Advanced Function Presentation

InfoPrint AFP Workbench for Windows:
Technical Reference Version 3.0

InfoPrint Solutions Company

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Note:

Before using this information and the product it supports, read the information in "Notices" on page 37.

Second edition (March 2009)

This edition replaces S550-1132-00 and applies to Version 2.0 of the InfoPrint AFP Workbench for Windows and to all subsequent releases and modifications until otherwise indicated in new editions of Technical Newsletters. Be sure to use the correct edition for the level of the product.

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Preface

How This Publication Is Organized

The information in this manual is presented in five chapters:

Chapter 1, "Preparing Your AFP Files for the Viewer," on page 1 describes how to prepare host files and resources for use with the Viewer.

Chapter 2, "Helpful Hints for the Viewer," on page 7 has some hints for using the Viewer and improving its performance.

Chapter 3, "The InfoPrint AFP Printer Driver for Windows," on page 13 describes how to install and use the InfoPrint® AFP™ Printer Driver for Windows®.

Chapter 4, "The AFP Reblocking Program," on page 19 describes how to upload and use the AFP Reblocker on your host session.

Chapter 5, "Mapping AFP Fonts for the Viewer," on page 23 contains information you may need to map AFP fonts you have either created or modified so they can be used for viewing files.

Chapter 1. Preparing Your AFP Files for the Viewer

The Viewer displays files of the following format:
* AFP files
* ASCII files
* JFIF (JPEG File Interchange Format)
* GIF (Graphic Interchange Format) files[1]
* TIFF (Tag Image File Format) files[2]
* PCX (Picture Exchange File) files[3]
* DCX (Multipage PCX) files[4]
* Bitmap files[5]
* SCS (SNA Character String)

ASCII files can be up to 10000 lines in length. Your z/OS® line data can be converted for use with the Viewer using the Advanced Function Presentation™ Conversion and Indexing Facility (ACIF). ACIF is provided with PSF for z/OS, Version 3.4; InfoPrint Manager for AIX®, Version 4.2; InfoPrint Manager for Windows, Version 2.2; PSF for iSeries®, Version 5.3; PSF/VSE, Version 2.2, and PSF/VM, Version 2.2. For more information about using ACIF, see "Using ACIF to Create and Index Files for Viewing" on page 3.

AFP files that can be viewed are:
* Documents of up to 100 000 pages
* Overlays
* Page segments

You can view files that were prepared using a z/OS host or a workstation. This chapter describes considerations when you prepare files from those two sources to use with the Viewer.

Preparing Data Files

The three major considerations for preparing files on z/OS for the Viewer are:
* Converting line-data files to AFP
* Adding indexing information to AFP files for use with the Viewer's navigation capabilities
* Transferring AFP files from the host system, if necessary.

Converting Files to AFP

If you print z/OS line data with an AFP page definition, you must convert the line data output to AFP before using the output file with the Viewer. ACIF creates an AFP data stream output file with your AFP page definition applied to the line data produced by your application program. If any required AFP resources are not inline, they must be transferred to the workstation separately. For more information about transferring resource files to your workstation, see "Using AFP Resources with the Viewer" on page 4.

Indexing AFP Files for Enhanced Viewer Access

Searching through large AFP files to find specific sections or pages to display can be difficult. AFP files can now contain indexing information so that you can more easily locate and display a specific section or page using the Viewer. You can use DCF, BookMaster®, ACIF, or the AFP Toolbox for Multiple Operating Systems to index your AFP files.

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1. Full color and compression are supported for this image format.

2. Full color and compression are supported for this image format.

3. Full color and compression are supported for this image format.

4. Full color and compression are supported for this image format.

5. Full color and compression are supported for this image format.

1

Preparing Files

With this indexing information included in your AFP documents, you can use the Select Group and Go To functions in the Viewer to rapidly locate individual pages in large files. Without this indexing function, you can still locate a specific page in an AFP file by:

- The sheet number (physical page) in the output file
- The page identifier that is included in the Begin Page AFP structured field
- A string search of the text in the file.

Searches without an index may take longer than with an index. ACIF and AFP Toolbox allow you to name groups of pages when indexing a file. To ensure that a group of pages can be selected in the Viewer, the first 64 characters in the group names must be unique within a file. See "Using ACIF to Create and Index Files for Viewing" on page 3 for more information about indexing files for viewing.

DCF and BookMaster Support for Indexing

Document Composition Facility (DCF) and BookMaster support for indexing is available with Program Temporary Fixes (PTFs).

The PTFs for DCF are:

Environment	MVS™ PTFs
Base	UN45413
TSO	UN45424
Environment	VM PTFs
Base	UN45419
SMFF	UN45420
DBCS	UN45421

The PTFs for BookMaster are:

Environment	MVS PTF
TSO	UN52208
Environment	VM PTF
Base	UN52207

These PTFs provide SCRIPT and GML support for marking items to be indexed. See the DCF or BookMaster PTFs for more information about this support.

AFP Toolbox for Multiple Operating Systems Support for Indexing

The AFP Toolbox supports adding indexing information to your documents as it generates AFP from C, C++, COBOL, RPG, and PL/1 applications. Indexing information added by AFP Toolbox is ignored when your document is printed, but is used by the Viewer for navigating through your displayed document.

You can then run your AFP Toolbox output through ACIF to generate an indexing file that can be concatenated to the front of the AFP output file. ACIF indexing information concatenated to the beginning of the AFP file increases the Viewer's performance. ACIF is provided with PSF for z/OS, Version 3.4; InfoPrint Manager for AIX, Version 4.2; InfoPrint Manager for Windows, Version 2.2; PSF for iSeries, Version 5.3; PSF/VSE, Version 2.2, and PSF/VM, Version 2.2.

For more information about AFP Toolbox, see *AFP Toolbox for Multiple Operating Systems: User's Guide*, S544-5292.

Using ACIF to Create and Index Files for Viewing

With ACIF, you can add indexing to AFP documents or add indexing as part of the conversion from line data to AFP data stream. You can create a separate index file with ACIF that can be concatenated to the front of the AFP output file for the best use of the indexing information by the Viewer.

ACIF can create the following types of files:

- AFP document file (with or without indexing)
- AFP resource file (this file is optional)
- AFP index file (this file is optional)

An ACIF AFP document file may include AFP indexing information. When the ACIF resource file or index file is created, they can be concatenated to the front of the ACIF AFP document file. The presence of the AFP resources at the beginning of the AFP output file provides inline resources to the Viewer so that the resources do not have to be transferred separately to the workstation. Placing ACIF index information at the beginning of the AFP file improves the Viewer's performance when you are navigating a large file.

Use the `ACIF INDEXDD` and `RESOBJDD` parameters to generate the index and resource files respectively. When you create an indexing file to view, specify `INDEXOBJ=ALL`.

Examples of the commands used to concatenate the ACIF files can be found in *AFP Conversion and Indexing Facility Application Programming Guide*, G544-3824.

ACIF Resources Options: If you intend to view many files that require the same set of resources, the resources need only be transferred to the resource subdirectory on your workstation once (see "Using AFP Resources with the Viewer" on page 4 for more information). ACIF need not generate a resource file for them. Set the value on the ACIF `RESTYPE` parameter to `NONE`.

If you would like all of the resources referenced in a document to be included in the ACIF resource file, specify `RESTYPE=FDEF,PSG,OVLY`. Resources can be selectively included, for example, if a value of `OVLY,FDEF` is set on the `RESTYPE` parameter, only overlays and form definition resources will be included. In this example, any page segments referenced in the document would need to be transferred separately t the workstation if they are to be viewed.

On an MVS system, set the value of the `RESFILE` parameter to `SEQ` to create a sequential data set for concatenation to the front of the ACIF AFP document file.

ACIF Indexing Options: The value that you specify for the ACIF `GROUPNAME` parameter is the value that you can select using the **Find Group** dialog box in the Viewer. Choosing group names that are unique within a file and that meaningfully divide the file into sequential sections is recommended.

Transferring AFP Data Files to the Workstation

You can use any standard file transfer program Windows to transfer AFP files from a z/OS host to you workstation.

AFP files must be transferred in binary format. For example, to transfer a file named `MYUSERID.MYDOC.LIST3820` from your z/OS host session (configured as the A host session in your Personal Communication Workstation program) to a file named `MYDOC.AFP` in your default Viewer Data directory using your host-to-workstation download program.

To transfer a file named my `MYDOC LIST3820 A` from your VM host session (configured as the A host session in your Personal Communication Workstation program) to a file named `MYDOC.AFP` in your default Viewer Data directory using your host-to-workstation program.

Transferred files can be stored anywhere on your workstation, but if you store them in the Data directory specified on the Viewer's **Preferences** dialog box, they will be available for immediate selection by the

Viewer. If the data files you transfer contain references to resources (such as page segments or overlays) that are not contained in the data files, remember to transfer those resources to the Viewer resource directory.

Using AFP Resources with the Viewer

The Viewer looks for and uses four types of resources:
- Overlays
- Page segments
- Form definitions
- Fonts

These resources can be either inline (contained within the document) or external (contained in a resource directory). The Viewer looks for resources to apply to documents in the following order:
1. **An inline resource.** Document-level resources are inline resources that are defined at the beginning of the document and applied to the entire document.
2. **An external resource.** External resources are stored in resource directories defined with the **More Preferences** dialog box and applied to an entire document. Separate resource directories can be defined for each type of resource, for example, you can have a page segment directory for page segments, an overlay directory for overlays, and so forth.

If no resource is found, an error is detected by the Viewer.

If resources such as page segments, overlays, and form definitions are inline (defined within an AFP document) the Viewer does not search the resource directories specified on the **More Preferences** dialog box.

ACIF can also create an AFP file that contains some or all of the AFP resources that are needed for printing and presentation. The AFP resource file can be combined with the AFP file created by ACIF so that the Viewer can use the inline resources.

Using Form Definitions

The Viewer allows you to display an AFP document using a form definition. The Viewer looks for form definitions to apply to documents in the following order:
1. **A default form definition.** A default form definition is one you specify with the **More Preferences** dialog box to be applied each time a file is viewed. You can use the **Form Definition** dialog box to apply any form definition resident on your workstation to the displayed file.
2. **An inline form definition.** The first inline form definition (a form definition contained in the AFP file) is applied when the file is opened.
3. **The Viewer default form definition.** The form definition supplied with Viewer that is applied if no other form definition is specified. The default is **NONE**. The form definition associated with **NONE** is named *F1010110.FDE*.

Using Fonts

If "Use AFP Fonts" check box is selected, from the More Preferences dialog box, then the AFP Viewer will attempt to locate each AFP Font Resource defined by the "AFP Font" path. If found, then the following rules will be applied. Otherwise, if not found the AFP Viewer will map the AFP Font resource as described in Chapter 5, "Mapping AFP Fonts for the Viewer," on page 23.

Rules:
1. AFP Code Page:
   a. Determine cpgid from code page.
   b. If cpgid found, check if ICU conversion tables have cpgid defined. Done.
   c. If ICU conversion tables do not have cpgid defined, then build ucm/cnv files from code page and add to ICU conversion table. Done.

    d. If cpgid not found, then us cpdef.fnt file to map code page.

2. AFP Outline Font:
    a. Extract Type 1 font from AFP Outline Font Resource and install in temporary directory. This temporary font will then be used to display referenced text. Once the AFP document is closed, the temporary font will be destroyed.

3. AFP Raster Font:
    a. Determine if matching AFP Outline Font is available, based off font name (Example: C0420000.300 = CZ4200.OLN), then perform #2. Done.
    b. If matching AFP Outline Font not available, then extract AFP Raster Font metrics and use with mapped font.

        Note: If the AFP Raster Font metrics is being used with a mapped font, then "Text Fidelity" option will be ignored.

Transferring AFP Resources to the Workstation

You can use any standard file transfer program on Windows to transfer AFP resource files from a z/OS host to your workstation. AFP files must be transferred in **binary** format. Store the transferred resources in the resources directory specified on the Viewer's **More Preferences** dialog box.

Preparing Workstation Files for the Viewer

You can use the Viewer to view ASCII files (most graphic controls that can exist in ASCII files are ignored ASCII files do not contain information to indicate page boundaries. The Viewer displays ASCII files at 6 lines per inch and allows a 1/2 inch margin for the top and the bottom.

You can convert any data from any Windows application that can be printed using a Windows printer into AFP format with the InfoPrint AFP Printer Driver for Windows. To convert the data you:

1. Define a port of FILE when you install the driver program (see Chapter 3, "The InfoPrint AFP Printer Driver for Windows," on page 13)

2. Select the Print option from your Windows application

3. Select the printer associated with the InfoPrint AFP Printer Driver for Windows

The InfoPrint AFP Printer Driver for Windows produces the data in AFP format that can then be used with the Viewer or printed on InfoPrint printers.

AFP Data Considerations

This section lists important points about the types of AFP data supported by the Viewer and about how some types of unsupported data are handled.

- The Viewer supports most of the Image Object Content Architecture (IOCA) formats for image data, as well as the IM format for image data.
- Because Windows does not support expanding and condensing fonts, normal width fonts will be substituted for expanded and condensed fonts with the Viewer. However, if you have expanded or condensed Type 1 fonts, you can specify in your font definition files that you want them to be used. To define a different substitution, you can use the font definition files described in Chapter 5, "Mapping AFP Fonts for the Viewer," on page 23.
- The Viewer provides Graphic Object Content Architecture (GOCA) format for AFP data objects.
- 100% Text Fidelity is not supported when AFP Fonts are mapped to Windows Fonts.
- Only the following Bar Codes are supported:

Types	Modifiers	Name
X'01'	X'01' and X'02'	Code 39

Preparing Files

Types	Modifiers	Name
X'02'	X'01' through X'09'	MSI
X'03'	X'00'	UPC-A
X'05'	X'00'	UPC-E
X'06'	X'00' through X'02'	UPC-2 digit
X'07'	X'00' through X'02'	UPC-5 digit
X'08'	X'00'	EAN 8
X'09'	X'00'	EAN 13
X'0A'	X'01' and X'02'	Industrial 2 of 5
X'0C'	X'01' and X'02'	Interleaved 2 of 5
X'11'	X'02' through X'04'	Code128
X'16'	X'00' and X'01'	EAN 2
X'17'	X'00' and X'01'	EAN13-5
X'18'	X'00' through X'04'	POSTNET
X'1B'	X'00' and X'01'	Japan Postal
X'1C'	X'00'	DataMatrix
X'1D'	X'00'	Maxicode
X'1E'	X'00' and X'01'	PDF417
X'22'	X'00' through X'03'	USPS 4-State

- Documents printed through the AFP Viewer may not be able to scan Bar Codes.
- AFP Viewer processes each logical page as a physical page, thus true N-up isn't supported.
- Not all Graphic Object Content Architecture (GOCA) patterns are an exact match.
- The following Graphic Object Content Architecture (GOCA) Line types display as follows:
  – Double Dotted Line = Dotted Line
  – Short Dash Line = Long Dash Line
- Graphic Object Content Architecture (GOCA) Line Width parameter is ignored when used with non-Solid Line types.
- Not all Extended SCS commands are supported.
- The Viewer does not support text or rules within page segments.
- An AFP form definition cannot be applied to ASCII file.
- The Constant Forms Control function provided in the AFP form definition resource is ignored by the Viewer. To view overlays without any variable data, you can open the overlay file itself.
- If more than one AFP document is contained in a single file, all of the documents in the file can be accessed by the Viewer, but any resources that may be between the documents will be ignored. Only the resources in a resource group at the beginning of the file will be used for all of the documents in the file

Chapter 2. Helpful Hints for the Viewer

This chapter contains some helpful hints for running the AFP Workbench Viewer application. Other helpful hints and information can be found by searching the Workbench online help information.

Mapping AFP Fonts and Improving Fidelity

An AFP page or overlay contains text, image, and placement instructions in extended binary coded decimal interchange code (EBCDIC). The page or overlay is created using AFP raster fonts. To approximate a printed page, Workbench interprets the AFP data stream, translates the locations to logical display units,[6] and places the text (translated to Unicode) in the Viewer window. To display the text, the Viewer requests Type 1 or TrueType outline fonts that most closely approximate AFP raster fonts. If the font metrics are no the same, mapping of AFP host fonts to outline fonts will not give you optimum text fidelity.

There are two reasons it is strongly recommended that you use the IBM Expanded Core fonts to format and display your documents wherever possible:

1. Using them ensures that the fonts will be available when printing at any location using the IBM Fonts for z/OS and Multiplatforms.
2. Your documents have better fidelity when viewed if you created them using these fonts because they match the fonts supplied with the Viewer.

If you have defined a path for your fonts in the **More Preferences** dialog, that path is checked first for you font definition files. If any of the font definition files are not found in the defined path, a \FONT subdirectory under the directory where the Viewer is installed is checked for those files. Code page map files are located in the registry or .INI file with the key name of "CNVFOLDER" in the "Preferences" section.

The Viewer must be restarted for changes made to your font definition files to take effect.

See Chapter 5, "Mapping AFP Fonts for the Viewer," on page 23 for more information about fonts and the Workbench.

IBM Expanded Core Fonts and DCF

If you are using Document Composition Facility (DCF) or BookMaster to format your documents, you can specify that DCF use the IBM Expanded Core fonts in its output by specifying an AFP device type if DCF PTF number PN21493 or BookMaster PTF number UN52208 are installed. Formatting your DCF or BookMaster output using the IBM Expanded Core fonts increases the fidelity of the documents when you view them.

Sonoran Font Support for the Viewer

You may experience text fidelity or text alignment problems when you view documents that were created with the Sonoran Serif or Sonoran Sans Serif fonts because there are no available Sonoran outline fonts. A solution is available in the form of the Sonoran metric fonts.

Sonoran metric fonts consist of Times New Roman (for Sonoran Serif) or Helvetica (for Sonoran Sans Serif) outline fonts. These fonts provide metrics that match those of the Sonoran raster fonts and offer high fidelity when you view AFP documents that were created with Sonoran fonts.

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6. Conversion to logical display units can cause pels to be lost in rounding.

Helpful Hints for the Viewer

The Sonoran metric fonts can be installed with ATM and used with the Viewer. To get a match for the font metrics, separate fonts for each of the following point sizes are provided: 6, 7, 8, 9, 10, 11, 12, 14, 16, 18, 20, 24, 30, and 36.

To get a copy of the Sonoran metric fonts for the Viewer, contact AFP Workbench Service and open a Program Management Record (PMR) requesting the Sonoran Serif and the Sonoran Sans Serif font you need.

Conditions That Can Affect Viewer Performance

This section describes some conditions that can have an effect on Viewer performance.

Displaying Complex Documents

If you are unable to display complex documents, there may not be enough memory available to the Viewer application. Check the following conditions:

- Check that **Cache Size** is set to 0 on the **Preferences** dialog box on the **Options** menu of the Viewer.
- If you are using ATM, lower your ATM font cache size using the ATM Control Panel.

Display Performance and Fidelity

The Viewer provides settings that allow you to increase display performance at the expense of fidelity. The **Image View** and **Text Fidelity** choices on the **Options** menu present different levels of fidelity for image and text that also affect the speed with which they are displayed. For image data (including shading patterns contained in overlays such as those created using Overlay Generation Language), the choices follow in order of improving performance:

Normal Displays the image as darkly as possible which can hide text inside shaded areas. **Normal** is the default.

Light Displays the image using a halftone algorithm for lighter output results.

Color Displays the image in one of six colors: yellow, blue, red, magenta, green, or cyan.

None No images are displayed.

For text data, the choices follow in order of improving performance:

Character Positions each character individually with the best fidelity.

Word Positions each word individually with good fidelity.

Line Positions each text block individually with normal fidelity. **Line** is the default.

Draft Performs no positional adjustments (such as variable spacing, intercharacter adjustment, and character rotation) and yields minimal fidelity.

Rules or Lines that Do Not Display

If rules or lines are not displayed, the problem may be due to display driver differences. You will need to edit the file called FTDPORT2.INI in the directory in which you installed Workbench (or your Windows directory if you are running the Viewer as a client on a network) to use another method for displaying rules. Use any workstation editor to edit the file. In the section under the heading **[Misc]**, change the RuleFix entry value from `RuleFix=FALSE` to `RuleFix=TRUE`.

The Page Redraws Too Many Times

To decrease the number of times the Viewer redraws a page in your file, select **Preferences** on the **Options** menu to display the **Preferences** dialog box. On the **Preferences** dialog box, enter a cache size greater than 0 to specify the number of pages to be cached in memory by the Viewer.

Troubleshooting

This section describes some conditions that can occur and what can be done to fix them.

Invalid AFP Data Stream

AFP structured fields in which the Length parameter does not match the actual length of the data, cause problems. In some cases, the record length may have been ignored by PSF. In other cases, padding may have been added or truncated with no error reported by PSF. These problems can often be traced to the program that produced the AFP data stream, opening the file with a S/370™ editor that truncated padding, or specifying the wrong parameters when the AFP file was downloaded.

A symptom of host editor data corruption is a missing resource message reported by the Viewer where the resource name has a '!' as the last character of the name. For example, if the Viewer reported that overlay `01ABC!` could not be found, this would indicate that bytes have been lost and that less AFP data was present than the AFP structured fields defined.

See "AFP Data Considerations" on page 5.

Printing

When you select the Current Page for printing on a Windows printer, the current view will be printed with the width of the window scaled to fit the width of the printer's printable area. When the same page is printed on a PSF/6000 driven printer, the page prints as it was created with the exact AFP placement instructions.

When printing from the Viewer to a PSF/6000, you must have redirect your port (LPT1, LPT2 or LPT3) to the appropriate queue being driven by PSF. To define your printer, use the documentation provided with Windows or PSF/6000.

Output Shifted Off The Page

When viewing a document that has been processed by DocuMerge that has not been formatted using the IBM Expanded Core Fonts, a text fidelity problem exhibited by a progressive shifting of each line of text to the left could occur.

DocuMerge and some other programs create AFP data stream structured fields that contain negative RMIs (Relative Move Inline) which amplify the differences in font metrics between AFP fonts and Type 1 fonts. Sonoran Metric fonts are now available to solve this problem if your document was created with Sonoran fonts. Contact AFP Workbench Service and have them open a PMR requesting these fonts and they will be sent to you.

Documents Displaying Much Smaller Than Expected

Documents created with DisplayWrite/370, Version 2.1.0 (and earlier) and formatted for the 3812 and 4224 logical device types contain MCF-2s with GRIDs that incorrectly specify font width. When displaying these documents on the Viewer, the text appears smaller than when the document is printed with PSF. To better view the document, use the Zoom function to enlarge the view. If the document was created with DisplayWrite/370 and you have the source, you can reformat the document specifying a device type that does not create these MCF-2s (such as 3820) or use the latest level of DisplayWrite/370 (2.2.0 or above).

Text Fidelity

If the document you are viewing uses a font character set or code page not defined to the Viewer, the Viewer uses a default. If the default is not a good match for the undefined character set or code page, you see a different size and style of characters or missing or changed characters. As a result, text may not be placed correctly.

Helpful Hints for the Viewer

Sometimes lines (or rules) are placed relative to a text string. If the text is misplaced because the Viewer is using a default or substitute font, the rules will also be misplaced. For example, an underscore line may be longer than the word being underscored. In some cases, changing the **Text Fidelity** setting may help alignment.

If the Viewer is not substituting fonts, and your text alignment still seems a bit off, especially if **Text Fidelity** is set to **Character**, it may be because your document was created with 300-pel metrics rather than 240-pel metrics. Documents created with the InfoPrint AFP Printer Driver can use 300-pel (or RIMA) metrics. Documents created with 240-pel fonts use 240-pel metrics. You can set which metrics the Viewer uses in its text placement algorithm by changing a flag in the `[Settings]` section of the FTDPORT2.INI file. By setting `240Fidelity=FALSE`, the Viewer uses 300-pel(RIMA) metrics. The default is `240Fidelity=TRUE`.

Using Find And Find Next

In AFP documents, the actual text you see can be stored in multiple AFP data stream structured fields. That is, when the text "2190 Lancaster Road NE" appears on the page, it is possible that the text in the file is stored in four fields: "2190", "Lancaster", "Road", "NE". The **Find** and **Find Next** functions will not find "2190 Lancaster" if "2190" and "Lancaster" are stored in separate fields. When text is broken into fields, the blanks between fields are frequently not in the file and cannot be located by the **Find** function.

Unable to Open a File In Two Viewer Sessions

If you cannot open a file on a local drive that is already open in another Viewer session, try the following:

1. Open your `AUTOEXEC.BAT` and `CONFIG.SYS` files with a text editor.
2. Search for a line with the DOS `'SHARE'` command.
3. Comment that line out.
4. Run the `AUTOEXEC.BAT` file or re-boot your system.
5. Try opening the same file in your two Viewer sessions.

Copying Text to the Clipboard

If the file being viewed contains rotated text or small fonts, unexpected results may occur if the **Copy (Text)** item of the **Edit** menu is selected. The data copied to the clipboard may be different than the area selected. Using the **Copy (Bitmap)** is recommended in these cases.

Colors Disappearing on a Color Background

Some colors in your document will not show up on a colored background if you have a cache size set to greater than zero in the **Preferences** dialog box. In this case, set your cache size to zero (which turns caching off). Another option is to view your data at a zoom factor greater than 150%. Above that factor, caching is not used.

Internal Medium Maps

Internal medium maps existing outside of an inline form definition are not supported by AFP Workbench. If you get a message that a medium map is missing, check to see if you are using a form definition and that the medium map being asked for is within that form definition.

Indexing Documents

AFP Workbench Viewer supports a maximum of 8 index attributes.

Changing the Print Dialog Default to Print All Pages

The default for the Viewer's Print dialog box is to print the current page. To change the default to print all the pages in a document, add the following entry under the `[Settings]` heading of the FTDPORT2.INI file:

`PrintAllPages=TRUE`

User-Defined Paper Sizes

Two user-defineable paper sizes can be selected from the list of selectable papersizes for non-standard documents: **U1** and **U2**. To view non-standard documents, edit the following lines in the FTDPORT2.INI file:

```
PaperSize1=12240, 15840
PaperSize2=12240, 15840
```

Change these numbers to the width and length of the paper size of the document you want to view (the width is the top of the viewed, unrotated page). The numbers must be in 1440ths of an inch. If your paper is in inches, multiply it by 1440ths of an inch. If your paper is in millimeters, multiply it by 56.7 and round to the nearest whole number (fractions are not recognized).

Start the Viewer and select **U1** in the **Paper Size** dialog box to use `PaperSize1` or **U2** to use `PaperSize2`. To change the paper size again, close the Viewer and edit the .INI file paper size or size.

If no values are set in the FTDPORT2.INI file, the default for **U1** and **U2** is 8.5 x 11 inches.

Chapter 3. The InfoPrint AFP Printer Driver for Windows

You can use the InfoPrint AFP Printer Driver for Windows with any Windows program to create AFP documents, overlays, and page segments.

Install the InfoPrint AFP Printer Driver for Windows as a Windows printer driver, invoke it from the print screen of your favorite Windows application, and the result is an AFP file.

Installing the InfoPrint AFP Printer Driver under Windows

Installation instructions for the InfoPrint AFP Printer Driver for Windows are available in the Readme files for the version of Windows you are using, for example, *readme2000.txt*.

Uploading AFP Files to MVS or VM

Upload AFP files to your MVS or VM host system with any standard file transfer program for Windows. AFP files must be uploaded as **binary** with a logical record length of **32756** and a record format of **variable**.

Note: AFP files that have been uploaded to your host system must be reblocked in order to be used. See Chapter 4, "The AFP Reblocking Program," on page 19 for instructions about reblocking AFP files on your MVS or VM host system.

Use the AFP Reblocking Program to reblock the AFP file. See "Using the AFP Reblocking Program" on page 20 for information about reblocking AFP files.

Printing with an Inline Form Definition

Instructions for printing files that were created with the InfoPrint AFP printer driver and that contain an inline form definition are as follows:

If your system is MVS:

> Specify FORMDEF=IBMAFP in your print job submission JCL.
>
> See also *PSF/MVS Application Programming Guide*, S544-3084.

If your system is VM:

> Use the following PSF command after using the VM CP TAG and SPOOL commands to specify your printer:
>
> ```
> PSF fn ft fm (FORMDEF(F1IBMAFP FDEF38PP) cc notrc)
> ```
>
> See also *PSF/VM Application Programming Guide*, S544-3466.

If your system is AS/400 or RS/6000®:

> No special commands or options are required. Print the file the same way you would any other AFP file.

Troubleshooting

Information on troubleshooting problems you can experience using the InfoPrint AFP Printer driver is covered in this section.

Symptom

Rectangles black out portions of your document when it is printed.

Things to try: Uncheck "Use text rules" on the printer driver's **Advanced Font Options** dialog box.

Note: Unchecking "Use text rules" may cause the driver to produce larger output files that print slower.

Symptom

After changing the selected paper size in your Windows application, paper in your printer's default drawer, rather than the specified drawer, is being used to print your document.

Things to check:

1. Make sure the **Create inline form definition** selection in the printer driver's **Advanced Form Definition Options** dialog box is checked.
2. Make sure the paper size you selected in your Windows application is connected to the correct source drawer on the printer driver's **Advanced Form Definition Options** dialog box.
3. If your Windows application allows you to change the source drawer, make sure you are selecting the correct source drawer.
4. If steps 1, 2, and 3 don't fix the problem, you can tell the driver to automatically select the correct bin by checking the **Auto Select Bin** check box (in Windows 95 only) from the **Advanced Form Definition Options** dialog.

   Note: Turning on automatic bin selection in the printer driver causes any source drawer selections made by your Windows applications to be ignored. It also prevents you from selecting any paper size that is not connected with a source drawer on the printer driver's **Advanced Form Definition Options** dialog box.

Symptom

Your text is printing as image, or the AFP document is larger than you would expect and prints slower.

Things to check:

1. Make sure that the font you are using in your Windows application has a substitute AFP character set on the printer driver's **Font** dialog box.
2. If the font you are using is an ATM font, ensure that the **Print ATM fonts as graphics** option on the ATM Control Panel is *not* checked.
3. Check your WIN.INI file for a **[FontSubstitutes]** section. Remove any font substitutions involving the fonts you are using. For example:

   ```
   [FontSubstitutes]
   ...
   MyFont=OtherFont  <== REMOVE THIS LINE
   ...
   ```

   You must restart Windows for this change to take effect.
4. If the font you are using is an ATM font, and the text is in color, add the following section to your ATM.INI file in your WINDOWS directory:

   ```
   [Colors]
   PrintColorGraphics=Off  <== ADD THIS LINE
   ```

   You must restart Windows for this change to take effect.
5. If you are running an old version of ATM, upgrade to at least ATM 2.5 or above. If you are running Windows 95, you need to upgrade to at least ATM 3.01.

6. If you are running ATM 2.6 or above, add the following entry to the **[Settings]** section of your ATM.INI file in your WINDOWS directory:

```
[Settings]
...
DownloadAdjust=Off  <== ADD THIS LINE
```

7. If you are printing from one of the Acrobat family of products, and your document is in landscape orientation, be sure you have checked landscape orientation on the **Print Setup** dialog.

Symptom

Text in your output is incorrectly placed. For example, words or characters overlap each other or are oddly spaced.

Things to check:

1. Ensure that the font you are using in your Windows application has a substitute AFP character set on the **Font** dialog box and that the substitute set is a good match (the average width of the characters must be the same).
2. If a better substitute AFP character set is not available, try switching the **Output Fidelity** option to **Character** on the driver's **Font** dialog box.
3. If the font you are using in your Windows application is an ATM font and you are running an old version of ATM, upgrade to ATM 2.5.
4. If the font you are using in your Windows application is an ATM font and you are running ATM 2.6 or 3.0, add the following entry to the [Settings] section of your ATM.INI file in your WINDOWS directory:

```
[Settings]

...
DownloadAdjust=Off  <== ADD THIS LINE
```

5. If none of the above steps work, remove the substitute AFP character set for the font you are using on the **Font** dialog box.

Symptom

Your color text is printing as black.

Things to check:

1. Make sure that the color you are using is one supported by the AFP data stream. See "Limitations of the Printer Driver" on page 17 for more information.
2. Make sure that the font you are using in your Windows application has a substitute AFP character set on the printer driver's **Font** dialog box.
3. If the font you are using is an ATM font, add the following section to your ATM.INI file in your WINDOWS directory:

```
[Colors]
PrintColorGraphics=Off  <== ADD THIS LINE
```

You must restart Windows for this change to take effect.

Note: Some applications, such as Microsoft® Word for Windows, force color text to black if the printer driver they are printing with only supports black and white images. Since the InfoPrint AFP Printer driver only supports black and white images, all color text will be printed as black text from these applications.

Symptom

The wrong text characters appear in your output.

Things to check:

1. Make sure that the **Code page:** specified on the printer driver's main setup dialog box matches the ANSI code page used by Windows. The default code page should normally *not* be changed. Turkish customers may find that T1000850 works better for them.

2. Make sure that the font you are using in your Windows application has a substitute AFP character set on the **Font** dialog box and that the substitute set is a good match (the characters are the same). Turkish customers may find that the font substitutions in IBMAFPT.INI (found on the diskette used to install the printer driver) work better than the font substitutions in IBMAFP.INI. They should rename IBMAFPT.INI to IBMAFP.INI and copy it into the Windows System directory.

3. If none of the above work, remove the substitute AFP character set for the font you are using on the printer driver's **Font** dialog box.

Symptom

An error or warning is issued indicating that data is being placed off the presentation space when you print a file on your host system.

Things to check:

1. Ensure you are using the Generic InfoPrint 240dpi or 300dpi printer driver or the InfoPrint AFP printer driver that matches your printer.

2. If the **Create inline form definition** check box on the printer driver's **Form Definition** dialog box is not checked, make sure that the medium origin of the external form definition you are printing with is (0, 0). If not, change the **Medium Origin** fields on the printer driver's **Clip Limit** dialog box to match the medium origin of your external form definition.

3. Increase the **Right** and **Bottom** entry fields on the printer driver's **Clip Limit** dialog box by at least .10 of an inch (2.54 mm).

4. Check the **Create inline form definition** check box on the printer driver's **Form Definition** dialog box and then follow the steps in "Printing with an Inline Form Definition" on page 13.

Symptom

Errors occur when you print a file created with the driver on your host system.

Things to check:

1. Make sure you followed all of the steps listed in "Uploading AFP Files to MVS or VM" on page 13.

2. Make sure that the AFP character sets substituted for the fonts used in your document are installed on your host system.

3. Make sure that your Print Services Facility™ (PSF) version is at Version 2.0 or above.

4. Make sure that the **Create inline form definition** check box on the printer driver's **Form Definition** dialog box is not checked. If it is checked, make sure the form definition you are using is **F1IBMAFP**. See also "Printing with an Inline Form Definition" on page 13.

Symptom

Page segments print incorrectly when included in a document or overlay.

Things to try:

1. If you are using landscape orientation, and are including the page segment inline in your Document Composition Facility (DCF) document, try referencing the page segment externally instead.

2. You may want to create an overlay instead of a page segment and then use **Include Page Overlay** (.IO [Overlay Include] or IPO) in your document or overlay rather than **Include Page Segment** (.SI [Segment Include] or IPS).

3. Create the page segment with the **Image Resolution** set to **240 x 240** and the **Compressed images** check box unchecked on the printer driver's first setup dialog box.

Symptom

Some horizontal lines disappear on output from Microsoft Word for Windows.

Things to try: Upgrade your version of Microsoft Word for Windows to version 6.0.

Symptom

Graphics, images, or both disappear on printed output.

Things to check: If you are using WordPerfect, change the unprintable area (using the **Top**, **Left**, **Right**, and **Bottom** entry fields on the printer driver's **Clip Limit** dialog box) to .25 inches (6.35 millimeters).

Symptom

Lotus® Freelance Graphics® for Windows' "Speaker notes" do not wrap correctly to the next line when the **Image Resolution** on the printer driver's main setup dialog box is set to **240 x 240**.

Note: This problem has been reported to Freelance Graphics for Windows Support. The problem has not been corrected as of version 2.01. The following suggestions are possible ways to work around the problem until Freelance has an opportunity to correct it.

Things to try:

1. If you have a 300 DPI printer, install the corresponding printer driver or Generic InfoPrint 300dpi AFP. The Freelance Graphics for Windows' "Speaker notes" print correctly when formatted for a 300 DPI printer when a 300 DPI printer driver is installed.
2. Edit the "Speaker notes" in your Freelance Graphics presentation. Press down and hold the **Ctrl** key, then press the **Enter** key to force the lines to wrap correctly.

Symptom

Microsoft Access for Windows' "Reports" print with broken lines or blank horizontal bands across the page.

Note: This problem has been reported to Microsoft Access for Windows support. The problem has not been corrected as of version 1.1. The following suggestion is a way to work about the problem until Microsoft has an opportunity to correct it.

Things to try:

1. Make sure you have at least 1MB of memory free before printing.
2. Change the top unprintable area (using the **Top** entry field on the printer driver's **Clip Limit** dialog box) to 0.

    Note: This may cause warnings about placing output in the unprintable area when you print the resulting document. This will not affect the way the document looks when it is printed as long as there is no actual data being placed in this area.

Symptom

Documents fail to print on a PC that has a Cirrus Logic video driver installed.

Things to try: Install a different video driver or print the document on a machine with a different driver installed.

Limitations of the Printer Driver

The InfoPrint AFP Printer Driver for Windows has the following limitation:

- Clipping an area will always clip whole characters. If you need to clip partial characters, you must remove the substitute AFP character set for the font you are using on the printer driver's **Font** dialog box which causes an image to be created instead of text.

Chapter 4. The AFP Reblocking Program

When AFP files are transferred from your workstation to your MVS or VM system, some records become wrapped. The wrapped records create a format that is unusable by PSF/MVS or PSF/VM. Printing a file with wrapped records causes errors. The AFP Reblocking Program reblocks the records in your AFP files into a format that can be used by PSF/MVS or PSF/VM.

The AFP Reblocking Program has three parts: the reblocker, the message file, and the profile. The reblocker and message file reblock your AFP file and provide information and error messages. You can use the profile to set the default naming conventions you want to use when you reblock a file.

The AFP Reblocking Program is located on the Workbench CD-Rom. To use the Reblocking Program it must first be uploaded to your MVS or VM system.

Uploading the AFP Reblocking Program

Perform the following steps to upload the AFP Reblocking Program to your MVS or VM system:

Uploading to MVS

1. Place the Workbench CD-Rom into your CD-Rom drive.
2. Use any standard file transfer program for Windows to transfer the following files to your MVS system:
   - AFRREBLK.EXC
   - AFRREMSG.EXC
   - AFRREBLK.MVS

   These files must be uploaded as **binary** files with a logical record length of **80** and a record format **fixed**.

   Upload the AFRREBLK and AFRREMSG execs as members of an existing REXX™ EXEC or CLIST partitioned dataset. This dataset should be allocated to SYSPROC or SYSEXEC.

   Note: You will receive better performance if you put the execs in SYSEXEC.
3. Rename the uploaded profile on your MVS system as follows:

   ```
   AFRREBLK.MVS   to   userid.AFRREBLK.PROFILE
   ```

   where userid is the high-level qualifier for the dataset

Uploading to VM

Perform the following steps to upload the AFP Reblocking Program to your VM system:

1. Place the Workbench CD-Rom into your CD-Rom drive.
2. Use any standard file transfer program Windows to transfer the following files to your VM system:
   - AFRREBLK.EXC
   - AFRREMSG.EXC
   - AFRREBLK.VM

   These files must be uploaded as **binary** files with a logical record length of **80** and a record format **fixed**.
3. Rename the uploaded files on your VM system as follows:

   ```
   AFRREBLK.EXC   to   AFRREBLK   EXEC
   AFRREMSG.EXC   to   AFRREMSG   EXEC
   AFRREBLK.VM    to   AFRREBLK   PROFILE
   ```

Using the AFP Reblocking Program

Use the AFP Reblocking Program when you have transferred an AFP file from your workstation (for example, a file you have created using the InfoPrint AFP Printer Driver for Windows) to your MVS or VM system. For information about uploading files to MVS or VM, see "Uploading to MVS" on page 19 or "Uploading to VM" on page 19.

The AFP Reblocking Program creates a file using the file name defaults you have specified in the reblocker profile (AFRREBLK.PROFILE for MVS or AFRREBLK PROFILE for VM). The reblocker determines the type of AFP file (for example, an overlay or a document file) and names the file with the default provided in the profile.

The AFP Reblocking Program on MVS

The MVS Profile (AFRREBLK.PROFILE): The MVS profile includes a list of possible AFP dataset types that the reblocker can recognize. When the reblocker encounters a dataset of a given type, it creates another dataset with the default name in the profile for that dataset type. For example, in the AFRREBLK.PROFILE the line

```
FormDef userid().afrreblk.formdef  /*Form Definition Names */
```

indicates that when a form definition is encountered, the file becomes a member of the partitioned dataset *userid.afrreblk.formdef*.

When the AFP form definition named

userid.P1PROFL1.UPLD

is reblocked, the name is changed by the profile to

userid.AFRREBLK.FORMDEF(P1PROFL1)

where *userid* is the user identifier of the person reblocking the page definition and becomes the high-level qualifier. The second qualifier (P1PROFL1) becomes the member name.

If the reblocker does not recognize the type of AFP dataset, it uses the default

userid.*objectname*.AFPDS

where *objectname* is the name of file uploaded for reblocking.

You can specify the high-level qualifier and the dataset name to be used for different AFP datasets. You can also specify a sequential dataset by using only one qualifier in the profile. For example, if you specify

```
FormDef  formdef  /* Form Definition Names  */
```

the file being reblocked is renamed as

userid.*objectname*.FORMDEF

Using the example above of the form definition named

userid.P1PROFL1.UPLD

the reblocked dataset would be named

userid.P1PROFL1.FORMDEF

At the bottom of the profile, you can specify the record length and block size to be used when reblocking dataset.

Using the AFP Reblocking Program on MVS

To use the AFP Reblocking Program on your MVS system, type in the following command at the TSO READY prompt:

```
afrreblk  userid.objectname.UPLD
```

where *objectname*.UPLD is the dataset name of the file.

Note: When reblocking to a partitioned dataset, the partitioned dataset must be pre-allocated before the AFP Reblocking program is run.

If you are uploading a lot of files and do not want to type in the command for each file, you can use ISPF to display the names of the files to reblock and type in **AFRREBLK** in the command section.

For example, in ISPF go to panel 3.4 (Data Set List Utility) and specify a DSNAME LEVEL that corresponds to your uploaded files:

```
userid.*.UPLD.
```

Then in the command section of the listing type **AFRREBLK**.

The AFP Reblocking Program on VM

The VM Profile (AFRREBLK PROFILE): The VM profile includes a list of the possible AFP file the reblocker can recognize. When the reblocker encounters a file of a given type, it renames it with the default name in the profile for that file type. For example, the line in AFRREBLK PROFILE A

```
FormDef  FDEF38PP  /* Form Definition Names  /*
```

indicates that when a form definition is encountered, the file is renamed with a filetype of FDEF38PP and a filemode of A. You can specify the filetype and filemode to be used for different AFP files.

If the reblocker does not recognize the filetype as an AFP file, it uses the default filetype and filemode of

```
AFPDS  A
```

Using the AFP Reblocking Program on VM

To use the AFP Reblocking Program on your VM system, type in the following command:

```
afrreblk filename filetype filemode
```

On VM, you can also type AFRREBLK in the command section of your file listing:

```
afrreblk samp UPLD B
```

This gives you a quick way to reblock your files without having to type in the entire file name.

Chapter 5. Mapping AFP Fonts for the Viewer

The Viewer needs to map the AFP fonts your document was created with to fonts that can be displayed on your workstation. For the Viewer to map the best matching outline fonts to display your AFP document, it needs to know certain characteristics about the fonts that were used to create your document. Mapping AFP fonts to outline fonts is done with the InfoPrint-supplied font definition files installed as part of the Viewer. These files are loaded into the FONT directory you specified when you installed the Viewer. You may edit them using any workstation editor. The shipped version of the font definition files maps the IBM Core Interchange (Latin only), compatibility, coordinated, Sonoran, and Data1 fonts for you.

If your document uses an AFP font whose family (familyname) is not installed on your workstation, you can use the ALIAS.FNT file (one of the font definition files installed with the Viewer) to substitute that font familyname with a different one. The ALIAS.FNT file remaps several of the AFP fonts to IBM Core Interchange fonts. If you have any outline fonts installed on your workstation, you may want to remove or comment out the font familyname substitutions in the ALIAS.FNT file. If you are using TrueType fonts, you must use the ALIAS.FNT file to map the font name. See "Alias File" on page 29 for more information about using the ALIAS.FNT file.

The IBM Core Interchange fonts (shipped with AFP Workbench for Windows) are in Type 1 outline format. These fonts are delivered in three type families: Times New Roman, Helvetica, and Courier. Each type family is provided in these character set groups:

Latin   The Latin group is available in 4 typefaces: roman medium, roman bold, italic medium, and italic bold.

Symbols   The Symbols group is available in 2 typefaces: roman medium and roman bold.

Because the IBM Core Interchange fonts are also available for printing with Version 2 of PSF/MVS, PSF/VM and PSF/VSE; and PSF/6000 they help standardize fonts across applications and installations.

If you created your documents with only the unmodified IBM fonts, you will not need to remap fonts to use the Viewer.

When You Need to Map Fonts

If you are using fonts that are not defined to the Viewer, if you have modified the InfoPrint AFP fonts, or if you have created your own AFP fonts, you need to define those fonts in the font definition files in order for documents using those fonts to display correctly with the Viewer.

- If you created a new coded font (or renamed one), you will need to define the coded font in the Coded Font file (ICODED.FNT or CODED.FNT).
- If you created a new character set, you have to define it in the Character Set Definition file (CSDEF.FNT).
- If you created a new code page, you have to define it in the Code Page Definition file (CPDEF.FNT).
- If you have created a new code page or modified a code page by moving characters, you have to create a new Code Page file (*.CNV).

If you only have modified an existing InfoPrint font component, you may not need to perform any of the above steps. For example, if you have only deleted code points in the code page, the font files supplied with the Viewer can be used.

Viewer Files Supplied for Mapping Fonts

The following types of files for font support are installed by default in the following subdirectories under the directory in which the Viewer was installed:

Table 1. Viewer Files and Directories

File	File Name	Subdirectory	Description
Coded Font files	ICODED.FNT CODED.FNT[1]	\FONT	Specifies which AFP code page and AFP font character set make up the coded font.
Character Set definition file	CSDEF.FNT	\FONT	Defines AFP character set attributes, such as point size. It also maps the font character set to its font global identifier.
Code Page definition file	CPDEF.FNT	\FONT	Maps each AFP code page to a Code Page Map file for the Viewer to use.
Code Page Map file	*cpgid*.CNV	\FONT\CNV	Defines character identifier mappings. The .CNV files for ICU UCONV are used for character conversion.
Alias File	ALIAS.FNT	\FONT	Maps AFP font type families to Type 1 or TrueType outline font family names.

Notes:

1. CODED.FNT is an optional file. A sample can be found in the SAMPLES subdirectory of the FONT subdirectory. The CODED.FNT file is meant to contain coded fonts you have created.

Steps for Mapping Your Fonts to the Viewer

After reading the rest of this chapter to determine which font files you need to modify, follow these steps:

1. Gather the information needed to define the fonts in the font definition files. This information described in the following sections of this appendix.
2. Make backup copies of any of the following font definition files that you plan to modify:
   - CSDEF.FNT
   - CPDEF.FNT
   - ICODED.FNT
   - ALIAS.FNT

   Note: Backup copies of these files should be made so that you have an unmodified copy in the event something happens to your modified copy that makes it inoperable.
3. Install any other outline fonts you are planning to use with the Viewer. (See *Adobe Type Manager User Guide* for information on installing fonts with ATM.)
4. If you have created or modified a code page, use the ICU makeconv tool to build the code page map file. See "Code Page Map Files" on page 29 for more information about the makeconv tool.
5. If you have created a new character set, edit the CSDEF.FNT file and add your character set name in the [CHARSET] section. Specify the correct attributes for your font in the CSDEF.FNT. Add the appropriate information in the [FGID] section of the file if you are naming a new font global identifier.
6. If you have created a coded font, create or edit the CODED.FNT file and add your coded font.

Syntax Rules for the Viewer Font Definition Files

Syntax rules for the Viewer font definition files are as follows:

- A semicolon (;) in the first column of any of these files will cause the line to be treated as a comment statement and ignored.

- Section headers within files are enclosed in brackets [   ] and must not be removed or changed.
- All values are case insensitive.
- If a parameter value is invalid and a default value exists, it will be substituted.
- All parameters are positional.
- Blanks are allowed between parameter values.
- Each line must be less than 80 characters in length.

Coded Font File

The InfoPrint Coded Font file (ICODED.FNT) maps AFP coded fonts to their AFP character sets and AFP code pages. Two Coded Font files can be used with the Viewer:

ICODED.FNT This file contains definitions for approximately 2500 InfoPrint-supplied coded fonts.

CODED.FNT You can create this optional file to define a list of any coded fonts you have created. If you create a CODED.FNT file, you must place it in the FONT subdirectory. A sample of this file can be found in the SAMPLES subdirectory of the FONT directory.

If a CODED.FNT file exists in the FONT subdirectory, it is searched first for the coded fonts used in an AFP file. If the coded font name is not found in CODED.FNT or if CODED.FNT does not exist, only the Viewer-supplied ICODED.FNT file will be searched.

```
X?A155N2 = C?A155N1, T1DCDCFS
X?AE10   = C?S0AE10, T1S0AE10
X?GT10   = C?D0GT10, T1D0BASE
X?ST15   = C?D0ST15, T1D0BASE
X?A0770C = C?A07700, T1DCDCFS
X?A0770I = C?A07700, T1GI0361
X0T0550C = C0T05500, T1DCDCFS
```

Figure 1. Example of the Partial Contents of a CODED.FNT File

Coded Font File Rules

- A question mark (?) can be used as the wild-card character only for the second character in the coded font name and the character set name. This allows all the character rotations of the coded fonts to be handled with one entry for searching.

  Note: A sequential search is performed for the coded font, and the first match is used (including the wild-card character).
- After the coded font name, the character set name must be listed first, followed by the code page name.
- The character set and code page must be separated by a comma.

Character Set Definition File

The Character Set Definition file specifies the character set attributes and font global identifier of the font. It is split into 2 sections, one for character sets [CHARSET] and one for font global identifiers [FGID].

Mapping AFP Fonts

```
[CHARSET]
;charset = fgid, height, width, strikeover, underline
C?H200A0=2304,110,73,0,0
C?H200D0=2304,140,93,0,0
C?N200B0=2308,120,80,0,0
C?4200B0=416,120,144,0,0
C?D0GT15=230,80,96,0,0
C?A155A0=33207,110,73,0,0
C?A175A0=33227,110,73,0,0
C?T055D0=4407,140,93,0,0
C?T17500=4555,100,67,0,0
C?T17560=4555,60,40,0,0
DEFAULT =2308,80,0
```

Figure 2. The [CHARSET] Section. Example of the character set [CHARSET] section in the Character Set Definition

The first section identified by the section header [CHARSET] lists each AFP font character set and its corresponding attributes:
- Font global identifier (fgid)
- Font height
- Font width
- Strikeover
- Underline

Table 2. Character Set Definition File Attribute Values for [CHARSET]

Attribute	Possible Values	Shipped default	Description
Fgid	InfoPrint-defined FGID or your own defined FGID within this range: 3840 to 4095 or 65260 to 65534	2308	A unique value that identifies the type family, typeface, and sometimes the point size of the character set.
Height	1 to 990	80	The vertical size of the character set (minimal baseline-to-baseline value) expressed in tenths of a point. For example, a 9-point font would have a height of 90.
Width	0 to 99 (currently ignored)	0	The average horizontal size of the characters in 1440th of an inch. Currently, 0 is always used because Windows determines an appropriate font width based on the font height.
Strikeover	1 (means yes), 0 (means no)	0	A font whose characters all have a line, parallel to the character baseline, placed over the middle of the character.
Underline	1 (means yes), 0 (means no)	0	A font whose characters all have a line, parallel to the character baseline, placed under the character.

The second section, identified by the section header [FGID], lists each font global identifier and its corresponding attributes:
- Font type families
- Style
- Weight
- Italic

```
[FGID]
;fgid = familyname, style, weight, italic
230=Gothic,MODERN,MED,0
416=Courier,MODERN,MED,0
2304=Helvetica,SWISS,MED,0
2308=TimesNewRoman,ROMAN,MED,0
4407=SonoranSerif,ROMAN,MED,0
4555=SonoranSerif,ROMAN,BOLD,1
33207=SonoranSansSerif,SWISS,MED,1
33227=SonoranSansSerif,SWISS,BOLD,1
```

Figure 3. The [FGID] Section. Example of the font global identifier [FGID] section in the Character Set Definition (CSDEF.FNT).

Table 3. Character Set Definition File Attribute Values for [FGID]

Attribute	Description	Possible Values	Shipped Default
Familyname[1]	An outline font name or an AFP type family name. This name appears on the ATM Control Panel if you have the font installed on your workstation.	Any Adobe® Type 1 font name or AFP type family name	TimesNewRoman
Style[2]	The same as a Windows "family". It is approximately equivalent to type family plus typeface style in AFP fonts.	SWISS[3], ROMAN[4], SCRIPT[5], MODERN[6], DISPLAY[7]	ROMAN
Weight	The degree of boldness of a typeface caused by different thickness of the strokes that form a graphic character.	LIGHT, MED, BOLD	MED
Italic	A font whose characters slant to the right.	1 (means yes), 0 (means no)	0

Notes:
1. "Familyname" is the same as "type family" in AFP fonts and "typeface name" in Windows.
2. "Style" is the same as Windows "family" and is roughly equivalent to "typeface style" and "type family" in A fonts.
3. SWISS is a proportionally spaced font, without serifs.
4. ROMAN is a proportionally spaced font, with serifs.
5. SCRIPT is a fixed-pitch font designed to look like handwriting.
6. MODERN is a fixed-pitch font, with or without serifs.
7. DISPLAY is a decorative font.

Character Set Definition File Rules

- Parameters must be separated by a comma. Table 2 on page 26 and Table 3 list the possible values, and shipped default values for each parameter.
- In the [CHARSET] section of the file, only fgid and height (point size) are required.
- In the [FGID] section of the file, only the type familyname and style are required.
- A question mark (?) can be used as the wild-card character only for the second character in the character set name. This allows all the character rotations of the coded fonts to be handled with one entry while searching.

  Note: A sequential search is performed for the character set, and the first match is used (including the wild-card character).
- The [CHARSET] section must come before the [FGID] section.

- You can set a default character set. The default character set that is defined in the file must be the last entry in the [CHARSET] section.
- If you add your own AFP font character set to the [CHARSET] section, you must assign it a font global identifier. Font global identifiers you create must be in the ranges of 3840 to 4095 or 65260 to 65534. If the new character set has the same familyname, style, weight, and italic attributes as an existing character set, you may use the same font global identifier; otherwise, you must add a unique font global identifier to the [FGID] section

Code Page Definition File

The Code Page Definition file maps the AFP code page name to its code page global identifier (CPGID). The section header [CODEPG] is followed by a list of AFP code pages and their parameters. The first parameter in each line is the AFP code page global identifier that maps to a Code Page Map file. (See "Code Page Map Files" on page 29 for more information about mapping code pages.) The second parameter is the Windows character set that you decide is the best match for your AFP code page. The last line gives the default parameter values to be used when a default is required.

You can use the NONSTD value to allow the name and size of a font to fully describe the logical font. If the specified font name does not exist, a font from any character set can be substituted for this specified font.

```
[CODEPG]
;codepage = cpgid
T1DCDCFS=1003
T1DEBASE=2058
T1D0BASE=2063
T1D0GP12=2085
T1GI0395=2079
T1GPI363=2066
T1V10037=37
T1V10273=273
T1000290=290
T1000310=310
T1000423=423
T1000905=905
DEFAULT =361
```

Figure 4. Example of the Code Page Definition File (CPDEF.FNT) Contents

Table 4. Code Page Definition File Attribute Values

Attribute	Possible Value	Shipped Default
Code Page Global Identifier	InfoPrint-defined CPGID or your own defined CPGID within this range: 65280 to 65534	361

Code Page Definition File Rules

- Parameters must be separated by a comma. Table 4 lists the possible values and shipped default values for each parameter.
- Only the first parameter (code page identifier) is required.
- If you create your own code page, you must assign it a unique code page identifier. Leading zeros are not valid.
- You can set a default code page. The default code page that is set within the file must be the last entry in the file.

Code Page Map Files

In order to add a new code page to the ICU UCONV, you need to obtain or create a .ucm (source) mapping data file corresponding to the desired code page. A large archive of converter data is maintained by the ICU team at

http://oss.software.ibm.com/cvs/icu/charset/data/ucm/

The .ucm file format can be found at

http://oss.software.ibm.com/icu/userguide/conversion-data.html

The converter .ucm source files will be compiled into binary converter files (.cnv files) by using the ICU tool makeconv, by issuing the following command:

```
makeconv file.ucm
```

where the *file*.ucm represents the .ucm source file.

When the AFP Viewer is installed a CNV folder is created under the InfoPrint AFP Viewer's destination folder. The .CNV folder is used as storage for the binary converter .cnv files. Once the corresponding .cnv file is added to the CNV folder, you will be able to add the new code page to the existing code pages in the InfoPrint AFP Viewer, by using the **Add Code Page** dialog box.

Alias File

The Alias File contains 2 sections: one section for font family name aliases [FONT] and one section for character identifier aliases [CHARID].

The first section, identified by the section header [FONT], lists the font familyname aliases. Font familyname aliases allow you to change all of the requested instances of a font familyname (as defined in the Character Set Definition file) to another font familyname. For example, this file is used to change all requests for the SonoranSerif font (which may not exist on the workstation) to requests for the TimesNewRoman font (which is one of the core fonts shipped with the Viewer) as shown in Figure 5.

ATM provides Type 1 support, however, TrueType fonts can be used with the Viewer. As a backup, a second font (TrueType) can be specified after the Type 1 font name. If the Type 1 font is not found, the TrueType font will be used to display your document.

Note: Be aware that font familyname remapping, especially to TrueType fonts, can cause some misalignment of text characters since the display font is not the same as the font used to create the AFP document. The font familyname can be found listed in the ATM Control Panel. Remapping of one font familyname to a different font familyname with very different characteristics (such as STYLE) may mean a matching font cannot be found. You will receive an error message if either font substitute cannot be found.

```
[FONT]
; ***** Requested font = Type 1 font, TrueType font  *****
Book=TimesNewRoman,Times New Roman
CourierOverstrike=Courier,Courier New
SonoranSerif=TimesNewRoman,Times New Roman
SonoranSansSerif=Helvetica,Arial
Text=Courier,Courier New
```

Figure 5. The [FONT] Section.. This example of the [FONT] section is from the Alias file (ALIAS.FNT)

The second section, identified by the section header [CHARID], lists the character identifier aliases. Character identifier aliases (also known as glyph identifiers) allow you to change all of the requested

instances of a character to another character. For example, since the Windows ANSI character set does not contain the ligature (LF510000), it is not mapped to a character in the code page map files. Instead, it is mapped to NOMATCH 00. If you want to map all occurrences of LF510000 — NOMATCH pair to a lower case f, you could do this in the [CHARID] section of the ALIAS.FNT file with the following entry:

```
LF510000=LF010000
```

If you want to change one specific character for one specific code page, you may remap the character on that code page to another character.

The Alias file is checked only when a NOMATCH 00 is found in a character mapping.

Note: Using the Alias file for more than a few character substitutions is not recommended as program performance will be affected. If a lot of character substitutions are needed, it is better to make those changes directly to the mappings in the Code Page Map files you are using.

```
[CHARID]
LF510000=LF010000
SA000000=SP320000,SP100000
```

Figure 6. The [CHARID] Section. This example of the [CHARID] section is from the Alias file (ALIAS.FNT)

Alias File Rules

- For family name aliases, all requests for the first family name in the Character Set Definition file have the second family name substituted for them. If the second family name is not found, the TrueType font (the third family name) is requested.
- Only 2 family name substitutes per line are allowed (to the right of the equal sign), and they must be separated by a comma.
- If multiple mappings are listed in the file for the same family name, only the first match is used.
- The Alias file is processed sequentially and is not chained (for example, if "Century Schoolbook" is set equal to "Times", and "Times" is set equal to "TimesNewRoman", "Century Schoolbook" will not be set to "TimesNewRoman").
- Blanks in family names are treated as characters (for example, "TimesNewRoman" is not the same font as "TimesNewRoman").
- The [CHARID] section of the Alias file is only used if the second character identifier is NOMATCH 00.
- The character identifier that you want modified in the [CHARID] section must be followed by an equal sign and the character identifier to which it is to be changed. A character remap occurs when the modified character identifier (the character to the left of the equal sign in the [CHARID] section) matches the first character identifier of a non-matching pair in the Code Page Map file.
- Several character identifiers (substitute char id) may be listed to the right of the equal sign separated by commas. The first substitute character identifier is substituted for the modified character identifier unless it does not exist in the Windows font. If it does not exist, the next substitute character identifier is used. If none of the substitute character identifiers exist, the undefined code point is used. If you want to see the contents of the Windows character sets, see the .WCP files in the SAMPLES subdirectory of the FONT directory.
- A maximum of 4 substitute character identifiers are allowed.

Appendix. Glossary

This glossary includes definitions from the following sources:

- Definitions reprinted from the American National Dictionary for Information Processing Systems are identified by the symbol (A) following the definition.

    Definitions reprinted from a published section of the International Organization for Standardization's Vocabulary—Information Processing or from a published section of the ISO Vocabulary—Office Machines are identified by the symbol (I) following the definition. Because many ISO definitions are also reproduced in the American National Dictionary for Information Processing Systems, ISO definitions may also be identified by the symbol (A).

- Definitions reprinted from working documents, draft proposals, or draft international standards of ISO Technical Committee 97, Subcommittee 1 (Vocabulary) are identified by the symbol (T) following the definition, indicating that final agreement has not yet been reached among its participating members.

- Definitions that are specific to InfoPrint products are so labeled, for example, "In SNA", or "In VM".

References

The following cross references are used in this glossary:

Contrast with. This refers to a term that has an opposed or substantively different meaning.

Synonym for. This indicates that the term has the same meaning as a preferred term, which is defined in its proper place in the glossary.

Synonymous with. This is a backward reference from a defined term to all other terms that have the same meaning.

See. This refers the reader to multiple-word terms that have the same last word.

See also. This refers the reader to terms that have a related, but not synonymous, meaning.

Numerics

2UP. Displaying two pages on the display at a time. See also multiple up.

4Up. Displaying four pages on the display at a time. See also multiple up.

A

ACIF. AFP Conversion and Indexing Facility

Adobe Type Manager (ATM). A program that lets you use Type 1 fonts for viewing or printing.

Advanced Function Presentation (AFP). A set of licensed programs that use the all-points-addressable concept to view and print text and graphics.

Advanced Function Presentation data stream (AFPDS). The data stream supported by InfoPrint's Advanced Function Presentation products.

AFP. Advanced Function Presentation.

AFP Conversion and Indexing Facility (ACIF). A PSF utility program that converts data into a common format, indexes data, and retrieves resources used by a document.

AFPDS. Advanced Function Presentation data stream.

all points addressable (APA). In computer graphics, pertaining to the ability to address and display or not display each picture element (pel) on a display surface. See also picture element.

APA. All points addressable.

ASCII (American National Standard Code for Information Interchange). The standard code, using a coded character set consisting of 7-bit coded characters (8-bits including parity check), that is used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters. (A)

ATM. Adobe Type Manager

B

bar code. A code representing characters by sets of parallel bars of varying thickness and separation that are read optically by transverse scanning. (I)

Bar Code Object Content Architecture™ (BCOCA™). An architected collection of control structures used to interchange and present bar code data.

BCOCA. Bar Code Object Content Architecture.

C

cache. A high-speed buffer storage kept in memory that contains frequently accessed instructions and data; it is used to reduce access time.

character. One set of symbols used for representing, organizing, or controlling data. Characters can be letters, digits, punctuation marks, or other symbols.

character set. (1) A collection of characters that is composed of some descriptive information and the character shapes themselves. (2) A group of characters used for a specific reason, for example, the set of characters a keyboard contains. (3) Often a synonym for AFP font character set. See coded font. (4) The Windows term "character set" is roughly equivalent to the AFP term "code page".

clipped area. A portion of a displayed page shown with a dashed box as a border.

coded font. An AFP font that associates a code page and a font character set.

code page. (1) Part of an AFP font that associates code points and character identifiers. A code page also identifies undefined code points. See also coded font and default character. (2) The AFP term "code page" is roughly equivalent to the Windows term "character set".

code point. A 1-byte code representing one of 256 potential characters.

compatibility font. Synonym for IBM-supplied compatibility font.

composed page. A page shown in the AFP Workbench for Windows Viewer window as it is formatted by the selected form definition. Because the form definition has been applied to the data, the page has been composed for presentation or display.

copies. See copy group.

copy group. A subset of a form definition that allows different modifications to be made to multiple copies of the input data. Modifications can include suppression of some data fields from printing as well as the use of different overlays.

Core Interchange font. See IBM Core Interchange font.

D

data stream.   (1) All information (data and control commands) sent over a data link usually in a single read or write operation. (2) A continuous stream of data elements being transmitted, or intended for transmission, in character or binary-digit form, using a defined format.

DCF.   Document Composition Facility.

default character.   The character displayed when an undefined code point is encountered.

document.   A file containing an AFP data stream document. An AFP data stream document is bounded by Begin Document and End Document structured fields and can be created using a text formatter such as Document Composition Facility (DCF). Other types of files that the Viewer can display include AFP overlays and page segments, as well as ASCII files.

Document Composition Facility (DCF).   An InfoPrint licensed program that provides a text formatter, called SCRIPT/VS. SCRIPT/VS can format documents for printing on InfoPrint page printers, InfoPrint line printers, PostScript® devices, or any printer functionally equivalent to the InfoPrint printers at the data stream level.

download.   (1) To transfer programs or data from a computer to a connected device, typically a personal computer. (T) (2) To transfer data from a computer to a connected device, such as a workstation or a microcomputer. Contrast with upload.

E

electronic form.   See overlay.

F

font.   (1) A family of characters of a given size and style. For example, 9-point Helvetica. (T) (2) See font character set. See also type font.

font character set.   Part of an AFP font that contains the raster patterns, identifiers, and descriptions of characters. Often synonymous with character set. See also coded font.

font height.   Point size, expressed in tenths of a point. For example, a 9-point font would have a font height of 90.

font width.   The average character width expressed in 1440th of an inch. For proportionally spaced fonts, the font width is 1/3 of the point size converted to 1440th of an inch (or the width of the average character escapement box). For fixed pitch fonts, the font width is calculated by dividing 1440 by the pitch. For mixed pitch fonts, the font width is the width of the space character (usually 120). See also pitch.

form definition (FORMDEF).   An AFP resource used by the Viewer that defines the characteristics of the form. A form definition can specify one or more overlays used, text suppression, and placement of a page of data on the physical form.

G

GOCA.   Graphic Object Content Architecture.

Graphic Object Content Architecture (GOCA).   An architecture that provides a collection of graphics values and control structures used to interchange and present graphics data.

group.   A named collection of pages that form a logical subset of a document. Groups are identified in an AFP document using the indexing functions of the ACIF or AFP API programs.

I

IBM compatibility font.   Synonym for IBM-supplied compatibility font.

IBM Core Interchange font.   A group of fonts supplied with PSF/VM Version 2, PSF/MVS Version 2, and PSF. These fonts include the Courier, Helvetica, and Times New Roman type families. Using the core fonts increases the fidelity of documents exchanged between different systems and applications.

IBM-supplied compatibility font.   A category of font supplied as part of Print Services Facility, Print Management Facility, and Operating System/400®. Many of these fonts are derived from fonts created for specific printers (such the IBM Proprinter) or applications (such as DCF). Examples of IBM compatibility fonts include the Courier, Gothic Text, and Prestige type families. Synonymous with compatibility font and IBM compatibility font.

image.   An electronic representation of a picture. An image can also be generated directly by software without reference to an existing picture.

K

KB.   Kilobyte; 1024 bytes

L

landscape.   Pertaining to a display or hard copy of a page with greater width than height. Contrast with portrait.

library.   A data file that contains files and control information that allows them to be accessed individually.

licensed program.   A separately priced program and its associated materials that bear an InfoPrint copyright and are offered to customers under the terms and conditions of either the Agreement for InfoPrint Licensed Programs or the InfoPrint Program License Agreement.

M

menu bar.   In SAA® Common User Access® architecture, the area at the top of a window that contains choices that give a user access to actions available in that window.

menu bar choice.   In SAA Common User Access architecture, a list of choices associated with a choice on the menu. A user selects a choice from the menu bar and a pull-down menu appears.

modified copy.   The ability to print or display the same page of data with different overlays and suppressions. Modified copies are defined in the copy group in the form definition.

multiple up.   Displaying more than one page on the display at a time.

Multiple Virtual Storage (MVS).   Multiple Virtual Storage, consisting of MVS/System Product Version 1 and the MVS/370 Data Facility Product operating on a System/370™ processor.

MVS.   Multiple Virtual Storage.

O

offset.   The distance from the top left corner of the Viewer window to the nearest corner of the displayed page.

OGL.   Overlay Generation Language.

origin.   The location where the composed page or clipped area is anchored in the Viewer window. The default origin is the top left corner of the Viewer window.

outline fonts.   (1) Fonts whose graphic character shapes are defined as mathematical equations rather than by raster patterns. (2) Fonts created in the format described in Adobe Type 1 Font Format, a publication available from Adobe Systems Inc. Synonymous with Type 1 fonts.

overlay.   A collection of predefined, constant data such as lines, shading, text, boxes, or logos, that is electronically composed and stored as an AFP resource file than can be merged with variable data on a page while printing or viewing.

Overlay Generation Language (OGL). A programming product used to create electronic overlays.

P

page. Part of an AFP document bracketed by a pair of Begin Page and End Page structured fields. page identifier. A user-defined entity for uniquely identifying a page within an AFP document file. For example, files created using DCF have page numbers that appear on the printed page as page identifiers.

page segment. An AFP resource that can contain text and images and that can be included on any addressable point on a page or electronic overlay. It assumes the environment the object it is included in. See also image.

paper size. The dimensions of the medium on which data is printed. The Viewer simulates placement of data on a user-specified paper size indicated by a thin black border.

pel. Picture element.

Personal System/2. IBM's personal computers that use an 80286, 80386, or 80486 processor.

pel density. The number of picture elements per unit of linear measurement.

picture element (pel). (1) In computer graphics, the smallest element of a display surface that can be independently assigned color and intensity. (T) (2) The addressable unit on a page printer. See also all-points-addressable and raster.

pitch. A unit of width of type, based on the number of characters that can be placed in a linear inch. For example, 10-pitch type has ten characters per inch.

point. A unit of about 1/72 of an inch used in measuring typographical material.

point size. The height of a font in points. See also point.

portrait. Pertaining to a display or hardcopy of a page with a greater height than width. Contrast with landscape.

presentation. For the Viewer, presentation is text orientation or multiple up. See also text orientation. See also multiple up.

printable area. In printing, the area on a sheet of paper where a picture element (pel) can be located.

Print Services Facility (PSF). (1) Print Services Facility is the IBM software product that allows you to use the InfoPrint family of IPDS™ printers. (2) PSF is a sophisticated print subsystem that drives IPDS page printers. PSF is supported under MVS, VSE, and VM, and as a standard part of the operating system under OS/400®. PSF manages printer resources such as fonts, images, and electronic forms, and provides error recovery for print jobs. The input data streams supported by PSF include 370 line data and AFPDS/MODCA-P. In the OS/400 environment, PSF also supports printing from SCS and DDS applications. When printing line data, PSF supports external formatting using page definitions and form definitions. This external formatting extends page printer functions such as electronic forms and use of typographic fonts without any change to applications programs.

PSF. Print Services Facility.

R

raster. Computer graphics in which a display image is composed of an array of pels arranged in rows and columns.

resource. A collection of printing instructions and sometimes data to be printed that consists entirely of AFP data stream structured fields. A resource is stored as a member of a library and used for printing or viewing. Viewer resources consist of fonts, overlays, form definitions, and page segments.

rotation. The number of degrees a graphic character is turned relative to the page coordinates.

S

scale. To enlarge or reduce all or part of a display image. See also zoom.

scroll.   To move a displayed page vertically or horizontally. Usually used to view data that otherwise cannot be observed within the boundaries of a display screen.

selected group.   A group of pages selected from the Select Group dialog box.

shading.   A darkened area on the displayed page. Usually used to highlight an area containing text. In AFP documents, image data is used to produce shading.

sheet number.   The number of a sheet in the order in which the sheets are displayed by the Viewer. For example, for a file containing 3 front matter pages (Roman numeral page numbers prior to the page numbered 1), selecting sheets 1-3 selects the front matter pages. Contrast with page identifier.

suppression.   Synonym for text suppression.

T

text orientation.   A description of the appearance of text as a combination of the print direction and character rotation. See also orientation.

text suppression.   The intentional omission of portions of text. Usually used on a specific modified copy of a page. The ability to prevent individual fields of text from appearing on a modified copy of a page. For example, the Cost field might be suppressed from a customer copy of an invoice.

typeface.   (1) A specific type style, such as Helvetica or Times New Roman. (2) One of the many attributes of a font, others, for example, being size and weight. (3) A collection of fonts, each having a different height or size of character sets. See also fonts.

type family.   All characters of a single design (for example, Courier or Helvetica), regardless of attributes, such as width, weight, style, and size.

type font.   A collection of characters sharing the same type family, typeface, and size.

type size.   (1) A measurement in pitch or points of the height and width of a graphic character in a font. (2) One of the many attributes of a font, others, for example, being weight and typeface.

Type 1 fonts.   Fonts created in the format described in the Adobe Type Font Format publication available from Adobe Systems Inc. Synonym for outline fonts.

typographic font.   A typeface originally designed for typesetting systems. Typographic fonts are usually proportionally spaced fonts.

U

upload.   (1) To transfer programs or data from a connected device, typically a personal computer, to a computer with greater resources. (T) (2) To transfer data from a device, such as a workstation or a microcomputer, to a computer. Contrast with download.

undefined code point.   A code point that does not have a character assigned to it in the code page.

Z

zoom.   The progressive scaling of an entire display image in order to give the visual impression of movement of all or part of a display group toward or away from an observer.

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Special characters

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