R&R Report Writer *Technical Bulletin*

Font Information Files for Bitstream® Soft Fonts

Product: R&R Report Writer® **Oper Sys:** DOS®
Version: 4.0

Summary

The procedure for using soft fonts in an R&R Report Writer report is as follows:

1. First, make the fonts themselves, using font software provided by your font vendor. You may have already performed this step to create fonts for another application, for example for WordPerfect® or Microsoft Word®.
2. After you have created the downloadable font files, use RRSETUP, the R&R Report Writer setup program, to create a font information file that contains printer control information about the downloadable fonts.
3. Finally, run R&R Report Writer, selecting the font information file (FIF) you have created. After the FIF has been attached to the report, you can apply any font identified in the FIF to any fields on your report.

Each of these steps is discussed in this technical bulletin.

Font Support Changes

R&R Report Writer version 4 introduces a new method of font support that enables you to use up to 32 fonts, each in up to four styles, in any report. While R&R version 3 maintains font information in the R&R configuration file, version 4 maintains this information in separate font information files (FIFs), which you attach to your report with the /Print Font-File command.

Each FIF contains printer control information that enables R&R Report Writer to use a specific set of fonts available to a specific printer. For example, one of the predefined font information files distributed with R&R Report Writer version 4 (RRHP_PRO.FIF) supports the fonts supplied by the HP ProCollection Cartridge for HP LaserJet printers. Another predefined FIF (RRHP_III.FIF) supports the internal fonts of the HP LaserJet III.

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As these examples illustrate, most of the predefined FIFs shipped with R&R support internal fonts (those present in a printer when you buy it) or cartridge fonts (those supplied by cartridges inserted into the printer). While we do supply several FIFs for HP Soft Font Collections, many users who want to print R&R Report Writer reports using soft (that is, downloaded) fonts will need to create their own font information files.

This technical bulletin explains the steps required to create a font information file for a selected set of Bitstream soft fonts. We chose Bitstream fonts because they are popular and widely available. If you use soft fonts provided by another vendor, you may still be able to follow these steps, since the process of creating and using downloadable fonts is similar for fonts from a variety of font and application vendors.

In this technical bulletin, we use Bitstream Dutch (Times Roman-equivalent) and Swiss (Helvetica-equivalent) typefaces to generate fonts for an HP LaserJet II printer. The fonts are generated by the Bitstream Fontware Installation Kit provided for Microsoft Word 5, which is similar to the installation kits provided for many other applications that support Bitstream fonts.

Making Soft Font Files

When you buy a Bitstream soft font either by itself or as part of an application, what you are usually buying are files that contain information about the shape and relative proportions of each character in the font. Bitstream calls these files *font outlines*. You buy a separate set of outline files for each typeface. For example, the Bitstream Fontware Starter Kit for Microsoft Word Version 5.0 contains a disk with two sets of outline files: those for the Dutch and Swiss typefaces. You can buy outlines separately, or they may be provided with other applications.

The important thing to understand about font outlines is that they are *not* the fonts themselves. You must use a font installation program to make the soft font files that will be downloaded to your printer. In the case of Bitstream fonts, Bitstream and many application vendors offer font installation programs that are tailored to specific applications. These installation programs serve one or more of the following functions:

1. They generate and install the downloadable font files on your hard disk.
2. For WYSIWYG applications, they may generate and install screen fonts that correspond to the downloadable printer fonts
3. They may also create a printer driver for the specific application that enables you to use the fonts you installed on the printer you selected.

The Microsoft Word 5 version of the Fontware Installation Kit performs two of these functions. It generates and installs soft font files, and it creates a Microsoft Word printer driver to access these fonts on the specified printer. It is the process of generating and installing the font files that enables R&R Report Writer to use the fonts.

For non-PostScript printers*, you generate and install Bitstream soft fonts as follows:

1. Run the Fontware program to copy font installation files to your hard disk.
2. Set up Fontware to generate fonts for a specific printer and a specific orientation (portrait or landscape). This step also involves selecting a symbol set (ASCII, Roman-8, PostScript) for all the fonts you will create in the current session.
3. Add one or more typefaces, which means copying the outline files for each selected typeface/style to your hard disk.
4. Make the font(s), first selecting the typefaces, styles, and point sizes you want.

As a result of the installation, Fontware creates a downloadable font file for each typeface/style/point size combination you select. These are the files that need to be sent to the printer for R&R Report Writer to use the soft fonts.

Creating a Font Information File

Once the downloadable font files are created, you must make a font information file (FIF) that gives R&R information about each font you want to use. This file contains the printer control sequences used to turn on each font. It also contains font metric information (that is, information about the size of each character in a font) that R&R Report Writer uses to format pages correctly. A single FIF can contain information for up to 32 fonts. For each font, you can have up to 4 styles: normal, bold, italic, and bold/italic.

To create a FIF, use the RRSETUP program provided with R&R Report Writer and select the Fonts option on the Main Menu. This option runs the R&R Font Manager, a program that allows you to add font information in either of two ways:

- Import information automatically from files created when the fonts were made.
- Enter the information manually.

Because printer control sequences and font metric information are difficult to enter manually, you should use the first method whenever possible.

Fortunately, adding information about these Bitstream fonts is easy. Since these fonts are for an HP LaserJet II, they are HP-format, bitmapped soft font files. All the printer control and font metric information about this type of font is contained in the same file that is downloaded to the printer. (For other types of fonts, the printer control information may be contained in an auxiliary file separate from the downloadable file.) If you know the names and locations of the

*For PostScript printers, the procedure is similar, but instead of generating a font for selected point sizes, you generate a font that can be scaled to any size.

downloadable font files, you can use the Font Manager's Font Import command to read information from these files into an R&R font information file.

Understanding Font File Names

How do you find out what your downloadable files are called and where they are? Even if you created the fonts yourself, font file names are often so cryptic that you may need help to figure out what they are. For example, the file name AK0100AH.HPF is for the soft font that Bitstream generates for 10-point Dutch bold on an HP LaserJet II.

Look at the documentation for your font installation program for information about identifying downloadable files. If the documentation does not provide the file names, it may explain file naming conventions or direct you to a file that contains the file names. The Microsoft Word version of Fontware automatically creates a text file with the same name as the driver for the printer you have selected (for example, for the HPDWNB2P.PRD printer driver Fontware creates the HPDWNB2P.TXT text file). This file contains the name and description of each soft font file you have generated for the specified printer. By looking at this file, you can tell what files to import when you create the FIF.

Creating Font Information Files

Before creating the FIF make a list of the fonts and styles you want to use on the selected printer. When you create an R&R Report Writer report with an attached FIF, you can use *only* those fonts and styles identified in the FIF. So if you want to use your printer's internal fonts or any cartridge fonts in addition to downloadable fonts, you must include information about these fonts in the FIF (we'll tell you how in a minute). You might consider arranging the fonts on your list in order of frequency of use, since it is helpful to place the most commonly used font in the first slot in the font information file.

For this example, we created the list of fonts in Figure 1. The last two fonts are the internal fonts that come with the HP LaserJet II. The information about these fonts comes from the printer manual, which indicates that Courier is available only in normal (N) and bold (B) styles, and Line Printer only in normal. The other fonts are the Bitstream soft fonts generated earlier. Each font was generated in three point sizes, and for each point size, only certain styles were generated. The "Pitch" value for these fonts is omitted because these are proportional fonts, which do not have a fixed number of characters per inch.

FONT	SYMBOL SET	POINT SIZE	PITCH	STYLES	SOURCE
Dutch	ASCII	10		N, B, I	Downloaded
Dutch	ASCII	14		N, B, I	Downloaded
Dutch	ASCII	18		N, B	Downloaded
Swiss	ASCII	10		N, B, I	Downloaded
Swiss	ASCII	14		N, B, I	Downloaded
Swiss	ASCII	18		N, B	Downloaded
Courier	PC-8	12	10	N, B	Internal
Line Printer	PC-8	8.5	16.6	N	Internal

Figure 1. Font List

Now you are ready to create a font information file by adding information about downloaded fonts and by copying information about the printer's internal fonts from another font information file.

Follow these steps to add information about downloaded fonts:

1. Change to the R&R Report Writer directory and type RRSETUP.
2. From the Main Menu, then select Fonts.
3. Press Home to highlight and press Enter.
4. Enter the name of the font file you want to create, optionally including a path. Since font files are associated with specific printers and fonts, you should use a name that will help you remember the file's contents. We'll call this file HPSOFT. You don't need to type an extension. R&R will automatically add the default extension of FIF.
5. To add the first font to the FIF, type F for Font, then R for Retrieve. A window will display a list of numbered slots in the font information file. To add a font, you must first select a slot. Press Enter to select the first slot, the slot in which you will place the most commonly used font.
6. Next, you will use the Import command to read information about the first style of the first font in Figure 1 (Dutch 10 point, normal style) into the font information file. According to the Bitstream-created text file, the downloadable file for this font is called AI0100AH.HPF. This file is located in the directory specified by the Bitstream font installation program (in this case, the Microsoft Word directory).

   To import information from this file, type I to select the Import command. Since the font is an HP-format soft font, type H to select HP-Softfont. R&R Report Writer will display a menu of soft font files in the current directory. If AI0100AH.HPF appears in this menu,

select it. Otherwise, press Esc until the data entry area is clear and type the full path and name of the font file. For example, type C:\WORD5\AI0100AH.HPF.

When the Font Manager imports the file, it first displays a screen like that illustrated in Figure 2. The menu that displays asks you to select the style of the font file you are importing.

```
HP-Softfont             Current font file: HPSOFT.FIF                MENU
Select font attribute

------------------------------------------------------------------------------
                                                                  Ú-------------¿
                                                                  ³ Normal      ³
           HP SOFT FONT DEFINITION                                ³ Bold        ³
+-------------------------------------------+                     ³ Italic      ³
¦        File name: AI0100AH.HPF            ¦                     ³ Bold/Italic ³
¦         Typeface: Times Roman             ¦                     À-------------Ù
¦      Orientation: Portrait                ¦
¦       Symbol set: ISO 6: ASCII            ¦
¦          Spacing: Proportional            ¦
¦            Pitch:                         ¦
¦       Point size: 10                      ¦
¦            Style: Upright                 ¦
¦    Stroke weight: -2                      ¦
+-------------------------------------------+
```

Figure 2 Font Manager Import Screen

7. Press Enter to select "Normal" as the style of this font. The screen illustrated in Figure 3 will display information from the font file you have selected.

```
Import                  Current font file: HPSOFT.FIF                MENU
Autofont  HP-Softfont  Postscript  Quit
Import a bitmapped HP soft font definition
------------------------------------------------------------------------------
             Name: Times Roman
          Spacing: Proportional
       Point size: 10.0
        Font type: Bitmapped

     NORMAL pitch: Width table
   Begin sequence: 27,"(0U",27,"(s1p10v0s-2b5T"
     End sequence:

       BOLD pitch: Width table
   Begin sequence:
     End sequence:

     ITALIC pitch: Width table
   Begin sequence:
     End sequence:

BOLD/ITALIC pitch: Width table
   Begin sequence:
     End sequence:
```

Figure 3 Font Definition Screen

As you can see, the information for the bold, italic, and bold/italic styles is not included. Since there will be a separate font file for each style, you will have to use the Import command to read information from the downloadable font files for each style you want to use.

8. To read information about the bold style of Dutch 10 point, type H to select the HP-Softfont option again. Select or enter the name of the font file that corresponds to the bold style. Again, the Bitstream-generated text file will tell you the file name, in this case AK0100AH.HPF.

After you specify the file name, the Font Manager will ask you to select a style. Select Bold, and information from the font file will be read in. The screen illustrated in Figure 3 will change to include information about Dutch (Times Roman) 10 point bold.

9. Now, use the HP-Softfont command to add information for the italic style in the same way. This time you will select the AJ0100AH.HPF file to provide information.

10. When you are finished adding styles to the font definition, select Quit to return to the Font Manager main menu. Before you save the font definition, you might want to edit the font name so that it is more descriptive. Since this font name appears on the R&R Report Writer font selection menu, it will be useful if the name indicates what point size and style(s) are available. For example, in this case you could change the default "Times Roman" font name as follows. Type E to select Edit. Press Enter to select the "Name" field. Add "10 point - N B I" to the font name to indicate the point size and styles available. Then press Enter followed by Esc.

11. To save the font definition you have just created, type F for Font and S for Save. Press Enter to confirm that you want to save the font in slot 1. Then type Y to save the font.

12. Repeat Steps 5-11 to add each of the Dutch and Swiss fonts on the list in Figure 1. As you can see, while you create a separate font definition for each font/point size combination, that single definition can contain information about up to four styles.

Using Internal Fonts

If you have followed the steps listed above, your font information file will contain all the information R&R Report Writer needs to use the downloaded fonts you have created. To use the LaserJet's two internal fonts, you will need to add them to the FIF as well. You can add them in either of two ways:

- By copying the information from another font information file designed for the same printer
- By entering the information manually.

Because it is easy to mistype printer control sequences, we recommend the first method.

Follow these steps to copy information about the two internal fonts from any of the predefined HP LaserJet FIFs shipped with R&R:

1. If you did not install any FIFs when you first installed R&R, install a FIF now. To do so,
    a. Insert the R&R Report Writer Disk 1 in a diskette drive.
    b. Make this drive the current drive.
    c. Type RRFIF.

d. Follow the instructions on the screen and insert the R&R disk for which you are prompted.

e. Use the Destination command to select a directory for the FIF.

f. Use the Select command to select any FIF for the HP LaserJet (for example, RRHP_A.FIF for the HP LaserJet A Cartridge). Any of these FIFs includes font definitions for the printer's internal fonts.

2. Run RRSETUP again and use the Font Manager to select a predefined, HP LaserJet FIF. In this example, we selected RRHP_A.FIF.

3. Use the Font Retrieve command to select the font described as "Courier PC-8 12 Point 10 Pitch". This is the first font in the FIF.

4. Now type F for Font and I for Information-File. This command lets you select or create another FIF. Press Enter for "Select". Select or enter the name of the FIF containing the downloadable font information (in this case HPSOFT.FIF).

5. Type S to select Save and select the next empty slot in the FIF. When you type Y for Yes, the Font Manager will save the font definition you retrieved from the predefined FIF in the new font information file. As you can see by looking at the screen illustrated in Figure 4, all the styles included in the font definition are copied in this single step.

```
R&R Font Manager         Current font file: HPSOFT.FIF                MENU
Font  Edit  Import  Download  Translation  Print  Quit
Retrieve, Save, Erase, Information-File
--------------------------------------------------------------------------------
             Name: Courier PC-8 12 Point 10 Pitch
          Spacing: Fixed
       Point size: 12.0
        Font type: Bitmapped

     NORMAL pitch: 10.00
   Begin sequence: 27,"(10U",27,"(sp10h12vsb3T"
     End sequence:

       BOLD pitch: 10.00
   Begin sequence: 27,"(10U",27,"(sp10h12vs3b3T"
     End sequence:

     ITALIC pitch:
   Begin sequence:
     End sequence:

BOLD/ITALIC pitch:
   Begin sequence:
     End sequence:
```

Figure 4 Font Definition Screen

6. Use the Font Information-File command to select the predefined FIF again. This time, retrieve the font described as "Line Printer PC-8 8.5 Point 16.66 Pitch" (the third font). Transfer it to the new font information file in the same way.

If you followed all the steps listed above, your font information file now contains all the information R&R Report Writer needs to use the downloaded fonts you have created, as well as the LaserJet's internal fonts.

Downloading Fonts

One last step is required before you leave the Font Manager: decide whether you want R&R Report Writer to download fonts for you.

By default, R&R Report Writer assumes that all soft fonts identified in an attached font information file have already been downloaded (that is, stored in the printer's memory) by means of a separate downloading utility. This default setting speeds up R&R Report Writer reports, since R&R Report Writer does not download fonts before each report. You do not have to make any changes to a font information file if you download your fonts outside of R&R.

However, if your environment does not allow you to have permanently resident soft fonts, you must modify your FIF to change the default behavior. For example, if you share a printer with people who use different fonts or whose applications require lots of printer memory (for example, graphics applications), you will probably want R&R Report Writer to download fonts for you. In this case, R&R Report Writer sends fonts to the printer before each report. The fonts are not stored in the printer's memory permanently, but are erased at the end of the report or at the beginning of the next print job. In this way, you can use the fonts identified in your R&R Report Writer font information file without affecting other print jobs.

Enabling R&R Report Writer for the Download

To enable R&R to download the soft fonts in the FIF we just created, follow these steps:

1. Use the Font Retrieve command to retrieve the first soft font you want R&R to download.
2. After retrieving the font, type D for Download. The Download Parameters screen illustrated in Figure 5 will appear. Note that for each style that is defined, the Font Manager provides the name of the downloadable font file (in this case, the same file you selected with the Font Import command). If you did not specify a default soft font directory in your R&R configuration file and place the font files in this directory, you should add a complete path to each file name.

```
Font: Times Roman 10 point - N B I                                    POINT
Select option.  Press Esc to return to main font menu

------------------------------------------------------------------------------
                              DOWNLOAD PARAMETERS


     NORMAL font file: AI0100AH.HPF
             Download: No

       BOLD font file: AK0100AH.HPF
             Download: No

     ITALIC font file: AJ0100AH.HPF
             Download: No

BOLD/ITALIC font file:
             Download: No
```

Figure 5. Download Parameters Screen

3. Use the cursor keys to highlight the "Download" field for each font style you want R&R to download. Type Y to change the download status indicator to Yes. This tells R&R to send the specified font file to the printer if the font is used in the report you are printing.
4. When you have added all the necessary download parameters, press Esc to return to the Font Manager main menu. Use the Font Save command to resave the font definition.
5. Repeat Steps 1-4 for every font you want R&R Report Writer to download.

If you have followed these steps, R&R Report Writer will download the specified soft fonts as temporary fonts at the beginning of a report when 1) this FIF is attached to the report and 2) the report uses any of the fonts with a download status of Yes.

Run R&R to Create a Report Using these Fonts

Now that the preliminary steps (steps you perform only once) are out of the way, you can create R&R Report Writer reports using your soft fonts. If you used fonts with R&R Report Writer version 3, you will find the procedure only slightly different. If you have never used fonts before, follow the steps given below.

To create or modify a report so that it uses the set of fonts identified in an existing font information file (for example, the Bitstream soft font FIF created in this technical bulletin), follow these steps:

1. Use the /Report Create or Retrieve command to create or retrieve the report.
2. Use the /Print Font-File command to attach the font information file that identifies the fonts you want to use (for example, HPSOFT.FIF).
3. Use the /Field Print Font, /Line Print Font, or /Mark Font commands to apply any fonts identified in this file to any field or fields in the report. Note that even if you never use these commands, all the fields in a newly created report will be assigned the FIF's default font, which is Font 1 unless you have previously used the /Global Default Font command to change the default.
4. If you have a display adapter with graphics capability, use the /Print Preview command to see a simulation of your report pages on screen.
5. Adjust the report layout if necessary to accommodate the size of the font(s) you are using. See the "Using Fonts" chapter of the *R&R for dBase and compatibles Version 4 User's Guide* for information about report features affected by fonts.
6. Print the report, first selecting the printer that supports the fonts identified in the attached FIF.

7. Save the report. The name and path of the attached FIF, as well as the number of the printer you selected, will become part of the report definition so you can retrieve and print the report in exactly the same format any time you want.

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