Working with Global Resource Identifiers

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Infoprint can identify the fonts required for a job, access AFP font files that are installed on or NFS-mounted to your Windows system, and download the appropriate fonts to an Infoprint-managed printer device. However, some Infoprint printers can use fonts that are resident in the printer, which saves the time it takes to download these fonts. Because the font files on the Windows system do not share the same names as the printer-resident fonts, Infoprint uses global resource identifiers (GRIDs) to map the system-resident fonts to the printer-resident fonts.

Uses of GRID Files

GRID files contain preassigned mappings that you can modify to map system-resident font file names to printer-resident font identifiers. These preassigned mappings include both single-byte character set (SBCS) and double-byte characters set (DBCS) outline fonts.

If you have a printer that supports outline fonts, you can use the GRID files to map raster character-set names to outline font global identifiers.

GRID files also support Mixed Object Document Content Architecture for Presentation (MO:DCA-P) files that specify fonts using GRIDs rather than character-set names. You can customize the GRID files to define which fonts Infoprint uses when the data stream of the job specifies GRIDs.

GRID Files that come with Infoprint Manager

Infoprint Manager provides four GRID files that you can customize to use with the types of printer devices that you have and the types of jobs that you print. These files are **charset.grd.sample**, **codepage.grd.sample**, **cpgid.grd.sample**, and **fgid.grd.sample**, and they are installed in the **<install path>\grd** directory. Descriptions of each file are provided below.

charset.grd.sample

Specifies which printer-resident fonts are activated for the character-set names found within the data stream of the job.

This file maps the font character-set name to a:

- Font global identifier (**fgid**)
- Graphic character set global identifier (**gcsgid**)
- Font width
- Vertical size value
- Set of font attributes (bold, italic, and doublewide)

Figure 1 on page 2 shows an example of the format of a line in the character set sample file.

```
#  FCS name ->  fgid  gcsgid  width  vsize  attr                      #
#-------------------------------------------------------------------#
   C0L00GSC     398       -     96    120   -     # GOTHIC CONDENSED   1
```

Figure 1. Sample File for a Character Set

codepage.grd.sample
Specifies which printer-resident fonts are activated for the code page names found within the data stream of the job.

This file maps a code page to the:
- Code page global identifier (**cpgid**)
- Graphic character set global identifier (**gcsgid**)

Figure 2 shows an example of the format of a line in the code page sample file.

```
#  code page name  ->  cpgid   gcsgid                                 #
#-------------------------------------------------------------------#
       T1000038           38    123   # US-ASCII Character Set         1
```

Figure 2. Sample File for a Code Page

fgid.grd.sample
Specifies which font character set Infoprint should download when substituting for a global resource identifier that it finds in the data stream of the job.

This file maps the following to a font character set (FCS) name:
- A font global identifier (**fgid**)
- A graphic character set global identifier (**gcsgid**)
- A font width
- A vertical size value

Figure 3 shows an example of the format of a line in the font global identifier sample file.

```
#  fgid   gcsgid  width   vsize -> FCS name                          #
#-------------------------------------------------------------------#
      3        0    144      240   C0E0DE10  # DELEGATE 12 POINT       1
```

Figure 3. Sample File for a Global Identifier

cpgid.grd.sample
Specifies which code page Infoprint should download when substituting for a global resource identifier that it finds in the data stream of the job.

This file maps a code page global identifier and a graphic character set global identifier to a code page name. Figure 4 shows an example of the format of a line in the code page identifier sample file.

```
#  cpgid  gcsgid  ->  code page name                                 #
#-------------------------------------------------------------------#
      29       0      T1V10871  # OLD ICELANDIC                      1
```

Figure 4. Sample File for a Code Page Identifier

For a detailed explanation of how the different types of identifiers combine to produce fonts, see *AFP Fonts: Font Summary*

If you have a job that specifies a font that is not resident on your printer, you can use the GRID files to map the missing font to one with the same point size that does reside on your printer. To understand what resident fonts your printer device has, consult both your printer documentation and *Advanced Function Presentation: Printer Information*.

Infoprint Search Order for GRID Files

Infoprint searches the following directories, in the order shown, for GRID files:

1. An internal list that matches the **charset.grd.sample** file.
2. **<install path>\grd**
3. **<install path>\var\psf***printername*, where *PrinterName* is the name of a valid Infoprint actual destination.

   Note: When the same mapping is found in one of these files, Infoprint uses the last one.

When you install Infoprint Manager, sample GRID files are installed in the **<install path>\grd** directory. You can maintain a central location for new or modified GRID files for specific printers by storing files in the **<install path>\var\psf***PrinterName* directory.

If you are mapping raster fonts to outline fonts, you can map multiple names to the same GRID part so that different sized fonts can apply to your print job.

Notes:

1. The new or modified GRID files you create have the same names as the sample files except that you delete **.sample** from each file name.
2. After creating or modifying GRID files, you must shut down and restart the physical printer represented by *PrinterName* for the changes in the file to take effect.

Understanding the General Syntax Rules and Allowable Values for GRID Files

To tailor the Infoprint-supplied GRID files for your own system needs, you need to understand the general syntax rules for the four GRID files and the allowable values for the fields within the files.

Syntax Rules that Apply to All Types of GRID Files

GRID files are simple ASCII text files that you can modify using any standard text editor. The following rules apply to all of the GRID files.

- No line in the file can contain more than 255 characters
- Fields within a line must be separated with one or more delimiters (spaces)
- The pound sign (#) indicates the start of a comment, which causes Infoprint to ignore the remainder of that line
- A dash (–), indicates the absence of a particular value, for which Infoprint substitutes a zero (0)
- An asterisk (*) indicates that a wildcard value (any numeric decimal) is accepted.
- Infoprint ignores blank lines and extraneous fields

Allowable Values for the charset.grd File

You can specify the following values for fields in the GRID file for a character set for a font:

fgid
Identifies the character set identifier for the font. Specify a numeric value from 1 to 65534 or enter a dash, – , if you want to disable the mapping of this character set to GRID values.

gcsgid
Identifies a global identifier for the font. Specify a numeric value from 0 to 65534 or enter a dash (–) to specify no **gcsgid**. If you specify an asterisk (*), Infoprint issues an error message.

width
Identifies the width specified in the character set. Specify a numeric value from 0 to 65534 or enter a dash (–) to specify no width. If you specify an asterisk (*), Infoprint issues an error message.

vertical_size
Identifies the vertical size specified in the character set. Specify a numeric value from 0 to 65534 or enter a dash (–) to specify no vertical size. If you specify an asterisk (*), Infoprint issues an error message.

attribute_field
Indicates the attributes of the character set. Specify a lowercase b (bold), i (italic), d (doublewide), or enter a dash (–) to specify no attribute.

Allowable Values for the codepage.grd File

You can specify the following values for fields in the GRID file for a code page for a font:

cpgid
Identifies the code page identifier for the font. Specify a numeric value from 1 to 65534 or enter a dash (–) if you want to disable the mapping of this character set to GRID values.

gcsgid
Identifies a global identifier for the code page. Specify a numeric value from 0 to 65534 or enter a dash (–) to specify no **gcsgid**. If you specify an asterisk (*), Infoprint issues an error message.

Allowable Values for the fgid.grd File

You can specify the following values for fields in the GRID file for a font global identifier:

fgid
Identifies the global identifier for the font. Specify a numeric value from 1 to 65534 or enter an asterisk (*) to indicate a wildcard value. If you specify a dash (–), Infoprint issues an error message.

gcsgid
Identifies the global identifier for the font. Specify a numeric value from 0 to 65534 or enter an asterisk (*) to indicate a wildcard value. If you specify a dash (–), Infoprint issues an error message.

width
Identifies the number of characters per horizontal inch. Specify a numeric

value from 1 to 65534 or enter an asterisk (*) to indicate a wildcard value. If you specify a dash (–), Infoprint issues an error message.

vertical_size
Identifies the vertical size of the font. Specify a numeric value from 1 to 65534 or enter an asterisk (*) to indicate a wildcard value. If you specify a dash (–), Infoprint issues an error message.

Allowable Values for the cpgid.grd File

You can specify the following values for fields in the GRID file for a code page global identifier:

cpgid
Identifies code page identifier for the font. Specify a numeric value from 1 to 65534.

gcsgid
Identifies the global identifier for the font. Specify a numeric value from 0 to 65534 or enter an asterisk (*) to indicate a wildcard value. If you specify a dash (–), Infoprint issues an error message.

Modifying GRID Files

The following section describes the two ways you can modify GRID files to support the printer devices and types of jobs in your production printing environment.

Note: If you are using Infoprint Manager to print from either the IBM 6404 Line Matrix printer, the IBM 6408 Line Matrix printer, or the 6408 Line Matrix printer in both native and 4234 emulation mode, you must modify both the **charset.64xx.grd** and the **codepage.64xx.grd** files as described in "Modifying the charset and codepage GRID Files" and "Modifying the FGID and CPGID GRID Files" on page 6.

Modifying the charset and codepage GRID Files

You can avoid having Infoprint download fonts by adding font entries that map the font character set or code page that is most referenced in jobs to a global identifier for a resident font.

For example, if many of your jobs specify the Prestige 10 point font, which is character set C0S0PR10, and that font is not resident on your IBM 3812 printer diskette, you can map the Prestige 10 point font to a similar font that does reside on your IBM 3812 printer diskette. In the following procedure, you map the Gothic 10 point font, character set C0D0GT10, that is a printer-resident font to the Prestige 10 point font.

Perform the following steps:

1. Open the file **<install path>\grd\charset.grd.sample** in a text editor such as Notepad.
2. Select **File –> Save as** . Rename the file **charset.grd** and save it into the **<install path>\var\psf*PrinterName*** directory, where *PrinterName* is the name of the Infoprint actual destination representing the 3812 printer device.
3. Edit the **charset.grd** file you just created. Copy the following line for the Gothic 10 point printer-resident font:

```
C0D0GT10  40   - 144   240     #  GOTHIC TEXT 10
```

4. Change the first entry in the copied line (in the **FCS name** column) to the character set identifier of the Prestige 10 point font that you want to map to the Gothic 10 point font. You can change the comment at the end of the copied line to identify the mapping change you are making.

   ```
   C0S0PR10  40   - 144   240     #  PRESTIGE 10 mapped to GOTHIC TEXT 10
   ```

5. Search the remainder of the **charset.grd** file to ensure that it contains no other C0S0PR10 entries. A later entry of the same character set would replace the entry you just made.
6. Save your changes and close the file.

If you print many jobs that specify the personal computer ASCII codepage for Iceland, T1000861, but that codepage is not resident on your printer diskette, you can map codepage T1000861 to a similar codepage that does reside on your printer diskette, the personal computer multilingual codepage for ASCII data, T1000850.

Perform the following steps:

1. Open the file **<install path>\grd\codepage.grd.sample** in a text editor such as Notepad.
2. Select **File –> Save as** . Rename the file **codepage.grd** and save it into the **<install path>\var\psf*PrinterName*** directory, where *PrinterName* is the name of the Infoprint actual destination representing the 3812 printer device.
3. Edit the **codepage.grd** file you just created and copy the following line for the personal computer multilingual codepage for ASCII data:

   ```
   T1000850        850     980  # PC MULTILINGUAL
   ```

4. Change the first entry in the copied line (in the **code page name** column) to the codepage identifier of the personal computer ASCII codepage for Iceland font that you want to map to the multilingual codepage. You can change the comment at the end of the copied line to identify the mapping change you are making.

   ```
   T1000860        850     980  # ICELAND MAPPED TO MULTILINGUAL
   ```

5. Search the remainder of the **codepage.grd** file to ensure that it contains no other T1000860 entries. A later entry of the same character set would replace the entry you just made.
6. Save your changes and close the file.

Modifying the FGID and CPGID GRID Files

You can add new entries to map your GRID data to the resident fonts in your printer by modifying either the **fgid.grd.sample** file or the **cpgid.grd.sample** file. If you have a printer that does not support the outline font technology (such as the IBM 3835 Advanced Function Printer), IBM recommends that you map all the `CZ`*nnnn* entries to raster font character-set names. If you do not create this mapping, Infoprint issues an error message and does not print the job.

For example, if you wanted to map the Times New Roman Latin 1 character set to the raster version, follow these steps.

1. Open the file **<install path>\grd\fgid.grd.sample** in a text editor such as Notepad.
2. Select **File –> Save as** . Rename the file **fgid.grd** and save it into the **<install path>\var\psf*PrinterName*** directory, where *PrinterName* is the name of the Infoprint actual destination representing the printer device.
3. Edit the file that you just created and copy the following line:

   ```
   2308    2039  *   *   CZN200      # Times New Roman Latin1
   ```

4. Change the entry in the **FCS name** column to CON20000.

```
2308    2039  *   *   CON20000    # Raster version of TNR Latin 1
```

5. Save your changes and close the file.

After this substitution, Infoprint prints jobs that specify the font character-set name CZN200 and that processed on the physical printer for which you made the change using the raster version of the font. The CZN200 character set now maps to:

- An FGID of 2308
- A GCSGID of 2039
- A vertical size of 65535
- A width of 0

Note: For more information about the different values available for font character sets and code pages, see "IBM Font Interchange Information" in *IBM Data Stream and Object Architectures Mixed Object Document Content Architecture Reference*.

Because the IBM 3835 Advanced Function Printer does not support any resident outline fonts, the **fgid.grd.sample** file maps the **FGID** and the **GCSGID** back to the C0N20000 character set. Then, Infoprint searches the resource library search path to locate the C0N20000 character for downloading with the job.

To modify the **cpgid** file so that the personal computer ASCII codepage for Iceland maps to the multilingual codepage for ASCII data as described in "Modifying the charset and codepage GRID Files" on page 5, perform the following steps:

1. Open the file **<install path>\grd\fgid.grd.sample** in a text editor such as Notepad.
2. Select **File –> Save as** . Rename the file **cpgid.grd** and save it into the **<install path>\var\psf*PrinterName*** directory, where *PrinterName* is the name of the Infoprint actual destination representing the printer device.
3. Edit the **cpgid.grd** file you just created and copy the following line for the personal computer multilingual codepage for ASCII data:

```
850     980      T1000850  # PC MULTILINGUAL
```

4. Change the first entry in the copied line, in the **cpgid** column, to the codepage identifier of the personal computer ASCII codepage for Iceland font that you want to map to the multilingual codepage. You can change the comment at the end of the copied line to identify the mapping change you are making.

```
861      980      T1000850 # ICELAND MAPPED TO MULTILINGUAL
```

5. Search the remainder of the **cpgid.grd** file to ensure that it contains no other 861 entries. A later entry of the same character set would replace the entry you just made.
6. Save your changes and close the file.

Verifying the GRID Files

During physical printer initialization, Infoprint examines the contents of the GRID files. If Infoprint detects any syntax errors, it reports an error condition and fails to enable the physical printer. To correct these errors, you must edit the GRID files that fail. For information on what files, lines, or fields are in error, you must access the GRID **error.log** file for the physical printer, which is located in **<install path>\var\psf***PrinterName*.

Preventing Infoprint From Using GRID Files

If you have a 300-pel printer but you print 240-pel jobs, the printer-resident fonts may have different line spacings and endings in the printed output. For some types of billing statements, these line endings are inappropriate. You can solve this problem by preventing Infoprint from using the GRID files, which in turn keeps Infoprint from using printer-resident fonts.

1. Rename your customized GRID files. For example, open Windows Explorer and navigate to the **<install path>\var\psf***PrinterName* directory, where PrinterName is the Infoprint actual destination that you don't want to use GRID files with. Find the **charset.grd** file and right-click it. From the pop-up menu, select **Rename** and change the name to **charset.grd.bak**.
2. Open the file **<install path>\grd\charset.grd.sample** in a text editor such as Notepad.
3. Select **File –> Save as** . Rename the file **charset.grd** and save it into the same **<install path>\var\psf***PrinterName* directory that you were working with in step 1.
4. Edit the **charset.grd** file and place a dash (–) in the **fgid** column.
5. Save your changes and close the file.
6. Open the file **<install path>\grd\codepage.grd.sample** in a text editor such as Notepad.
7. Select **File –> Save as** . Rename the file **codepage.grd** and save it into the same **<install path>\var\psf***PrinterName* directory that you were working with in step 1.
8. Edit the copied **codepage.grd** file and place a dash (–) in the **cpgid** column.
9. Save your changes and close the file.

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