



Using the SAP Transform on Windows NT and Windows 2000



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Chapter 1. Infoprint Manager and SAP R/3

SAP R/3 has become a popular choice for medium to large-sized companies that require an integrated software product to provide basic business automation. The R/3 client/server application provides business a series of integrated modules that span the major functions of finance, manufacturing, sales distribution, and human resources. IBM's four decades of experience in printing and data management translates into billions of pages printed annually in more than 130 countries, solidifying our leadership position in the enterprise printing environment. Integrate IBM's printing expertise with SAP's leading business application software for a winning combination.

You can add Infoprint Manager servers to your SAP R/3 print enterprise without modifying your existing SAP configuration. Install the SAP Print feature for Infoprint Manager for Windows NT and Windows 2000 by applying the latest product service (PTF UR52622/APAR IR44445; October 2001), and you can make use of the SAP transform (**sap2afp**) for transforming both ABAP and OTF data for printing through Infoprint Manager. You can also use your Infoprint Windows server to print PostScript and PCL files on UNIX printers.

Adding Electronic Forms, Logos, and Electronic Signatures to Text Documents

The Advanced Function Presentation (AFP) data stream that emerges from the Infoprint SAP transform contains text records that you can enhance through the addition of electronic forms, logos, and electronic signatures. In addition to the AFP resources, the Infoprint Manager SAP transform has been enhanced to support both raw image data (bitmaps images) and box shading. The expanded support for different levels of box shading and the print images that SAP R/3 users have come to expect and appreciate provides a strong, industry standard for printing from SAP R/3. Print SAP color images using the native Output Text Format (OTF) data stream in either one, four, or eight-bit pixel images: Infoprint Manager can handle it all!

Customers using SAP R/3 Version 4 with the Generic Output Format (SAPGOF) generated data streams that contain Version 2 of both ABAP and OTF data, will also appreciate the double byte character set (DBCS) enablement. Infoprint Manager now supports the **Shift-Jis** Japanese PC language. Infoprint Manager allows a world-class set of business application modules designed for a client-server environment the ability to achieve world-class printing.

Scalability of Printing across an Enterprise

Infoprint Manager allows SAP R/3 customers to access the full range of IBM Infoprint printers (low-speed to high-speed, simplex or duplex, continuous forms or cut sheet) as well as other printers, such as Hewlett-Packard and Lexmark. You can leverage your investment in printers by sharing your Infoprint-managed printers with other host, and LAN-based applications. Infoprint Manager provides the SAP R/3 enterprise with comprehensive print management across an enterprise of any size, providing print integrity through built-in error recovery.

Chapter 2. Installing the Infoprint Manager NT SAP Print Feature

This topic describes “Installing the SAP Print Feature on Infoprint Windows Servers” and “Installing Infoprint Fonts for Printing with the SAP Transform” on a Windows NT or Windows 2000 server that already contains Infoprint Manager for Windows NT and Windows 2000, Version 1.1.

Once you have installed the SAP Print Feature and the necessary Infoprint fonts, you can begin “Configuring the SAP R/3 Transform” on page 4.

Installing the SAP Print Feature on Infoprint Windows Servers

Use the following procedure to install the SAP Print Feature on your Infoprint Windows NT or Windows 2000 server:

1. Ensure that you have installed the latest level of service Infoprint Manager for Windows NT and Windows 2000 (PTF UR52622/APAR IR44445; October 2001) from either a CD-ROM or the Download the Most Recent Update for Infoprint Manager for Windows NT and Windows 2000 web page (<http://www.printers.ibm.com/R5PSC.NSF/Web/ipmntftpdir>).
2. Insert the *Infoprint Manager NT SAP Print Feature IR44445/UR52622 CD-ROM* into the CD-ROM drive on your Infoprint Windows server.
3. Follow the instructions that will install this feature (the **sap2afp** data stream transform) on your Infoprint Manager Windows NT or Windows 2000 server.
4. Remove the CD-ROM from your CD-ROM drive.

Installing Infoprint Fonts for Printing with the SAP Transform

To print output from the **sap2afp** transform, you must install the Gothic fonts that are specified in the **fonts.tab** configuration file of the *install_path\sap2afp\path*, as well as the required code pages. You can obtain these resources from the *AFP Font Collection: Fonts for AIX, OS/2, Windows NT, and Windows 2000: Version 2 Release 1* CD-ROM (LK2T-9269-01).

Note: If you are printing double-byte fonts, you may require the following AFP Font Collection CD-ROMs::

- *Japanese Fonts for AIX, Windows NT, and Windows 2000* (LK2T-9276-02)
- *Korean Fonts for AIX, Windows NT, and Windows 2000* (LK2T-9278-01)
- *Simplified Chinese Fonts for AIX, Windows NT, and Windows 2000* (LK2T-9280-01)
- *Traditional Chinese Fonts for AIX, Windows NT, and Windows 2000* (LK2T-9282-02)

To load the fonts that are required to transform OTF or ABAP data from SAP R/3 on an Infoprint Manager system, use the following procedure:

1. Insert the CD-ROM for the AFP Font Collection into the CD-ROM drive on your Infoprint Windows server.
2. If autorun does not start the install, double-click on the **My Computer** icon on your desktop.

3. From the **My Computer** window, double-click on your CD-ROM drive and then double-click on the NT folder icon.
4. From the NT folder window, double-click on the **setup.exe** executable to begin the install.
5. Select the drive where you have installed Infoprint Manager to install these fonts. For example, if Infoprint is installed on the **D** drive, the fonts should be installed in the `D:\afpfonts` path.
6. While Infoprint recommends that you use the **full installation** option, if you select a customized install, you should be certain to choose the following four options:
 - **BookMaster Fonts**
 - **Compatibility Fonts**
 - **OCR Fonts**
 - **Symbols Fonts**
7. To install the fonts, press **Next**.
When the fonts finish loading, you will see a Font Collection pop-up dialog with the message:
Installation of Font Collection 2.1.0.1 is complete.
8. Verify that the fonts cited in your **fonts.tab** configuration file (which is installed on the `install_drive\Program Files\IBM Printing Systems\sap2afp\` path).
You can use a **Notepad** editor to both view and change this file.
9. Infoprint Manager installs these fonts in the `/usr/lpp/afpfonts` directory.
10. Remove the CD-ROM from your CD-ROM drive.

Configuring the SAP R/3 Transform

The SAP Transform includes two types of files:

- An executable named **sap2afp**, which converts Output Text Format (OTF) data into MO:DCA-P output data and Advanced Business Application Programming (ABAP) list format data into line data. This file is installed in the `install_path\bin` path on your Infoprint Windows server.
- Configuration files that are installed in the `install_path\sap2afp` path.

Table 1. *sap2afp* Configuration Files

Configuration File	Purpose	Use
barcode.tab	Provides list of valid SAP bar codes.	OTF data only
xxxxyyyy.tab	Maps ASCII code pages to EBCDIC code pages.	OTF data only
fonts.tab	Provides a list of raster fonts with the appropriate character set and code page.	OTF data only
6400fonts.tab	Provides a list of raster fonts that apply exclusively to the IBM 6400 printer, with the appropriate character set and code page.	OTF data only
image.tab	Defines the dither matrix for half-tone color print jobs.	OTF data only

Table 1. sap2afp Configuration Files (continued)

pagedef.tab	Defines the form definition (SAP R/3 PAPER TYPE) used, as well as the page definition and fonts for jobs that go through ACIF.	ABAP/OTF
defcp.tab	Converts ASCII into EBCDIC characters.	ABAP data only

Chapter 3. Print Support that Applies to both SAP R/3 Release 3 and Release 4

The following topics describe SAP R/3 features that can be used by installations running either SAP R/3 Release 3 or SAP R/3 Release 4.

- “Customizing Print Characteristics”
- “Enabling Multi-Byte Character Sets for Japanese Fonts” on page 18
- “Setting Up Your SAP R/3 System to Support New OTF User Fonts” on page 19
- “Using Bar Codes with SAP R/3” on page 21
- “Printing Oversize Characters on an IBM 6400 Printer with SAP R/3” on page 26
- “Adding Box Shading Values to Printed Output” on page 27

Customizing Print Characteristics

The following topics describe how you can change output appearance when printing through Infoprint Manager by modifying SAP devices and formats.

Defining a Customized Device Type

A Device Type is a collection of table entries that you can access and modify online to describe the fonts, the printer driver to use to create the data, and the formats that can be used for SAPscript printing. Every Output Device must have a Device Type that is used to process the Output Document. A physical printer can have many Output Devices, with different Device Types for each one.

For basic printing, the SAP transform can use the Device Type **SAPGOF** and existing formats, such as **LETTER** or **X_65_255**. However, if you plan on customizing any of these print characteristics, you should create a customized device type so that you will not lose data when you upgrade your SAP R/3 system.

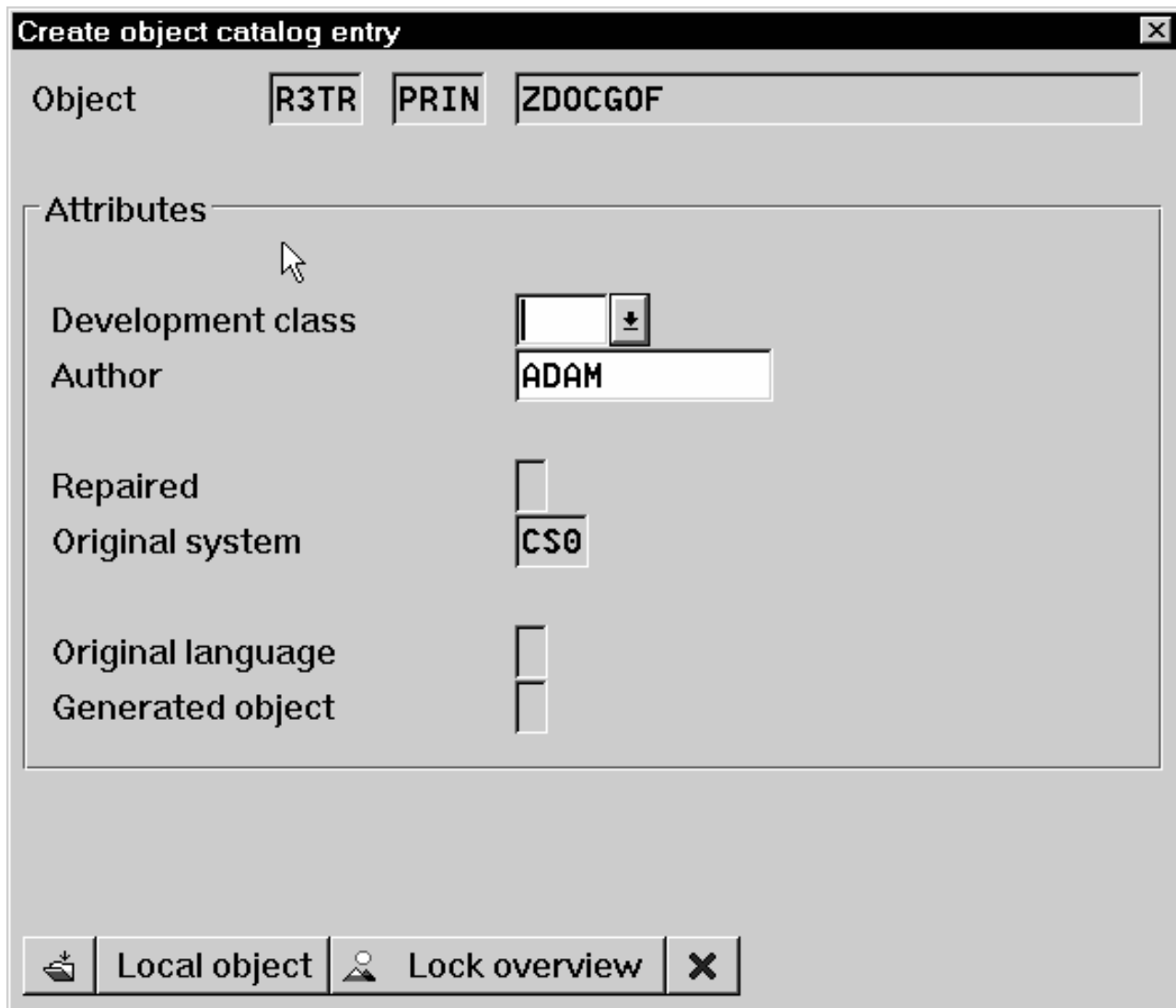
To create a customized device type, a SAP R/3 administrator must perform the following procedure from the SAP R/3 graphical user interface:

1. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration--> Spool--> Spool Administration** path. or typing `/nSPAD` in the **ok-Code** field.
2. From the **Spool Administration** window, select the **Utilities--> Copy device type** pull-down option.
3. From the **Copy Device Type** window, specify the device type you want to customize (in this case, **SAPGOF**) in the **Copy device type** field and provide a name for your customized Device Type (in this case, **ZDOCGOF**) in the **to device type** field.

Note that any customized Device Type must start with the Z character or it will be overwritten when you upgrade to a new level of SAP R/3.

4. From the menu bar, click on the **execute** icon.
5. From the **Create object catalog entry** window directly below, decide whether or not you want to be able to copy this customized device type to another SAP system. If you do, specify a **Development class** field value.

If you do not need to copy this Device Type to another SAP system, click on the **Local object** push-button as displayed in the example below:



Create object catalog entry

Object **R3TR PRIN ZDOCGOF**

Attributes

Development class ▾

Author **ADAM**

Repaired

Original system **CS0**

Original language

Generated object

Figure 1. Create Object Catalog Entry window

6. Click on the **save** icon.

SAP R/3 provides a screen to show the customized Device Type and the original device type from which it was copied.

Changing Document Print Orientation

The **sap2afp** transform allows you to enhance the quality of your printing from a SAP R/3 enterprise through the use of form definitions. Form definitions allow you to use electronic overlays and specify both media orientation (how the page is printed) and bin selection. The **sap2afp** transform defines which form definition should be used for printing through the use of Formats. Every spool job in R/3 requires a Format (Paper type), whether it is ABAP data ("X_65_80") or OTF data ("LETTER"). SAP R/3 formats are mapped to Advanced Function Presentation (AFP) form definitions in the **pagedef.tab** configuration file. You can display the Format of a spool request in the output controller (**SP01**).

By default, the **sap2afp** transform uses “F1SAP Form Definition” on page 17, which by default defines duplex, portrait printing. In addition, Infoprint Manager provides an assortment of form definitions, which are documented in the *IBM Infoprint Manager: Reference*. Consult this list to find a form definition that meets your printing needs.

The following topic describes how to specify landscape media orientation through a form definition for an entire document and then connect the newly-created Format to a Device Type. By mapping a SAP Format to a form definition in the **pagedef.tab** file, you can define the media style for the entire job. Depending upon the type of data you wish to print, there are two separate procedures:

- “Defining a Customized Device Type for ABAP Jobs”
- “Defining a New OTF Format” on page 10

Defining a Customized Device Type for ABAP Jobs

If you are printing Advanced Business Application Programming (ABAP) jobs, you must create a blank ABAP Format in the SAP system by using the following procedures:

1. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration--> Spool--> Spool Administration** path, or typing /nSPAD in the **ok-Code** field.
2. From the **Spool Administration: initial screen** window, select the **Formats** option and click the **Change** push-button.
3. From the **Spool Administration: Format** window, select an existing Format (in this case, X_65_255) from which to copy.
Note that all ABAP system formats follow the naming convention of *X_number-of-rows_number-of-columns*.
4. From the **Spool Administration: Copy Format from X_65_255** window, specify the name of your customized Format with the naming convention of *Z_number-of-rows_number-of-columns_more-identifying-text* as shown below:

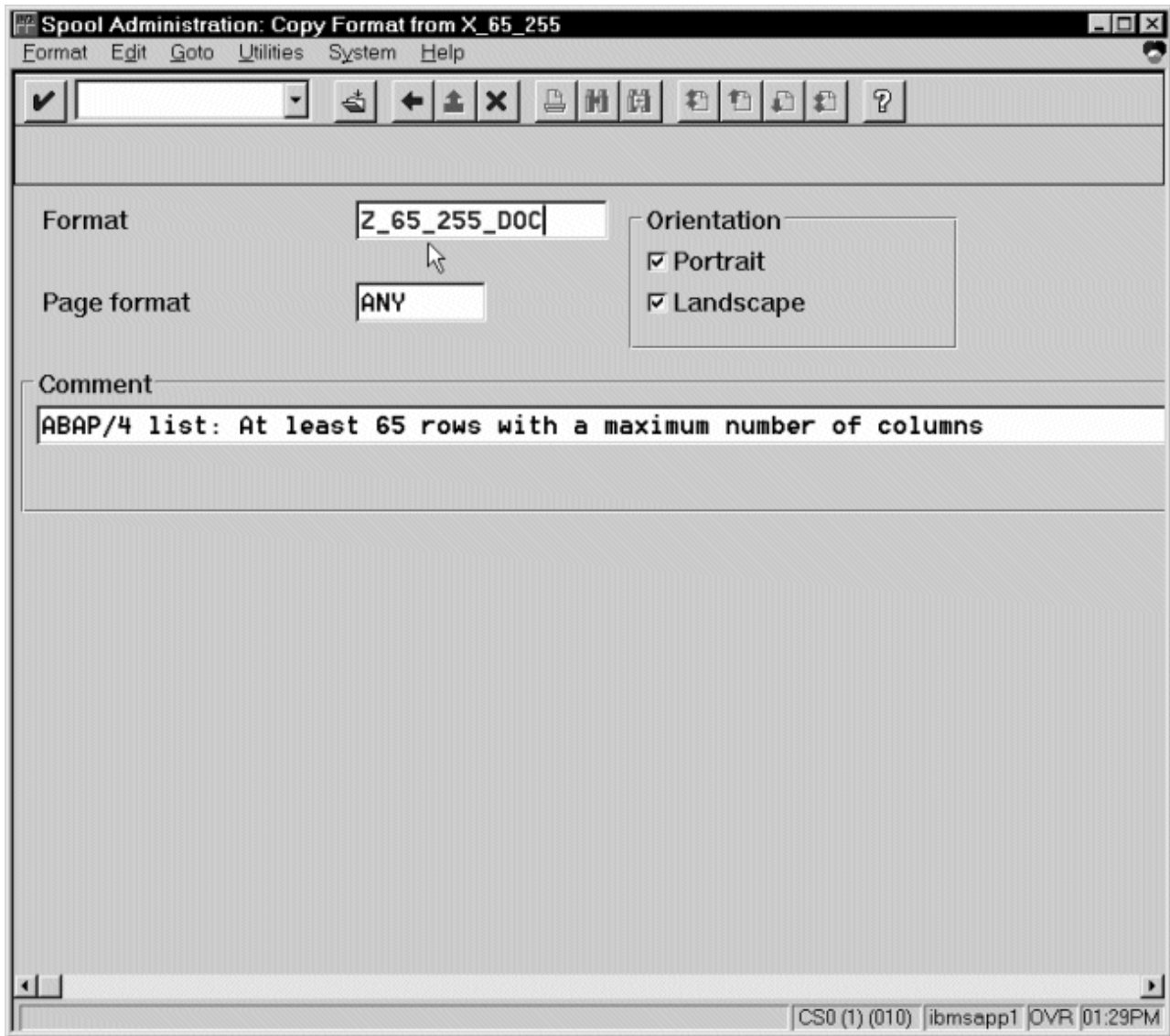


Figure 2. Spool Administration: Copy Format from X_65_255 window

5. Select the back icon (the left-pointing arrow) and the system prompts you to save the new ABAP format.

Once you have saved the new ABAP format, you must “Connecting a New Format to a Device Type” on page 12 .

Defining a New OTF Format

If you are printing Output Text Format (OTF) jobs, you must create page format with the same name as the customized format you plan to apply.

1. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration-->Spool-->Spool Administration** path. or typing the /nSPAD transaction in the **ok-Code** field.
2. From the **Spool Administration: initial screen** window, select the **Page formats** option and click the **Change** push-button.
3. Select the page format that you want to copy (in this case, LETTER) and click on the **copy from** push-button.

4. From the **Spool Administration: Copy Page Format from LETTER** window, specify the name of the customized paper type that you are creating (in this case, ZLETD0C).
5. Select the back icon (the left-pointing arrow) and the system prompts you to save the new page format.
6. Specify /nSPAD in the **ok-Code** field.
7. From the **Spool Administration: initial screen** window, select the **Formats** option and click the **Change** push-button.
8. Select the Format that you wish to copy (in this case, ZLETD0C), and select the **copy from** push-button.
9. From the **Spool Administration: Copy Format from LETTER** window, fill in the values as displayed below:

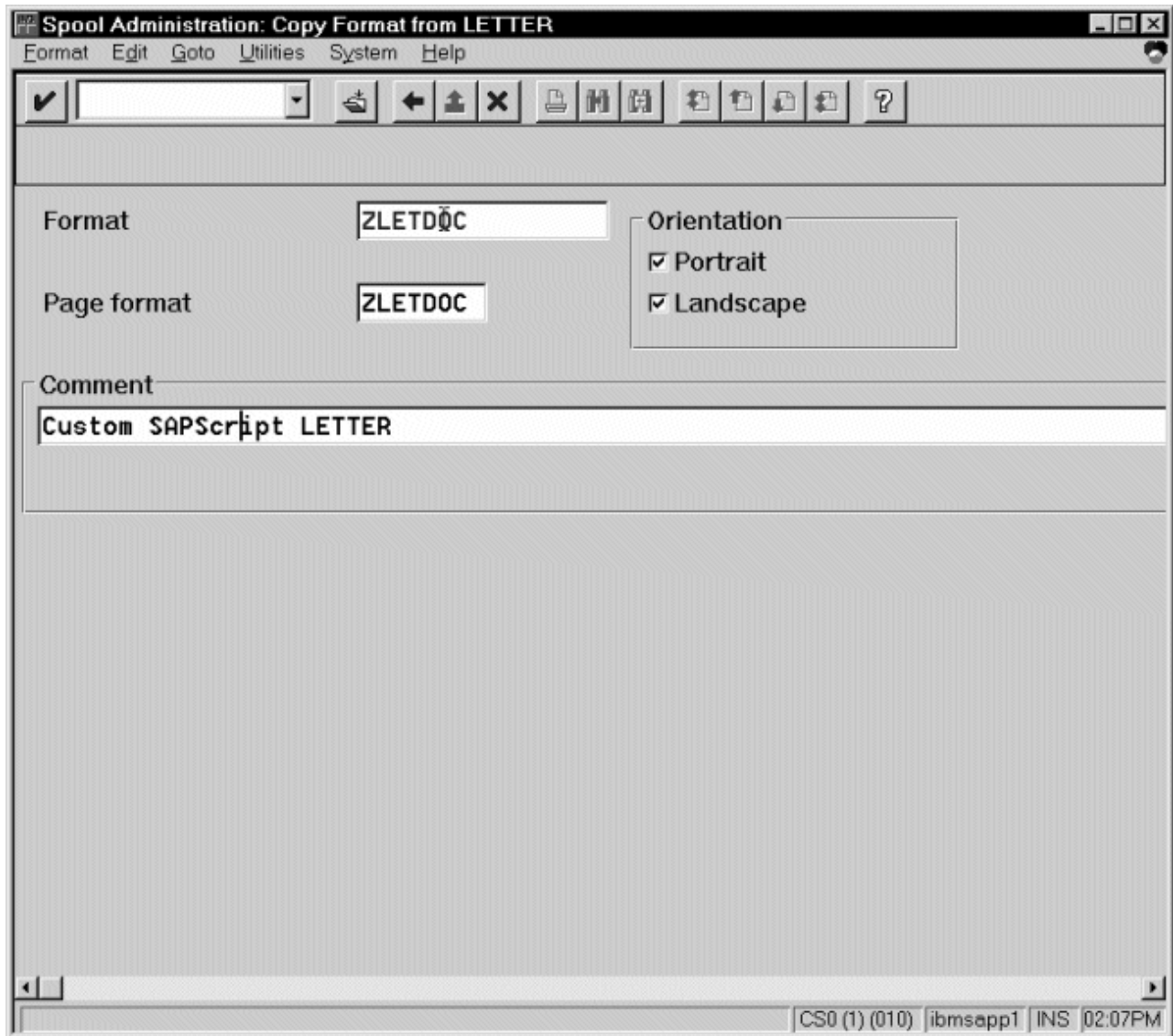


Figure 3. Spool Administration: Copy Format from LETTER window

10. Select the back icon (the left-pointing arrow) and the system prompts you to save the new OTF format.

Once you have saved the new OTF format, you must “Connecting a New Format to a Device Type”.

Connecting a New Format to a Device Type

To use the format you created, you must connect the format to a device type by performing the following steps:

1. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration--> Spool--> Spool Administration** path. or typing /nSPAD in the **ok-Code** field.
2. From the **Spool Administration: initial screen** window, select the **Device formats** option and click the **Change** push-button.
3. From the **Spool Administration: Choose Format for Device Type** window, specify the Device Type (link to creating custom device types) and your customized Format name (in this case, Z_65_255_DOC or ZLETDOC) in the appropriate fields.

Note that all ABAP customized user Formats follow the naming convention of *Z_number-of-rows_number-of-columns_descriptive-text*.

4. Select the Execute icon.
5. From the **Maintain Format for Device Type** window displayed immediately below, the blank left column indicates that the customized format has not yet been initialized:

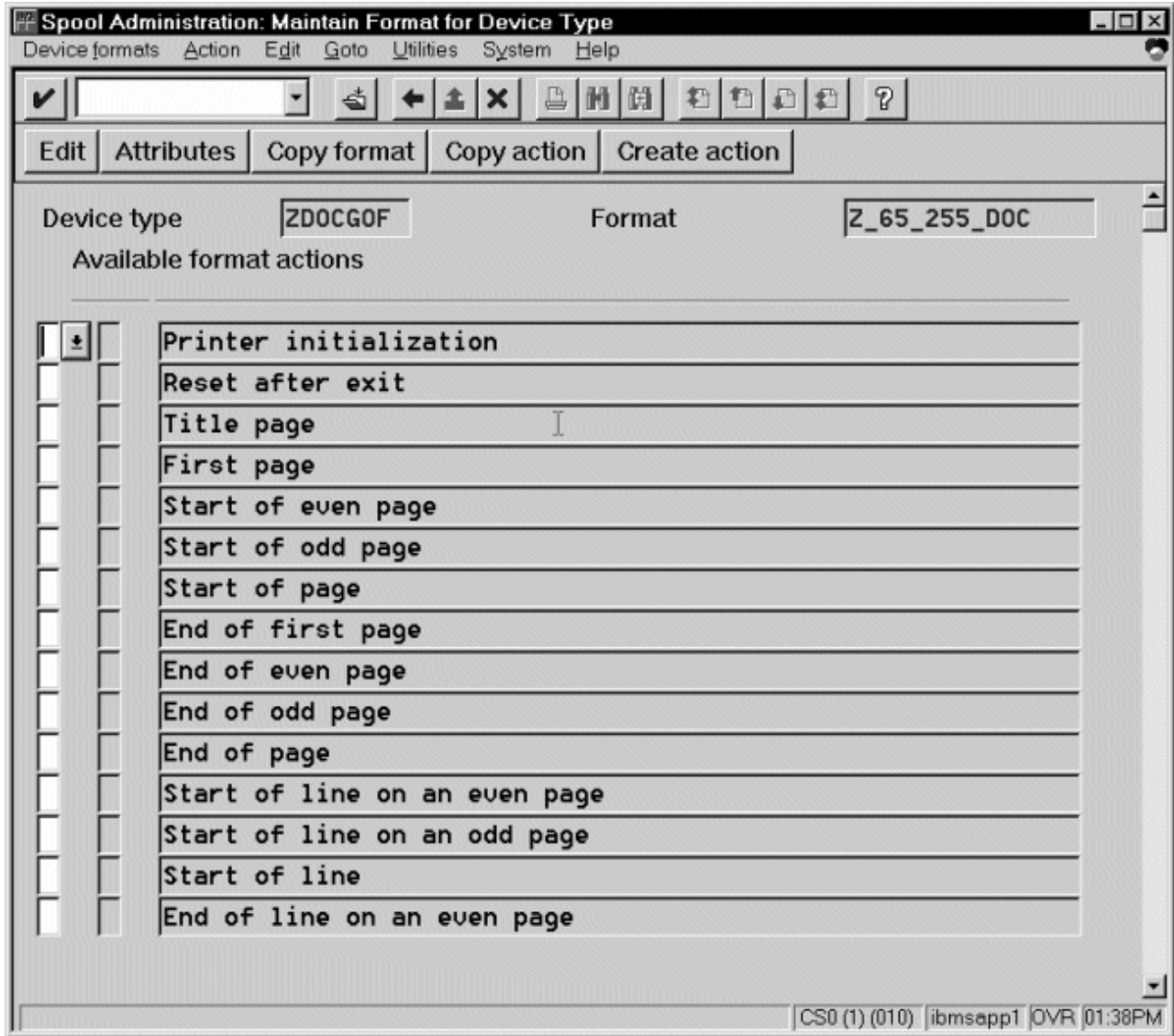


Figure 4. Spool Administration: Maintain Format for Device Type window

6. Click on the **Copy format** push-button.
7. From the **Spool Administration: Copy Format** window, you can see that the system has filled in the information from the **Maintain Format for Device Type** window:

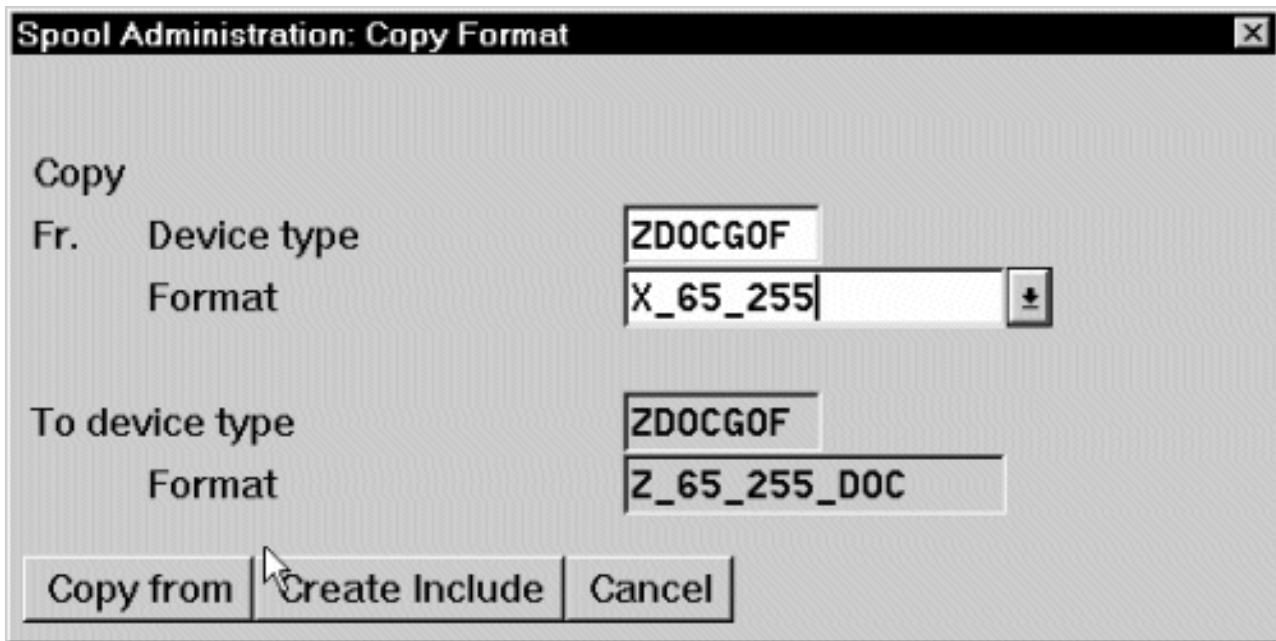


Figure 5. Spool Administration: Copy Format window

8. Press the **Copy from** push-button to initialize your new Format.
9. Select the back icon (the left-pointing arrow) and the system prompts you to save the new format.
10. From your Infoprint AIX server, move to the *install_path\sap2afp* path and access the **pagedef.tab** configuration file.
11. Within the **pagedef.tab** configuration file, create a new entry for the format that you just created. If you are printing landscape, specify F1C10011 as the form definition value.
Note that all fields must be specified in **pagedef.tab**. However, for OTF printing, only the form definition value is used, while ABAP printing uses all values.
12. Exit and save the **pagedef.tab** configuration file.

Changing Page Print Orientation

The **sap2afp** transform allows you to enhance the quality of your printing from a SAP R/3 enterprise through the use of form definitions. Form definitions allow you to use electronic overlays and specify both media orientation (how the page is printed) and bin selection. A form definition can consist of multiple copy groups, which are also known as media maps.

The following procedure shows how you can define a name for each defined page within an existing Layout Set. If you do not need to change page orientation on a page-by-page basis, refer to Changing Document Print Orientation. Page-by-page mapping is necessary only if different pages within a document are formatted differently. You should use a custom layout set when making these changes. If you use a system Layout Set, your changes are overwritten each time you upgrade your SAP R/3 system. Remember that each media map remains in effect until SAP R/3 encounters a new media map.

Every spool job in R/3 requires a Format (Paper type), whether it is ABAP data (X_65_80) or OTF data (LETTER). SAP R/3 formats are mapped to Advanced

Function Presentation (AFP) form definitions in the **pagedef.tab** configuration file. You can display the Format of a spool request in the output controller (SP01).

When mapping an SAP Format to a form definition in the **pagedef.tab** file, the first media map within the form definition will define the media style for the entire job. If you have a job that contains different electronic overlays on each page, you might have to switch media styles on each page. **Sap2afp** converts names defined in the paper resources for pages within Layout Sets to AFP media map names, and for each page that defines a paper resource, that AFP media map will be used.

By default, the **sap2afp** transform uses “F1SAP Form Definition” on page 17, which contains 25 separate media maps for simplex printing, duplex printing, bin selection, and page orientation. In addition, Infoprint Manager provides an assortment of form definitions, which are documented in the *IBM Infoprint Manager: Reference*.

1. From the SAP R/3 graphical user interface, access the **Layout Set** menu screen. You can access this view from the SAP R/3 main menu by either specifying the SE71 transaction code in the **ok-Code** field, or by selecting: **Tools --> Word Processing --> Layout Set**

Note: In SAP R/3 Release 4.6C, the **Layout Set** menu is the **Page** menu, which contains the **Resource Name** field cited in step 3 below.

2. From the **Layout Set** main menu, access the **Change Pages** option and select the job for which you are changing page orientation (in this case, ZASORDER1).
3. From the first page of the job, double-click so that it is highlighted and fill in the **Resource Name** field (under the **Print Attributes** pane) as shown below:

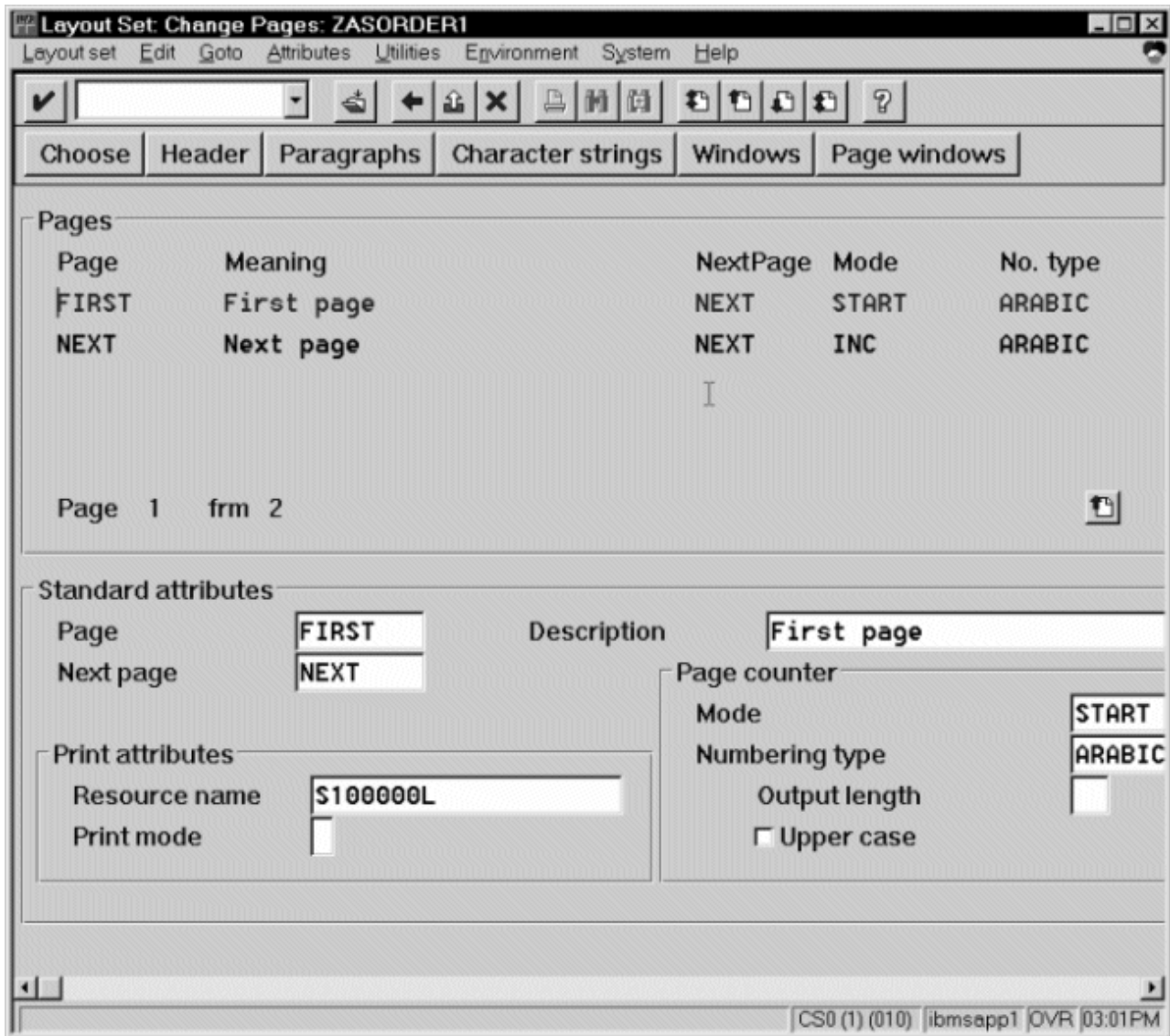


Figure 6. Layout Set: Change Pages window, First Page

4. Double-click on the next page that you intend to modify and fill in the **Resource Name** field on the second page as shown below:

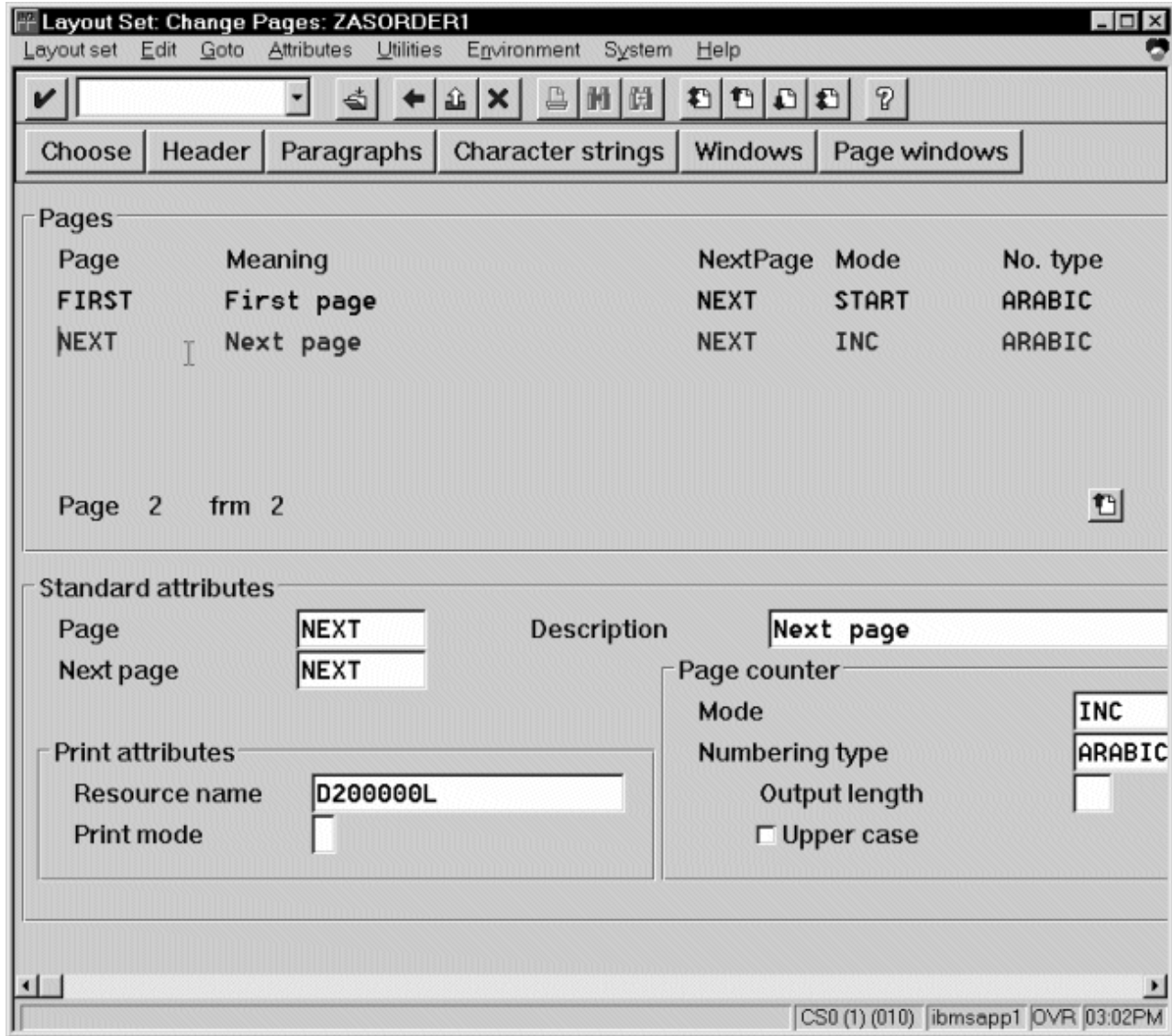


Figure 7. Layout Set: Change Pages window, Next Page

5. Continue with the same procedure on any page where you want to specify a new media style.
6. Once you have finished, click on the **save** (open folder) icon to save this setting.

F1SAP Form Definition

The form definition specified in the **pagedef.tab** configuration file is the default submitted with every Advanced Function Presentation (AFP) data stream document. **F1SAP** is the default form definition, which each of the media maps references. The following briefly describes the media maps contained within this form definition. Note that the print direction is across and the Page Position in inches from the edge of the paper is 0.165,0.165 for all 25 media maps.

Table 2. F1SAP Form Definition Values

Media Map	Bin	Sides	Presentation Mode
F1A10111	1	2	Portrait

Table 2. F1SAP Form Definition Values (continued)

S100000P	1	1	Portrait
S200000P	2	1	Portrait
S300000P	3	1	Portrait
S400000P	4	1	Portrait
D100000P	1	2	Portrait
D200000P	2	2	Portrait
D300000P	3	2	Portrait
D400000P	4	2	Portrait
T100000P	1	2 (Tumble)	Portrait
T200000P	2	2 (Tumble)	Portrait
T300000P	3	2 (Tumble)	Portrait
T400000P	4	2 (Tumble)	Portrait
S100000L	1	1	Landscape
S200000L	2	1	Landscape
S300000L	3	1	Landscape
S400000L	4	1	Landscape
D100000L	1	2	Landscape
D200000L	2	2	Landscape
D300000L	3	2	Landscape
D400000L	4	2	Landscape
T100000L	1	2 (Tumble)	Landscape
T200000L	2	2 (Tumble)	Landscape
T300000L	3	2 (Tumble)	Landscape
T400000L	4	2 (Tumble)	Landscape

Enabling Multi-Byte Character Sets for Japanese Fonts

The **sap2afp** data stream transform supports the use of multi-byte character sets (MBCS) through the use of the **iconv** utility. To use this support, you must run the **SAPGOF** (or a compatible) device type on a SAP R/3 system at Release 4.0A or higher.

To support the printing of box characters, IBM now provides a customized conversion file with the **sap2afp** transform – **IBM-9932** — which resides in the *install_path\iconv* path.

For Japan, you must modify the 'convert to' segment of the **80000000.tab** and **defcp.tab.japan** (which both reside in the *install_path\sap2afp\path*) to match by setting the value to IBM-939.

To enable this support, an Infoprint Manager Windows administrator must perform the following procedure:

1. Create a backup copy of the current *install_path\sap2afp\defcp.tab* file. Ensure that the **iconv** utility is installed on the Infoprint Manager system where the **sap2afp** transform is running.

2. Copy the *install_path\sap2afp\defcp.tab.japanpath* file to the *install_path\sap2afp\defcp.tab* file.
3. Create a backup copy of the current *install_path\sap2afp\pagedef.tab* file.
4. Copy the *install_path\sap2afp\pagedef.tab.japan* to the *install_path\sap2afp\pagedef.tab* file.
5. Obtain the fonts needed for printing.

Font recommendations are given in both the files *install_path\sap2afp\fonts.tab* and *install_path\sap2afp\pagedef.tab*.

Setting Up Your SAP R/3 System to Support New OTF User Fonts

Use the following procedure when using the **sap2afp** data stream transform to print with a new font that you have created for the job:

1. From the R/3 main menu, access the **Font** window so you can create a font family for this new, customized font, by selecting the **Tools** main menu and then selecting the **Word Processing --> Font** path. or typing /nSP73 in the **ok-Code** field.
2. From the **SAPscript Font Maintenance: Initial Screen** window, select the **Font families** option and select the **Change** push-button.
3. Select the **Create** icon and fill in the font information on the **Create/Change Font Family** window as shown in below:

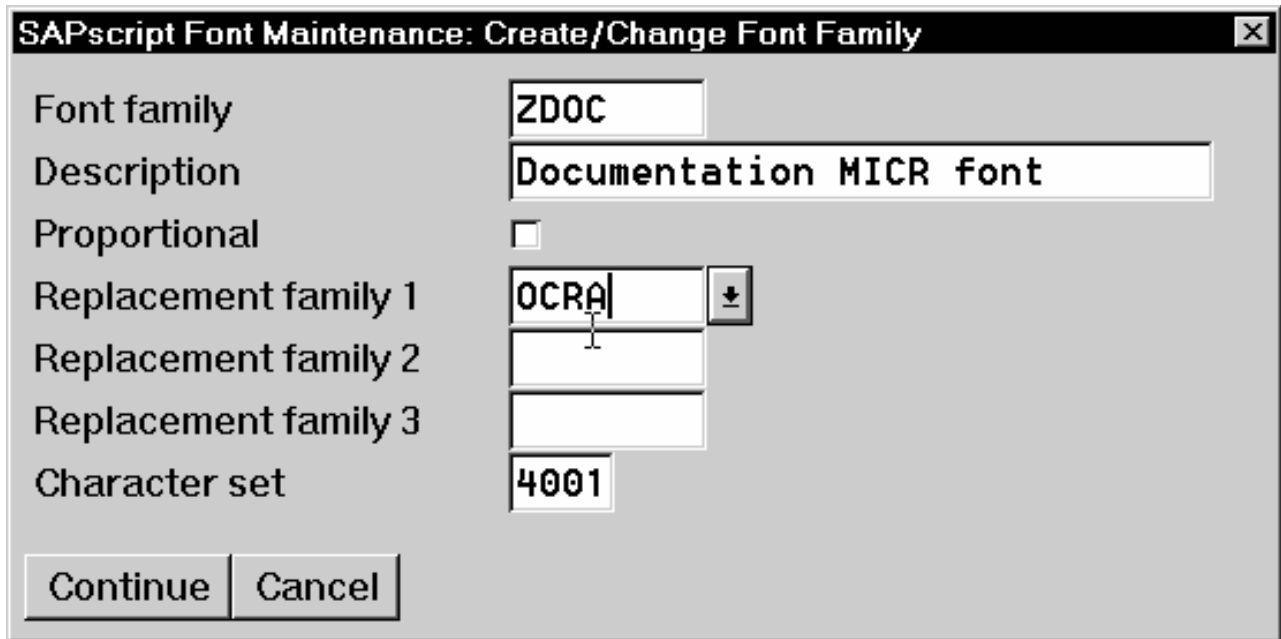


Figure 8. SapScript Font Maintenance: Create/Change Font Family

4. Select the **Continue** push-button.
5. When the system prompts you for a **Change Request Query** request, select the **Cancel** push-button.
6. From the **SAPscript Font Maintenance: Initial Screen** window, select the **System Fonts** option and select the **Create** push-button.
7. Fill in the information from the **Create System...** window as indicated below:

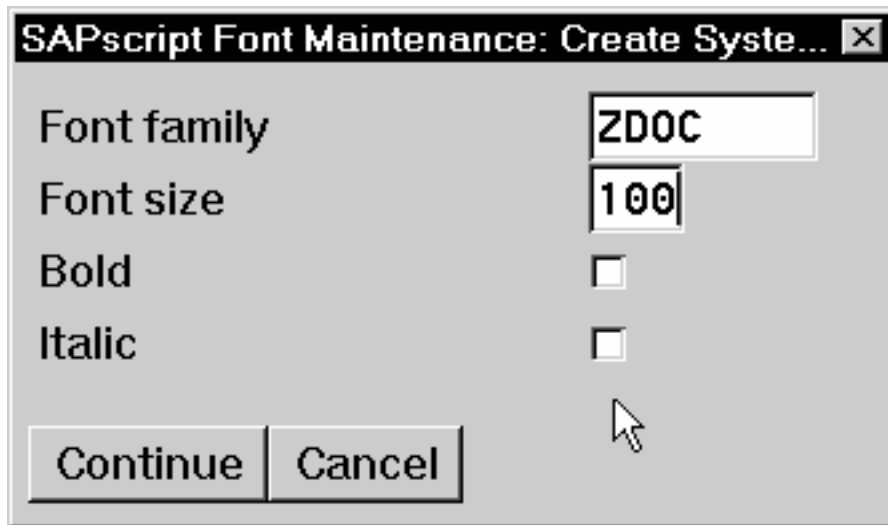


Figure 9. SapScript Font Maintenance Create System... window

8. Select the **Continue** push-button.
9. When the system prompts you for a **Change Request Query** request, select the **Cancel** push-button.
10. From the **SAPscript Font Maintenance: Initial Screen** window, select the **Printer fonts/AFM metrics** option and select the **Change** push-button.
11. From the **Create/Change...** window displayed below, select the intended device type (ZDOC0GF) and fill in the remaining information:

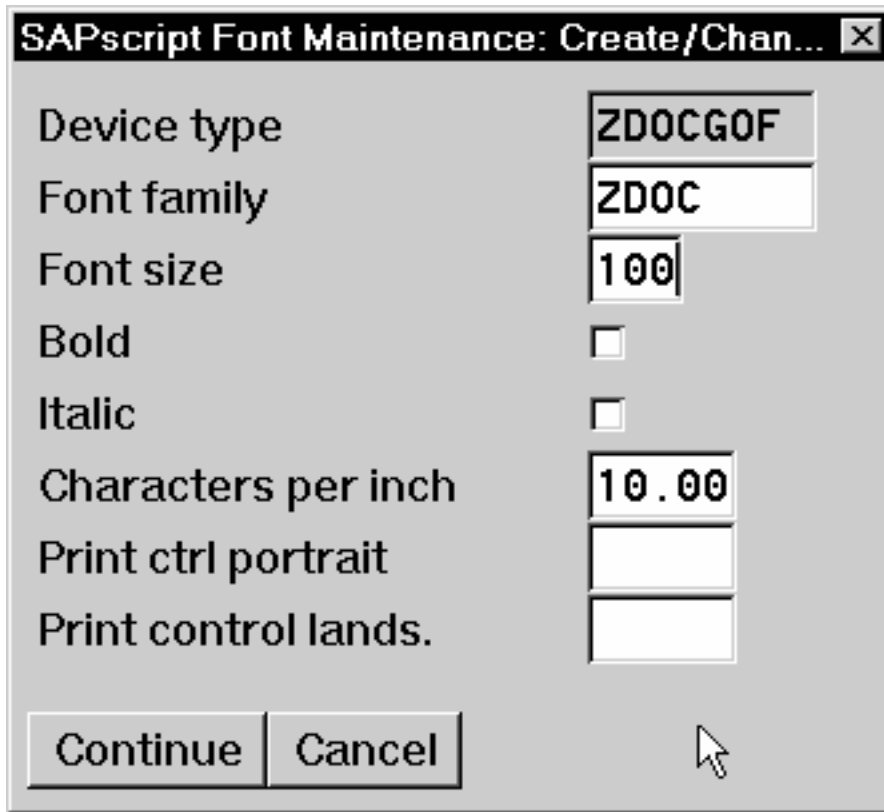


Figure 10. SapScript Font Maintenance (Create/Change) window for OTF Fonts

12. Select the **Continue** push-button.
Before you can use this new Output Text Format (OTF) font, you must define a layout set that contains this new font to use your device type.
13. Add an entry in the **fonts.tab** configuration file that identifies this new OTF font and ensure that these resources are on the Infoprint AIX server where your Infoprint physical printer resides.

Using Bar Codes with SAP R/3

The following three topics describe the bar codes for printing that can be used when printing OTF and ABAP output from Infoprint Manager for AIX:

1. "Bar Codes Supported by the Infoprint SAP (sap2afp) Transform"
2. "Setting Up Your SAP R/3 System to Support New OTF User Bar Codes" on page 22
3. "Bar Codes and Printing from SAP R/3 through Infoprint Manager" on page 24
4. "Specifying Width in SAP Bar Codes" on page 25.

Bar Codes Supported by the Infoprint SAP (sap2afp) Transform

Some SAP R/3 applications require that data is printed as a bar code. All the bar codes that can be specified in SAP R/3 are printable in AFP output. If OTF specifies bar code data, the sap2afp transform converts it into Bar Code Object Content Architecture (BCOCA) data, which is understood directly bar codes by the control unit of the AFP printer.

BCOCA is supported by the following printers:

- IBM 3112 Page Printer
- IBM 3116 Page Printer
- IBM 3130 Advanced Function Printer
- IBM 3160 Advanced Function Printer
- IBM InfoPrint 60 Printer
- IBM 3812 Page Printer
- IBM 3816 Page Printer
- IBM 3900-OW1 Advanced Function Printer
- IBM 3900-OW3 Advanced Function Printer
- IBM 3900 Advanced Function Duplex Printing System, Models D01, D02
- IBM 3900 Advanced Function Wide Duplex Printing System, Models DW1, DW2
- IBM 3912 Page Printer
- IBM 3916 Page Printer
- IBM 3930 Page Printer
- IBM 3935 Advanced Function Printer
- IBM InfoPrint 4000 Printer IBM
- IBM 6400 Line Matrix Printer
- LaserPrinter 4028
- Network Printer 12 (NP 12)
- Network Printer 17 (NP 17)
- Network Printer 24 (NP 24)
- Any printers that accept the Printer Control Language (PCL) PCL4, PCL5, or PCL5c data streams

Setting Up Your SAP R/3 System to Support New OTF User Bar Codes

Use the following procedure when using the **sap2afp** data stream transform to print with a new bar code that you have created for the job:

1. From the R/3 main menu, access the **Font** window by either taking the **Word Processing** --> **Font** path, or typing /nSP73 in the **ok-Code** field.
2. From the **SAPscript Font Maintenance: Initial Screen** window, select the **System bar codes** option and select the **Change** push-button.
3. Select the **Create** icon and fill in the bar code information on the **Create/Change System Bar Code** window as shown below:

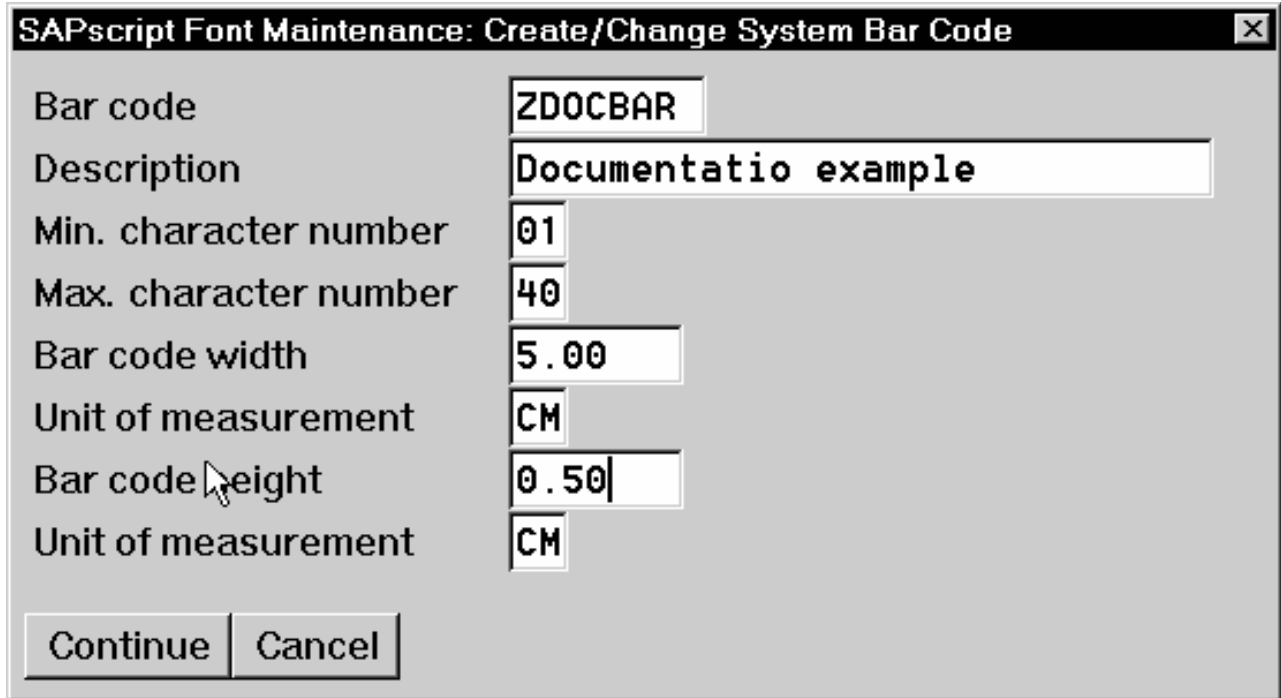


Figure 11. SapScript Font Maintenance (Create/Change) System Bar Code window

4. Select the **Continue** push-button.
5. When the system prompts you for a **Change Request Query** request, select the **Cancel** push-button.
6. From the **SAPscript Font Maintenance: Initial Screen** window, select the **Printer bar codes** option and select the **Change** push-button.
7. From the **Create/Change...** window displayed below, select the intended bar code (ZDOCGOF) and fill in the remaining information:

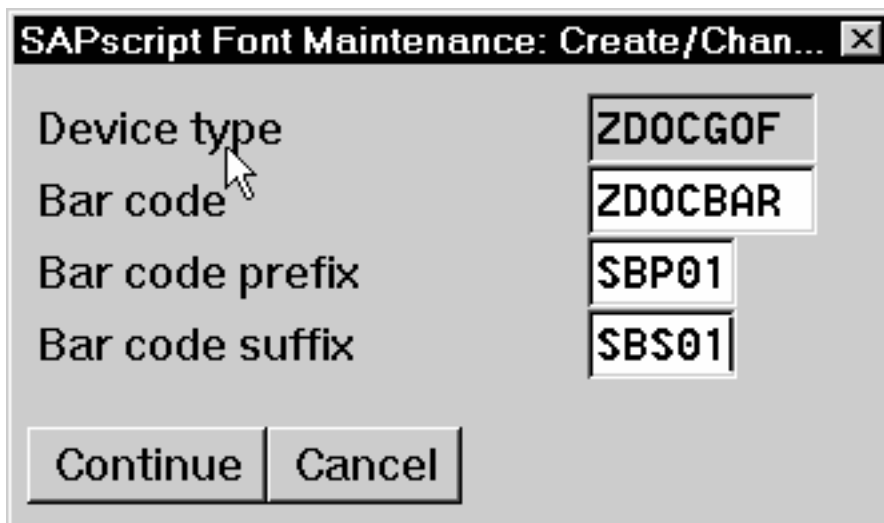


Figure 12. SapScript Font Maintenance (Create/Change) window

8. Select the **Continue** push-button.

Before you can use this new Output Text Format (OTF) bar code, you must define a layout set that contains this new bar code to use your device type (in this case, ZDOCG0F).

9. Add an entry in the **barcode.tab** configuration file that identifies this new OTF bar code name to an actual bar code type. The **barcode.tab** configuration file identifies values in the following format:

```
BarCode=ZDOBAR Type=017 Mode=002 Flag=128
```

Note: Ensure that the new bar code resources are in your AIX resource path and reside on the Infoprint AIX server, where your Infoprint actual destination resides.

For more information about the information in the **barcode.tab** configuration file and how it relates to the Bar Code Object Content Architecture (BCOCA), see “Bar Codes and Printing from SAP R/3 through Infoprint Manager”.

Bar Codes and Printing from SAP R/3 through Infoprint Manager

The following information maps the Bar Code Object Content Architecture values with the SAP R/3 system values found in the **barcode.tab** configuration file, which resides in the *install_path\sap2afp* path.

Table 3. Bar Code Type Field Values

Bar Code Type Field Values	Description
X'01'	Code 3 of 9
X'02'	MSI
X'08'	EAN-8
X'09'	EAN-13
X'0C'	Interleaved 2 of 5
X'11'	Code 128
X'18'	POSTNET

Table 4. Bar Code Mode Field Values

Mode Field Values	Bar Code Type	Meaning
1	X'01'	Present the bar code without a generated check digit.
2	X'01'	Generate a check digit and present it with the bar code.
1	X'02'	Present the bar code without check digits generated by the printer.
2	X'02'	Present the bar code with generated IBM modulo-10 check digit. This check digit will be the second check digit; the first check digit is the last byte of the BSA data.
3	X'02'	Present the barcode with two check digits. Both check digits are generated using the IBM modulo-10 algorithm.

Table 4. Bar Code Mode Field Values (continued)

5	X'02'	Present the barcode with two check digits. The first check digit is generated using the IBM modulo-11 algorithm; the second using the IBM modulo-10 algorithm. The first check digit equals the remainder; exception condition EC-0E00 exists if the first check-digit calculation results in a value of 10.
0	X'08'	Present an EAN-8 barcode symbol. The input data consists of seven digits: two flag digits and five article digits. All seven digits are encoded along with a generated check digit.
0	X'09'	Present an EAN-13 barcode symbol. The input data consists of twelve digits: two flag digits and ten article digits, in that order. The first flag digit is not encoded. The second flag digit, the article number digits, and generated check digits are encoded. The first flag digit is presented in HRI form at the bottom of the left quiet zone. The first flag digit governs the A and B number-set pattern of the barcode and space coding of the six digits to the left of the symbol center pattern.
1		Present the bar code without a generated check digit. In sequence, the input data consists of a start character, digits to be encoded, and a stop character.
2	X'0C'	Generate a check digit and present it with the bar code. In sequence, the input data consists of a start character, digits to be encoded, and a stop character.
2	X'11'	Generate a Code 128 symbol using subset A, B, or C as appropriate, to produce the shortest possible bar code from the given data. The Code 128 code page is used to interpret the bar code symbol data. Generate a check digit and present it with the data.
0	X'18'	Present the ZIP code as 5 digits.
1	X'18'	Present the ZIP code as 9 digits.

Table 5. Bar Code Flag Values

Flag Field Values	Meaning
128	Present without Human Readable Text (HRI)
0	Present with Human Readable Text

Specifying Width in SAP Bar Codes

Infoprint Manager allows you to modify bar code width using the same command syntax provided through Page Printer Formatting Aid (PPFA). By modifying the **barcode.tab** configuration file to use the **ModWidth** parameter, you can change the width of bar codes and the wide-to-narrow ratio.

ModWidth

Specifies the width of the smallest defined bar code element, using mils (thousandths of an inch). For bar code types that explicitly specify the module width (for example, **POSTNET** and **RM4SCC**), this field is

ignored. The range of values allowed is 1–to-254. If **ModWidth** is not specified in the **barcode.tab** file, the **sap2afp** transform uses the defaulted bar code width.

n Specifies the width of each module, using thousandths of an inch (1/1000) as the unit of measure.

Ratio Specifies a percent value in the form *nnn*. For example, 200 represents a ration of 2.5 to 1. For most bar code symbols, the **Ratio** value should be between 200 and 300. For bar code types that explicitly specify the module width (for example, **POSTNET** and **RM4SCC**), this field is ignored. If **Ratio** is not specified, the default ratio for the bar code symbol is used. This value must be a three-digit character between 100 and 500.

To shorten an existing bar code, you can specify the following line in the **barcode.tab** file:

```
BarCode = BC_CD39 Type = 001 Mode = 001 Ratio = 2000 ModWidth = 10
```

Printing Oversize Characters on an IBM 6400 Printer with SAP R/3

Infoprint Manager gives you the ability to resize Output Text Format (OTF) fonts on an IBM 6400 Printer. If your printer supports the graphics object content architecture (GOCA) feature, you can use the **6400fonts.tab** configuration file to alter the height and width of characters printed. The **SIZE=** parameter allows you to specify the height of a font (in points) and have it scaled appropriately. Since there are 72 points in an inch, **720** indicates a height of an inch. The **CPI=** (characters per inch) parameter defines the horizontal width to which the 6400 printer-resident fonts should be scaled. The smaller the number you specify, the wider the font you receive.

To ensure that a font prints one inch high, specify the following line in the *install_path*\sap2afp\6400fonts.tab configuration file:

```
FONT=TIMES SIZE=720 TYPE=3 CODEPAGE=T1V10273 CharSet=C0S0ESTR DB=0
```

To ensure that a font prints one inch wide, specify the following line in the *install_path*\sap2afp\6400fonts.tab configuration file:

```
FONT=TIMES SIZE=360 TYPE=3 CODEPAGE=T1V10273 CharSet=C0S0ESTR DB=0 CPI=1
```

To ensure that a font prints one—half inch wide, specify the following line in the *install_path*\sap2afp\6400fonts.tab configuration file:

```
FONT=TIMES SIZE=360 TYPE=3 CODEPAGE=T1V10273 CharSet=C0S0ESTR DB=0 CPI=2
```

Once you have modified the **6400fonts.tab** file appropriately, access the **Print Screen List** window on the SAP R/2 graphical user interface and specify 6400 in the **Title** field of the **Spool request** pane:

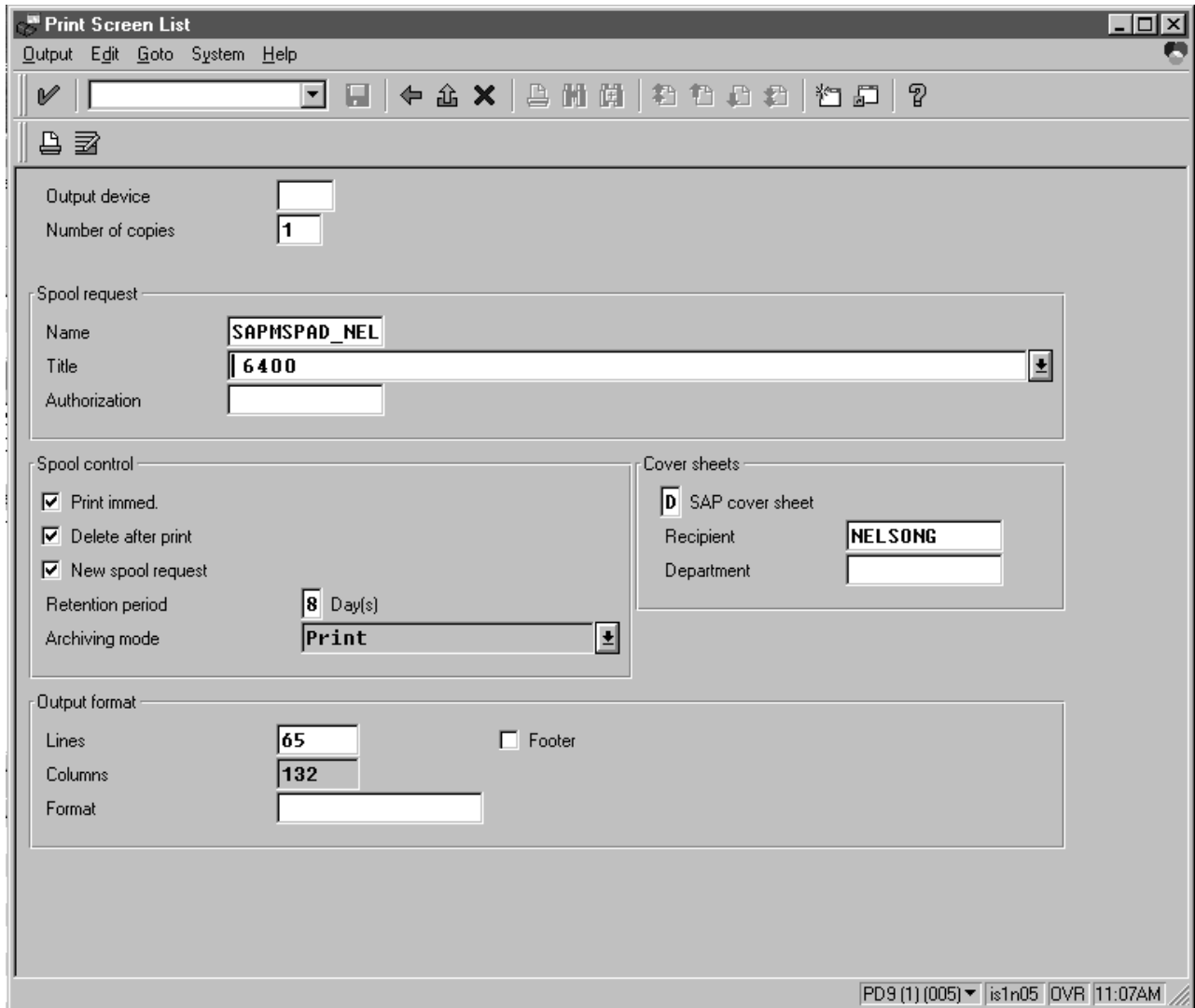


Figure 13. SAP R/3 Interface: Print Screen List window

Adding Box Shading Values to Printed Output

Infoprint Manager supports both Output Text Format (OTF) shading values and border thickness values.

Note that this support is now provided in the **ipm_print** command. You do not need to use this procedure, unless you are specifying the **sap2afp** Command directly from the command line.

If your printer supports the graphics object content architecture (GOCA) feature, you can use the **BX OTF** command to print boxes that are either clear, solid, or contain four different levels of shading. The levels of shading are a percentage between 0 and 100, with 0 indicating a clear box and 100 a solid box. To recognize input from the **BX** Output Text Format (OTF) command, specify the following command on the SAP R/3 panel:

```
rspo/host_spool/custom_print=/usr/lpp/psf/bin/sap2afp -d &S -f &F -g
```

This command allows you to print boxes that are either clear, solid, or contain four different levels of shading. You perform this task during installation when you define the print command while Activating Access Method **Z**. Just add the **-g** option to the end of the line. For more information on the **BX** command values required to specify box shading, refer to your SAP R/3 documentation.

Note: If you specify this option to an Infoprint logical printer that is not enabled for GOCA, the file will print a presentation text object content architecture (PTOCA) box or boxes and the following message sequence for each box:

```
0420-535: ERROR: One or more graphics objects were encountered.  
The printer does not support this type of object.  
:  
:  
0420-879: Infoprint continues processing the print job: The STOP  
when errors found in IMAGE and GRAPHICS data field on the  
Infoprint SMIT Error Handling Options panel is set to no.
```

Chapter 4. Submitting Jobs from SAP Systems

From your Infoprint Windows server, you can submit jobs to a UNIX printer running on a SAP application server by submitting jobs through a network connection (using **LPD**) through Access Method **U**. The following describes specific settings for the Access Method on your SAP system.

Once you have started the Infoprint Manager LPD service and defined Access Method **U** as shown below, you should be able to submit jobs to Infoprint Manager through the logical destination (**Host printer** value) without having to take any further action on your Infoprint Windows server.

- “Starting the Infoprint LPD Service”.
- “Defining Devices that Use Infoprint Manager for Access Method U” on page 31.

Starting the Infoprint LPD Service

In order to print to a UNIX printer and use the **sap2afp** transform that resides on your Infoprint Windows server, you must activate the Infoprint Manager LPD service that comes with Infoprint Manager for Windows NT and Windows 2000. Note that this service is different from the **LPD** Windows service that comes with the base operating system.

1. From the **Start** menu, click on the **Programs-->Infoprint Manager-->Management Console** path.
2. Click **File --> Stop Server**.
3. Access the **Edit-->Service Configuration...** path.
4. From the **Service Configuration** window, ensure that the **Run Infoprint Manager LPD service** check box has been checked (as shown in the figure below). Press **OK** to save this change.

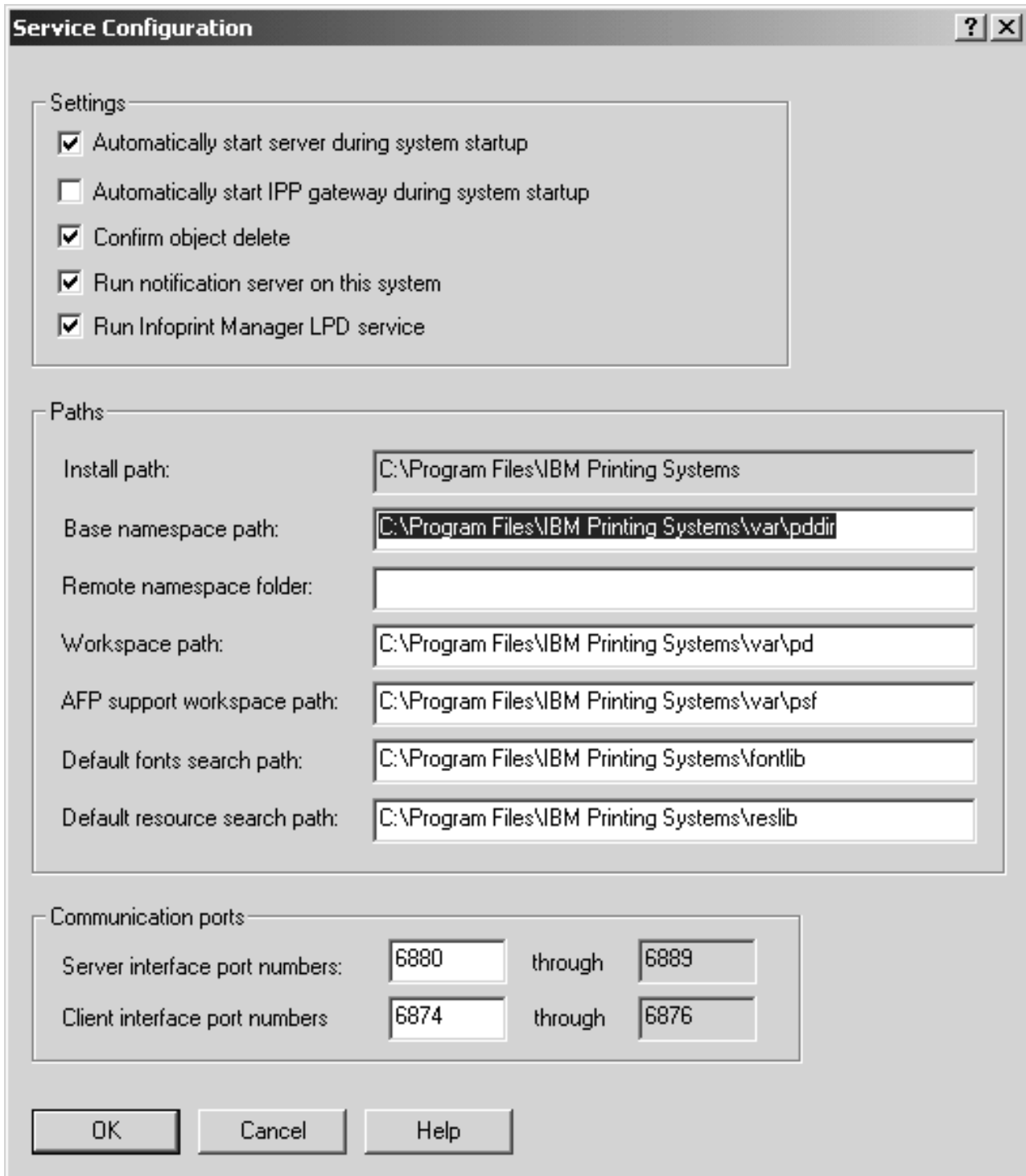


Figure 14. MMC Service Configuration window.

5. Click **File --> Start Server**.
6. Exit the **Infoprint Manager Management Console**.

Defining Devices that Use Infoprint Manager for Access Method U

The following topic describes an alternate method for creating an output device for printing either PCL or PostScript data from an SAP R/3 system that runs on either an AIX, HP-UX, or Sun server to a Windows server running Infoprint Manager for Windows NT and Windows 2000.

1. Ensure that you have a logical printer defined in Infoprint Manager, which will send jobs to your physical printer device.
2. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration--> Spool--> Spool Administration** path or typing /nSPAD in the **ok-Code** field.
3. From the **Spool Administration** window, select the **Output devices** option and select the **Change** push-button.
4. Select the **Create** icon and fill in the following information on the **Create Output Device** window:

Table 6. Defining Access Method U

Field	Value
Output Device	ipm1pms Type the name that R/3 users will need to access the printer.
Device type	POST2 Select the device type that has been defined in the R/3 system for the printer model. POSTSCPT applies to any PostScript printer, while HPLJ4 applies to a Hewlett-Packard LaserJet 4 printer.
Spool server	hrmssbx_SBX_00 Select the name of the R/3 application server, which will be the SAP R/3 spool server (spool work process), that transfers output across a network link.
Destination hosts	nwser Type the hostname for the Infoprint Windows server.
Host printer	prt1-1p Type the name of the Infoprint Manager logical destination.
Device class	Enter a space so that this field accepts the default value of printer, which is P, or you can specify Standard printer, as in the example.
Access method in host spool	U Select the method that the spool work process uses to pass data to the host spool system.

5. From the menu bar, click on the **Back** icon and the system will prompt you to save the new output device.

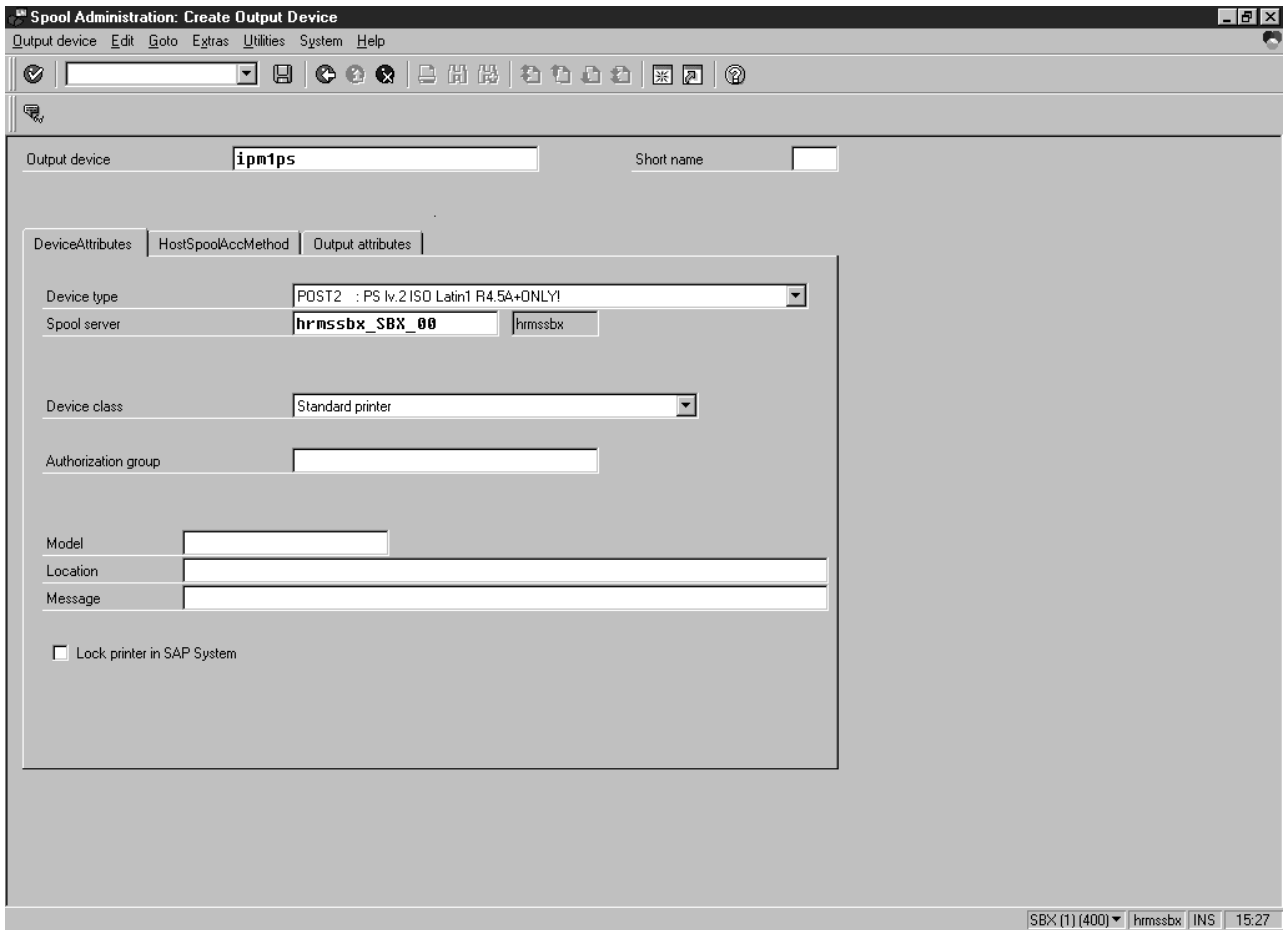


Figure 15. Sample Printer Definition from Spool Administration: Create Output Device window.

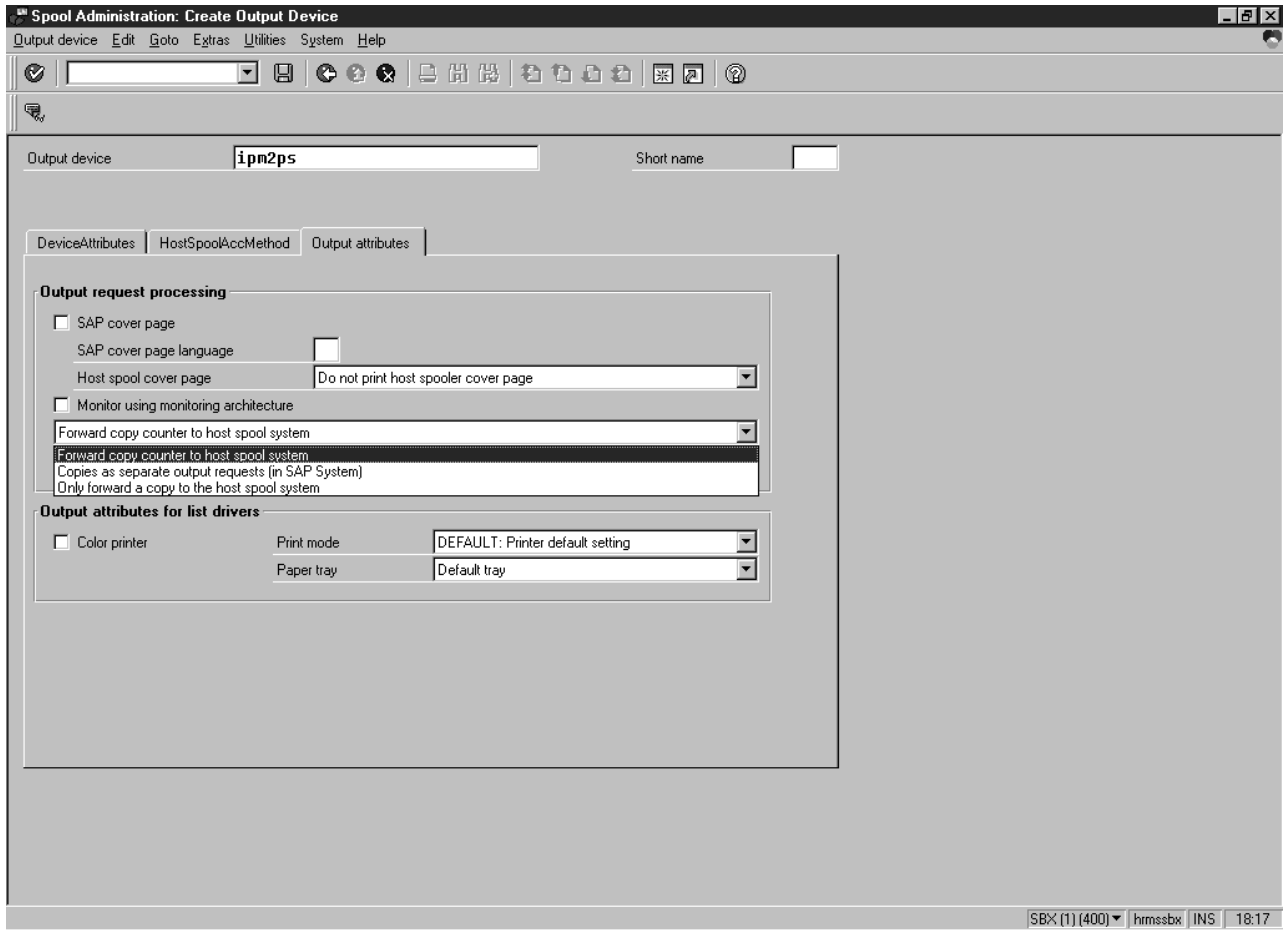


Figure 16. Sample Output Attributes values from Spool Administration: Create Output Device window.

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