

IBM Infoprint Manager 3.1 for AIX



Using the SAP R/3 Print Feature (5/12/99)

IBM Infoprint Manager 3.1 for AIX

Using the SAP R/3 Print Feature (5/12/99)

Infoprint Manager and SAP R/3 Overview	1
Installing the SAP R/3 Print Feature	6
Configure for Printing PCL and PostScript with SAP R/3 Release 3 on AIX	6
Installing Infoprint Options for SAP R/3	7
Selecting a SAP Print Command	7
Using the Infoprint ipm_print Command for Printing PostScript or PCL	7
Using the AIX qprt Command	8
Updating the SAP Profile to Activate the SAP Print Command	8
Installing Infoprint when SAP Runs on HP-UX or Sun Servers	9
Configuring the Infoprint AIX Server	9
Configuring the SAP System Server(s)	10
Installing and Configuring the AIX Client	13
Using the Installer GUI	13
Using the AIX Command Line	14
Installing Infoprint Fonts for Printing with the SAP Transform	15
Configure for Printing ABAP and OTF with SAP R/3 Release 3	16

Activating Access Method Z	17
SAP Custom Print Command Options	18
Using the Infoprint sap2afp Command	19
Using the AIX qpri Command	21
Configuring the SAP R/3 Transform	22
Bar Codes Supported by the Infoprint SAP R/3 Transform	23
Printing with SAP R/3 Release 4 (Enhanced Status)	25
Installing the AIX Client and the SAP Feature on the SAP System Server .	26
Defining a User for the OMS Callback Daemon on the SAP System Server .	26
Deciding where to Run the SAP Callback Daemon	26
Defining the Infoprint Manager OMS to SAP R/3 on the SAP Server(s). .	27
Defining a Real Output Management System	27
Defining a Logical Output Management System	32
Installing the SAP R/3 Print Feature and the SAP Fonts on the Infoprint Server	35
Configuring the SAP Callback Daemon	35
Running on the Infoprint AIX Server	35
Running on the SAP R/3 Application Server	35
Starting the SAP Callback Daemon	37
Defining Output Devices for Printing ABAP and OTF as SAP R/3 Release 3 .	38
Defining Devices that Use Infoprint Manager for Access Method L	40
Defining Devices that Use Infoprint Manager for Access Method U	42
Printing from SAP R/3 Release 4 (Enhanced Status)	44

Activating End-User Pop-Ups	46
Organizing OMS Output Devices into LOMs.	48
Using Separate Command Groups	48
Using Different OMS Services	48
Distributing the Callback Workload	48
Using Different Report Levels or Event Delivery Criteria	48
Moving OMS Definitions Between Systems	49
Selecting Event Report Levels	51
Viewing Enhanced Job Status, Job Events, and Querying Jobs	52
Displaying Device Status	54
Canceling Jobs	56
Shutting Down the SAP Callback Daemon	57
Customizing Print Characteristics by Defining a Customized Device Type	58
Changing Document Print Orientation	60
Defining a New ABAP Format	60
Connecting a New Format to a Device Type	64
F1SAP Form Definition	67
Changing Page Print Orientation	69
Enabling Multi-Byte Character Sets for Japanese Fonts	72
Setting Up Your SAP R/3 System to Support New OTF User Fonts	73
Setting Up Your SAP R/3 System to Support New OTF User Bar Codes	75

Bar Codes and Printing from SAP R/3 through Infoprint Manager 77

Adding Box Shading Values to Printed Output 79

Submitting Faxes from SAP R/3 80

Creating an R/3 Fax Device 80

Submitting a Fax from SAP R/3 to Infoprint Manager 83

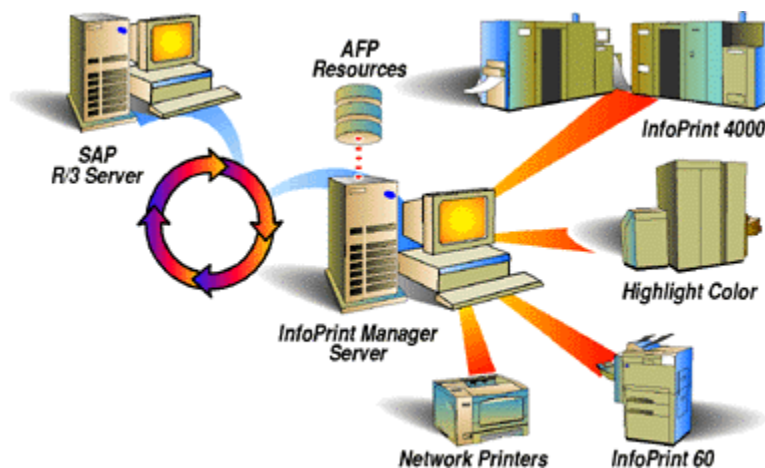
Infoprint Manager and SAP R/3



A scalable software solution to manage and deliver information in a connected world

Highlights

- Robust integration of SAP R/3 with Infoprint Manager
- Reliable notification about job status to SAP R/3 Users
- Add electronic forms, logos, and electronic signatures to your text documents
- Reliable management of the print environment



A large international corporation is committed to a SAP R/3 enterprise to manage their data processing across all departments. They especially appreciate the SAP R/3 option provided by Infoprint Manager. Infoprint Manager and SAP R/3 combine to provide a robust solution that manages all printing the way SAP R/3 manages and keeps track of their entire business, from external documents sent to customers, to reports created for internal distribution and printed at the desktop. Because Infoprint Manager can manage both the high-end production printers and the low-end desktop (network) printers, it meets their needs as no other print application on the market today.

Robust Integration of SAP R/3 with Infoprint Manager

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 Release 3 print enterprise without modifying your existing SAP configuration. Install an Infoprint AIX client on your SAP server system, and Infoprint Manager will recognize your existing **lpr**-based print and query commands. To use this support, configure your SAP devices to use Access Method **L**.

You can add Infoprint Manager servers to your SAP R/3 Release 3 print enterprise to print both the native Output Text Format (OTF) data stream and the native Advanced Business Programming Application (ABAP) line data stream as Advanced Function Presentation (AFP) output on production printers. To use this support, configure Access Method **Z**.

You can add Infoprint Manager servers to your SAP R/3 Release 4 print enterprise to print all data streams and receive enhanced job status from the SAP R/3 system. To use this support, configure your SAP devices to use Access Method **E** and define Infoprint Manager as an Output Management System for your SAP R/3 Release 4 enterprise.

IBM Infoprint Manager provides support for the latest levels of SAP R/3, using a variety of Access Methods:

Data Stream from SAP R/3	Access Method	SAP R/3 Release
Printing either PostScript or PCL files	<u>L</u>	SAP Version 3
Printing either OTF or ABAP files	<u>Z</u>	SAP Version 3
Printing either PostScript, PCL, OTF, or ABAP files	<u>E</u>	SAP Version 4

Reliable Notification about Job Status to SAP Users

Until SAP R/3 Release 4, the SAP R/3 spool process provided little feedback to users about jobs sent to print. When a job disappeared off the queue, the SAP spool process considered it complete, regardless of whether it printed or not!

With SAP R/3 Release 4 and Infoprint Manager Release 3.1, you can define Infoprint Manager as an Output Management System and receive input on the jobs that you have submitted for printing.

Infoprint Manager and the SAP R/3 Release 4 OMS support allow a SAP user to:

- receive notification of a job's processing status
- cancel one or more jobs
- query the status of one or more jobs
- query the status of an Infoprint printer and its jobs

Add 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 3.1 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.

Reliable Management of the Print Environment

With Infoprint Manager's Infoprint AIX server, you can manage printers and devices from a single point of control. You can track and manage jobs across your enterprise from job submission to printed output. When output does not print, operators no longer have to determine whether or not a spool request was generated. Instead of having to walk over to the printer, they can use the Infoprint Manager graphical user interface (GUI) to pinpoint where in the process the job is delayed and determine the appropriate action to resolve the problem. Infoprint Manager provides automatic workload balancing among printers that you have defined with the same characteristics. For more information about how to configure printers and monitor printing across an installation, see *IBM Infoprint Manager: Administrator Guide*.

By transforming SAP Print output to Advanced Function Printer Data Stream (AFPDS), Infoprint Manager allows R/3 customers: to manage the full range of IBM AFP printers (low speed to high speed, simplex or duplex, continuous forms or cut-sheet) to share Infoprint Manager managed printers with other host and LAN- based applications to receive

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.

Prerequisites

The initial software requirement for a SAP R/3 system using Infoprint Manager Version 3 Release 1 to manage its printing capabilities:

- a SAP R/3 system Version 3 and higher (or Version 4 for DBCS and job notification)
- an AIX operating system Version 4.2.1 or Version 4.3 on either a uniprocessor or a symmetric multiprocessor (SMP)
- the SAP Print Feature selected from the Infoprint Installer for Version 3 Release 1
- an Infoprint Manager Version 3 Release 1 AIX client installed on the SAP R/3 system

The following terms are trademarks of IBM Corporation in the United States and/or other countries: IBM, Advanced Function Presentation, AFP, AIX, Infoprint, Print Services Facility, PSF, RISC System/6000 and RS/6000.

Other company, product and service names may be trademarks or service marks of others.

R/3, SAP, and SAPscript are registered trademarks of SAP AG.

Installing the SAP R/3 Print Feature

With few changes, you can configure SAP R/3 Release 3 to send both PS and PCL output data directly to Infoprint Manager. Also, you can configure SAP R/3 to transform SAP output into AFP output to take advantage of all the features of AFP printing.

If you are running SAP R/3 Release 4, you can configure the system to use the SAP certified Output Management System (OMS) interface to send all data streams to Infoprint Manager and receive event notification for print jobs back to the R/3 system.

The following procedures help you install the SAP R/3 option so that you can print using Infoprint Manager for AIX, Version 3.1.

Configure for Printing PCL and PostScript with SAP R/3 Release 3 on AIX

Configure for Printing ABAP and OTF with SAP R/3 Release 3 on AIX

Configure for Printing with SAP R/3 Release 4 (Enhanced Status) on AIX

Configure for Installing Infoprint when SAP Runs on HP-UX or Sun Servers

Note: At a minimum, on every system on which you will be running the SAP Transform (Infoprint AIX servers and SAP R/3 application servers), you must have the following installed:

- bos.loc.adt.iconv (Language Converter Development Toolkit)

Configure for Printing PCL and PostScript with SAP R/3 Release 3

If you have a SAP R/3 system running on a non-AIX UNIX operating system, refer to [Installing Infoprint when SAP Runs on HP-UX or Sun Servers](#) on page 9.

SAP R/3 systems running on AIX work best with Infoprint Manager when these installations are configured to use our **ipm_print** command. However, because the standard SAP host spool print command is a typical **lp** command and Infoprint Manager includes a gateway for standard UNIX print commands, you can integrate your SAP R/3 Release 3 system with Infoprint Manager by defining the host printer name of your R/3 device to be an Infoprint Manager logical destination. SAP will get better feedback concerning the status of jobs if you use the Infoprint Manager **ipm_print** command.

Installing Infoprint Options for SAP R/3

You must install the following wherever a Spool Work Process resides that will make print requests for Infoprint Manager logical printers:

1. The [AIX Client](#) (on page 13) from the Infoprint Installer. The Infoprint Manager AIX client includes the Infoprint Manager command line and the gateway for the standard UNIX print commands.
2. The SAP Print Feature from the Infoprint Installer instructions that are contained on both the web pages and the "Installing Infoprint Manager Control on Your AIX System" PDF file. The Infoprint Manager SAP feature includes the **ipm_print** command.

Note: You must install the AIX Client before you install the SAP R/3 Print Feature. If you install the SAP R/3 Print Feature first, the AIX Client will overwrite the **SAP Print Feature**.

Selecting a SAP Print Command

There are two potential print commands that SAP R/3 installations using Infoprint Manager might want to use for submitting print commands. The following topic presents both commands, with their relative strengths and weaknesses.

Using the Infoprint **ipm_print** Command for Printing PostScript or PCL

The Infoprint Manager **ipm_print** command provides more accurate SAP job information to Infoprint Manager. For example, each SAP userid can be used to track a job through the system. The corresponding **ipm_query** command allows Infoprint Manager to provide more accurate job status to SAP: a job is not identified as complete until it actually prints or is deleted from the print queue. You can also use the **ipm_print** jobs to fax jobs from SAP.

To use these print commands, update these three parameters in the **Instance Profile Management for Experts (Change)** window:

```
# rspo/host_spool parms

rspo/host_spool/print=ipm_print -P &P -F &F -O '&O' -o
'&o' -R '&R' -C &C -Y '&Y' -T '&T' -D '&D' -t '&t'

rspo/host_spool/query=ipm_query -P&P

rspo/host_spool/answer_format=lpstat
```

Using the AIX `qprt` Command

The AIX `qprt` command is the standard SAP R/3 print command. Using this command allows you to send jobs to both standard AIX queues and Infoprint Manager printers. This print option is limited because you cannot use the Infoprint Manager Fax option or have the userid of the job creator associated with the job.

To use this print command, update these three parameters in the **Instance Profile Management for Experts (Change)** window:

```
# rspo/host_spool parms  
  
rspo/host_spool/print=qprt -dp -P&P -Bnn -N&C -r -R14 -X850 &F  
  
rspo/host_spool/query=lpq -l -P&P  
  
rspo/host_spool/answer_format=lpstat
```

Updating the SAP Profile to Activate the SAP Print Command

Edit the profile of the application server where the spool work process runs by doing the following on the SAP R/3 graphical user interface:

1. Enter RZ10 in the OK-Code field.
2. From the **Instance Profile Management for Experts** window, select the appropriate profile and click on the **Choose** push-button.
3. From the SAP R/3 window, use the scroll bar to go to each parameter (`rspo/host_spool/print`, `rspo/host_spool/query`, and `rspo/host_spool/answer_format`) and update the parameters with the command that you decided to use from the preceding section.
4. Once you have notified other SAP R/3 application users, click on the **Save** folder and restart the R/3 application.

Once you have completed these procedures, you can create devices to print either PostScript or PCL from your SAP R/3 Release 3 system, using Infoprint Manager to drive the printer(s). Use the procedure for Devices that Use Infoprint Manager and SAP R/3 with Access Method L on page 40.

Installing Infoprint when SAP Runs on HP-UX or Sun Servers

SAP R/3 installations that run on non-AIX UNIX systems work best with Infoprint Manager when these installations are configured to invoke commands remotely on the Infoprint AIX server. For an alternative method of submitting jobs from non-AIX SAP R/3 application servers that provides no feedback to the SAP servers, see [Defining Devices that Use Infoprint Manager for Access Method U](#) found on page 42.

To use the SAP feature of Infoprint Manager 3.1 with a SAP R/3 system running on a non-AIX UNIX system, you must install the SAP feature on the Infoprint AIX server and perform the following tasks:

1. [Configuring the Infoprint AIX Server](#)
2. [Configuring the SAP System Server\(s\)](#)

If you are printing Output Text Format (OTF) data, ensure that you have installed the [fonts](#) (see page 15) necessary for printing on the Infoprint AIX server.

Configuring the Infoprint AIX Server

Use the following procedure to configure the AIX server that has already installed Infoprint Manager Version 3 Release 1 with the SAP Print Feature:

1. Add a user called `sapuser`.

Note that this user does not have to be part of any special groups.
2. Authorize the `sapuser` userid to issue remote commands by adding the following entry to the `/etc/hosts.equiv` file: `+ sapuser`.
3. Authorize all remote servers running the SAP R/3 application to specify remote commands on the Infoprint AIX server as `sapuser` by performing the following procedure:
 1. Add an `.rhosts` file with permissions of 600 to the `/home/sapuser` directory.
 2. Edit the `.rhosts` file and add a line for each non-AIX server running a SAP R/3 application with a plus (+) sign appended to it.

If a Domain Name Server is being used, just specify the fully-qualified name to the **.rhosts** file as shown below:

```
/home/sapuser/.rhosts:          sol.penn.boulder.ibm.com +
```

If a Domain Name Server is **not** being used, you must also add the host name and its IP address to the **/etc/hosts** file as show below:

```
/home/sapuser/.rhosts:  sol.penn.boulder.ibm.com +
```

```
/etc/hosts:              172.16.8.10 sol.penn.boulder.ibm.com
```

Note: For added accountability among SAP systems and print jobs, you can create separate AIX users for each SAP system or SAP R/3 application server. Follow the three steps specified in this topic to create additional users (like *sapuser*) that are mapped to each application server from which you will be using Infoprint Manager to print.

For more information about using the **rsh** and **rcp** commands to connect to the Infoprint AIX server and send files between servers, refer to your AIX Operating System documentation.

Configuring the SAP System Server(s)

Use the following procedure to configure remote server(s) (HP-UX or SUN) running the SAP R/3 application so you can print with Infoprint Manager Version 3 Release 1:

1. Obtain access to each non-AIX server running SAP R/3 and log on.
2. Verify that you can **ping** the Infoprint AIX server by hostname:

```
ping -c 3 hostname
```

where *hostname* is the unqualified name for the Infoprint AIX server, such as *nwser*.

If the response shows that a good communication path exists, you will see the following:

```
----tcPIP_addr PING Statistics----  
3 packets transmitted, 3 packets received, 0% packet loss  
round-trip min/avg/max = 7/7/7 ms
```

3. If you cannot ping the Infoprint AIX server by hostname, edit the **/etc/hosts** file and add the hostname and IP address of the Infoprint AIX server:

```
/etc/hosts:              9.99.11.109 nwser
```

4. Create a small directory named **/usr/lpp/pd/bin**:

```
mkdir /usr/lpp/pd/bin
```

5. If your SAP R/3 installation is a Release 4 system, use the file transfer protocol (FTP) of your choice to copy the **/usr/lpp/pd/bin/ipm.omdesc** file from the Infoprint AIX server to at least one of the SAP R/3 servers running the SAP R/3 application.

This file contains the SAP Infoprint Manager Output Management System (OMS) definition that is loaded into the SAP R/3 System. Ensure that the file is readable by the sysadmin (where sys is the three-character SAP system name) on the SAP R/3 application system.

6. From the **/usr/lpp/pd/bin** directory on the Infoprint AIX server, edit each of the files specified below (2 for SAP R/3 Release 3; 5 for SAP R/3 Release 4) so they specify the name of the user (*sapuser*) and hostname where Infoprint Manager is running. For the secondary qualifier (*sys*), use the name of the system where your SAP applications are running, either **sun** for SUN or **hp** for Hewlett-Packard.

SAP R/3 R 3 Files on the Infoprint AIX Server
--

ipm_print.sys

ipm_query.sys

SAP R/3 R 4 Files on the Infoprint AIX Server
--

ipm_submit.sys

ipm_job_cancel.sys

ipm_job_query.sys

ipm_dev_query.sys

startcbd.sys

7. Use the FTP of your choice to move the files that you edited in step six above (two or five, depending upon the Release of SAP R/3) from the Infoprint AIX server to the non-AIX SAP server. For the secondary qualifier (sys), use the name of the system where your SAP applications are running, either **sun** for SUN or **hp** for Hewlett-Packard.

Note: For SAP R/3 Release 3, move the two files to each SAP R/3 application server running a spool work process (SWP). For SAP R/3 Release 4, move the five files to all SAP R/3 application servers.

8. If running with SAP R/3 Release 4 applications, rename each **startcbd.sys** file where sys is either **sun** or **hp**, to **startcbd**:

```
mv startcbd.sun startcbd
```

```
mv startcbd.hp startcbd
```

9. Ensure that each file copied in step 7 is executable.

10. If your applications run SAP R/3 Release 4, follow the Access Method E instructions for installing SAP R/3, beginning at [Define a SAP User for the OMS Callback Daemon](#) on page 21.

If your applications run SAP R/3 Release 3, rename the **ipm_print.sys** file to **ipm_print** and the **ipm_query.sys** file to **ipm_query**. Then, follow the directions for either [Defining Output Devices that Use Infoprint Manager for Access Method L](#) (page 40) or [Defining Devices for Printing ABAP and OTF on SAP R/3 Release 3](#), (page 38).

Installing and Configuring the AIX Client

To prepare for installing the Infoprint AIX client on your AIX system using the Infoprint Installer, do the following:

1. Log into the AIX system as **root**.
2. Open an aixterm or dtterm window.
3. Insert the Infoprint Manager CD-ROM into the CD-ROM reader.
4. At the AIX command prompt, type **cd /** and press **Enter**.
5. Type **ls cdrom**, **ls -al**, and press **Enter**.
6. If the message:

```
The file cdrom does not exist
```

displays, you must create a directory for the CD-ROM; type **mkdir /cdrom** and press **Enter**.

If there is already a cdrom directory, no message displays; you do not have to create a directory.
7. Type **mount -v cdrfs -r /dev/cdn /cdrom** where **cdn** is the identifier of your CD-ROM drive. Press **Enter**.
8. At the AIX command prompt (as **root**), type **cd** and press **Enter**.
9. Type **ksh** and press **Enter**.
10. Decide whether you want to invoke the Infoprint Installer with or without the graphical user interface (GUI). If you use the GUI, you will be prompted to select options for the AIX client. If your AIX workstation does not support the GUI, you must specify options on the command line.

Using the Installer GUI

1. Type **/cdrom/setup -c** and press **Enter**. The Infoprint Installer window displays.
 - Select the language you want from the **Preferred Language:** list if you want a language other than U.S. English for the rest of the Infoprint Installer screens, which are documented in "Installing Infoprint Manager Control on Your AIX System".
 - Select the **Set AIX Locale** check box if you want to set your AIX system to the same language as you just selected for the Infoprint Installer.

Notes:

(1) The text you see in the remaining screens during installation will be in the language you just selected.

(2) If the language you selected is not the same as the server language, the server must run in English.

(3) If you selected the **Set AIX Locale** check box, your system locale will change once you have logged off and back on or shut down and restart the AIX system after completing the installation of Infoprint .

2. Click on **Next >>**. You will now see several screens to allow you to configure your Infoprint AIX client.

Using the AIX Command Line

Type `/cdrom/setup -C -n ServerName -p PortNumber` and press **Enter**.

locale

is the locale of the AIX client. The default is **en_US** (U.S. English). If this locale is not the same as the server locale, the server locale must be **en_US**.

ServerName

is the name of the Infoprint server to which this AIX client will submit jobs. To determine the name of your server, type `hostname` at the AIX command line.

PortNumber

is the port where the Infoprint server is running. By default, Infoprint Manager uses 6874 as the default port number for servers. You may want to verify which port numbers are being used by your AIX system by viewing the list in the `/etc/services` file.

Remember that you must shut down and restart the system after completing the install of Infoprint Manager.

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 **/usr/lpp/psf/sap2afp** directory, as well as the required code pages. You can obtain these resources from the AFP Font Collection CD-ROM that is provided with Infoprint Manager.

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. Load the CD-ROM for the AFP Font Collection into the CD-ROM drive on your RS/6000 server.
2. Create a mount point from which to add fonts from this CD-ROM by typing `smitty cdrfs` from the AIX command line and taking the following path: **CDROM File Systems -- Add a CDROM File System**.
3. Select **F4** to set the **DEVICE name** field to the system-generated name (usually **cd0**).
4. For the **MOUNT POINT** field, specify `/cdrom`.
5. Press the **F10** key to exit SMIT.
6. From the AIX command line, mount the CD-ROM to your RS/6000 by specifying:

```
mount /cdrom  
cd /cdrom
```
7. From the AIX command line, specify `smitty install_latest`.
8. For the **INPUT device /directory for software** field, specify `/cdrom/aix`
9. To ensure that you install the correct fonts without over writing any existing resources on your system, specify `no` for the **COMMIT software updates?** field and `yes` for the **SAVE replaced files?** field.
10. Specify the **F4** key to list all font options.

11. Use the **F7** key to select the following four options:

- **afpfonts.bookmstr**
- **afpfonts.compat**
- **afpfonts.codepage**
- **afpfonts.ocr**

12. To install the fonts, press **Enter**.

Note: These fonts should take approximately 43 MB on your RS/6000.

13. Verify that the fonts cited in your **fonts.tab** configuration file have been installed.

14. Infoprint Manager installs these fonts in the **/usr/lpp/afpfonts** directory.

15. To remove the IBM AFP Font Collection CD-ROM, specify the following at the AIX command line:

```
umount /cdrom
```

Then you can remove the CD-ROM from your CD-ROM drive.

Configure for Printing ABAP and OTF with SAP R/3 Release 3

To print the ABAP and OTF data streams as AFP output, you must install the following:

1. The [AIX Client](#) (see page 13) from the Infoprint Installer. This feature needs to be installed wherever a Spool Work Process resides that will make print requests for Infoprint Manager logical printers.
2. The SAP Print Feature from the [Infoprint Installer instructions](#) that are contained on both the web pages and the "Installing Infoprint Manager Control on Your AIX System" PDF file. The SAP Print Feature option needs to be installed on your AIX Infoprint server, as well as on your SAP R/3 Application server. Ensure that you install the [SAP fonts](#) (see page 15) and [configure the sap2afp transform](#) (see page 22) on either the Infoprint AIX server or the SAP application server, depending upon where you decide to run the **sap2afp** transform. For a description of how the **sap2afp** transform can be run, refer to the individual command descriptions in the [SAP Custom Print Command Options](#) topic on page 18.

Note: You must install the AIX Client before you install the SAP R/3 Print Feature. If you install the SAP R/3 Print Feature first, the AIX Client will overwrite the **SAP Print Feature**.

Once these options have been correctly installed, you can configure your SAP R/3 application server to print both ABAP and OTF data by completing the following tasks in the order listed:

- [Activating Access Method Z](#)
- [Defining an Output Device Type](#)

Activating Access Method Z

SAP Access Methods are the means the SAP spool system uses to pass output to the host spool system. They tell the Spool Work Process what is to be done with the final output data stream. Access Method **Z** is a spool exit that allows you to output ABAP and OTF data for the Infoprint SAP (**sap2afp**) transform.

To activate Access Method **Z** with the R/3 spool exit, use the following procedure:

1. From the R/3 main menu, access the **Reporting** pull-down menu by selecting the Tools main menu and then selecting the **System-- Services--Reporting** path or typing /nSA38 in the **ok-Code** field.
2. From the **ABAP/4: Execute Program** window, specify **RSP00049** for the **Program** field and press the **EXECUTE** button once.

This process makes Access Method **Z** available on R/3.

3. Once Access Method **Z** is available on R/3, you must edit the profile of the application server where the spool work process runs by:
 1. From R/3, enter **RZ10** in the ok-Code field. This choice produces a list of all profiles on your R/3 system.
 2. From the **Instance Profile Management for Experts** window, select the appropriate profile and click on the **Choose** push-button.
 3. From the SAP R/3 window, use the scroll bar to go to the end of the file and add one of the set of options described in [SAP Custom Print Command Options](#) (page 18) at the bottom of the window.
 4. Once you have notified other SAP R/3 application users, click on the **Save** folder and restart the R/3 application.

SAP Custom Print Command Options

There are three potential print commands that SAP R/3 installations using Infoprint Manager might want to use for submitting print commands. The following topic presents each command, with its relative strengths and weaknesses.

Using the Infoprint `ipm_print` Command for Printing ABAP or OTF

The Infoprint Manager `ipm_print` command provides more complete SAP job information to Infoprint Manager. For example, each SAP userid can be used to track a job through the system. The corresponding `ipm_query` command allows Infoprint Manager to provide more accurate job status to SAP: a job is not identified as complete until it actually prints or is deleted from the print queue. `ipm_print` also allows you to provide box shading values to OTF jobs.

When you use `ipm_print`, the job is submitted to Infoprint Manager and the `sap2afp` transform is run when the job is scheduled to the printer, instead of before the job is spooled. In other words, the transform runs on the Infoprint AIX server, not on the SAP application server.

You do not have to specify a value in the `printer.tab` configuration file and need to perform less maintenance. For example, you can add devices to your SAP system and not have to modify anything on the SAP application server.

However, you can specify only one `defcp.tab` configuration file (the default conversion table for converting ASCII characters into EBCDIC characters) for printing ABAP jobs, no matter how many SAP application servers you use.

To use this print command:

1. Specify these three lines at the bottom of the **Instance Profile Management for Experts (Change)** window:

```
# Access Method Z Spool Exit Parameters

rspo/host_spool/custom_print=ipm_print -P &P -F &F -O
'&O' -o '&o' -R '&R' -C &C -Y '&Y' -T '&T' -D '&D' -t
'&t'

rspo/host_spool/custom_query=ipm_query -P&P
```

2. Once you have completed this task, return to step 3 of the [Activating Access Method Z](#) procedure on page 17.

Using the Infoprint sap2afp Command

The Infoprint Manager **sap2afp** Command invokes the transform directly and the transform then submits the job to Infoprint Manager. Using this option allows you to provide box shading values to OTF jobs and have a SAP userid associated with a job to track that job through the system. In addition, you can specify more than a single **defcp.tab** configuration file (the default conversion table for converting ASCII characters into EBCDIC characters) for printing ABAP jobs by installing different instances of the transform on different SAP application servers. For example, you could specify one code page on an application server where English data is printed and another code page on an application server where German data is printed.

This print option does require you to specify a value in the **printer.tab** configuration file and requires more maintenance of all the [configuration files](#) on page 22. For example, you must update the printer.tab file every time you either add or delete an R/3 AFP printer.

To use this print command:

1. Specify these three lines at the bottom of the **Instance Profile Management for Experts (Change)** window:

```
# Access Method Z Spool Exit Parameters
```

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

```
rspo/host_spool/custom_query=/usr/lpp/psf/bin/sap2afp -d &S -q
```

2. Map each R/3 output device to an IBM Infoprint Manager logical printer through the **/usr/lpp/psf/sap2afp/printer.tab** configuration file.

Because SAP R/3 Release 3 restricts the names of Output Devices to four characters, the printer.tab configuration file allows you to map R/3 Output Devices to more meaningfully named devices.

The **printer.tab** file uses the following keyword-value pairs:

Dest

Specifies the four-character R/3 Output Device.

System

Specifies the operating system from which **sap2afp** output is printed. You can specify either AIX or AIX system.

Queue

Specifies the name of the IBM Infoprint Manager logical printer.

Node

Specifies the IP address of the target operating system. The content (a maximum of 15 bytes) is not used. You must specify a value for **Node**, but it is used only when **System=OS/2**.

The following provides a sample **printer.tab** configuration file. Note that you can include comments in lines preceded by two slashes (//):

```
// Printer table
// Format: DEST=SPRT System=AIX Queue=pcl4039 Node=192.9.200.220
// Note: The Node parameter is not used for entries where the
// System field is AIX or MVS, but you must still enter a
// value.
Dest=MVSP System=MVS Queue=pcl4039 Node=192.9.200.220
Dest=AIX1 System=AIX Queue=pcl4029 Node=192.9.200.116
Dest=AIX2 System=AIX Queue=PSF4039 Node=192.9.200.220
Dest=OS2P System=OS2 Queue=OS2AFP Node=192.9.201.66
Dest=OS2 System=OS2 Queue=OS2AFP Node=192.9.201.66
```

If you have defined an R/3 AFP printer called AFPT, you could map this printer to the IBM Infoprint Manager logical printer psf3116 by adding the following line to the **printer.tab** configuration file.

```
Dest=AFPT System=AIX Queue=psf3116 Node=0.0.0.0
```

3. Once you have completed this task, return to step 3 of the [Activating Access Method Z](#) procedure on page 17.

Using the AIX **qprt** Command

The AIX **qprt** Command is the standard SAP R/3 print command. Using this option allows you to send jobs to both standard AIX queues and Infoprint Manager printers. This print option is limited because you cannot use the Infoprint Manager Fax option, provide box shading values to OTF jobs, or have the userid of the job creator associated with the job.

Specify these three lines in the **Instance Profile Management for Experts (Change)** window:

```
# Access Method Z Spool Exit Parameters
```

```
rspo/host_spool/custom_print=qprt -dp -P&P -Bnn -N&C -r -R14 -  
X850 &F
```

```
rspo/host_spool/custom_query=lpq -l -P&P
```

Once you have completed this task, return to step 3 of the [Activating Access Method Z](#) procedure on page 17.

Configuring the SAP R/3 Transform

To install the **sap2afp** transform, you must install the SAP Print Feature, using the [Infoprint Installer](#). Follow the directions provided with the Using the Infoprint Installer. Remember to select the **SAP Print Feature** on the Infoprint Installer.

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 **/usr/lpp/psf/bin** directory.
- Configuration files that are installed in the **/usr/lpp/psf/sap2afp** directory.

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
image.tab	Defines the dither matrix for half-tone color print jobs.	OTF data only
printer.tab	Maps four-character SAP printer name to an Infoprint logical printer.	ABAP/OTF

Note: Unless you are invoking the **sap2afp** transform directly from the SAP R/3 system, you do not need this configuration file. You invoke the transform if you are on a SAP R/3 Release 3 system and have chosen the Infoprint **sap2afp** print command, rather than the **ipm_print** command or the **qprt** print command, as your [SAP Custom Print Command Option](#) (see page 18).

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

Bar Codes Supported by the Infoprint SAP 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 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

Printing with SAP R/3 Release 4 (Enhanced Status)

SAP R/3 Release 4 provides support to more closely integrate an external Output Management System (OMS). Infoprint Manager is a SAP-certified OMS that provides synchronous functions for submitting jobs, canceling jobs, querying jobs, and querying devices, as well as asynchronous event information. The Infoprint SAP Callback daemon collects and delivers these events to the R/3 system.

SAP R/3 Release 4 allows you to print all data streams through Access Method **E**. While you can still use Access Method **L** to print PCL and PostScript output from SAP R/3 Release 4, you will not have access to the enhanced status reporting that is made available by defining Infoprint Manager as an Output Management System through Access Method **E**. Access Method **Z** is available, but not supported in SAP R/3 Release 4. Because the SAPGOF device type allows the output of both ABAP and OTF data with Access Method **E**, Access Method **Z** is no longer necessary in SAP R/3 Release 4. Since Infoprint Manager 3.1 invokes the **sap2afp** transform at the Infoprint physical printer, Access Method **E** allows you to receive enhanced status reporting while processing both ABAP and OTF print jobs.

To install and configure Infoprint Manager as a SAP R/3 OMS when SAP R/3 is running on an AIX operating system, use the following procedures in sequence:

Note: This procedure presumes that you have already installed and configured Infoprint Manager on a separate AIX server. An SAP OMS interface restriction requires that your Infoprint server (**pdsrserver**) name be no longer than nine characters.

1. [Installing the AIX Client and the SAP Feature on SAP System Server\(s\)](#)
2. [Defining a SAP User for the OMS Callback Daemon on the SAP System Server\(s\)](#)
3. [Deciding Where to Run the SAP Callback Daemon](#)
4. [Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server\(s\)](#)
5. [Installing the SAP R/3 Print Feature and the SAP Fonts on the Infoprint AIX Server](#)
6. [Configuring the SAP Callback Daemon](#)
7. [Starting the SAP Callback Daemon](#)

To install and configure Infoprint Manager as a SAP R/3 OMS when SAP R/3 is running on other UNIX operating systems, follow the procedures described in the topic [Installing Infoprint when SAP Runs on HP-UX or Sun Servers](#) on page 9.

Installing the AIX Client and the SAP Feature on the SAP System Server

Use the [Infoprint Installer](#) instructions that are contained on both the web pages and the "Installing Infoprint Manager Control on Your AIX System" PDF file to install the [AIX client](#) (see page 13) and the SAP Print feature on every AIX server where any SAP application server will issue OMS commands. If you have configured your SAP R/3 installation to use alternate servers, you must repeat these installation tasks on the alternate servers.

Note: You must install the AIX Client before you install the SAP R/3 Print Feature. If you install the SAP R/3 Print Feature first, the AIX Client will overwrite the SAP feature.

Defining a User for the OMS Callback Daemon on the SAP System Server

Because the OMS callback daemon must logon to the SAP system and its external management interface (XMI) to make RFC requests, you must define a user for it. Regardless of where the callback daemon runs, you will need this user information when you [Define the Infoprint Manager OMS to SAP R/3](#) on page 27.

To define a user for the Infoprint Manager Callback daemon, choose the following path on the SAP R/3 graphical user interface:

Tools > Administration > User maintenance > Users

The user should be a CPIC type and requires XOMI permissions to log into the CCMS system management XOM application programming interface. These authorizations can be provided in the S_XMI_XOM_A profile. For assistance, see your SAP Systems Administrator.

Remember to record the user, password, and client [for later use](#) (see table on page 30).

Note that if you ever change or modify this SAP user, remember to make the changes to the **SAP configuration** pane on the **Spool Admin.: Real Output Management (Change)** window, and the **rc.iprsap** file in the **/etc** directory on the Infoprint AIX server where the SAP callback daemon is running.

Deciding where to Run the SAP Callback Daemon

Each SAP R/3 system using the Infoprint Manager Callback support needs to have one callback daemon running. The SAP Callback daemon can run on the Infoprint AIX server or on a SAP R/3 application server (as long as that server is running on an AIX operating system). If you choose to run the SAP Callback daemon on an SAP R/3 application server running on AIX, then you must configure that application server into the Infoprint Manager cell (DCE) or as an Infoprint secondary server (non-DCE).

Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server(s)

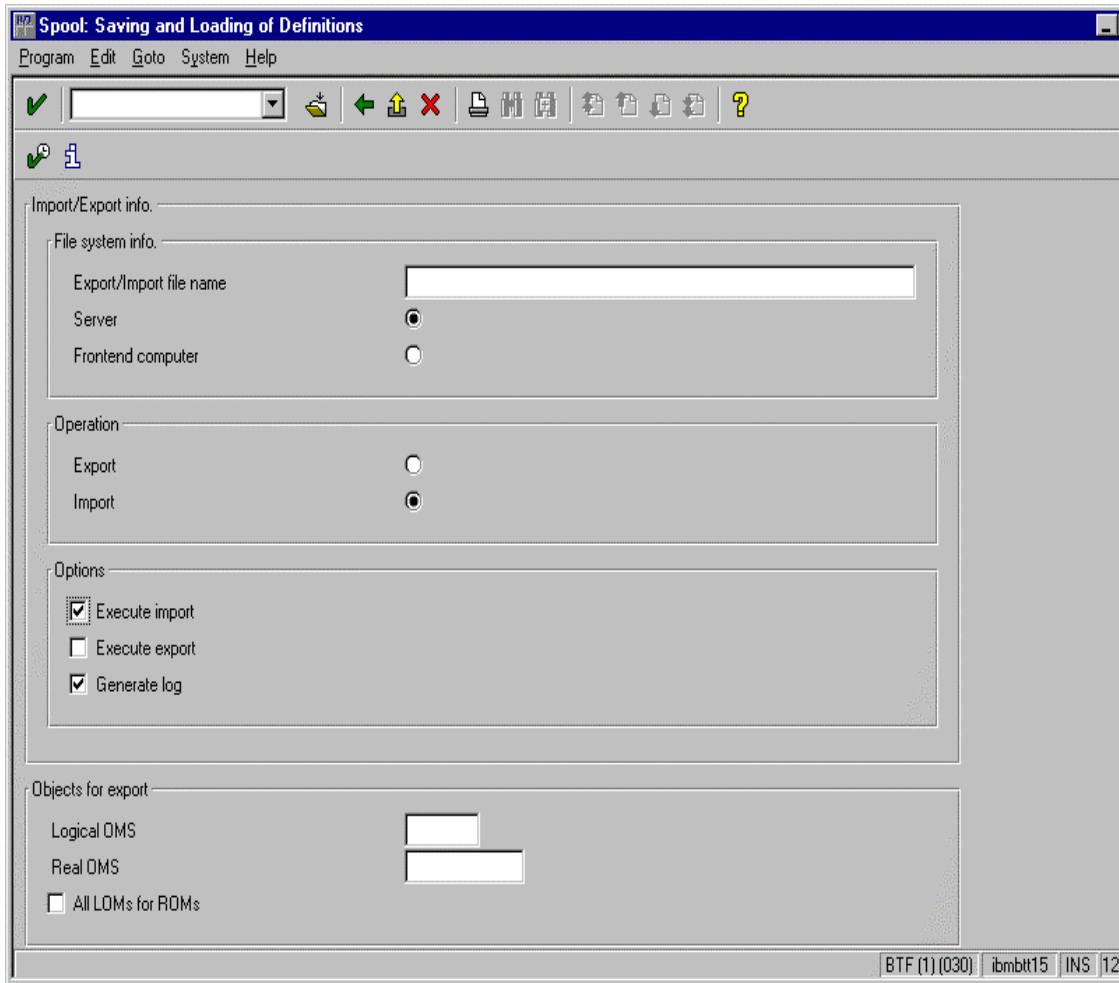
Infoprint Manager provides a configuration file to assist in defining Infoprint Manager as an OMS on your R/3 system. This procedure will define Infoprint Manager as the [Real Output Management System \(ROMS\)](#) on this page for your SAP R/3 installation, as well as defining a [Logical Output Management System \(LOMS\)](#) on page 32 so you can define Access Method E devices in SAP R/3.

Defining a Real Output Management System

Use the following procedure to define a Real Output Management System for SAP R/3:

1. Log onto your SAP R/3 Release 4 system.
2. Import the configuration file by entering transaction SA38.
3. From the **ABAP: Execute Program** window, specify RSPOXOMS in the **Program** field and click on the **execute** (checkmark) icon.
4. From the **Spool: Saving and Loading of Definitions** window shown below, specify `/usr/lpp/pd/bin/ipm.omsdesc` in the **Export/Import file name** field, ensure that the **Operation** pane is set to *Import*, the **File system info** pane is set to *Server*, and check both the **Execute import** and **Generate log** options in the **Options** pane.

Once you have set these options, click on the **Execute** (checkmark with a clock) icon.



5. Running the report displays a list of the ROMS and LOMS that have been imported into the system.
6. To complete the necessary definitions, specify the `spad` transaction.
7. From the **Spool Administration: Initial Screen** window, click on the **Extended admin** push-button (**f6** key) and select the **Real OMS** push-button from the **Output management systems** pane to obtain a list of the Real Output Management Systems (ROMS) available on your SAP application server.

You should now see IBM IPM listed.
8. From the **Spool Admin.: List of Real Output Management Systems** window, select the IBM IPM ROM and click on the **Choose** (checkmark with a clock or **f2** key) icon.

9. From the **Spool Admin.: Real Output Management (Display)** window, click the **Change** (red pencil **F8** key) icon.
10. From the **Spool Admin.: Real Output Management System (Change)** window displayed below, select an **Initialization instance**. The initialization instance is the instance that starts the callback daemon. The initialization instance you select depends upon where you decided where to run the callback daemon in [Decide Where to Run the SAP Callback Daemon](#) on page 35.
 - If you have a non-AIX SAP R/3 application server, you can specify any Initialization instance value.
 - If you have an AIX SAP R/3 application server and choose to run the callback daemon on the Infoprint AIX server, leave the **Initialization instance** field blank.
 - If you have an AIX SAP R/3 application server and you chose to run the callback daemon on one of those application servers, pick that particular application server as the initialization instance.

You specify an initialization instance value by moving your cursor to the arrow point down on the left side of the field and clicking on a value from the list of all active SAP R/3 application servers.

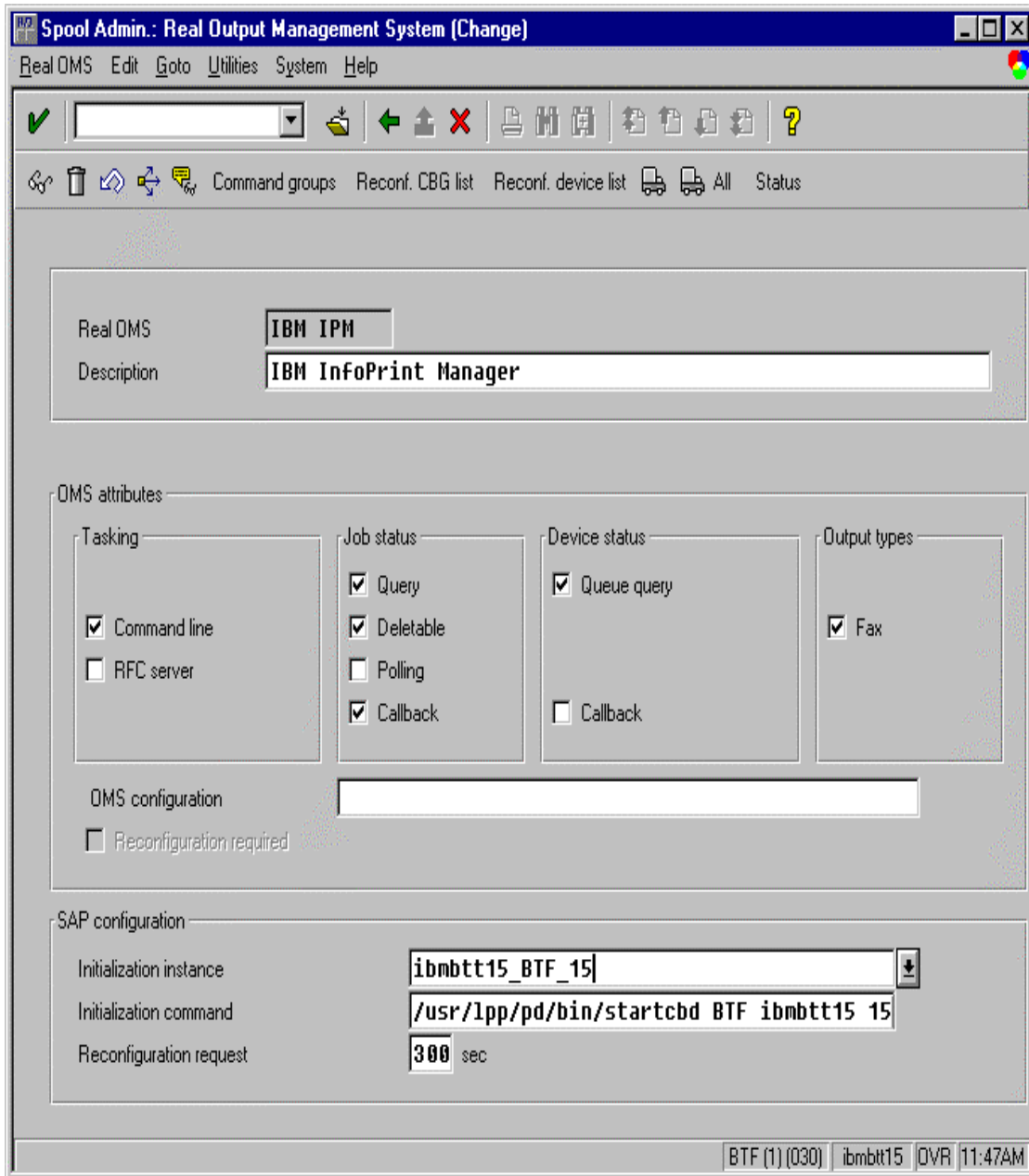
11. Specify an **Initialization command** value by moving your cursor to the field where you will see this text-string:

```
/usr/lpp/pd/bin/startcbd <SystemName> <Host Name> <InstanceID> <User>  
<Client> <Password> <Language>
```

Replace the generic values inside the angle brackets with variables like those displayed in the table that follows. The table displays the variables grouped into three components: **Command to Start the Callback Daemon**; **SAP R/3 Instance Where the Callback Daemon Logs On**; and the **Callback Daemon Userid information**. All variables in the table are examples and will differ from values that you specify, unless otherwise noted. The **Spool Admin.: Real Output Management System (Change)** window displayed just beneath the table uses these example variables.

Initialization command Field	Variables
Command to Start the Callback Daemon	
fully-qualified path for the command	<i>/usr/lpp/pd/bin/startcbd</i> Note: This value is hard-coded and may not be modified.
SAP R/3 Instance Where Callback Daemon Logs On	
<SystemName> Three-character system name	<i>BTf</i>
<Host Name>	<i>ibmbtt15</i>
<InstanceID>	<i>15</i>
Callback Daemon User ID Information	
<User>	<i>ibm</i> Note: This value and the two that follow were originally defined when you created a SAP userid for the OMS Callback daemon (see page 26).
<Client>	<i>030</i>
<Password>	<i>newname</i>
<Language>	<i>En</i>

Note: The resulting text string is the same that you will specify in the **startcbd** command when you [Start the SAP Callback Daemon](#) on page 37.



Note: Do not change any of the attributes specified in the **OMS attributes** pane above.

12. Save this information by clicking on the folder icon (or specifying the **Ctrl + S** keys).

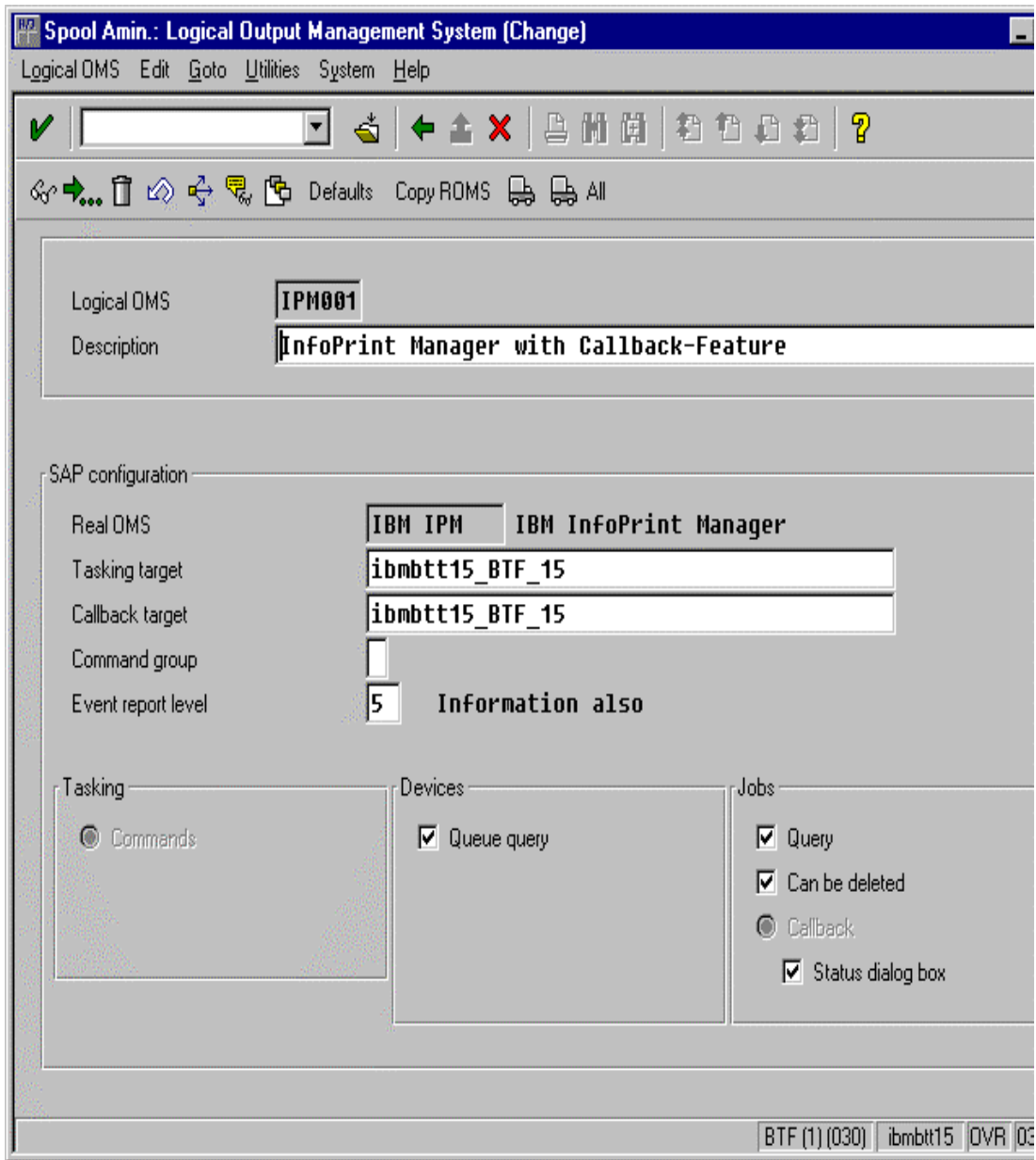
Defining a Logical Output Management System

Use the following procedure to define a Logical Output Management System for SAP R/3:

1. From the SAP R/3 graphical user interface, complete the Logical Output Management System (LOMS) definitions by specifying the `spad` transaction.
2. From the **Spool Administration: Initial Screen** window, click on the **Extended admin** push-button (**f6** key) and select the **Logical OMS** push-button from the **Output management systems** pane to obtain a list of the Logical Output Management Systems (LOMS) available on your installation.
3. From the **Spool Admin.: List of Logical Output Management Systems** window, select the `IPM001` LOMS and click on the **Choose** (checkmark with a clock or **f2** key) icon.
4. From the **Spool Admin.: Logical Output Management (Display)** window, click the **Change** (red pencil **f8** key) icon.
5. From the **Spool Admin.: Logical Output Management (Change)** window displayed below, specify a value from the list of all active SAP application servers for both the **Tasking target** field and the **Callback target** field in the format: `hostname_systemname_instanceID`, such as `ibmbtt15_BTF_15`.

The **Tasking target** field, specifies where the commands are invoked, while the **Callback target** field specifies where the asynchronous callbacks are delivered.

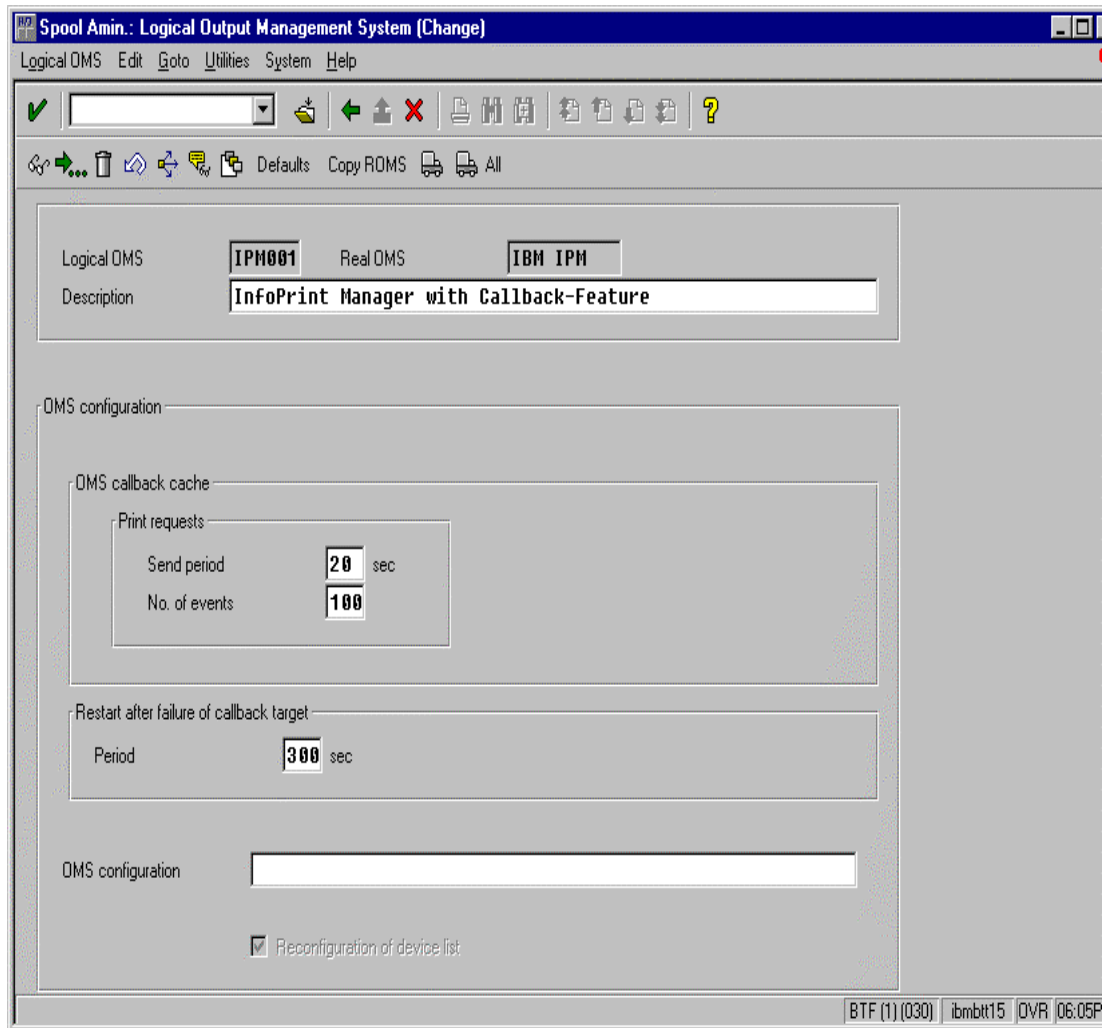
In addition, you should specify a value for the **Event report level** field in the **SAP configuration** pane. Use the downward arrow to determine the message level you want (1 is the least and 5 is the most).



- To ensure that users on your SAP R/3 system receive pop-up windows for both problem and completion notification messages about a job's status, check the **Status dialog box** field in the **Jobs** pane.

Note: Until SAP R/3 Release 4.5B, the pop-up message is always reported only to users in the client where the OMS callback daemon has logged on. You defined this client when you [Defined a User for the OMS Callback Daemon](#) on page 26. In SAP R/3 Release 4.5B, SAP delivers asynchronous pop-ups to users who are logged onto any SAP client.

7. Save this information by clicking on the **Save** (open folder) icon, or specifying the **Ctrl + S** keys.
8. From the top of the window, click on the **Next screen** (right-facing green arrow) icon, or specifying the **F5** key.
9. From this panel (displayed below), you can specify how often (**Send period** field) in seconds or how many (**No. of events** field) notification events the Infoprint Manager callback daemon should collect before delivery to the SAP R/3 system. In other words, the callback daemon will only deliver events for jobs on printers associated with this LOMS if it has collected x number, or x seconds have passed since the last delivery.



Installing the SAP R/3 Print Feature and the SAP Fonts on the Infoprint AIX Server

If you have chosen to run the SAP Callback daemon on the Infoprint AIX server, or if you are printing Output Text Format (OTF) data, you must install the SAP R/3 Print feature on the Infoprint AIX server, if you have not already done so. Perform this task by using the [Infoprint Installer instructions](#) that are contained on both the web pages and the "Installing Infoprint Manager Control on Your AIX System" PDF file. Also, if you are printing Output Text Format (OTF) data, ensure that you have configured the configuration files that are described in [Configuring the SAP R/3 Transform](#) on page 22, and installed the [fonts](#) (see page 15) necessary for printing on the Infoprint AIX server.

Configuring the SAP Callback Daemon

Each SAP R/3 system using the Infoprint Manager Callback support needs to have one callback daemon running. The SAP Callback daemon can run on the Infoprint AIX server or on a SAP R/3 application server (as long as that server is running on an AIX operating system). If you choose to run the SAP Callback daemon on an SAP R/3 application server running on AIX, then you must configure that application server into the Infoprint Manager cell (DCE) or as an Infoprint secondary server (non-DCE). Based on where you decide to run this process, perform **only one** of the following tasks.

Running on the Infoprint AIX Server

You can run the SAP callback daemon on the Infoprint AIX server instead of on the SAP R/3 application server. To ensure that the SAP daemon (**sapcbd**) is restarted automatically whenever the system it is running on is restarted, specify the following from the AIX command line:

```
mkitab "rciprsap:2:once:/etc/rc.iprsap.out 2&1 # Autostart of Infoprint  
sapcbd"
```

Note that starting additional SAP Callback daemons does not require you to perform this step again.

Running on the SAP R/3 Application Server

If you choose to run the SAP Callback daemon on an SAP R/3 application server, use either the procedure for using a non-DCE version of Infoprint Manager, or the procedure for using a DCE version of Infoprint Manager, depending upon your installation.

To configure the callback daemon to run with the non-DCE version of Infoprint Manager, do the following:

1. From the Infoprint AIX server, open the Infoprint SMIT interface by typing either "smit" or "smitty" (for the ASCII interface) .
2. Click **InfoPrint Utilities --> Configure Secondary Servers (NFS) --> Link From Primary Server to Secondary Server**. Enter the requested information about the SAP application server, treating the SAP application server as if it were a secondary server.
3. On the SAP system, log on as root user and type the following command:

```
/usr/lpp/InfoPrint/install/bin/link2prim.ksh -ph  
prim_srvr_hostname
```

(If name resolution services (DNS or NIS) are not in use, append `-a prim_srvr_ip_addr` to the command, where `prim_srvr_hostname` is the host name of the primary system and `prim_srvr_ip_addr` is the IP address of the primary system.

4. From the AIX command line, enter the following command:
`/usr/lpp/InfoPrint/install/bin/sapcfg.ksh`
5. Answer the questions as prompted.

If your network is not using name resolution services (like DNS), then you must enter the primary server's IP address (instead of host name) when prompted to **Enter primary server host name** by the `sapcfg.ksh` script.

To configure the callback daemon to run with the DCE version of Infoprint Manager, do the following:

1. Ensure that you have installed the DCE client code.
2. From the AIX command line, enter the following command:
`/usr/lpp/InfoPrint/install/bin/sapcfg.ksh -d`
3. Answer the questions as prompted.

If your network is not using name resolution services (like DNS), then you must enter the primary server's IP address (instead of host name) when prompted to **Enter primary server host name** by the `sapcfg.ksh` script.

Starting the SAP Callback Daemon

To start the SAP Callback daemon (regardless of whether you have installed it on the SAP System that you selected in step 10 of [Defining a Real Output Management System](#) (see Page 27) or on the [Infoprint AIX server](#) on page 35), you must run the `/etc/rc.iprsap` file from the AIX command line.

From the AIX command line, access the `rc.iprsap` file in the `/etc` directory. Edit the file and copy the commented `startcbd` command at the top of the file (`/usr/lpp/pd/bin/startcbd <SystemName> <Host Name> <InstanceID> <User> <Client> <Password> <Language>`) and specify the same values that you entered for the initialization command on the **Spool Admin.: Real Output Management System (Change)** window.

Once you have saved and exited the file, run the SAP Callback daemon from the command line by specifying:

```
/etc/rc.iprsap
```

If the callback daemon has started correctly, you should see the following response:

```
0 Successfully\started\SAPCBD
```

If you receive any other message, the daemon has not started correctly. To resolve the problem, refer to the `/var/pd/sapcbd.sysname/error.log` file (where `sysname` is the SAP R/3 system name to which the SAP callback daemon is delivering events), correct the problems cited, and try to start the Callback daemon again. If it still does not start correctly, contact your Printing Systems Company technical support representative.

Now that you have finished defining the Infoprint Manager OMS to your SAP R/3 Release 4 system, you can begin to define devices so you can [print or fax from SAP R/3](#) with Infoprint Manager by using pages 38 through 83 of this document.

Defining Output Devices for Printing ABAP and OTF on SAP R/3 Release 3

The following topic describes how to create a new output device in SAP R/3 Release 3 for submitting both ABAP and OTF data to Infoprint Manager 3.1 for both transforming to AFP data and printing the output.

To enable this support, a SAP R/3 administrator must perform the following procedure from the SAP R/3 graphical user interface:

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:

Field	Value
Output Device	<i>Prt1</i> Type the name that R/3 users will need to access the printer.
Device type	<i>IBMAFP</i> Specify the device type that has been defined in the R/3 system for the printer model. IBMAFP is the 240-pel printer designation, while IBMAFP3 is the 300-pel printer designation. You may have customized versions of these device types as well.
Spool server	<i>us01d2_P40_41</i> Specifies the name of the R/3 application server which will be the spool server that processes requests for this device.
Host printer	<i>prt1-lp</i> Specifies the name of the Infoprint Manager logical printer.
Device class	Enter a space so that this field accepts the default value of printer.
Access method in host spool	<i>Z</i> Specifies the method that the spool work process uses to pass data to the host spool system.

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

Defining Devices that Use Infoprint Manager for Access

Method L

The following topic describes how to create a new output device for printing PCL and PostScript data to Infoprint Manager 3.1 on SAP R/3 Release 3.

To enable this support, a SAP R/3 administrator must perform the following procedure from the SAP R/3 graphical user interface:

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.

- Select the **Create** icon and fill in the following information on the **Create Output Device** window:

Field	Value
Output Device	<p><i>PRT1</i></p> <p>Type the name that R/3 users will need to access the printer.</p>
Device type	<p><i>POSTSCPT</i></p> <p>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.</p>
Spool server	<p><i>us01d2_P40_41</i></p> <p>Select the name of the R/3 application server which will be the SAP R/3 spool server (spool work process) that processes requests for this device.</p>
Host printer	<p><i>prt1-lp</i></p> <p>Type the name of the Infoprint Manager logical printer.</p>
Device class	<p>Enter a space so that this field accepts the default value of printer, which is <i>P</i>.</p>
Access method in host spool	<p><i>L</i></p> <p>Select the method that the spool work process uses to pass data to the host spool system.</p>

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

Defining Devices that Use Infoprint Manager for Access

Method U

This method is intended for use by Infoprint Manager users whose SAP R/3 applications run on non-AIX UNIX systems. For a preferred method of submitting jobs from non-AIX UNIX systems with Infoprint Manager that provides better feedback, see [Installing Infoprint when SAP Runs on HP-UX or Sun Servers](#) on page 9.

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 HP-UX or Sun server to Infoprint Manager 3.1 running on AIX.

To enable this support, a SAP R/3 administrator must perform the following procedure from the SAP R/3 graphical user interface:

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:

Field	Value
Output Device	<i>PRT1</i> Type the name that R/3 users will need to access the printer.
Device type	<i>POSTSCPT</i> 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	<i>us01d2_P40_41</i> 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	<i>nwser</i> Type the hostname for the Infoprint AIX server.
Host printer	<i>prt1-lp</i> Type the name of the Infoprint Manager logical printer.
Device class	Enter a space so that this field accepts the default value of printer, which is <i>P</i> .
Access method in host spool	<i>U</i> Select the method that the spool work process uses to pass data to the host spool system.

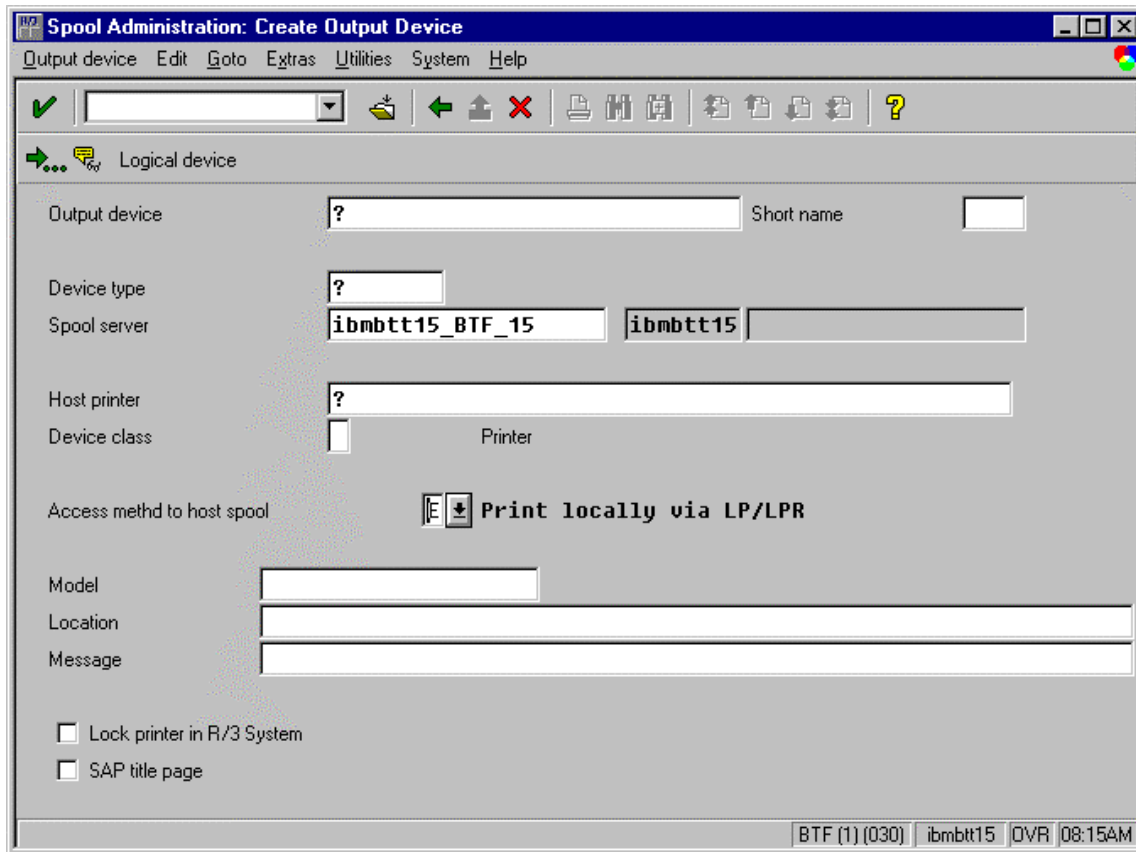
5. From the menu bar, click on the **Back** icon and the system will prompt you to save the new output device.

Printing from SAP R/3 Release 4 (Enhanced Status)

Use the following procedure to define devices to SAP R/3 Release 4. For more information, you might want to consult the "Connecting a Printer to an External Output Management System" topic in the SAP R/3 online documentation.

1. Ensure that you have a logical printer defined in Infoprint Manager, which will send jobs to your physical printer device.
2. From the SAP R/3 graphical user interface, specify the `spad` transaction.
3. From the **Spool Administration: Initial Screen** window, click the **Output Devices** button, click the **Change** (red pencil **F8** key) icon, and push the **Output Devices** push-button.
4. From the **Spool Administration: List of Output Devices** window, click the **Create** (white paper image to the right of the trash can) icon.
5. From the **Spool Administration: Create Output Device** window displayed below, fill in the following pieces of information:

From the Spool Administration: Create Output Device window displayed below, fill in the following pieces of information: Field	Examples
Output device: Specify a long name and allow the system to generate a short name.	IPM
Device type: Specifies the output data stream.	SAPGOF
Host printer: Type the Infoprint Manager logical printer name.	ip01-sam
Access method to host spool: Ensure you specify this Access Method.	E
LOMS: Specify the LOMS to which this device should be assigned. You specified this value on the Spool Admin.: Logical Output Management System window under Define the Infoprint Manager OMS to SAP R/3 on page 27.	IPM001
Spool server: Choose an applicable spool server from the entries list on the field.	ibmbtt15_BTF_15



Save this information by clicking on the folder icon (or specifying the **Ctrl + S** keys), then exit the interface.

Once you have saved these changes, you have a devices that will print to Infoprint Manager using Access Method **E**.

Because this device is defined to send jobs to Infoprint Manager, you can, among other tasks, [View Job Status](#) , [Job Events, and Job Queries](#) (page 52), [Display Devices](#) (p. 54), and [Cancel a Job](#) (p. 56).

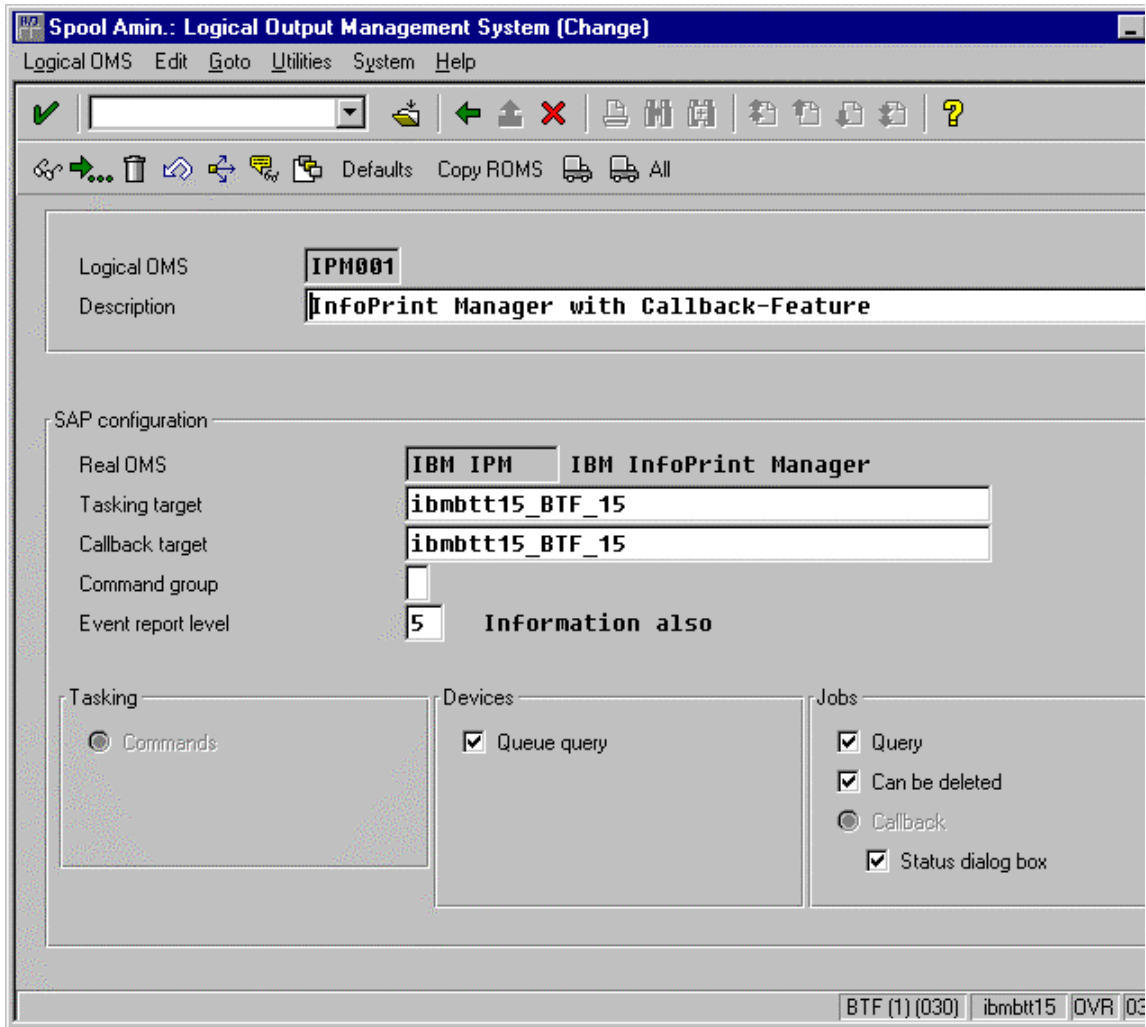
Activating End-User Pop-Ups

Infoprint Manager Version 3.1 delivers information to SAP R/3 about output requests (print jobs) as they process. SAP will alert job owners about problem completion and error information delivered from Infoprint Manager 3.1 through end-user pop-up messages.

Note: Until SAP R/3 Release 4.5B, the pop-up message is always reported only to users in the client where the OMS callback daemon has logged on. You defined this client when you [Defined a User for the OMS Callback Daemon](#) on page 26. In SAP R/3 Release 4.5B, SAP delivers asynchronous pop-ups to users who are logged onto any SAP client.

To activate this support, ensure that you have done the following while installing and configuring Infoprint Manager with SAP R/3 Release 4.

1. From the SAP R/3 graphical user interface, modify the Logical Output Management System (LOMS) definitions by specifying the `spad` transaction.
2. From the **Spool Administration: Initial Screen** window, click on the **Extended admin** push-button (**f6** key) and select the **Logical OMS** push-button from the **Output management systems** pane to obtain a list of the Logical Output Management Systems (LOMS) available on your installation.
3. From the **Spool Admin.: List of Logical Output Management Systems** window, select the `IPM001` LOMS or another appropriate LOMS and click on the **Choose** (checkmark with a clock or **f2** key) icon.
4. From the **Spool Admin.: Logical Output Management (Display)** window, click the **Change** (red pencil **f8** key) icon.
5. From the **Spool Admin.: Logical Output Management System** window that is displayed below, check the **Status dialog box** field in the **Jobs** pane and save the changes.



6. Once you have specified this setting, information from the Infoprint Manager sent back to your SAP R/3 application server will be delivered in the form of a pop-up window. For example, if an output request was canceled, a pop-up **Information** window like the one displayed below should appear on the output requesters' SAPGUI.



Organizing OMS Output Devices into LOMs

While you can assign all of your R/3 OMS output devices to a single Logical Output Management System (LOMS), it might be useful to group output devices into separate LOMS. These separate LOMS can be based upon the functions that they perform, such as the four listed immediately below.

Using Separate Command Groups

You can define a different set of OMS command for each LOMS that you have defined. For example, your Infoprint Manager printers may require different submit command options, depending upon whether you are printing from ABAP and OTF input, or PCL and PostScript input. You can assign both sets of printers to their own LOMS and define a special command group that uses the special options for each LOMS.

Using Different OMS Services

You can define LOMSs to allow for the use of different OMS services by a group of printers. For example, you can restrict access to a particular ROMS feature like job cancellation. By creating a LOMS and turning off job cancellation, you can prevent SAP R/3 users from deleting output requests that are sent to the devices of the LOMS.

Distributing the Callback Workload

You can define separate LOMSs to distribute the workload of processing status reports from the Infoprint callback daemon. For each LOMS, specify a different R/3 server as the callback target. Before implementing this feature, consult the online documentation about LOMS that is provided with your SAP R/3 Release 4 system.

Using Different Report Levels or Event Delivery Criteria

You could also specify different report levels on the **Spool Admin.: Logical Output Management System (Change)** window, as described in [Selecting Event Report Levels](#) (page 51).

Moving OMS Definitions Between Systems

You can maintain OMS definitions on a single application server by replicating your Infoprint Manager OMS definitions in other SAP R/3 systems. If you need to make changes to OMS definitions, you can then transport the OMS objects from the maintenance system to your other systems.

This maintenance model requires you to use only logical spool servers in the following:

- OMS ROMS and LOMS definitions
- Infoprint Manager Output device definitions

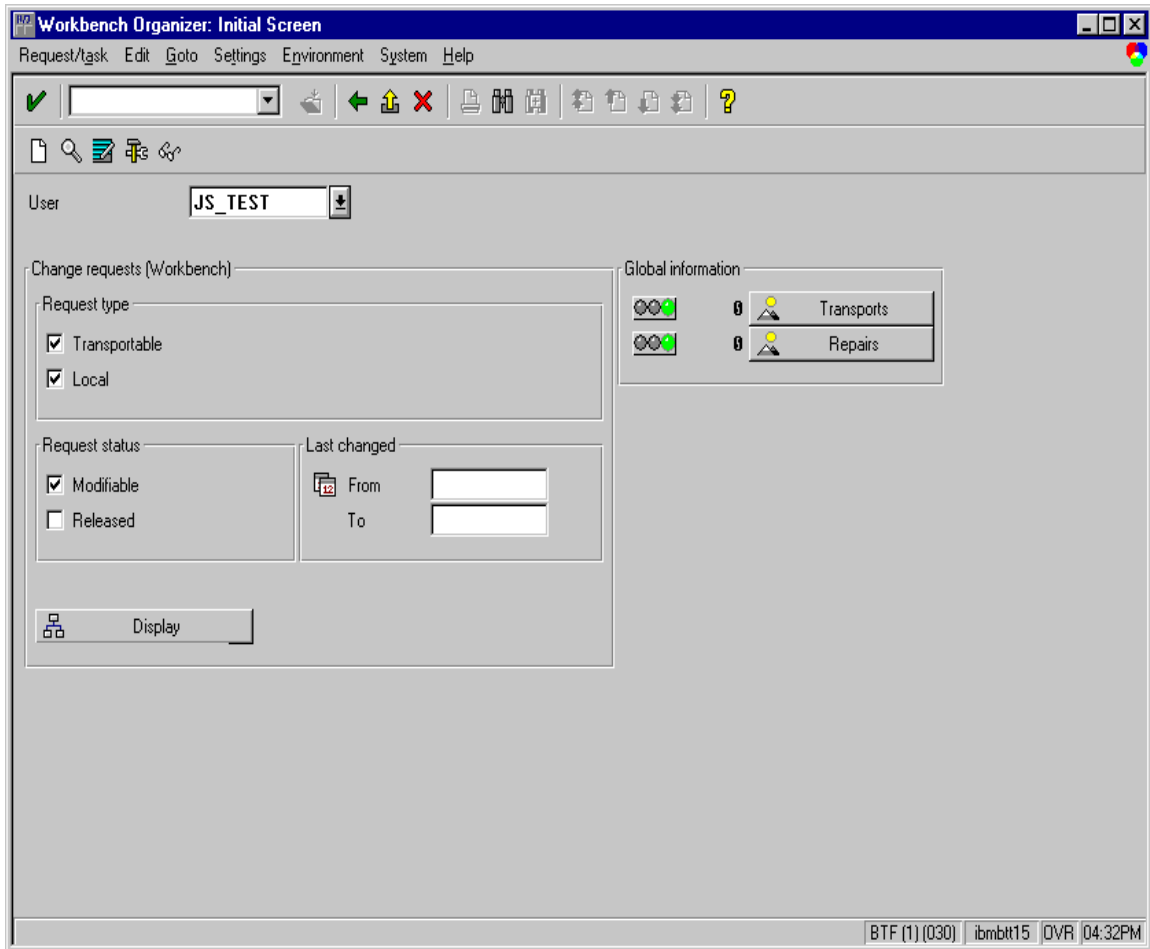
Logical servers allow you to organize your printing architecture and manage printers. By using only logical spool servers, you will not have to change server names in the OMS definitions after you have transported them. For more information about Logical Servers, refer to the "Spool Server Definitions: Classifying Servers, Using Logical Servers, and Using Alternate Servers" topic in your SAP R/3 Release 4 online documentation.

The following procedure describes how you can use the R/3 logistics (transport) system to move OMS definitions between SAP R/3 systems:

1. From the R/3 main menu, access the **Real OMS** window by using the following path **Tools > CCMS > Spool > Spool Administration**, or type `spad` in the **ok-Code** field.
2. From the **Spool Admin.: Initial Screen** window, click on the **Extended admin** push-button (**f6** key) and select the **Real OMS** push-button from the **Output management systems** pane to obtain a list of the Real Output Management Systems (ROMS) available on your installation.
3. From the **Spool Admin.: List of Real Output Management Systems** window, select the **Change mode** push-button from the ROMS list and double-click on the ROMS definition that you want to transport.
4. From the **Spool Admin.: Real Output Management System** window, choose the appropriate transport function:
 - To transport only the ROMS definition, push the **Transport** (truck) icon or specify the **Ctrl + f5** key.
 - To transport both the ROMS definition and all LOMS definitions that reference it, push the **Transport all** (truck) icon to the right or specify the **Ctrl + f6** key.

In either case, a transport request is created for transporting the OMS definition objects to other R/3 systems.

To transport your OMS definitions, type /SE09 in the **ok-Code** field so you can complete this task from the R/3 software logistics transport system.



To perform this transport and verify that it is successful, refer to the SAP R/3 online logistics documentation.

Selecting Event Report Levels

The following procedure describes how you can specify the level of Events that the callback daemon reports for jobs submitted through Infoprint Manager. For an example of the **Spool Admin.: Logical Output Management System** window, refer to page 34.

1. From the SAP R/3 graphical user interface, modify the Logical Output Management System (LOMS) definitions by specifying the `spad` transaction.
2. From the **Spool Administration: Initial Screen** window, click on the **Extended admin** push-button (**f6** key) and select the **Logical OMS** push-button from the **Output management systems** pane to obtain a list of the Logical Output Management Systems (LOMS) available on your installation.
3. From the **Spool Admin.: List of Logical Output Management Systems** window, select the `Ipm001` LOMS and click on the **Choose** (checkmark with a clock or **f2** key) icon.
4. From the **Spool Admin.: Logical Output Management (Display)** window, click the **Change** (red pencil **f8** key) icon.
5. From the **Spool Admin.: Logical Output Management System (Change)** window, specify a value for the **Event report level** field in the **SAP configuration** pane. Use the downward arrow to determine the message level you want (1 is the least and 5 is the most).

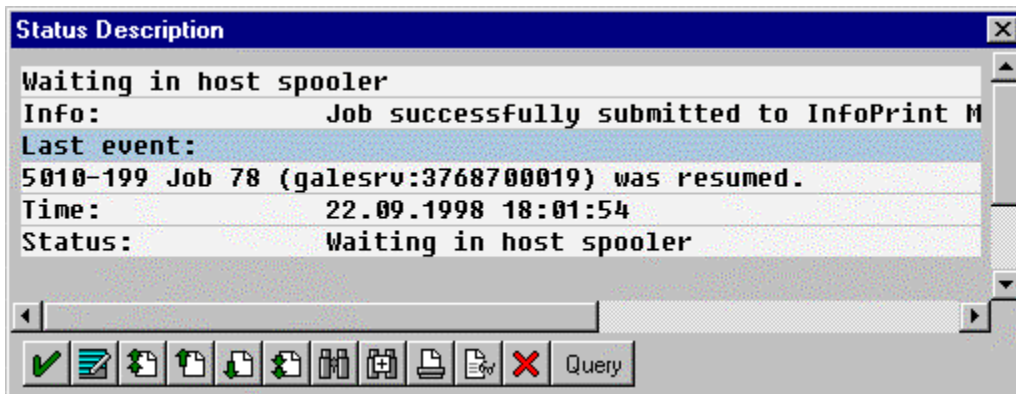
When you have finished, be sure to save your changed LOMS definition by clicking the **Save** folder icon.

Viewing Enhanced Job Status, Job Events, and Querying Jobs

The following procedure describes Output Management System (OMS) support for obtaining information about a print job sent to Infoprint Manager. By using this feature, you can see asynchronous events and synchronous queries about jobs reported to your SAP R/3 system.

To view the status of an output request, use the following procedure from the SAP R/3 Release 4 graphical user interface:

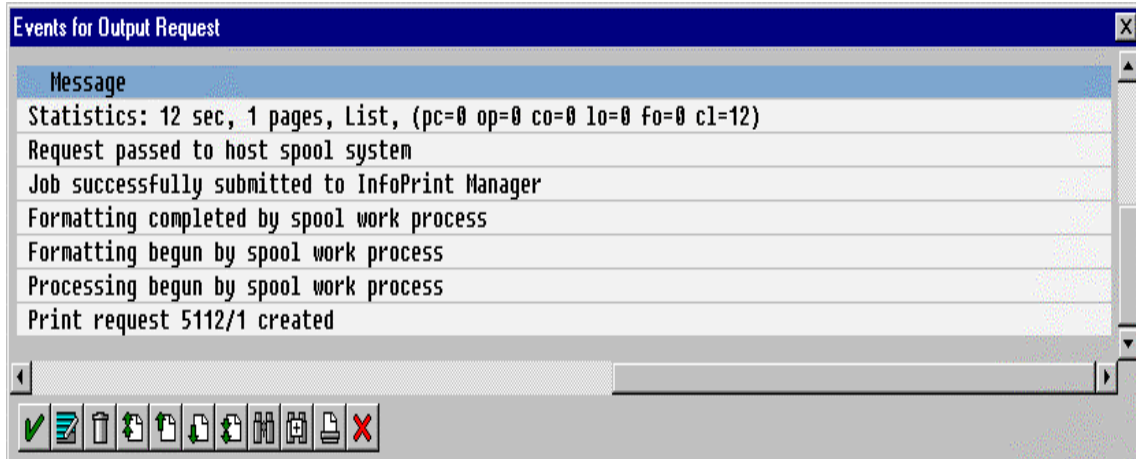
1. From the **Output Requests for Spool Request** xxxxxxxx window (where xxxxxxxx refers to the SAP Spool ID), double-click on the output request you want to view in the **Status** column on the far right.
2. From the **Status Description** pop-up window (example displayed below), you can see current information about the job, including the last event received. Click on the Events (**F5** key) button.



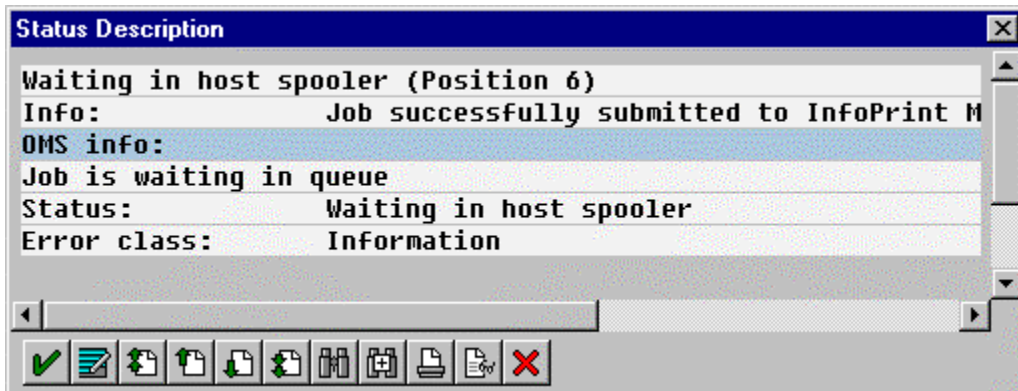
3. From the **Events for Output Requests** pop-up window (displayed below), you can view all the events concerning this job.

Date	Time	Class	Area	Status	Printout
22.09.1998	18:28:46	Problem	Spool	Waiting in host spooler	Not printed
22.09.1998	18:01:54	Information	Spool	Waiting in host spooler	Not printed
22.09.1998	18:01:42	Information	Spool	Waiting in host spooler	Not printed
22.09.1998	18:01:31	Problem	Spool	Waiting in host spooler	Not printed
22.09.1998	17:58:53	Information	Spool	Waiting in host spooler	Not printed
22.09.1998	17:58:53	Information	Spool	Waiting in host spooler	Not printed
22.09.1998	17:57:11	Information	R/3 spool		Not printed

Note: This **Events for Output Requests** pop-up window is displayed two times to show (1) the right side of the window with the date, time, and current status of the job, and (2) the left-side of the window with its message text.



4. From the **Status Description** pop-up window, you can also click on the Query (f8 key) button and issue a query to return the current information for a job, including its position in the queue. For example, the following displays the result of a 'Query' for a job that has been successfully submitted for printing:



When you close this 'query' **Status Description** window, the system updates the latest status for that job in other displays.

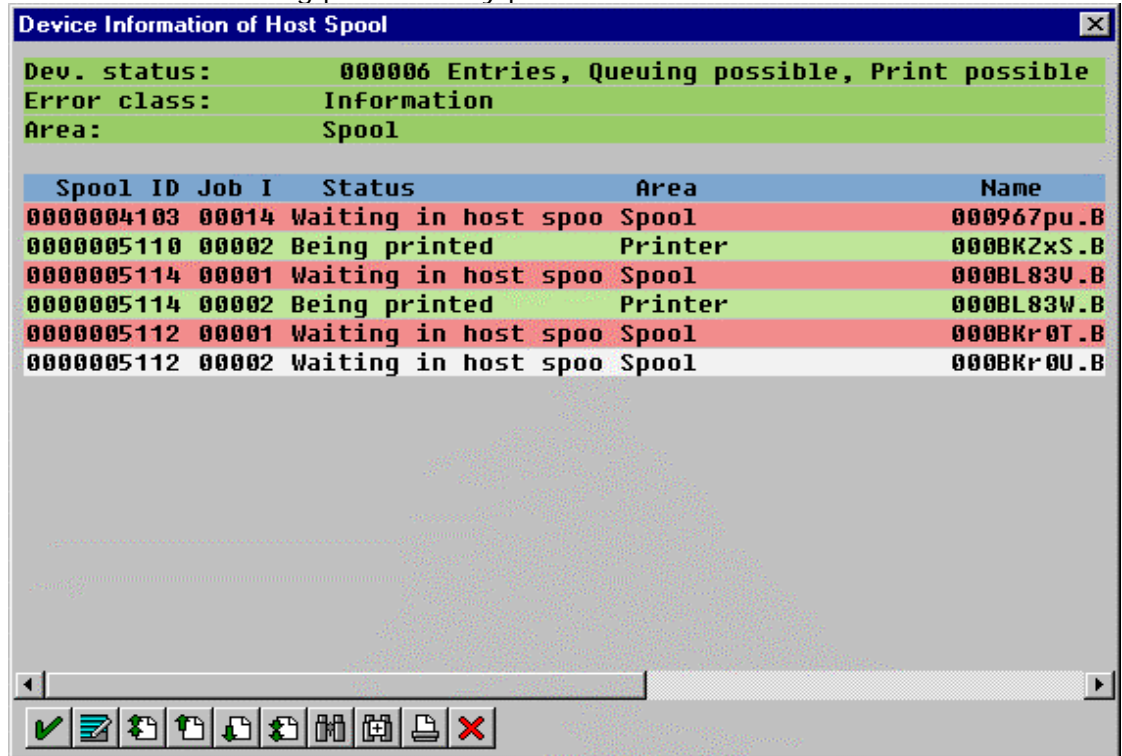
Displaying Device Status

To display the status of Infoprint Manager printers and the queue of jobs that have been sent to an Infoprint printer, use the following procedure from the SAP R/3 graphical user interface:

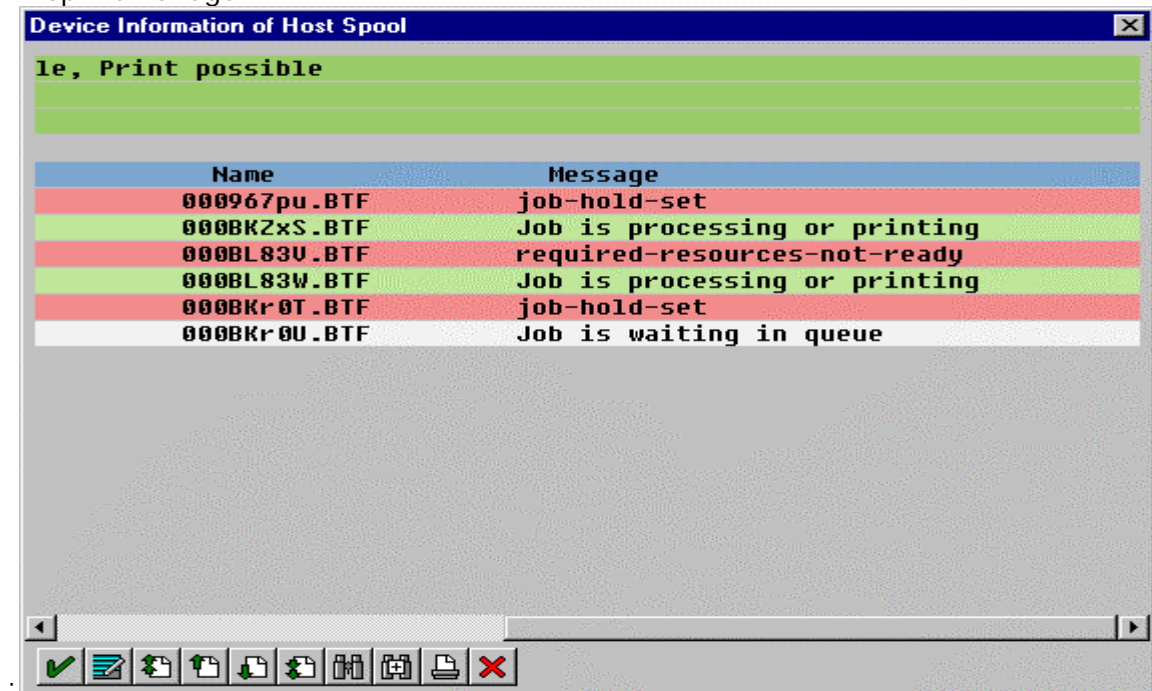
1. From the R/3 main menu, access the **Spool Administration: Initial Screen** window by selecting the Tools main menu and then selecting the **Tools--Administration--Spool--Spool Administration** path
or typing /nSPAD in the **ok-Code** field.
2. From the **Spool Administration: Initial Screen** window, click on the **Output devices** button from the **Configuration** area.
3. From the **Spool Administration: List of Output Devices** window, do the following:
 1. Highlight the your Infoprint printer from the **Devices** column.
 2. Press the **Output device** pull-down menu and select the **Choose** option (or specify the **f2** key).
4. From the **Spool Administration: Change Output Device (Display)** window, click on the **External jobs** button.
5. The **Device Information of Host Spool** pop-up window displays the status of this device.

Note that this window is displayed twice to capture both the right and the left sides.

1. This section indicates that there are six jobs in the Infoprint Manager queue, two of which are being processed by printers:



- (2) The list of jobs includes information about each job, including its current status in Infoprint Manager:

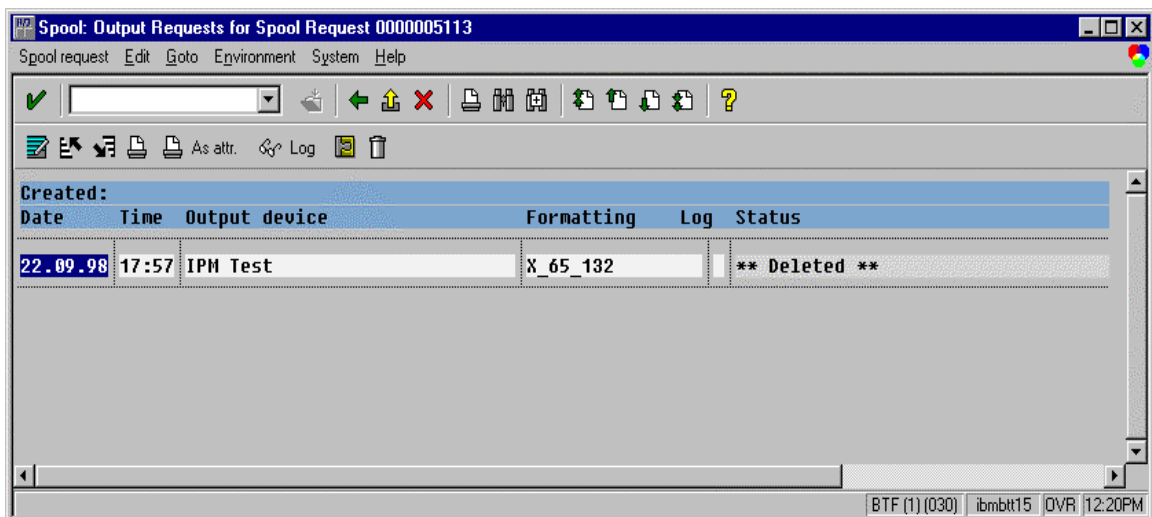


Canceling Jobs

The following procedure describes how you can cancel SAP print jobs that you have sent to the Infoprint AIX server. Use the following procedure from the SAP R/3 Release 4 graphical user interface. Note that this procedure provides only one of many methods for accessing the **Spool Output Requests for Spool Request XXXXXXXXXX** window.

1. From the R/3 main menu, access the **Spool Administration: Initial Screen** window by typing `/nspad` in the **ok-Code** field.
2. From the **Spool Administration: Initial Screen** window, click on the **Output devices** button from the **Configuration** area.
3. From the **Spool Administration: List of Output Devices** window, do the following:
 1. From the **Devices** column, use the mouse to highlight the SAP device that you used to send your job to Infoprint Manager.
 2. Press the **Spool Requests (shift + f6)** key button.
4. From the **Spool Requests for Device XXX** (where XXX is the name of the device that you selected), double-click on the spool request of the output request that you want to cancel.
5. From the **Spool: Attributes** window, click on the **Output requests** button.
6. From the **Spool Output Requests for Spool Request XXXXXXXXXX** window (where XXXXXXXXXX is the number of your spool request), click on the output request you want to cancel to highlight it and then click on the trash can icon (or specify the **shift + f2** key) to delete the output request from Infoprint Manager.

This step invokes the Infoprint Manager command for canceling a job (`pdrm`).



Shutting Down the SAP Callback Daemon

The following procedure describes how you can shut down the SAP Callback daemon and restart it. This procedure is useful if you are moving the SAP Callback daemon from one SAP application server to another, or if the SAP R/3 system it supports is not going to be used for awhile.

From an AIX command line on the system where the SAP Callback daemon is currently running (whether Infoprint AIX server or SAP application server), type:

```
stopcbd systemname
```

where *systemname* is your 3-character SAP R/3 system name.

This command stops the Callback daemon, enabling you to migrate it from one server to another.

If you do not want a reboot of the system to restart the SAP Callback daemon (whether Infoprint AIX server or SAP application server), remove its entry in the **/etc/rc.ipsap** file.

If you are moving the SAP Callback daemon to another system, remember to follow the instructions for both [Configuring the Callback Daemon](#) (page 35) and [Starting the SAP Callback Daemon](#) (page 37).

Customizing Print Characteristics by 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 existing Device Types (such as *IBMAFP*, *IBMAFP3*, or *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 [X]

Object

Attributes

Development class [v]




Author

Repaired

Original system

Original language

Generated object

 Local object  Lock overview 

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** (see page 67), 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 Commands 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](#) (page 64) 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 New ABAP Format](#)
- [Defining a New OTF Format](#)

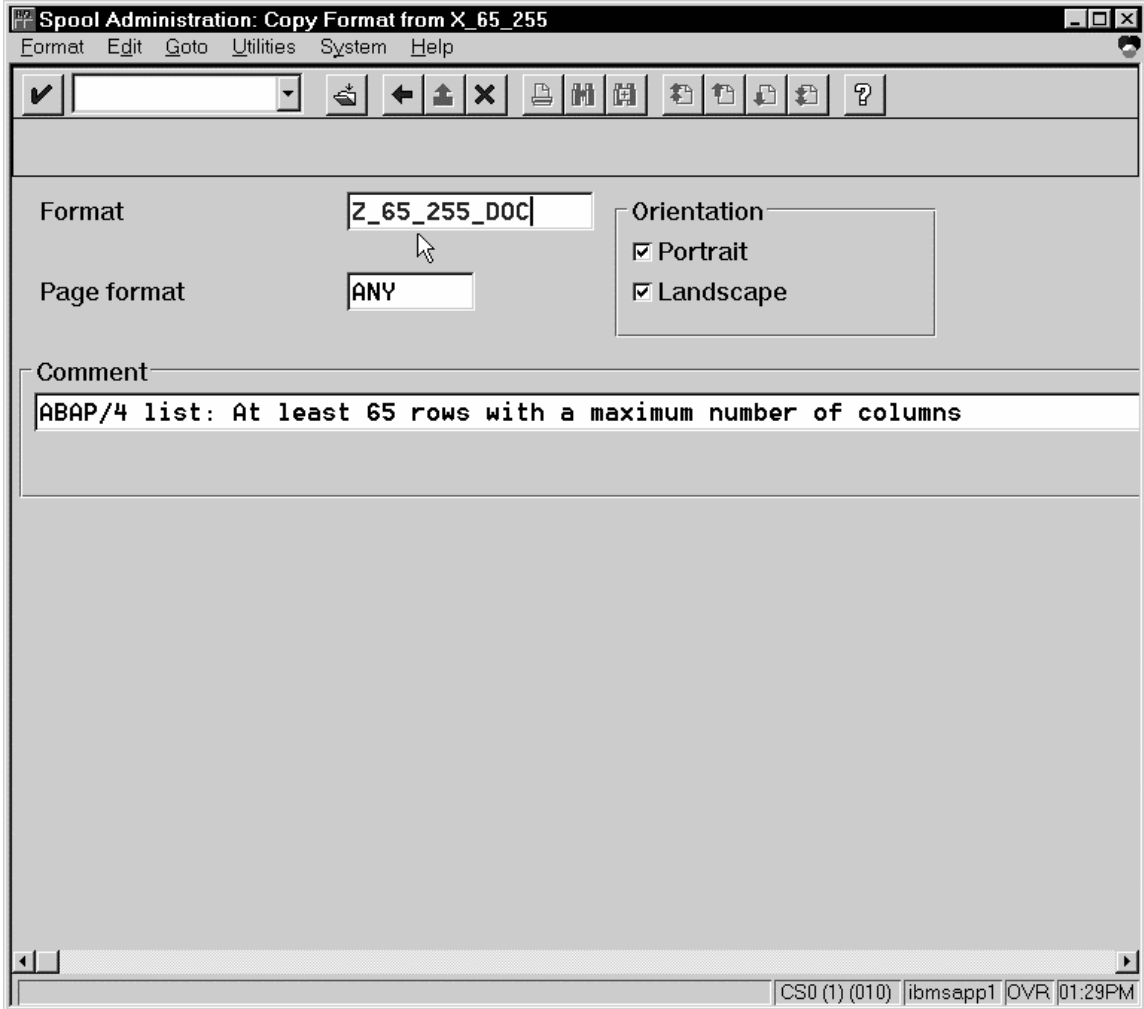
Defining a New ABAP Format

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** panel, 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:



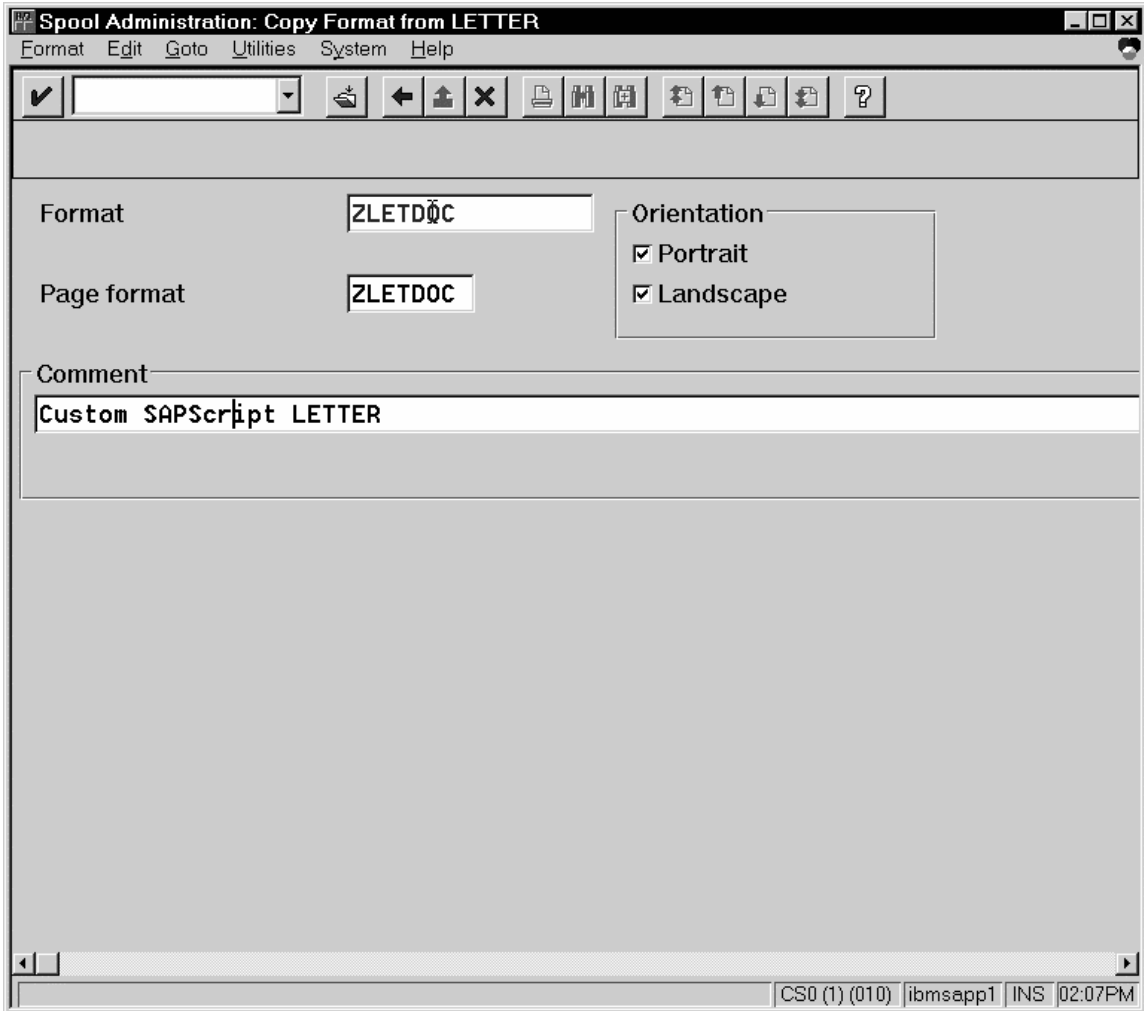
5. Select the back **icon** (the left-pointing arrow) and the system prompts you to save the new ABAP format.

Once you have saved the new ABAP format, you must [Connect the New Format to a Device Type](#) as described on page 64.

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 /nSPAD 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:



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 [Connect the New Format to a Device Type](#) as described on page 64.

Connecting a New Format to a Device Type

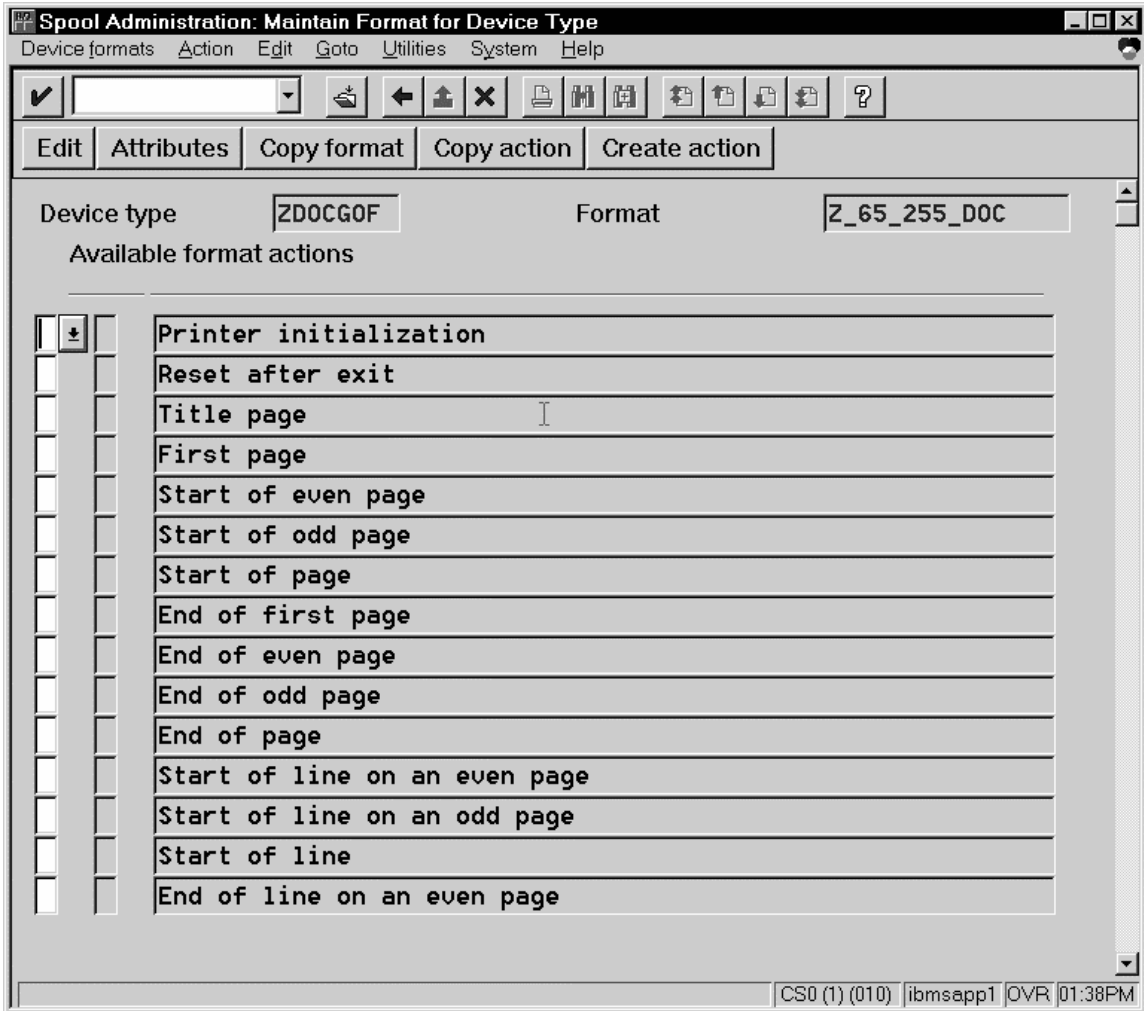
To use the format you created, you must connect the format to a device type by performing the following steps:

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.

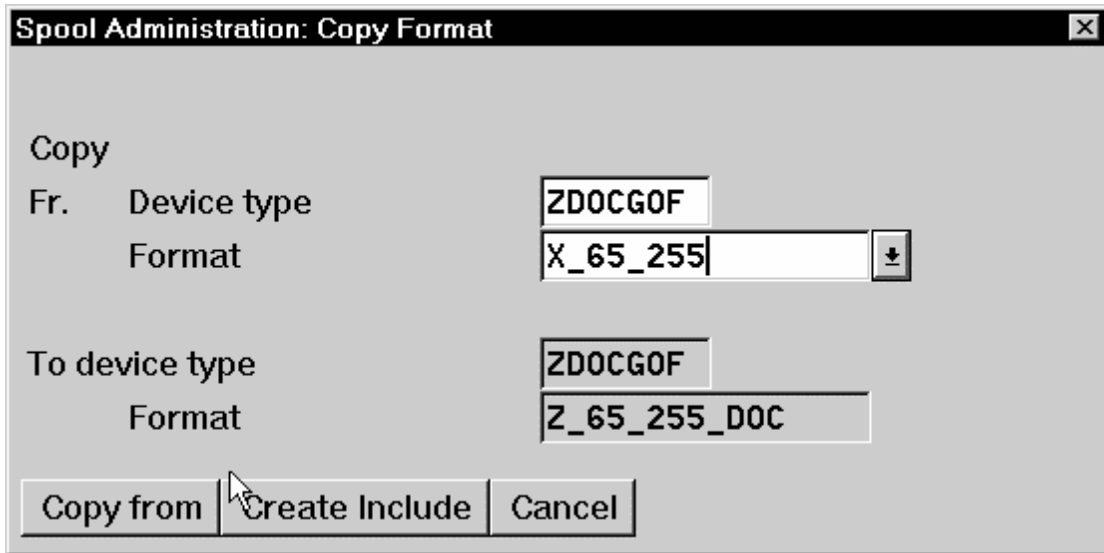
or typing /nSPAD in the **ok-Code** field.
2. From the **Spool Administration: initial screen** window, select the **Device formats** option and click the **Change** push-button.
3. From the **Spool Administration: Choose Format for Device Type** window, specify the Device Type (link to creating custom 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:



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:



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 **/usr/lpp/psf/sap2afp** directory 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.

F1SAP Form Definition

After you apply this APAR, the form definition specified in the **pagedef.tab** configuration file will be 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.

Media Map	Bin	Sides	Presentation Mode
F1A10111	1	2	Portrait
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
T100000P	1	2 (Tumble)	Portrait
S100000L	1	1	Landscape
S200000L	2	1	Landscape

Media Map	Bin	Sides	Presentation Mode
S300000L	3	1	Landscape
S400000L	4	2	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

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](#) on page 60. 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** (page 67), 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 Commands 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 selecting:

Tools -- Word Processing -- Layout Set

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:

Layout Set: Change Pages: ZASORDER1

Layoutset Edit Goto Attributes Utilities Environment System Help

Choose Header Paragraphs Character strings Windows Page windows

Pages

Page	Meaning	NextPage	Mode	No. type
FIRST	First page	NEXT	START	ARABIC
NEXT	Next page	NEXT	INC	ARABIC

Page 1 frm 2

Standard attributes

Page: FIRST Description: First page

Next page: NEXT

Page counter: Mode: START

Numbering type: ARABIC

Print attributes

Resource name: S100000L

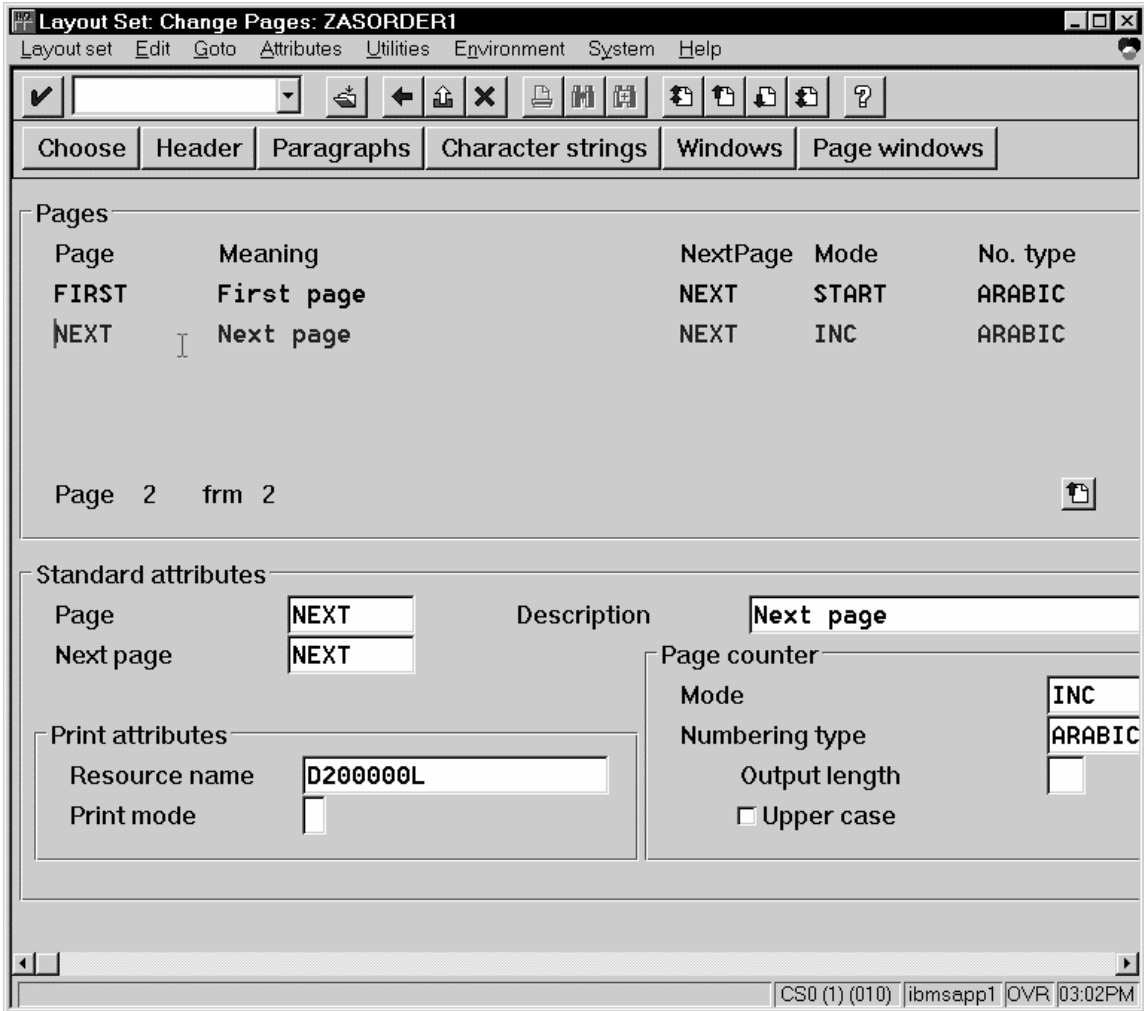
Print mode:

Output length:

Upper case

CS0 (1) (010) | ibmsapp1 OVR 03:01PM

4a. 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:



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

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 on an AIX operating system. 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 enable this support, an Infoprint Manager AIX administrator must perform the following procedure:

1. Ensure that the **iconv** utility is installed on the Infoprint Manager system where the **sap2afp** transform is running.

To support the printing of box characters, IBM now provides three new customized conversion file with the **sap2afp** transform:

- **IBM-932-SAP2AFP**: which extends the **IBM-932** conversion file
- **IBM-1030-SAP2AFP**: which extends the **IBM-930** conversion file
- **IBM-1031-SAP2AFP**: which extends the **IBM-939** conversion file

For Japan, the **sap2afp** transform uses the conversion file **IBM-932-SAP2AFP_IBM-1031-SAP2AFP** by default. You can modify the 'convert to' segment of the **80000000.tab** and **defcp.tab.japan** to match by setting the value to **IBM-1030-SAP2AFP**.

1. Create a backup copy of the current **/usr/lpp/psf/sap2afp/defcp.tab** file.
2. Copy the **/usr/lpp/psf/sap2afp/defcp.tab.japan** file to the **/usr/lpp/psf/sap2afp/defcp.tab** file.
3. Create a backup copy of the current **/usr/lpp/psf/sap2afp/pagedef.tab** file.
4. Copy the **/usr/lpp/psf/sap2afp/pagedef.tab.japan** to the **/usr/lpp/psf/sap2afp/pagedef.tab** file.
5. Obtain the fonts needed for printing.

Font recommendations are given in both the files **/usr/lpp/psf/sap2afp/fonts.tab** and **/usr/lpp/psf/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:

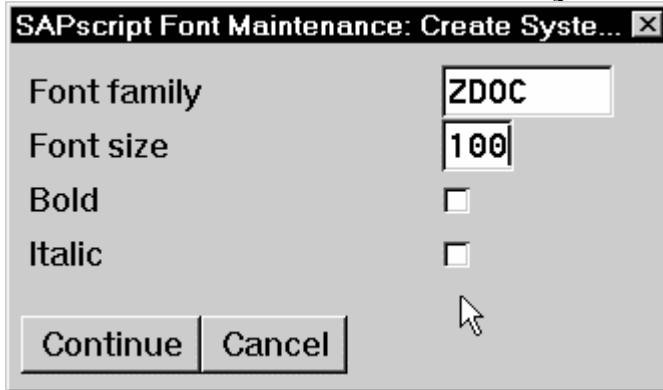
The screenshot shows a dialog box titled "SAPscript Font Maintenance: Create/Change Font Family". The fields are filled as follows:

Font family	ZDOC
Description	Documentation MICR font
Proportional	<input type="checkbox"/>
Replacement family 1	OCRA
Replacement family 2	
Replacement family 3	
Character set	4001

Buttons: Continue, Cancel

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.

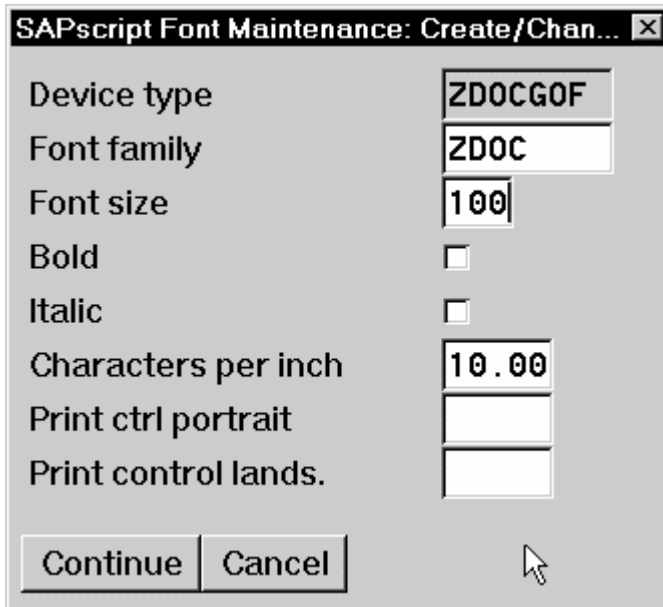
7. Fill in the information from the **Create System...** window as indicated below:



The screenshot shows a dialog box titled "SAPscript Font Maintenance: Create System...". It contains the following fields and controls:

Font family	ZDOC
Font size	100
Bold	<input type="checkbox"/>
Italic	<input type="checkbox"/>
Continue Cancel	

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 (ZDOCGOF) and fill in the remaining information:



The screenshot shows a dialog box titled "SAPscript Font Maintenance: Create/Chan...". It contains the following fields and controls:

Device type	ZDOCGOF
Font family	ZDOC
Font size	100
Bold	<input type="checkbox"/>
Italic	<input type="checkbox"/>
Characters per inch	10.00
Print ctrl portrait	
Print control lands.	
Continue Cancel	

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

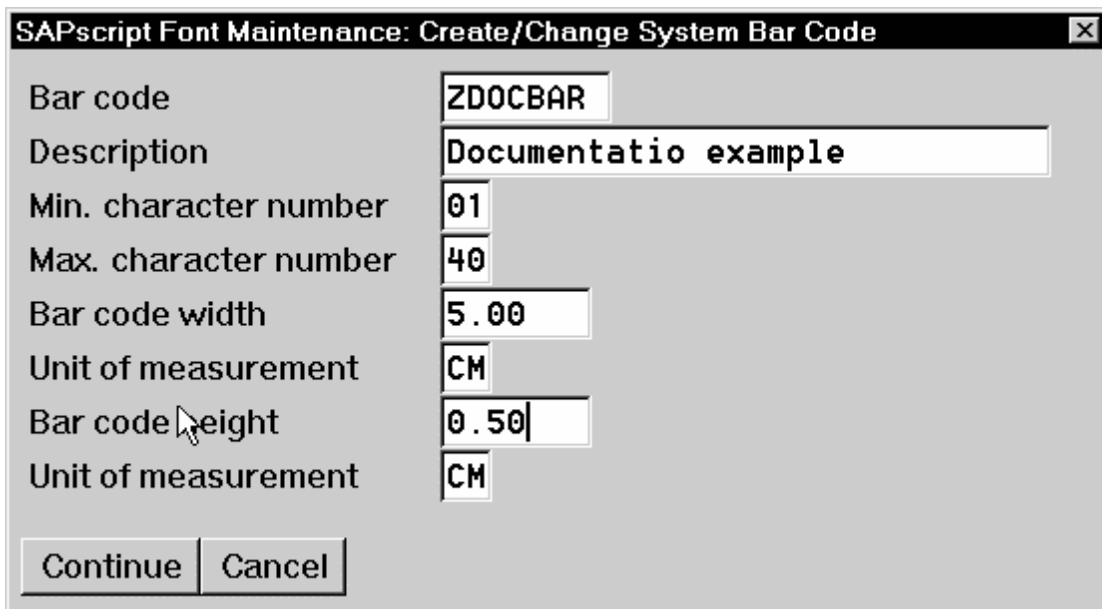
Before you can use this new Output Text Format (OTF) font, you must define a layout set that contains this new font to use your device type.

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.

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 in below:



The screenshot shows a dialog box titled "SAPscript Font Maintenance: Create/Change System Bar Code". It contains the following fields and values:

Bar code	ZDOCBAR
Description	Documentatio example
Min. character number	01
Max. character number	40
Bar code width	5.00
Unit of measurement	CM
Bar code height	0.50
Unit of measurement	CM

At the bottom of the dialog box, there are two buttons: "Continue" and "Cancel".

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:

Device type	ZDOCGOF
Bar code	ZDOCBAR
Bar code prefix	SBP01
Bar code suffix	SBS01

Continue Cancel

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, ZDOCGOF).

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 physical printer 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 the next topic.

Barcodes 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.

Barcode 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

'Mode' Field Values	Barcode 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.

'Mode' Field Values	Barcode Type	Meaning
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-OE00 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.

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

Adding Box Shading Values to Printed Output

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

Note that this support is now provided in the [ipm_print command](#) on both pages 7 and 18. 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.

TIP: 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.

:

:

Infoprint continues processing the print job: The STOP
0420-879: when errors found in IMAGE and GRAPHICS data field on the
Infoprint SMIT Error Handling Options panel is set to no.
```

Submitting Faxes from SAP R/3

Faxing jobs from SAP R/3 to Infoprint Manager is similar to printing jobs from SAP R/3 to Infoprint Manager: you must define a SAP device that is connected to an Infoprint Manager destination. However, you must define a SAP device so that a fax number can be passed to Infoprint Manager.

You can submit faxes from both SAP R/3 Release 3 and SAP R/3 Release 4 systems, providing that you have installed the [Infoprint Fax option](#) on the Infoprint AIX server. If you are running on a SAP R/3 Release 3 system, you must have configured [Access Method L to use the ipm_print command](#) (see page 7). If you are running on a SAP R/3 Version 4 system, you must have installed and configured [Infoprint Manager as an Output Management System \(OMS\)](#) (page 25).

Once you have verified that the prerequisites cited above have been applied, use the following two procedures to implement sending faxes from SAP R/3.

Creating an R/3 Fax Device

The following procedure describes how you can create a SAP R/3 fax device for submitting jobs to an Infoprint AIX server.

1. Ensure that you have defined a logical destination in Infoprint Manager that will send jobs to the fax destination.
2. From the SAP R/3 graphical user interface, specify the `spad` (**Tools->Administration, Spool->Spool Administration**) transaction.
3. From the **Spool Administration: Initial Screen** window, click the **Output Devices** button, click the **Change** (red pencil **f8** key) icon, and push the **Output Devices** push-button.
4. From the **Spool Administration: List of Output Devices** window, click the **Create** (white paper image to the right of the trash can) icon.

- From the **Spool Administration: Create Output Device** window displayed below, fill in the following pieces of information:

Field	Examples
Output device: Type a name for the device.	<i>FAX</i>
Device class: Select a device class for Fax.	<i>F</i>
Host printer: Type the Infoprint Manager logical destination (printer) name that will send the job to the Infoprint fax destination.	<i>ip01-sam</i>
Access method to host spool: Ensure that you specify the appropriate Access Method for your SAP release.	<i>L (Release 3)</i> <i>E (Release 4)</i>
LOMS: If you are running on a SAP R/3 Release 4 system, specify the LOMS to which this device should be assigned. You specified this value on the Spool Admin.: Logical Output Management System window under Define the Infoprint Manager OMS to SAP R/3 .	<i>IPM001</i>
Spool server: Choose an applicable spool server from the entries list on the field.	<i>ibmbtt15_BTF_15</i>

- Save your device definition, by specifying **Output Device --> Save** from the menu options.
- Specify the `scon` (**Tools->Communication->Configuration**) transaction.
- From the **SAPcomm: Configuration** window, select the **Location** option from the **Destination** pane and click on the **Change** push-button.
- Click on the check box to close the pop-up message window that displays information about the table's client independent status.
- From the **SAPcomm: "destination location": Overview** window, click on the **New entries** push button and specify the Output Device that you created in step 4 above.

Note: Specify the appropriate country code in the **Ctry** column. For example, specify "US" for an installation in the United States.

11. From the **New Entries: Details of Created Entries** window, click on the **save** folder icon (or specify the **Ctrl + S** keys) to save your changes.
12. From the **SAPcomm: Configuration** window, select the **Selection** option from the **Destination** pane and click on the **Change** push-button.
13. Click on the check box to close the pop-up message window that displays information about the table's client independent status.
14. From the **SAPcomm: "destination selection"** window, click on the **New Entries** field.
15. From the **New Entries: Details of Created Entries** window, fill in the following values on the **Selection** pane:

Field	Examples
Service: Specify the type of service.	TELEFAX
Cntry: Specify the country code that you specified in step 9 above.	US

Note that the **Key**, **Type**, **Area Served**, and **Device group** fields should all be left blank.

16. Under the **Destination** pane, specify the output device that you created in step 4:

Field	Examples
Output device: Specify the short name for the device you created in step 4 above.	FAX

Note that the **Country of location** field should be left blank.

17. Save your fax definition, by clicking the **Save folder** icon (or using the **Ctrl + S** keys).

Once you have completed this procedure, you are ready [to submit a fax request from SAP R/3 to Infoprint Manager](#).

Submitting a Fax from SAP R/3 to Infoprint Manager

The following procedure describes how you can submit a fax from your SAP R/3 system to the Infoprint AIX server. Note that you must have already [created an R/3 fax device](#) before using the following procedure:

1. From the SAP R/3 graphical user interface, create a spool request for a document that you want to fax.

Note: Ensure that the **Print immediate** push button is not selected.

2. Enter sp01 in the OK-Code field.
3. From the **Spool Requests** window, select the spool request that you specified in step 1 and click on the **Printer** icon.
4. From the **Spool: Output Request** window, specify the relevant fields in the **Print parameters** and **Title page** pane, then click on the **Fax** icon button.
5. From the **Spool: Query FAX Number** pop-up window, specify the number to which you are sending the fax in the **Recipient number** field and the appropriate country key in the **Country key** field.
6. Click on the **Fax** button.

Your fax job will be sent to the Infoprint Manager fax destination and be faxed. You can also fax from SAP applications by providing the fax number and selecting the Fax device.