



SAP R/3: Configuration and Printing Tasks



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Chapter 1. How to Use this Document

This document describes how a business enterprise that uses SAP R/3 can use Infoprint Manager for AIX to manage its print environment. This document is divided into seven main topics which you can use to plan, implement, and print to Infoprint Manager for AIX. Note that some of these topics repeat sections of installation procedures. You should determine what SAP R/3 release you are running on, what type of data you want to print, and section best fits your print installation's needs.

To insure that your SAP application servers are correctly integrated with the Infoprint AIX server, you must install one or more of the following wherever a Spool Work Process resides that will make print requests to Infoprint Manager logical destinations. Please note that these options have been listed in order of ease of use:

1. The Infoprint Manager SAP Client, which simplifies the installation of the Infoprint Manager SAP feature on SAP Application Servers. This package includes everything needed to be installed on the SAP Application Servers. If you use his install option, you do not need to install either The SAP Print feature or the AIX client on SAP application servers. For more information about the Infoprint Manager SAP Client package, see Installing the Infoprint Manager SAP Client Package.
2. The Infoprint Manager AIX Client, which includes the Infoprint Manager command line and the gateway for the standard UNIX print commands. It also includes the custom print command for use with SAP R/3 Release 3 access methods L, Z, and E.

Note: If you have not yet applied Infoprint Manager Program Temporary Fix (PTF) U474309, you may want to use this method if you need to install on SAP application servers.

3. The SAP Print Feature, which includes both the **sap2afp** data stream transform and the IPM SAP Certified Output Management Support feature.
4. The SAP fonts, which are required by the **sap2afp** data stream transform.

Note: At a minimum, on every system on which you will be running the **sap2afp** transform (both Infoprint AIX servers and SAP R/3 application servers), you must have the following fileset installed:

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

This document consists of the following seven topics:

1. "Chapter 2. Overview of the SAP R/3 Print Feature" on page 3.
A general description of Infoprint Manager's SAP Print Feature which describes the benefits available through the product.
2. "Chapter 3. Installing Infoprint when SAP Runs on HP-UX or SUN Servers" on page 7.
Describes what you must do if your SAP application servers run on either HP-UX or SUN UNIX servers to install, configure, and print to Infoprint Manager for AIX.
3. "Chapter 4. Installing to Print from SAP R/3 Release 4 (Enhanced Status)" on page 11.

A collection of procedures necessary to install and use Infoprint Manager for printing PCL, PostScript, OTF, or ABAP output from a SAP R/3 installation. You can configure the system to use the Infoprint Manager 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. Note that this method requires you to install the SAP Client on the SAP application server(s) and both the SAP Print Feature and the SAP Fonts on the Infoprint AIX server, then use access method E to define devices in SAP R/3.

4. "Chapter 5. Installing to Print from SAP R/3 Release 3.1h or 3.1i (Enhanced Status)" on page 43.

A collection of procedures necessary to install and use Infoprint Manager for printing PCL, PostScript, OTF, or ABAP output from a SAP R/3 installation. You can configure the system to use the SAP 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. Note that this method requires you to install the SAP Client on the SAP application server(s) and both the SAP Print Feature and the SAP Fonts on the Infoprint AIX server, then use access method E to define devices in SAP R/3.

5. "Chapter 6. Installing to Print PCL and PostScript with SAP R/3 Release 3" on page 75.

With few changes, you can configure SAP R/3 Release 3 to send both PS and PCL output data directly to Infoprint Manager. This section contains a collection for procedures necessary to install and use Infoprint Manager for printing either PCL or PostScript data from an SAP R/3 installation. Note that this option involves only the installation of either the SAP Client or the AIX Client on your SAP application server(s), then using access method L to define devices in SAP R/3.

6. "Chapter 7. Installing to Print ABAP and OTF with SAP R/3 Release 3 on AIX" on page 79.

You can configure SAP R/3 to transform SAP output into AFP output to take advantage of all the features of AFP printing. A collection of procedures necessary to install and use Infoprint Manager for printing the native SAP R/3 data streams Output Text Format (OTF) and Advanced Business Application Programming (ABAP) from a SAP R/3 installation. Note that this section gives you two installation options:

- The first performs the data transform on the Infoprint Manager server (post spool) and requires that you only install either the SAP Client or the AIX Client on the SAP Application server(s), and the SAP feature and the SAP Fonts on the Infoprint Manager server.
- The second performs the data stream transform on the SAP application server (pre-spool) and requires you to install the SAP Print Feature, the SAP Fonts, and the AIX Client on the SAP application server(s), then use access method Z to define devices in SAP R/3.

7. "Chapter 8. Print Support that Applies to both SAP R/3 Release 3 and Release 4" on page 95.

A collection of procedures for customizing the Infoprint Manager **sap2afp** data stream transform and related SAP R/3 print options that apply regardless of what level of SAP R/3 you have installed. This section includes a description for using the Infoprint Manager Fax feature through a SAP R/3 system.

Chapter 2. Overview of the SAP R/3 Print Feature

The following describes the benefits that can be derived by business enterprises that use SAP R/3 and Infoprint Manager Version 3 Release 2 to manage their print environments.

Infoprint Manager and SAP R/3

A large international corporation is committed to a SAP R/3 enterprise to manage



Figure 1. SAP R/3 Product Logo

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.

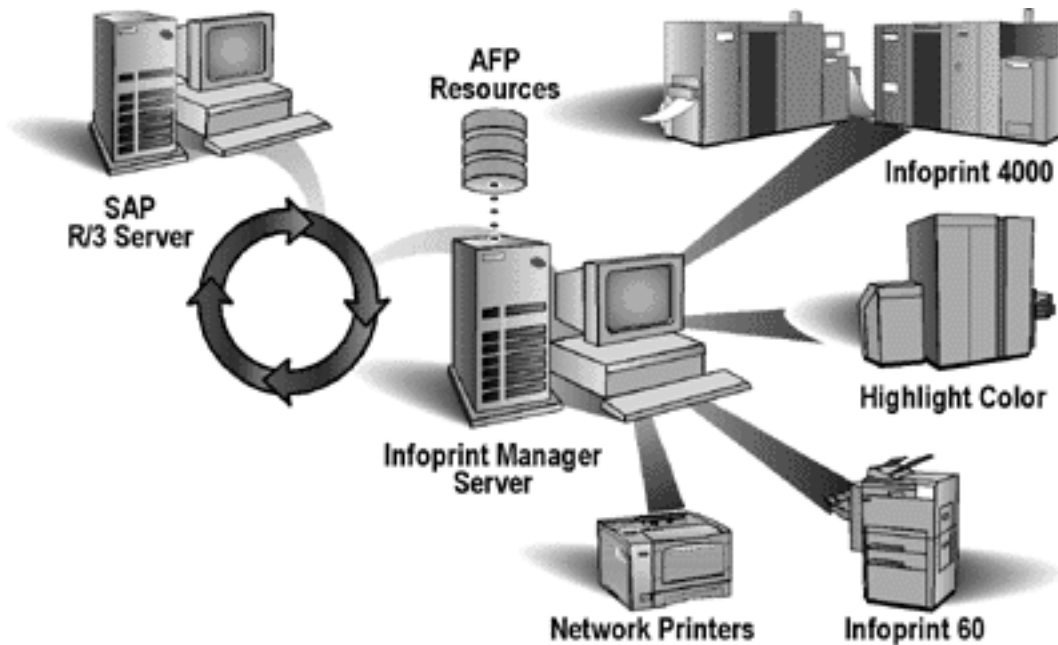


Figure 2. An Infoprint Manager SAP R/3 Configuration

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 Version 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 Version 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 Version 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 Version 4 enterprise.

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

Table 1. SAP R/3 Access Methods for Printing

Data Stream from SAP R/3	Access Method	SAP R/3 Version
--------------------------	---------------	-----------------

Table 1. SAP R/3 Access Methods for Printing (continued)

Printing either PostScript or PCL files	L	SAP Version 3
Printing either OTF or ABAP files	Z	SAP Version 3
Printing either PostScript, PCL, OTF, or ABAP files	E	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 3.2, 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

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

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

Customers using SAP R/3 Version 4 with the Generic Output Format (SAPGOF) generated data streams that contain Version 2 of both ABAP and OTF data, will also appreciate the double byte character set (DBCS) enablement. Infoprint Manager 3.2 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.

Scalability of Printing across an Enterprise

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

Chapter 3. 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” on page 9.

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 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 2 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.
 - a. Add an `.rhosts` file with permissions of 600 to the `/home/sapuser` directory.
 - b. 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:

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* 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----
```

```
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. If your SAP R/3 installation is a Release 3.1h or 3.1i (both kernel and data base) system, use the file transfer protocol (FTP) of your choice to copy the **/usr/lpp/pd/bin/ipm.omdesc_31h** 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.

7. 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.

List of SAP R/3 Release 3 Files on the Infoprint AIX Server:

- a. **ipm_print.sys**
- b. **ipm_query.sys**

List of SAP R/3 Release 4 Files on the Infoprint AIX Server:

- a. **ipm_submit.sys**

- b. `ipm_job_cancel.sys`
 - c. `ipm_job_query.sys`
 - d. `ipm_dev_query.sys`
 - e. `startcbd.sys`
8. 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.

9. 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
```
10. Ensure that each file copied in step 6 is executable.
11. 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.
- 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 or Defining Devices for Printing ABAP and OTF on SAP R/3 Release 3.

---

## 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*.

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 3.2 running on AIX.

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

*Table 2. Defining Access Method U*

| Field | Value |
|-------|-------|
|-------|-------|

Table 2. Defining Access Method U (continued)

|                                    |                                                                                                                                                                                                            |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output Device</b>               | PRT1<br>Type the name that R/3 users will need to access the printer.                                                                                                                                      |
| <b>Device type</b>                 | POSTSCPT<br>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. |
| <b>Spool server</b>                | us01d2_P40_41<br>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.                                  |
| <b>Destination hosts</b>           | nwser<br>Type the hostname for the Infoprint AIX server.                                                                                                                                                   |
| <b>Host printer</b>                | prt1-lp<br>Type the name of the Infoprint Manager logical printer.                                                                                                                                         |
| <b>Device class</b>                | Enter a space so that this field accepts the default value of printer, which is P.                                                                                                                         |
| <b>Access method in host spool</b> | U<br>Select 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.

## Chapter 4. Installing to Print from 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 invokes the **sap2afp** transform at the Infoprint actual destination, Access Method **E** allows you to receive enhanced status reporting while processing both ABAP and OTF print jobs.

---

### Infoprint Manager SAP OMS Overview

The Infoprint Manager SAP OMS support consists of a command-line interface and a SAP callback daemon which logs onto a SAP system and delivers Infoprint Manager notifications back to SAP R/3 by making RFCs (remote function calls). As print, cancel job, and device query requests are made by SAP users, the SAP Spool Work Process (SWP) invokes the Infoprint Manager commands. As the job progresses through the Infoprint Manager system, notifications are sent back to SAP through the Infoprint Manager SAP Callback daemon (**sapcbd**). Only one **sapcbd** needs to be started for each SAP system, regardless of how many application servers make up that system. The **sapcbd** runs on the same server where Infoprint Manager is running.

The Infoprint Manager SAP Print Feature contains:

- the command-line interface
- the SAP Callback daemon (**sapcbd**)
- the **sap2afp** transform

The Infoprint Manager SAP Client contains the command-line interface.

To allow SAP to issue the Infoprint Manager commands, you must install the Infoprint Manager SAP Client on every SAP server where an SAP application server will issue the commands. This includes every application server with an SWP managing R/3 devices that have been configured to use the Infoprint Manager OMS. If you have configured your SAP R/3 system to use alternate servers, you must repeat these installation tasks on the alternate servers as well.

To allow the **sapcbd** to deliver Infoprint Manager notifications to a SAP system, you must install the SAP Print Feature on at least one system where the Infoprint Manager servers are running. To allow SAPGOF device type output (both OTF and ABAP data streams) to be transformed and processed by Infoprint Manager, you

must install the SAP Print Feature on every system where Infoprint Manager actual destinations are going to transform SAP data.

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.

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

**Notes:**

1. These procedures presume that you have already installed and configured Infoprint Manager on a separate AIX server.
2. An SAP OMS interface restriction requires that your Infoprint server (**pdserver**) name be no longer than nine characters.

- “Installing the Infoprint Manager SAP Client Package on each SAP System Server”.

If you are maintaining a SAP System server that was configured prior to PTF U474309, you should use the “Appendix. Installing the AIX Client and the SAP Print Feature on each SAP System Server” on page 119 procedure instead of this option.

- “Installing the SAP Print Feature and the SAP Fonts on the Infoprint AIX Server” on page 13.
- “Defining a SAP User for the OMS Callback Daemon” on page 17.
- “Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server” on page 17.
- “Starting the SAP Callback Daemon” on page 25.

## Installing the Infoprint Manager SAP Client Package on each SAP System Server

With Infoprint Manager Program Temporary Fix (PTF) U474309 (available in March 2001), you can simplify the installation of the SAP Print Feature on SAP application servers by installing the SAP Client package.

This command bypasses the Infoprint Installer and installs the necessary filesets on the SAP application server.

The SAP Client package simplifies the installation because your SAP application server no longer needs to install either the SAP Print Feature, the AIX Client, or the prerequisite filesets for the Infoprint Installer. The SAP Client package requires a much smaller subset of prerequisites, as you can see from the following list:

1. bos.rte 4.2.1.0
2. bos.rte.printers 4.2.1.8

To install the SAP Client on your SAP application servers, use the following procedure:

1. Log into the AIX system as **root**.
2. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
3. Open a terminal window.

(If you are using the Common Desktop Environment (CDE), you may open a terminal window by clicking on the terminal icon contained in the front panel.

(The front panel is the task bar that appears at the bottom of the screen.) By default, the terminal icon is contained in a pop-up menu above the text editor icon that appears on the front panel.

4. The first time you run the Installer, follow this procedure:
  - a. Type the following on the command line:

```
smit cdrfs
```
  - b. Select **Add a CDROM File System** from the list of choices presented.
  - c. Click the List button and select your CD-ROM device name (cd0, for example).
  - d. Type the following in the **MOUNT POINT** field:

```
/cdrom
```
  - e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see `crfs: 0506-909 /cdrom file system already exists`, do not interpret this as a failure. (The existing **/cdrom** file system should be usable.)
  - f. Press the **F12** key to exit **SMIT**.
5. Type the following on the command line:

```
mount /cdrom
```
6. The SAP Client package (**ipr.sapclient**) is installed at the command line by specifying `setup -x`.

Note that the SAP Client package cannot be installed if other `ipr*` filesets reside on a SAP application server.

## Installing the SAP Print Feature and the SAP Fonts on the Infoprint AIX Server

To run the SAP Callback daemon on the Infoprint AIX server, you must install the SAP R/3 Feature on the Infoprint AIX server, if you have not already done so.

If you are printing either Output Text Format (OTF) or Advanced Business Application Programming (ABAP) data, ensure that you have installed the **sap2afp** transform and the fonts necessary for printing. To install the transform, you must install the SAP Print Feature on each Infoprint AIX server with actual destinations that will be transforming data.

1. Log into the AIX system as **root**.
2. Open either an `aixterm` or a `dtterm` window to get to an AIX command line.
3. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
4. The first time you run the Installer, follow this procedure:
  - a. Type the following on the command line:

```
smit cdrfs
```
  - b. Select **Add a CDROM File System** from the list of choices presented.
  - c. Click the List button and select your CD-ROM device name (cd0, for example).
  - d. Type the following in the **MOUNT POINT** field:

```
/cdrom
```
  - e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see `crfs: 0506-909 /cdrom file system already exists`, do not interpret this as a failure. (The existing **/cdrom** file system should be usable.)
  - f. Press the **F12** key to exit **SMIT**.

5. Type the following on the command line:  

```
mount /cdrom
```
6. To install the optional Infoprint Manager SAP Print Feature, enter the following command:  

```
/cdrom/setup
```
7. 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. 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.
8. From the next Infoprint Installer panel (displayed below), you must install both the Infoprint Manager Base and the SAP Print Feature:

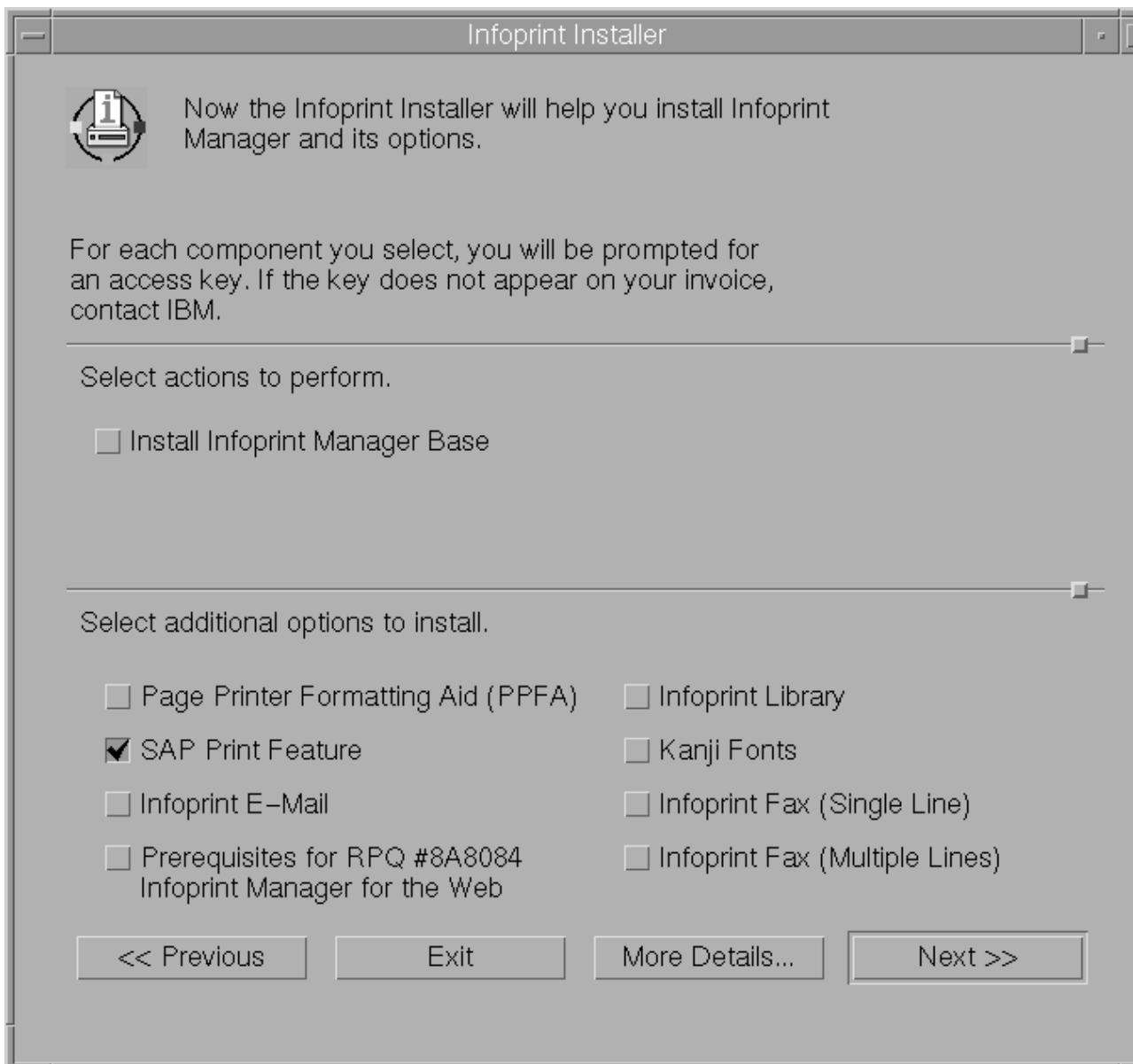


Figure 3. Infoprint Installer: Install Options panel



9. Follow the remaining Infoprint Installer screens to complete installation of the product. Note that you must have the feature key for the SAP Print Feature from your invoice, because you will be prompted for it on the following panel:

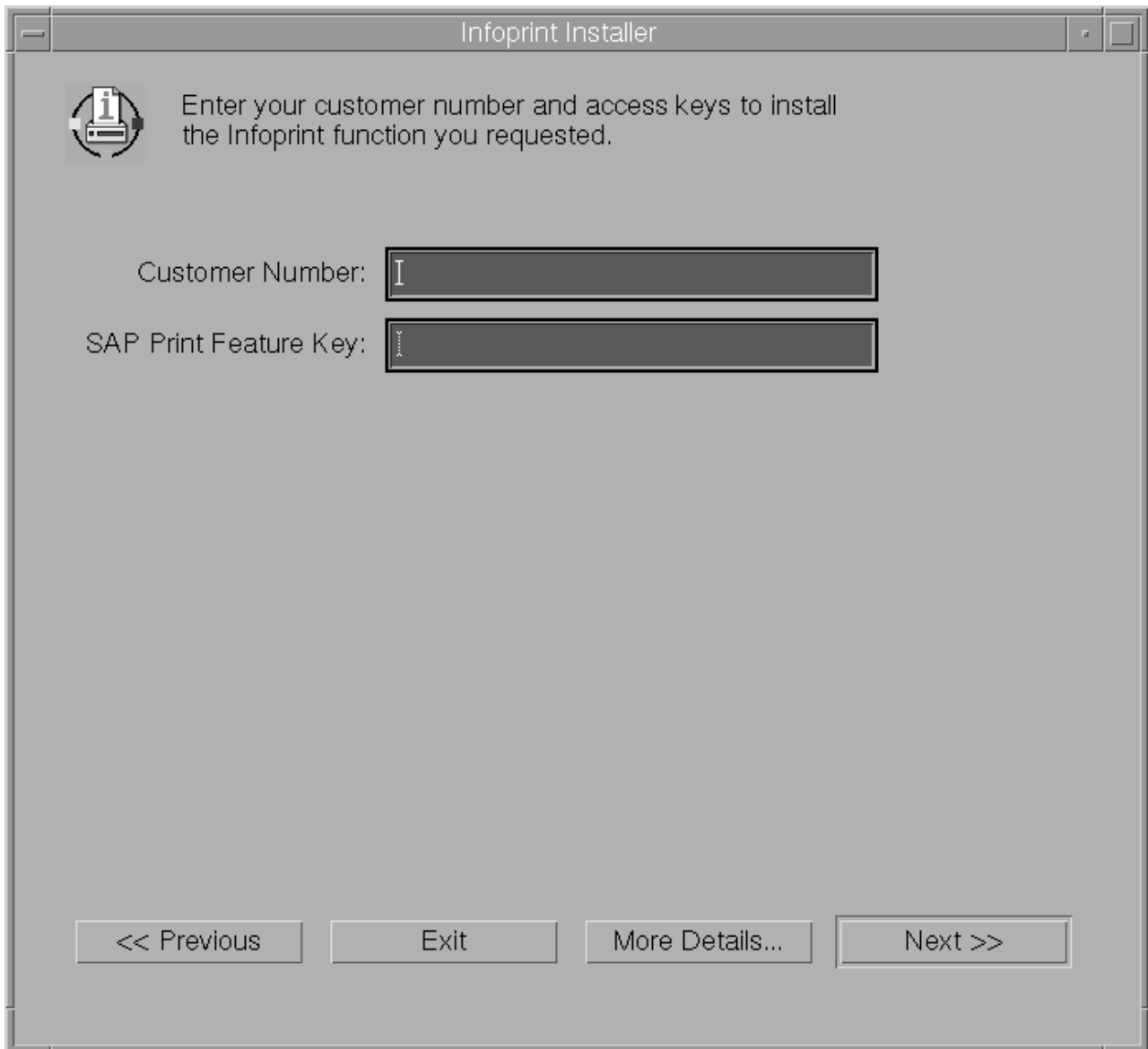


Figure 4. Infoprint Installer: SAP Key panel

Note that if you cannot locate your invoice, click the **More Details...** button on the key-entry screen for information on how to contact IBM Customer Support. The Installer setup script prints a help statement if you specify the following on the AIX command line: `/cdrom/setup -h`.

### 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/bin` 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 the following two commands in sequence:
  - a. `mount /cdrom`
  - b. `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:
  - a. **afpfonts.bookmstr**
  - b. **afpfonts.compat**
  - c. **afpfonts.codepage**
  - d. **afpfonts.ocr**
12. To install the fonts, press **Enter**.  
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 .`
16. Then you can remove the CD-ROM from your CD-ROM drive.

### Configuring the SAP R/3 Transform

The SAP Transform includes two types of files:

- An executable named **sap2afp**, which converts Output Text Format (OTF) data into MO:DCA-P output data and Advanced Business Application Programming (ABAP) list format data into line data. This file is installed in the **/usr/lpp/psf/bin** directory.
- Configuration files that are installed in the **/usr/lpp/psf/sap2afp** directory.

Table 3. *sap2afp* Configuration Files

| Configuration File | Purpose                               | Use           |
|--------------------|---------------------------------------|---------------|
| <b>barcode.tab</b> | Provides list of valid SAP bar codes. | OTF data only |

Table 3. sap2afp Configuration Files (continued)

|                      |                                                                                                                                   |                |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>xxxxyyyy.tab</b>  | Maps ASCII code pages to EBCDIC code pages.                                                                                       | OTF data only  |
| <b>fonts.tab</b>     | Provides a list of raster fonts with the appropriate character set and code page.                                                 | OTF data only  |
| <b>6400fonts.tab</b> | Provides a list of raster fonts that apply exclusively to the IBM 6400 printer, with the appropriate character set and code page. | OTF data only  |
| <b>image.tab</b>     | Defines the dither matrix for half-tone color print jobs.                                                                         | OTF data only  |
| <b>pagedef.tab</b>   | Defines the form definition (SAP R/3PAPER TYPE) used, as well as the page definition and fonts for jobs that go through ACIF.     | ABAP/OTF       |
| <b>defcp.tab</b>     | Converts ASCII into EBCDIC characters.                                                                                            | ABAP data only |

---

## Defining a SAP User for the OMS Callback Daemon

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. You will need this user information when you Define the Infoprint Manager OMS to SAP R/3.

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. Remember to record the user, password, and client for when you specify an **Initialization command** value when Defining a Real Output Management System.

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.ipsap** file in the **/etc** directory on the Infoprint AIX server where the SAP callback daemon is running.

---

## Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server

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). 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) for your SAP R/3 installation, as well as defining a

Logical Output Management System (LOMS) so you can define Access Method E devices in SAP R/3. for your SAP R/3 installation, as well as defining a Logical Output Management System (LOMS) 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 RSP0XOMS 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.

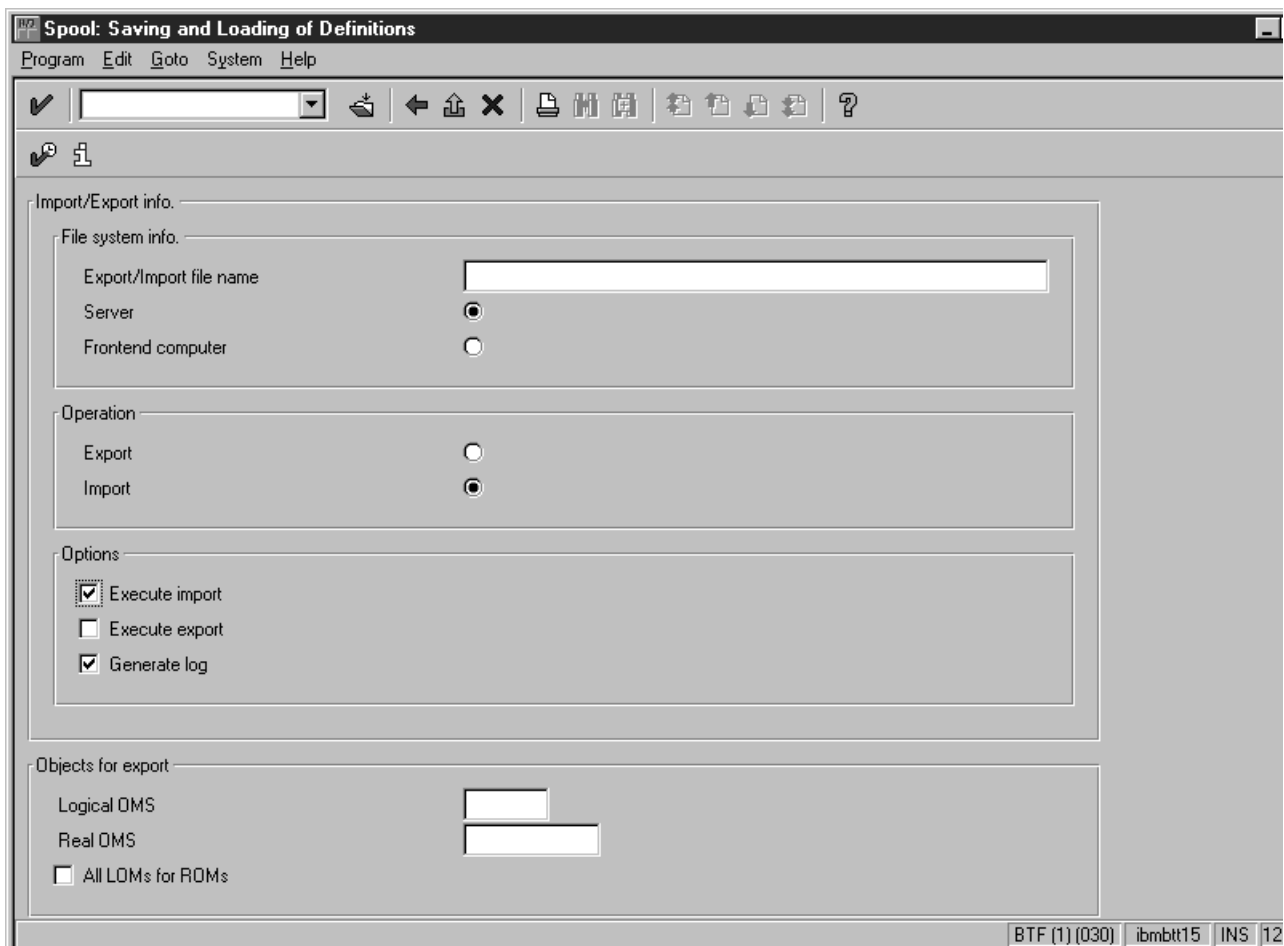


Figure 5. Real Output Management System window

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.
  - 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, leave the **Initialization instance** field blank.

You specify an initialization instance value by moving your cursor to the arrow pointing 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. Within the **SAP configuration** pane at the bottom of the window, 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>
```

In the **Initialization command** field shown below, the full value follows:

```
/usr/lpp/pd/bin/startcbd BTF ibmbtt15 15 ibm 030 newname En
```

The following tables display the variables grouped into three components:

- a. **Command to Start the Callback Daemon**
- b. **SAP R/3 Instance Where the Callback Daemon Logs On**
- c. **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.

Table 4. Command to Start the Callback Daemon (sapcbd).

| Variable                  | Explanation                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------------|
| /user/lpp/pd/bin/startcbd | The fully-qualified path for the command. Note that this value is hard-coded and may not be modified. |

Table 5. SAP R/3 Instance where the Callback Daemon (sapcbd) Logs on.

| Variable | Explanation                      |
|----------|----------------------------------|
| BTF      | The three-character System Name. |

Table 5. SAP R/3 Instance where the Callback Daemon (sapcbd) Logs on. (continued)

|          |                 |
|----------|-----------------|
| ibmbtt15 | The Host Name   |
| 15       | The Instance ID |

Table 6. Callback Daemon (sapcbd) User ID Information

| Variable | Explanation                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| ibm      | The User value. This value and the two that follow were originally defined when you created a SAP userid for the OMS Callback daemon. |
| 030      | The Client value                                                                                                                      |
| newname  | The Password value                                                                                                                    |
| En       | The Language value: in this example, English.                                                                                         |

**Note:** Note: The resulting text string is the same that you will specify in the **startcbd** command when you Start the SAP Callback Daemon.

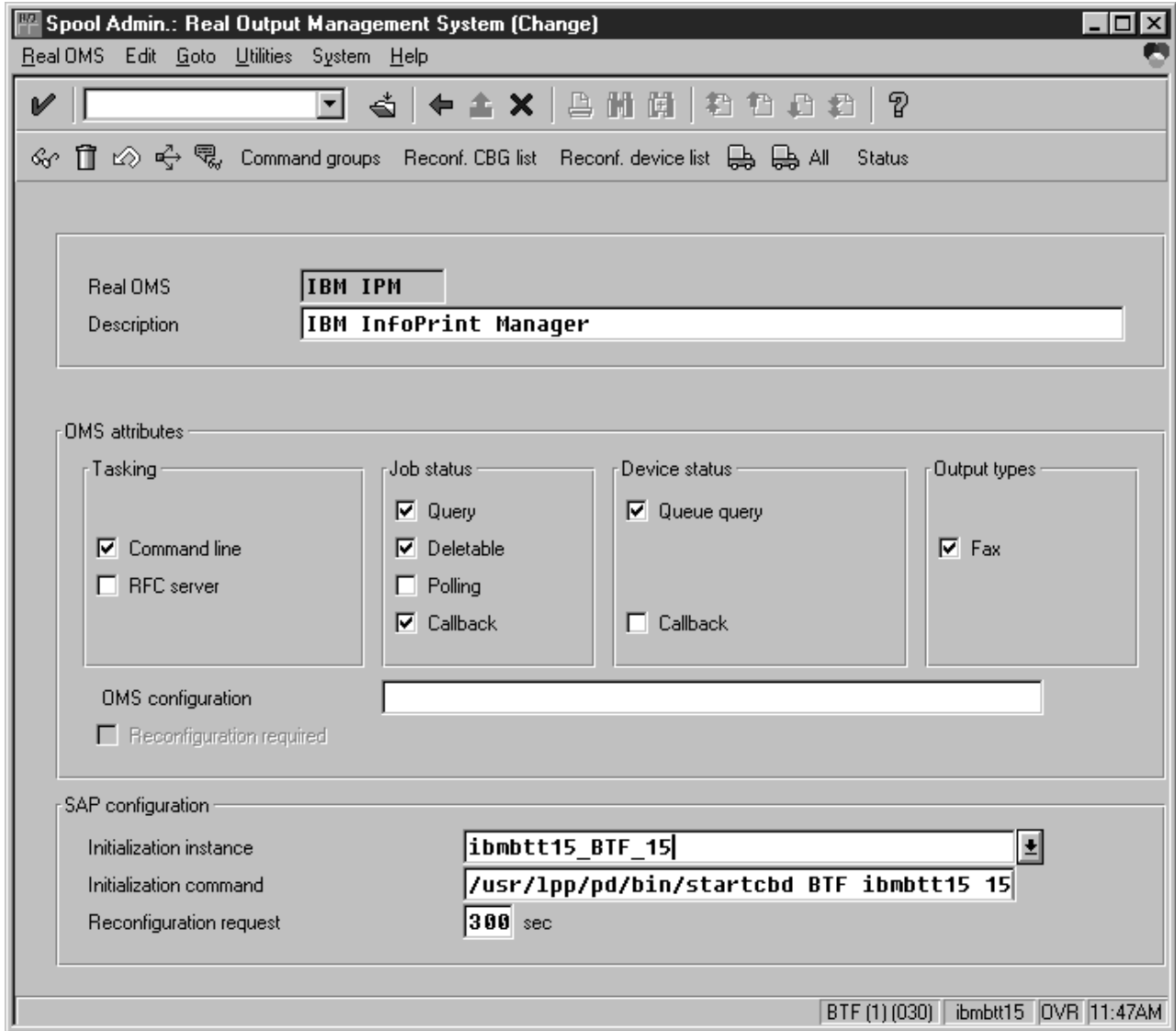


Figure 6. Real Output Management System (Change) window

**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).

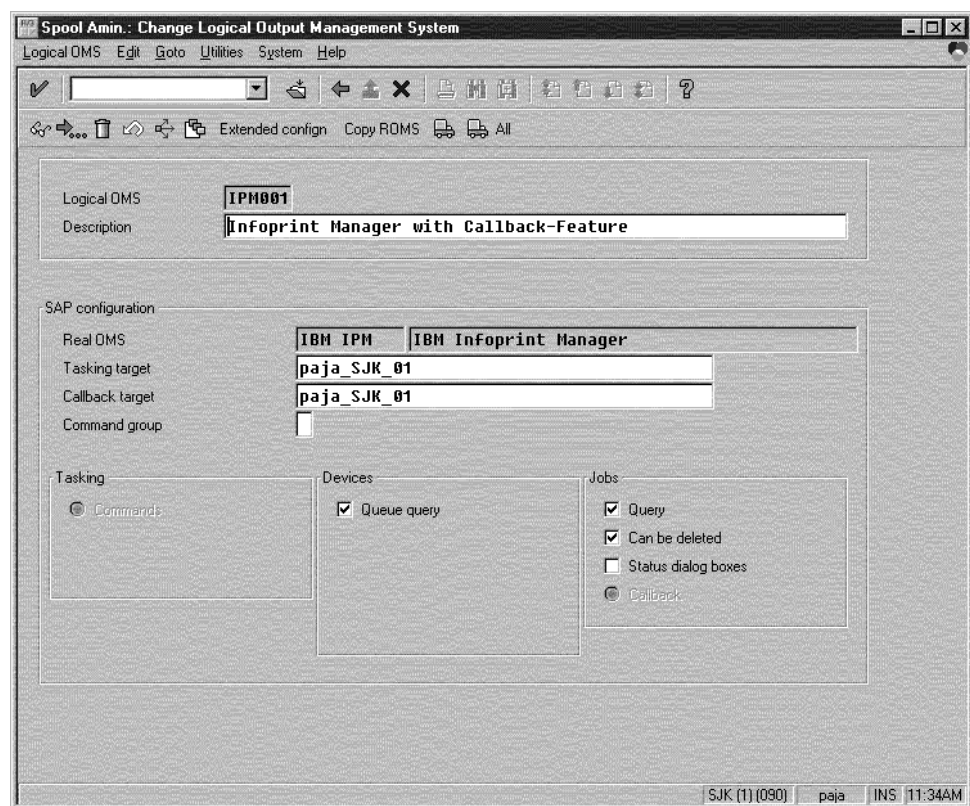
## Defining a Logical Output Management System

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`. 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`.

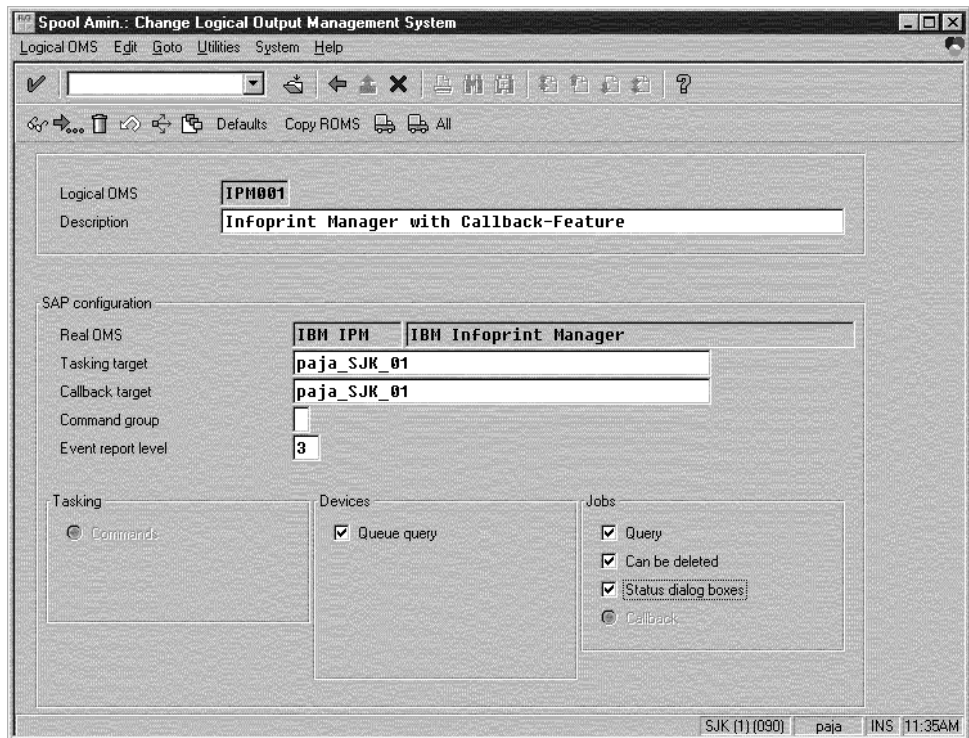
The **Tasking target** field, specifies where the commands are invoked, while the **Callback target** field specifies where the asynchronous callbacks are delivered.



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).



6. 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. 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 specify 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.

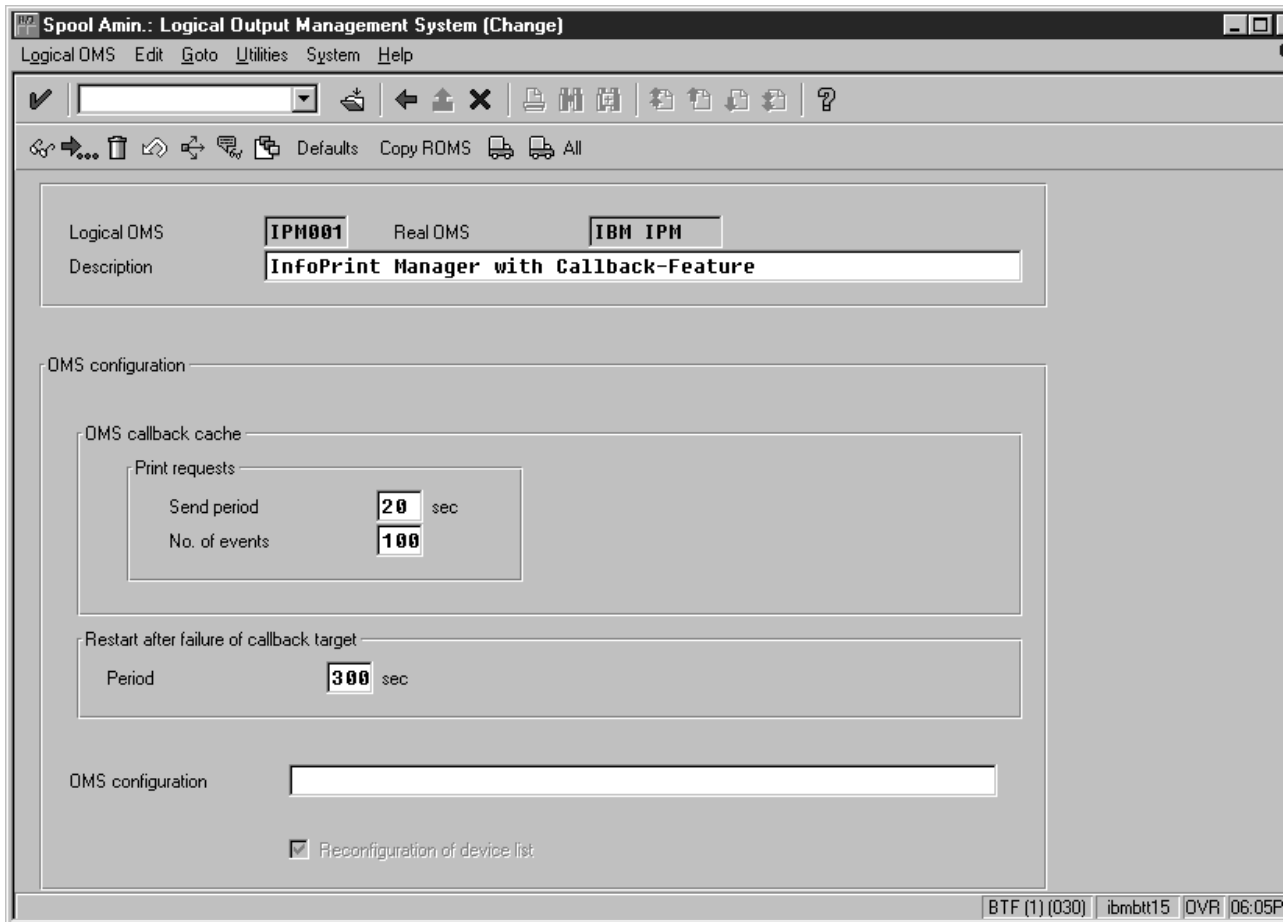


Figure 7. Specify Notification Event Values

---

## Starting the SAP Callback Daemon

Each SAP R/3 system using the Infoprint Manager Callback support needs to have one callback daemon running. To start the SAP Callback daemon, you must edit and run the **/etc/rc.iprsap** file from the AIX command line. This procedure takes place on the Infoprint AIX server.

1. From the AIX command line, access the **rc.iprsap** file in the **/etc** directory. Edit the file to copy and uncomment the two lines of code:
  - a. An echo statement that states that the Callback daemon has been started:  
`echo Starting sapcbd <System Name>`
  - b. The **startcbd** command (see Callback Daemon User ID Information) at the top of the file:  
`/usr/lpp/pd/bin/startcbd <System Name> <Host Name> <Instance ID> <User>  
 <Client> <Password> <Language>`
2. Specify the same values for the items in angle brackets (< >) that you entered for the initialization command on the **Spool Admin.: Real Output Management System (Change)** window.
3. Once you have saved and exited the file, start 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.<sid>sysname/error.log** file (where **<sid>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 technical support representative.

---

## Configuring to Start Callback Daemons on System Reboot

The SAP Callback daemon needs to run all the time. A monitor ensures that it is restarted if it ever stops after it is started. However, to ensure that both the daemon and its monitor are restarted if the AIX system that it runs on is rebooted, you need to perform one more step to add the **rc.iprsap** file to the **/etc/inittab** directory.

To ensure that the SAP Callback daemon(s) are restarted automatically whenever the system they are running on is restarted, use the Infoprint **SMIT** interface:

### Infoprint Printing Systems-->Infoprint Utilities-->SAP Callback Daemons

From the **SAP Callback Daemons** panel, select the **Start SAP daemons at reboot** option.

If you prefer the command line, you can also enter the the following at the AIX command line instead:

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

Both the SMIT interface and this command ensure that the SAP daemons (**sapcbd**) are restarted automatically whenever the systems they are running on are restarted.

As you add more callback daemons to your Infoprint configuration, you do not have to perform this step, but you do need to add a new entry in the `/etc/rc.iprsap` file and type `/etc/rc.iprsap` on the command line. Your new callback daemons will start and any SAP Callback daemons that are already running will report that they are running.

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.

---

## Shutting Down the 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 migrating 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, type:

```
stopcbd systemname
```

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

If you do not want a reboot of the system to restart the SAP Callback daemon, remove its entry from the `/etc/rc.iprsap` file.

To ensure that no SAP Callback daemons are restarted automatically whenever the systems they are running on are restarted, use the Infoprint SMIT interface:

### Infoprint Printing Systems-->Infoprint Utilities-->SAP Callback Daemons

From the **SAP Callback Daemons** panel, select the **Do not start SAP daemons at reboot** option.

If you are moving the SAP Callback daemon to another system, remember to follow the instructions for both Starting the SAP Callback Daemon and Configuring to Start Callback Daemons on System Reboot.

---

## Defining Devices for Infoprint Manager that Use the Infoprint OMS

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 destination 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 select 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:

*Table 7. Devices that use the Infoprint Manager OMS.*

| <b>Field</b>                       | <b>Value</b>                                                                                                                                                                                                 |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output Device</b>               | IPM<br>Specify a long name and allow the system to generate a short name.                                                                                                                                    |
| <b>Device type</b>                 | SAPGOF<br>Specifies the driver that generates the output data stream.                                                                                                                                        |
| <b>Host printer</b>                | ip01-sam<br>Specify the Infoprint Manager logical destination.                                                                                                                                               |
| <b>Access method to host spool</b> | E<br>Ensure you specify this Access Method.                                                                                                                                                                  |
| <b>LOMS</b>                        | IPM001<br>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. |
| <b>Spool server</b>                | ibmbtt15_BTF_15<br>Choose an applicable spool server from the entries list on the field.                                                                                                                     |

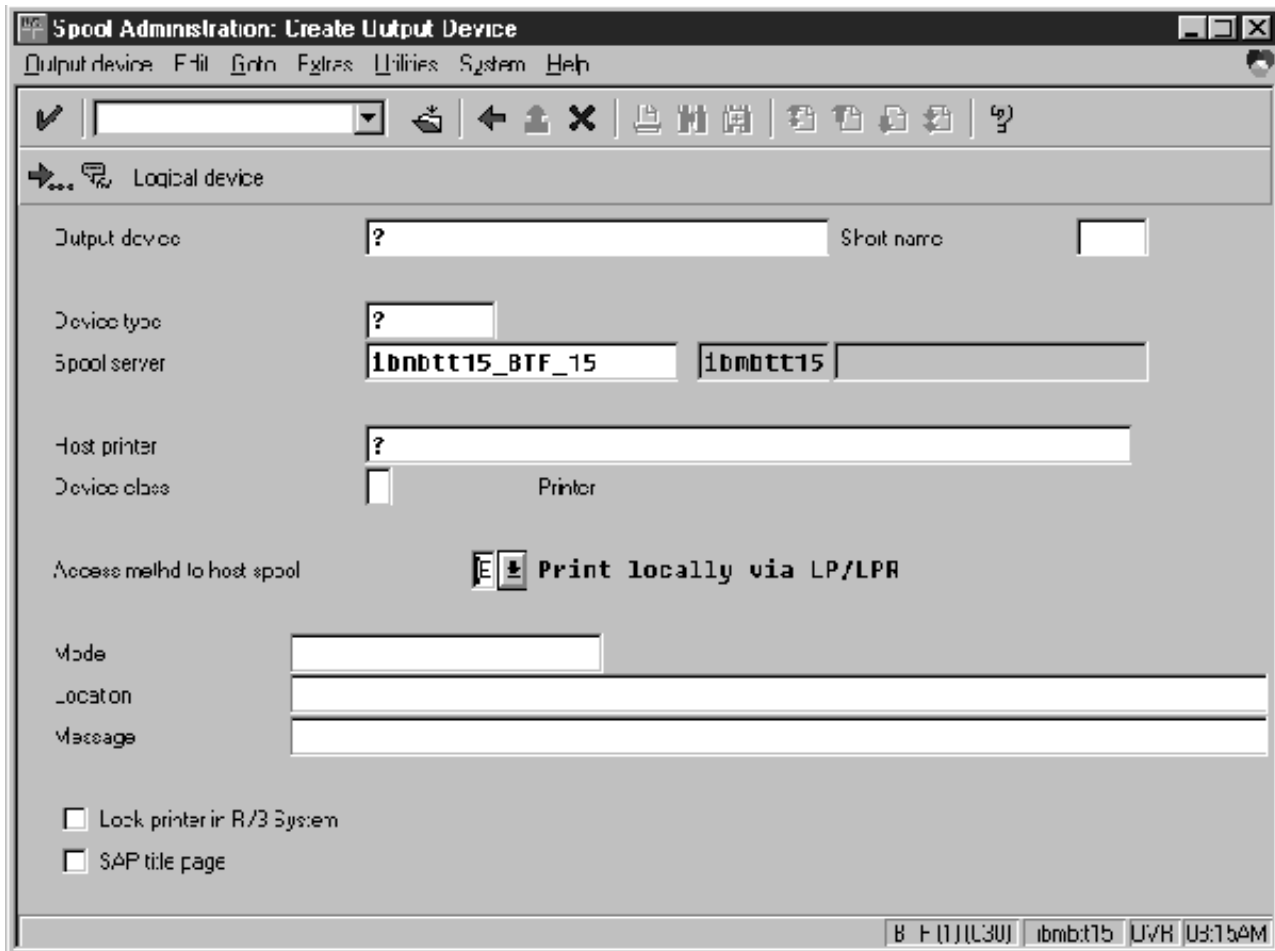


Figure 8. Display for Defining Access Method E

6. 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 device 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, Display Device Status, and Cancel a Job.

## 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 xxxxxx** window (where xxxxxx refers to the SAP Spool ID), double-click on the output request you want to view in the **Status** column on the far right.

- From the **Status Description** pop-up window (example displayed below), you can see current information about the job, including the last event received.

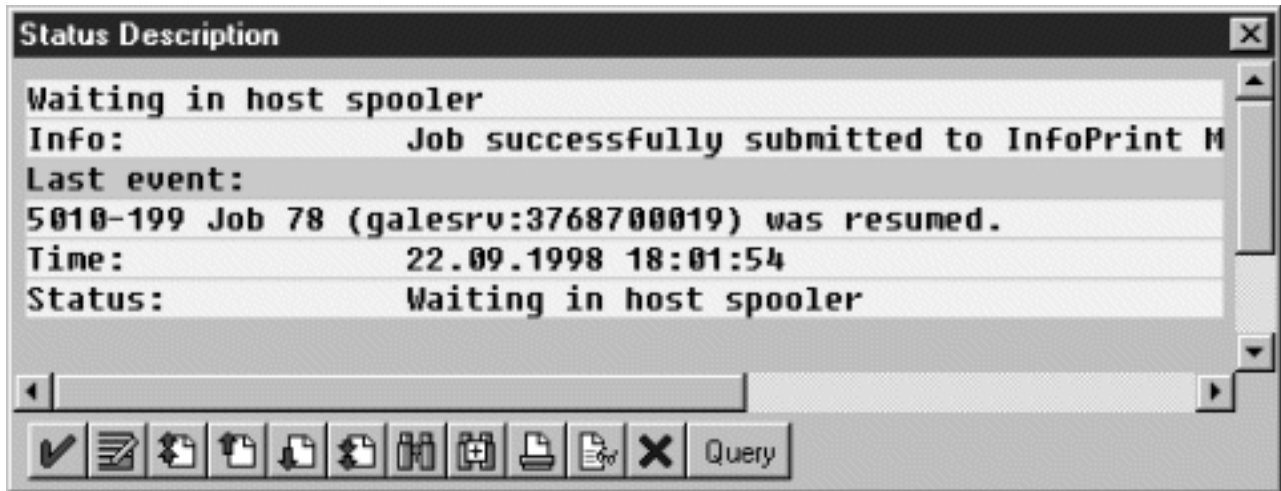


Figure 9. SAP R/3 Status Description field.

- Click on the Events (f5 key) button on the **Status Description** window to get the **Events for Output Requests** window. From the **Events for Output Requests** pop-up window (displayed below), you can view all the events concerning this job.

**Note:** This **Events for Output Requests** pop-up window is displayed twice 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.

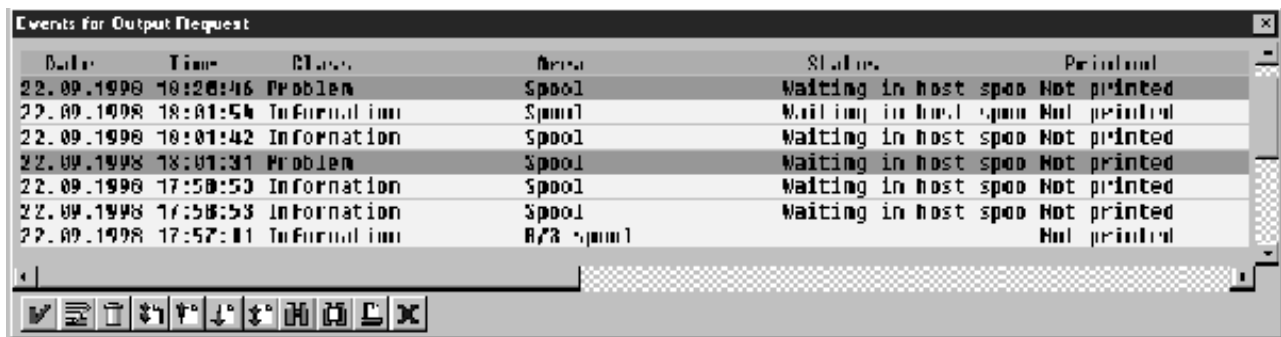


Figure 10. Events for Output Requests field, view 1.

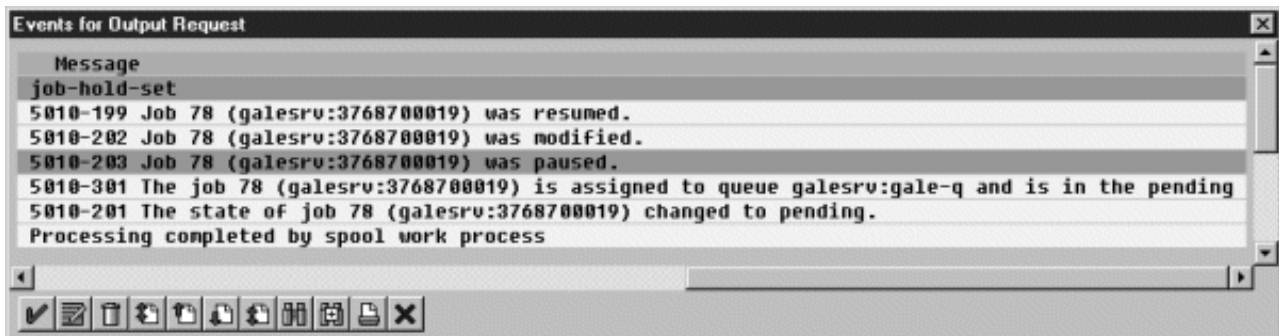


Figure 11. Events for Output Requests field, view 2.

- 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. Notice that the first line shows the job's position in the print queue.

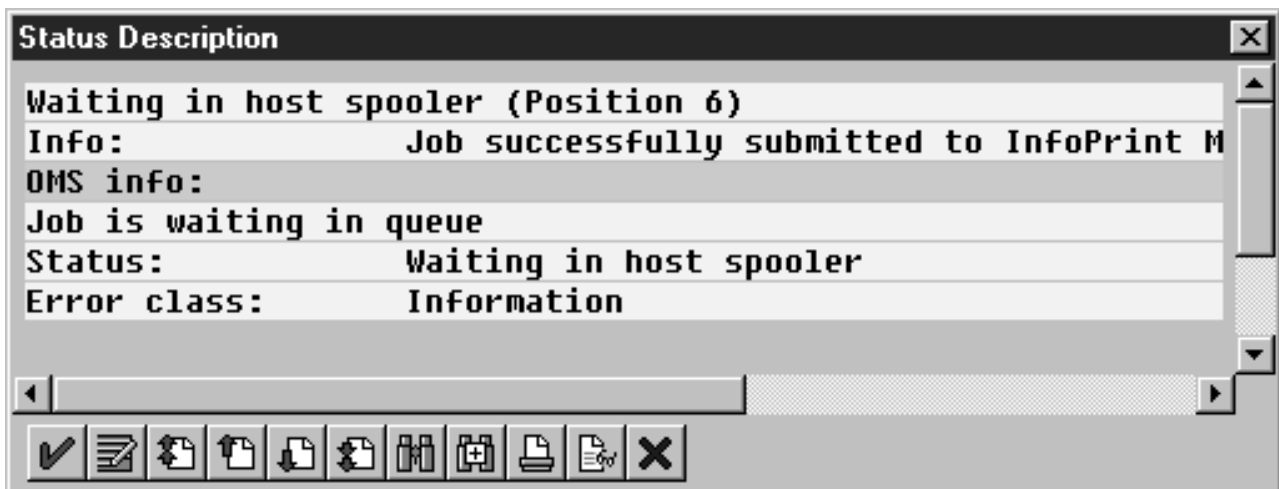


Figure 12. Status Description field.

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:

- 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.
- From the **Spool Administration: Initial Screen** window, click on the **Output devices** button from the **Configuration** area.
- From the **Spool Administration: List of Output Devices** window, do the following:
  - Highlight the your Infoprint printer from the **Devices** column.



- b. 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:** 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:

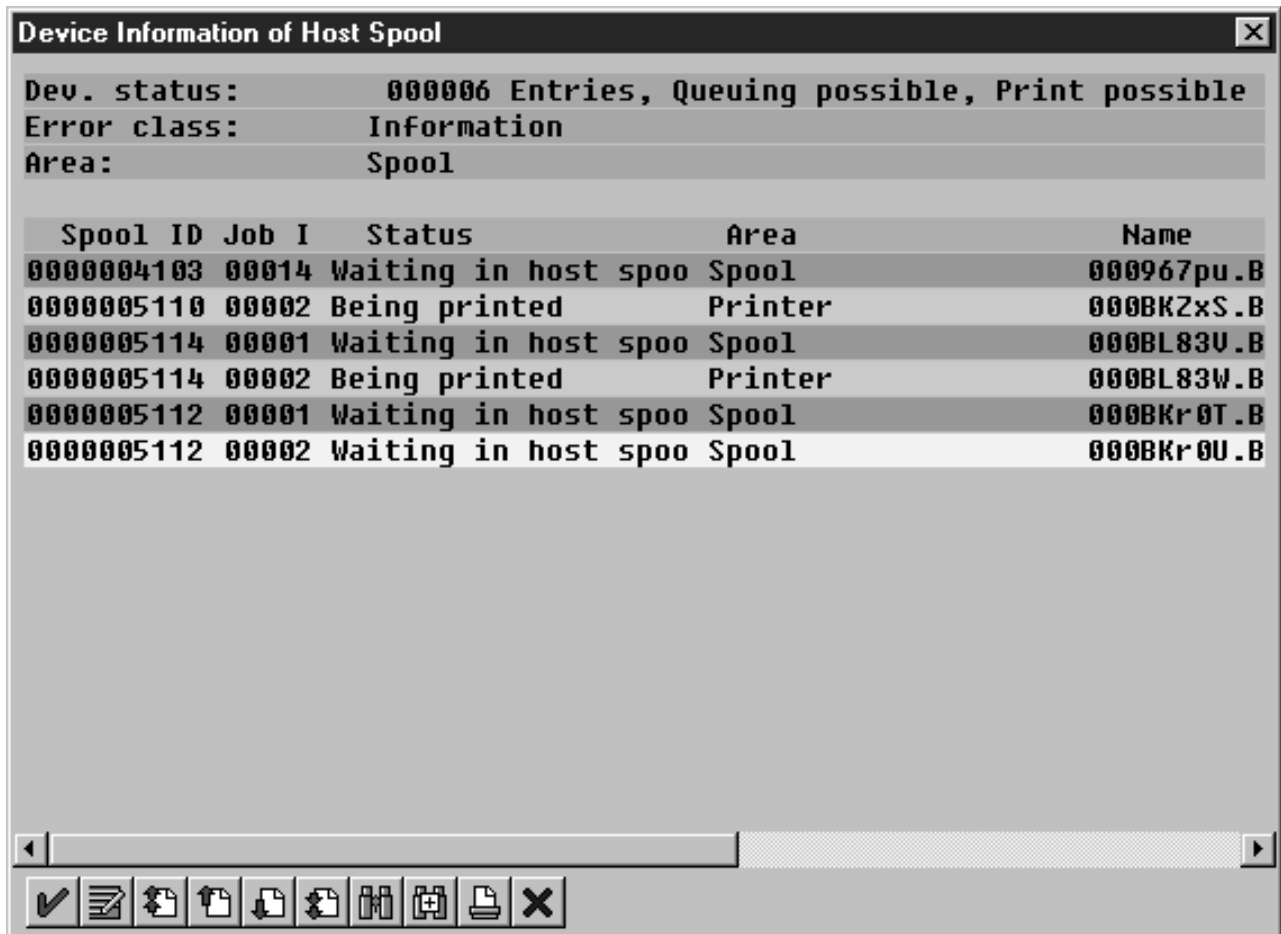
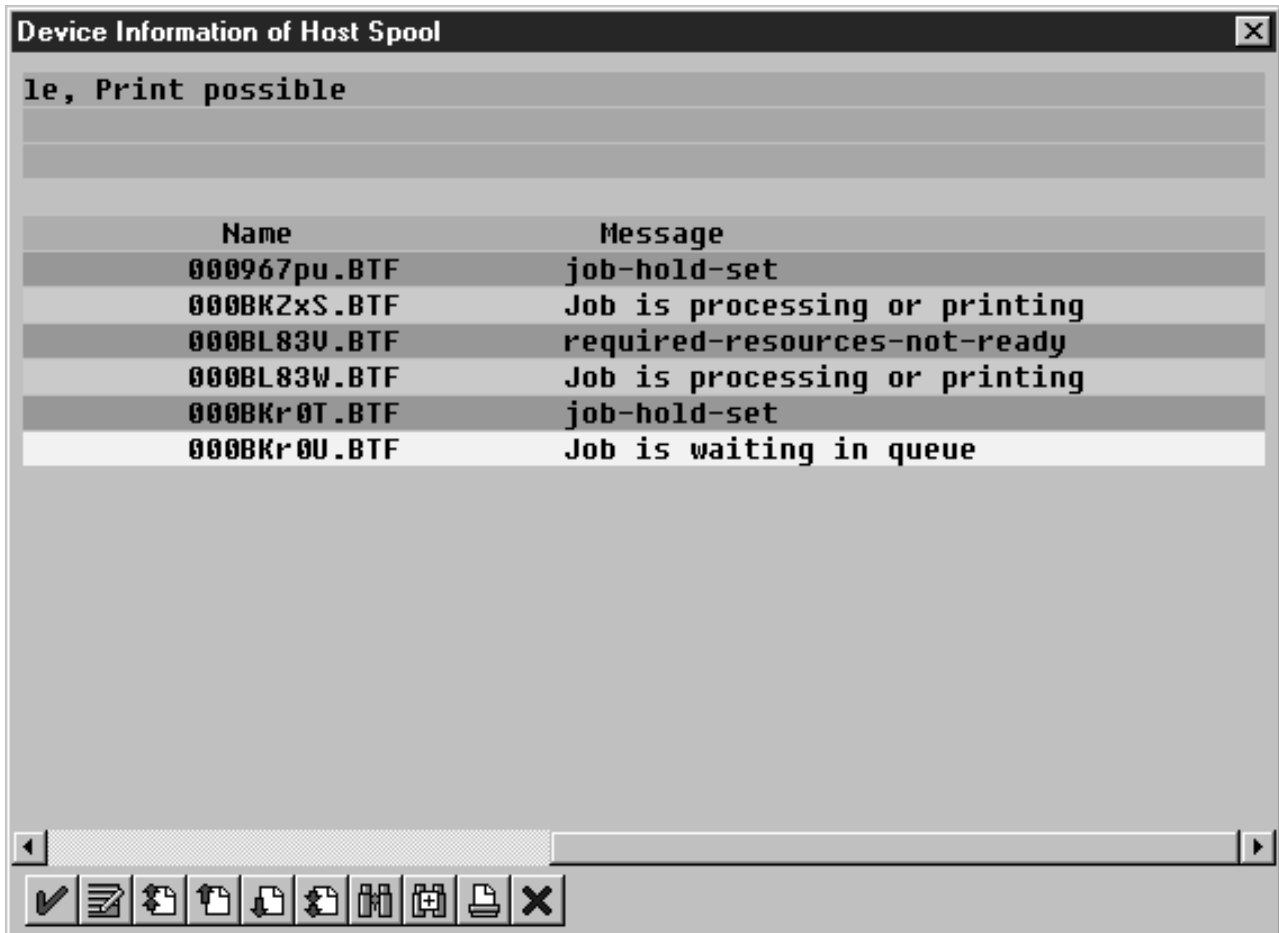


Figure 13. Device Information of Host Spool: first view.

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



The screenshot shows a window titled "Device Information of Host Spool" with a close button (X) in the top right corner. The window contains a list of printer jobs. At the top, the text "le, Print possible" is displayed. Below this is a table with two columns: "Name" and "Message". The table lists six jobs with their respective names and messages. At the bottom of the window, there is a horizontal scrollbar and a toolbar with various icons including a checkmark, a list, a refresh, a print, a delete, a search, a printer, and a close button.

| Name         | Message                       |
|--------------|-------------------------------|
| 000967pu.BTF | job-hold-set                  |
| 000BKZxS.BTF | Job is processing or printing |
| 000BL83U.BTF | required-resources-not-ready  |
| 000BL83W.BTF | Job is processing or printing |
| 000BKr0T.BTF | job-hold-set                  |
| 000BKr0U.BTF | Job is waiting in queue       |

Figure 14. Device Information of Host Spool: second view.

## 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 XXXXXXXXXXXX** 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:
  - a. From the **Devices** column, use the mouse to highlight the SAP device that you used to send your job to Infoprint Manager.
  - b. 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 XXXXXXXXXXXX** 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**).

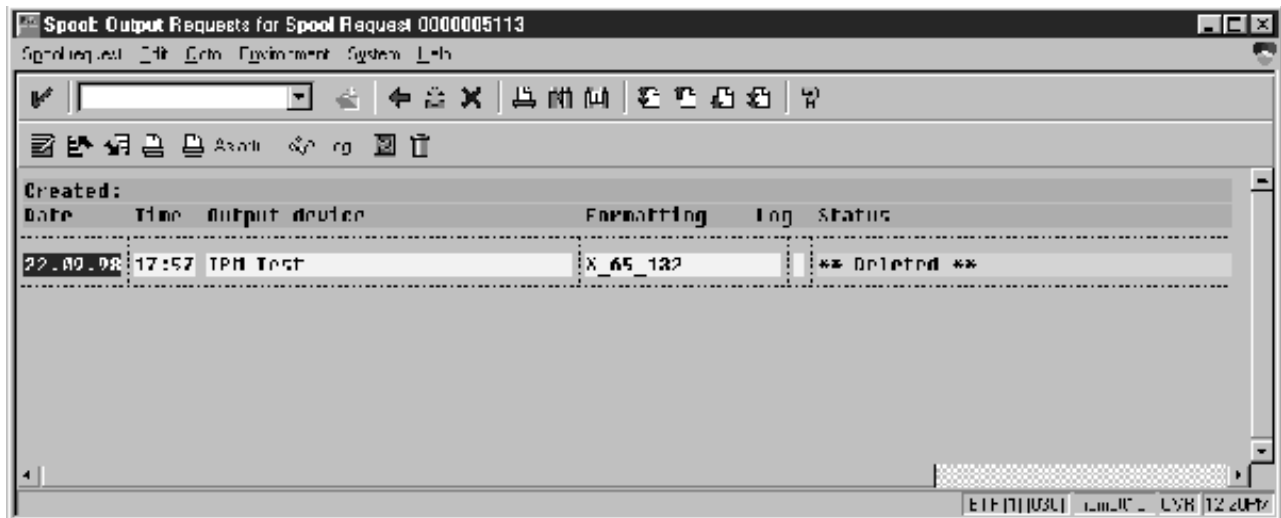


Figure 15. Spool Output Requests window.

---

## Advanced OMS Configuration

The following sections describe useful administrative functions, including ways of configuring your OMS to improve performance. Be sure to consult your SAP R/3 Release 4 documentation in conjunction with any procedures described in this section.

### Activating End-User Pop-Ups

Infoprint Manager delivers information to SAP R/3 about output requests (print jobs) as they process. SAP will alert job owners about problem and job completion information delivered from Infoprint Manager 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. 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.

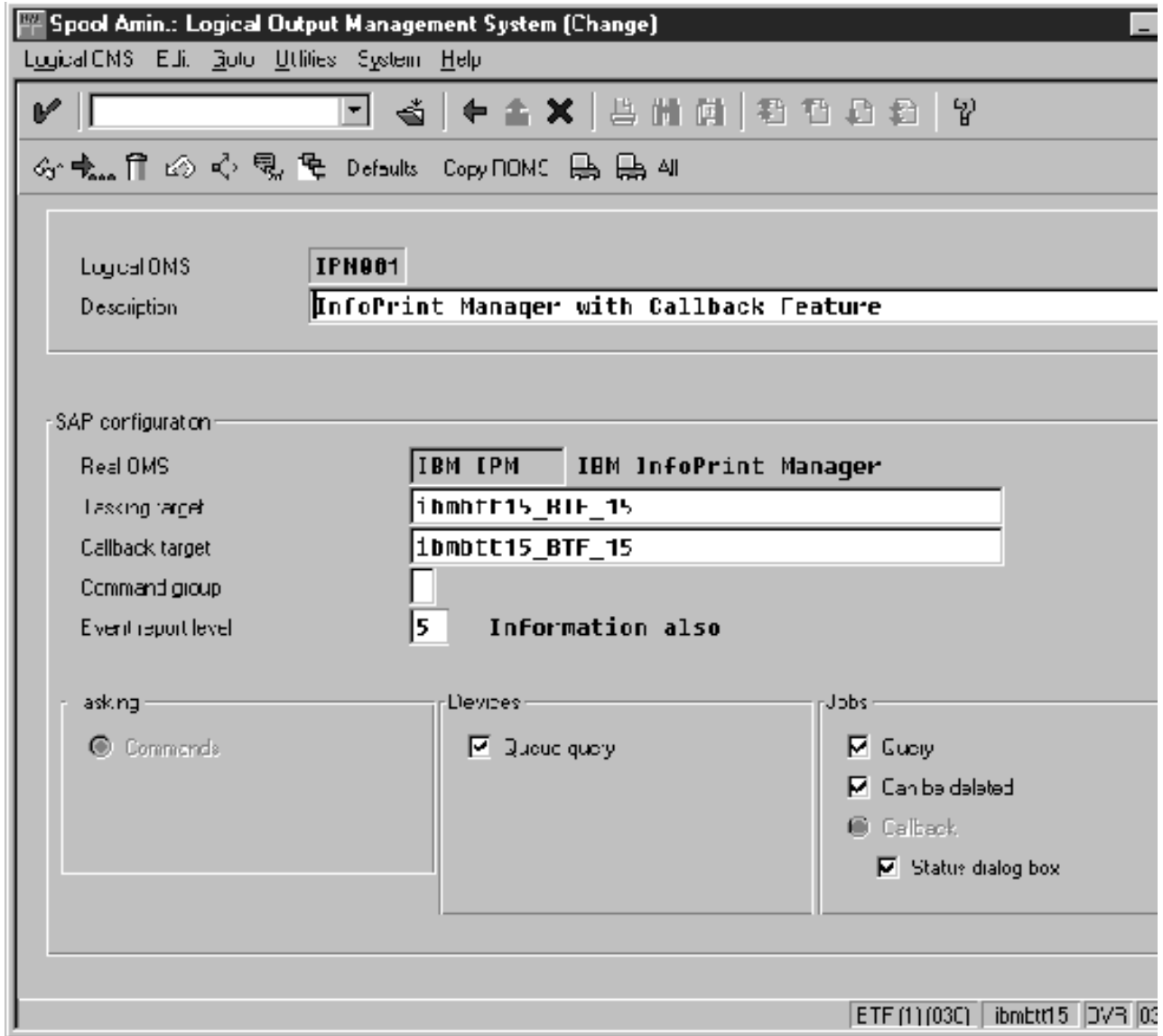


Figure 16. Logical Output Management Window.

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.

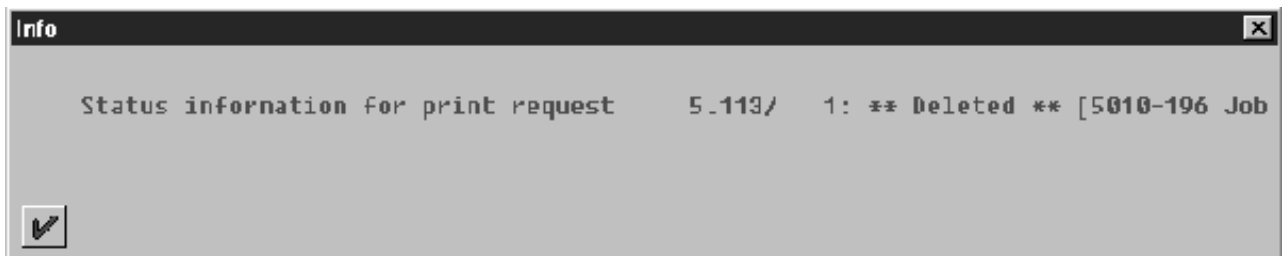


Figure 17. Information Window Showing Cancelled Output Request.



## 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.

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 (Change)** window displayed below, 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.

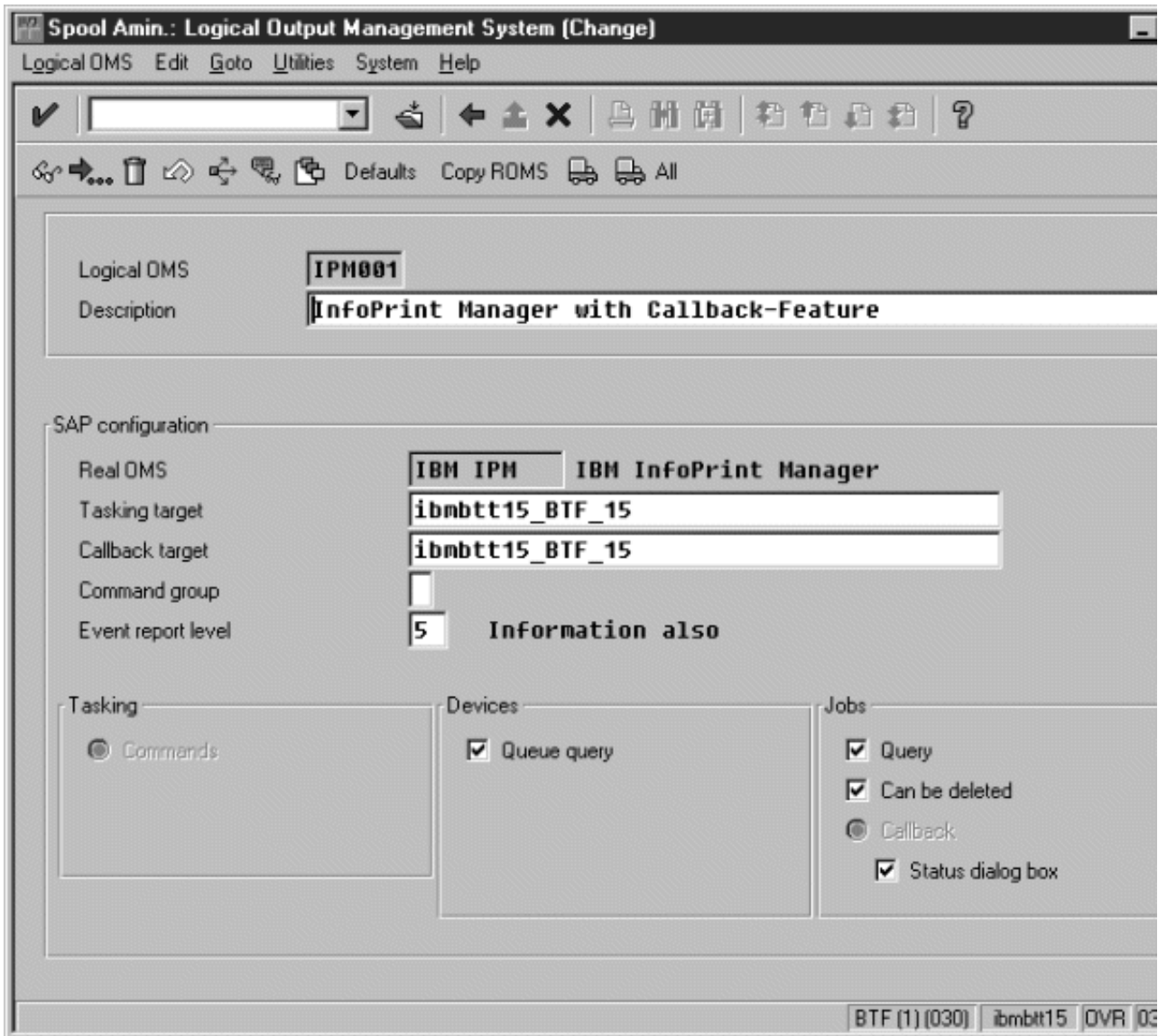


Figure 18. Logical Output Management (Change) Window



## 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:

- Using different report levels or event delivery criteria
- Using different OMS services
- Distributing the callback workload
- Using separate command groups

### Using Different Report Levels or Event Delivery Criteria

You can define LOMSs to specify different report levels on the Spool Admin.: Logical Output Management System (Change) window, as described in Selecting Event Report Levels (1 being the fewest messages, while 5 indicates the most messaging). On the second screen of this same window, you can also define LOMSs to specify different Event Delivery Criteria. This allows you to determine how often and how many events are delivered by the Callback daemon to your SAP system. To see how this screen was originally configured, see the figure beneath step 9 of Defining a Logical Output Management System.

## 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 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.

---

## Moving OMS Definitions among Systems

You can maintain OMS definitions on a single application 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, see the "Spool Server Definitions: Classifying Servers, Using Logical Servers, and Using Alternate Servers" topic in your SAP R/3 Release 4 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 >** and **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 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** keys.
  - 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** keys.

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

5. 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.

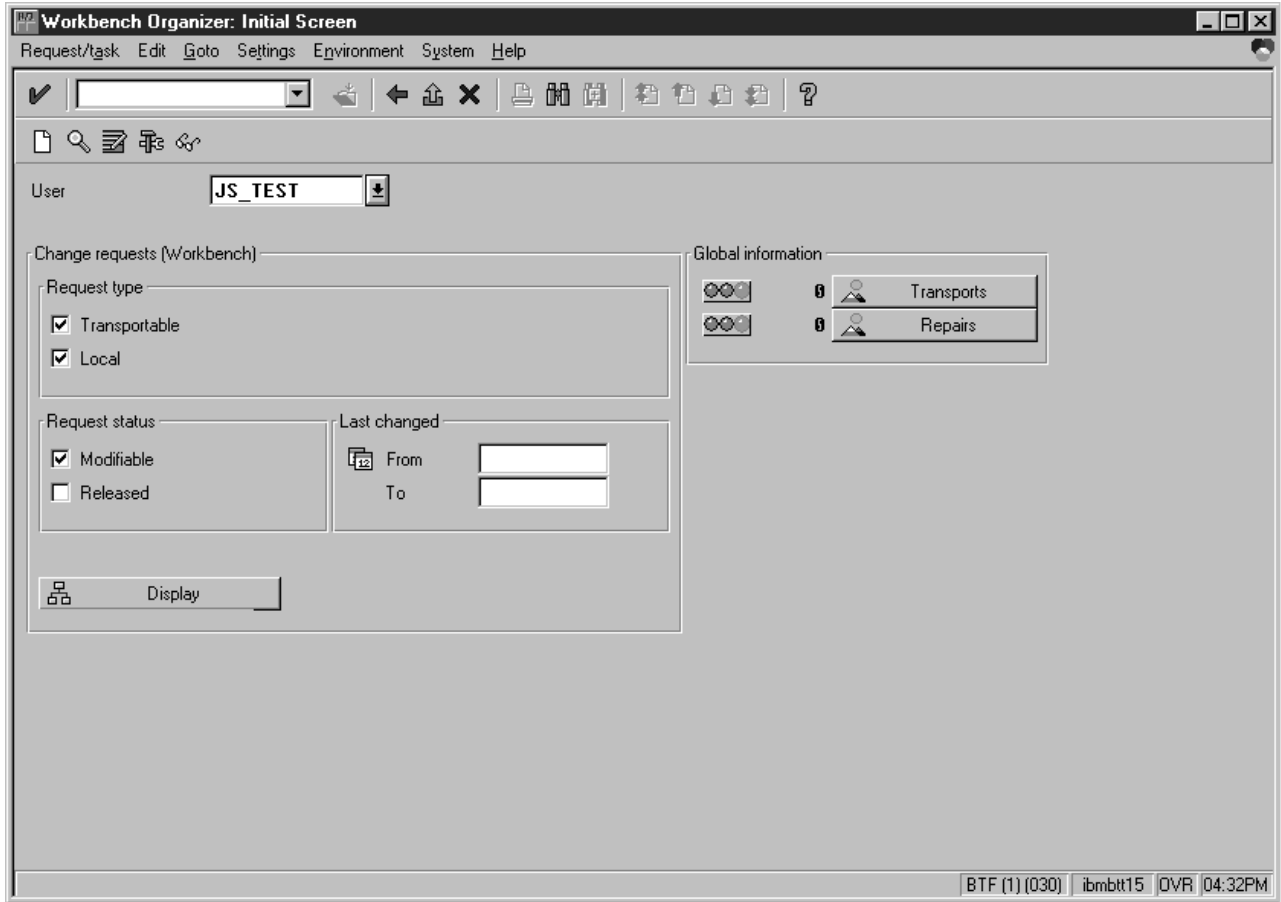


Figure 19. OMS Transport Window.



## Chapter 5. Installing to Print from SAP R/3 Release 3.1h or 3.1i (Enhanced Status)

If both your SAP kernel and data base are running Release 3 Version 1h or Release 3 Version 1i, you can use Infoprint Manager Version 3 Release 2 to take advantage of an early version of SAP R/3 Release 4 Output Management System (OMS) support.

SAP R/3 OMS support allows for a close integration with an external Output Management System. 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 OMS support 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 and Access Method **Z** to print both ABAP and OTF output from SAP R/3, 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**. 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 3.1h and 3.1i. Since Infoprint Manager invokes the **sap2afp** transform at the Infoprint actual destination, Access Method **E** allows you to receive enhanced status reporting while processing both ABAP and OTF print jobs.

Infoprint Manager for AIX Version 3 Release 2 provides a transport to activate the SAP OMS support. Once activated, this support is similar to the SAP Release 4 support, except that you must access the **SAP Spool Administration** windows with transaction spat (instead of transaction spad) and the **SAP Spool** windows with transaction sp1t (instead of transaction sp01).

---

### Infoprint Manager 3.2 SAP R/3 Release 3.1h or 3.1i Transport

The Infoprint Manager SAP Print Feature provides a transport containing two programs:

- **Y9SPINSE**
- **YSPOXOMS**

**Y9SPINSE** activates Access Method **E** so SAP R/3 can support external Output Management Systems, such as Infoprint Manager.

**YSPOXOMS** allows the Infoprint Manager OMS definition to be read into the SAP system.

---

### Infoprint Manager SAP OMS Overview

The Infoprint Manager SAP OMS support consists of a command-line interface and a SAP callback daemon which logs onto a SAP system and delivers Infoprint Manager notifications back to SAP R/3 by making RFCs (remote function calls). As print, cancel job, and device query requests are made by SAP users, the SAP Spool Work Process (SWP) invokes the Infoprint Manager commands. As the job progresses through the Infoprint Manager system, notifications are sent back to

SAP through the Infoprint Manager SAP Callback daemon (sapcbd). Only one sapcbd needs to be started for each SAP system, regardless of how many application servers make up that system. The sapcbd runs on the same server where Infoprint Manager is running.

The Infoprint Manager SAP Print Feature contains:

- the command-line interface
- the SAP Callback daemon (**sapcbd**)
- the **sap2afp** transform

To allow SAP to issue the Infoprint Manager commands, you must install the Infoprint Manager AIX Client and the Infoprint Manager SAP Print Feature on every SAP server where an SAP application server will issue the commands. This includes every application server with an SWP managing R/3 devices that have been configured to use the Infoprint Manager OMS.

To allow the **sapcbd** to deliver Infoprint Manager notifications to a SAP system, you must install the SAP Print Feature on at least one system where the Infoprint Manager servers are running. To allow SAPGOF device type output (both OTF and ABAP data streams) to be transformed and processed by Infoprint Manager, you must install the SAP Print Feature on every system where Infoprint Manager actual destinations are going to transform SAP data.

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.

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 on “Chapter 3. Installing Infoprint when SAP Runs on HP-UX or SUN Servers” on page 7.

**Notes:**

1. These procedures presumes that you have already installed and configured Infoprint Manager on a separate AIX server.
  2. An SAP OMS interface restriction requires that your Infoprint server (**pdserver**) name be no longer than nine characters.
- “Installing the Infoprint Manager SAP Client Package on each SAP System Server” on page 45.  
If you are maintaining a SAP System server that was configured prior to PTF U474309, you should use the “Appendix. Installing the AIX Client and the SAP Print Feature on each SAP System Server” on page 119 procedure instead of this option.
  - “Installing the SAP Print Feature and the SAP Fonts on the Infoprint AIX Server” on page 46.
  - “Defining a SAP User for the OMS Callback Daemon” on page 50.
  - “Importing the Infoprint 3.2 SAP R/3 Release 3.1h or 3.1i Transport” on page 51.
  - “Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server for Release 31h or 31i” on page 51.
  - “Starting the SAP Callback Daemon” on page 58.

## Installing the Infoprint Manager SAP Client Package on each SAP System Server

With Infoprint Manager Program Temporary Fix (PTF) U474309 (available in March 2001), you can simplify the installation of the SAP Print Feature on SAP application servers by installing the SAP Client package.

This command bypasses the Infoprint Installer and installs the necessary filesets on the SAP application server.

The SAP Client package simplifies the installation because your SAP application server no longer needs to install either the SAP Print Feature, the AIX Client, or the prerequisite filesets for the Infoprint Installer. The SAP Client package requires a much smaller subset of prerequisites, as you can see from the following list:

1. bos.rte 4.2.1.0
2. bos.rte.printers 4.2.1.8

To install the SAP Client on your SAP application servers, use the following procedure:

1. Log into the AIX system as **root**.
2. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
3. Open a terminal window.  
(If you are using the Common Desktop Environment (CDE), you may open a terminal window by clicking on the terminal icon contained in the front panel. (The front panel is the task bar that appears at the bottom of the screen.) By default, the terminal icon is contained in a pop-up menu above the text editor icon that appears on the front panel.)
4. The first time you run the Installer, follow this procedure:
  - a. Type the following on the command line:  

```
smit cdrfs
```
  - b. Select **Add a CDRom File System** from the list of choices presented.
  - c. Click the List button and select your CD-ROM device name (cd0, for example).
  - d. Type the following in the **MOUNT POINT** field:  

```
/cdrom
```
  - e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see `crfs: 0506-909 /cdrom file system already exists`, do not interpret this as a failure. (The existing **/cdrom** file system should be usable.)
  - f. Press the **F12** key to exit **SMIT**.
5. Type the following on the command line:  

```
mount /cdrom
```
6. The SAP Client package (**ipr.sapclient**) is installed at the command line by specifying `setup -x`.

Note that the SAP Client package cannot be installed if other ipr\* filesets reside on a SAP application server.

## Installing the SAP Print Feature and the SAP Fonts on the Infoprint AIX Server

To run the SAP Callback daemon on the Infoprint AIX server, you must install the SAP R/3 Feature on the Infoprint AIX server, if you have not already done so.

If you are printing either Output Text Format (OTF) or Advanced Business Application Programming (ABAP) data, ensure that you have installed the **sap2afp** transform and the fonts necessary for printing. To install the transform, you must install the SAP Print Feature on each Infoprint AIX server with actual destinations that will be transforming data.

1. Log into the AIX system as **root**.
2. Open either an aixterm or a dtterm window to get to an AIX command line.
3. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
4. The first time you run the Installer, follow this procedure:
  - a. Type the following on the command line:  
`smit cdrfs`
  - b. Select **Add a CDRROM File System** from the list of choices presented.
  - c. Click the List button and select your CD-ROM device name (cd0, for example).
  - d. Type the following in the **MOUNT POINT** field:  
`/cdrom`
  - e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see `crfs: 0506-909 /cdrom file system already exists`, do not interpret this as a failure. (The existing **/cdrom** file system should be usable.)
  - f. Press the **F12** key to exit **SMIT**.
5. Type the following on the command line:  
`mount /cdrom`
6. To install the optional Infoprint Manager SAP Print Feature, enter the following command:  
`/cdrom/setup`
7. 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. 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.
8. From the next Infoprint Installer panel (displayed below), you must install both the Infoprint Manager Base and the SAP Print Feature:



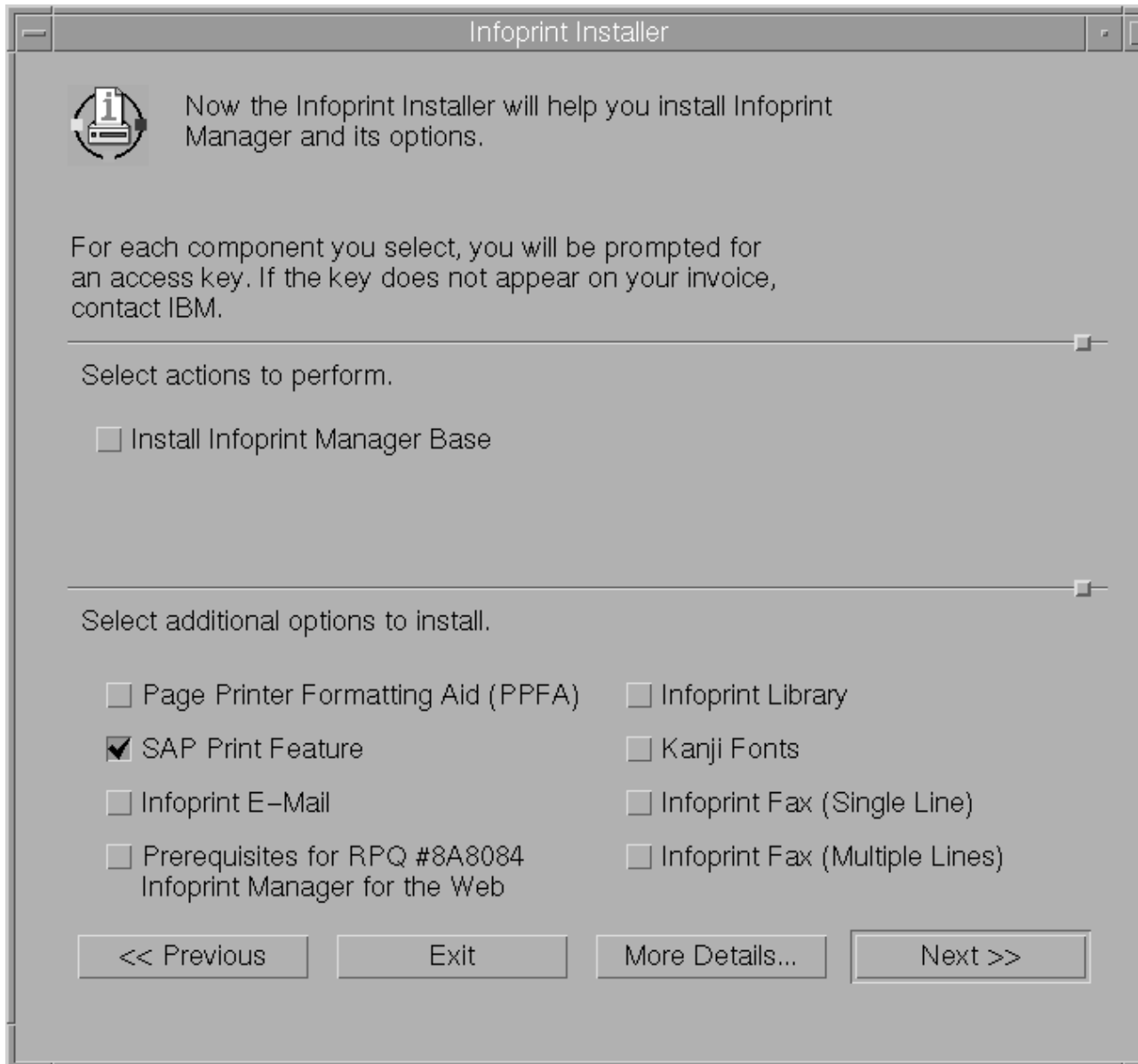


Figure 20. Infoprint Installer: Install Options panel

9. Follow the remaining Infoprint Installer screens to complete installation of the product. Note that you must have the feature key for the SAP Print Feature from your invoice, because you will be prompted for it on the following panel:



Figure 21. Infoprint Installer: SAP Key panel

Note that if you cannot locate your invoice, click the **More Details...** button on the key-entry screen for information on how to contact IBM Customer Support. The Installer setup script prints a help statement if you specify the following on the AIX command line: `/cdrom/setup -h`.

### 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/bin` 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 the following two commands in sequence:
  - a. `mount /cdrom`
  - b. `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:
  - a. **afpfonts.bookmstr**
  - b. **afpfonts.compat**
  - c. **afpfonts.codepage**
  - d. **afpfonts.ocr**
12. To install the fonts, press **Enter**.  
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 .`
16. Then you can remove the CD-ROM from your CD-ROM drive.

### Configuring the SAP R/3 Transform

The SAP Transform includes two types of files:

- An executable named **sap2afp**, which converts Output Text Format (OTF) data into MO:DCA-P output data and Advanced Business Application Programming (ABAP) list format data into line data. This file is installed in the **/usr/lpp/psf/bin** directory.
- Configuration files that are installed in the **/usr/lpp/psf/sap2afp** directory.

Table 8. *sap2afp* Configuration Files

| Configuration File  | Purpose                                     | Use           |
|---------------------|---------------------------------------------|---------------|
| <b>barcode.tab</b>  | Provides list of valid SAP bar codes.       | OTF data only |
| <b>xxxxyyyy.tab</b> | Maps ASCII code pages to EBCDIC code pages. | OTF data only |

Table 8. *sap2afp* Configuration Files (continued)

|                      |                                                                                                                                        |                |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>fonts.tab</b>     | Provides a list of raster fonts with the appropriate character set and code page.                                                      | OTF data only  |
| <b>6400fonts.tab</b> | Provides a list of raster fonts that apply exclusively to the IBM 6400 printer, with the appropriate character set and code page.      | OTF data only  |
| <b>image.tab</b>     | Defines the dither matrix for half-tone color print jobs.                                                                              | OTF data only  |
| <b>pagedef.tab</b>   | Defines the form definition (SAP R/3 <b>PAPER TYPE</b> ) used, as well as the page definition and fonts for jobs that go through ACIF. | ABAP/OTF       |
| <b>defcp.tab</b>     | Converts ASCII into EBCDIC characters.                                                                                                 | ABAP data only |

## Defining a SAP User for the OMS Callback Daemon

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. You will need this user information when you “Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server for Release 31h or 31i” on page 51.

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 permission to log into the **CCMS** system management and make RFC calls (using S- RFC authorization).

The following table indicates SAP authorization objects with their relevant field values.

Table 9. *SAP Authorization Objects for Defining an OMS Callback Daemon User*

| SAP Release | S_RFC Authorization Object                   |
|-------------|----------------------------------------------|
| 3.1x        | ACTVT=16<br>RFC_NAME= SXMI<br>RFC_TYPE= FUGR |

Using this information, you must create authorizations and profiles for this ID and assign the profile to the **CPIC** type user. For assistance, see your SAP Systems Administrator.

Remember to record the user, password, and client for later use. Note that if you ever change or modify this SAP user, you must make the changes to the **SAP configuration** pane on the **Spool Admin.: Real Output Management (Change)** window. You accessed this window through the spat transaction. You must also

make these changes to the `rc.iprsap` file in the `/etc` directory on the Infoprint AIX server where the SAP callback daemon is running.

## Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server for Release 31h or 31i

Infoprint Manager provides a configuration file to assist in defining Infoprint Manager as an OMS on your R/3 system. To access this configuration file, you must first import the "Importing the Infoprint 3.2 SAP R/3 Release 3.1h or 3.1i Transport". This procedure will define Infoprint Manager as the "Defining a Real Output Management System". 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) for your SAP R/3 installation, as well as "Defining a Logical Output Management System" on page 55 so you can define Access Method E devices in SAP R/3. for your SAP R/3 installation, as well as defining a Logical Output Management System (LOMS) so you can define Access Method E devices in SAP R/3.

### Importing the Infoprint 3.2 SAP R/3 Release 3.1h or 3.1i Transport

After installing the Infoprint Manager AIX Client and the SAP Print Feature on a SAP host system, use the following procedure to activate the OMS support from an AIX command-line on your SAP system.

1. Logon as **root**.
2. Copy the programs for import:
 

```
cp /usr/lpp/pd/bin/R900835.PD9 /usr/sap/trans/data
cp /usr/lpp/pd/bin/K900835.PD9 /usr/sap/trans/cofiles
```
3. Modify the permissions on these programs so the SAP system administrator, `<sid>adm` -- where `<sid>` is the three-character SAP System ID -- can import them:
 

```
chown <sid>adm:sapsys /usr/sap/trans/data/R900835.PD9
chmod 755 /usr/sap/trans/data/R900835.PD9
chown <sid>adm:sapsys /usr/sap/trans/cofiles/K900835.PD9
chmod 755 /usr/sap/trans/cofiles/K900835.PD9
```
4. Log on to the system as `<sid>adm`.
5. Specify `cd /usr/sap/trans/bin`.
6. Specify `tp import PD9K90835 <sid>client u148` where `client` represents the default client of your SAP system.

### 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 3.1h or 3.1i system.
2. To activate Access Method E and allow the SAP R/3 system to access the Infoprint Manager OMS definition, enter transaction SA38.
3. From the **ABAP: Execute Program** window, activate Access Method E by specifying Y9SPINSE in the **Program** field and clicking on the **execute** (checkmark) icon.
4. Allow the SAP R/3 server to access the Infoprint Manager OMS definition by specifying YSPOXOMS in the **Program** field and clicking on the **execute** (checkmark) icon.

You will see the **Spool: Saving and Loading of Definitions** window shown below.

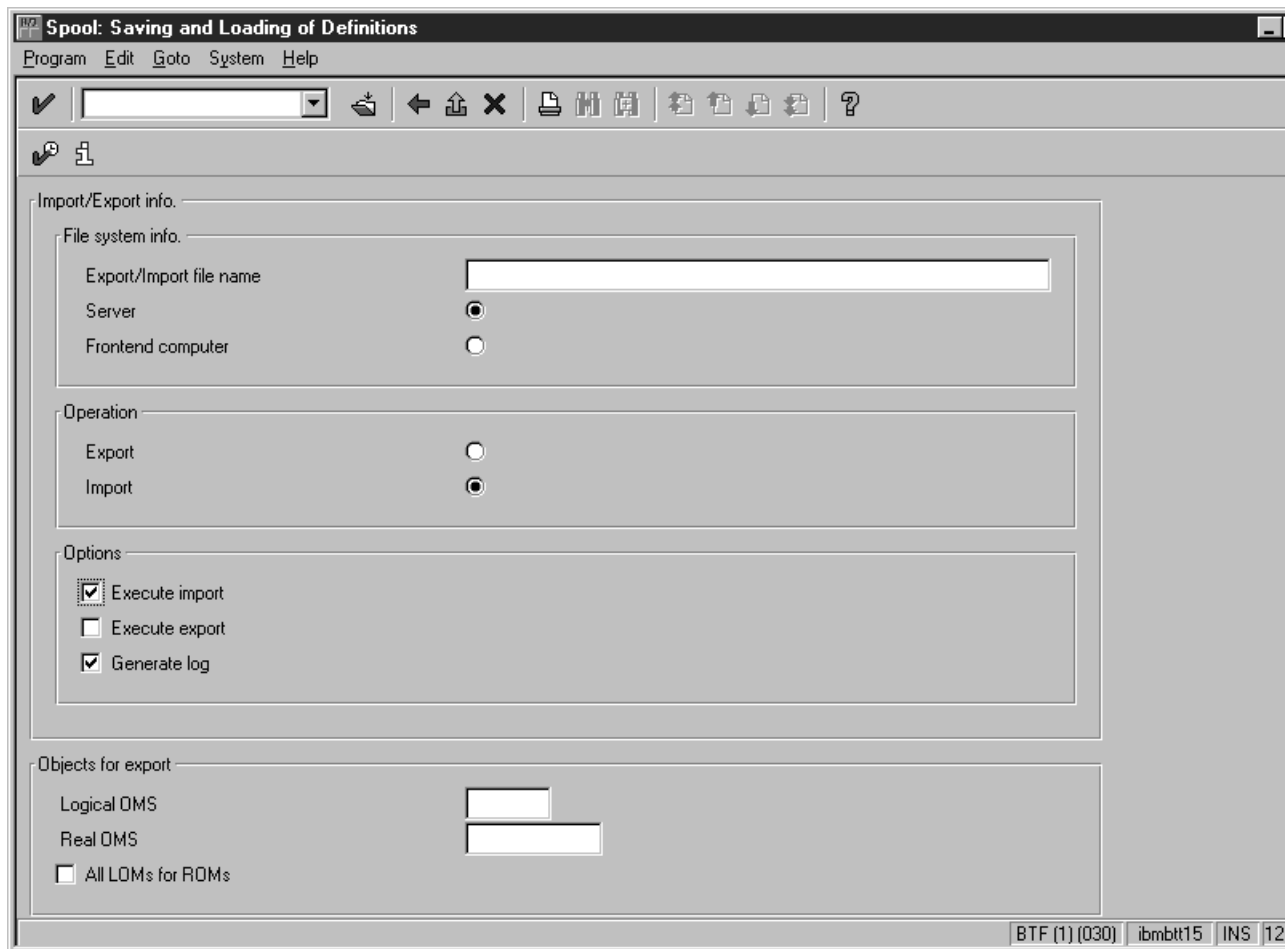
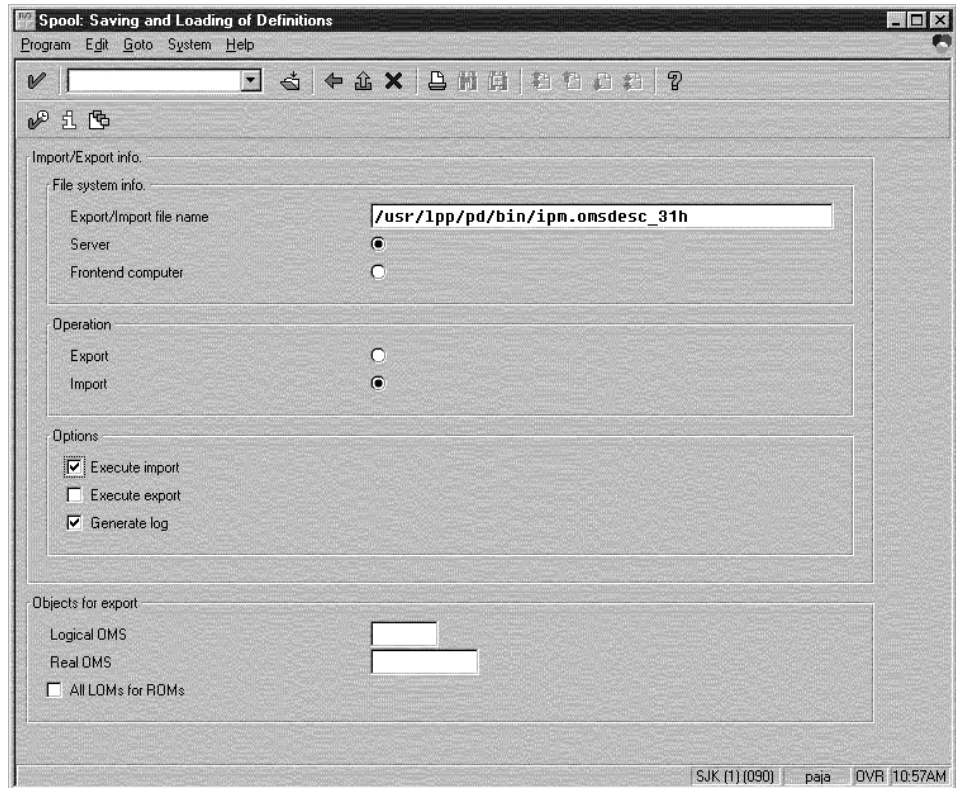


Figure 22. Real Output Management System window

5. Specify `/usr/lpp/pd/bin/ipm.omsdesc_31h` 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.

6. Running the report displays a list of the ROMS and LOMS that have been imported into the system.
7. To complete the necessary definitions, specify the spat transaction.
8. 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.
9. 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.
10. From the **Spool Admin.: Real Output Management (Display)** window, click the **Change** (red pencil f8 key) icon.
11. 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.
  - 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, leave the **Initialization instance** field blank.

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

12. Within the **SAP configuration** pane at the bottom of the window, 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> 3.1H
```

In the **Initialization command** field shown below, the full value follows:

```
/usr/lpp/pd/bin/startcbd BTF ibmbtt15 15 ibm 030 newname En 3.1H
```

The following tables display the variables grouped into three components:

- a. **Command to Start the Callback Daemon**
- b. **SAP R/3 Instance Where the Callback Daemon Logs On**
- c. **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.

Table 10. Command to Start the Callback Daemon (*sapcbd*).

| Variable                  | Explanation                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------------|
| /user/lpp/pd/bin/startcbd | The fully-qualified path for the command. Note that this value is hard-coded and may not be modified. |

Table 11. SAP R/3 Instance where the Callback Daemon (*sapcbd*) Logs on.

| Variable | Explanation                      |
|----------|----------------------------------|
| BTF      | The three-character System Name. |
| ibmbtt15 | The Host Name                    |
| 15       | The Instance ID                  |

Table 12. Callback Daemon (*sapcbd*) User ID Information

| Variable | Explanation                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| ibm      | The User value. This value and the two that follow were originally defined when you created a SAP userid for the OMS Callback daemon. |
| 030      | The Client value                                                                                                                      |
| newname  | The Password value                                                                                                                    |
| En       | The Language value: in this example, English.                                                                                         |

**Note:** Note: The resulting text string is the same that you will specify in the **startcbd** command when you Start the SAP Callback Daemon.



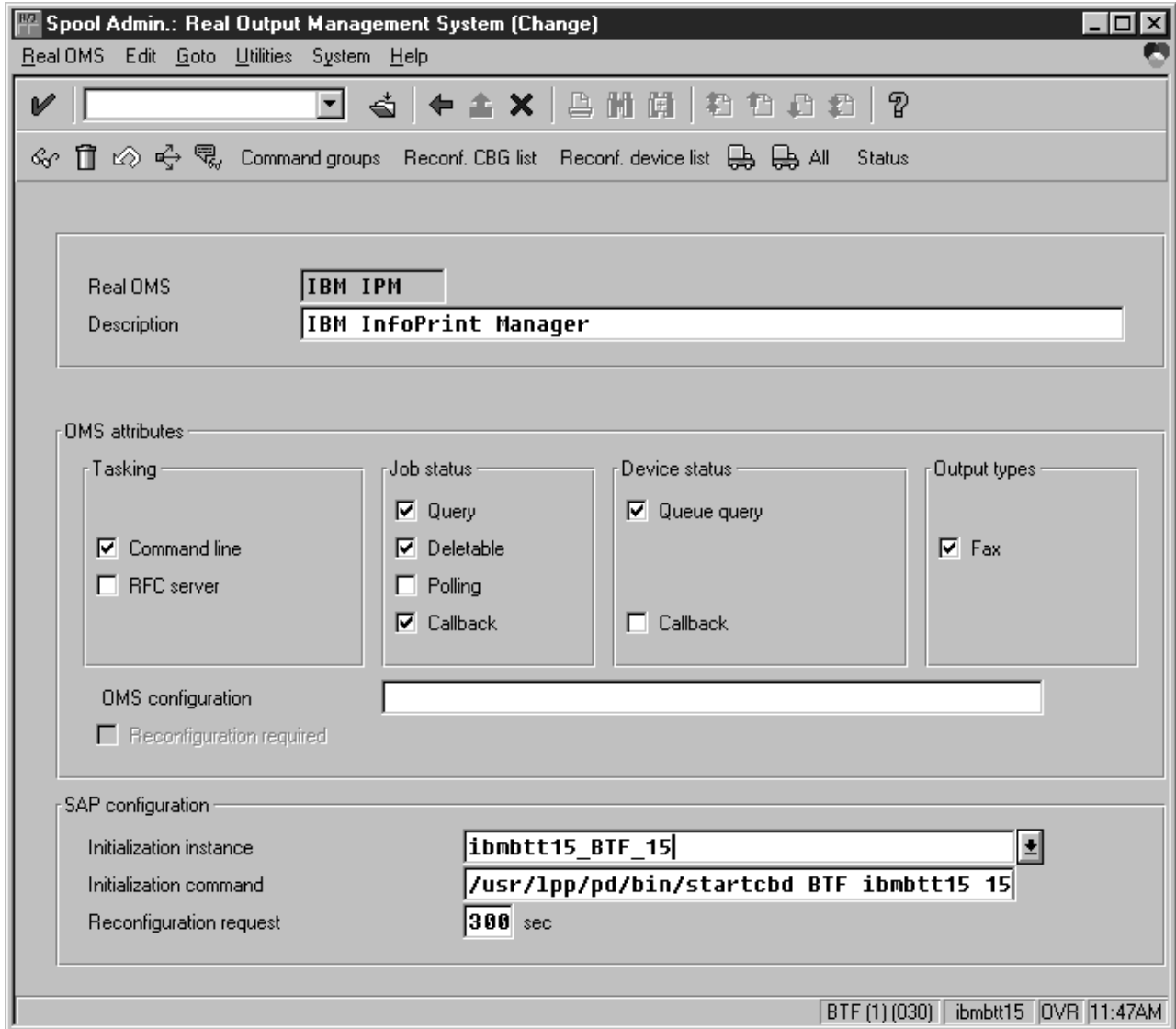


Figure 23. Real Output Management System (Change) window

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

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

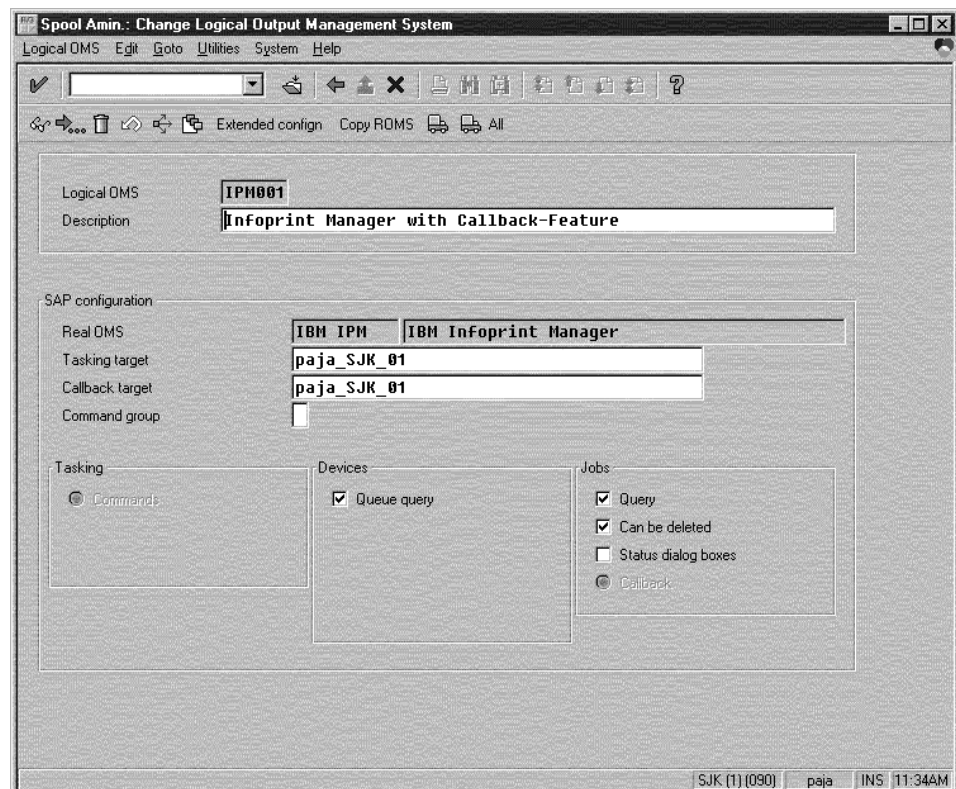
### Defining a Logical Output Management System

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.

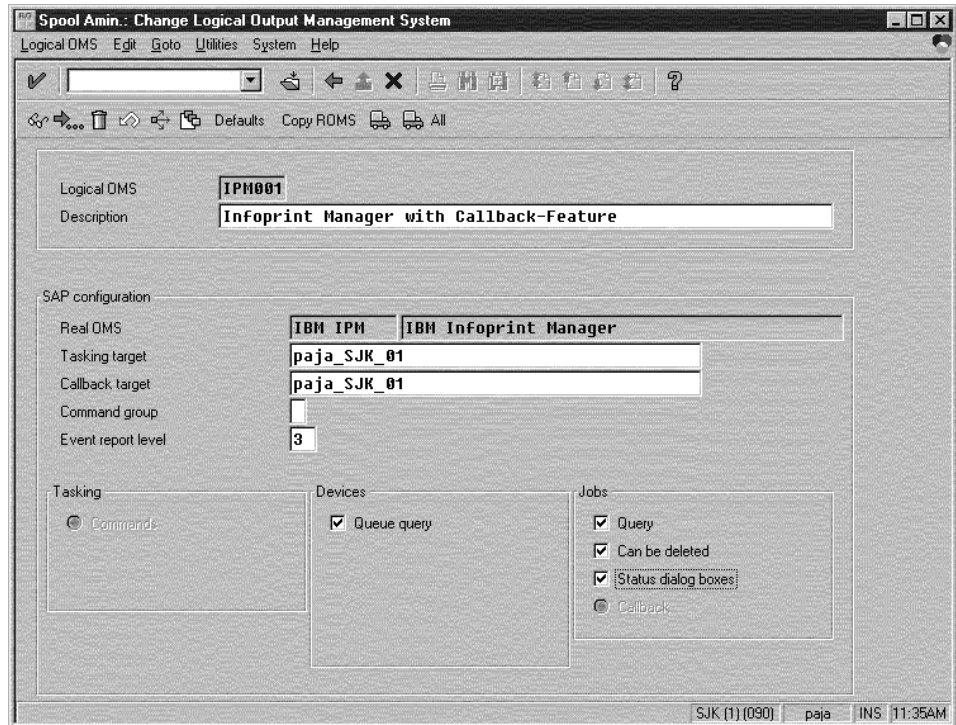
4. From the **Spool Admin.: Logical Output Management (Display)** window, click the **Change** (red pencil f8 key) icon.
5. From the **Spool Admin.: Logical Output Management (Change)** window displayed below, specify a value from the list of all active SAP application servers for both the **Tasking 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).



6. 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 "Defining a SAP User for the OMS Callback Daemon" on page 50. 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 specify 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.

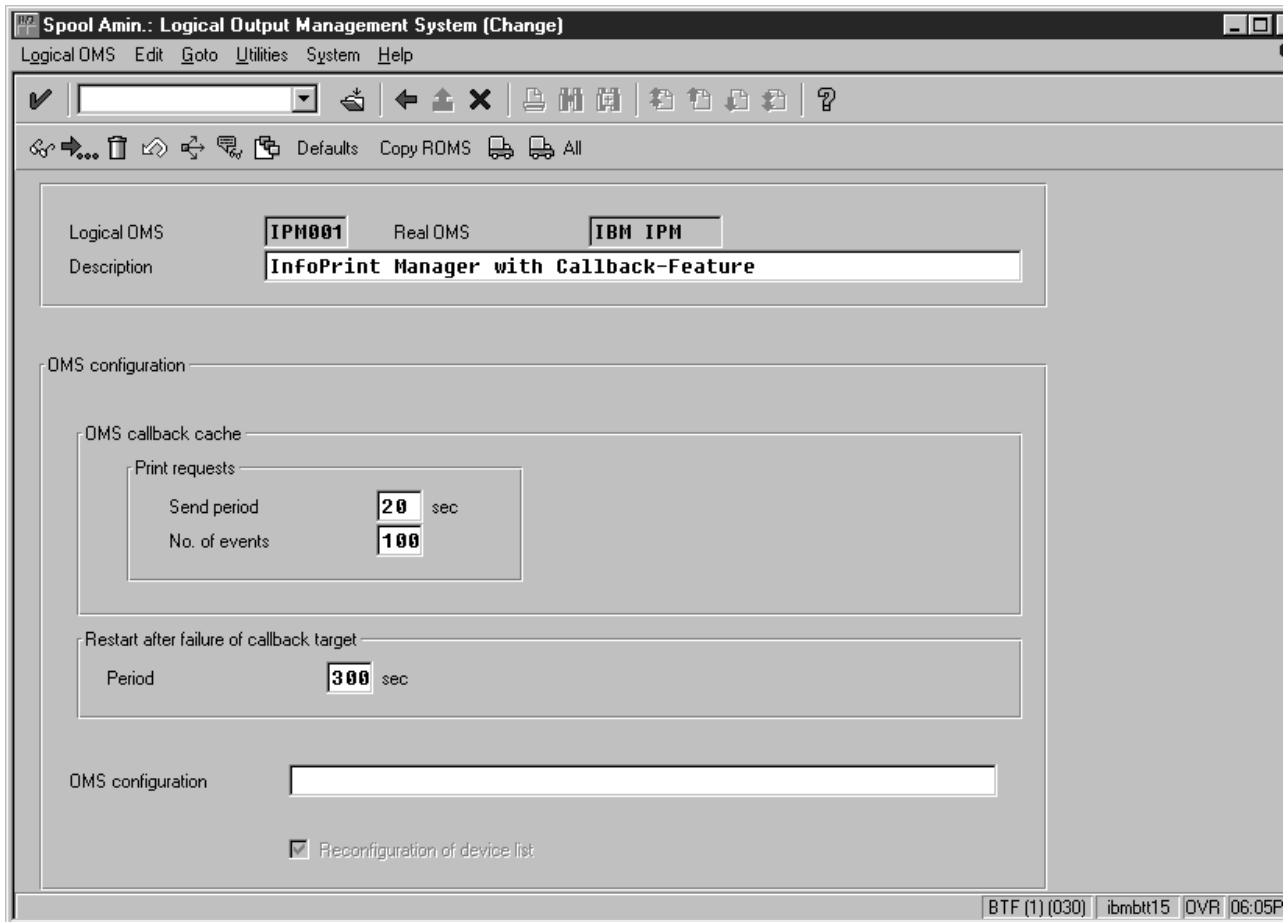


Figure 24. Setting Notification Event Values

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

## Starting the SAP Callback Daemon

Each SAP R/3 system using the Infoprint Manager Callback support needs to have one callback daemon running. To start the SAP Callback daemon, you must edit and run the `/etc/rc.iprsap` file from the AIX command line. This procedure takes place on the Infoprint AIX server.

1. From the AIX command line, access the `rc.iprsap` file in the `/etc` directory. Edit the file to copy and uncomment the two lines of code:
  - a. An echo statement that states that the Callback daemon has been started:
 

```
echo Starting sapcbd <System Name>
```
  - b. The `startcbd` command (see Callback Daemon User ID Information) at the top of the file:
 

```
/usr/lpp/pd/bin/startcbd <System Name> <Host Name> <Instance ID> <User>
<Client> <Password> <Language>
```
2. Specify the same values for the items in angle brackets (`< >`) that you entered for the initialization command on the **Spool Admin.: Real Output Management System (Change)** window.
3. Add the string `31H` at the end of the new line for the `startcbd` command.
4. Once you have saved and exited the file, start 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.<sid>sysname/error.log` file (where `<sid>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 technical support representative.

## Configuring to Start Callback Daemons on System Reboot

The SAP Callback daemon needs to run all the time. A monitor ensures that it is restarted if it ever stops after it is started. However, to ensure that both the daemon and its monitor are restarted if the AIX system that it runs on is rebooted, you need to perform one more step to add the `rc.iprsap` file to the `/etc/inittab` directory.

To ensure that the SAP Callback daemon(s) are restarted automatically whenever the system they are running on is restarted, use the Infoprint **SMIT** interface:

### Infoprint Printing Systems-->Infoprint Utilities-->SAP Callback Daemons

From the **SAP Callback Daemons** panel, select the **Start SAP daemons at reboot** option.

If you prefer the command line, you can also enter the the following at the AIX command line instead:

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

Both the SMIT interface and this command ensure that the SAP daemons (`sapcbd`) are restarted automatically whenever the systems they are running on are restarted.

As you add more callback daemons to your Infoprint configuration, you do not have to perform this step, but you do need to add a new entry in the `/etc/rc.iprsap` file and type `/etc/rc.iprsap` on the command line. Your new callback daemons will start and any SAP Callback daemons that are already running will report that they are running.

Now that you have finished defining the Infoprint Manager OMS to your SAP R/3 Release 3.1h or 3.1i system, you can begin to define devices so you can print or fax from SAP R/3 with Infoprint Manager.

## Shutting Down the 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 migrating 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, type:

stopcbd *systemname*

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

If you do not want a reboot of the system to restart the SAP Callback daemon, remove its entry from the `/etc/rc.iprsap` file.

To ensure that no SAP Callback daemons are restarted automatically whenever the systems they are running on are restarted, use the Infoprint SMIT interface:

**Infoprint Printing Systems-->Infoprint Utilities-->SAP Callback Daemons**

From the **SAP Callback Daemons** panel, select the **Do not start SAP daemons at reboot** option.

If you are moving the SAP Callback daemon to another system, remember to follow the instructions for both "Starting the SAP Callback Daemon" on page 58 and "Configuring to Start Callback Daemons on System Reboot" on page 59.

## Defining Devices for Infoprint Manager that Use the Infoprint OMS

Use the following procedure to define devices to SAP R/3 Release 3.1h or Release 3.1i. 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 destination 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 select 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:

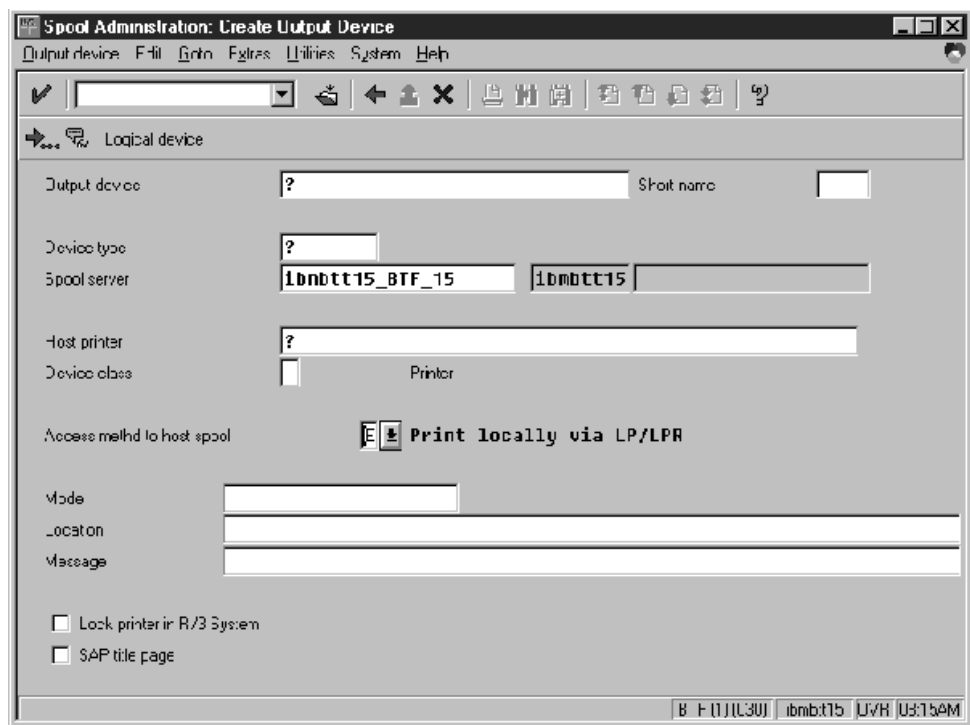
Table 13. Devices that use the Infoprint Manager OMS.

| Field                              | Value                                                                     |
|------------------------------------|---------------------------------------------------------------------------|
| <b>Output Device</b>               | IPM<br>Specify a long name and allow the system to generate a short name. |
| <b>Device type</b>                 | SAPGOF<br>Specifies the driver that generates the output data stream.     |
| <b>Host printer</b>                | ip01-sam<br>Specify the Infoprint Manager logical destination.            |
| <b>Access method to host spool</b> | E<br>Ensure you specify this Access Method.                               |

Table 13. Devices that use the Infoprint Manager OMS. (continued)

|                     |                                                                                                                                                                                                                  |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LOMS</b>         | IPM001<br><br>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. |
| <b>Spool server</b> | ibmbtt15_BTf_15<br><br>Choose an applicable spool server from the entries list on the field.                                                                                                                     |

Figure 25. Display for Defining Access Method E



6. 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 device 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, “Viewing Enhanced Job Status, Job Events, and Querying Jobs”, “Displaying Device Status” on page 63, and “Canceling Jobs” on page 66.

## 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 3.1h or Release 3.1i graphical user interface:

1. Specify the sp1t transaction in the ok-Code field.
2. From the **Output Requests for Spool Request xxxxxx** window (where xxxxxx refers to the SAP Spool ID), double-click on the output request you want to view in the **Status** column on the far right.
3. From the **Status Description** pop-up window (example displayed below), you can see current information about the job, including the last event received.

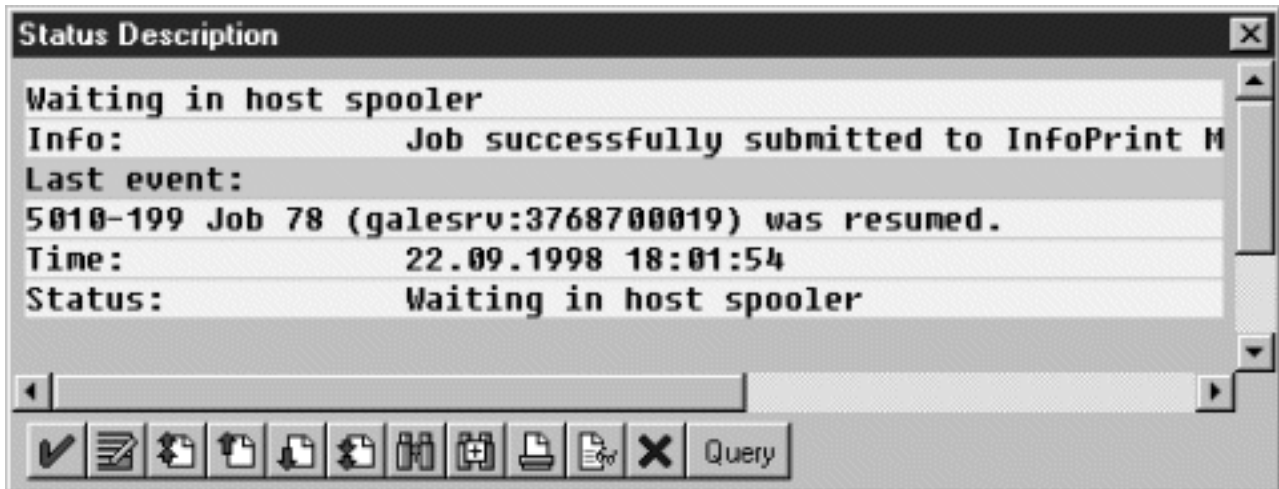


Figure 26. SAP R/3 Status Description field

4. Click on the Events (F5 key) button on the **Status Description** window to get the **Events for Output Requests** window. From the **Events for Output Requests** pop-up window (displayed below), you can view all the events concerning this job.

**Note:** This **Events for Output Requests** pop-up window is displayed twice 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.

Figure 27. Events for Output Requests field, view 1.



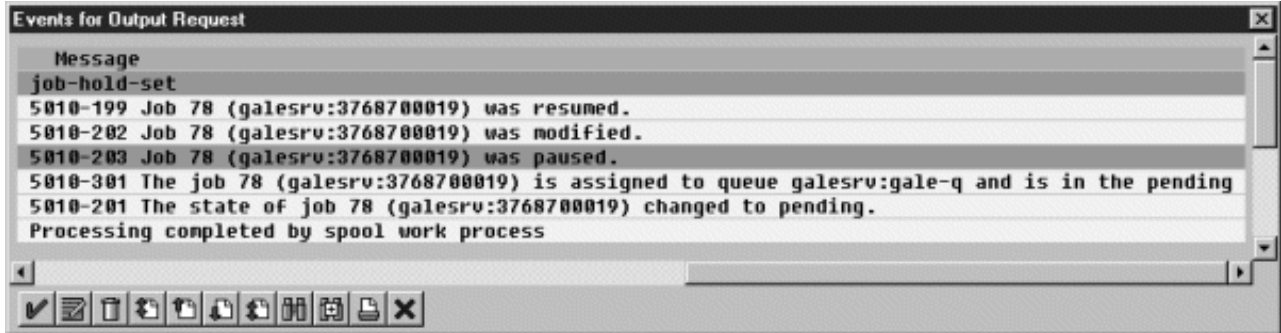


Figure 28. Events for Output Requests field, view 2.

- 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. Notice that the first line shows the job's position in the print queue.

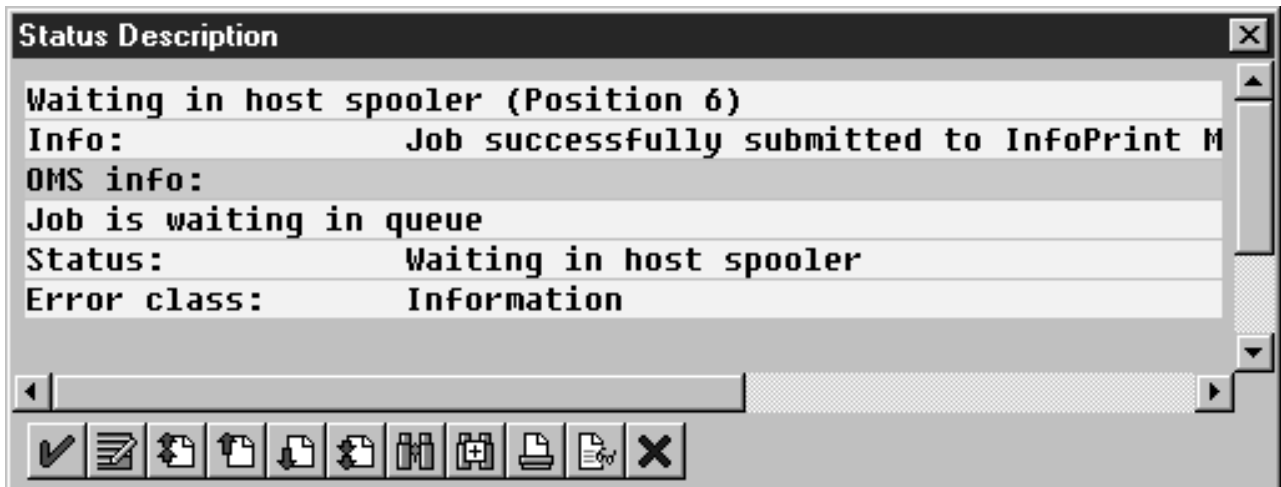


Figure 29. Status Description field.

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:

- From the R/3 main menu, access the **Spool Administration: Initial Screen** window by typing /nSPAT in the **ok-Code** field.
- From the **Spool Administration: Initial Screen** window, click on the **Output devices** button from the **Configuration** area.
- From the **Spool Administration: List of Output Devices** window, do the following:
  - Highlight the your Infoprint printer from the **Devices** column.
  - 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:** 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:

| Device Information of Host Spool |                                                  |                      |         |            |  |  |
|----------------------------------|--------------------------------------------------|----------------------|---------|------------|--|--|
| Dev. status:                     | 000006 Entries, Queuing possible, Print possible |                      |         |            |  |  |
| Error class:                     | Information                                      |                      |         |            |  |  |
| Area:                            | Spool                                            |                      |         |            |  |  |
| Spool ID                         | Job I                                            | Status               | Area    | Name       |  |  |
| 0000004103                       | 00014                                            | Waiting in host spoo | Spool   | 000967pu.B |  |  |
| 0000005110                       | 00002                                            | Being printed        | Printer | 000BK2xS.B |  |  |
| 0000005114                       | 00001                                            | Waiting in host spoo | Spool   | 000BL83U.B |  |  |
| 0000005114                       | 00002                                            | Being printed        | Printer | 000BL83W.B |  |  |
| 0000005112                       | 00001                                            | Waiting in host spoo | Spool   | 000BKr0T.B |  |  |
| 0000005112                       | 00002                                            | Waiting in host spoo | Spool   | 000BKr0U.B |  |  |

Figure 30. Device Information of Host Spool: first view.

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

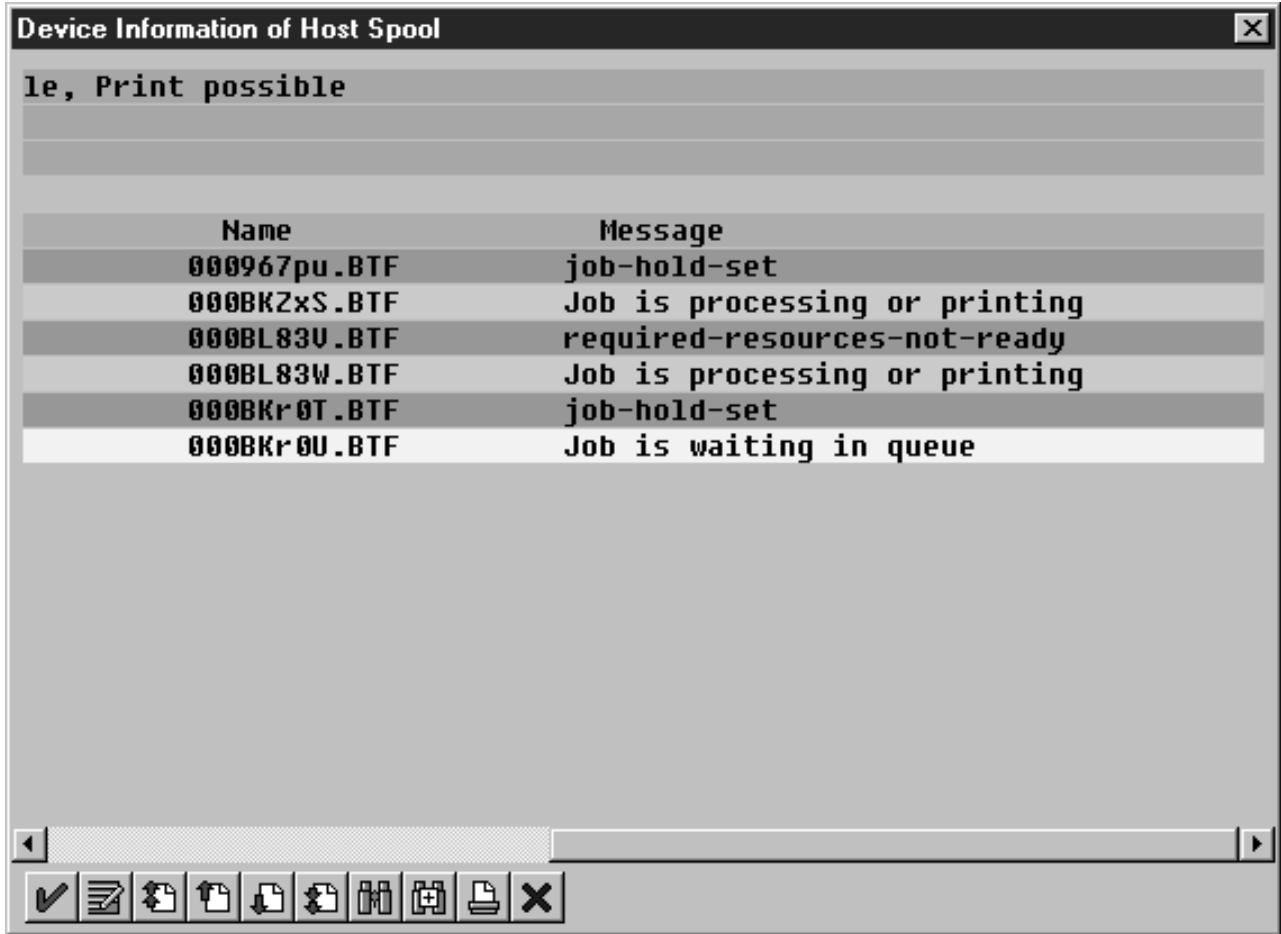


Figure 31. Device Information of Host Spool: second view.

## 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 3.1h or Release 3.1i graphical user interface. Note that this procedure provides only one of many methods for accessing the **Spool Output Requests for Spool Request XXXXXXXXXXXX** window.

1. From the R/3 main menu, access the **Spool Administration: Initial Screen** window by typing /nspat 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:
  - a. From the **Devices** column, use the mouse to highlight the SAP device that you used to send your job to Infoprint Manager.
  - b. 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 XXXXXXXXXXXX** window (where XXXXXXXXXXXX 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**).

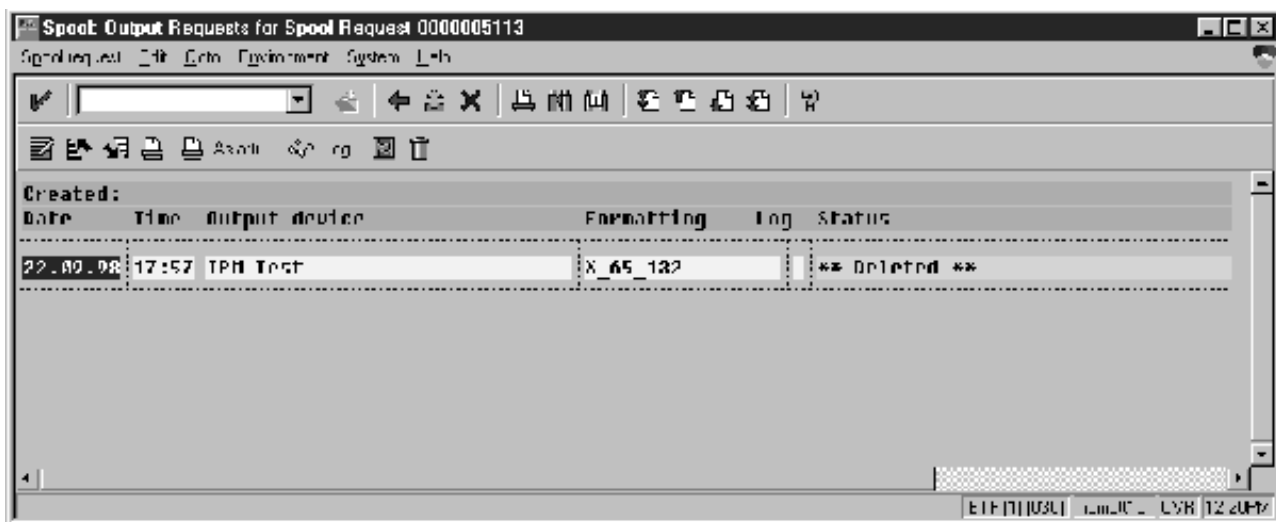


Figure 32. Spool Output Requests window.

## Advanced OMS Configuration

The following sections describe useful administrative functions, including ways of configuring your OMS to improve performance. Be sure to consult your SAP R/3 Release 4 documentation in conjunction with any procedures described in this section.

### Activating End-User Pop-Ups

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

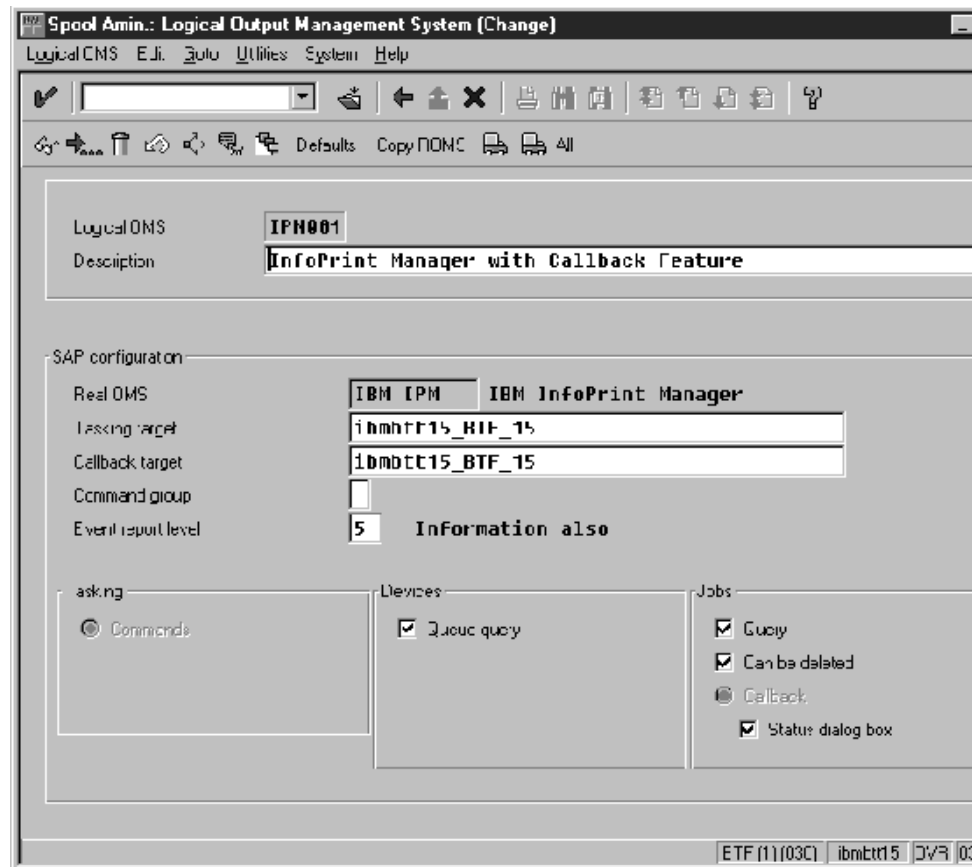
**Note:** Until SAP R/3 Release 4.5B, the pop-up message is always reported only to users in the client where the OMS callback daemon has logged on. You defined this client when you Defined a User for the OMS Callback Daemon. In SAP R/3 Release 4.5B, SAP delivers asynchronous pop-ups to users who are 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 3.1h or 3.1i.

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.

- 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.

Figure 33. Logical Output Management window.



- 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.

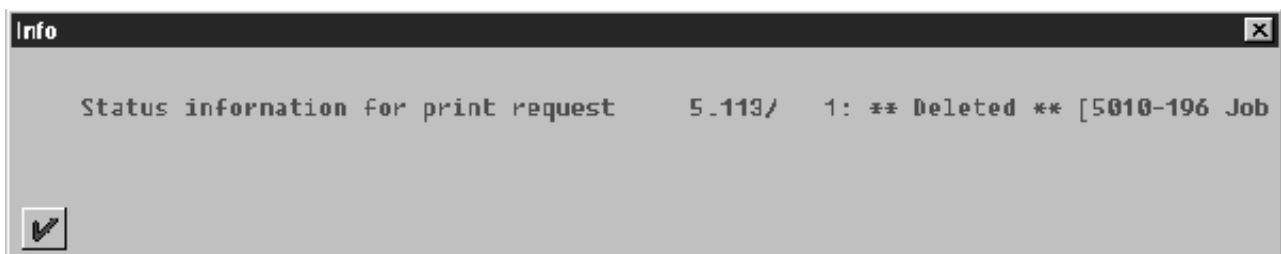


Figure 34. Cancelled Output Request window

## 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.

1. From the SAP R/3 graphical user interface, modify the Logical Output Management System (LOMS) definitions by specifying the spat 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 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.

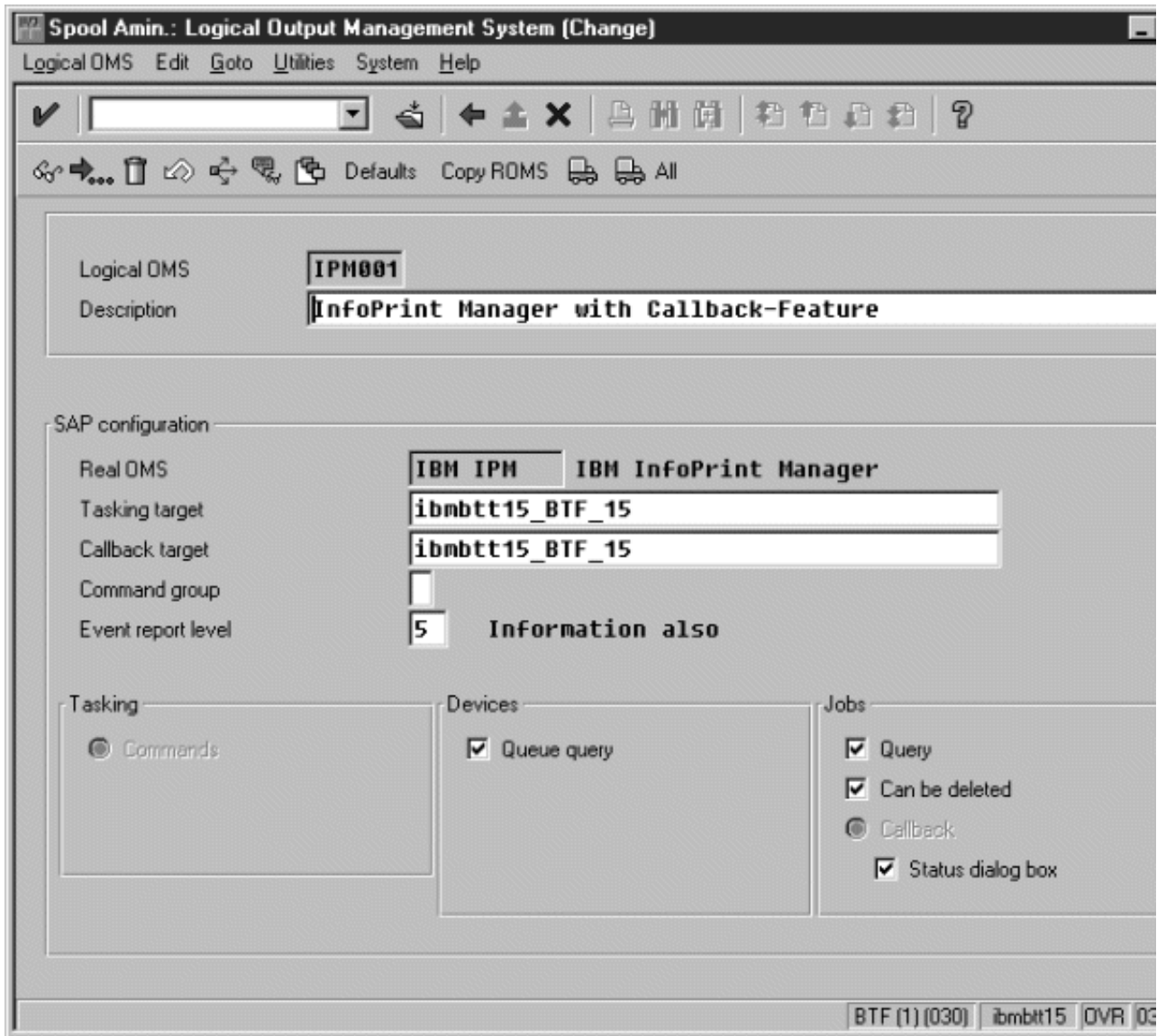


Figure 35. Logical Output Management (Change) window



## Organizing OMS Output Devices into LOMSs

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:

- “Using Different Report Levels or Event Delivery Criteria” on page 39.
- “Using Different OMS Services” on page 39.
- “Distributing the Callback Workload” on page 39.
- “Using Separate Command Groups” on page 39.

**Using Different Report Levels or Event Delivery Criteria:** You can define LOMSs to specify different report levels on the Spool Admin.: Logical Output Management System (Change) window, as described in Selecting Event Report Levels (1 being the fewest messages, while 5 indicates the most messaging). On the second screen of this same window, you can also define LOMSs to specify different Event Delivery Criteria. This allows you to determine how often and how many events are delivered by the Callback daemon to your SAP system. To see how this screen was originally configured, see the figure beneath step 9 of Defining a Logical Output Management System.

## 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 3.1h or 3.1i system.

## 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.

## Moving OMS Definitions among Systems

You can maintain OMS definitions on a single application 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, see the "Spool Server Definitions: Classifying Servers, Using Logical Servers, and Using Alternate Servers" topic in your SAP R/3 Release 4 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 >** and **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 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** keys.
  - 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** keys.

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

5. 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.

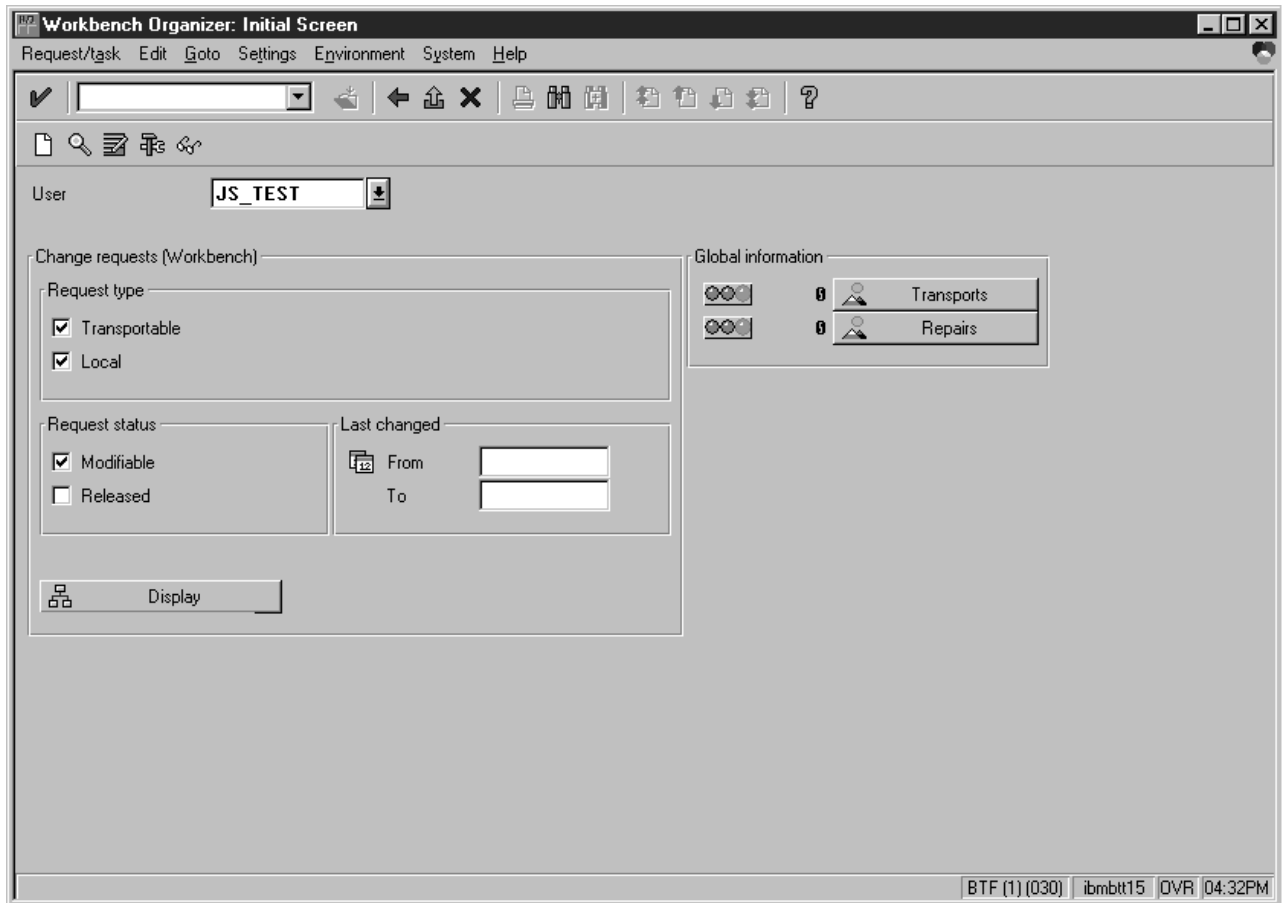


Figure 36. OMS Transport Window



## Chapter 6. Installing to Print 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 “Chapter 3. Installing Infoprint when SAP Runs on HP-UX or SUN Servers” on page 7.

You must install the Infoprint Manager SAP Client package from the command line ).The SAP Client package provides you both Infoprint Manager command line and the gateway for the standard UNIX print commands. It also includes the custom print command for use with R/3 Release 3 Access Method L. The command-line interface means that you do not need the prerequisite filesets needed to use the Infoprint Installer.

---

### Installing the Infoprint Manager SAP Client Package on each SAP System Server

With Infoprint Manager Program Temporary Fix (PTF) U474309 (available in March 2001), you can simplify the installation of the SAP Print Feature on SAP application servers by installing the SAP Client package. .

This command bypasses the Infoprint Installer and installs the necessary filesets on the SAP application server.

The SAP Client package simplifies the installation because your SAP application server no longer needs to install either the SAP Print Feature, the AIX Client, or the prerequisite filesets for the Infoprint Installer. The SAP Client package requires a much smaller subset of prerequisites, as you can see from the following list:

1. bos.rte 4.2.1.0
2. bos.rte.printers 4.2.1.8

To install the SAP Client on your SAP application servers, use the following procedure:

1. Log into the AIX system as **root**.
2. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
3. Open a terminal window.

(If you are using the Common Desktop Environment (CDE), you may open a terminal window by clicking on the terminal icon contained in the front panel. (The front panel is the task bar that appears at the bottom of the screen.) By default, the terminal icon is contained in a pop-up menu above the text editor icon that appears on the front panel.

4. The first time you run the Installer, follow this procedure:
  - a. Type the following on the command line:

```
smit cdrfs
```
  - b. Select **Add a CDROM File System** from the list of choices presented.
  - c. Click the List button and select your CD-ROM device name (cd0, for example).
  - d. Type the following in the **MOUNT POINT** field:

```
/cdrom
```

- e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see `crfs: 0506-909 /cdrom` file system already exists, do not interpret this as a failure. (The existing `/cdrom` file system should be usable.)
  - f. Press the **F12** key to exit **SMIT**.
5. Type the following on the command line:
 

```
mount /cdrom
```
  6. The SAP Client package (**ipr.sapclient**) is installed at the command line by specifying `setup -x`.

Note that the SAP Client package cannot be installed if other `ipr*` filesets reside on a SAP application server.

---

## 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.

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.

### 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 “Defining Output Devices that Use Infoprint Manager for Access Method L”.

---

## Defining Output 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 3.2 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 destination defined in Infoprint Manager, which will send jobs to your physical printer device.
2. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration--> Spool--> Spool Administration** path. or typing /nSPAD in the **ok-Code** field.
3. From the **Spool Administration** window, select the **Output devices** option and select the **Change** push-button.
4. Select the **Create** icon and fill in the following information on the **Create Output Device** window:

Table 14. Devices that use the Infoprint Manager OMS.

| Field         | Value                                                                     |
|---------------|---------------------------------------------------------------------------|
| Output Device | PRT1<br><br>Type the name that R/3 users will need to access the printer. |

Table 14. Devices that use the Infoprint Manager OMS. (continued)

|                                    |                                                                                                                                                                                                                |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Device type</b>                 | POSTSCPT<br><br>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. |
| <b>Spool server</b>                | us01d2_P40_41<br><br>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.                                        |
| <b>Host printer</b>                | prt1-lp<br><br>Type the name of the Infoprint Manager logical printer.                                                                                                                                         |
| <b>Device class</b>                | Enter a space so that this field accepts the default value of printer, which is P.                                                                                                                             |
| <b>Access method in host spool</b> | L<br><br>Select 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.



## Chapter 7. Installing to Print ABAP and OTF with SAP R/3 Release 3 on AIX

You can configure SAP R/3 to transform the native SAP R/3 data streams Output Text Format (OTF) and Advanced Business Programming Application (ABAP) into AFP output to take advantage of all the features of AFP printing.

To print ABAP and OTF data streams as AFP output, you must select one of the following options:

1. “Using the Post-Spool Data Transform”: This method performs the data transform on the Infoprint Manager server (post— spool) and requires:
  - a. Installing the Infoprint Manager SAP Client (after you have applied PTF U474309) on each SAP application server where a spool work process resides. These spool work processes will make print requests to Infoprint Manager logical printers.
  - b. Installing both the SAP Print Feature and the SAP Fonts on the Infoprint AIX server.
  - c. Use the **ipm\_print** print Command to submit print jobs to Infoprint Manager.
2. “Using the Pre-Spool Data Transform” on page 85: This method performs the data transform on the SAP applicaiton server (pre-spool) and requires: you to install both the AIX Client and the SAP Print Feature on each SAP application server where a spool work process resides. On the Infoprint AIX server, you must install the SAP Fonts.
  - a. Installing the AIX Client and the SAP Print Feature on each SAP application server where a spool work process resides. These spool work processes will make print requests to Infoprint Manager logical printers.

**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. If you install the Infoprint Manager SAP Client package, you do not have to install either of these components.

- b. Installing the SAP Fonts on the Infoprint AIX server.
- c. Use the Infoprint **sap2afp** print Command to submit print jobs to Infoprint Manager.

After you have installed to run the transform either Post-Spool or Pre-Spool, you must complete the following three procedures before you can successfully print ABAP and OTF data from your SAP R/3 system:

1. “Activating Access Method Z” on page 91.
2. “Configuring the SAP R/3 Transform” on page 91.
3. “Defining Output Devices that Use Infoprint Manager for Access Method Z” on page 92.

---

### Using the Post-Spool Data Transform

This topic consists of the following three sections in sequence:

1. "Installing the Infoprint Manager SAP Client Package on each SAP System Server".
2. "Installing the SAP Print Feature and the SAP Fonts on the Infoprint AIX Server" on page 81.
3. "Using the Infoprint ipm\_print Command for Printing ABAP or OTF" on page 84.

## Installing the Infoprint Manager SAP Client Package on each SAP System Server

With Infoprint Manager Program Temporary Fix (PTF) U474309 (available in March 2001), you can simplify the installation of the SAP Print Feature on SAP application servers by installing the SAP Client package.

This command bypasses the Infoprint Installer and installs the necessary filesets on the SAP application server.

The SAP Client package simplifies the installation because your SAP application server no longer needs to install either the SAP Print Feature, the AIX Client, or the prerequisite filesets for the Infoprint Installer. The SAP Client package requires a much smaller subset of prerequisites, as you can see from the following list:

1. bos.rte 4.2.1.0
2. bos.rte.printers 4.2.1.8

To install the SAP Client on your SAP application servers, use the following procedure:

1. Log into the AIX system as **root**.
2. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
3. Open a terminal window.  
(If you are using the Common Desktop Environment (CDE), you may open a terminal window by clicking on the terminal icon contained in the front panel. (The front panel is the task bar that appears at the bottom of the screen.) By default, the terminal icon is contained in a pop-up menu above the text editor icon that appears on the front panel.)
4. The first time you run the Installer, follow this procedure:
  - a. Type the following on the command line:  
smit cdrfs
  - b. Select **Add a CDROM File System** from the list of choices presented.
  - c. Click the List button and select your CD-ROM device name (cd0, for example).
  - d. Type the following in the **MOUNT POINT** field:  
/cdrom
  - e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see crfs: 0506-909 /cdrom file system already exists, do not interpret this as a failure. (The existing /cdrom file system should be usable.)
  - f. Press the **F12** key to exit **SMIT**.
5. Type the following on the command line:  
mount /cdrom
6. The SAP Client package (**ipr.sapclient**) is installed at the command line by specifying `setup -x`.

Note that the SAP Client package cannot be installed if other ipr\* filesets reside on a SAP application server.

## Installing the SAP Print Feature and the SAP Fonts on the Infoprint AIX Server

To run the SAP Callback daemon on the Infoprint AIX server, you must install the SAP R/3 Feature on the Infoprint AIX server, if you have not already done so.

If you are printing either Output Text Format (OTF) or Advanced Business Application Programming (ABAP) data, ensure that you have installed the **sap2afp** transform and the fonts necessary for printing. To install the transform, you must install the SAP Print Feature on each Infoprint AIX server with actual destinations that will be transforming data.

1. Log into the AIX system as **root**.
2. Open either an aixterm or a dtterm window to get to an AIX command line.
3. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
4. The first time you run the Installer, follow this procedure:
  - a. Type the following on the command line:

```
smit cdrfs
```
  - b. Select **Add a CDROM File System** from the list of choices presented.
  - c. Click the List button and select your CD-ROM device name (cd0, for example).
  - d. Type the following in the **MOUNT POINT** field:

```
/cdrom
```
  - e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see `crfs: 0506-909 /cdrom file system already exists`, do not interpret this as a failure. (The existing **/cdrom** file system should be usable.)
  - f. Press the **F12** key to exit **SMIT**.
5. Type the following on the command line:

```
mount /cdrom
```
6. To install the optional Infoprint Manager SAP Print Feature, enter the following command:

```
/cdrom/setup
```
7. 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. 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.
8. From the next Infoprint Installer panel (displayed below), you must install both the Infoprint Manager Base and the SAP Print Feature:

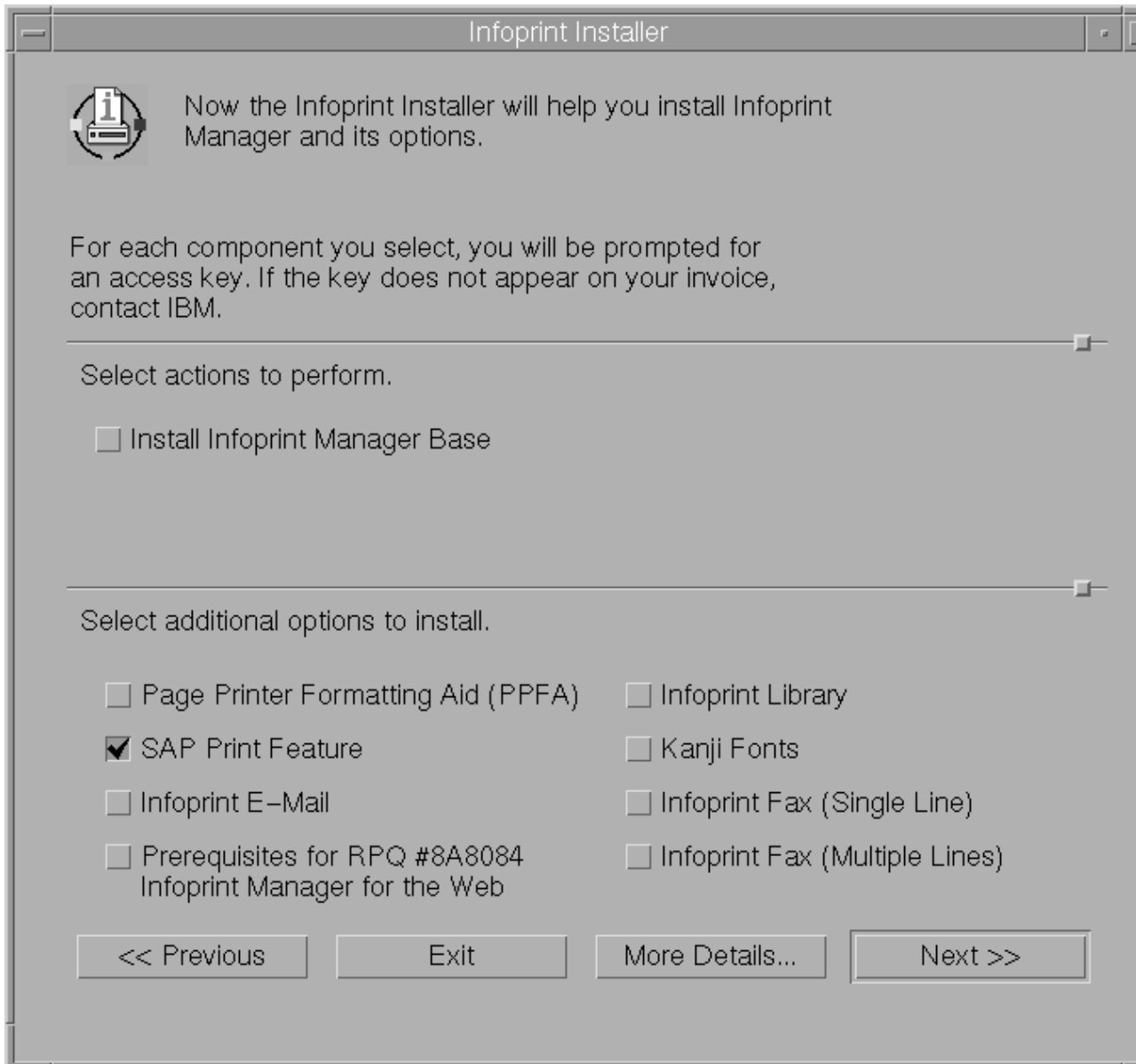


Figure 37. Infoprint Installer: Install Options panel

9. Follow the remaining Infoprint Installer screens to complete installation of the product. Note that you must have the feature key for the SAP Print Feature from your invoice, because you will be prompted for it on the following panel:

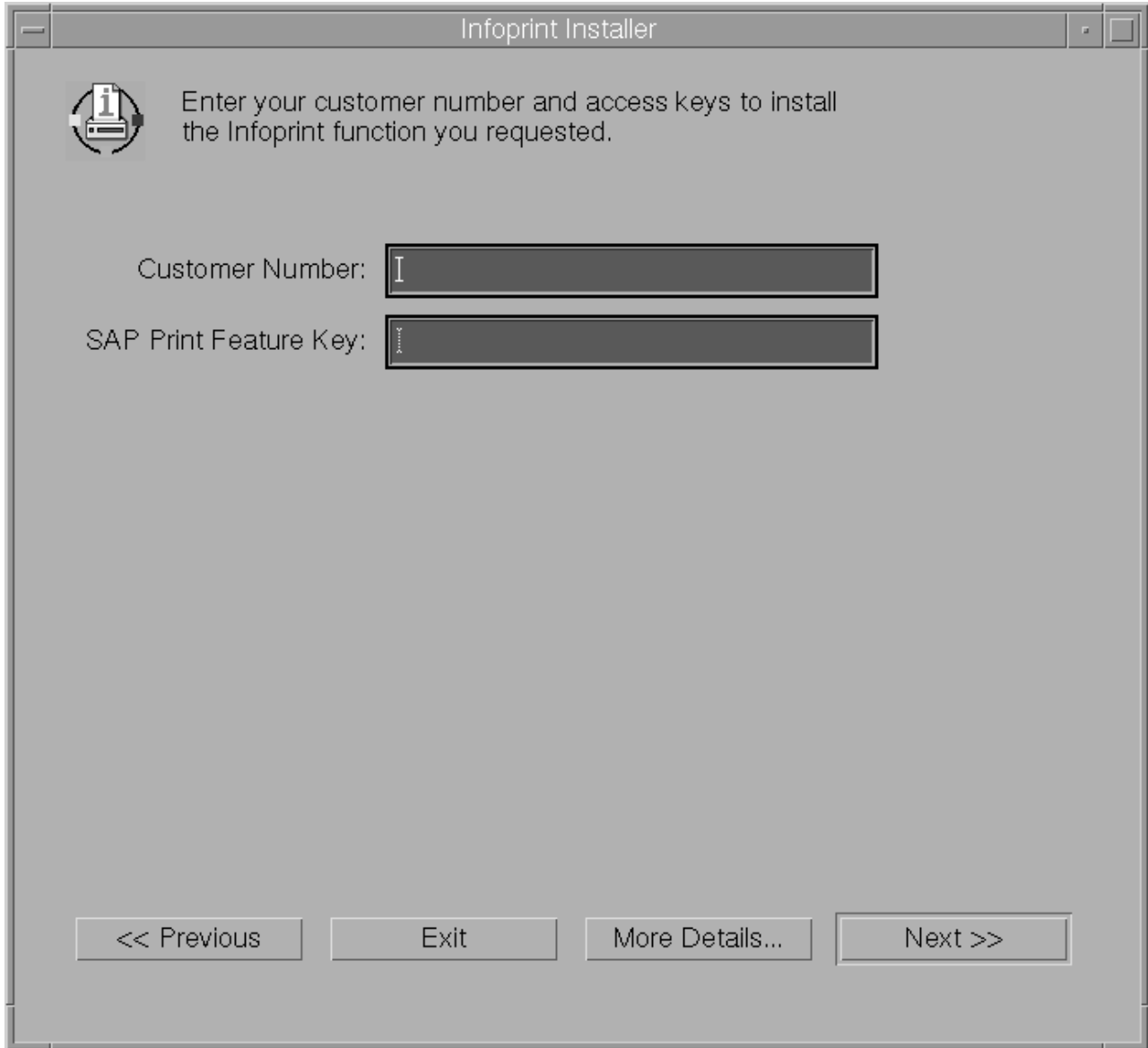


Figure 38. Infoprint Installer: SAP Key panel

Note that if you cannot locate your invoice, click the **More Details...** button on the key-entry screen for information on how to contact IBM Customer Support. The Installer setup script prints a help statement if you specify the following on the AIX command line: `/cdrom/setup -h`.

### 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/bin` 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 the following two commands in sequence:
  - a. `mount /cdrom`
  - b. `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:
  - a. **afpfonts.bookmstr**
  - b. **afpfonts.compat**
  - c. **afpfonts.codepage**
  - d. **afpfonts.ocr**
12. To install the fonts, press **Enter**.  
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 .`
16. Then you can remove the CD-ROM from your CD-ROM drive.

## 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, specify these three lines at the bottom of the **Instance Profile Management for Experts (Change)** window:

```
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
```

Once you have completed this task, return to step 3 of the “Activating Access Method Z” on page 91 procedure.

---

## Using the Pre-Spool Data Transform

This topic consists of the following three sections in sequence:

1. “Installing the Infoprint Manager AIX Client on the SAP Server”
2. “Installing the SAP Print Feature and the SAP Fonts on the Infoprint AIX Server” on page 81
3. “Installing Infoprint Fonts for Printing with the SAP Transform on the Infoprint AIX Server” on page 89
4. “Using the Infoprint sap2afp Command” on page 89

## Installing the Infoprint Manager AIX Client on the SAP Server

If you are installing the AIX Client on your SAP application server(s), you must:

1. “Preparing to Use the Installer GUI”.
2. “Using the Installer GUI to Install and Configure the AIX Client” on page 86

### Preparing to Use the Installer GUI

To prepare for installing the Infoprint AIX client and the SAP Print Feature on your SAP AIX system(s) using the Infoprint Installer, do the following:

1. Log into the AIX system as **root**.
2. Open either an aixterm or a dterm window to get to an AIX command line.
3. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
4. The first time you run the Installer, follow this procedure:

- a. Type the following on the command line:

```
smit cdrfs
```

.

- b. Select **Add a CDRom File System** from the list of choices presented.
- c. Click the List button and select your CD-ROM device name (cd0, for example).
- d. Type the following in the **MOUNT POINT** field:

```
/cdrom
```

.

- e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see crfs: 0506-909 /cdrom file system already exists, do not interpret this as a failure. (The existing **/cdrom** file system should be usable.)
- f. Press the **F12** key to exit **SMIT**.

## Using the Installer GUI to Install and Configure the AIX Client

To install the AIX Client on your SAP server, follow the instructions in “Preparing to Use the Installer GUI” on page 85 and then use the following procedure:

1. Type the following on the command line:  

```
mount /cdrom
```
2. To install Infoprint Manager's AIX Client, type `/cdrom/setup -c` and press **Enter**. The Infoprint Installer window displays.
3. 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. 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.
4. Click on **Next >>**. You will now see several screens to allow you to configure your Infoprint AIX client.
5. The Installer asks you to reboot the system so the environment variables that Infoprint Manager modifies can be updated. When asked if you want to reboot the system, if you select **Now**, the AIX system shuts down immediately without any message to other users that a shutdown is to take place. You do not need to reboot each SAP system if you explicitly export the **PDHOST**, **PD\_SOCKET**, and the **PATH** environment variables each time you log on.
6. Once the AIX Client has been successfully installed, from an AIX command line specify:  

```
cd /usr/lpp/pd/bin
```
7. Edit both the **ipm\_print** and **ipm\_query** scripts to modify the following two lines:  

```
#export PDHOST=
#export PD_SOCKET=
```

Uncomment both lines and specify the values you set when installing the AIX Client, then save and close the file.

**Notes on Language:** The text you see in the remaining screens during installation will be in the language you just selected. If the language you selected is not the same as the server language, the server must run in English. If you selected the **Set AIX Locale** check box in Step 3 above, your system locale will change once you have either logged off and then logged back on, or shut down and then restarted the AIX system after completing the installation of Infoprint.

## Using the Installer GUI to Install the SAP Print Feature

To install the SAP Print Feature on a SAP server, do the following:

1. If you have not already done so, follow the instructions in “Preparing to Use the Installer GUI” on page 85.
2. Type the following on the command line:  

```
mount /cdrom
```
3. To install the optional Infoprint Manager SAP Print Feature, enter the following command:  

```
/cdrom/setup
```
4. 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. 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.
5. From the next Infoprint Installer panel (displayed below), you must click the check box next to Install Infoprint Manager Base so the Installer does not



attempt to install the Infoprint Manager base product on your SAP system server, and select the check box for the SAP Print Feature:

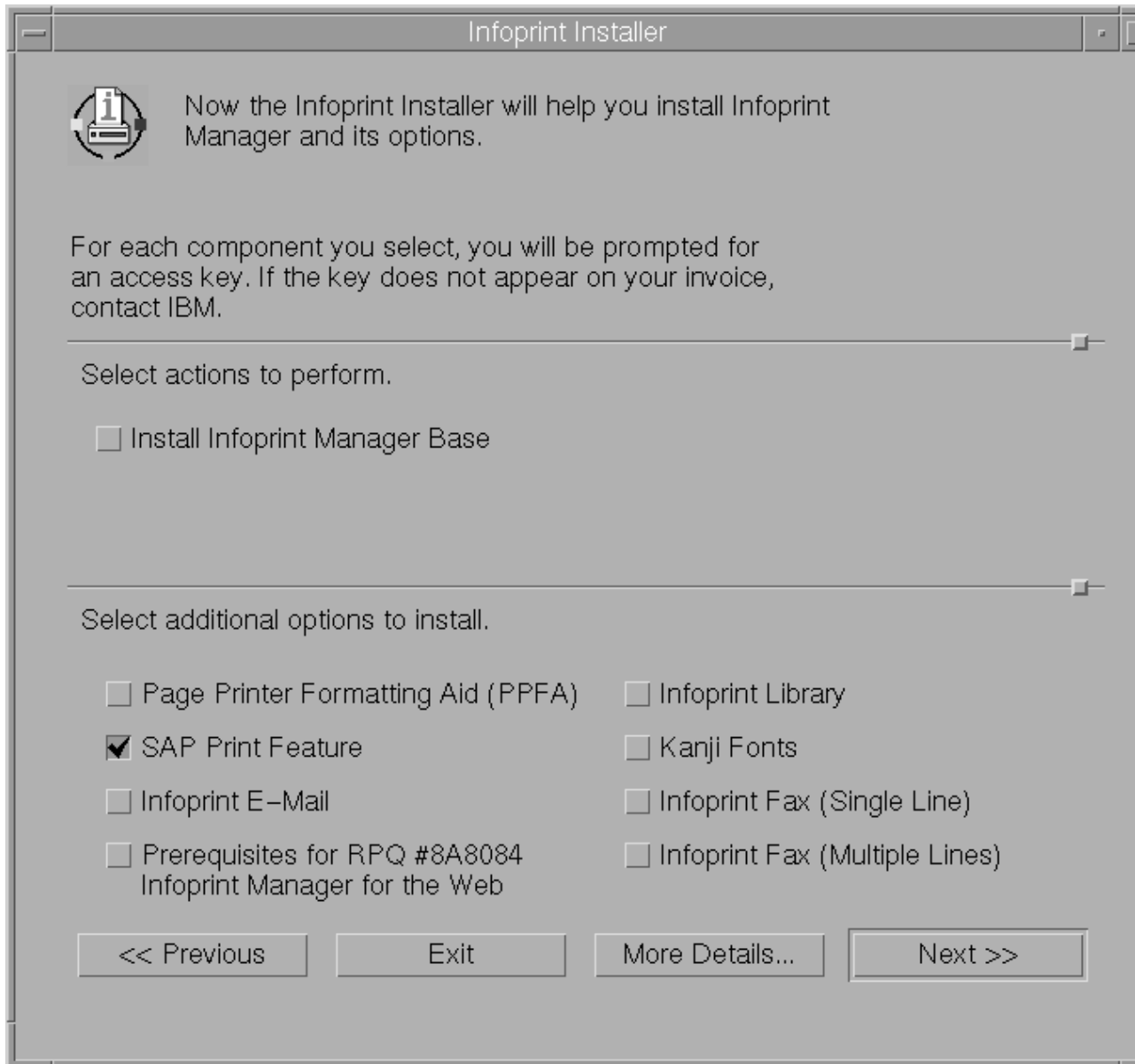


Figure 39. Infoprint Installer: Install Options panel

6. Follow the remaining Infoprint Installer screens to complete installation of the product. Note that you must have the feature key for the SAP Print Feature from your invoice, because you will be prompted for it on the following panel:

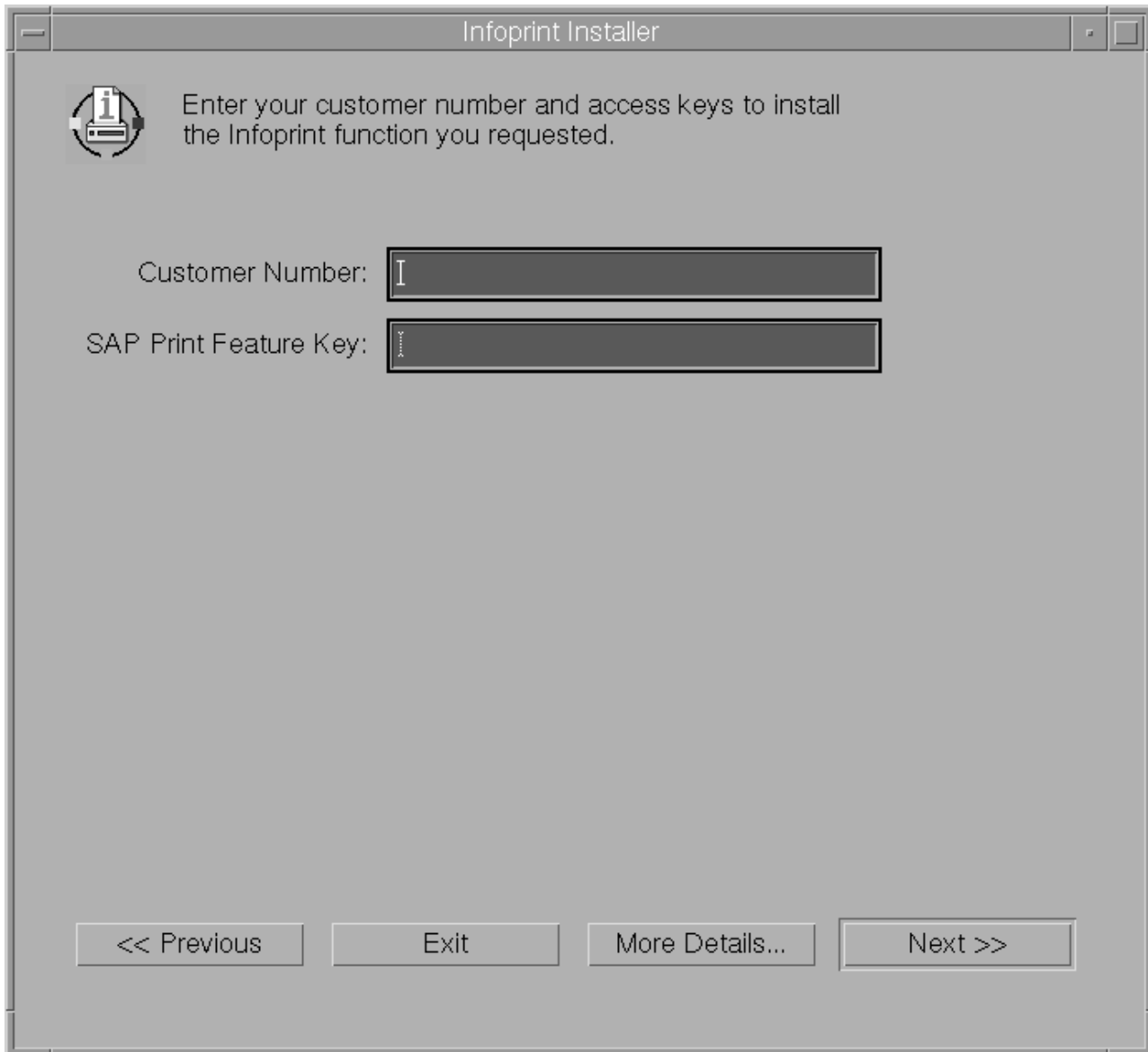


Figure 40. Infoprint Installer: SAP Key panel

Note that if you cannot locate your invoice, click the **More Details...** button on the key-entry screen for information on how to contact IBM Customer Support. The Installer setup script prints a help statement if you specify the following on the AIX command line: `/cdrom/setup -h`.

7. Once the SAP Print Feature has been successfully installed, from an AIX command line specify the following:
 

```
cd /usr/lpp/pd/bin
```
8. Edit the **ipm\_submit**, **ipm\_job\_query**, **ipm\_dev\_query**, and **ipm\_job\_cancel** scripts to modify the following two lines:
 

```
#export PDHOST=
#export PD_SOCKET=
```

Uncomment both lines and specify the values you set when installing the AIX Client. Then save and close the file. This step eliminates the need to restart (bounce) each SAP application server.

## Installing Infoprint Fonts for Printing with the SAP Transform on the Infoprint AIX Server

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/bin** 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 Infoprint AIX 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 the following two commands in sequence:
  - a. `mount /cdrom`
  - b. `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:
  - a. **afpfonts.bookmstr**
  - b. **afpfonts.compat**
  - c. **afpfonts.codepage**
  - d. **afpfonts.ocr**
12. To install the fonts, press **Enter**.  
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 .`
16. Then you can remove the CD-ROM from your CD-ROM drive.

## 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. 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=pc14039 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=pc14039 Node=192.9.200.220
Dest=AIX1 System=AIX Queue=pc14029 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.

## 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 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.

---

## 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. To do so, perform the following procedure:
  - a. From R/3, enter `RZ10` in the **ok-Code** field. This choice produces a list of all profiles on your R/3 system.
  - b. From the **Instance Profile Management for Experts** window, select the appropriate profile and click on the **Choose** push-button.
  - c. 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** at the bottom of the window.
  - d. Once you have notified other SAP R/3 application users, click on the **Save** folder and restart the R/3 application.

---

## Configuring the SAP R/3 Transform

The SAP Transform includes two types of files:

- An executable named **sap2afp**, which converts Output Text Format (OTF) data into MO:DCA-P output data and Advanced Business Application Programming (ABAP) list format data into line data. This file is installed in the `/usr/lpp/psf/bin` directory.

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

Table 15. *sap2afp* Configuration Files

| Configuration File   | Purpose                                                                                                                           | Use            |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>barcode.tab</b>   | Provides list of valid SAP bar codes.                                                                                             | OTF data only  |
| <b>xxxxyyyy.tab</b>  | Maps ASCII code pages to EBCDIC code pages.                                                                                       | OTF data only  |
| <b>fonts.tab</b>     | Provides a list of raster fonts with the appropriate character set and code page.                                                 | OTF data only  |
| <b>6400fonts.tab</b> | Provides a list of raster fonts that apply exclusively to the IBM 6400 printer, with the appropriate character set and code page. | OTF data only  |
| <b>image.tab</b>     | Defines the dither matrix for half-tone color print jobs.                                                                         | OTF data only  |
| <b>pagedef.tab</b>   | Defines the form definition (SAP R/3 PAPER TYPE) used, as well as the page definition and fonts for jobs that go through ACIF.    | ABAP/OTF       |
| <b>defcp.tab</b>     | Converts ASCII into EBCDIC characters.                                                                                            | ABAP data only |

## Defining Output Devices that Use Infoprint Manager for Access Method Z

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

Table 16. *Devices that use the Infoprint Manager OMS.*

| Field                | Value                                                                     |
|----------------------|---------------------------------------------------------------------------|
| <b>Output Device</b> | PRT1<br><br>Type the name that R/3 users will need to access the printer. |

Table 16. Devices that use the Infoprint Manager OMS. (continued)

|                                    |                                                                                                                                                                                                                                                                          |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Device type</b>                 | IBMAFP<br><br>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.<br><br>You may have customized versions of these device types as well. |
| <b>Spool server</b>                | us01d2_P40_41<br><br>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.                                                                                                  |
| <b>Host printer</b>                | prt1-1p<br><br>Type the name of the Infoprint Manager logical printer.                                                                                                                                                                                                   |
| <b>Device class</b>                | Enter a space so that this field accepts the default value of printer, which is <i>P</i> .                                                                                                                                                                               |
| <b>Access method in host spool</b> | Z<br><br>Select 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.

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, ensure that you update the appropriate configuration files (such as **printer.tab**) described in “Configuring the SAP R/3 Transform” on page 91.





## Chapter 8. Print Support that Applies to both SAP R/3 Release 3 and Release 4

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

- “Customizing Print Characteristics”
- “Enabling Multi-Byte Character Sets for Japanese Fonts” on page 106
- “Setting Up Your SAP R/3 System to Support New OTF User Fonts” on page 107
- “Using Bar Codes with SAP R/3” on page 109
- “Printing Oversize Characters on an IBM 6400 Printer with SAP R/3” on page 114
- “Adding Box Shading Values to Printed Output” on page 115
- “Submitting Faxes from SAP R/3” on page 116

---

### Customizing Print Characteristics

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

#### Defining a Customized Device Type

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

For basic printing, the SAP transform can use 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:

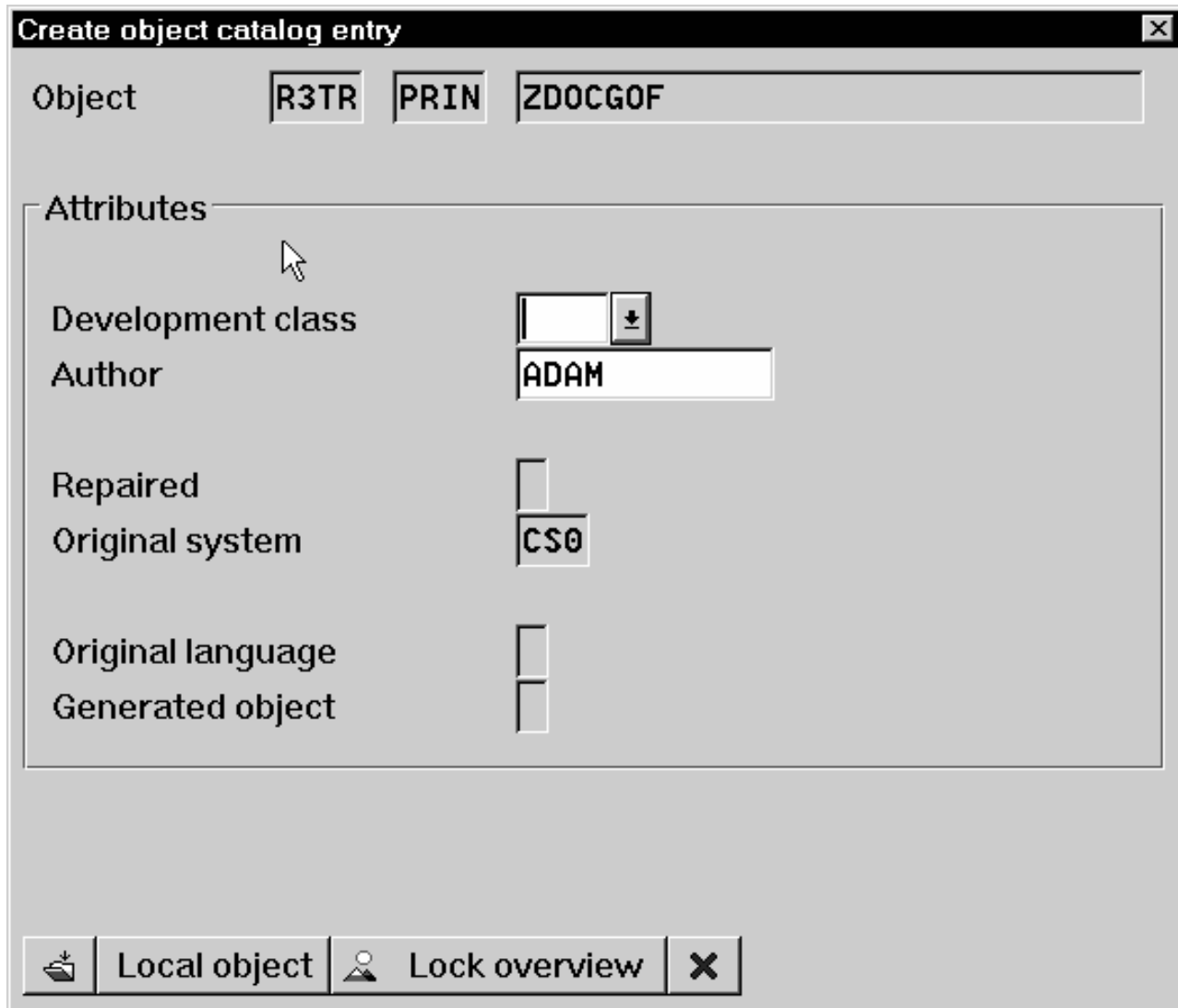
1. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration-->Spool-->Spool Administration** path. or typing /nSPAD in the **ok-Code** field.
2. From the **Spool Administration** window, select the **Utilities-->Copy 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.

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

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



**Create object catalog entry**

Object

**Attributes**

Development class

Author

Repaired

Original system

Original language

Generated object

Figure 41. Create Object Catalog Entry window

- Click on the **save** icon.

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

## Changing Document Print Orientation

The **sap2afp** transform allows you to enhance the quality of your printing from a SAP R/3 enterprise through the use of form definitions. Form definitions allow you to use electronic overlays and specify both media orientation (how the page is printed) and bin selection. The **sap2afp** transform defines which form definition should be used for printing through the use of Formats. Every spool job in R/3 requires a Format (Paper type), whether it is ABAP data ("X\_65\_80") or OTF data

("LETTER"). SAP R/3 formats are mapped to Advanced Function Presentation (AFP) form definitions in the **pagedef.tab** configuration file. You can display the Format of a spool request in the output controller (**SP01**).

By default, the **sap2afp** transform uses "F1SAP Form Definition" on page 105, which by default defines duplex, portrait printing. In addition, Infoprint Manager provides an assortment of form definitions, which are documented in the *IBM Infoprint Manager: Reference*. Consult this list to find a form definition that meets your printing needs.

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

- "Defining a Customized Device Type for ABAP Jobs"
- "Defining a New OTF Format" on page 98

### **Defining a Customized Device Type for ABAP Jobs**

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

1. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration-->Spool-->Spool Administration** path, or typing /nSPAD in the **ok-Code** field.
2. From the **Spool Administration: initial screen** window, select the **Formats** option and click the **Change** push-button.
3. From the **Spool Administration: Format** window, select an existing Format (in this case, X\_65\_255) from which to copy.  
Note that all ABAP system formats follow the naming convention of *X\_number-of-rows\_number-of-columns*.
4. From the **Spool Administration: Copy Format from X\_65\_255** window, specify the name of your customized Format with the naming convention of *Z\_number-of-rows\_number-of-columns\_more-identifying-text* as shown below:

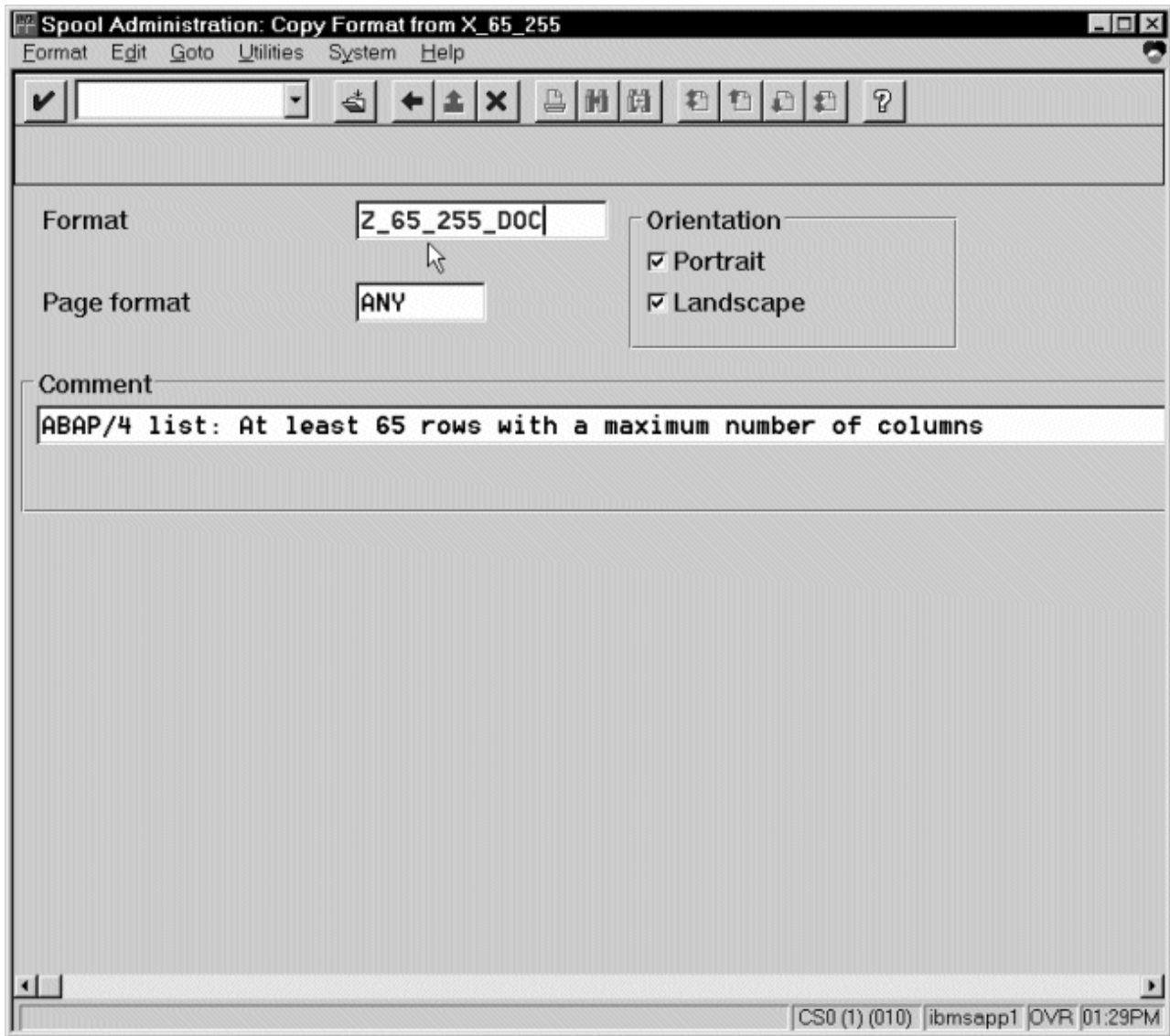


Figure 42. Spool Administration: Copy Format from X\_65\_255 window

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

Once you have saved the new ABAP format, you must “Connecting a New Format to a Device Type” on page 100 .

### Defining a New OTF Format

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

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

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

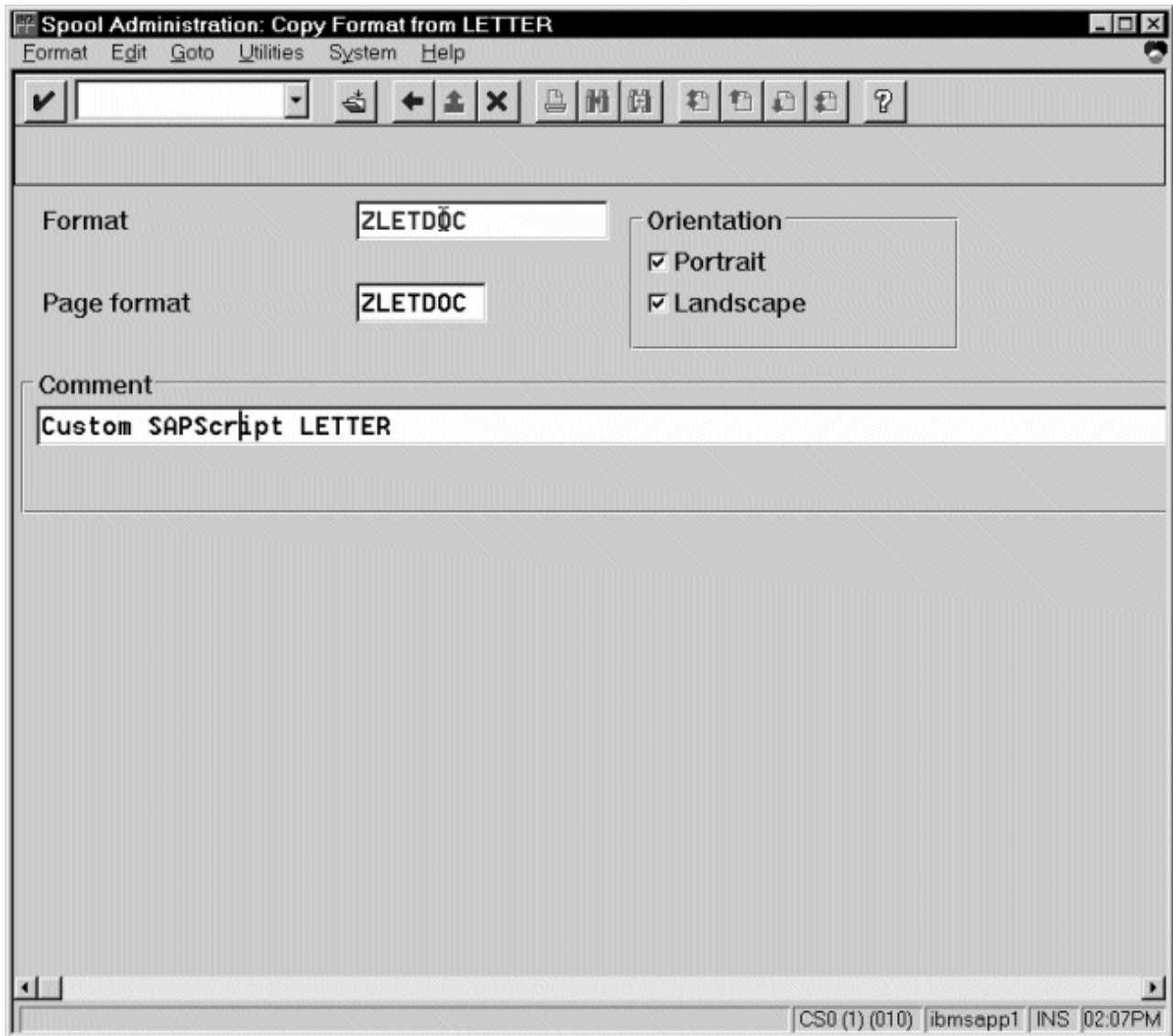


Figure 43. Spool Administration: Copy Format from LETTER window

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

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

### **Connecting a New Format to a Device Type**

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

1. From the R/3 main menu, access the **Spool Administration** window by selecting the **Tools** main menu and then selecting the **Tools--> Administration--> Spool--> Spool Administration** path. or typing /nSPAD in the **ok-Code** field.
2. From the **Spool Administration: initial screen** window, select the **Device formats** option and click the **Change** push-button.
3. From the **Spool Administration: Choose Format for Device Type** window, specify the Device Type (link to creating custom device types) and your customized Format name (in this case, Z\_65\_255\_DOC or ZLETDOC) in the appropriate fields.

Note that all ABAP customized user Formats follow the naming convention of *Z\_number-of-rows\_number-of-columns\_descriptive-text*.

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

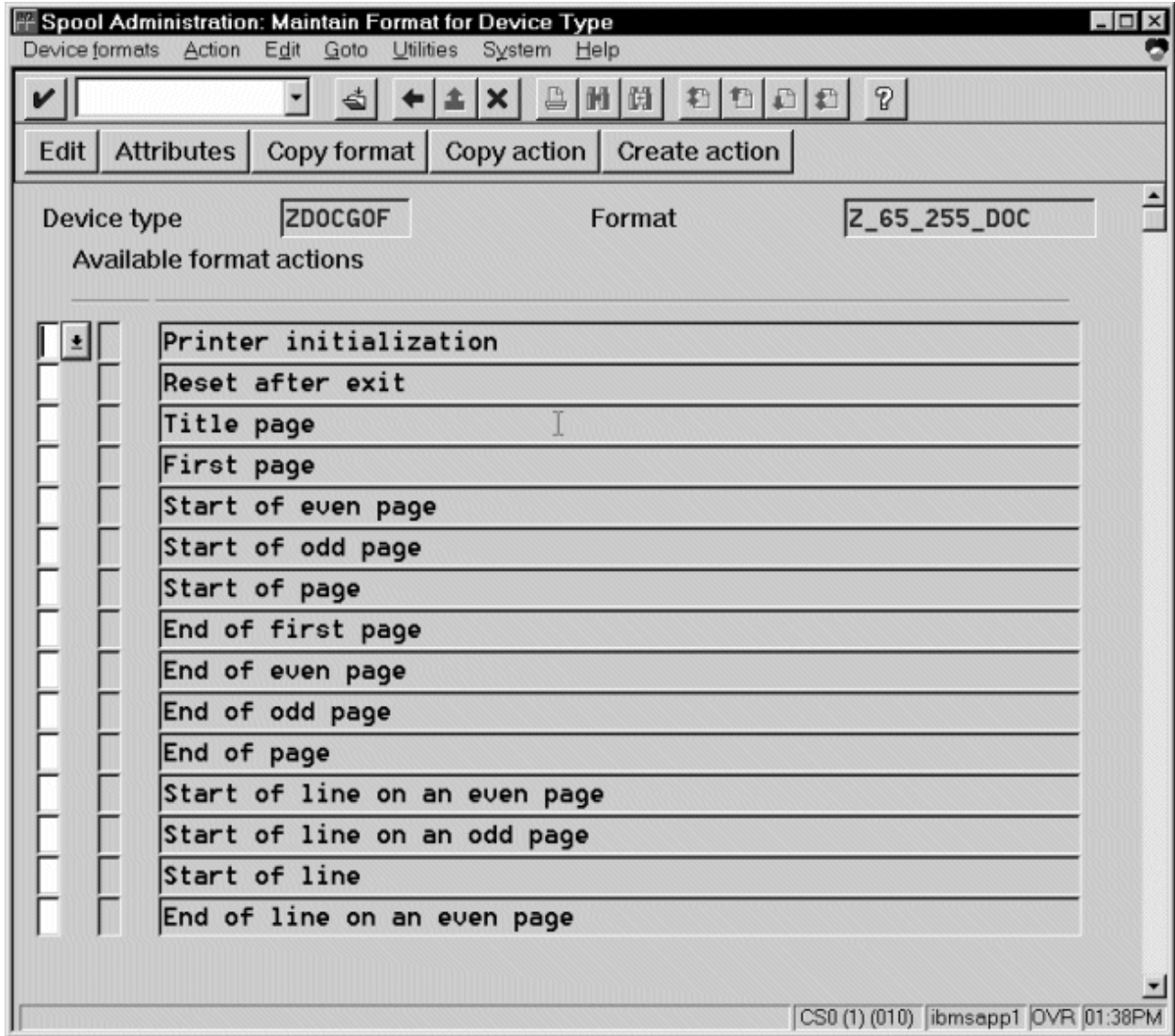


Figure 44. Spool Administration: Maintain Format for Device Type window

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

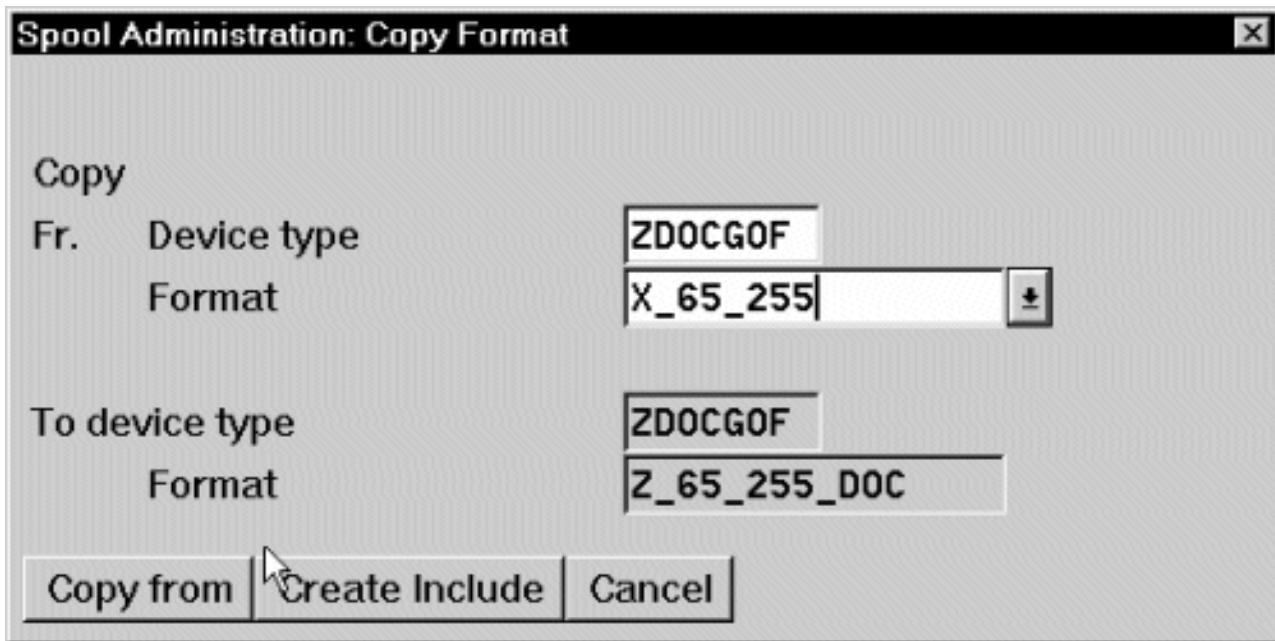


Figure 45. Spool Administration: Copy Format window

8. Press the **Copy from** push-button to initialize your new Format.
9. Select the back icon (the left-pointing arrow) and the system prompts you to save the new format.
10. From your Infoprint AIX server, move to the `/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.

## Changing Page Print Orientation

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

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

Every spool job in R/3 requires a Format (Paper type), whether it is ABAP data (X\_65\_80) or OTF data (LETTER). SAP R/3 formats are mapped to Advanced



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

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

By default, the **sap2afp** transform uses “F1SAP Form Definition” on page 105, which contains 25 separate media maps for simplex printing, duplex printing, bin selection, and page orientation. In addition, Infoprint Manager provides an assortment of form definitions, which are documented in the *IBM Infoprint Manager: Reference*.

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

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

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

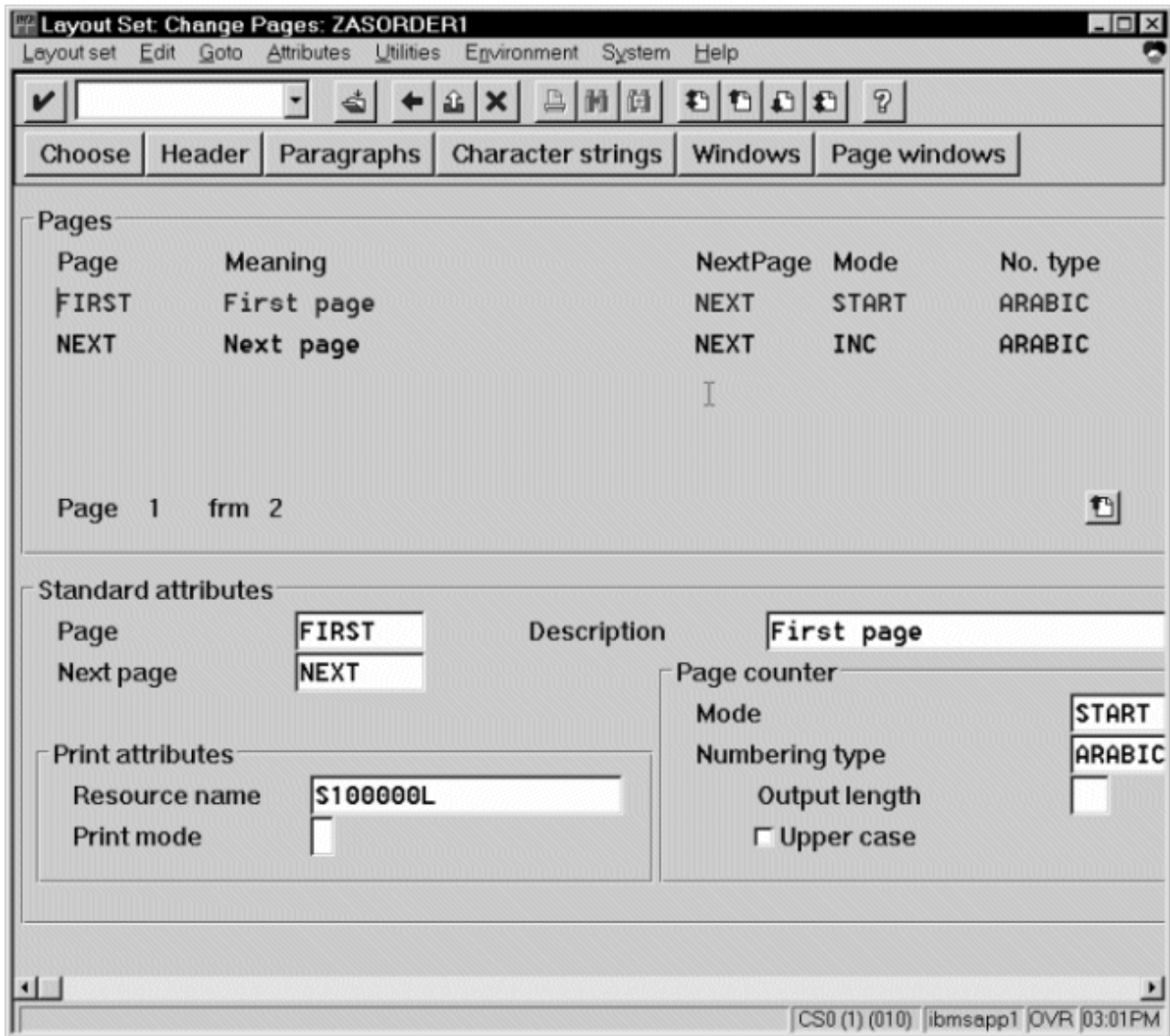


Figure 46. Layout Set: Change Pages window, First Page

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

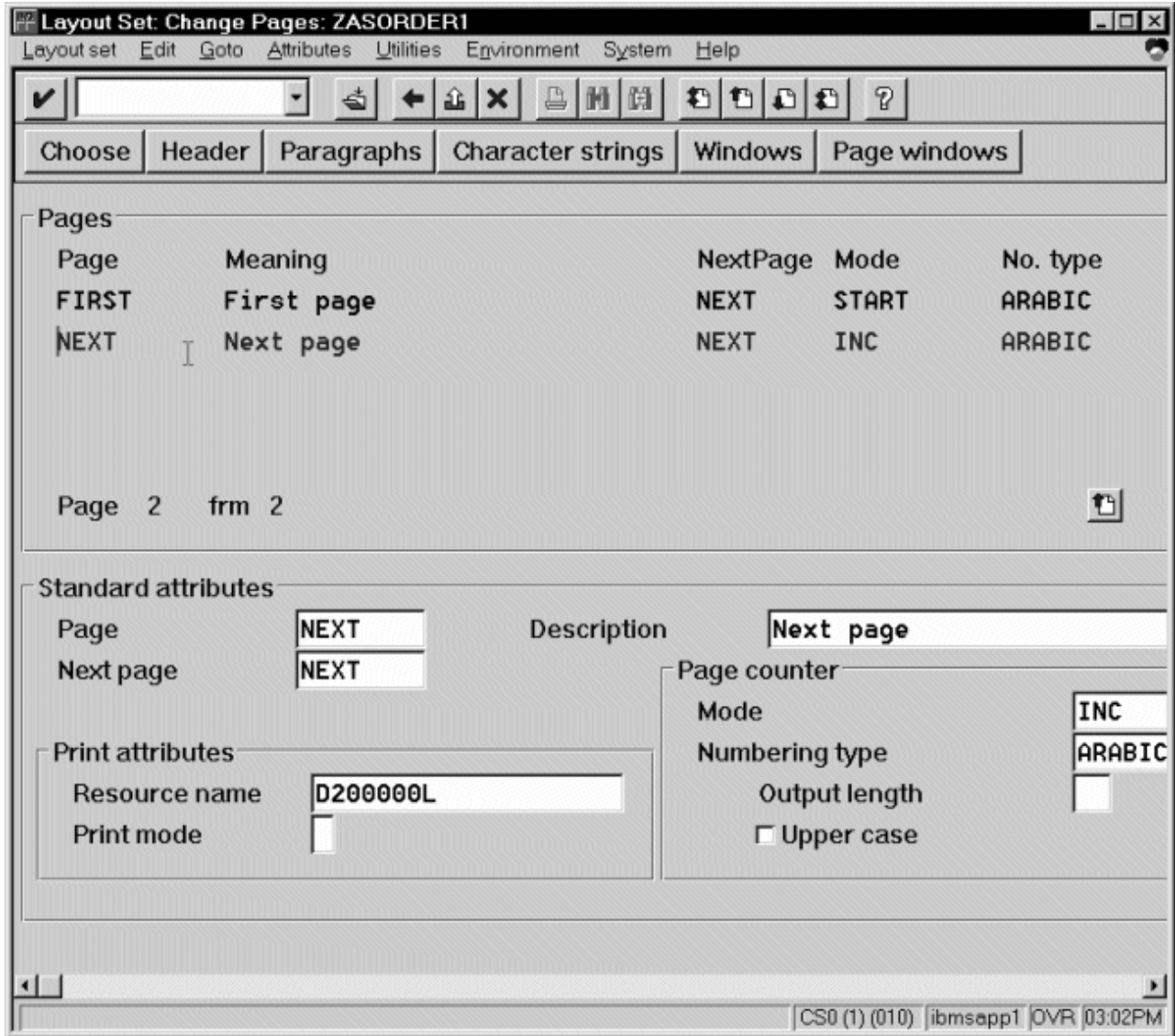


Figure 47. Layout Set: Change Pages window, Next Page

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

## F1SAP Form Definition

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

Table 17. F1SAP Form Definition Values

| Media Map | Bin | Sides | Presentation Mode |
|-----------|-----|-------|-------------------|
| F1A10111  | 1   | 2     | Portrait          |

Table 17. F1SAP Form Definition Values (continued)

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

## Enabling Multi-Byte Character Sets for Japanese Fonts

The **sap2afp** data stream transform supports the use of multi-byte character sets (MBCS) through the use of the **iconv** utility 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 customized conversion files 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**.

2. Create a backup copy of the current **/usr/lpp/psf/sap2afp/defcp.tab** file.
3. Copy the **/usr/lpp/psf/sap2afp/defcp.tab.japan** file to the **/usr/lpp/psf/sap2afp/defcp.tab** file.
4. Create a backup copy of the current **/usr/lpp/psf/sap2afp/pagedef.tab** file.
5. Copy the **/usr/lpp/psf/sap2afp/pagedef.tab.japan** to the **/usr/lpp/psf/sap2afp/pagedef.tab** file.
6. 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:

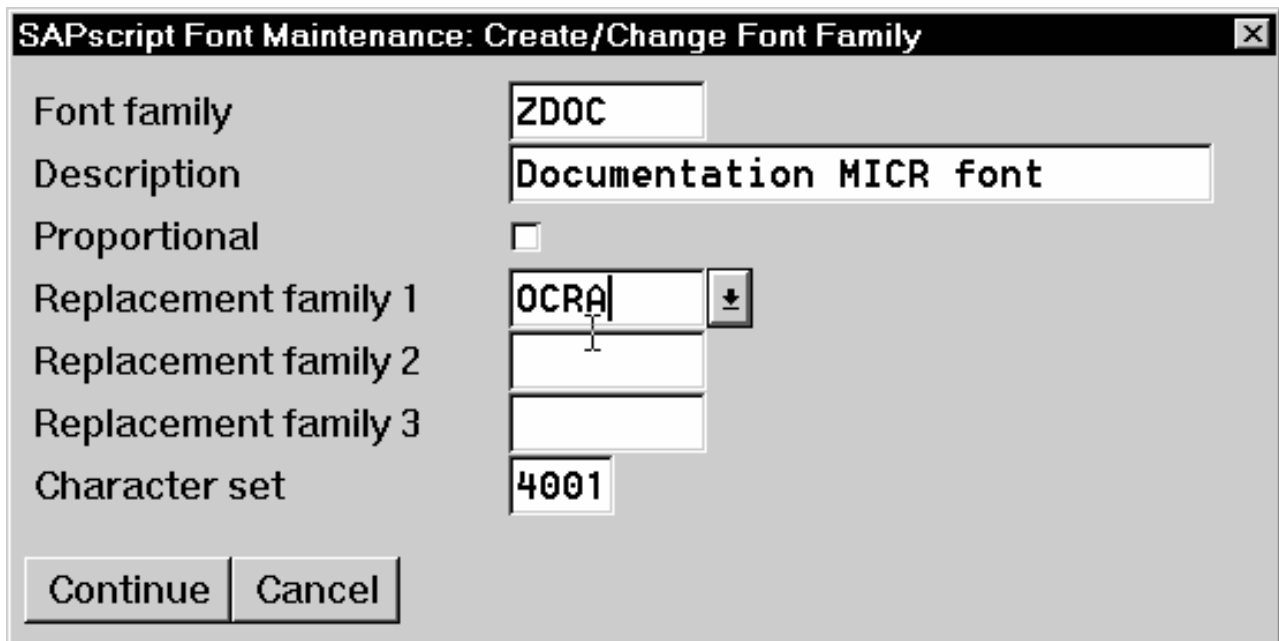


Figure 48. SapScript Font Maintenance: Create/Change Font Family

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

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

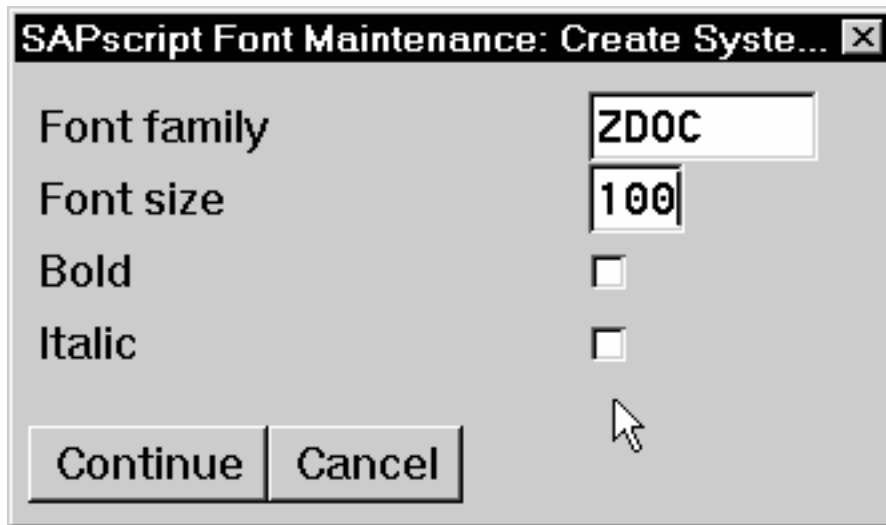


Figure 49. SapScript Font Maintenance Create System... window

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

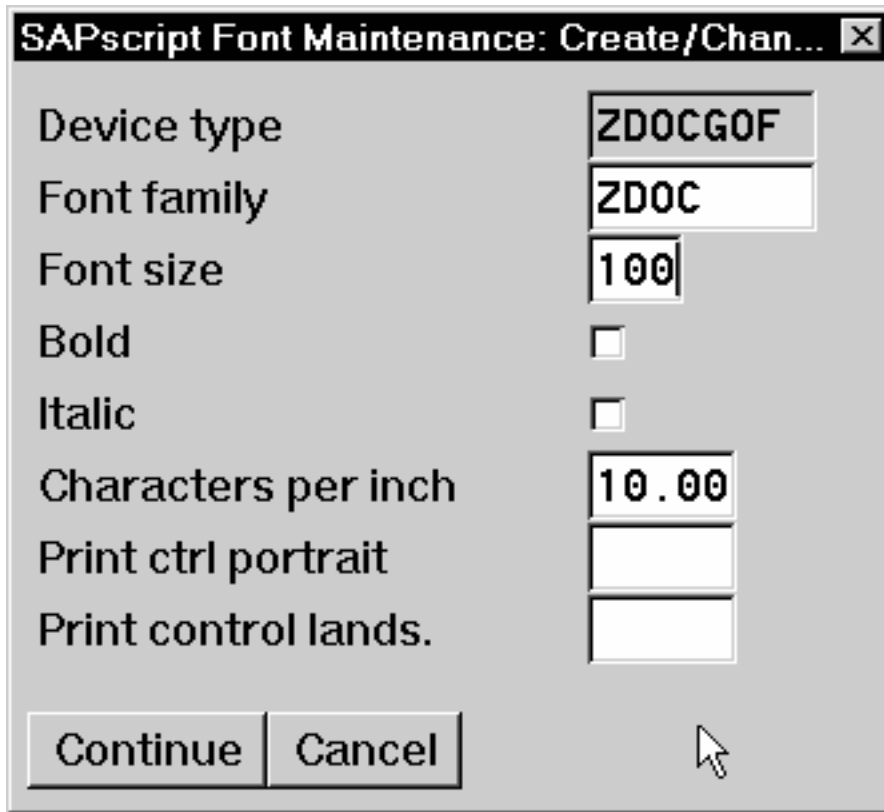


Figure 50. SapScript Font Maintenance (Create/Change) window for OTF Fonts

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

---

## Using Bar Codes with SAP R/3

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

1. "Bar Codes Supported by the Infoprint SAP (sap2afp) Transform"
2. "Setting Up Your SAP R/3 System to Support New OTF User Bar Codes" on page 110
3. "Bar Codes and Printing from SAP R/3 through Infoprint Manager" on page 112
4. "Specifying Width in SAP Bar Codes" on page 113.

### Bar Codes Supported by the Infoprint SAP (sap2afp) Transform

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

BCOCA is supported by the following printers:

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

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

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

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



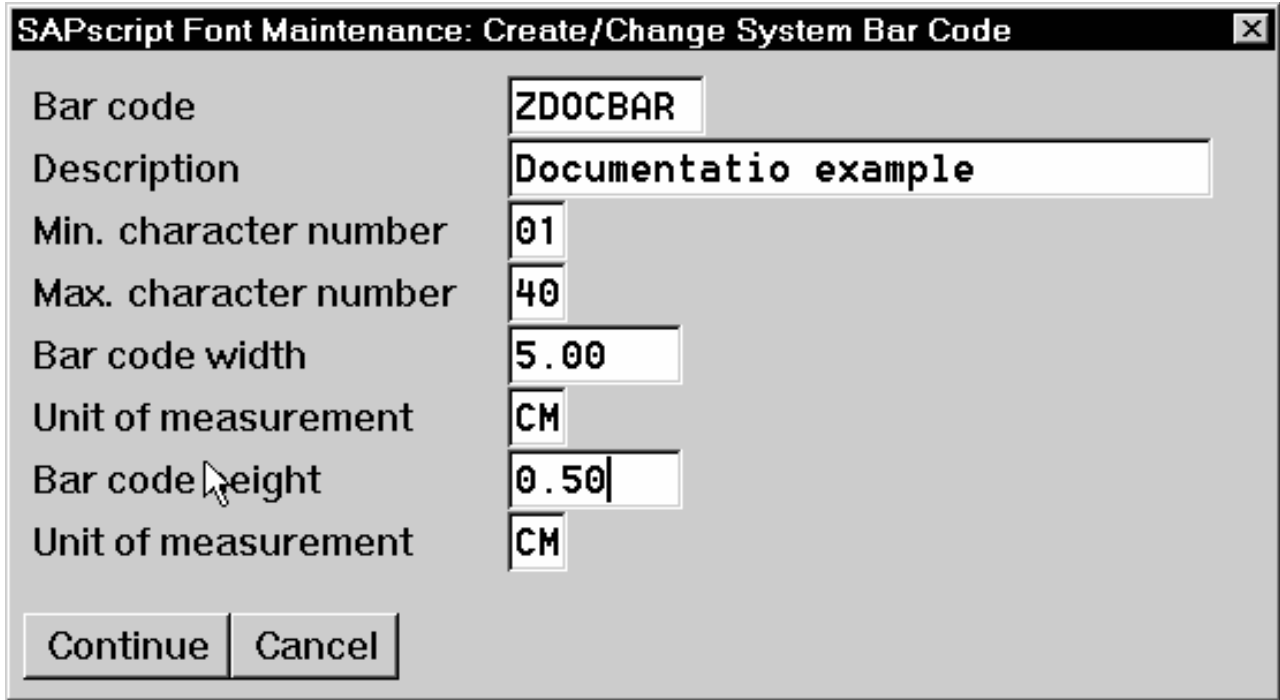


Figure 51. SapScript Font Maintenance (Create/Change) System Bar Code window

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

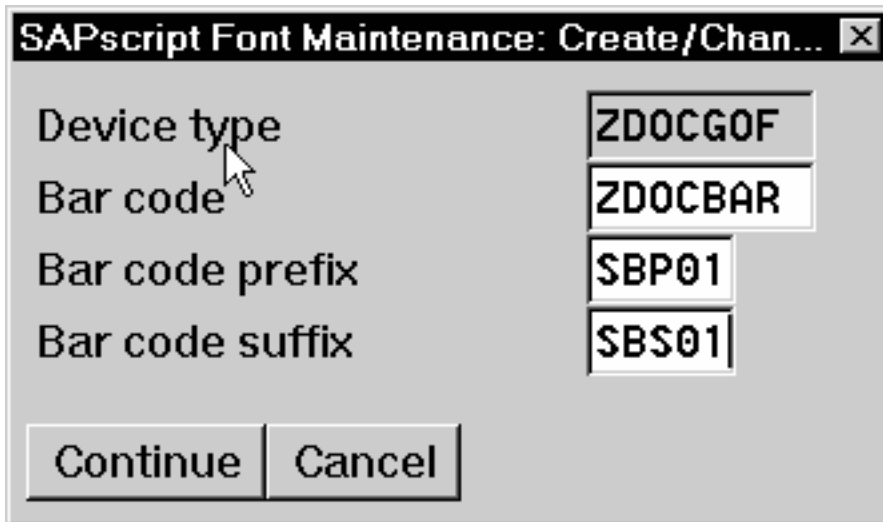


Figure 52. SapScript Font Maintenance (Create/Change) window

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

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

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

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

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

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

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

The following information maps the Bar Code Object Content Architecture values with the SAP R/3 system values found in the **barcode.tab** configuration file.

Table 18. Bar Code Type Field Values

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

Table 19. Bar Code Mode Field Values

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

Table 19. Bar Code Mode Field Values (continued)

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

Table 20. Bar Code Flag Values

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

## Specifying Width in SAP Bar Codes

Infoprint Manager for AIX 3.2 allows you to modify bar code width using the same command syntax provided through Page Printer Formatting Aid (PPFA). By modifying the **barcode.tab** configuration file to use the **ModWidth** parameter, you can change the width of bar codes and the wide-to-narrow ratio.

### ModWidth

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

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

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

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

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

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

---

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

With PTF U474309 (available in March, 2001), Infoprint Manager gives you the ability to resize Output Text Format (OTF) fonts on an IBM 6400 Printer. If your printer supports the graphics object content architecture (GOCA) feature, you can use the **6400fonts.tab** configuration file to alter the height and width of characters printed. The **SIZE=** parameter allows you to specify the height of a font (in points) and have it scaled appropriately. Since there are 72 points in an inch, **720** indicates a height of an inch. The **CPI=** (characters per inch) parameter defines the horizontal width to which the 6400 printer-resident fonts should be scaled. The smaller the number you specify, the wider the font you receive.

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

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

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

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

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

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

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

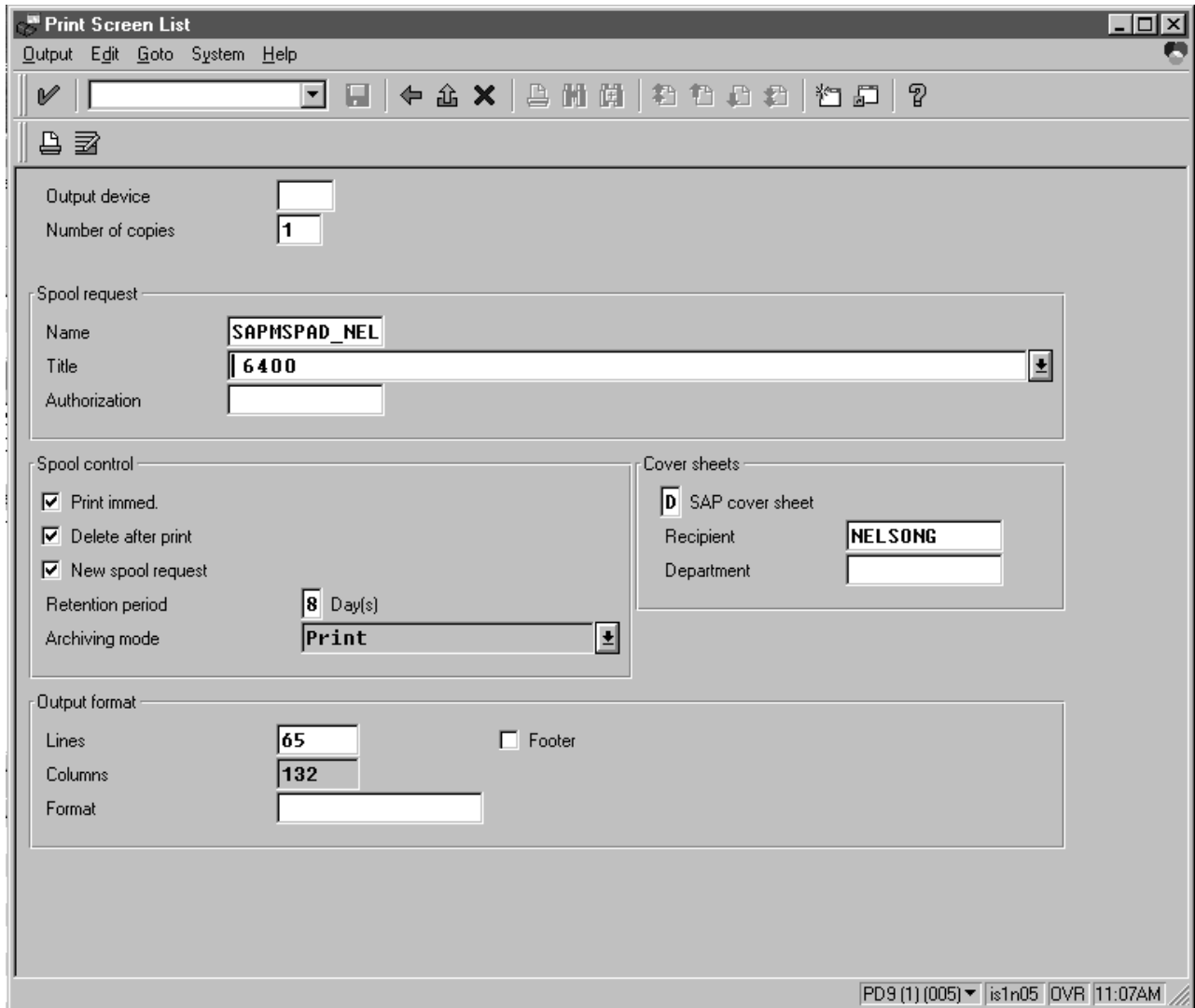


Figure 53. SAP R/3 Interface: Print Screen List window

## 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. You do not need to use this procedure, unless you are specifying the **sap2afp** Command directly from the command line.

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

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

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

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

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

---

## 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 Manager Fax feature on the Infoprint AIX server. For more information on installing the Infoprint Manager Fax feature, go to the Printing Systems homepage on the Web at <http://www.ibm.com/printers>, click on the Infoprint Manager for AIX pages. 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. If you are running on a SAP R/3 Release 4 system, you must have “Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server” on page 17 or “Defining the Infoprint Manager OMS to SAP R/3 on the SAP System Server for Release 31h or 31i” on page 51.

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 either /nspad transaction in the **ok-Code** field, or take the **Tools->Administration,Spool->Spool Administration**) path from the main menu.
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:

Table 21. Devices that use the Infoprint Manager OMS.

| Field                              | Value                                                                                                                                                                                                                                                                                              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output Device</b>               | FAX<br>Type the name that R/3 users will need to access the device.                                                                                                                                                                                                                                |
| <b>Device class</b>                | F<br>Select a device class for the fax.                                                                                                                                                                                                                                                            |
| <b>Host printer</b>                | ip01-sam<br>Type the Infoprint Manager logical destination (printer) name that will send the job to the Infoprint fax destination. .                                                                                                                                                               |
| <b>Access method to host spool</b> | L (for SAP R/3 Release 3)<br>E (for SAP R/3 Release 4)<br>Ensure that you specify the appropriate Access Method for your SAP release.                                                                                                                                                              |
| <b>LOMS</b>                        | IPM001<br>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 <b>Spool Admin.: Logical Output Management System</b> window when you Defined the Infoprint Manager OMS to SAP R/3 on the SAP System Server. |
| <b>Spool server</b>                | ibmbtt15_BTF_15<br>Choose an applicable spool server from the entries list on the field.                                                                                                                                                                                                           |

6. Save your device definition, by specifying **Output Device** --> **Save** from the menu options.
7. Specify the /nscon (**Tools->Communication->Configuration**) transaction.
8. From the **SAPcomm: Configuration** window, select the **Location** option from the **Destination** pane and click on the **Change** push-button.
9. Click on the check box to close the pop-up message window that displays information about the table's client independent status.
10. 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:

Table 22. Devices that use the Infoprint Manager OMS.

| Field          | Value                                                              |
|----------------|--------------------------------------------------------------------|
| <b>Service</b> | TELEFAX<br>Specify the type of service.                            |
| <b>Cntry</b>   | US<br>Specify the country code that you specified in step 9 above. |

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: 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 /nsp01 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.
7. 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.



## Appendix. Installing the AIX Client and the SAP Print Feature on each SAP System Server

Use the Infoprint Installer to install the AIX Client 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.

---

### Preparing to Use the Installer GUI

To prepare for installing the Infoprint AIX client and the SAP Print Feature on your SAP AIX system(s) using the Infoprint Installer, do the following:

1. Log into the AIX system as **root**.
2. Open either an aixterm or a dtterm window to get to an AIX command line.
3. Insert the Infoprint Manager Server 1 CD-ROM into the CD-ROM reader.
4. The first time you run the Installer, follow this procedure:

- a. Type the following on the command line:

```
smit cdrfs
```

- b. Select **Add a CDROM File System** from the list of choices presented.

- c. Click the List button and select your CD-ROM device name (cd0, for example).

- d. Type the following in the **MOUNT POINT** field:

```
/cdrom
```

- e. Click **OK**. The running person will raise his arms to indicate success. If he instead falls down and you see `crfs: 0506-909 /cdrom file system already exists`, do not interpret this as a failure. (The existing **/cdrom** file system should be usable.)

- f. Press the **F12** key to exit **SMIT**.

---

### Using the Installer GUI to Install and Configure the AIX Client

To install the AIX Client on your SAP server, follow the instructions in “Preparing to Use the Installer GUI” and then use the following procedure:

1. Type the following on the command line:

```
mount /cdrom
```

2. To install Infoprint Manager’s AIX Client, type `/cdrom/setup -c` and press **Enter**. The Infoprint Installer window displays.

3. 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. 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.

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

5. The Installer asks you to reboot the system so the environment variables that Infoprint Manager modifies can be updated. When asked if you want to reboot the system, if you select **Now**, the AIX system shuts down immediately without any message to other users that a shutdown is to take place. You do not need

to reboot each SAP system if you explicitly export the **PDHOST**, **PD\_SOCKET**, and the **PATH** environment variables each time you log on.

## Notes on Language

The text you see in the remaining screens during installation will be in the language you just selected. If the language you selected is not the same as the server language, the server must run in English. If you selected the **Set AIX Locale** check box in Step 3 above, your system locale will change once you have either logged off and then logged back on, or shut down and then restarted the AIX system after completing the installation of Infoprint.

---

## Using the Installer GUI to Install the SAP Print Feature

To install the SAP Print Feature on a SAP server, do the following:

1. If you have not already done so, follow the instructions in “Preparing to Use the Installer GUI” on page 119.
2. Type the following on the command line:  
`mount /cdrom`
3. To install the optional Infoprint Manager SAP Print Feature, enter the following command:  
`/cdrom/setup`
4. 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. 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.
5. From the next Infoprint Installer panel (displayed below), you must click the check box next to Install Infoprint Manager Base so the Installer does not attempt to install the Infoprint Manager base product on your SAP system server, and select the check box for the SAP Print Feature:

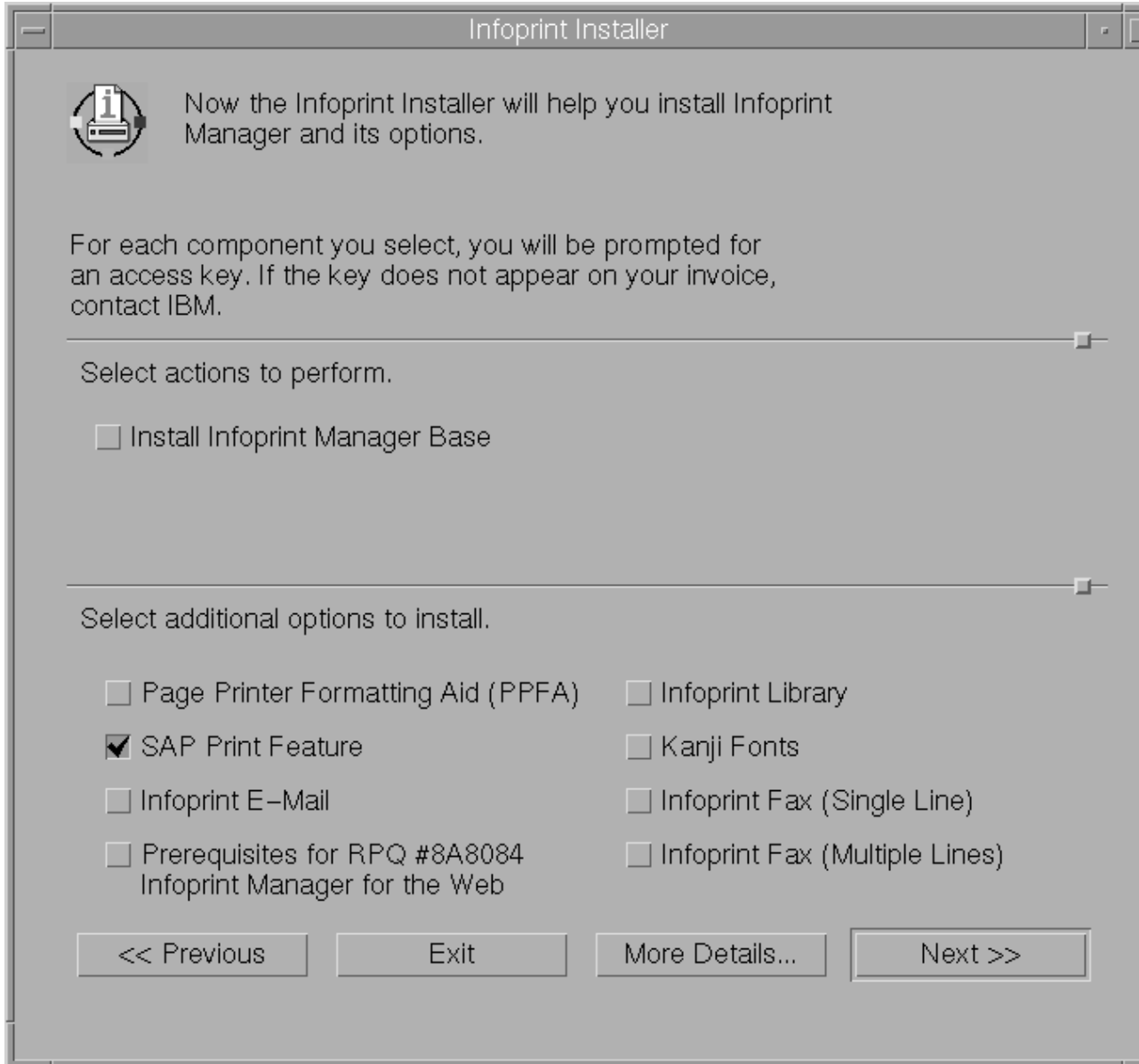


Figure 54. Infoprint Installer: Install Options panel

6. Follow the remaining Infoprint Installer screens to complete installation of the product. Note that you must have the feature key for the SAP Print Feature from your invoice, because you will be prompted for it on the following panel:

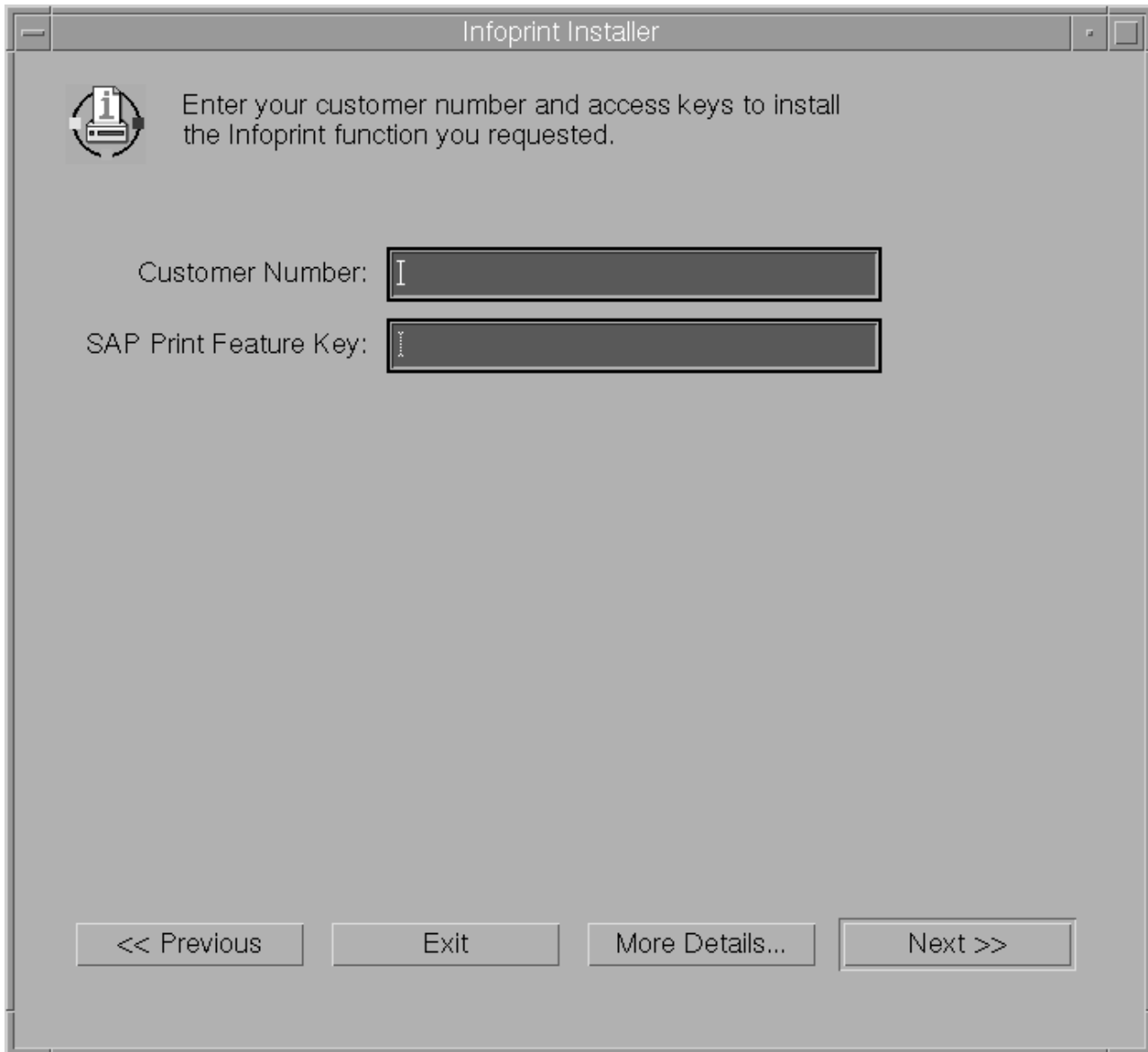


Figure 55. Infoprint Installer: SAP Key panel

Note that if you cannot locate your invoice, click the **More Details...** button on the key-entry screen for information on how to contact IBM Customer Support. The Installer setup script prints a help statement if you specify the following on the AIX command line: `/cdrom/setup -h`.

7. Once the SAP Print Feature has been successfully installed, from an AIX command line specify the following:
 

```
cd /usr/lpp/pd/bin
```
8. Edit the **ipm\_submit**, **ipm\_job\_query**, **ipm\_dev\_query**, and **ipm\_job\_cancel** scripts to modify the following two lines:
 

```
#export PDHOST=
#export PD_SOCKET=
```

Uncomment both lines and specify the values you set when installing the AIX Client. Then save and close the file. This step eliminates the need to restart (bounce) each SAP application server.

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