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IBM ASCII/SAP DEVICE TYPES

This document describes the SAP Compatible IBM DEVICE TYPES for direct ASCII integration. Appendix 1 provides step-by-step instructions for installing ZIBM44V4 (one of the IBM ASCII/SAP DEVICE TYPES) into the list of DEVICE TYPES in the SAP R/3 spooling system. Appendix 2 provides step-by-step instructions for creating, formatting, and printing a sample label by utilizing the printer's software, the IBM Graphics Language (IGP) to create and embed IBM-defined ASCII printer commands into SAP. Appendix 3 provides two IGP sample label programs and the printed labels using the IBM 4400 thermal printer. The IBM ASCII/SAP DEVICE TYPES are designed for use on the SAP R/3. The procedures outlined below specifically pertain to SAP version 3.1H. However, if your SAP R/3 system version is 3.0 or higher, the procedures are identical. All ASCII/SAP DEVICE TYPES are also compatible with other versions of SAP, including SAP R/2. This procedure will also work for SAP versions 4.0 or higher, however the look of some of the screens has changed for those versions.

ASCII/SAP DEVICE TYPES designed by IBM specifically for IBM 4400 printers and are compliant with all requirements for SAP R/3 compatible DEVICE TYPES. Once installed in an R/3 system's list of DEVICE TYPES, IBM ASCII/SAP DEVICE TYPES can be assigned to IBM 4400 printers by the SAP System Administrator. IBM ASCII/SAP DEVICE TYPES function entirely within the host's SAP R/3 software system. IBM ASCII/SAP DEVICE TYPES allow SAP system users to print SAP application documents, forms, and labels, which contain IBM Graphics Language (IGP) bar codes and its set of fixed and scalable fonts conveniently from their SAPscript text processing system.

Familiarity with the SAP System Administration screens (SPAD) will be needed. We recommend reading the SAP Basis Component Printing Guide on the online SAP help system, as well as the "The SAP R/3 Handbook", J. A. Hernandez, McGraw-Hill, 1997.

Operation of the SAP R/3 Printing System

The SAP R/3 Printing System has a proprietary spooling system to receive, process, schedule, print, and distribute documents requested for printing by SAP users. The SAP spooling system performs two major functions: (1) formatting the document according to the parameters of the DEVICE TYPE assigned to the OUTPUT DEVICE (printer) and (2) communicating the formatted output data to the spooling system of the host computer system, where the OUTPUT DEVICE is physically connected.

Basically, SAP system users working on data within a SAP application module can request the printing of a displayed document by clicking on the print button in any SAP transaction screen that presents a standard toolbar or by choosing the Print function from the transaction's List menu. This step presents the user with a Print Screen List, which allows the user to enter an OUTPUT DEVICE name and results in the transaction generating a SPOOL REQUEST.

The SPOOL REQUEST starts a SAP spool work process to handle the SPOOL REQUEST for the user-named OUTPUT DEVICE, which is a printer in this case. To do that, the OUTPUT DEVICE works with a System Administrator-assigned DEVICE TYPE, which is available in a list of DEVICE TYPES within the SAP spooling system. The DEVICE TYPE provides all necessary spool processing information via a command translation table for the OUTPUT DEVICE. As a result, the spool work process is able to translate the SAP native output control commands contained in the SAP application's print controls into the command language of the named OUTPUT DEVICE.

SAP R/3 LIST OF DEVICE TYPES

In SAP, a DEVICE TYPE is a printer parameter interface between an OUTPUT DEVICE and set of logical information components that define how that printer prints documents. These logical information components are a collection of printer-specific control properties.

The standard SAP system "out-of-the-box" supplies an extensive list of resident DEVICE TYPES to enable printing with a variety of commercially available OUTPUT DEVICES. SAP assures that these resident DEVICE TYPES will work properly with the SAP R/3. In the SAP SPOOL ADMINISTRATION (SPAD) screens, SAP provides System Administrators the capability to define new DEVICE TYPES and append them to the resident list of available DEVICE TYPES. However, the creator of such a new DEVICE TYPE is responsible for its accuracy, performance, and support, not SAP.

Note: Any of the resident DEVICE TYPES, regardless of origin, can be used "as is" or modified by the System Administrator. Depending on the specific SAP system environment, a DEVICE TYPE, such as ZIBM44V4, may be customized to meet OUTPUT DEVICE specific requirements. Typically, the list of resident DEVICE TYPES provides a good starting set of templates to create custom DEVICE TYPES. A simple way to create a custom DEVICE TYPE is to copy the definition and then change it as necessary to meet system OUTPUT DEVICE requirements. Modifications to the DEVICE TYPES can be made easily by using the fill-in-the-box tables in the SAP SPOOL ADMINISTRATION screens.

SAPscript Printer Drivers

The SAP system provides a list of "out-of-the-box" SAPscript printer drivers, which are assigned to various DEVICE TYPES in the SAP list of available DEVICE TYPES. The purpose of these SAPscript printer drivers is to make the conversion from the output format of SAPscript to the print format of the DEVICE TYPE assigned with the OUTPUT DEVICE. The list below identifies five of the most common of the SAPscript printer drivers.

Each of these SAPscript printer drivers is named in the SAP system with unique four character code, such as STN2.

1. HPL2: HP PCL4/PCL5 (LJ 3, 4, 5, 6)
2. POST: PostScript (Adobe)
3. PRES: Prescribe(Kyocera)
4. SWIN: Windows (SAPlpd/SAPWIN)
5. STN2: SAP Standard Line Printer Driver

System Administrators who create DEVICE TYPES specify one of these SAPscript printer drivers in the Driver field of the SPAD "Create Device Type" screen.

Note: The ZIBM44V4 Device type is intended to be used with the STN2 Printer Driver

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Printing to an OUTPUT DEVICE

For a SAP transaction to print a document, it must deliver an output data stream to an OUTPUT DEVICE connected to the R/3 system. To prepare the data for that output stream, the SAP spooling system needs a substantial amount of information about the physical device represented by the OUTPUT DEVICE. In SAP R/3, each OUTPUT DEVICE is assigned a specific DEVICE TYPE that provides for the storage of the details about the physical device and other required data within the spooling system. The information contained in each DEVICE TYPE is organized as a collection of tables that define the attributes of a specific OUTPUT DEVICE.

A printer is a common example of an OUTPUT DEVICE. When R/3 has multiple printers connected, it requires separate OUTPUT DEVICE (printer) definitions, each of which has been assigned the proper printer-specific DEVICE TYPE definition.

Creation of an OUTPUT DEVICE

In SAP, an OUTPUT DEVICE is a unique four character system name for the physical device. This OUTPUT DEVICE name is registered in the SAP spooling system and is specified each time a print request is made to print a document to the device. The SPAD Create Output Device screen is used to specify the OUTPUT DEVICE definition, which includes the four character OUTPUT DEVICE name, the DEVICE TYPE, and other essential system information about the physical device to the SAP spooling system.

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Description of IBM ASCII/SAP DEVICE TYPES

IBM ASCII/SAP DEVICE TYPES provide SAP system users the ability to print reports, forms and labels utilizing the bar codes, fonts, and graphics drawing that are resident in the graphic firmware available for every IBM 4400 printer

IBM ASCII/SAP DEVICE TYPES are registered and loaded in the Device Type Management component of the SAP Spool System as pass-thru DEVICE TYPES that contain printer commands such as line feed, carriage return, and form feed. Other features of the printer such as bar codes, fonts, logos, and drawing tools are defined in the layout of the form or label within SAPscript. These ASCII printer commands are passed directly to the OUTPUT DEVICE by the SAP Spool System. The OUTPUT DEVICE, in this case the IBM printer, will intercept, interpret and execute the commands received from the SAP Spool System. Refer to Appendix 2 for a detailed example of creating an IGP label using the SAP R/3 SAPscript editor.

Any one of the IBM ASCII/SAP DEVICE TYPES has the following logical components:

SAPSCRIPT DRIVER
This component contains the SAPscript printer driver, which makes the conversion from the output format of SAPscript to the print format of the DEVICE TYPE assigned to the OUTPUT DEVICE. This driver uses the properties and attributes resident in the DEVICE TYPE definition to translate SAPscript forms into an output data stream that can be printed by the physical printer.

CHARACTER SETS
This component is a collection of character sets, or code pages, that are available in the OUTPUT DEVICE. The SAP spooling system uses this collection of character sets to translate SAP code values in its own system character set into an output data stream of code values understood by the OUTPUT DEVICE.

PRINT CONTROLS
This component contains the command set of the OUTPUT DEVICE and makes it possible for the SAP spooling system to translate its system print controls used ABAP/4 programs and in SAPscript forms into the escape sequences required by the OUTPUT DEVICE.

FORMATS
This component determines how the output will appear on the paper and primarily specifies paper sizes, such as Letter and DINA4. It allows SAPscript forms to construct a layout and portrait or landscape orientation in the printable area of the page.

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DEVICE INITIALIZATION

This component is a group of escape sequences used to configure the OUTPUT DEVICE for the requirements of the specific document in the print request. These configuration escape sequences, containing information such as cpi, lpi and fonts, are sent to the printer prior the initiation of an output data stream for the document.

Bar Code And Font Support

This device type provides SAP system users the ability to print documents utilizing the bar codes and serif and sans serif fonts that are resident in the printer. Appendix 2 provides details on how to do this. A listing of bar codes supported by the IBM 4400 at the time of this writing appears below. In general, any bar code specified in the IGP Programmers Reference Manual can be supported, however bar code symbologies marked with an * can possibly present problems during upload if they contain non-ascii data.

Australian 4-State
Codabar
Code 39
Code 93
Code 128A, 128B, 128C*
Data Matrix*
EAN 8
EAN13
FIM
I-2/5, German I-2/5, ITF-14
Matrix
Maxicode*
MSI
PDF417*
Planet
Postnet
PostBar and Royal Mail (KIX)
Telepen
UCC/EAN-128
UPC-A, UPC-E, UPC-E0
UPCSHIP
UPS11

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How to install a IBM ASCII/SAP DEVICE TYPE

For any one of the IBM ASCII/SAP DEVICE TYPES to be available to SAP R/3 applications, it must be imported into the SAP spooling system. R/3 provides two import utilities in SAP transaction SA38 to store the DEVICE TYPE information in the proper places within the spooling system. One utility is used to import the ASCII/SAP DEVICE TYPE character sets. The other is used for the remaining components of ASCII/SAP DEVICE TYPE.

Briefly, the ASCII/SAP DEVICE TYPE installation steps are:

? **Test** the printer outside SAP R/3 to verify its printing operation.

? **Import** the device type definition file using the SA38 utility.

? **Verify** the import of the device type

? **Create or Reassign** an OUTPUT DEVICE for the SAP spooling system. This makes a logical connection between the OUTPUT DEVICE, the DEVICE TYPE, and the COMMUNICATION PATH to the printer (physical device).

? **Test the installation** by printing a test document selected in a user's SAP application transaction screen. Specify the OUTPUT DEVICE name in the Print List screen and the list printing of the test document should take place at the printer.

Successful implementation of these steps will verify correct installation of ASCII/SAP DEVICE TYPE.

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Appendix 1

Installation of the IBM ASCII/SAP Device Type: ZIBM44V4

The following procedures detail the use of the SAP R/3 System to install the IBM ASCII/SAP DEVICE TYPE in the list of available DEVICE TYPES in the spool system of SAP R/3. The outlined procedures below pertain specifically to SAP version 3.1H. If your SAP R/3 system version is 3.0 or higher, the procedures are similar and the ASCII/SAP DEVICE TYPE is also compatible with other versions of SAP.

PROCEDURE ONE: Test the printer outside of SAP: print Non-SAP documents in Non-SAP environment

This is to confirm that the host OS/printer attachment works properly outside of SAP. This enhances the assurance that the host operating system and the printer are correctly configured prior to creating the IBM printer as an OUTPUT DEVICE to the SAP R/3 internal spool system.

SAP R/3 documentation strongly advises that the printer should be thoroughly pre-tested in printing Non-SAP documents in the host OS system without SAP. Typically, the host OS could be any one of these platforms: UNIX systems, Windows or Windows NT, AS/400, or IBM mainframe platforms.

After the "Printer's Requirements" above are satisfied, generate a few printouts to the IBM printers from any non-SAP applications such as MS Word or any ASCII text editor. If no printouts were generated, check all connections to and from the printer. If all else fails, contact IBM Support Group to resolve it. ***Do not proceed any further!***

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PROCEDURE TWO:
## Import the ZIBM44V4 DEVICE TYPE to an existing SAP R/3 System

1. Set the printer emulation to IGP from the printer's panel. The printer emulation should already be set in IGP mode when powered ON. Next, print the printer's configuration from the printer's panel to make sure that the firmware is loaded correctly and the Flash-RAM and DRAM installed memory satisfied the printer's memory requirement.

2. Save the current printer's configuration so that whenever the printer is turned OFF and ON the same settings will be loaded into the memory. Refer to the User's Reference Manual of the IBM printer for a complete procedure on how to accomplish step 1 and 2.

3. Double-click the self-extracting ZIBM44V4 DEVICE TYPE file *355756.exe* you have just downloaded from the device type download page. Two files named as *ZIBM_IGP_LS and ZIBM44V4.PRI* will be required during the installation of the ZIBM44V4 DEVICE TYPE. <u>Note the path where these files are located because you will be asked to specify the path during the import process of the ZIBM44V4 DEVICE TYPE</u>.

4. Start the SAP R/3 front-end client GUI. Log into the central instance of SAP Server with administrator rights. Type in your User name and Password at the appropriate text box. Press the *<ENTER>* key to continue to the next screen. The screen should look very much like the illustration below.

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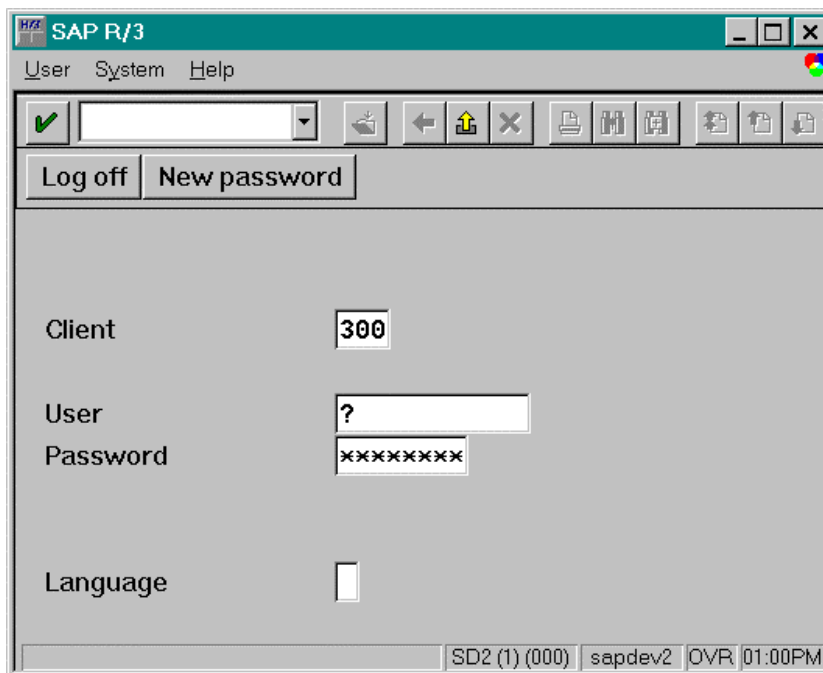
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SAP R/3 Login Screen

5. Start the ***Program Execution*** transaction SA38 by entering */nSA38* in the command line text box located just below the menu bar of the SAP R/3 System screen ![✔ /nSA38 ▼] Press the *<Enter>* key or click once on the ![✔] box adjacent to the command line text box. The screen should look very much like the illustration below.
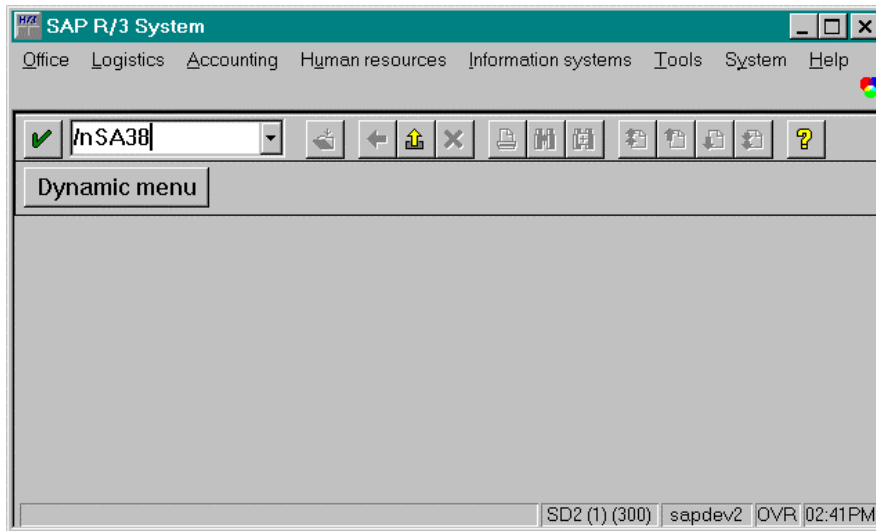
SAP R/3 System Screen

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6. The next series of steps outline the import procedure of the device type definition file *ZIBM44V4.PRI* from the floppy disk to the SAP R/3 printing system. First, execute the Program Execution transaction SA38 by keying in */nSA38* at the command line entry text box located just below menu bar of the current screen .
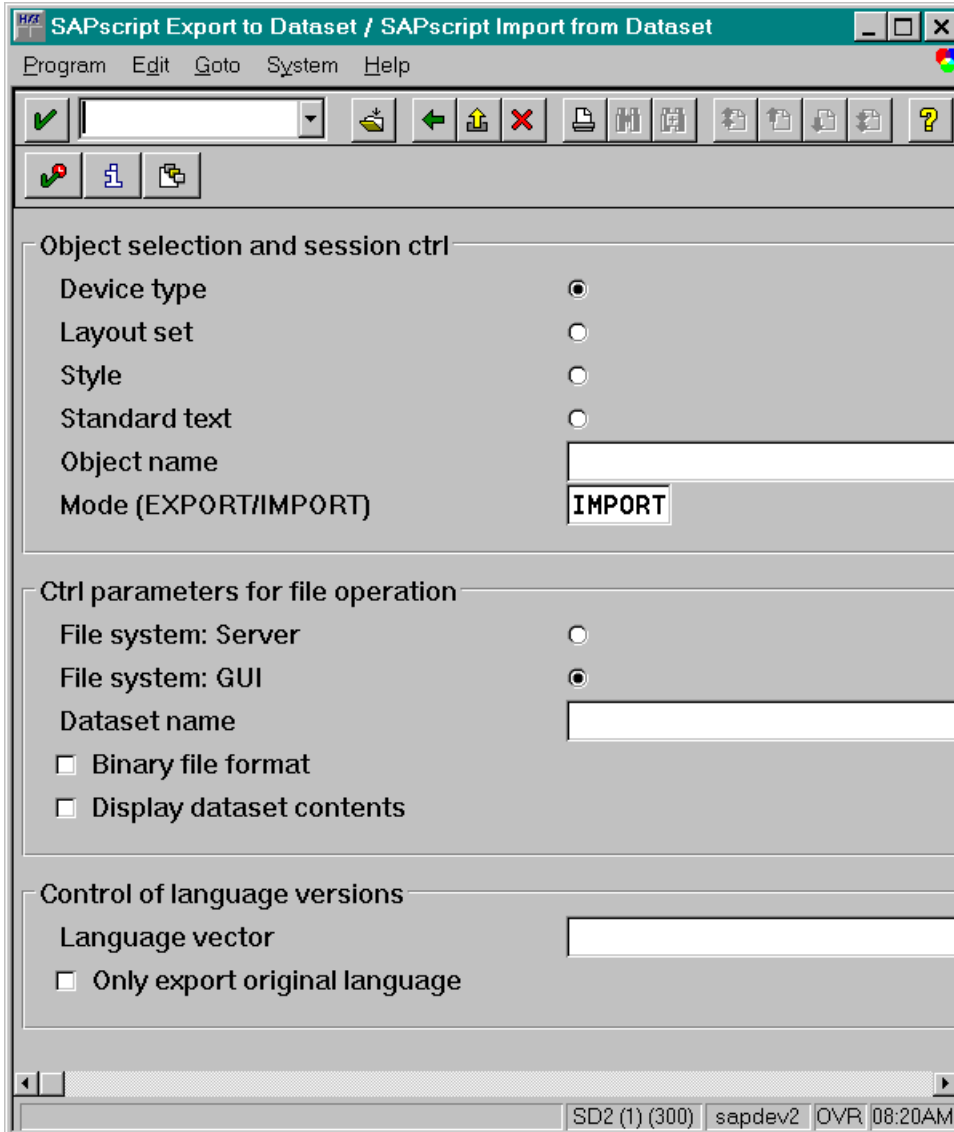
   At the window screen "*ABAP/4: Execute Program"*,very much like the illustration below, key in *RSTXSCRP* in the **Program** text entry box then click execute button to launch the device type definition import program.
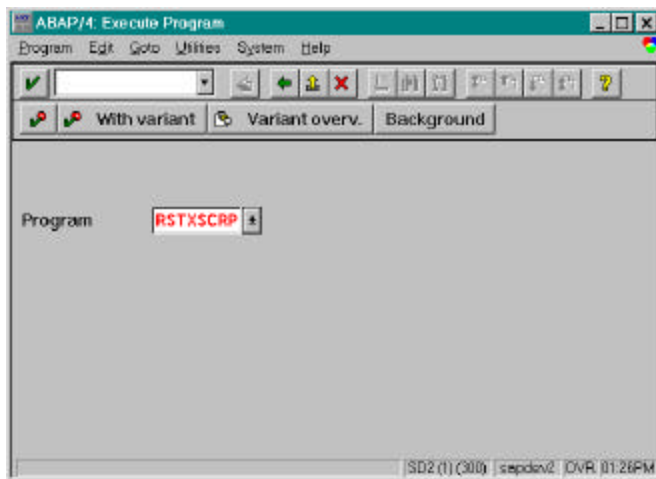
ABAP/4 Execute Program Screen

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7. At the next window titled " *SAPscript Export to Dataset / SAPscript Import from Dataset* " shown below, select *Device type* option, key in *ZIBM44V4* for *Object name* text box, enter *IMPORT* for *Mode (EXPORT/IMPORT)* option, select *File system: GUI* option, and key in */tmp/ZIBM44V4.PRI* in the *Dataset name* text box. When the entries for all the requirement fields are entered correctly, click on [execute icon] execute button to start the import process. Ignore all other options.

SAPscript Import from Dataset Screen

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8. When making changes or defining new objects in the SAP R/3 system, an object is assigned a request number so that SAP R/3 system can track its profile as to when, who, what, and how that object was created. In this case it is appropriate to request a new number since you are about to create a new printer definition object. To obtain a new request number, at the pop-up dialog " *Change Request Query* " windows shown below, simply click on the Create request command button.

Change Query Request Screen

9. Next, type in the description for the newly created request at the " *Create Request* " screen very much like the illustration below. Next click the save button to continue.

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Create Request Screen

10. Notice that a new request number is placed in the *Number* field entry text box and the description of the request that you have just entered in the " Create Request " screen, is displayed just below the request number. Next, click the enter button [✔] located at the lower left corner of the current active window.

11. A pop-up dialog text box labeled " *Import from a Local File* " prompts for the device type definition file and the its location. Use the browse button [⯆] to locate the *ZIBM44V4.PRI* in the *File name* entry text box and then click the [OK] command button to start the upload process. The screen should look very much like the illustration below.


```
Import from a Local File                                    [×]
File name        A:\ZPTX____ .PRI
Data format      ASC


[                                                            ]

OK  ✖
```

Import from a Local File dialog

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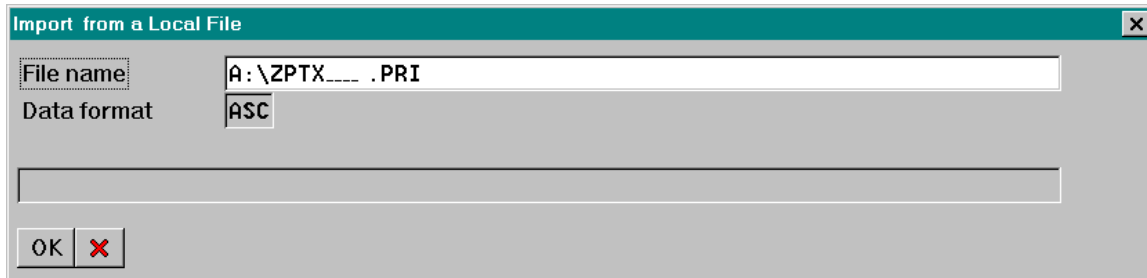
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12. When the import process is finished, update messages will be displayed in the current active window very much like the illustration below.

SAPscript Export to Dataset Screen

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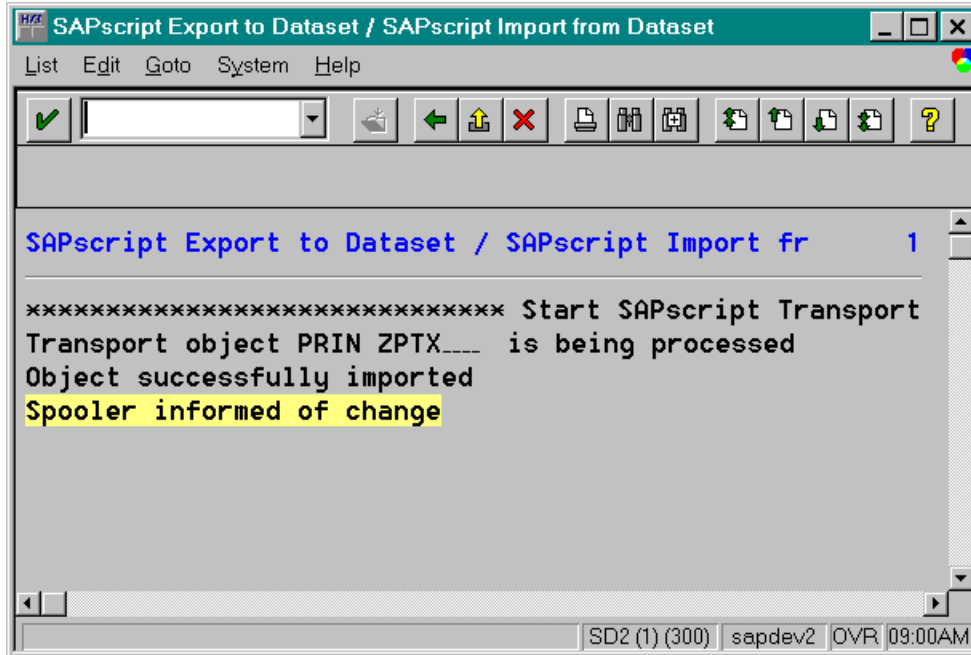
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PROCEDURE THREE:
Verify the import of ZIBM44V4 DEVICE TYPE in the SAP R/3 System

1. Start the Spool Administration transaction program SPAD by entering */nSPAD* in the command line text box located just below the menu bar of the current active window of SAP R/3 system. Press the *<Enter>* key or click on the check box adjacent to the command line text box entry.
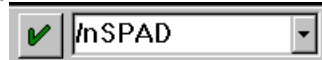
2. At the " *Spool Administration Initial Screen* " very much like the illustration below, select **Device type** option so that the radio button is ON and then click the [Display] button.

SPAD Initial Screen

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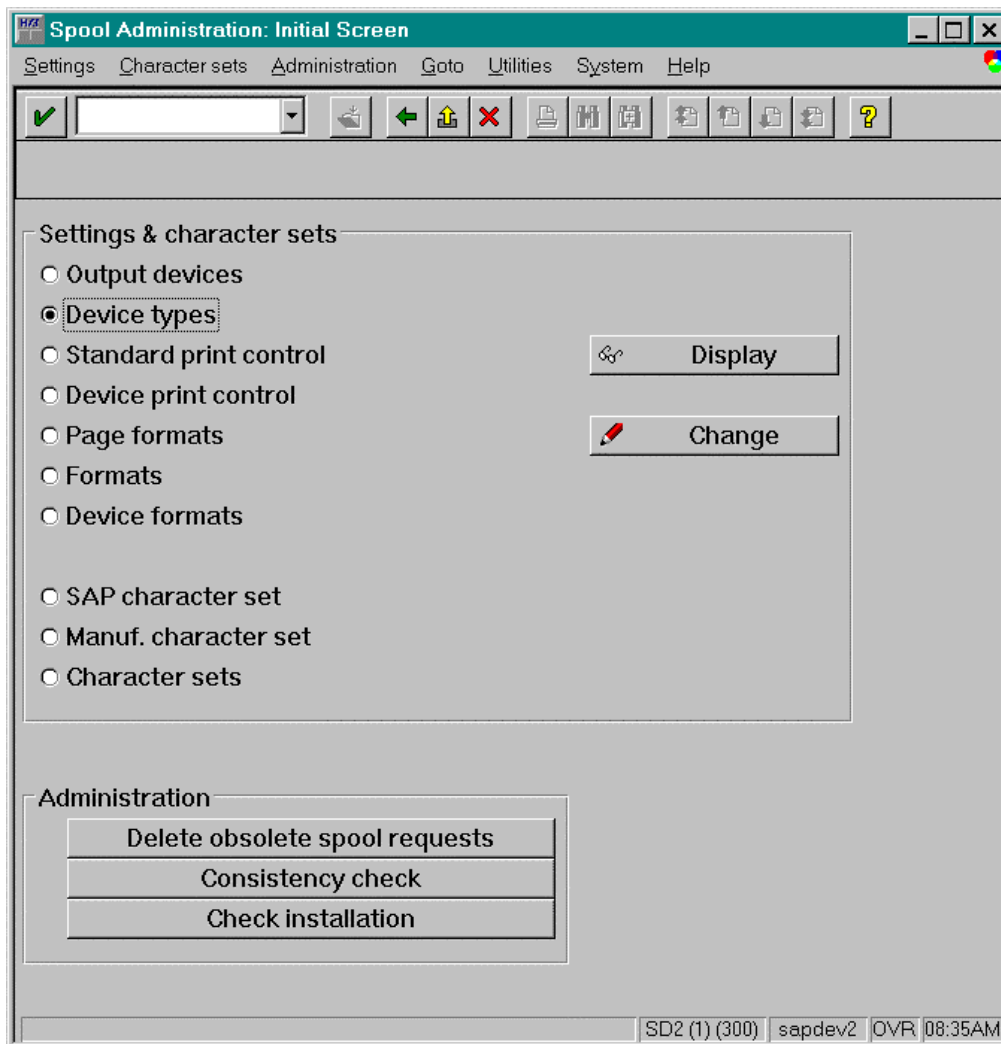
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3. Scroll down the " *List of Device Types* " screen shown below, if you don't see *ZIBM44V4* on the list. The IBM device type should be listed as **ZIBM44V4 IBM ASCII Printer (IGP)**. If the device type is not listed, repeat PROCEDURE ONE again.

```
Spool Administration: List of Device Types                    _ □ ✕
Device type   Edit   Goto   Utilities   System   Help              ●

✔ [          ▼]  ⬛ ← ⬆ ✕  ⬛ ⬛ ⬛  ⬛ ⬛ ⬛ ⬛  ?

 Single | Delete | Create | Copy from

Device typName

ZASCII     ASCIIPRI, IGP multinat. codep.
ZCOT       COT-SAP Treiber 12.08.99
ZCPQTLPP   Compaq Tandem LP+ 1.00A
ZHPLJ23    HP Laserjet 2.3: driver STN2
ZIBM4400   IBM ASCII Printer

ZIBM6408   IBM 6408-A00  ASCII
ZIBM64XX   IBM 64xx      emulation 1.00A
ZIBM_NEW   IBM 6408-A00  ASCII
ZPGL       ASCIIPRI with PGL multin.codep
ZPTX1PCL   HP Laserjet 3 series PCL-5
ZPTXANSI   PTRX Proline Series5 ANSI
ZPTXASC3   Printronix ASCII Printer (PGL) ▮
ZPTXLM     Printronix Proline Series 5
ZPTXLPP    Printronix LP+ emulation 1.00B




                              SD2 (1) (300)  sapdev2  OVR 08:51AM
```

SPAD List of Device Types Screen

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PROCEDURE FOUR: Using the IBM ZIBM44V4 DEVICE TYPE
Scenario 1: Create an "Output Device" in SAP for the IBM 4400 printer

1. From the current active SAP R/3 system window enter the " *System Administration*" screen by keying in */nSPAD* at the command line text box entry located just below the menu bar

2. At the " *Spool Administration : Initial Screen*" very much like the one shown below, select the **Output devices** option and then click the [✐ Change] command button to define a IBM output device.

19
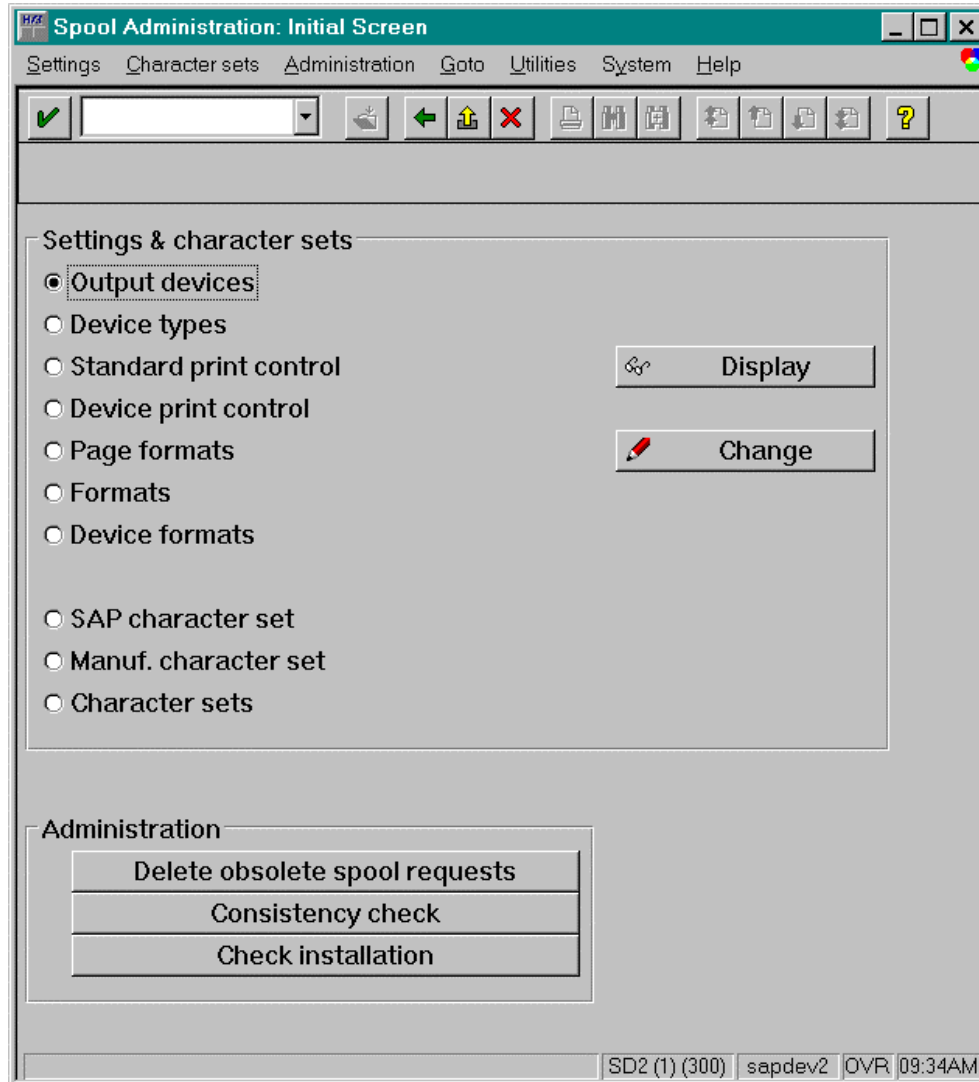
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SPAD Initial Screen

3.   At the " *Spool Administration: List of Output Devices* " screen very much like the illustration below, click on the [Create] command button located just below the formatting toolbar, to enter the create output device screen.

```
┌─────────────────────────────────────────────────────────────────┐
│ Spool Administration: List of Output Devices        _ □ ✕        │
├─────────────────────────────────────────────────────────────────┤
│ Output device  Edit  Goto  Utilities  System  Help               │
├─────────────────────────────────────────────────────────────────┤
│ ✔ [          ▼]  ⬅ ⬆ ✕  🖨 H H  ⬆ ⬆ ⬇ ⬆  ?                      │
├─────────────────────────────────────────────────────────────────┤
│ Single   Delete   Create                                         │
├─────────────────────────────────────────────────────────────────┤
│ Dev.   Device typLocation or message                             │
│                                                                  │
│ DUC    HPLJ4      Engr Bldg. A (HP4SiA)                          │
│ DUC2   HPLJ4      Building C - Front desk                        │
│ DUKE   IBM6408    DVT Engineering - Building A                   │
│ GFAX   HPLJ_II    IRV/HOL Goldfax                                │
│ H011   ZIBM6408   WHS    - REC1_PRINT - LETTER (P5212)           │
│ H012   ASCIIPRI        - LABEL1_PRINT (T1006)                    │
│ H013   ASCIIPRI        - LABEL2_PRINT (T1006)                    │
│ H014   ZIBM6408   ORD    - LA21_PRINT - LETTER (P5212)           │
│ H015   ZIBM6408   FIN    - CS2_PRINT - LETTER (P5212)            │
│ H016   ZIBM6408   PLN    - CS3_PRINT - LETTER (P5212)            │
│ H017   ZIBM6408   ORD    - LA23_PRINT - INVOICE (P5212)          │
│ H018   ZIBM6408   SAP    - LA26_PRINT (P5000)                    │
│ H019   ZIBM6408   WHS    - LETTER (P5212)                        │
│ H020   HPLJ4      FIN    - (HP5)                                 │
│ HL00   HPLJIIID   LSROOM - A4 (L1024)                            │
│ I001   ZIBM6408   DERIAN - Order Entry, VAX:LPDE23 (P5212)       │
│ I002   ASCIIPRI   DERIAN - Supplier Management 2nd flr, VAX      │
│ I003   ZIBM6408   BLDG C - Accounting area, VAX:LPCC04 (P52      │
│ I004   ZIBM6408   DERIAN - Customer Service, VAX:LPDE26 (P5      │
│                                                                  │
│ ◄                                          ►                     │
│                        SD2 (1) (300) │ sapdev2 │OVR│09:47AM      │
└─────────────────────────────────────────────────────────────────┘
```
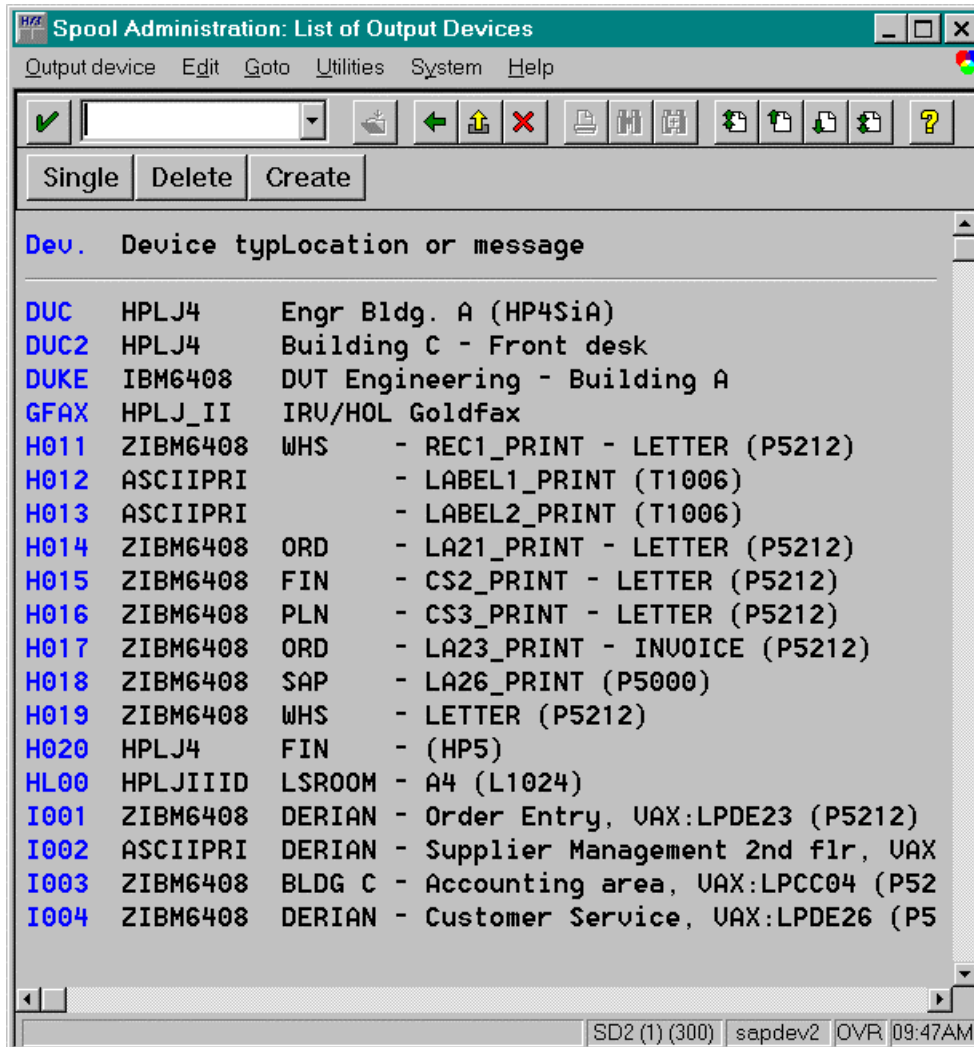
SPAD List of Output Devices Screen

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4. Next, at the "*Spool Administration: Create Output Device*" screen shown below, two fields on this screen are the most important for you to create the printer as an output device in SAP: (1) *Output device* field, which names the printer within the SAP system and (2) *Device type* field, which specifies the internal SAP driver and other properties of the printer within the SAP system. Key in four alphanumeric characters in the *Output device* text box entry field. Next, click anywhere on the text entry box of the *Device type* field to get a list of available device types. Select *ZIBM44V4 IBM ASCII Printer (IGP)* device type from the pick list. *ZIBM44V4* should be displayed inside the *Device type* text entry box. For other fields listed below:

    Spool Server: The name of the SAP Spooler Server.

    Host: The host operating system where the SAP Spooler Server is configured and installed.

    Host Printer: The name of the printer where it is defined in the host operating system.

    Device class: do not change.

    Access method: Enter the following entries depending on the access method (connection method either local or remote [illustrated below is a local connection]) between the SAP Server Spooler and the host operating system spool.

    LPQ format: Enter *B* in the entry text box.

    Location: Administrative information field to describe the physically location of the printer.

    Message: Administrative information field for SAP administrator to display the message to users.

    Consult the on-line help *BC Printing Guide* in SAP R/3 system for a complete description of each field and what options are available for it.

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Spool Administration: Create Output Device

Output device   Edit   Goto   Utilities   System   Help

Next screen

Output device	IBM1
Device type	ZIBM44V4
Spool server	Host
Host printer	
Device class	Printer
Access method	L Print locally via LP/LPR with signal
LPQ format	
Location	Building A Front Desk
Message	

☐ SAP title page
☐ Lock printer in R/3 System

SD2 (1) (300)   sapdev2   OVR   10:55AM

SPAD Create Output Device Screen

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5. When all the fields are correctly entered with appropriate entries, save the output device definition by selecting from the menu bar *Output device* ✍ *Save*. A shorter way to save is to click on the save button ⬜ on the formatting toolbar just below the menu bar of the "*Spool Administration: Create Output Device*" screen.

6. The " *Spool Administration: List of Output Devices*" screen now displays a list the output devices for the SAP R/3 system. Scroll up or down to find the output device that has just been named in the **Output device** field along with the text description of where the printer is located entered in the **Location** field of the *"Spool Administration: Create Output Device"* screen.

The printer should now be ready for SAP document printing.

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Scenario 2: Reassign an existing "Output Device" in SAP for the IBM 4400 printer

1. From the current active SAP R/3 system window enter the " *System Administration: Initial Screen"* screen by keying in */nSPAD* at the command line text box entry located just below the menu bar.
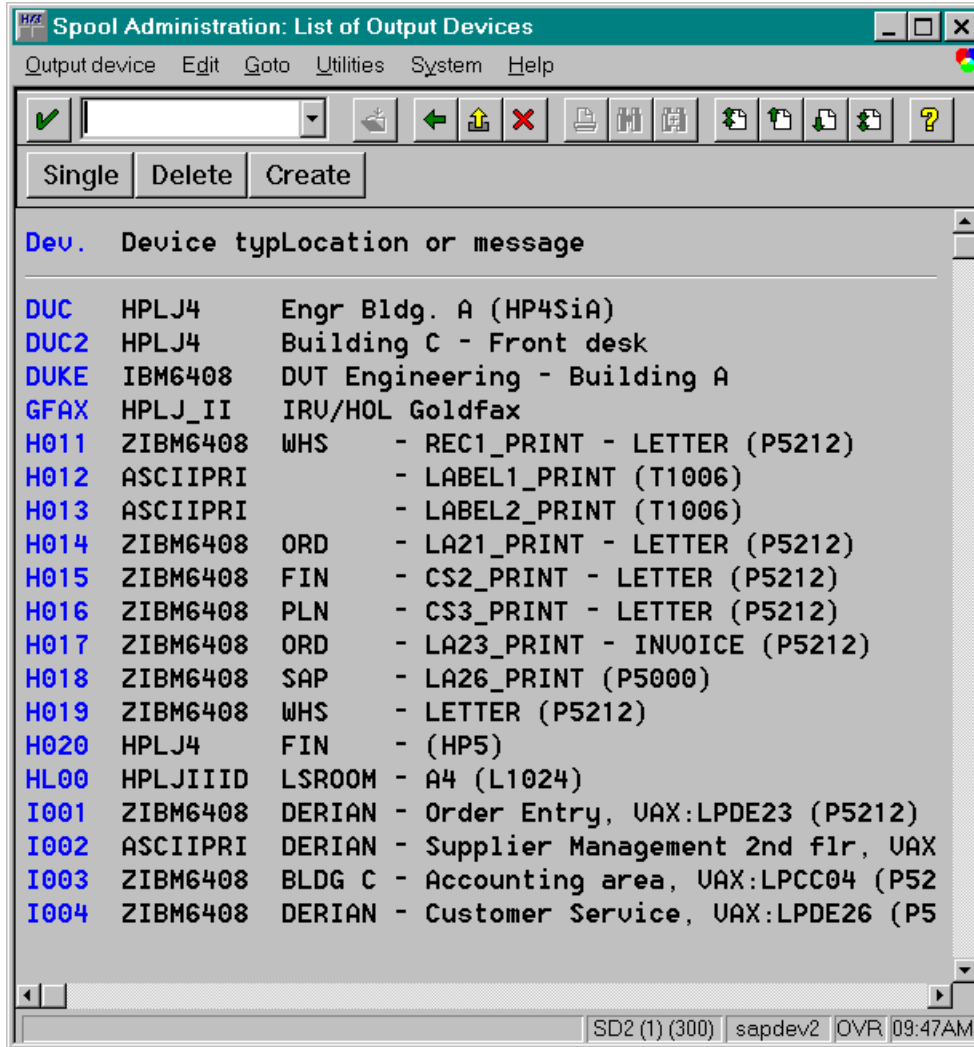
$$\boxed{\ \checkmark\ |\ \text{/nSPAD} \qquad |\ \blacktriangledown\ }$$

2. At the " *Spool Administration : Initial Screen"* very much like the one shown below, select the ***Output devices*** option and then click the $\boxed{\text{Change}}$ command button to continue.
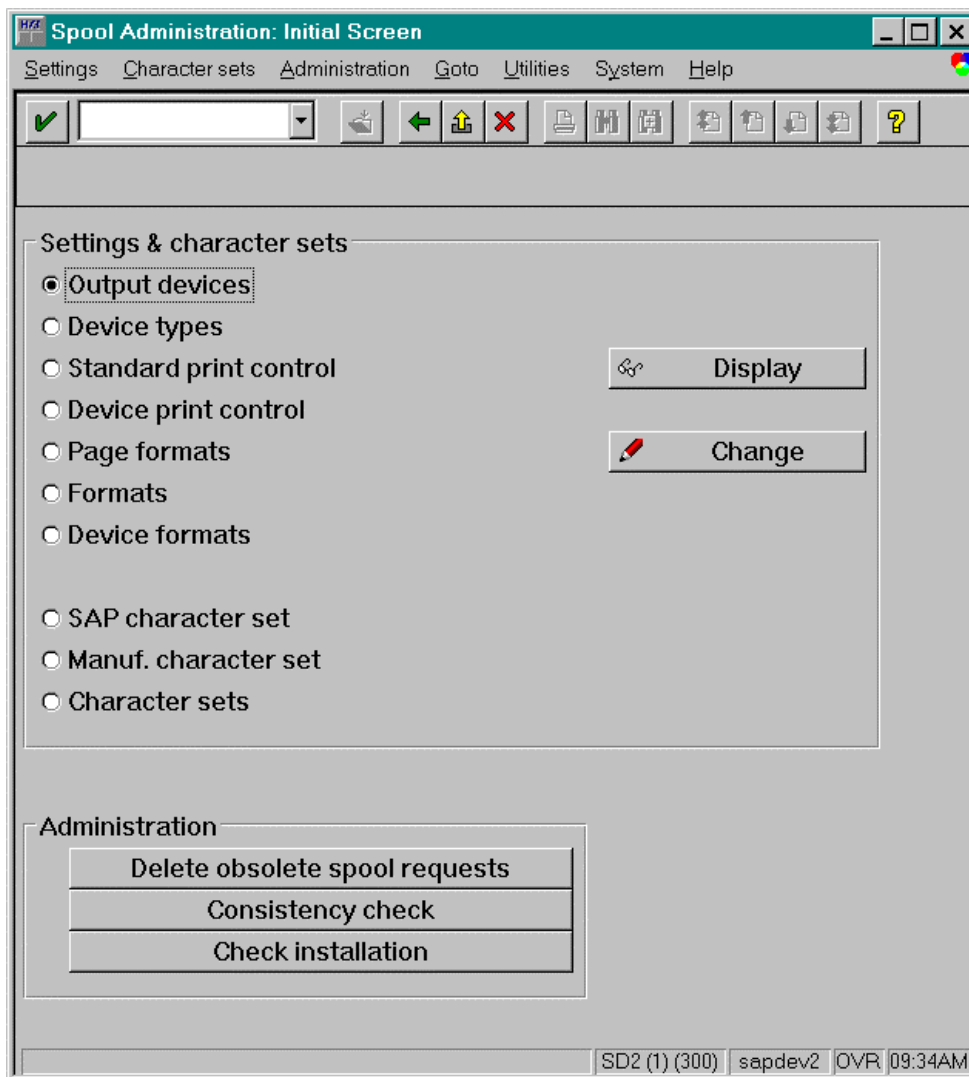
SPAD Initial Screen

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3. At the " *Spool Administration: List of Output Devices* " screen shown below, double-click on the desired output device from the list of output devices.

```
┌────────────────────────────────────────────────────────────────────┐
│ H/3  Spool Administration: List of Output Devices        _ □ ✕      │
├────────────────────────────────────────────────────────────────────┤
│ Output device  Edit  Goto  Utilities  System  Help                 │
├────────────────────────────────────────────────────────────────────┤
│ ✔ [          ▼]  ←🔙  ← 🔼 ✕  🖨 ⬛ ⬛  ⬛ ⬛ ⬛ ⬛  ❓                  │
├────────────────────────────────────────────────────────────────────┤
│  Single   Delete   Create                                          │
├────────────────────────────────────────────────────────────────────┤
│ Dev.   Device typLocation or message                               │
│                                                                    │
│ DUC    HPLJ4      Engr Bldg. A (HP4SiA)                            │
│ DUC2   HPLJ4      Building C - Front desk                          │
│ DUKE   IBM6408    DUT Engineering - Building A                     │
│ GFAX   HPLJ_II    IRU/HOL Goldfax                                  │
│ H011   ZIBM6408   WHS     - REC1_PRINT - LETTER (P5212)            │
│ H012   ASCIIPRI           - LABEL1_PRINT (T1006)                   │
│ H013   ASCIIPRI           - LABEL2_PRINT (T1006)                   │
│ H014   ZIBM6408   ORD     - LA21_PRINT - LETTER (P5212)            │
│ H015   ZIBM6408   FIN     - CS2_PRINT - LETTER (P5212)             │
│ H016   ZIBM6408   PLN     - CS3_PRINT - LETTER (P5212)             │
│ H017   ZIBM6408   ORD     - LA23_PRINT - INVOICE (P5212)           │
│ H018   ZIBM6408   SAP     - LA26_PRINT (P5000)                     │
│ H019   ZIBM6408   WHS     - LETTER (P5212)                         │
│ H020   HPLJ4      FIN     - (HP5)                                  │
│ HL00   HPLJIIID   LSROOM - A4 (L1024)                              │
│ I001   ZIBM6408   DERIAN - Order Entry, VAX:LPDE23 (P5212)         │
│ I002   ASCIIPRI   DERIAN - Supplier Management 2nd flr, VAX        │
│ I003   ZIBM6408   BLDG C - Accounting area, VAX:LPCC04 (P52        │
│ I004   ZIBM6408   DERIAN - Customer Service, VAX:LPDE26 (P5        │
│                                                                    │
├────────────────────────────────────────────────────────────────────┤
│                            SD2 (1) (300)  sapdev2  OVR  09:47AM     │
└────────────────────────────────────────────────────────────────────┘
```

SPAD List of Output Devices Screen

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IBM Printing Systems

4. At the "*Spool Administration: Change Output Device*" screen very much like the illustration below, click anywhere on the text entry box of the ***Device type*** field to get a list of available device types. Select *ZIBM44V4 IBM ASCII Printer (IGP)* device type from the pick list. *ZIBM44V4* should be displayed inside the ***Device type*** text entry box. Note that the name displayed inside the ***Output device*** text box represents the output device name that you have selected in the previous screen. For other entries listed below:

> ***Spool Server***: The name of the SAP Spooler Server.

> ***Host***: The host operating system where the SAP Spooler Server is configured and installed.

> ***Host Printer***: The name of the printer where it is defined in the host operating system.

> ***Device class***: do not change.

> ***Access method***: Enter the following entries depending on the access method (connection method) between the SAP Server Spooler and the host operating system spool.

> ***LPQ format***: Enter *B* in the entry text box.

> ***Location***: Administrative information field to describe the physically location of the printer.

> ***Message***: Administrative information field for SAP administrator to display the message to users.

> Consult the on-line help *BC Printing Guide* in SAP R/3 system for a complete description of each field and what options are available for it.

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IBM Printing Systems

Spool Administration: Change Output Device

Output device   Edit   Goto   Utilities   System   Help

Next screen   **Delete**

Output device   DUC

Device type   ZIBM44V4
Spool server   Host
Destination host   Output handling running
Host printer
Device class   Printer

Access method   S   Print on LPDHOST via SAP protocol
LPQ format   B   Berkeley-compatible LPQ (RFC1179)

Location   Engr Bldg. A
Message

☑ SAP title page
☐ Lock printer in R/3 System

SD2 (1) (300)   sapdev2   OVR   11:35A

SPAD Change Output Device Screen

Rev A

IBM Printing Systems

5. When all the fields are correctly entered with appropriate entries, save the output device definition by selecting from the menu bar *Output device* ✍ *Save*. A shorter way to save is to click on the save button on the formatting toolbar just below the menu bar of the "*Spool Administration: Change Output Device*" screen.

6. The " *Spool Administration: List of Output Devices*" screen now displays a list the output devices for the SAP R/3 system. One of which is the one you have just modified to use the *ZIBM44V4* device type.

The printer should now be ready for SAP document printing.

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IBM Printing Systems

PROCEDURE FIVE: Test the installed IBM ZIBM44V4 DEVICE TYPE and OUTPUT DEVICE

1. To test the newly installed IBM printer and the new ZIBM44V4 Device Type in SAP R/3 System, many SAP transactions generate and display results in a list format at the current window. At any given screen, a print option can be selected to print the current list to the desired printer. To accomplish this, first, key in *nSPAD* ✔ | /nSPAD ▼ in the command text entry box located just below the menu bar of the current active window of SAP R/3 system. Next select ⦿ Output devices then click on the ✐ Display command button. A list of available output device types will be displayed. The screen should look very much like the illustration below.

SPAD List of Output Devices Screen

Rev A
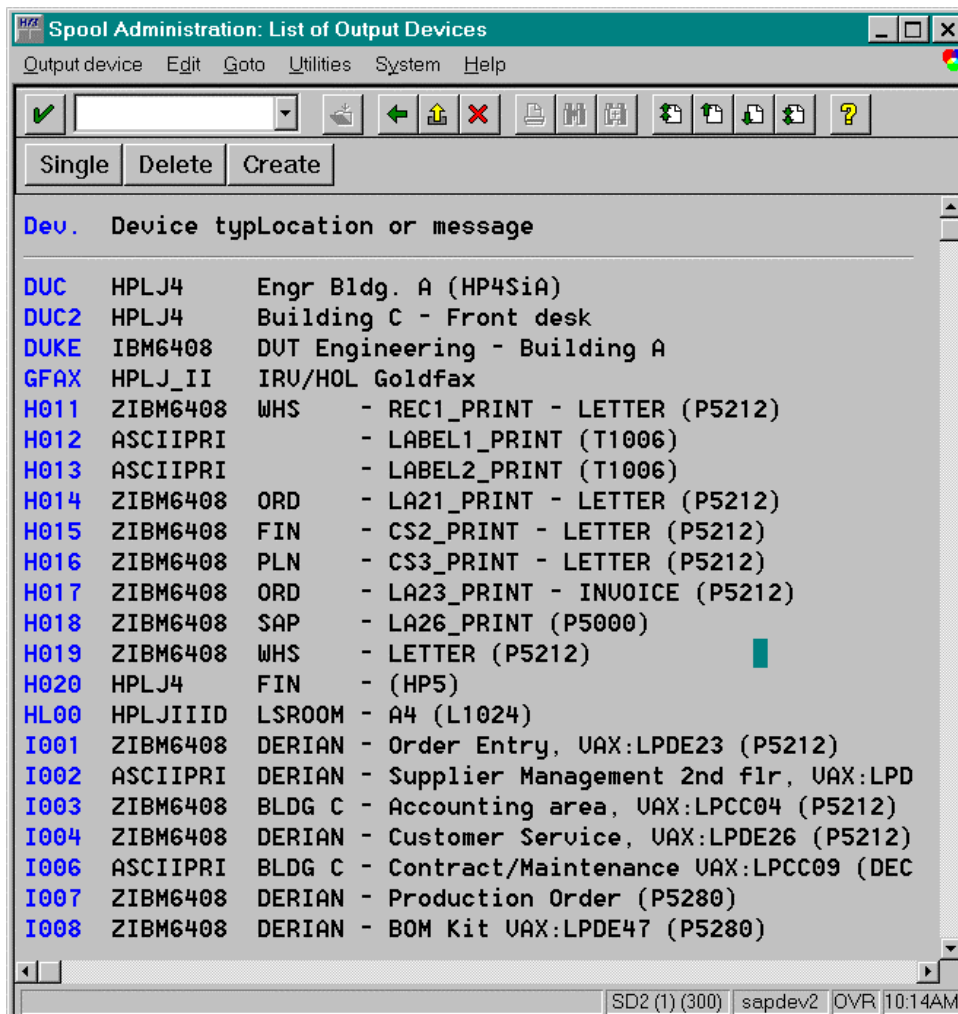
2. Next select from the menu bar *Output device* ✍ *Print this list,* a "Print Screen List" screen similar to the one shown below will be displayed. Key in the name for the ***Output device*** field, which has been defined earlier in section "**Using the IBM ZIBM44V4 DEVICE TYPE"** of this document. Check the ***Print immed*** and the ***Delete after print*** under the *Spool Control* area of the *Print Screen List.* Next click on the [🖶] command button to print.

```
┌──────────────────────────────────────────────────────────────────────────┐
│ ▓ Print Screen List                                          _ □ ✕        │
│ Output  Edit  Goto  System  Help                                    ●     │
├──────────────────────────────────────────────────────────────────────────┤
│ ✔ [          ▼] ◄ ← ⬆ ✕  □ ▥ ▦  ▤ ▤ ▤ ▤  ?                              │
│ 🖶 ▤                                                                       │
│                                                                           │
│  Output device        [     ]± BLDG C - Computer Room, VAX:LPCR03 (P5212/IGP) ▲ │
│  Number of copies      [1    ]                                             │
│                                                                           │
│  ┌Spool request───────────────────────────────────────────────────────┐  │
│  │ Name         [SAPMSPAO_TRA        ]                                  │  │
│  │ Title        [                                                    ]  │  │
│  │ Authorization [               ]                                      │  │
│  └─────────────────────────────────────────────────────────────────────┘  │
│  ┌Spool control─────────────────────┐  ┌Cover sheets───────────────────┐  │
│  │ ☑ Print immed.                   │  │ [D]  SAP cover sheet           │  │
│  │ ☑ Delete after print             │  │ Recipient   [TRAN_DU       ]   │  │
│  │ ☑ New spool request              │  │ Department  [Engineering   ]   │  │
│  │ Retention period  [8] Day(s)     │  └────────────────────────────────┘  │
│  │ Archiving mode   [Print      ▼]  │                                      │
│  └──────────────────────────────────┘                                     │
│  ┌Output format─────────────────────────────────────────────────────────┐ │
│  │ Lines     [65   ]        □ Footer                                    │ │
│  │ Columns   [132  ]                                                    │ │
│  │ Format    [X_65_132    ]  ABAP/4 list: At least 65 rows by 132 col  ▼│ │
│  └──────────────────────────────────────────────────────────────────────┘ │
│ ◄ □                                                               ►        │
│                                  SD2 (1) (300) │ sapdev2 │OVR│10:23AM      │
└──────────────────────────────────────────────────────────────────────────┘
```

Print Screen List

3. If there is no output from the printer, check to make sure that the printer is properly connected and able to print non-SAP applications from the host system where the printer is connected. Otherwise contact your SAP administrator for support.

IBM Printing Systems

Appendix 2

How to print an IGP label using the SAP R/3 SAPscript

Import the Layout Set Definition File

1. The next series of steps outline the import procedure of the layout set definition file *ZIBM_IGP_LS* from the floppy disk to the SAP R/3 printing system. First, execute the Program Execution transaction SA38 by keying in */nSA38* at the command line entry text box located just below menu bar of the current screen [✔ /nSA38 ▼]. At the window screen "*ABAP/4: Execute Program*", very much like the illustration below, key in *RSTXSCRP* in the **Program** text entry box then click [🔧] execute button to launch the layout set definition import program.
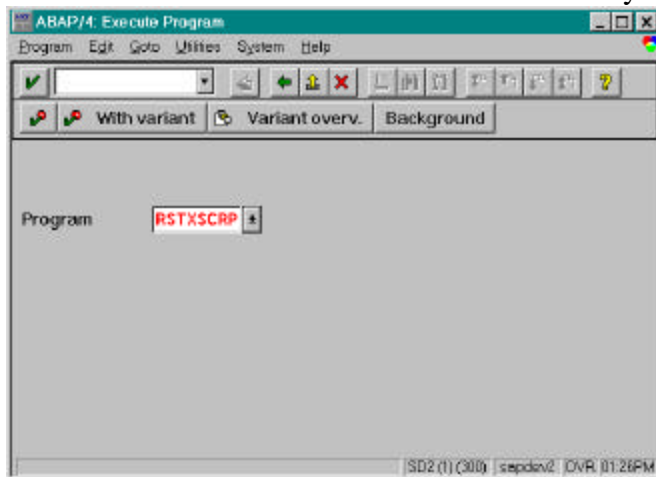
ABAP/4 Execute Program Screen

2. At the next window titled " *SAPscript Export to Dataset / SAPscript Import from Dataset* " shown below, select *Layout set* option, key in *ZIBM_IGP_LS* for *Object name* text box, enter *IMPORT* for *Mode (EXPORT/IMPORT)* option, select *File system: GUI* option, and key in */tmp/ZIBM_IGP_LS* in the *Dataset name* text box. When the entries for all the requirement fields are entered correctly, click on [🔧] execute button to start the import process. Ignore all other options.

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IBM Printing Systems

SAPscript Import from Dataset Screen

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3. When making changes or defining new objects in the SAP R/3 system, an object is assigned a request number so that SAP R/3 system can track its profile as to when, who, what, and how that object was created. In this case it is appropriate to request a new number since you are about to create a new layout set definition object. To obtain a new request number, at the pop-up dialog "

   Change Request Query" windows shown below, simply click on the ☐ **Create request** command button.

Change Query Request Screen

4. Next, type in the description for the newly created request at the " *Create Request* " screen very much like the illustration below. Next click the save button [save icon] to continue.

Create Request Screen

5. Notice that a new request number is placed in the **Number** field entry text box and the description of the request that you have just entered in the " Create Request " screen, is displayed just below the request number. Next, click the enter button [enter icon] located at the lower left corner of the current active window.

6. A pop-up dialog text box labeled " *Import from a Local File* " prompts for the layout set definition file and the its location. Use the browse button [browse icon] to locate the *ZIBM_IGP_LS* in the **File name** entry text box and then click the [OK] command button to start the upload process. The screen should look very much like the illustration below.
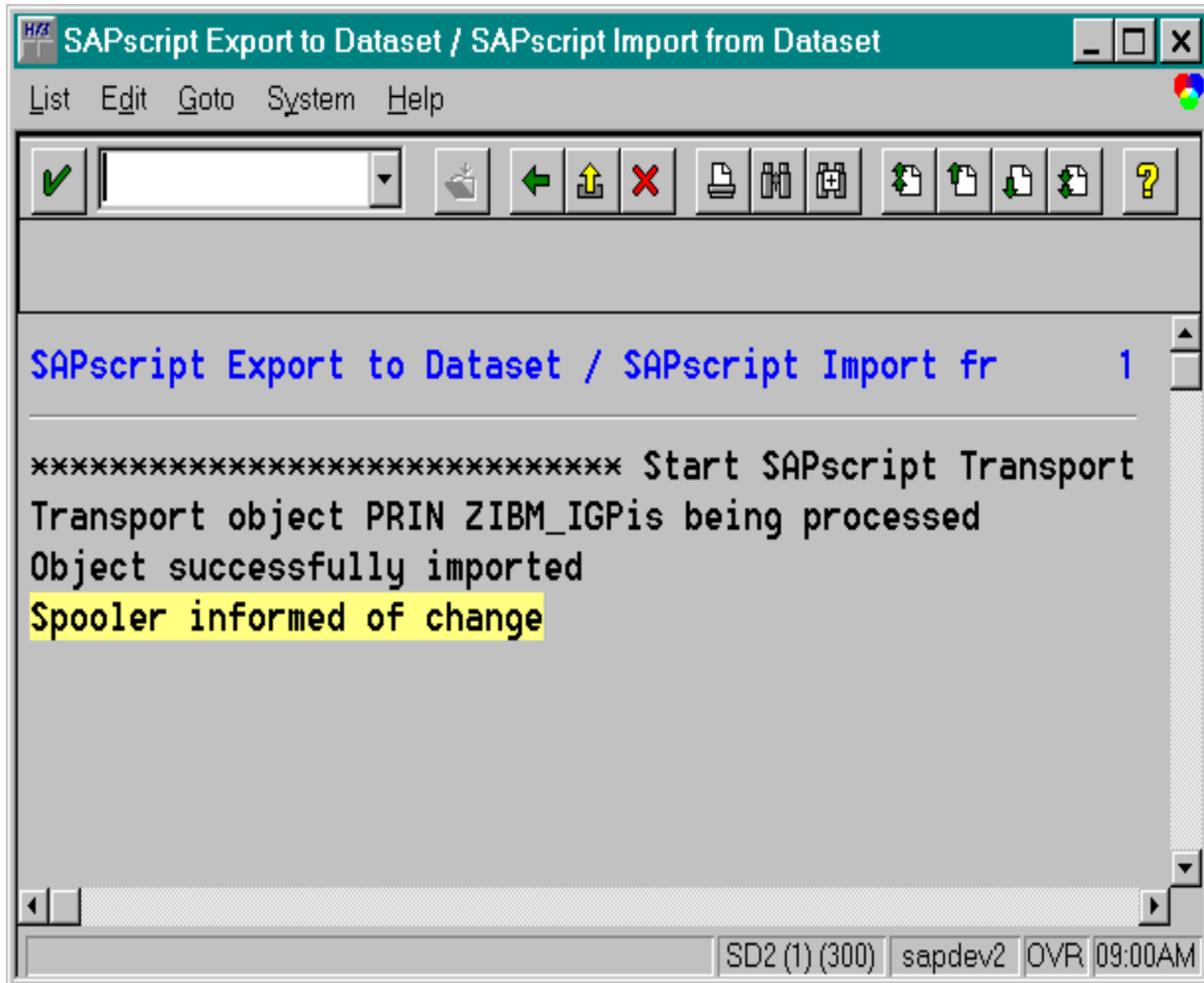
Rev A

Import from a Local File dialog

7. When the import process is finished, update messages will be displayed in the current active window very much like the illustration below.


SAPscript Export to Dataset Screen
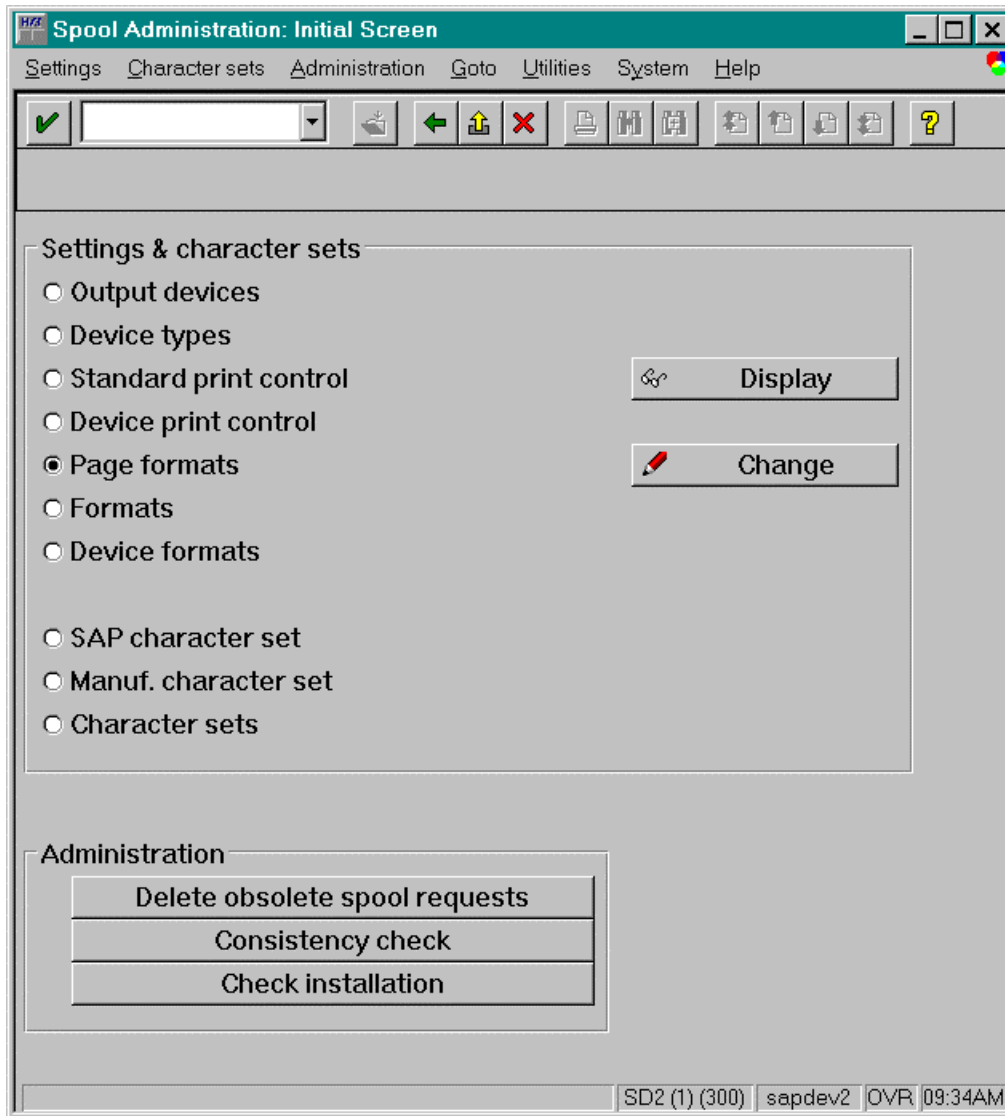
Rev A

IBM Printing Systems

Define a generic Page Format (ZANY) in SPAD of SAP R/3 for any IGP label

1. Successful importation of the ZIBM44V4 DEVICE TYPE and the ZIBM_IGP_LS generic layout set is required before continuing this section, the Page Format definition.

2. To create a ZANY Page Format in SAP, at the current active SAP R/3 system window enter the " *Spool Administration"* screen by keying in */nSPAD* at the command line text box entry located just below the menu bar
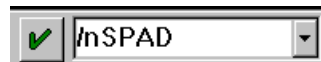
3. At the " *Spool Administration : Initial Screen"* very much like the one shown below, select the **Page formats** option and then click the command button to define a new page format ZANY.

Rev A

IBM Printing Systems

Spool Administration: Initial Screen

Settings   Character sets   Administration   Goto   Utilities   System   Help

Settings & character sets

- ○ Output devices
- ○ Device types
- ○ Standard print control
- ○ Device print control
- ● Page formats
- ○ Formats
- ○ Device formats

- ○ SAP character set
- ○ Manuf. character set
- ○ Character sets

    ⊰⊱   **Display**

    ✎   **Change**

Administration

| Delete obsolete spool requests |
| Consistency check |
| Check installation |

SD2 (1) (300)   sapdev2   OVR   09:34AM

SPAD Initial Screen

Rev A
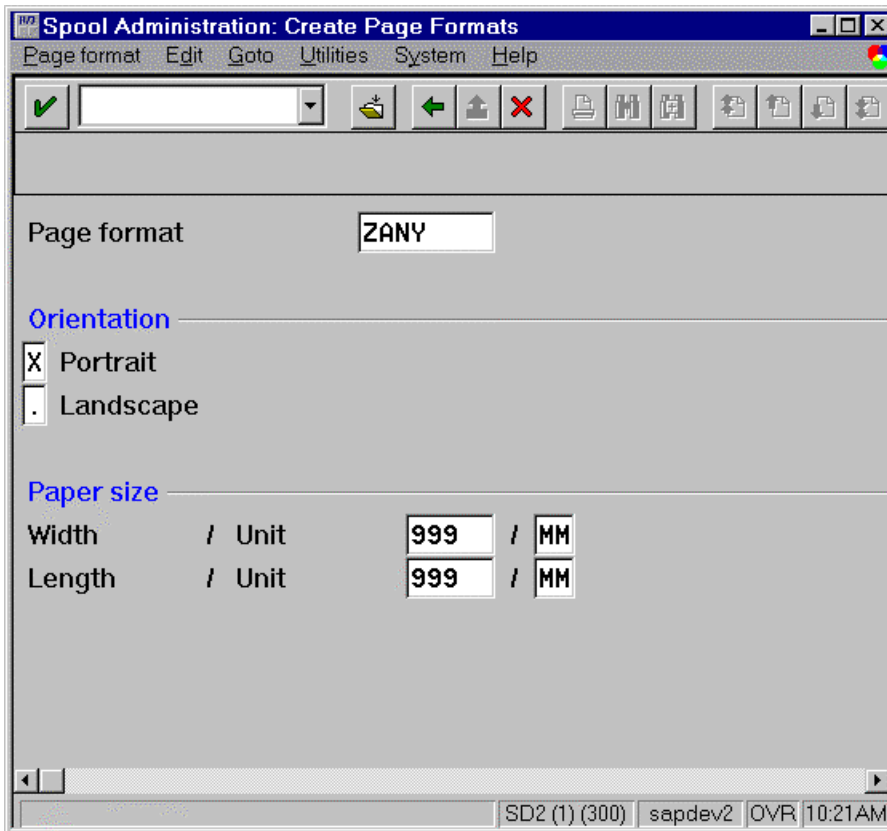
4. At the *"Spool Administration: List of Page Formats"* screen click on the Create command button. A pop-up text box, like the one shown below, prompts for the required field entries to create a new Page Format. Key in the field entries as listed below and click the save button.

Page format:	ZANY
Portrait:	X
Width:	999 MM
Length:	999 MM

Spool Administration: Create Page Formats

Page format   Edit   Goto   Utilities   System   Help

Page format   ZANY
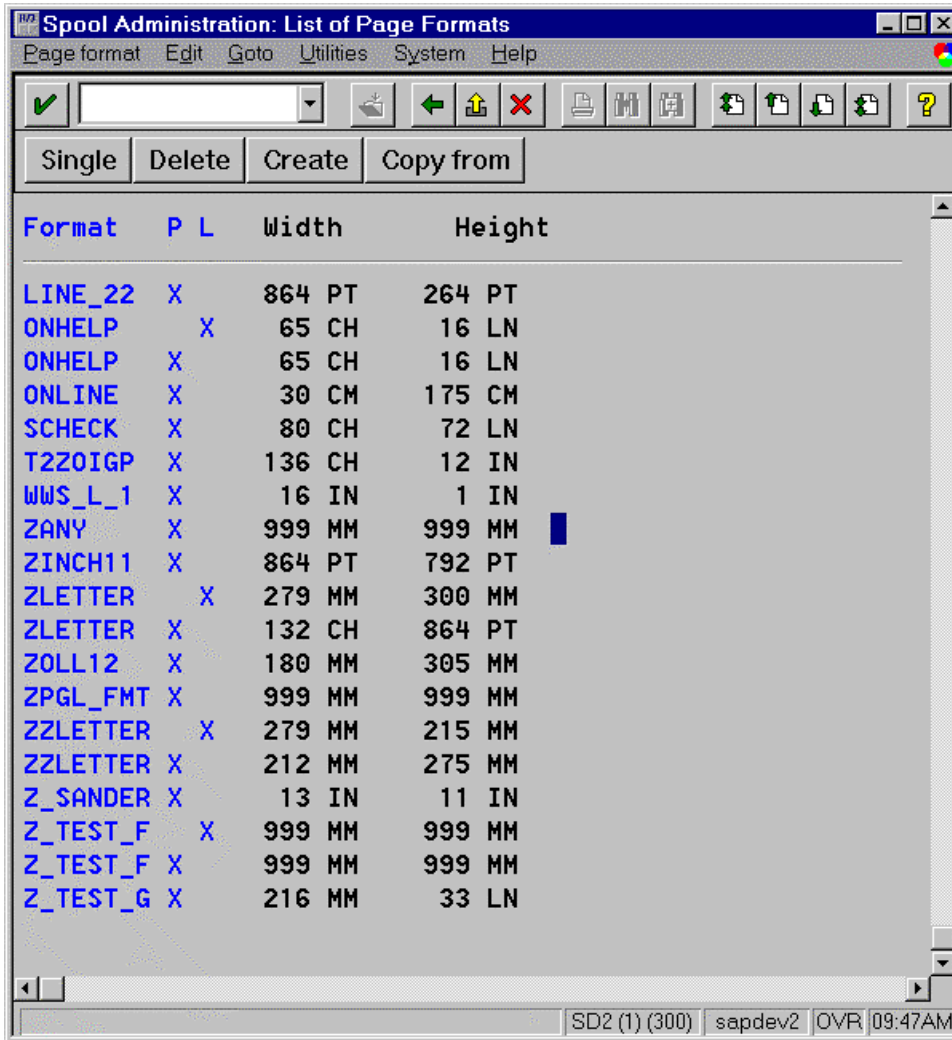
Orientation
X Portrait
. Landscape

Paper size
Width   / Unit   999 / MM
Length   / Unit   999 / MM

SD2 (1) (300)   sapdev2   OVR   10:21AM

SPAD: Create Page Formats Screen

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IBM Printing Systems

5. Verify that ZANY Page Format is listed along with other Page Formats within the Spool Administration of SAP R/3 system. At the *"Spool Administration: Create Page Formats"* screen click [←] the button. A list of available page formats will be displayed. Locate ZANY page format by scrolling up or down the screen very much like the illustration below.

```
Spool Administration: List of Page Formats                   _ □ ×
Page format  Edit  Goto  Utilities  System  Help

 ✔  [          ▼]  ❤  ←  ⬆  ✖   ▤  ▥  ▦   ▤ ▤ ▤ ▤   ?

 Single | Delete | Create | Copy from

Format    P L   Width      Height

LINE_22   X     864 PT     264 PT
ONHELP      X    65 CH      16 LN
ONHELP    X      65 CH      16 LN
ONLINE    X      30 CM     175 CM
SCHECK    X      80 CH      72 LN
T2ZOIGP   X     136 CH      12 IN
WWS_L_1   X      16 IN       1 IN
ZANY      X     999 MM     999 MM   ▮
ZINCH11   X     864 PT     792 PT
ZLETTER     X   279 MM     300 MM
ZLETTER   X     132 CH     864 PT
ZOLL12    X     180 MM     305 MM
ZPGL_FMT  X     999 MM     999 MM
ZZLETTER    X   279 MM     215 MM
ZZLETTER  X     212 MM     275 MM
Z_SANDER  X      13 IN      11 IN
Z_TEST_F    X   999 MM     999 MM
Z_TEST_F  X     999 MM     999 MM
Z_TEST_G  X     216 MM      33 LN

                             SD2 (1) (300) | sapdev2 | OVR | 09:47AM
```

<u>SPAD: List of Page Formats Screen</u>

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IBM Printing Systems

Create an IGP label

IGP (Intelligent Graphics Printing firmware for the IBM Graphics Language) is an ASCII-based output language designed for IBM 4400 printers. Some of the IGP graphics processing features include:

- ? On-Line Form and Label Generation
- ? Selectable Bar Codes
- ? Expanded and Compressed Character Print
- ? Rotated Alphanumerics
- ? Logos
- ? Reversed Print
- ? Automatic Increment/Decrement Capability
- ? TIFF and PCX Raster Data File Support

Additional features are listed in the IGP Programmer's Reference Manual for each type of printer. IGP is robust a ASCII based printer emulation that contains many built-in mnemonic commands used specifically to generate labels and forms. To design a label or a form, a user typically would use a text editor such as **EDIT** under DOS or any word processing software to key in the equivalent ASCII IGP code commands and then save the IGP codes (program) in text format (ASCII format). Refer to appendix 3 for the display of a printed label sample using the IBM 4400 printer and an IGP program list for the same sample label.

Another method to create an IGP label is to use a Label Design Software such as Codesoft™, LabelView™, or LabelMatrix™, which would generate equivalent IGP codes for the designed label. All of the available label design software provide users with unlimited GUI (Graphical User Interface) drawing tools with drag and drop capabilities to simplify the process of creating or designing labels. A user simply uses the mouse along with many graphics drawing features to add or define new fonts, bar codes with variable data, boxes, and logos without keying in a single IGP code.

Once the label design section is complete, simply select the IBM IGP printer driver and print the label with the "print to file" option selected at the printer's Properties Page. The captured output data stream in response to a user's print request for a label is now an IGP program (just like the IGP program shown in Appendix 3).

All is required a soft copy of the IGP program file in ASCII format. Whether the IGP program file is generated directly by keying in the IGP ASCII commands, obtained from existing legacy IPG/IGP programs, or captured from one of the Label Design Software, the label program can be imported directly into SAP system and printed to the IBM printer.

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IBM Printing Systems

**Import an existing IGP label to SAP R/3 as Standard Text**

1. SAP R/3 system allows you to upload (import) text files into its own Text Management System, called the Standard Text. The Standard Text is a text editor that allows SAP front-end users to create and edit text. With an existing IGP program created either by entering the IGP codes directly or by capturing the IGP output from one of the Label Design Software packages (as outlined in the previous section), log into SAP R/3 system. The logging procedure is identical to PROCEDURE ONE, steps 1 through 4 of appendix 1 above.

2. At SAP R/3 System select ***Tools ✍ Word Processing ✍ Standard Text*** from the main menu toolbar.

3. At the *"Standard Text: Request"* screen shown below, key in the name of your choice for the IGP program in the **Text name** field and click [Create/change] button. For our example, we will use the name ZIBM_NEW.

**Standard Text: Request Screen**

Rev A
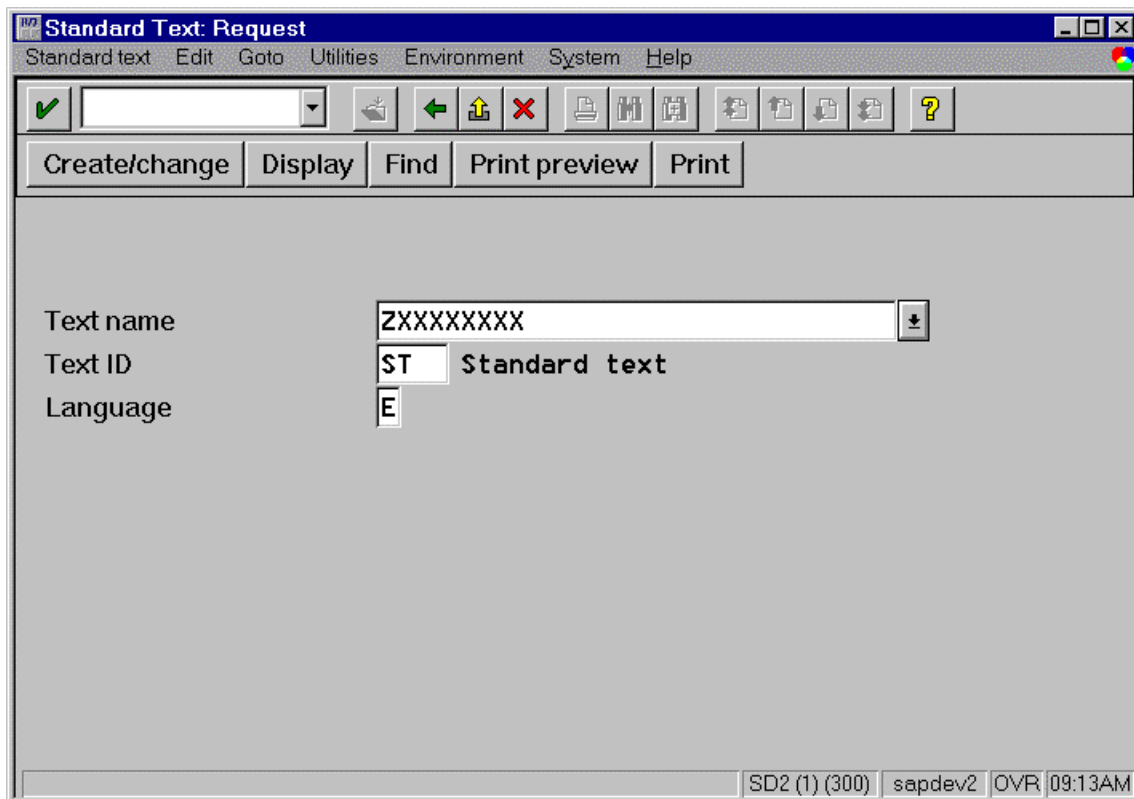
IBM Printing Systems

4. Next, at the window titled *"Change Standard Text: ZXXXXXXXX Language E"* screen shown below, select **Text->Upload** option from the menu toolbar. Note that *ZXXXXXXXX* represents the entered name of the **Text name** field of the previous screen.
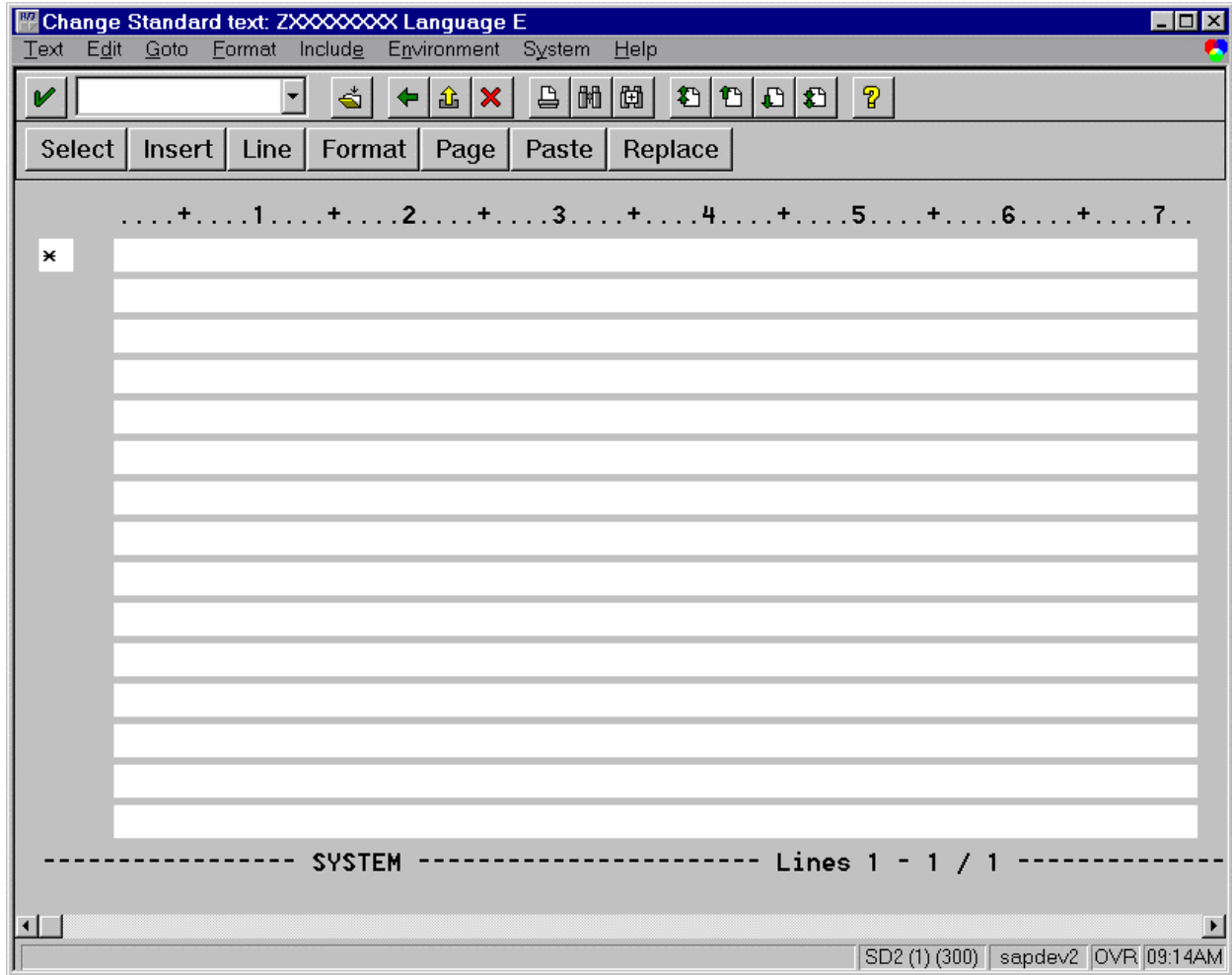

Change Standard Text Screen

Rev A

5. A pop-up dialog text box labeled *" Upload "* prompts for the format type for the standard text file. Select ASCII format and click [✔ Transfer] command button.
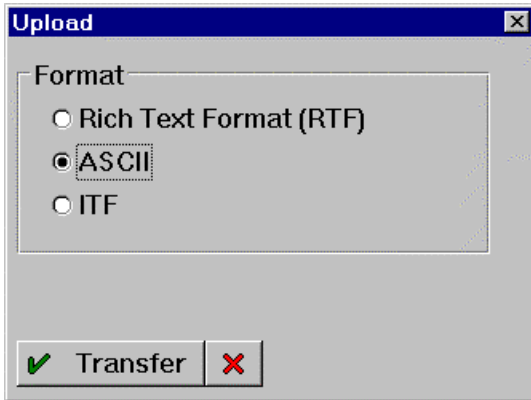
Upload dialog

6. A labeled "*Import ASCII File*" pop-up dialog text box prompts for the name of the IGP filename. Click on the browse [±] button to locate for the IGP file that was created earlier in the "***Create an IGP label***" section of the appendix 2. The filename will be displayed in the ASCII file text field. Next click on the [✔ Transfer] command button to transfer the IGP codes into the Standard Text editor.
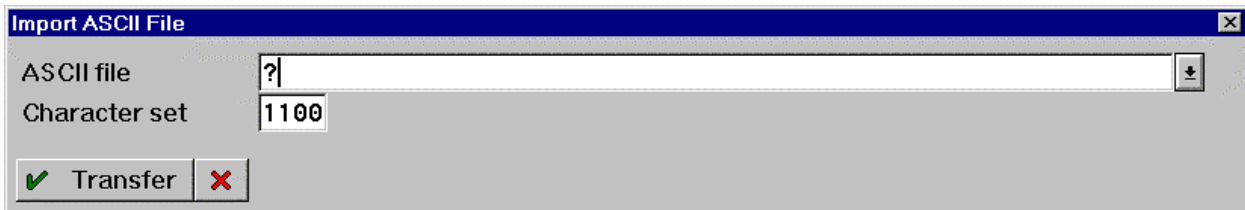
Import ASCII File Dialog

7. The content of IGP program should be displayed in the Standard Text Editor. This indicates the successful upload of the IGP program into SAP R/3 System. Save and Exit by pressing the F11 key.

Rev A

IBM Printing Systems

Include a Text Element to ZIBM_IGP_LS layout set

1. The Text Element to be embedded in the layout set is the Standard Text *ZXXXXXXXX* that was imported earlier in the section "***Import an existing IGP label to SAP R/3 as Standard Text***" which represents the IGP program for the label. To include the Text Element to the ZIBM_IGP_LS layout set, at the *"SAP R/3 System"* screen select ***Tools ✍ Word processing ✍ Layout set***.

2. At the screen named *"Layout Set: Request"* key in *ZIBM_IGP_LS* and select *Windows* option under the ***Sub-objects*** section. Click on the [✐ Change] command button when ready.

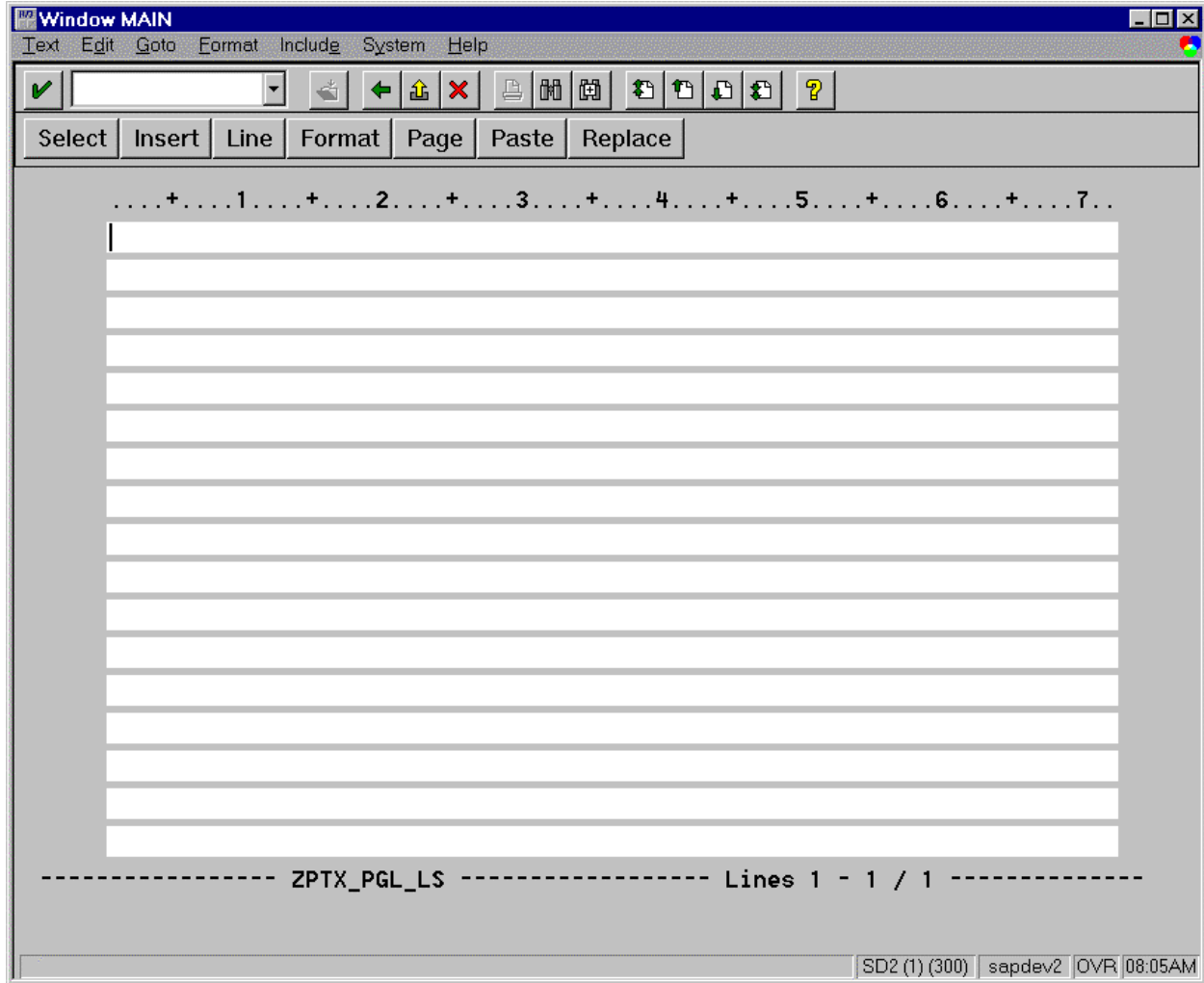**<u>Layout Set: Request Screen</u>**

Rev A
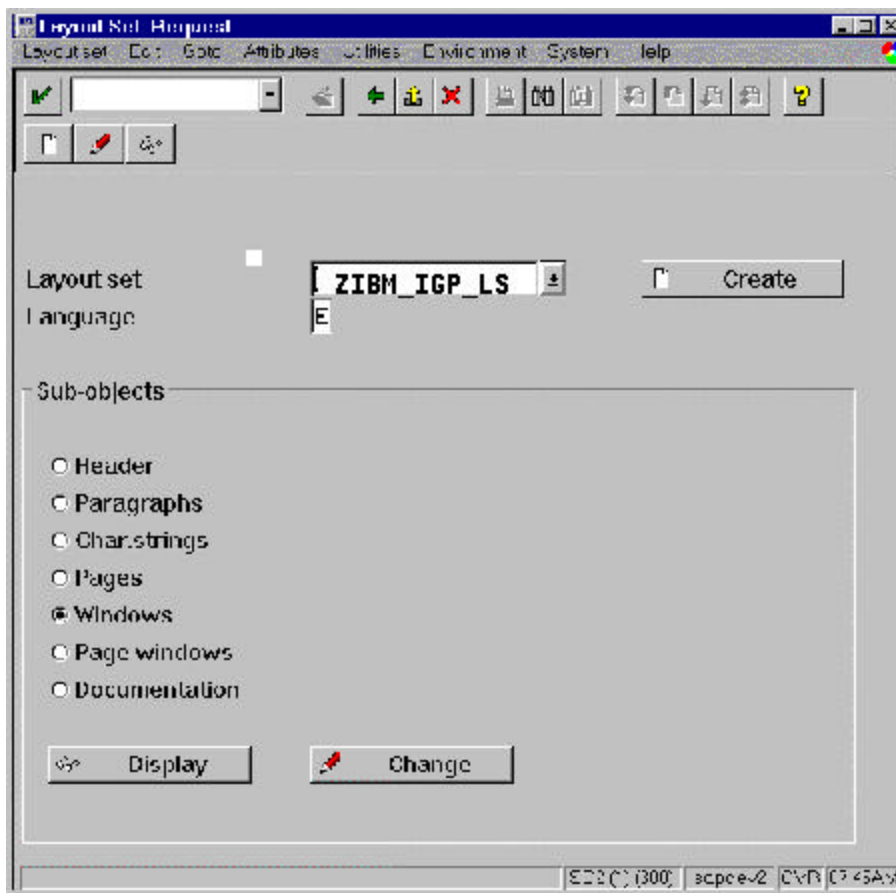
IBM Printing Systems

3. At the "Layout Set: Change Windows: ZIBM_IGP_LS" screen shown below, click the
   Text elements command button to embed the IGP program or the text element.
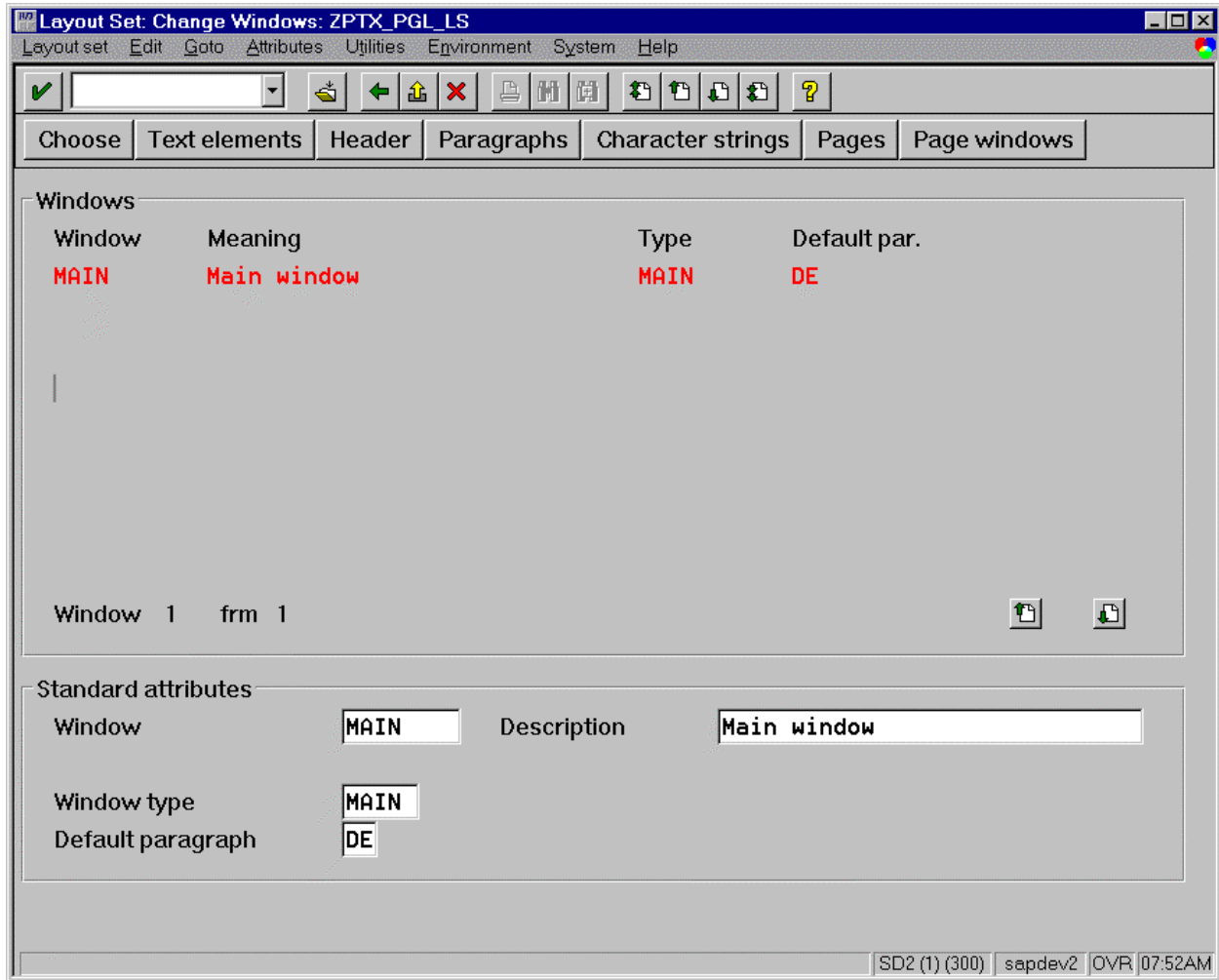
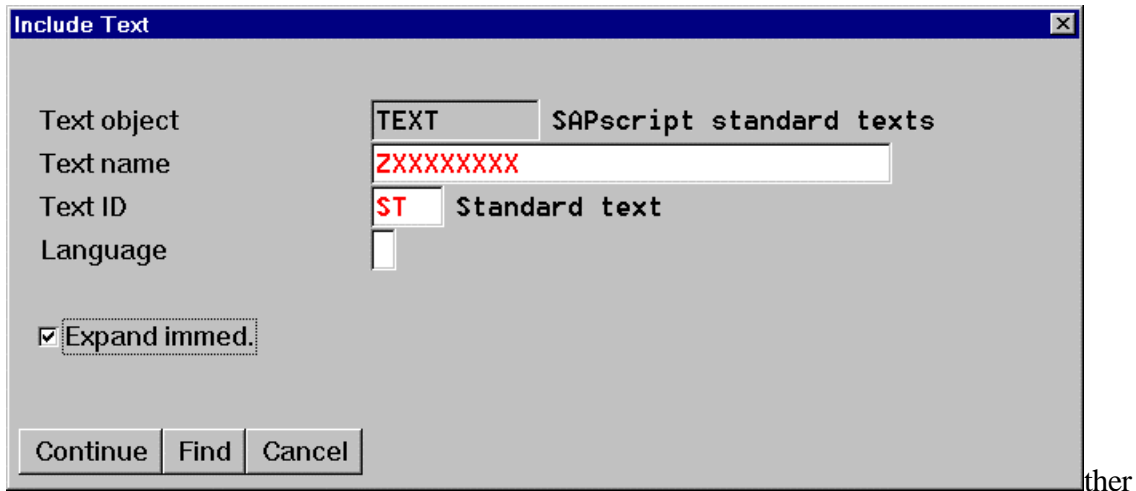**Layout Set Change Windows Screen**

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IBM Printing Systems

4. At the SAPscript editor titled as *"Window MAIN"*, select **Include ✍ Text ✍ Standard** from the main menu bar.

```
Window MAIN                                                    _ □ ✕
Text  Edit  Goto  Format  Include  System  Help                    ●

✔ [                    ▼]  ⌨  ←  ⬆  ✕   🖨 🔍 🔍  🔄 🔄 🔄 🔄  ❓

Select │ Insert │ Line │ Format │ Page │ Paste │ Replace

       ....+....1....+....2....+....3....+....4....+....5....+....6....+....7..
      |




















---------------- ZPTX_PGL_LS ----------------- Lines 1 - 1 / 1 --------------

                                           SD2 (1) (300) │ sapdev2 │ OVR │08:05AM
```

Window MAIN Screen

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5. A pop-up dialog text box prompts for the name of the Standard Text. Key in the text name (*ZXXXXXXXX)* that was entered in the **"Import an existing IGP label to SAP R/3 as Standard Text"** section of the Appendix 2 above. Select **Expand immed.** and click the **Continue** command button. The IGP program will be loaded onto the SAPscript editor.

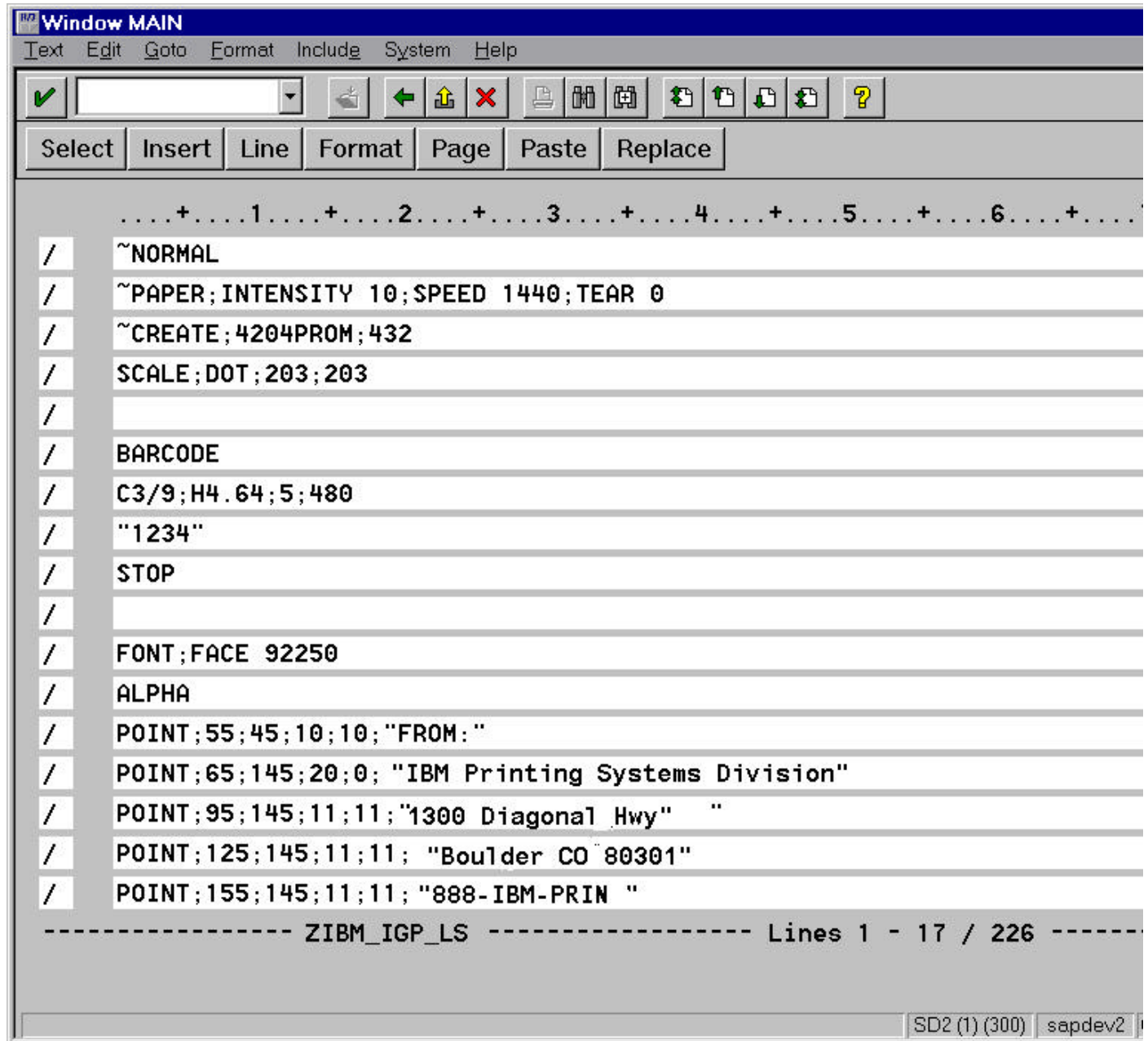| Include Text	☒
Text object	TEXT SAPscript standard texts
Text name	ZXXXXXXXX
Text ID	ST Standard text
Language	
☑ Expand immed.	
Continue Find Cancel	

ther

Include Text Dialog

Place IGP commands in the layout set

1. The Windows Main Screen should now appear very much like the figure below. The IGP program is now in the editor, ready to be saved as part of the layout set.


```
Window MAIN
Text  Edit  Goto  Format  Include  System  Help

Select  Insert  Line  Format  Page  Paste  Replace

      ....+....1....+....2....+....3....+....4....+....5....+....6....+....
/   ~NORMAL
/   ~PAPER;INTENSITY 10;SPEED 1440;TEAR 0
/   ~CREATE;4204PROM;432
/   SCALE;DOT;203;203
/
/   BARCODE
/   C3/9;H4.64;5;480
/   "1234"
/   STOP
/
/   FONT;FACE 92250
/   ALPHA
/   POINT;55;45;10;10;"FROM:"
/   POINT;65;145;20;0; "IBM Printing Systems Division"
/   POINT;95;145;11;11;"1300 Diagonal Hwy"    "
/   POINT;125;145;11;11; "Boulder CO 80301"
/   POINT;155;145;11;11; "888-IBM-PRIN "
---------------- ZIBM_IGP_LS ---------------- Lines 1 - 17 / 226 ------
                                                      SD2 (1) (300)  sapdev2
```

Window MAIN Screen

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2. Click the ← button and the save button 🖫 .

Test print the IGP label

Activate the *ZIBM_IGP_LS* layout set before printing the label. At the screen shown below, select *Layout set ✍ Activate*. The *Status* field displays Active-Saved which indicates that the layout set is activated. Next select *Utilities ✍ Test print.* Make sure that the printer is working and an OUTPUT DEVICE has been defined for the printer.

Layout Set Change Header Screen

IBM Printing Systems

Troubleshooting Tips

This set of application notes has been successfully used at many SAP installations worldwide. Sometimes, however problems can arise due to site specific configurations or other factors. While it is not possible to anticipate every scenario, the following notes are designed to assist in troubleshooting problems that may arise.

Problems with the Layout Set test print

1) Layout set does not print, or prints with error messages.

a. Ensure that the output device is using the ZIBM44V4 device type.

b. Some editors can introduce unwanted escape codes into the PGL layout set. Upload the sample PGL program provided and ensure that it is not modified before importing into a layout set, then try another test print. This step should rule out the possibility of a corrupted file, or one with incorrect syntx. If it fixes the problem, try another editor or else re-generate your PGL program with another program, or call IBM technical support.

Problems with printing Layout Set from the ABAP print program

First, ensure that the layout set test print was successful. If so, and the ABAP print program is using the correct layout set and supplying the correct variables, there should not be any problems. Further details of ABAP programming are beyond the scope of this document.

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Using Multiple Layout Sets

Sometimes, you may wish to have multiple layout sets, each with a separate IGP label design. To do so, follow the procedure below.

1) Copy the original ZIBM_IGP_LS Layout set:
At the *"SAP R/3 System"* screen select ***Tools*** ✍ ***Word processing*** ✍ ***Layout set***. The **Layout Set:Request** screen will be displayed. Next select ***Utilities*** ✍ ***Copy From Client*** to get to the **Copy Layout Sets Between Clients** screen. At this point for ***"Layout set name"*** use ZIBM_IGP_LS**,** and for ***"Target layout set"*** enter a name of your choice for the new layout set – say, ZMY_CUSTOM_LS.

2) Clear contents of the new layout set, if necessary.
At the **Layout Set: Request** screen, select the name of the new layout set and click on the "Change" command button. Next, select the text element of the new layout set. (Exactly as in steps 1 – 3 of the section entitled Include a Text Element to ZIBM_IGP_LS layout set). With the cursor at the first line of text (if any), click the "Select" button. Then move the cursor to the last line of text and hit the "Select" button again, followed by the "Delete" button.

3) Include a new text element (representing a new IGP program) into the new layout set using the same steps used previously (see section entitled Import an existing IGP label to SAP/R3 as Standard Text).

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Replace the IGP label variable fields with the SAP database data

Often, an IGP label can be designed before the exact variable names from the ABAP print program are known. If this has been done, replace the necessary placeholder dynamic data of the ~EXECUTE section of IGP program (~AF1, ~BF1, etc.) with the variable names from the ABAP print program once they are known. For example, consider the second sample program as found in Appendix 3. The following lines of code (near the end) represent the assignment of values to variable fields AF1, AF2, and BF1:

~AF1;"0123456789"
~AF2;"IBM PRINTING SYSTEMS"
~BF1;"0123456789"

Locate the appropriate variable name within the ABAP print program that queries the SAP database server for the bar code data (for example we will use "BC-DATA"). Replace **~BF1;"0123456789"** with **~BF1;&"BC-DATA"&.** The ABAP program will now substitute the value for BC-DATA into the program each time it is invoked.

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Appendix 3

Sample IGP label program 1

```
~NORMAL
~PIOFF
~PAPER;CUT 0
~CREATE;LAB;432
SCALE;DOT;203;203
ISET;0
HORZ
1;202;4;807
1;406;5;808
1;610;4;807
1;913;4;807
STOP
VERT
1;405;914;1214
STOP
FONT;FACE 93779;BOLD ON;SLANT OFF
ALPHA
POINT;273;448;30;11;"0123456789"
POINT;456;21;15;5;"CODE 128B"
POINT;964;23;15;5;"TO: "
POINT;995;75;15;5;"International "
POINT;1039;75;15;5;"Business Machines"
POINT;1083;75;15;5;"New Orchard Road"
POINT;1127;75;15;5;"Armonk, NY   10504"
POINT;1171;75;15;5;"(914)499-1900"
POINT;963;417;15;5;"FROM:"
POINT;998;468;15;5;"IBM Printing Systems"
POINT;1042;468;15;5;"6300 Diagonal Highway"
POINT;1086;468;15;5;"Boulder, CO     80301"
POINT;651;12;16;5;"PDF 417"
POINT;161;17;55;9;"IBM THERMAL PRINTING SOLUTIONS"
POINT;473;458;28;10;"0123456789"
POINT;245;17;16;6;"CODE 39"
STOP
BARCODE
PDF417;XD5;YD11;C1;S0;675;187
"IBM 203DPI THERMAL PRINTERS"
STOP
BARCODE
C3/9CD;XRD3 :3:7:7;H4.38;284;106
"0123456789"
PDF;S
STOP
BARCODE
C128B;XRD2:2:4:4:6:6:8:8;H4.38;488;231
"IBM THERMAL PRINTERS"
PDF;S
STOP
END
```

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```
~EXECUTE;LAB
~NORMAL
```

Sample IGP label program 2

```
~NORMAL
~PIOFF
~PAPER;CUT 0
~CREATE;LAB;432
SCALE;DOT;203;203
ISET;0
HORZ
1;202;4;807
1;406;5;808
1;610;4;807
1;913;4;807
STOP
VERT
1;405;914;1214
STOP
FONT;FACE 93779;BOLD ON;SLANT OFF
ALPHA
AF1;10;POINT;273;448;30;11
POINT;456;21;15;5;"CODE 128B"
POINT;964;23;15;5;"TO: "
POINT;995;75;15;5;"International "
POINT;1039;75;15;5;"Business Machines"
POINT;1083;75;15;5;"New Orchard Road"
POINT;1127;75;15;5;"Armonk, NY   10504"
POINT;1171;75;15;5;"(914)499-1900"
POINT;963;417;15;5;"FROM:"
AF2;20;POINT;998;468;15;5
POINT;1042;468;15;5;"6300 Diagonal Highway"
POINT;1086;468;15;5;"Boulder, CO     80301"
POINT;651;12;16;5;"PDF 417"
POINT;161;17;55;9;"IBM THERMAL PRINTING SOLUTIONS"
POINT;473;458;28;10;"0123456789"
POINT;245;17;16;6;"CODE 39"
STOP
BARCODE
PDF417;XD5;YD11;C1;S0;675;187
"IBM 203DPI THERMAL PRINTERS"
STOP
BARCODE
C3/9CD;XRD3:3:7:7;H4.38;BF1;10;284;106
PDF;S
```

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```
STOP
BARCODE
C128B;XRD2:2:4:4:6:6:8:8;H4.38;488;231
"IBM THERMAL PRINTERS"
PDF;S
STOP
END

~EXECUTE;LAB

~AF1;"0123456789"
~AF2;"IBM PRINTING SYSTEMS"
~BF1;"0123456789"

~NORMAL
```

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