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Printronix Device Types
YPTT4203 / YPTT4305 and YPTT2203 / YPTT2300

The YPTT4203 and YPTT4305 SAP device types were designed by Printronix Auto ID specifically for the PGL-based **Thermal printers** (e.g., T4M, T5r, T6, T8), and are compliant with all requirements for SAP R/3 compatible Device Types as defined in the SAP Printer Supplier Agreement. The device types YPTT2203 and YPTT2300 are specifically for the T2N but have the same functions as first two, respectively. Once installed in the SAP system, the device type can be assigned to any number of PGL-based printers by the SAP System Administrator. The device type functions entirely within the SAP R/3 software system. It allows SAP users to print SAP Smart Forms documents conveniently from their SAP system, without the need to program or understand the printer's native PGL graphics language.

For more information on the Printronix PGL graphics language, please refer to the online manuals at the Printronix Auto ID web site http://PrintronixAutoID.com/support/manuals/. The Printronix Printer Vendor Wizard Note is number 2370835. Please visit this SAP Note to obtain more information and any new updates.

Features:
The YPTT4203 and YPTT4305 device types support all resident printer fonts, both in bold and italics print. Four styles of Unicode characters are available to use: Andale J, Andale K, Andale S and Andale T, provided the appropriate font cartridge (T4M) or SD card (T2N, T6, T8) is installed into the printer. These Andale fonts are not available for the T5r, and are purchased as options for the other printer types.

Certain bar codes are also supported, which are listed in SAP note 2370835.

Graphical elements such as lines, boxes and logos are supported. Logos can be kept and maintained on the BDS system (Business Document Service) via transaction SE78. Refer to Appendix 2 for more information on graphics.

Device types YPTT4203 and YPTT2203 support 203 dpi printing and device types YPTT4305 and YYPTT2300 support 300 dpi printing. Verify which print head is installed before selecting a device type to use. The difference between these two drivers is in how they handle logo scaling. Logos are sized differently depending on the dot resolution of the printer. More information on this topic is available in Appendix 2.

Limitations:
The following SAP features are not supported: List printing, SAPscript Layout Set generated output, printing of specialty symbols, Adobe forms.

SAP Versions:
These drivers are compatible with the following SAP systems:

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SAP_BASIS 6.20 Support Package 64 and higher
SAP_BASIS 6.40 Support Package 22 and higher
SAP_BASIS 7.00 Support Package 16 and higher
SAP_BASIS 7.10 standard
SAP_BASIS 7.11 and higher
Please refer to SAP Note 1097563 for more information on releases.

In the SAP system, a Device Type stores the information needed to generate a device specific, output-ready data stream. For printing devices, this includes such things as controls for font selection and formatting, character set selection, page size, bar code definitions, graphic object rendering and more. Please refer to online help "SAP Printing Guide (BC-CCM-PRN)" on SAP Help Portal for details.

The SAP system provides a list of "out-of-the-box" device types. Others such as the Printronix YPTT4203 and YPTT4305 device types are provided by individual vendors for support and maintenance. This document describes how to install and use these device types. Familiarity with the SAP System Administration screens (SPAD) will be required. Working knowledge of SAP Smart Forms is also required.

Appendix 1 provides step-by-step installation instructions for these Device Types.

DEVICE TYPE COMPONENTS

The YPTT4203 and YPTT4305 device types have the following logical components:

DEVICE TYPE AND ABAP LABEL PRINTER PDL DRIVER
These are the two main components that make up the complete device type. They make possible the conversion of the SAP generic output format of Smart Forms (SAPGOF) to the printer specific commands that are sent to the printer. The device type uses the properties and attributes resident in the definition to translate Smart Forms output format into a data stream that can be understood and printed by the physical printer. The ABAP PDL driver (Page Description Language), in conjunction with the device type settings, does the translation from SAPGOF format to the native printer commands.
Further information on SAPGOF can be found from SAP provided documents and specifications. The various components of the device types are listed below.

CHARACTER SET
The Device Types use character set 4131, which is for UTF-8 printing.

PRINT CONTROLS
Certain print controls are set up in the device types. These are standard print tokens which represent strings of printer commands. The printer commands can be tweaked to affect or enhance the output, but care should be taken when doing this as it may result in errors during output.

FORMATS

This component determines how the output will appear on the paper and primarily specifies paper sizes, such as INCH4 and INCH6. It allows Smart Forms output to construct a layout in portrait or landscape orientation in the printable area of the page. Supported formats include INCH2, INCH4, INCH5, INCH6, INCH7 and INCH8.

DEVICE INITIALIZATION

This component is a group of commands 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. Device initialization is not used with device typesYPTT4203 and YPTT4305.

Printronix SAP Device Types: Bar Code and Font Support

Printronix device types YPTT4203 and YPTT4305 provide SAP system users the ability to print Smart Forms documents utilizing the bar codes and fonts that are resident and standard in the T2N, T4M, T5r, T6, and T8 Thermal Printers.

When the device type has been specified in the printer definition, the printer's bar codes and fonts are made immediately available for use by SAP Smart Forms developers. All available bar codes are automatically mapped to the equivalent device-specific escape sequences that represent the bar codes in the output device.

Note: When a form is designed in SAP using Smart Forms, we suggest that the programmer examine the actual printout (hard copy) of the form on the target printer rather than view the print preview mode of the document in SAP. The placement of different types of bar codes can only be finalized with a visual inspection of the actual output.
Certain fonts and graphical images may also differ slightly in appearance from the preview mode versus the printed hard copy.

Refer to SAP Note 2370835 for information on supported bar codes and fonts.

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Appendix 1

Installation, use and maintenance of the Device Types: YPTT4203, YPTT2203, YPTT2300, YPTT4305

Briefly, the steps for installation and use of the device type are outlined here:

- **Test** the printer outside SAP R/3 to verify its printing operation, network connection and printer resident settings.

- **Import** the Printronix device type/s using the Transport Management System (TMS) and SA38 utility.

- **Create** an Output Device for the SAP spooling system. This makes a logical connection between the Device Type and the physical device (printer).

- **Print** a test document from the application screen. Specify the output device name in the Print dialog screen. Many Smart Forms can be tested directly from the Smart Forms transaction with the built in test feature.

The following procedures provide details of these steps. For demonstration purposes, device type YPTT4203 is used to illustrate the steps. The same procedures apply to the other device types.

Preliminary Printer Verification Stage:
Printing 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 Printronix 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

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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 Printronix 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 printers. If all else failed, contact Printronix Support Group to resolve it. ***Do not proceed any further!***

PROCEDURE ONE:

Install the Device Types to an existing SAP R/3 System

1. Set the LP+ printer emulation to P-Series from the printer's panel and the Active IGP emulation to PGL. The printer emulations should already be set properly by default. Next, print the printer's configuration from the printer's panel to make sure that the firmware is loaded correctly and the Flash and DRAM installed memory satisfied the printer's memory requirement. Refer to the printer documentation for more details.
2. Save the current printer's configuration as the Power-up Config so that settings are retained whenever printer is turned off. The saved settings will load into the printer's memory when it is powered on. Refer to the Administrator's Manual of the Printronix printer for a complete procedure on how to accomplish step 1 and 2. Manuals can be found on the Printronix Auto ID web site at http://PrintronixAutoID.com/support/manuals/.

3. Double-click the self-extracting device type file ***xxxxxx.exe*** you have just download from the Printronix DEVICE TYPE DOWNLOAD PAGE. <u>Note the path where this file is saved because you will be asked to specify the path during the import process of the device type</u>
    Run the executable to extract the files. The package consists of six files:
    K000146.PVD and **R000146.PVD**   -> ABAP PDL control and data files
    YPTT4203.PRI and **YPTT4305.PRI** -> Device Type files for T4M, T5, T6, and T8
    YPTT2203.PRI and YPTT2300.PRI -> Device Type files for T2N
    These six files need to be saved in a directory on your local system where they can be obtained when importing into SAP.

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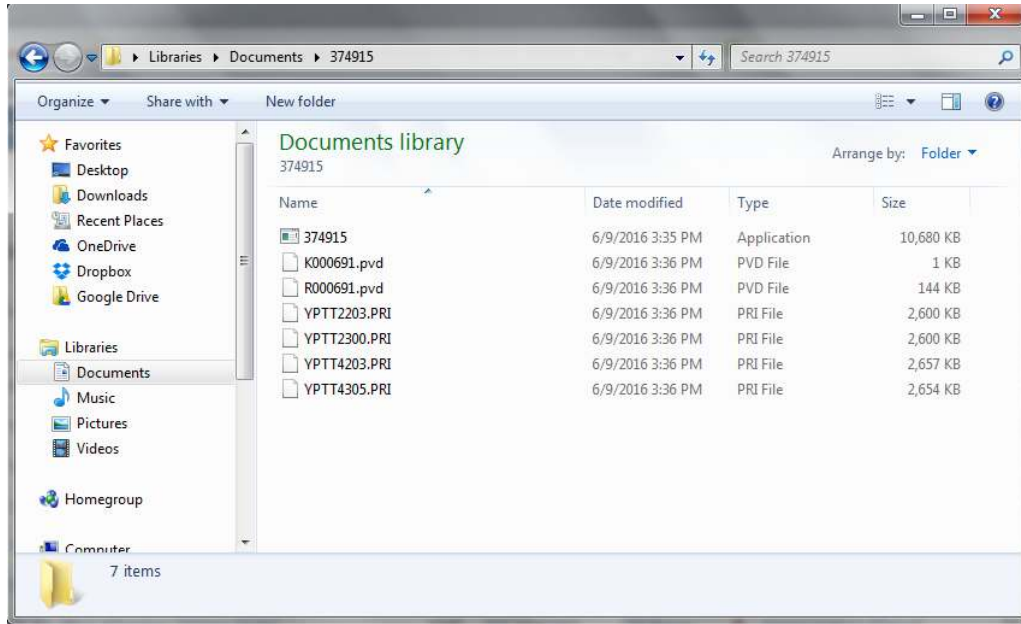
NOTE: It is advised to install both 203 and 300 device types onto your system for your target printer. If you choose to install only one of the device types, you will still be required to use both ABAP PDL files (K000146.PVD & R000146.PVD). Importing these transport files is shown in PROCEDURE 2.

4. Start the SAP R/3 front-end client GUI. Log into the central instance of SAP Server with administrator rights. Type in your Username and Password. Press the *<ENTER>* key to continue to the next screen. The next few steps involve installing the device type files (.PRI file). More information relating to this procedure can be found on SAP Note 6427.
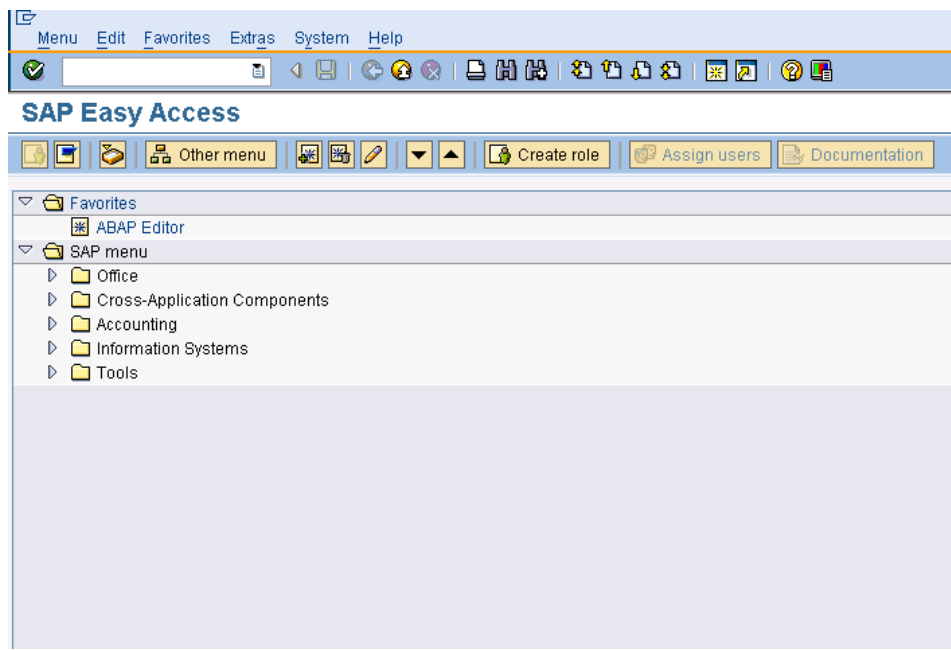
SAP R/3 System Screen

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4. 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 and press *<Enter>*. The screen should look very much like the illustration below.
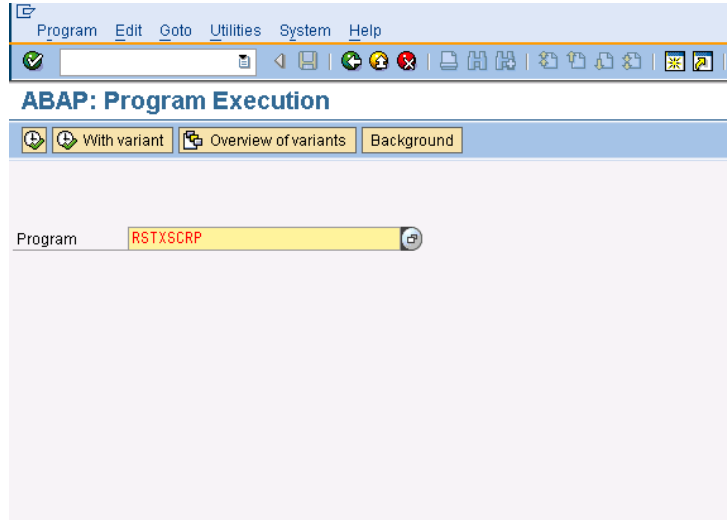
ABAP/4 Execute Program Screen (see SAP Note 6427 for more details)

6. The next series of steps outline the import procedure of the device type definition file to the SAP R/3 printing system. The same procedure applies to all Printronix device types. For illustration purposes, the YPTT4203 device type will be used to demonstrate.

Using transaction SA38(*"ABAP/4: Execute Program")*, key in *RSTXSCRP* in the **Program** text entry box then click execute button to launch the device type definition import program. This program can also be accessed from transaction SPAD via the menu *Utilities -> For device types -> Export/Import.*

7. At the next window titled " *SAPscript Export to Dataset / SAPscript Import from Dataset* " shown below, select **Device type** option, key in *YPTT4203* for **Object name** text field, enter *IMPORT* for **Mode (EXPORT/IMPORT)** option, select appropriate Control Parameters for File Operation depending on file location **From/On Frontend**, and key in *<path>YPTT4203.PRI* in the **File name** entry field. When all fields are entered correctly, click on the execute button (F8) to start the import process. Ignore all other options.

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SAPscript Import from Dataset Screen

8. An "Open" dialogue box should be displayed. Navigate to where the extracted file was placed from step 3 above and select the file. Click the *Open* button.

9. When the import process is finished, an update message will be displayed in the current active window. Repeat the process for the second PRI file.

PROCEDURE TWO:

Importing of the transport files containing the ABAP PDL Driver

NOTE: Please read SAP Note 1103422 before commencing with these instructions.

1. Place the two transport files, K000146.PVD and R000146.PVD (actual names may differ slightly), into their respective locations for importing into SAP.

   K000146.PVD is copied to the control directory and **R000146.PVD** is copied to the data directory:
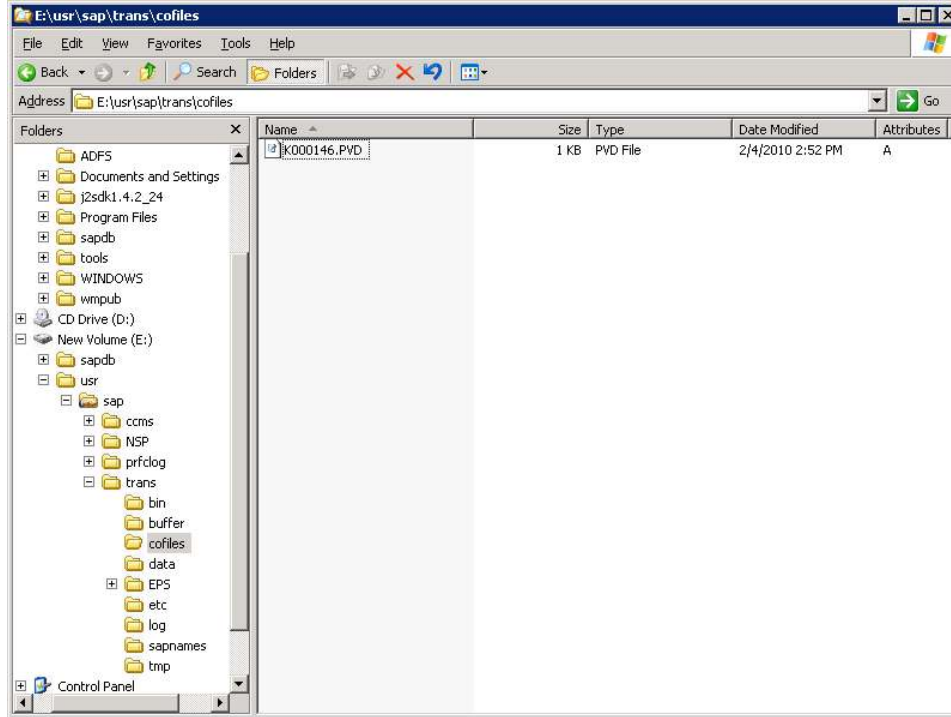
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R000146.PVD is copied to the data directory:
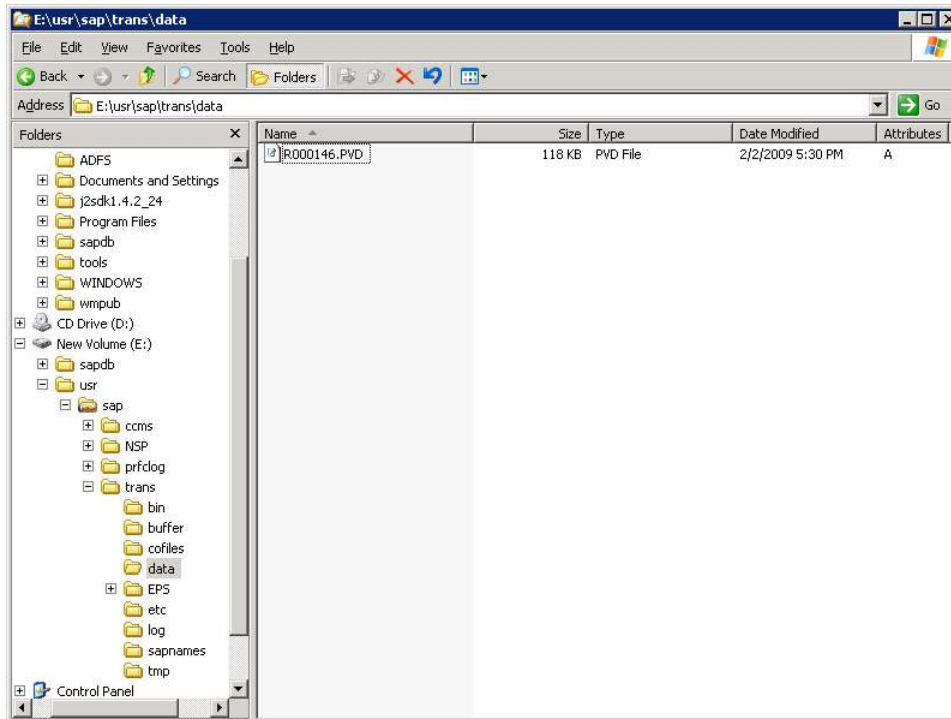
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2. Importing the files is carried out with transaction STMS. The files (normally 1 data file and one control file) need to be imported into a development system.
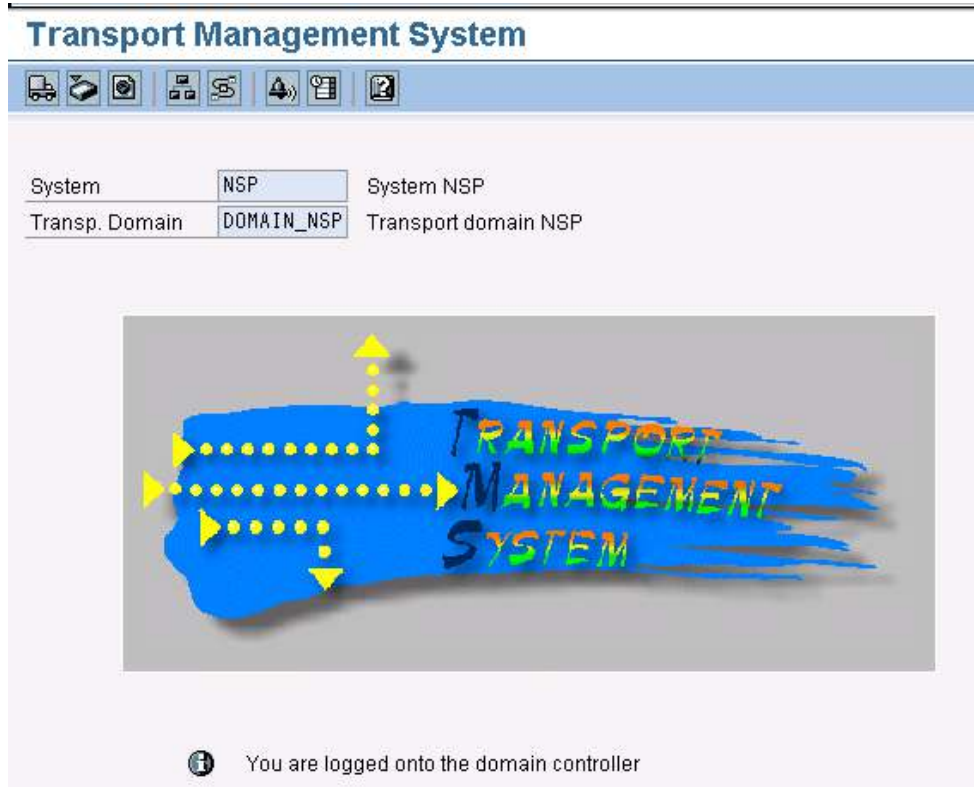
STMS Initial Screen

3. Click on Overview -> Imports (F5). On the next screen select the system to import into by double clicking on it or clicking on it then pressing F2.
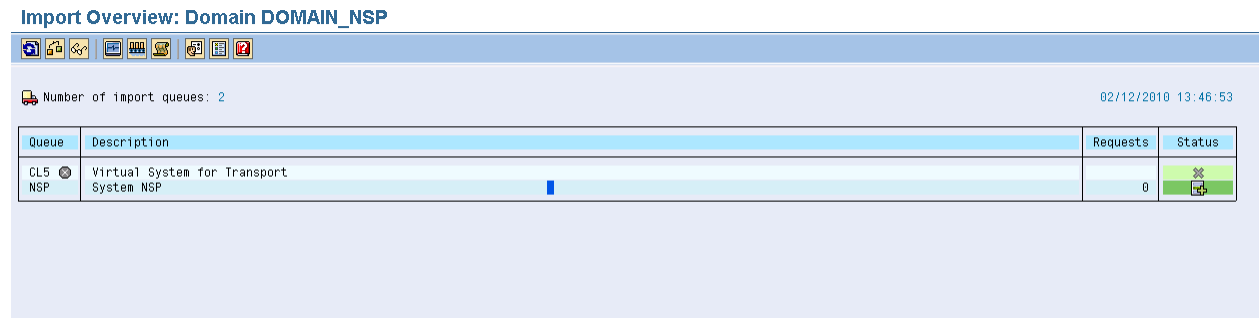
4. Click on the transport file shown, then click on Extras -> Other Requests -> Add

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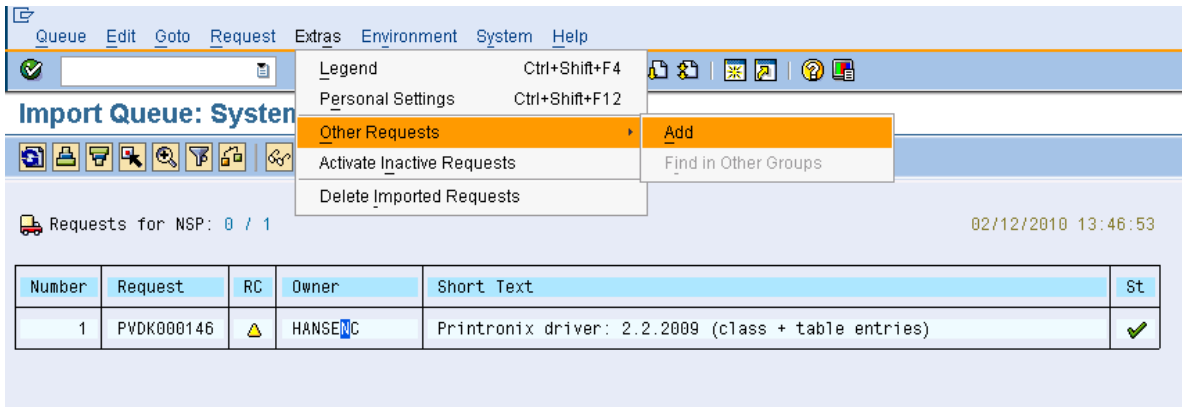
5. The import queue is shown. Click the green check button.
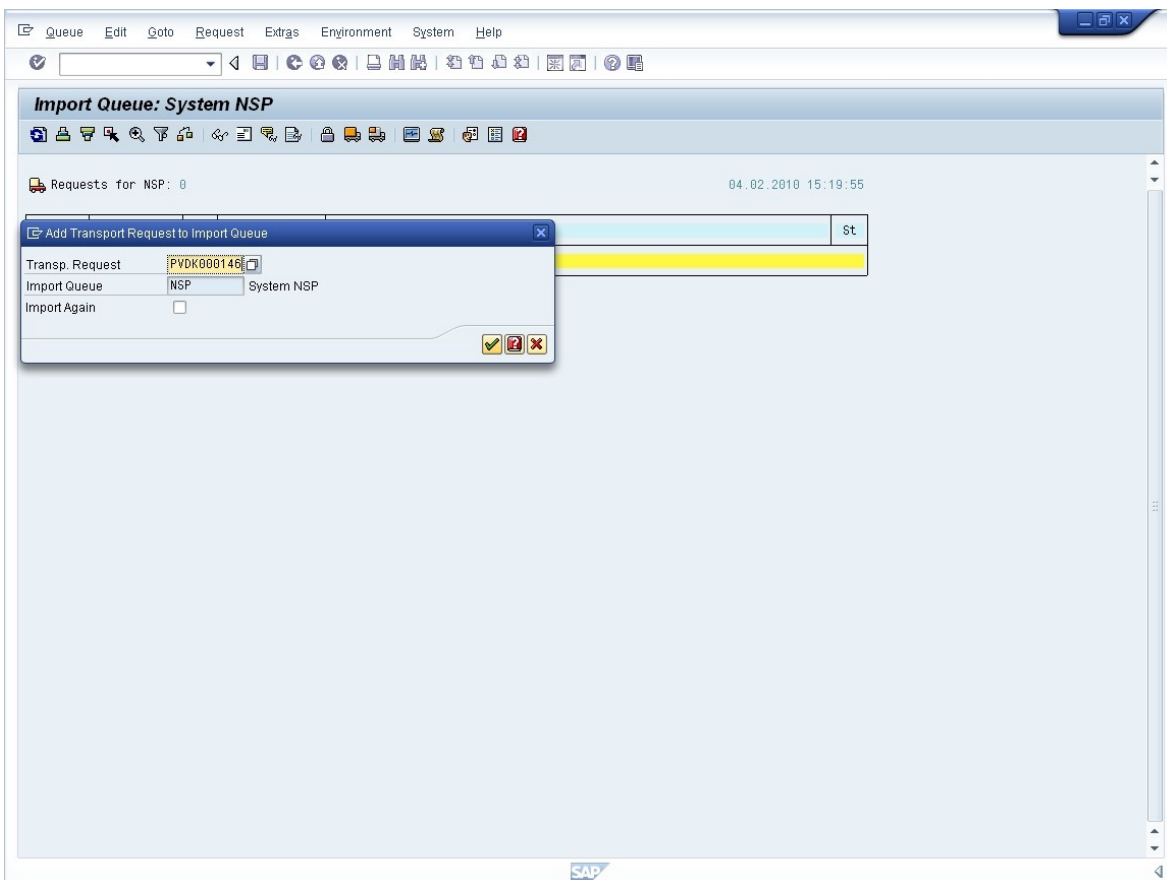
6. A confirmation prompt will appear. Click 'Yes' to continue.
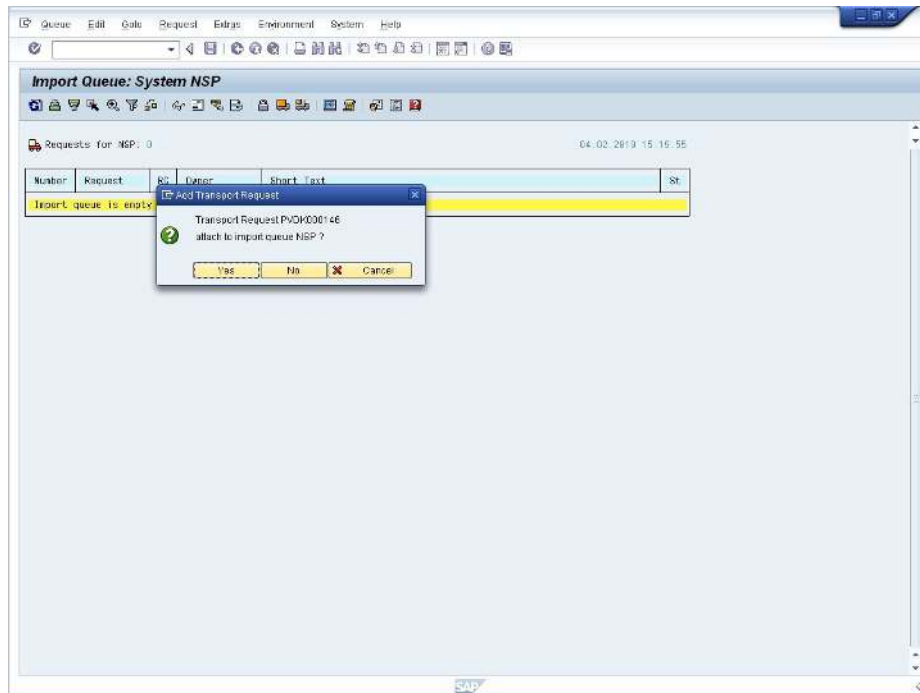
7. On the scheduling prompt, select 'Immediate', then click the green check button.
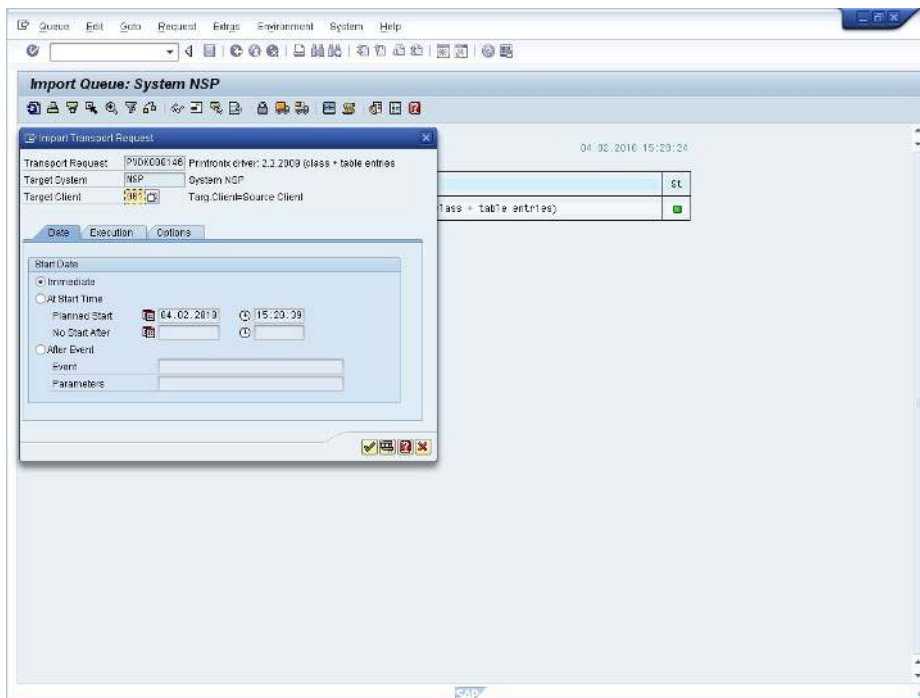
8. An additional prompt appears. Click the 'Yes' button to execute the import. The print driver is now ready to use.

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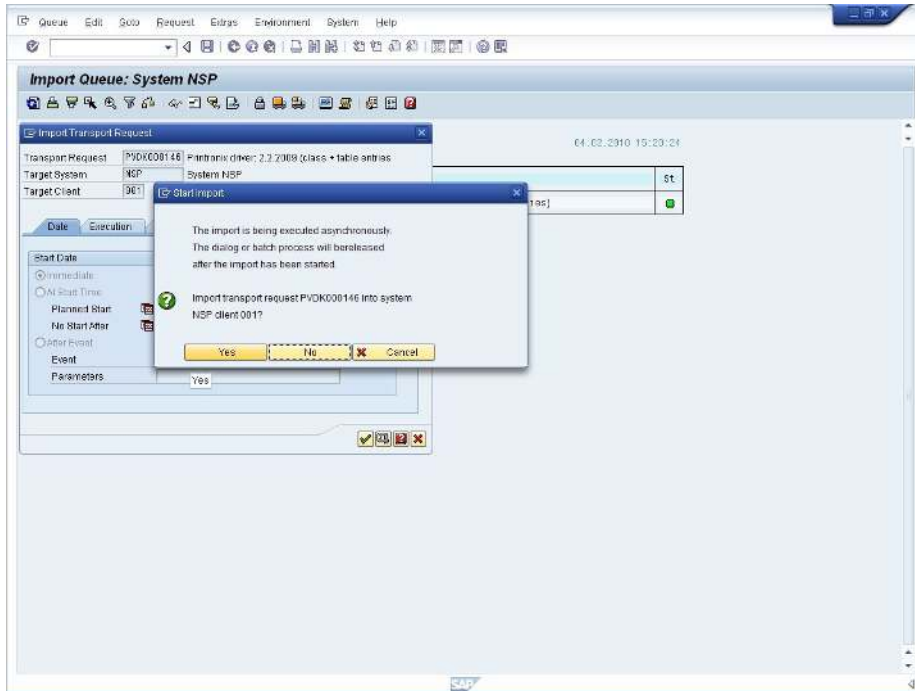
PROCEDURE THREE:

Verify the import of the DEVICE TYPE in the SAP R/3 System

1. Start the Spool Administration transaction program **SPAD** by enter */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*", select **Device type** option so that the radio button is ON and then click the [Display] button.

3. Scroll down the "List *of Device Types*" screen and locate the device type that you imported. If it is not listed, then repeat PROCEDURE ONE again.

Creating the Output Device

Each output device can only be tied to one single output device at a time. The procedure below show the steps involved in creating the output device and linking it to the device type.

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"* type in new printer name, then click on Display [Display]. The following screen will show an empty list.
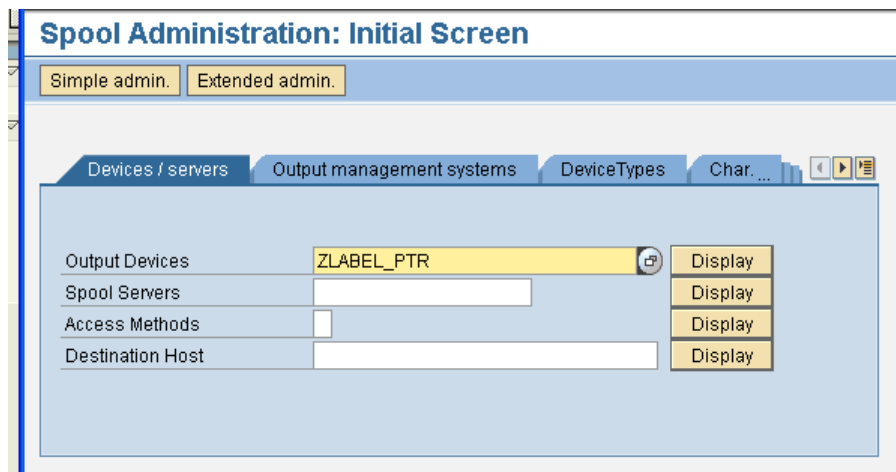
3. Click on the create [ ] icon to create the new output device.

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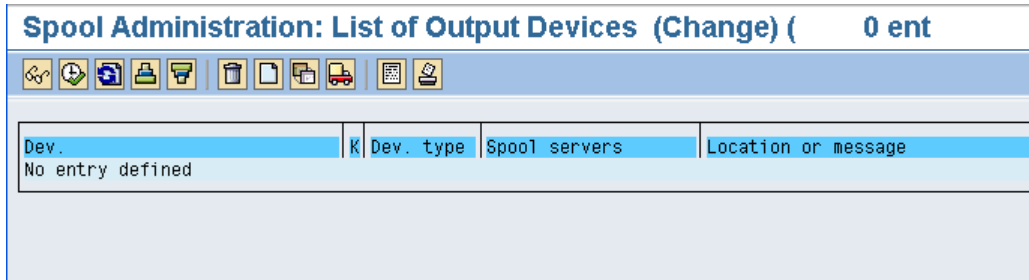
4. Click on the Device Type pull down arrow and select the applicable device type that you wish to use.
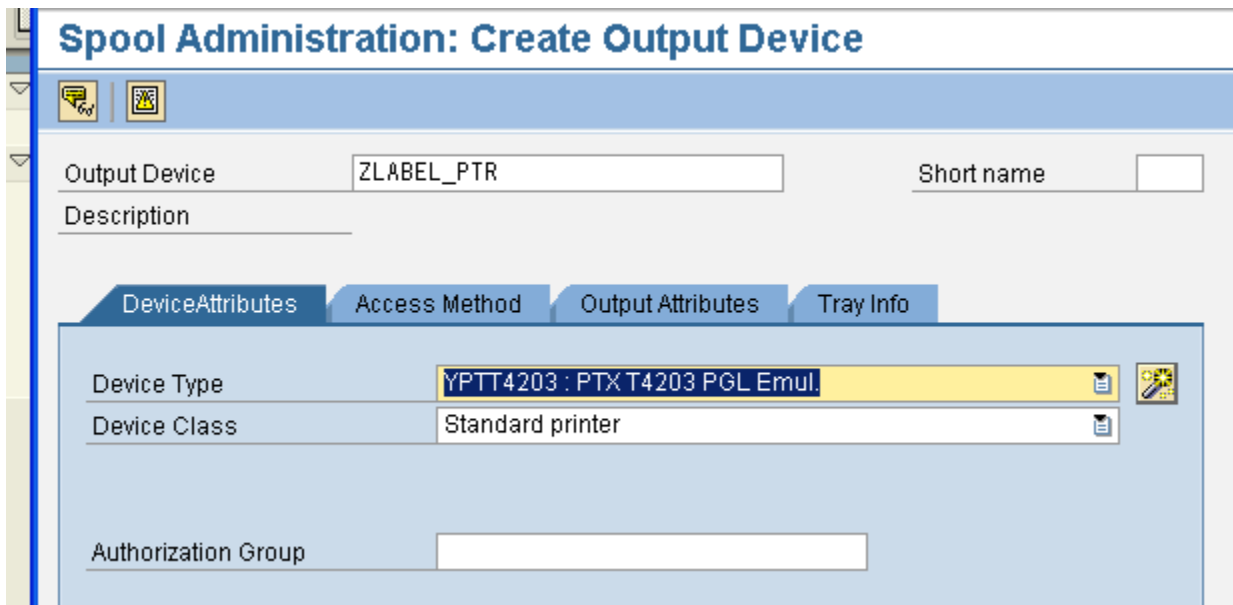
5. Fill in the remaining fields. Most importantly, these fields shown below:

   Device Class: Standard printer (it should default to this value).

   Spool Server: The name of the SAP Spooler Server.

   Host Spool Access Method: This depends on how the printer is set up and the printer host system. Press F1 on this field for more information.

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

   Destination Host: The host machine where the printer is installed.

   Location: Administrative information field, typically to describe the physical location of the printer.

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

6. When all the fields are correctly entered with appropriate entries, save the output device definition by selecting from the menu bar *Output device* → *Save* or the save icon 💾.

The Printronix Auto ID printer is now ready for Smart Forms output printing.

Reassign an existing "Output Device" in SAP for the Printronix printer

To change an existing output device to use another device type, use transaction SPAD to perform this. Enter the output device name, click 'Display' and you will enter the initial settings screen. If you're not sure of the device name, leave the field blank and click 'Display'. This will present you with a list of output devices to choose from.

Go into change mode by clicking the 'Change' icon 🖊, select a new device type, then click on the 'Save' 💾 icon.

The printer should now be ready for SAP document printing.

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PROCEDURE FOUR:

Using the Printronix DEVICE TYPE

Device types YPTT4203, YPTT2203, YPTT2300, and YPTT4305 can only be used with Smart Forms generated output. Smart Forms can be accessed using transaction code 'SMARTFORMS'. Designing forms using Smart Forms is beyond the scope of this document. A good place to start is the online SAP help (BC-SRV-SCR).

More information on Smart Form information sources can be found in SAP Note 526824.
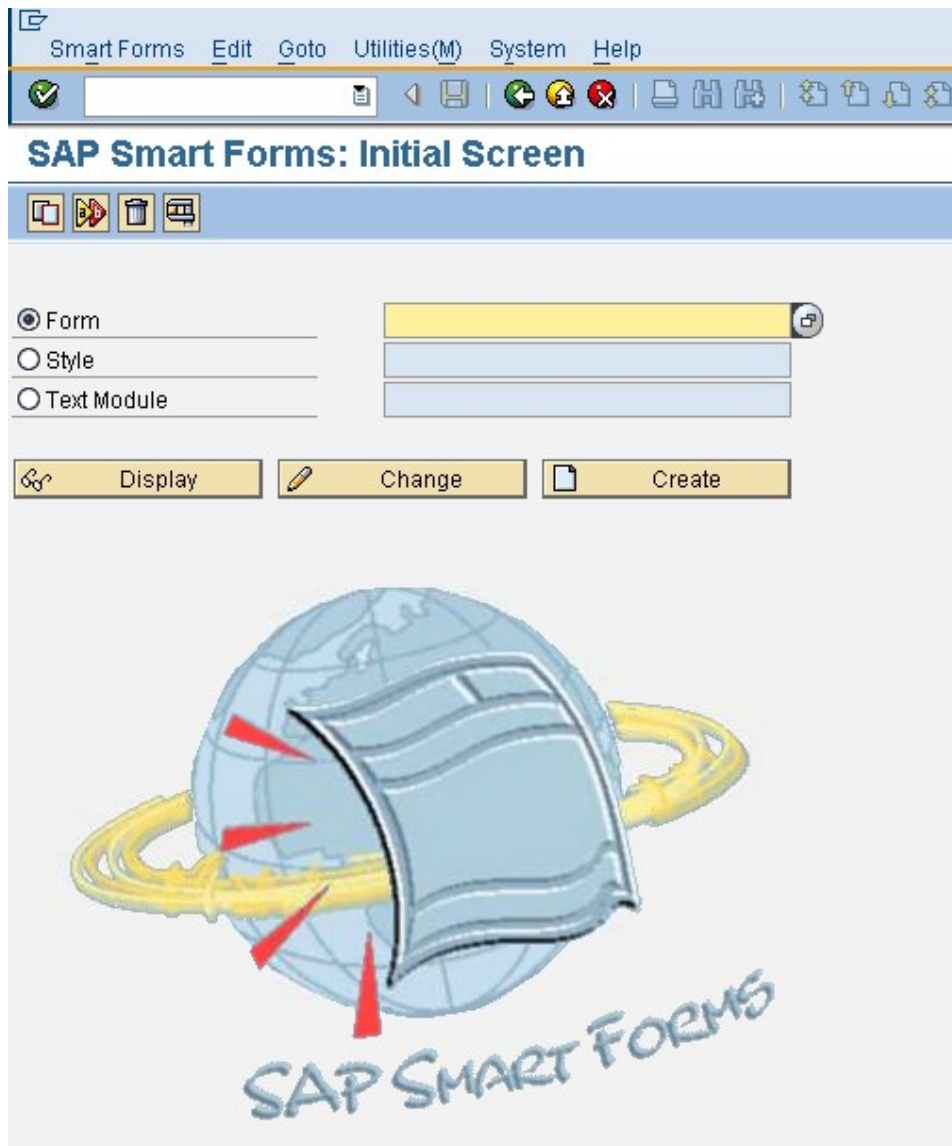
Smart Forms Initial Screen

PROCEDURE FIVE:

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Maintenance

In the event that it becomes necessary to support a device type, it is advisable to export the device type from the user system so that it can be analyzed to see what customer modifications, if any, have been made. Device type export is detailed below.

1) At the SAP Easy Access screen, enter transaction **SA38**
2) At the ABAP: Program Execution screen, Enter program **RSTXSCRP**
3) At the "SAPscript Export to Dataset / SAPscript Import from Dataset" screen:
   - Select the "Device Type" radio button
   - Enter the name of the device type to be exported in the "Object Name" field
   - Leave other fields at their default value
   - Enter (F8) to execute.

Device Type Export

4) A "save as" dialogue box should be displayed. Enter the name you wish to call the device type (e.g. *devicetype.pri*) and press Save. The file will be saved in the location specified..

5) If your download is being performed on a remote system via a WTS login, then transfer to your local desktop as follows:
   ```
   1. Go to Start -> Run
   2. Type \\client\c$ or \\client\d$
   3. Select the access level you need.
   4. Drag the desired files to the new window displaying your
      local client folder.
   ```

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<u>Appendix 2</u>

Installing and using logos with the device types.

Graphic images can be stored and administered centrally in the SAP BDS (Business Document Service). Transaction SE78 provides a mechanism to upload graphic images and store them in SAP. Source graphic image formats can be in Bitmap format (.BMP) or Tagged Image Format (.TIF or .TIFF).
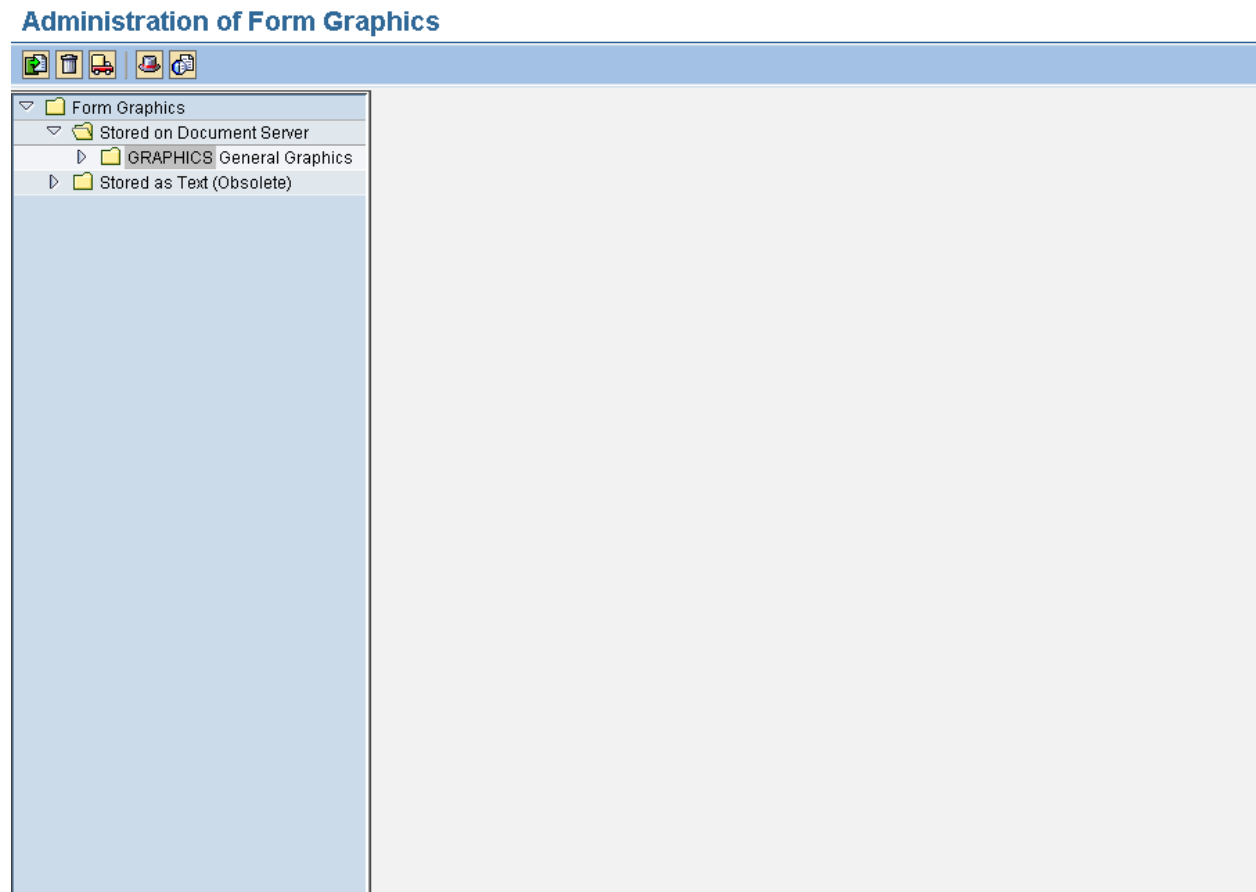
Graphics Administration initial screen

Importing graphic images into SAP

The procedure below lists the steps required to import a logo or graphic into SAP for use in Smart Forms.

1. Go to transaction SE38 (type /nSE78).
2. In the left section of the screen, expend the section called 'Graphics General Graphics'.

3. Double-click on BMAP Bitmap Graphics.

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4. On the right hand side, type a name for your graphic image. This is the name that the system will use to identify your logo. Select 'Black and White Bitmap Image'.

(Color images can be used, but image quality may suffer. A 'dot' pattern is used to represent color images). It is recommended to use black and white images.
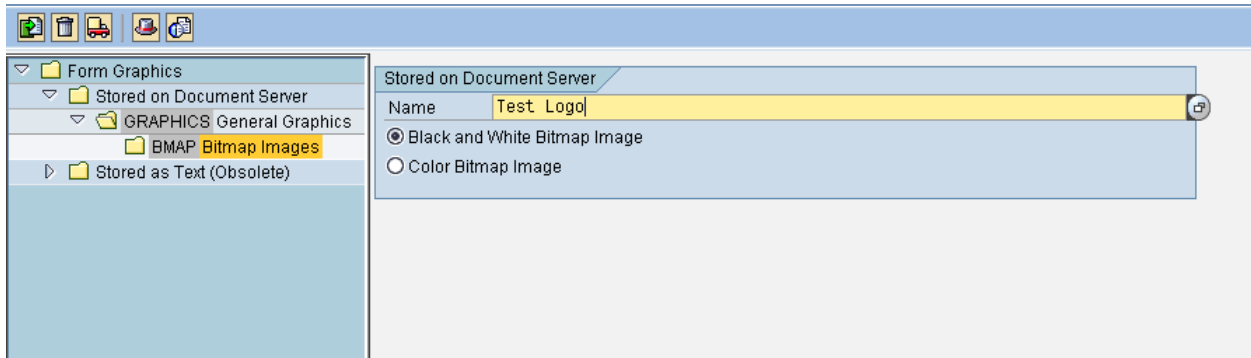
5. Click on the menu Graphic -> Import (F5).
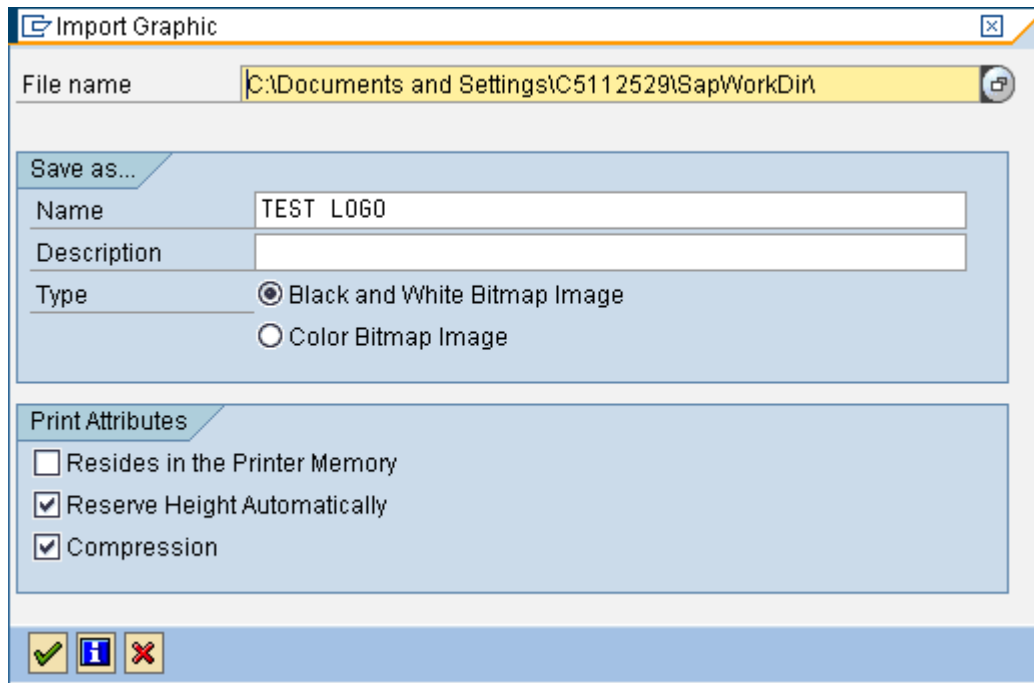
6. Locate the source file for the logo. In the File name selection, click on the pull-down arrow to browse for a file. The file can be in bitmap or TIF format.
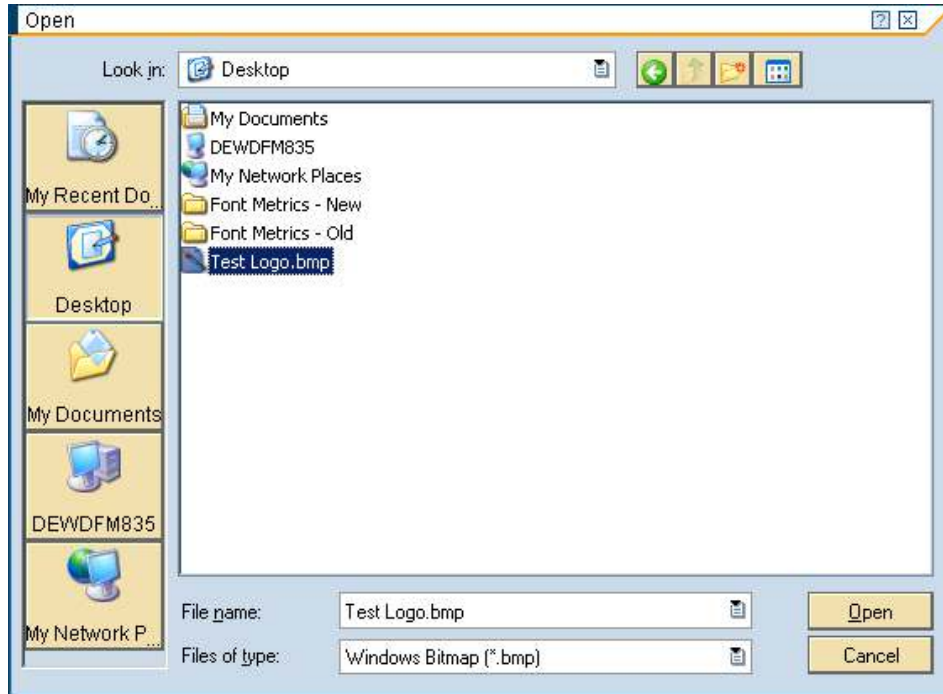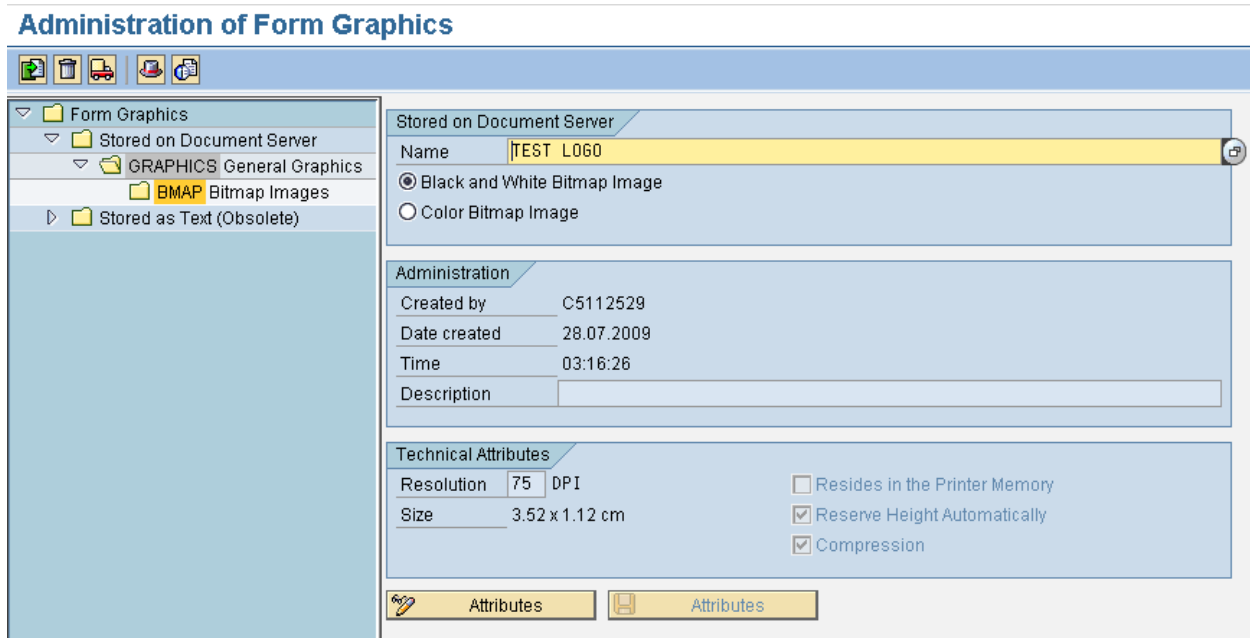
7. Once the file is located, click on it, then click the 'Open' button. Next click the 'Continue' button. A message will confirm that the file was imported.

8. The image can be viewed by clicking on the 'Print Preview' button . An image of the logo will display in the space provided.
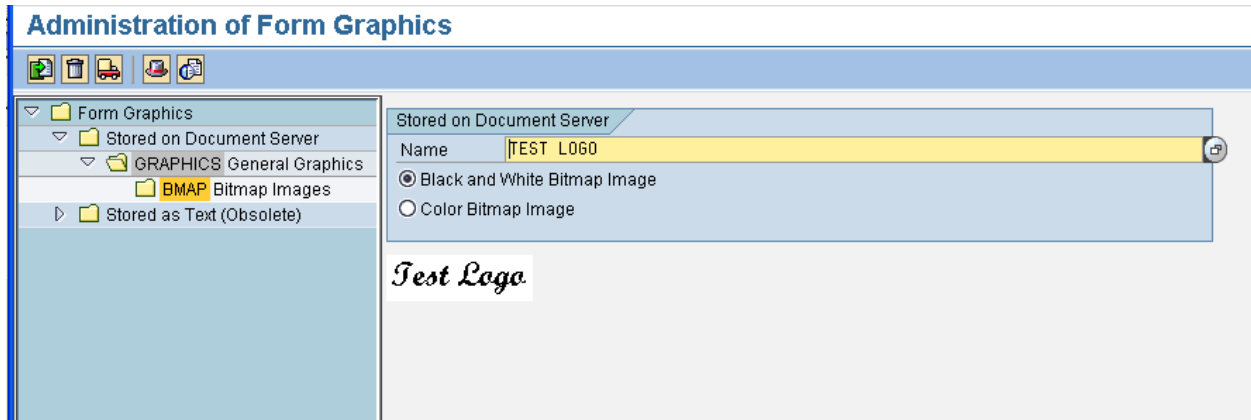
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9. The image attributes can be displayed changed. Click on the 'Graphic Information' (F6) button ![icon]. To change any of the attributes, click on the 'Attributes' button. ![Attributes button]


NOTE

It may take several iterations to size the logo correctly for it to appear as desired on the output. Of particular importance is the printer resolution.

For example: If you intend to print the logo to a 200 DPI printer, and you need the printed logo to be 1.5 inches in length, and 0.75 inches high, then make sure the drawn image is 300 pixels wide by 150 pixels high (1.5 * 300 / 0.75 * 200).

To control the size of the image, the resolution can be changed in the Smart Forms Graphic object. The image will be scaled according to the resolution of the device type (hence YPTT2403 or YPTT2203 will scale to 200 DPI). Image quality may suffer if the graphic is scaled too much from its original size.

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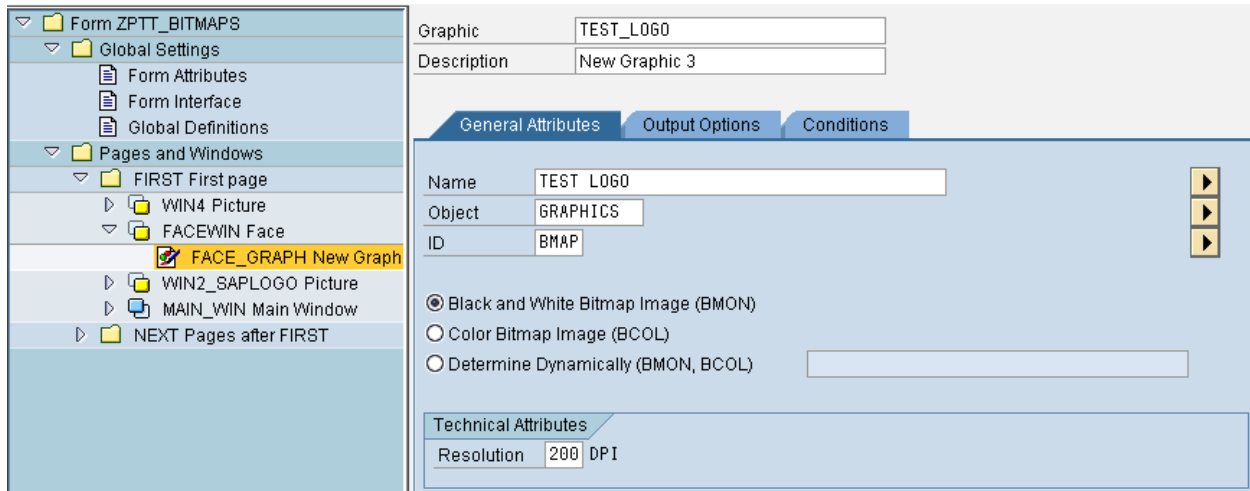
Smart Forms – setting the graphic resolution