

# The Manual of MW6 Barcode DLL for SAP R/3

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## 1. Introduction

MW6 Barcode DLL for SAP R/3 is compatible with SAPgui, SAPsprint and SAPlpd, it allows you to print over 100 different barcodes including Code 39, Code 128, GS1-128, EAN 13, EAN 8, UPC-A, UPC-E, Royal Mail 4 State, USPS OneCode, Deutsche Post Identcode, Deutsche Post Leitcode, Japan Postal Code, PDF417, Micro PDF417, DataMatrix, MaxiCode, Aztec, QRCode, Micro QRCode, CodaBlock-F, Code 16K and Code 49 virtually on any windows printer from SAP R/3 system, please check out [this page](#) for the complete list of featured barcodes.

Our Barcode DLL is a cost-effective way to provide the barcode solution for SAP R/3 system, no special hardware such as barcode font or barcode printer is required.

You can easily embed the print controls supported by our Barcode DLL in SAPscript, SmartForms and ABAP to print barcodes.

## 2. Installation

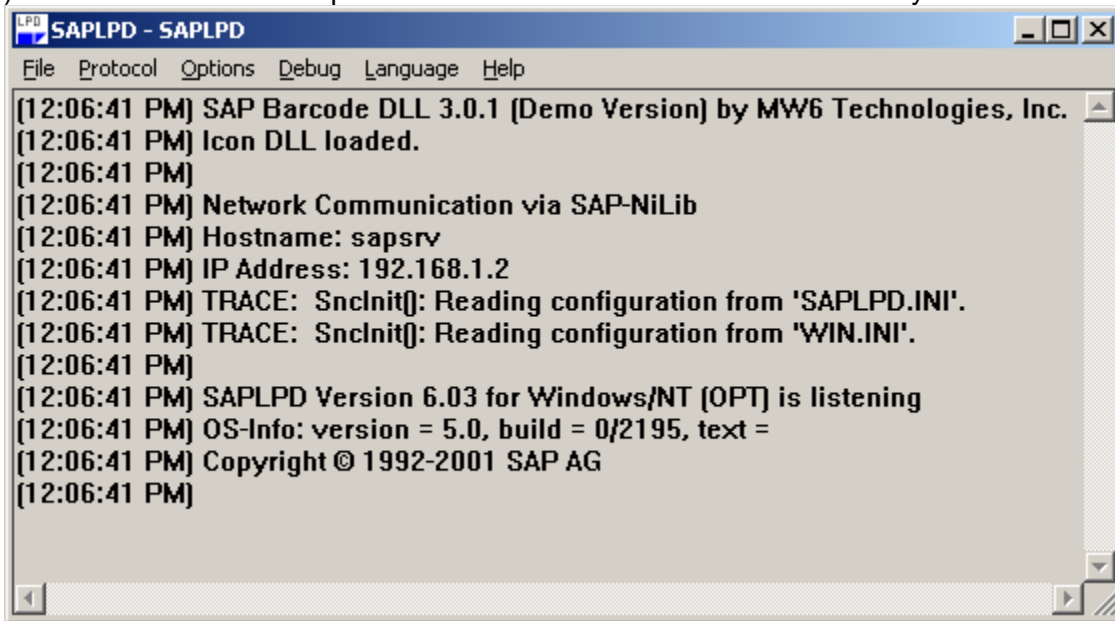
You have to install our Barcode DLL on both server (SAPsprint folder) and client (SAPlpd folder) PCs if you have one of the following scenarios:

- 1) You want to print barcodes onto a LOCL printer with server printing SAPsprint.
- 2) You want to print barcodes onto a virtual PDF printer with server printing SAPsprint.

### 2.1 Demo Version

Follow the instructions listed below to install the demo version of MW6 Barcode DLL for SAP R/3:

- 1) Unzip MW6BarcodeDLL.ZIP
- 2) Run Setup.exe, depending on which file (SAPlpd.exe, SAPsprint.exe or SAPWin.dll) is involved in printing barcodes, choose the folder where that specific file is located as the installation destination folder (e.g. "C:\Program Files\SAP\FrontEnd\SAPgui\saplpd", "C:\Program Files\SAP\SAPsprint", "C:\Program Files\SAP\FrontEnd\SAPgui").
- 3) A screen shot for SAPlpd after it loads the Barcode DLL successfully.



### 2.2 Full Version

Follow the instructions listed below to install the full version of MW6 Barcode DLL for SAP R/3:

- 1) Uninstall the demo version software package if applicable.
- 2) Unzip full version software package .ZIP file.

- 3) Run Setup.exe, depending on which file (SAPlpd.exe, SAPsprint.exe or SAPWin.dll) is involved in printing barcodes, choose the folder where that specific file is located as the installation destination folder (e.g. "C:\Program Files\SAP\FrontEnd\SAPgui\saplpd", "C:\Program Files\SAP\SAPSprint", "C:\Program Files\SAP\FrontEnd\SAPgui").
- 4) A screen shot for SAPlpd after it loads the Barcode DLL successfully.



### 3. Setup

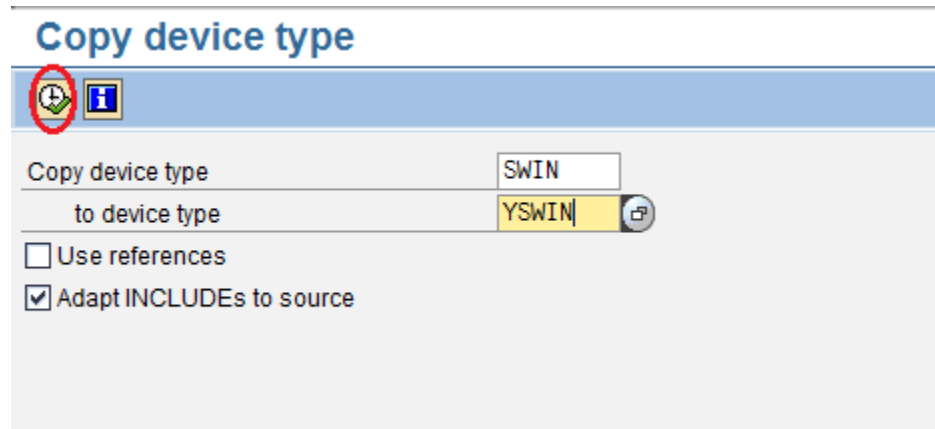
#### 3.1 Create A New Device Type

In order to use windows printer to print barcodes from SAP R/3 system, a new device type same as "SWIN" (Rel.4.x/SAPlpd 4.09 + ONLY!) is needed, if you want to use SWINCF to print barcodes, please check out the SAP Note **1079665**.

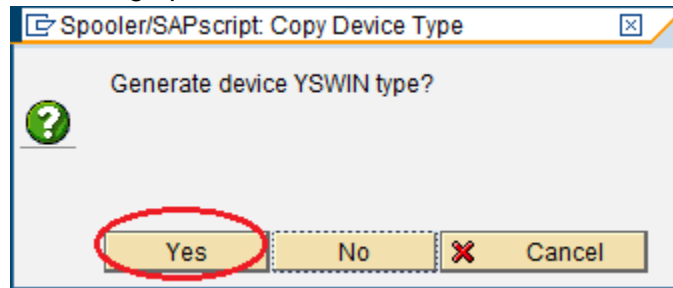
Follow the instructions listed below to create a new device type:

- 1) Start transaction SPAD.

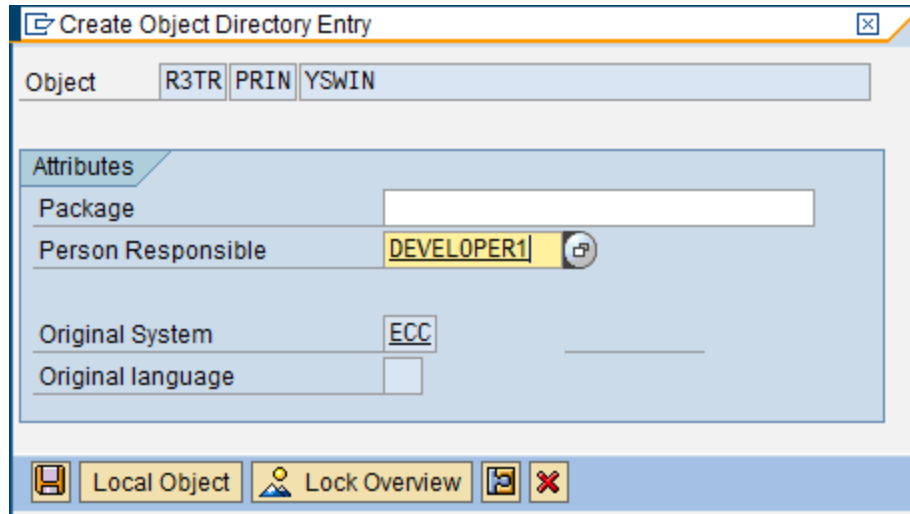
- 2) Select "**Utilities**" > "**For device types**" > "**Copy device type**", then select the device type "**SWIN (Rel.4.x/SAPIpd 4.09 + ONLY!)**" or "**SWIN (Windows printing via SAPIpd)**" for "**Copy device type**", please don't choose "SAPWIN". Enter a name that begins with Y or Z. (e.g. YSWIN) for "**to device type**" and choose the default settings for "**User references**" and "**Adapt INCLUDEs to source**" fields.




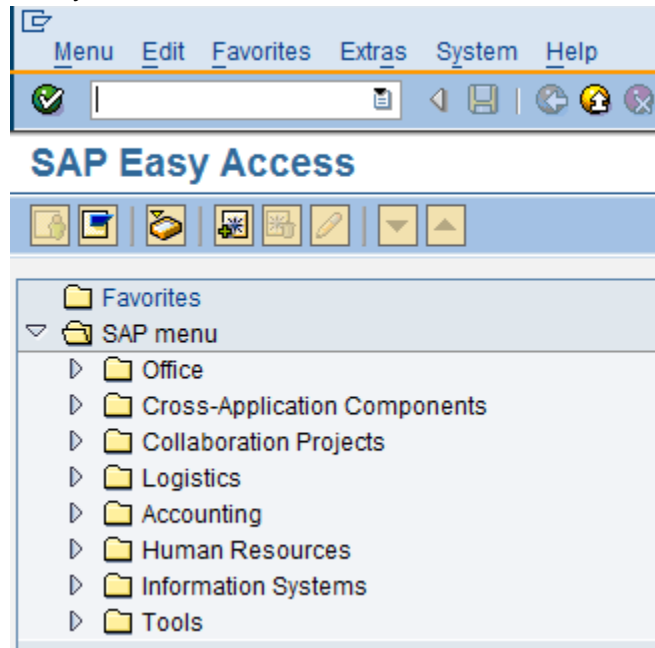
- 3) Click "**Execute**" icon to bring up the next window and click "**Yes**" button.



- 4) If you want to create a local object, click "**Local Object**" button, otherwise you need to specify a package.



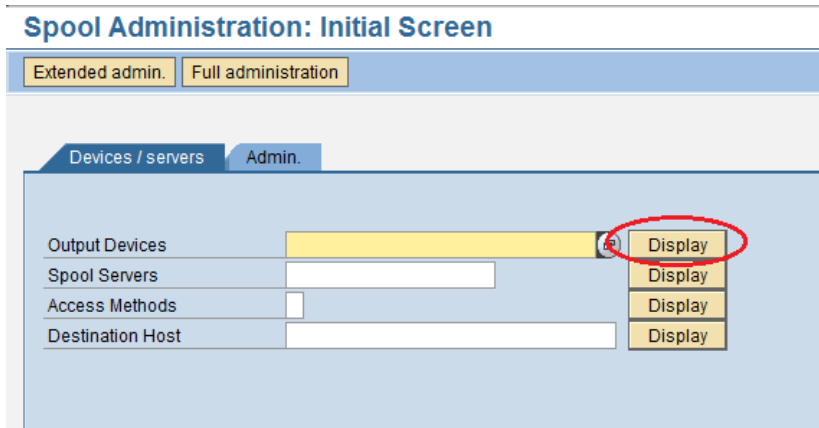
5) Hit  a few times until you can see the main menu window.



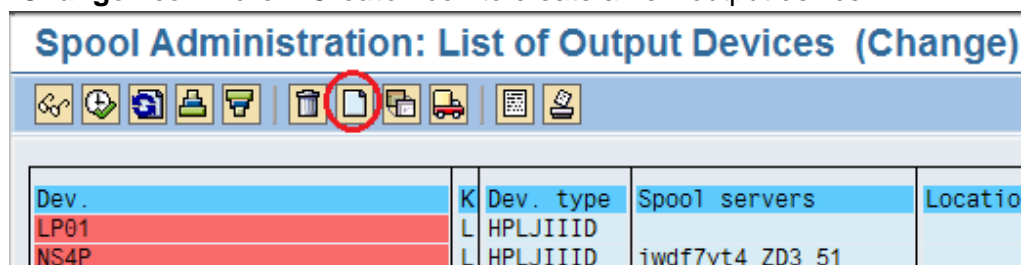
### 3.2 Create A New Output Device

Follow the instructions listed below to assign a printer to a new output device:

- 1) Start transaction SPAD.
- 2) Select "**Devices / servers**" tab > click "**Display**" button



3) Click "**Change**" icon > click "**Create**" icon to create a new output device



### 3.2.1 Device Attributes

The screenshot shows the 'Spool Administration: Create Output Device' window. The 'DeviceAttributes' tab is selected, displaying the following fields:

- Output Device: YLOCAL
- Short name: YL
- Description: (empty)
- Device Type: YSWIN : Windows printing via SAPIpd
- Spool Server: sapdev\_ECC\_04
- Server Description: (empty)
- Host: (empty) Real Server: (empty)
- Device Class: Standard printer
- Authorization Group: (empty)
- Model: (empty)
- Location: (empty)
- Message: (empty)
- Lock Printer in SAP System

| Field Name          | Description  |
|---------------------|--|
| Device Type         | Choose a predefined device type (e.g. YSWIN)   |
| Spool Server        | Select a SAP spool server, which is only required when host spool access method "S" is chosen. |
| Device Class        | Irrelevant field   |
| Authorization Group | Irrelevant field   |
| Model               | Irrelevant field   |
| Location            | Irrelevant field   |
| Message             | Irrelevant field   |


### 3.2.2 Host Spool Access Method

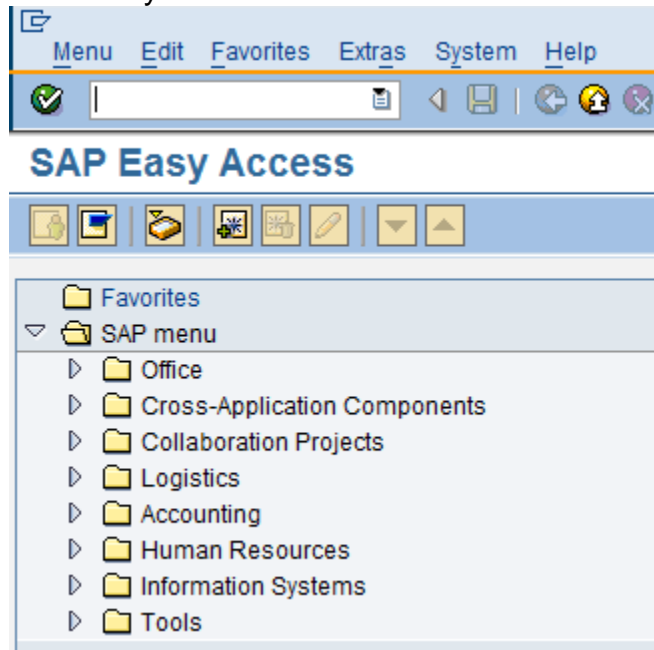
The screenshot shows a software window titled "Spool Administration: Create Output Device". It has a menu bar with "Output Device", "Edit", "Goto", "Extras", "Utilities(M)", "System", and "Help". Below the menu bar is a toolbar with various icons. The main area contains several input fields and tabs. The "Output Device" field contains "YLOCAL" and the "Short name" field contains "YL". There are tabs for "DeviceAttributes", "Access Method", "Output Attributes", and "Tray Info". The "Access Method" tab is active, showing a dropdown menu for "Host Spool Access Method" with the value "S: Print Using SAP Protocol". Below this are fields for "Host printer" (containing "\\server-name\printer-name") and "Destination host" (containing "sapsrv"). At the bottom, there is a checkbox labeled "Do Not Query Host Spooler for Output Status" which is currently unchecked.

| Field Name               | Description   |
|--------------------------|---|
| Host Spool Access Method | <p>(1) Choose "<b>S: Print Using SAP Protocol</b>" if a print server with SAPIpd or SAPsprint is used to print barcodes.</p> <p>(2) Choose "<b>F: Printing on Frontend Computer</b>" if SAPIpd and SAP GUI are used together to print barcodes, SAP GUI sends print job to SAPIpd, SAPIpd is started automatically and forwards the print data stream to the Windows print manager.</p> <p>(3) Choose "<b>G: Frontend Printing with Control Tech</b>", only SAP GUI is involved in printing barcodes, SAPIpd is not used.</p> |
| Host printer             | <p>Enter the name of a local printer or shared network printer to print barcodes,</p> <p>If you want to use the windows default printer, simply enter "__default".</p> <p>If you want to use a shared network printer, enter a name something like "\\server-name\printer-name"</p>   |
| Destination host         | <p>The name of host system where SAPIpd or SAPsprint is running to print barcodes, it is only required for host spool access method "S: Print using SAP protocol"</p>   |

### 3.2.3 Save Settings

- 1) Save all settings by clicking  icon.

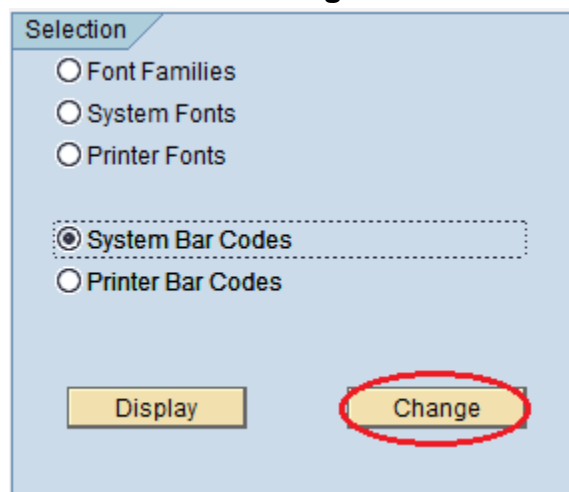
- 2) Hit  a few times until you can see the main menu window.



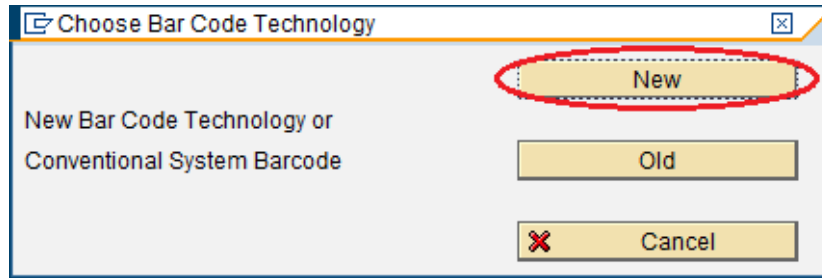
### 3.3 Create A New System Bar Code

Follow the instructions listed below to create a new system bar code:

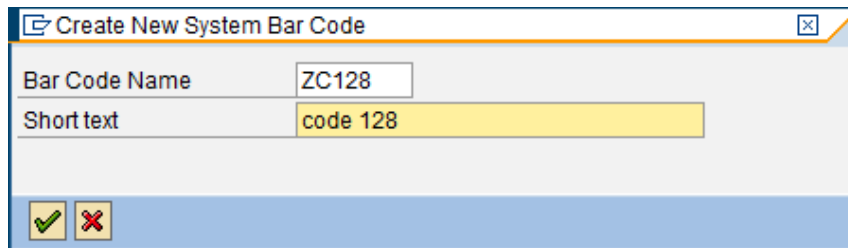
- 1) Start transaction SE73.
- 2) Select "**System Bar Codes**" > click "**Change**" button



- 3) In the next window, click "**Create**" icon to bring up another small window, click "**New**" button.



- 4) Enter a name into "**Bar Code Name**" field and a brief description into "**Short text**" field, the bar code name must begin with **Z** to avoid the conflict between your bar codes and the SAP bar codes.

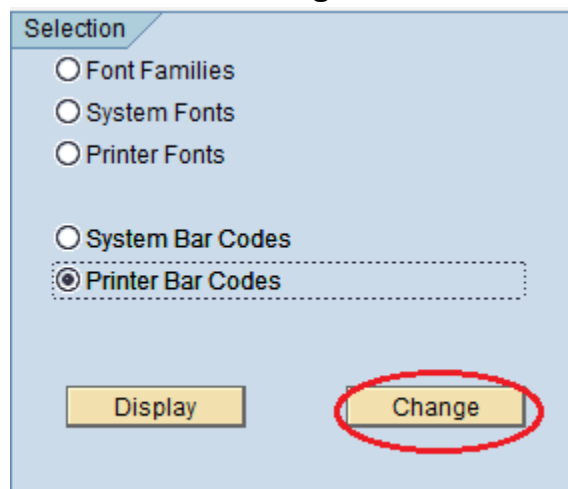


- 5) Choose the default settings for the remaining dialogs.

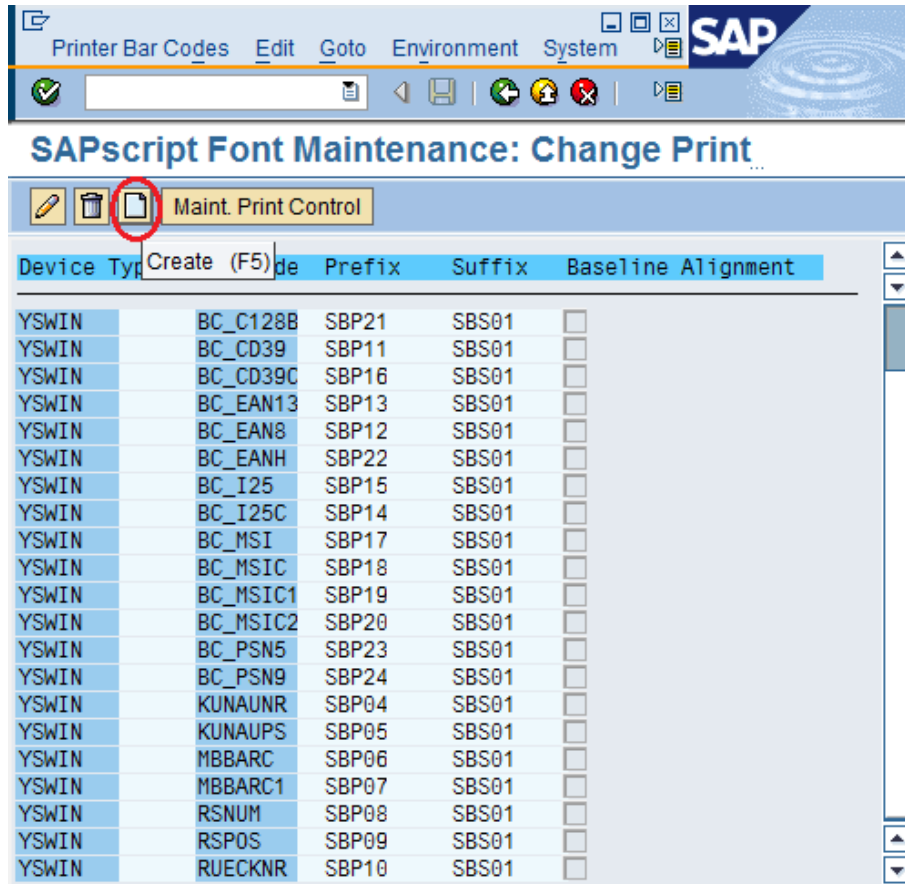
### 3.4 Create A New Printer Bar Code

Follow the instructions listed below to create a new printer bar code:

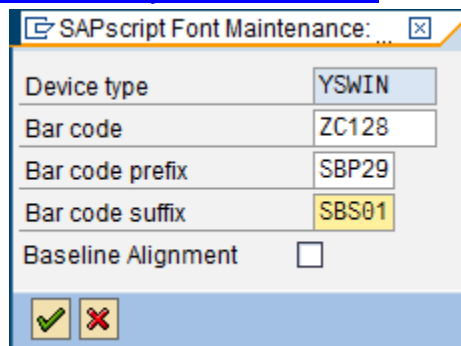
- 1) Start transaction SE73
- 2) Select "**Printer Bar Codes**" > click "**Change**"



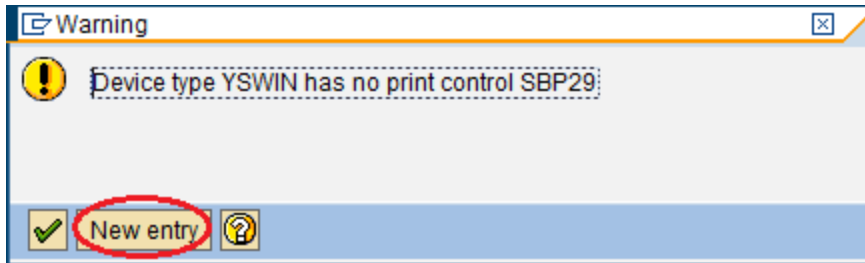
- 3) In the next window, select the device type (e.g. YSWIN) which you previously defined, click **"Create"** icon to create a new printer barcode.



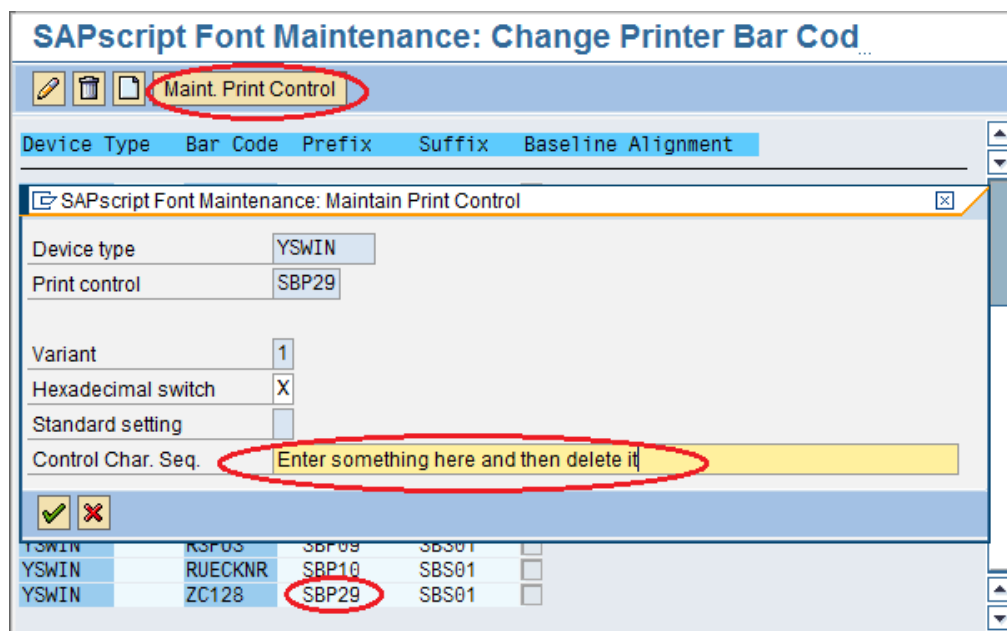
- 4) Enter some appropriate data into **"Bar code"**, **"Bar code prefix"** and **"Bar code suffix"** fields, **"Bar code"** field value could be a system bar code which you previously defined via ["Create A System Bar Code"](#)





- 5) Click **"New entry"** if the following dialog pops up, you need to edit **"Bar code prefix"** print control (e.g. SBP29) later by putting valid control character sequence there via ["Edit A Print Control"](#)

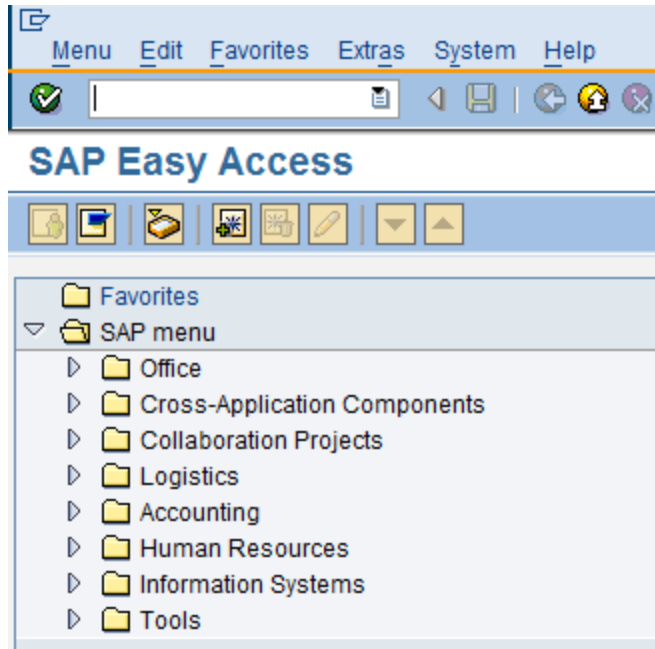


- 6) In order to make new defined print control work properly, you must make it dirty by clicking it (e.g. SBP29) and clicking "**Maint. Print Control**" to bring up a new dialog where you could enter something into "**Control Char Seq.**" field and then delete it.



- 7) Save all settings by clicking  icon.

- 8) Hit  a few times until you can see the main menu window.

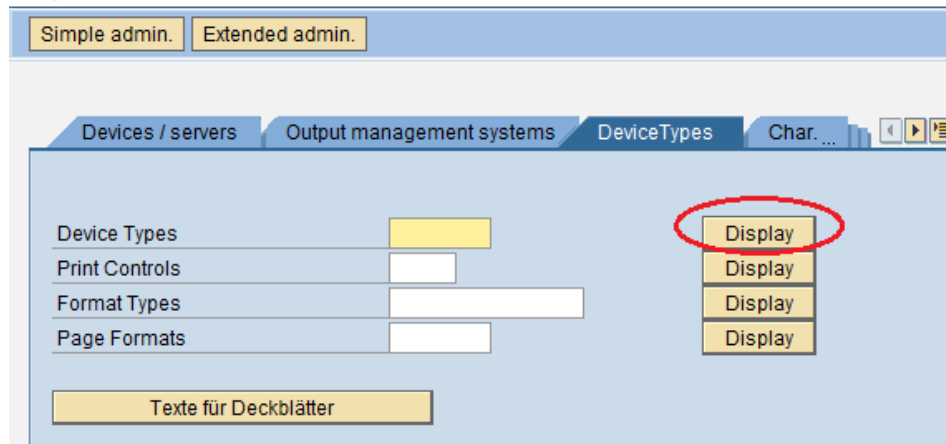


### 3.5 Edit A Print Control

Follow the instructions listed below to edit a print control:

- 1) Start transaction SPAD.
- 2) Click "**Full administration**" button > click "**DeviceTypes**" tab, click "**Display**" button to choose your device type (e.g. YSWIN).


#### Spool Administration: Initial Screen




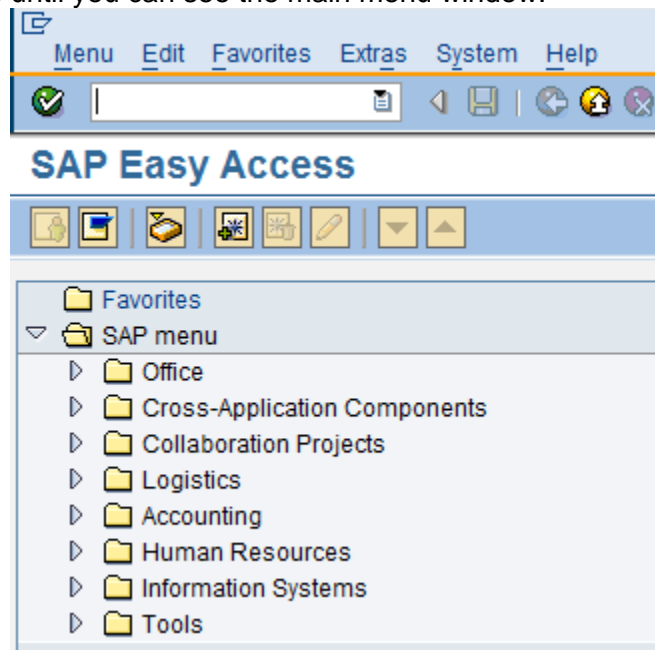
- 3) Click "**Print controls**" tab > click "**Change**" icon, enter a control character sequence (e.g. bC=128,B=60,H=15,A=0,P=0,R=0,FS=16,D=) to define a print control, in this case, it is SBP29.

| Attributes              |                                  | Print Controls                   |                       |                                  |                       |                       |  |  |
|-------------------------|----------------------------------|----------------------------------|-----------------------|----------------------------------|-----------------------|-----------------------|--|--|
| Print Control Selection |                                  |                                  |                       |                                  |                       |                       |  |  |
| Print Controls          |                                  |                                  |                       |                                  |                       |                       |  |  |
| Name                    | Direct                           | Extended                         | U                     | Convert                          | H                     | Ac                    | Control Character Sequence                   |  |
| SBP18                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | bC=MSI, B=90, H=13, P=1, A=0, D=             |  |
| SBP19                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | bC=MSI, B=90, H=13, P=2, A=0, D=             |  |
| SBP20                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | bC=MSI, B=90, H=13, P=3, A=0, D=             |  |
| SBP21                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | bC=128B, B=90, H=13, A=0, D=                 |  |
| SBP22                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | bC=E128, B=90, H=13, A=0, D=                 |  |
| SBP23                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | bC=PSN5, B=40, H=3, A=0, D=                  |  |
| SBP24                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | bC=PSN9, B=65, H=3, A=0, D=                  |  |
| SBP29                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | bC=128, B=60, H=15, A=0, P=0, R=0, FS=16, D= |  |
| SBS01                   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |  |  |
| SESCP                   | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | \e   |  |
| SF001                   | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | Courier New                                  |  |
| SF010                   | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1  |  |

- For print-control prefix (e.g. SBP29), ensure that **"Extended"** and **"Converted"** radio buttons are clicked, if **"Direct"** radio button is clicked instead, SAP R/3 will not be able to print barcodes.
- For print-control suffix SBS01:
  - ❖ For SAP 4.6, ECC 5.0 or ECC 6.0, ensure that **"Extended"** and **"Converted"** radio buttons are clicked and **"Control Character Sequence"** field is empty.
  - ❖ For SAP 4.7, ensure that **"Direct"** and **"Hex"** radio buttons are clicked and 1B is entered in the **"Control Character Sequence"** field.

4) Save all settings by clicking  icon.

5) Hit  a few times until you can see the main menu window.



### 3.6 Test Printing Barcodes

Follow the instructions listed below to test printing barcodes after the previous steps are finished:

- 1) Start transaction SPAD.
- 2) Select "**Utilities**" > "**For device types**" > "**Test data (SAPscript)**"
- 3) Print the predefined document **SAPSCRIPT-BARCODETEST**, specify **ST** as the document ID and **EN** or **DE** as the language.
- 4) If you want to test printing rotated barcodes, choose **SAPSCRIPT-BARCODETEST2**.

The test document is usually available only in client 000.

## 4. Print Barcodes in SAP R/3

### 4.1 Print Barcodes in SAPScript

#### 4.1.1 Use Print Control

Here's a handy SAPScript code snippet to print barcodes using a print control.

```
/
/: PROTECT
/ Print Barcodes Here (This text line is needed before the barcode print-control prefix)
/: PRINT-CONTROL SBP29
= 1234ABCDEF
/: PRINT-CONTROL SBS01
/: ENDPROTECT
/
```

#### 4.1.2 Use Character Format

- 1) Create a new character format

## Form: Change Character Strings: ZBARCODE\_TEST

The screenshot shows the SAP configuration interface for character formats. The top section, 'Character Formats', contains a table with the following data:

| Format | Meaning  | Mark. | Prot. | Hidd. | Sup. | Sub. |
|--------|----------|-------|-------|-------|------|------|
| B2     | Code 39  | Off   |       |       |      |      |
| B3     | EAN 13   | Off   |       |       |      |      |
| B4     | Code 128 | Off   |       |       |      |      |

The 'B4' row is highlighted with a dashed border. Below this table, it indicates 'Char. Format 3 of 3'. The bottom section, 'Standard Attributes', shows the configuration for the selected 'B4' format. The 'Meaning' is 'Code 128'. The 'Bar code' attribute is set to 'BC\_C128B', which is circled in red. The 'Protected' attribute is set to 'Off' (radio button), and the 'Hidden' attribute is set to 'Retain' (radio button).

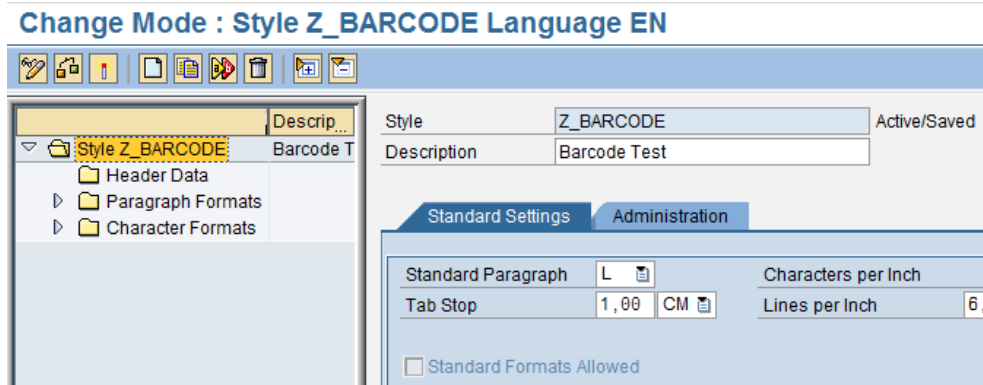
2) In your SAPScript code, assign a new created character format to a barcode string:

```
/
/: PROTECT
/ Code 128
/ <B4>12345678</>
/: ENDPROTECT
/
```

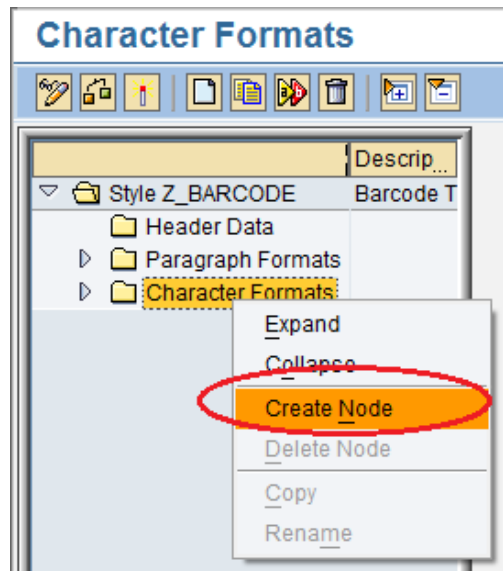
### 4.2 Print Barcodes in Smart Form

Follow the instructions listed below to print barcodes in a Smart Form:

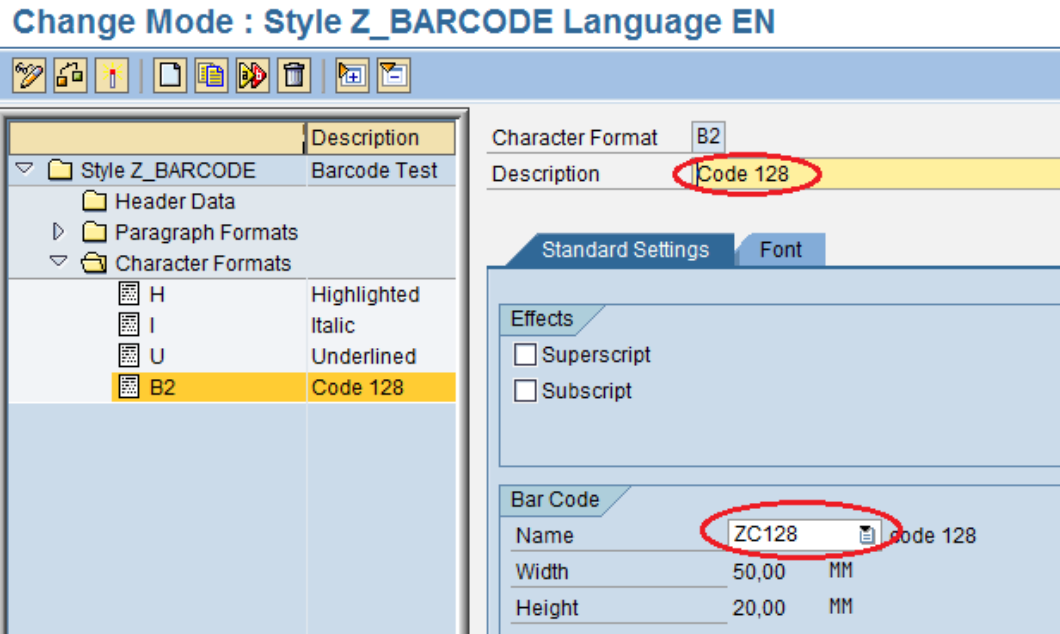
- 1) Start transaction SMARTFORMS.
- 2) Copy the style "SYSTEM" to a local one "Z\_BARCODE", save and then activate it.



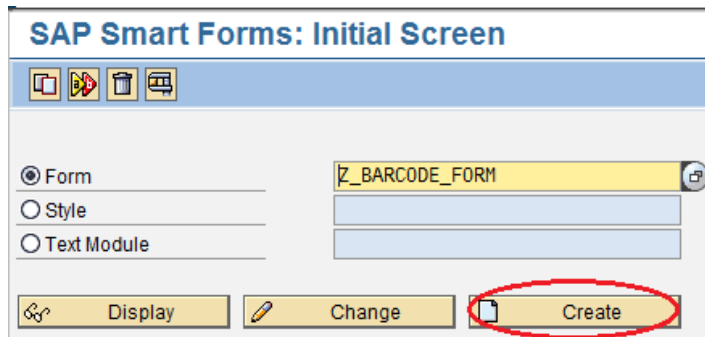
- 3) Right click "**Character Formats**" and choose "**Create Node**".



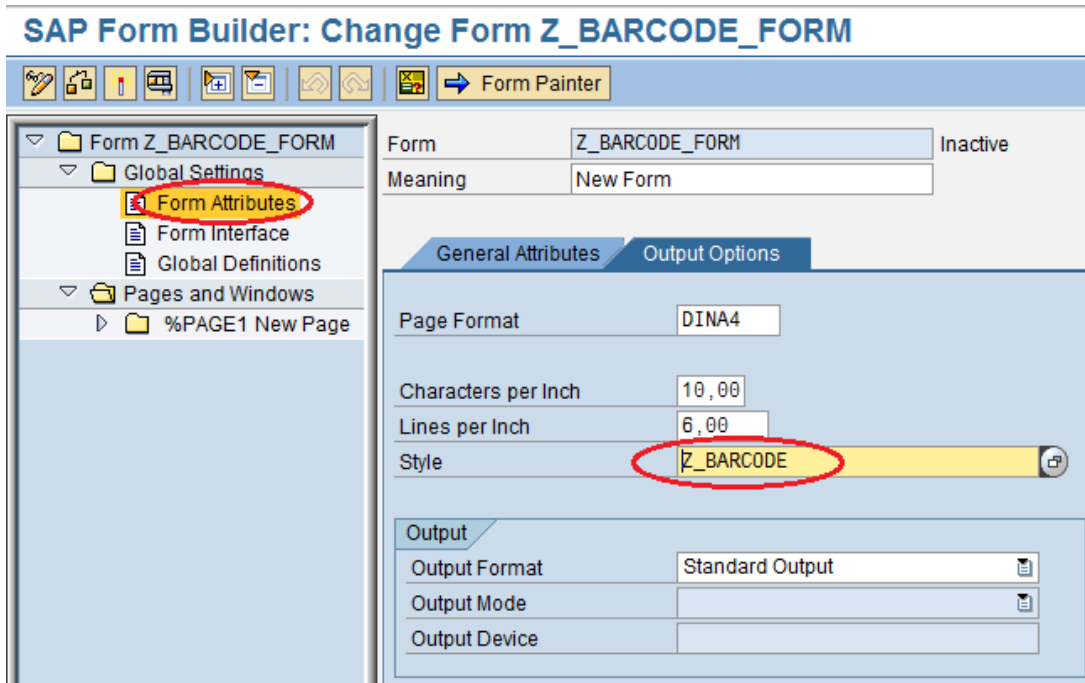
- 4) Enter a name and a brief description into "**Character Format**" and "**Description**" fields respectively, choose a system barcode (e.g. ZC128) from the list, save and then activate it.



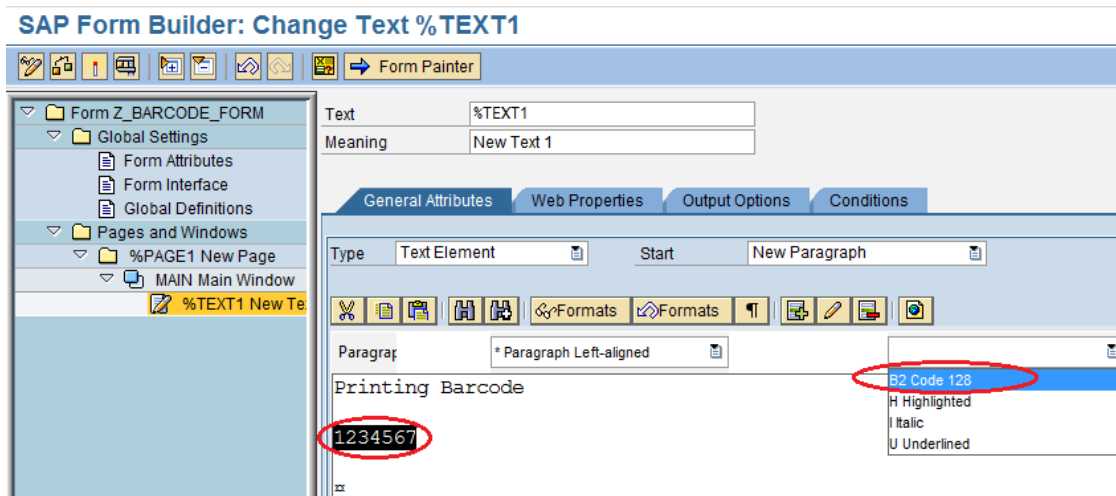
5) Create a new form



6) Click "Form Attributes" and select "Output Options", choose Z\_BARCODE as style.



- 7) Insert a string or SAPScript variable into the form and highlight it, select your character format.



- 8) Save and then activate it.

### 4.3. Print Barcodes in ABAP

Here's a handy ABAP code snippet to print barcodes in SAP R/3:

```

REPORT  Z_BARCODE_ABAP.

NEW-PAGE NO-HEADING PRINT ON LINE-SIZE 80.

WRITE: /'Test printing a barcode'.

FORMAT COLOR OFF INTENSIFIED OFF.

WRITE: / .

* Start printing a barcode
* Use a print-control prefix
PRINT-CONTROL FUNCTION 'SBP29'.

* Insert a barcode string
* Use NO-GAP to remove trailing blanks
WRITE: '12345678' NO-GAP.

* Stop printing a barcode
* Use a print-control suffix
PRINT-CONTROL FUNCTION 'SBS01'.

WRITE: / .

```

## 5. Print Control Parameters

### 5.1 Common Commands

#### 5.1.1 B Command

This command is used to specify the barcode width in millimeters (MMs). For example, if the barcode width is 65 MMs, the **B command** is B=65.

**Remarks:**

An example of control character sequence:

bC=128, R=0, B=65, H=20, X=0, P=0, BT=0, A=0, FS=15, D=

#### 5.1.2 C Command

This command is used to specify the barcode type.

| Command | Barcode Description | Allow Bearer Bars? | Allow Supplement 2 or 5? | Sample Barcode String |
|---------|---------------------|--------------------|--------------------------|-----------------------|
| C=11    | Code 11             |                    |                          |                       |
| C=128   | Code 128            |                    |                          | 1234ABCD+/-           |
| C=128A  | Code 128 (Set A)    |                    |                          |                       |
| C=128B  | Code 128 (Set B)    |                    |                          |                       |

|           |   |     |     |                            |
|-----------|---|-----|-----|----------------------------|
| C=128C    | Code 128 (Set C)                              |     |     |                            |
| C=25DL    | Data Logic 2/5                                | Yes |     |                            |
| C=25I     | Interleaved 2 of 5 Barcode                    | Yes |     |                            |
| C=25IATA  | IATA 2 of 5 Barcode                           | Yes |     |                            |
| C=25IND   | Industrial 2 of 5 Barcode                     | Yes |     |                            |
| C=25M     | Matrix 2 of 5 Barcode                         | Yes |     |                            |
| C=39      | Code 39                                       |     |     | 1234ABCD                   |
| C=39E     | Code 39 Extended                              |     |     |                            |
| C=93      | Code 93                                       |     |     |                            |
| C=APR     | Australia Postal Routing                      |     |     |                            |
| C=APRD    | Australia Postal Redirection                  |     |     |                            |
| C=APRP    | Australia Postal Reply Paid                   |     |     |                            |
| C=APSC    | Australia Postal Standard Customer            |     |     |                            |
| C=AZ      | Aztec   |     |     |                            |
| C=C16K    | Code 16K                                      |     |     |                            |
| C=C32     | Code 32 or Italian Pharmacode                 |     |     |                            |
| C=C49     | Code 49                                       |     |     |                            |
| C=CBF     | Codablock-F                                   |     |     |                            |
| C=CC      | Channel Code                                  |     |     |                            |
| C=CDB14   | GS1 Composite Databar-14                      |     |     | 1234567890123+2D Data      |
| C=CDB14L  | GS1 Composite Databar Limited                 |     |     |                            |
| C=CDB14S  | GS1 Composite Databar Stacked                 |     |     |                            |
| C=CDB14SO | GS1 Composite DataBar Stacked Omnidirectional |     |     |                            |
| C=CDBE    | GS1 Composite DataBar Expanded                |     |     | (01)12345678901234+2D Data |
| C=CDBES   | GS1 Composite DataBar Expanded Stacked        |     |     |                            |
| C=CODA    | Codabar                                       |     |     |                            |
| C=CONE    | Code One                                      |     |     |                            |
| C=CP      | China Postal Code                             |     |     |                            |
| C=DAFT    | USPS DAFT Code                                |     |     | DAFTTFAD                   |
| C=DAPC    | Danish Postal Code                            |     |     | CC12345678                 |
| C=DB14    | GS1 Databar-14                                |     |     | 1234567890123              |
| C=DB14L   | GS1 Databar Limited                           |     |     |                            |
| C=DB14S   | GS1 Databar Stacked                           |     |     |                            |
| C=DB14SO  | GS1 DataBar Stacked Omnidirectional           |     |     |                            |
| C=DB14T   | GS1 Databar Truncated                         |     |     |                            |
| C=DBE     | GS1 DataBar Expanded                          |     |     | (01)12345678901234         |
| C=DBES    | GS1 DataBar Expanded Stacked                  |     |     |                            |
| C=DM      | DataMatrix                                    |     |     |                            |
| C=DPIDEN  | Deutsche Post Identcode                       |     |     | 12345678901                |
| C=DPLEIT  | Deutsche Post Leitcode                        |     |     | 1234567890123              |
| C=E128    | UCC/EAN128 (GS1-128)                          |     |     | (21)95FNC1(11)090101       |
| C=E13     | EAN 13  |     | Yes | 123456789012+12            |
| C=E8      | EAN 8   |     | Yes | 1234567+12345              |
| C=E8V     | EAN Velocity                                  |     | Yes |                            |
| C=FIM     | USPS Facing Identification Mark               |     |     | A                          |
| C=FLATT   | Flattermarken                                 |     |     |                            |
| C=FP39    | France Postal Code 39                         |     |     | RA12345678                 |
| C=H128    | HIBC Code 128 for LIC or PAS                  |     |     | +H123ABC01234567890D       |
| C=H39     | HIBC Code 39 for LIC or PAS                   |     |     | +/EAH783B                  |
| C=HCBF    | HIBC CodaBlock-F for LIC or PAS               |     |     | +/EAH783/Z34H159\$         |
| C=HDM     | HIBC DataMatrix for LIC or PAS                |     |     |                            |
| C=HMPDF   | HIBC Micro PDF417 for LIC or PAS              |     |     |                            |
| C=HPDF    | HIBC PDF417 for LIC or PAS                    |     |     |                            |
| C=HQR     | HIBC QRCode for LIC or PAS                    |     |     |                            |
| C=IP25    | Italy Postal Code 2/5                         |     |     |                            |

|          |  |     |     |                            |
|----------|--|-----|-----|----------------------------|
| C=IP39   | Italy Postal Code 39                         |     |     |                            |
| C=ISBN   | ISBN or International Standard Book Number   |     | Yes | 3161484100                 |
| C=ISMN   | ISMN or International Standard Music Number  |     | Yes | M-2306-7118-7              |
| C=ISSN   | ISSN or International Standard Serial Number |     | Yes | 0264-3596                  |
| C=ITF14  | ITF-14 or UPC Shipping Container Symbol      | Yes |     | 1234567890123              |
| C=J13    | JAN 13                                       |     | Yes |                            |
| C=J8     | JAN 8  |     | Yes |                            |
| C=JP     | Japan Postal Code                            |     |     | 1234567AZ                  |
| C=KIX    | Netherlands Postal Code (KIX)                |     |     | A12345678                  |
| C=KP     | Korean Postal Code                           |     |     | 123456                     |
| C=LOG    | Logmars                                      |     |     |                            |
| C=MC     | MaxiCode                                     |     |     |                            |
| C=MPDF   | Micro PDF417                                 |     |     |                            |
| C=MQR    | Micro QRCode                                 |     |     |                            |
| C=MSI    | MSI/Plessey                                  |     |     |                            |
| C=NNB    | Numly Number or ESN                          |     |     | 1234567890123456789        |
| C=OPC    | Optical Product Code                         |     | Yes | 123456789                  |
| C=PDF    | PDF417                                       |     |     |                            |
| C=PHOT   | Pharmacode One-Track                         |     |     |                            |
| C=PHTT   | Pharmacode Two-Track                         |     |     |                            |
| C=PLT    | USPS PLANET                                  |     |     |                            |
| C=POT    | USPS POSTNET                                 |     |     |                            |
| C=PZN    | Pharma-Zentral-Nummer                        |     |     | 123456                     |
| C=QR     | QRCode                                       |     |     |                            |
| C=RM4S   | Royal Mail 4 State                           |     |     |                            |
| C=SC14   | SCC-14 or Shipping Container Code            |     |     |                            |
| C=SC18   | SSCC-18 or UPC-128 Shipping Container Code   |     |     |                            |
| C=SPC    | Singapore Postal Code                        |     |     |                            |
| C=SWPC   | Swiss Parcel Post Barcode                    |     |     |                            |
| C=TELE   | Telepen Alpha                                |     |     |                            |
| C=TELEN  | Telepen Numeric                              |     |     |                            |
| C=UKP    | UK Plessey                                   |     |     |                            |
| C=UPCA   | UPC-A  |     | Yes | 1234567890                 |
| C=UPCE   | UPC-E  |     | Yes | 1234567                    |
| C=USPSH  | USPS Horizontal Bars                         |     |     |                            |
| C=USPSOC | USPS OneCode or USPS Intelligent Mail        |     |     | 12345678901234567890+50309 |
| C=USPSS  | USPS Sack Label                              |     |     | 50309123                   |
| C=USPST  | USPS Tray Label                              |     |     | 5030912345                 |
| C=VBOL   | VICS BOL or VICS Bill of Lading              |     |     |                            |
| C=VSCAC  | VICS SCAC PRO                                |     |     |                            |

**Remarks:**

If the barcode type is set to UCC/EAN128 (GS1-128) via the **C command** "C=E128", you could use a "FNC1" string to indicate the end of a varied-length data field. For example, set the barcode string to "(01)12345678901234(10)12345FNC1(11)080101", "FNC1" is used to indicate the end of the data field after the Application Identifier (AI) #10, since AI #10 allows the corresponding data field to have 1-20 alphanumeric characters, the following barcode will be generated.



(01)12345678901234(10)12345(11)080101

### 5.1.3 H Command

This command is used to specify the barcode height in millimeters (MMs). For example, if the barcode height is 20 MMs, the **H command** is H=20.

### 5.1.4 R Command

This command is used to specify the barcode rotation option.

| Command | Description          |
|---------|----------------------|
| R=0     | 0 degree rotation    |
| R=90    | 90 degrees rotation  |
| R=180   | 180 degrees rotation |
| R=270   | 270 degrees rotation |

### 5.1.5 X Command

This command is used to indicate whether the character hex representation is enabled or not, if enabled, a sub-string with the leading characters "0x" followed by 2 hexadecimal digits will be converted to a single corresponding character.

| Command | Description           |
|---------|-----------------------|
| X=0     | No conversion         |
| X=1     | Conversion is enabled |

For example, if "X=1" is invoked, the string "123450x0A67890" will be converted to the string "12345" plus Chr(10) plus "67890", the string "0x300x78" will be converted to the string "0x".

#### **Remarks:**

You can use this command to allow the barcode to encode the non-printable characters (e.g. line feed and carriage return).

## 5.2 1D & Postal Code Barcodes

### 5.2.1 A Command

This command is used to indicate whether the human readable text should be printed out or not.

| Command | Description                   |
|---------|-------------------------------|
| A=0     | No human readable text        |
| A=1     | Print the human readable text |

## 5.2.2 BT Command

This command is used to specify the bearer bar type of barcode.

| Command | Description                         |
|---------|-------------------------------------|
| BT=0    | No bearer bar                       |
| BT=1    | Horizontal bearer bars only         |
| BT=2    | A bearer bar box around the barcode |

## 5.2.3 FS Command

This command is used to specify the font size of the human readable text. For example, if the font size is 14, the **FS command** is FS=14.

## 5.2.4 P Command

This command is used to indicate whether the check digit should be added to a barcode or not.

| Command | Description                  |
|---------|------------------------------|
| P=0     | No check digit               |
| P=1     | Add check digit to a barcode |

## 5.3 2D Barcodes

### 5.3.1 Aztec



#### 5.3.1.1 AZFM Command

This command is used to specify the preferred format for Aztec barcode.

| Command | Description            |
|---------|------------------------|
| AZFM=0  | Auto format            |
| AZFM=1  | 15 X 15 compact format |
| AZFM=2  | 19 X 19                |
| AZFM=3  | 19 X 19 compact format |
| AZFM=4  | 23 X 23                |
| AZFM=5  | 23 X 23 compact format |
| AZFM=6  | 27 X 27                |
| AZFM=7  | 27 X 27 compact format |
| AZFM=8  | 31 X 31                |

|         |           |
|---------|-----------|
| AZFM=9  | 37 X 37   |
| AZFM=10 | 41 X 41   |
| AZFM=11 | 45 X 45   |
| AZFM=12 | 49 X 49   |
| AZFM=13 | 53 X 53   |
| AZFM=14 | 57 X 57   |
| AZFM=15 | 61 X 61   |
| AZFM=16 | 67 X 67   |
| AZFM=17 | 71 X 71   |
| AZFM=18 | 75 X 75   |
| AZFM=19 | 79 X 79   |
| AZFM=20 | 83 X 83   |
| AZFM=21 | 87 X 87   |
| AZFM=22 | 91 X 91   |
| AZFM=23 | 95 X 95   |
| AZFM=24 | 101 X 101 |
| AZFM=25 | 105 X 105 |
| AZFM=26 | 109 X 109 |
| AZFM=27 | 113 X 113 |
| AZFM=28 | 117 X 117 |
| AZFM=29 | 121 X 121 |
| AZFM=30 | 125 X 125 |
| AZFM=31 | 131 X 131 |
| AZFM=32 | 135 X 135 |
| AZFM=33 | 139 X 139 |
| AZFM=34 | 143 X 143 |
| AZFM=35 | 147 X 147 |
| AZFM=36 | 151 X 151 |

**Remarks:**

An example of control character sequence to print Aztec barcodes:  
bC=AZ, B=60, H=60, R=0, AZFM=0, AZHT=0, D=

**5.3.1.2 AZHT Command**

This command is used to indicate whether or not to process the tilde character ("~") for Aztec barcode.

| Command | Description                       |
|---------|-----------------------------------|
| AZHT=0  | Don't process the tilde character |
| AZHT=1  | Process the tilde character       |

If "AZHT=1" is invoked, non-printable characters can be encoded with Aztec barcode by using the tilde character, "**~dNNN**" represents the ASCII character encoded by the 3 digits NNN, for example, "**~d010**" represents the character LF (line feed).

### 5.3.2 Code One



#### 5.3.2.1 COVR Command

This command is used to specify the version for Code One barcode.

| Command | Version | Size              |
|---------|---------|-------------------|
| COVR=1  | A       | 16 X 18           |
| COVR=2  | B       | 22 X 22           |
| COVR=3  | C       | 28 X 32           |
| COVR=4  | D       | 40 X 42           |
| COVR=5  | E       | 52 X 54           |
| COVR=6  | F       | 70 X 76           |
| COVR=7  | G       | 104 X 98          |
| COVR=8  | H       | 148 X 134         |
| COVR=9  | S       | 8 X varied width  |
| COVR=10 | T       | 16 X varied width |

#### Remarks:

An example of control character sequence to print Code One barcodes:  
bC=CONE, B=50, H=50, R=0, COVR=3, D=

### 5.3.3 DataMatrix



#### 5.3.3.1 DMFM Command

This command is used to specify the preferred format for DataMatrix barcode.

| Command | Description    |
|---------|----------------|
| DMFM=0  | Auto format    |
| DMFM=1  | 10 X 10 format |
| DMFM=2  | 12 X 12 format |
| DMFM=3  | 14 X 14 format |
| DMFM=4  | 16 X 16 format |
| DMFM=5  | 18 X 18 format |
| DMFM=6  | 20 X 20 format |
| DMFM=7  | 22 X 22 format |
| DMFM=8  | 24 X 24 format |
| DMFM=9  | 26 X 26 format |

|         |                  |
|---------|------------------|
| DMFM=10 | 32 X 32 format   |
| DMFM=11 | 36 X 36 format   |
| DMFM=12 | 40 X 40 format   |
| DMFM=13 | 44 X 44 format   |
| DMFM=14 | 48 X 48 format   |
| DMFM=15 | 52 X 52 format   |
| DMFM=16 | 64 X 64 format   |
| DMFM=17 | 72 X 72 format   |
| DMFM=18 | 80 X 80 format   |
| DMFM=19 | 88 X 88 format   |
| DMFM=20 | 96 X 96 format   |
| DMFM=21 | 104 X 104 format |
| DMFM=22 | 120 X 120 format |
| DMFM=23 | 132 X 132 format |
| DMFM=24 | 144 X 144 format |
| DMFM=25 | 8 X 18 format    |
| DMFM=26 | 8 X 32 format    |
| DMFM=27 | 12 X 26 format   |
| DMFM=28 | 12 X 36 format   |
| DMFM=29 | 16 X 36 format   |
| DMFM=30 | 16 X 48 format   |

**Remarks:**

An example of control character sequence to print DataMatrix barcodes:

bC=DM, B=50, H=50, R=0, DMFM=4, DMHT=1, DMMD=0, D=

**5.3.3.2 DMHT Command**

This command is used to indicate whether or not to process the tilde character for DataMatrix barcode.

| Command | Description                       |
|---------|-----------------------------------|
| DMHT=0  | Don't process the tilde character |
| DMHT=1  | Process the tilde character       |

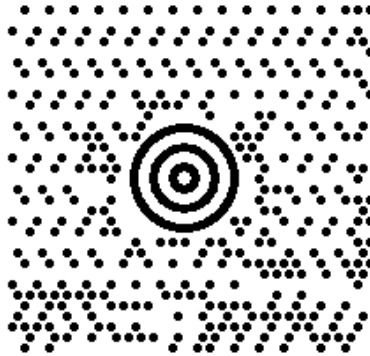
If "DMHT=1" is invoked, non-printable characters can be encoded with DataMatrix barcode by using the tilde character, "~dNNN" represents the ASCII character encoded by the 3 digits NNN, for example, "~d010" represents the character LF (line feed).

**5.3.3.3 MMD Command**

This command is used to specify the encoding mode for DataMatrix barcode.

| Command | Description   |
|---------|---|
| DMMD=0  | ASCII mode for mainly encoding ASCII characters (0-127)         |
| DMMD=1  | C40 mode for mainly encoding numeric and upper case characters  |
| DMMD=2  | Text mode for mainly encoding numeric and lower case characters |
| DMMD=3  | Base256 mode for mainly encoding bytes of data                  |

### 5.3.4 MaxiCode



#### 5.3.4.1 MCMD Command

This command is used to specify the mode for MaxiCode barcode.

| Command | Description |
|---------|-------------|
| MCMD=2  | Mode 2      |
| MCMD=3  | Mode 3      |
| MCMD=4  | Mode 4      |
| MCMD=5  | Mode 5      |

#### Remarks:

An example of control character sequence to print MaxiCode barcodes:

bC=MC, R=0, MCMD=3, MCHT=0, D=

If the barcode string is properly formatted and begins with the 7 characters "[ ]><RS>01<GS>", the values of zip code, country code and service class can be embedded in that string.

For example, let's pass the following string to the Barcode DLL for SAP R/3:  
[ ]><RS>01<GS>9615238<GS>840<GS>001<GS>AIM, Inc<GS>634 Alpha Drive<GS>Pittsburgh<GS>PA<RS><EOT>

In this format, the identifier "[ ]><RS>01<GS>" is followed by a date (YY), in this example, it is "96".

The above data is encoded in a particular manner as follows:

- 1) The first 9 data characters [ ]><RS>01<GS>YY are extracted.
- 2) The next 3 data elements separated by <GS>, representing respectively the zip code, country code and service class, are extracted and encoded in the primary message. In this example, they are 15238, 840 and 001.
- 3) The remaining string preceded with [ ]><RS>01<GS>YY is encoded in the secondary message. In this example, it is:  
[ ]><RS>01<GS>YYAIM, Inc<GS>634 Alpha Drive<GS>Pittsburgh<GS>PA<RS><EOT>

<RS>, <GS> and <EOT> indicate 3 characters with ASCII values 30, 29 and 4 respectively.

### 5.3.4.2 MCHT Command

This command is used to indicate whether or not to process the tilde character for MaxiCode barcode.

| Command | Description                       |
|---------|-----------------------------------|
| MCHT=0  | Don't process the tilde character |
| MCHT=1  | Process the tilde character       |

If "MCHT=1" is invoked, non-printable characters can be encoded with MaxiCode barcode by using the tilde character, "~dNNN" represents the ASCII character encoded by the 3 digits NNN, for example, "~d010" represents the character LF (line feed).

### 5.3.5 Micro PDF417



#### 5.3.5.1 MPDFC Command

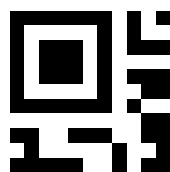
This command is used to specify the number of columns for Micro PDF417 barcode.

| Command | Description |
|---------|-------------|
| MPDFC=1 | 1 column    |
| MPDFC=2 | 2 columns   |
| MPDFC=3 | 3 columns   |
| MPDFC=4 | 4 columns   |

**Remarks:**

An example of control character sequence to print Micro PDF417 barcodes:  
bC=MPDF, B=70, H=30, R=0, MPDFC=3, D=

### 5.3.6 Micro QRCode



### 5.3.6.1 MQRLV Command

This command is used to specify the error correction level for Micro QRCode barcode.

| Command | Description                             |
|---------|---|
| MQRLV=1 | L (applicable to version M2, M3 and M4) |
| MQRLV=2 | M (applicable to version M2, M3 and M4) |
| MQRLV=3 | Q (applicable to version M4 only)       |

#### Remarks:

An example of control character sequence to print Micro QRCode barcodes:

bC=MQR, B=60, H=60, R=0, MQRLV=1, MQRVR=2, D=

### 5.3.6.2 MQRVR Command

This command is used to specify the version for Micro QRCode barcode.

| Command | Description                      |
|---------|----------------------------------|
| MQRVR=1 | Version M1 with the size 11 X 11 |
| MQRVR=2 | Version M2 with the size 13 X 13 |
| MQRVR=3 | Version M3 with the size 15 X 15 |
| MQRVR=4 | Version M4 with the size 17 X 17 |

## 5.3.7 PDF417



### 5.3.7.1 PDFC Command

This command is used to specify the preferred number of columns for PDF417 barcode.

For example, if the preferred number of columns is 5, the **PDFC command** is PDFC=5.

The preferred number of columns should be between 3 and 30.

#### Remarks:

An example of control character sequence to print PDF417 barcodes:

bC=PDF, B=70, H=30, R=0, PDFC=3, PDFCL=2, PDFHT=1, PDFMD=1, PDFR=5, PDFTS=0, D=

### 5.3.7.2 PDFCL Command

This command is used to specify the error correction level for PDF417 barcode.

| Command | Description              |
|---------|--------------------------|
| PDFCL=0 | Error correction level 0 |
| PDFCL=1 | Error correction level 1 |

|         |                          |
|---------|--------------------------|
| PDFCL=2 | Error correction level 2 |
| PDFCL=3 | Error correction level 3 |
| PDFCL=4 | Error correction level 4 |
| PDFCL=5 | Error correction level 5 |
| PDFCL=6 | Error correction level 6 |
| PDFCL=7 | Error correction level 7 |
| PDFCL=8 | Error correction level 8 |

### 5.3.7.3 PDFHT Command

This command is used to indicate whether or not to process the tilde character ("~") for PDF417 barcode.

| Command | Description                       |
|---------|-----------------------------------|
| PDFHT=0 | Don't process the tilde character |
| PDFHT=1 | Process the tilde character       |

If "PDFHT=1" is invoked, non-printable characters can be encoded with the PDF417 barcode by using the tilde character, "~dNNN" represents the ASCII character encoded by the 3 digits NNN, for example, "~d010" represents the character LF (line feed).

### 5.3.7.4 PDFMD Command

This command is used to specify the encoding mode for PDF417 barcode.

| Command | Description   |
|---------|---|
| PDFMD=0 | Binary mode to encode the characters with the ASCII value between 0 and 255   |
| PDFMD=1 | Text mode to encode the printable characters with the ASCII value between 32 and 126, TAB character (ASCII value 9), LF character (ASCII value 10) and CR character (ASCII value 13). |
| PDFMD=2 | Auto mode to achieve maximum encoding capacity.   |

### 5.3.7.6 PDFR Command

This command is used to specify the preferred number of rows for PDF417 barcode. For example, if the preferred number of rows is 6, the **PDFR command** is PDFR=6. The preferred number of rows should be between 3 and 90.

### 5.3.7.7 PDFTS Command

This command is used to indicate whether or not to truncate the right side of PDF417 barcode.

| Command | Description                                     |
|---------|---|
| PDFTS=0 | Don't truncate the right side of PDF417 barcode |
| PDFTS=1 | Truncate the right side of PDF417 barcode       |

### 5.3.8 QRCode



#### 5.3.8.1 QRLV Command

This command is used to specify the level of error correction allowing recovery for QRCode barcode.

| Command | Description |
|---------|-------------|
| QRLV=0  | Level L     |
| QRLV=1  | Level M     |
| QRLV=2  | Level Q     |
| QRLV=3  | Level H     |

**Remarks:**

An example of control character sequence to print QRCode barcodes:

bC=QR, B=60, H=60, R=0, QRLV=1, QRMK=2, QRVR=9, D=

#### 5.3.8.2 QRMK Command

This command is used to specify the mask pattern of QRCode barcode for improving the readability.

| Command | Description     |
|---------|-----------------|
| QRMK=0  | Auto mask       |
| QRMK=1  | Mask value is 0 |
| QRMK=2  | Mask value is 1 |
| QRMK=3  | Mask value is 2 |
| QRMK=4  | Mask value is 3 |
| QRMK=5  | Mask value is 4 |
| QRMK=6  | Mask value is 5 |
| QRMK=7  | Mask value is 6 |
| QRMK=8  | Mask value is 7 |

#### 5.3.8.3 QRVR Command

This command is used to specify the version for QRCode barcode.

| Command | Description |
|---------|-------------|
| QRVR=0  | Auto        |

|         |           |
|---------|-----------|
| QRVR=1  | 21 X 21   |
| QRVR=2  | 25 X 25   |
| QRVR=3  | 29 X 29   |
| QRVR=4  | 33 X 33   |
| QRVR=5  | 37 X 37   |
| QRVR=6  | 41 X 41   |
| QRVR=7  | 45 X 45   |
| QRVR=8  | 49 X 49   |
| QRVR=9  | 53 X 53   |
| QRVR=10 | 57 X 57   |
| QRVR=11 | 61 X 61   |
| QRVR=12 | 65 X 65   |
| QRVR=13 | 69 X 69   |
| QRVR=14 | 73 X 73   |
| QRVR=15 | 77 X 77   |
| QRVR=16 | 81 X 81   |
| QRVR=17 | 85 X 85   |
| QRVR=18 | 89 X 89   |
| QRVR=19 | 93 X 93   |
| QRVR=20 | 97 X 97   |
| QRVR=21 | 101 X 101 |
| QRVR=22 | 105 X 105 |
| QRVR=23 | 109 X 109 |
| QRVR=24 | 113 X 113 |
| QRVR=25 | 117 X 117 |
| QRVR=26 | 121 X 121 |
| QRVR=27 | 125 X 125 |
| QRVR=28 | 129 X 129 |
| QRVR=29 | 133 X 133 |
| QRVR=30 | 137 X 137 |
| QRVR=31 | 141 X 141 |
| QRVR=32 | 145 X 145 |
| QRVR=33 | 149 X 149 |
| QRVR=34 | 153 X 153 |
| QRVR=35 | 157 X 157 |
| QRVR=36 | 161 X 161 |
| QRVR=37 | 165 X 165 |
| QRVR=38 | 169 X 169 |
| QRVR=39 | 173 X 173 |
| QRVR=40 | 177 X 177 |

## 6. 2D Barcode Data Capacity

### 6.1 PDF417

PDF417 is a multi-row, variable-length symbology offering high data capacity and error-correction capability, it is capable of encoding 1100 bytes, 1800 ASCII characters, or 2700 digits. Every PDF417 symbol is composed of a stack of rows, from a minimum of 3 to a maximum of 90 rows, a PDF417 symbol character consists 17 modules arranged into 4 bars and 4 spaces.

### 6.2 DataMatrix

| Format    | Capacity (in digits) | Capacity (in alphanumeric characters) | Capacity (in bytes) |
|-----------|----------------------|---------------------------------------|---------------------|
| 10 X 10   | 6                    | 3                                     | 1                   |
| 12 X 12   | 10                   | 6                                     | 3                   |
| 14 X 14   | 16                   | 10                                    | 6                   |
| 16 X 16   | 24                   | 16                                    | 10                  |
| 18 X 18   | 36                   | 25                                    | 16                  |
| 20 X 20   | 44                   | 31                                    | 20                  |
| 22 X 22   | 60                   | 43                                    | 28                  |
| 24 X 24   | 72                   | 52                                    | 34                  |
| 26 X 26   | 88                   | 64                                    | 42                  |
| 32 X 32   | 124                  | 91                                    | 60                  |
| 36 X 36   | 172                  | 127                                   | 84                  |
| 40 X 40   | 228                  | 169                                   | 112                 |
| 44 X 44   | 288                  | 214                                   | 142                 |
| 48 X 48   | 348                  | 259                                   | 172                 |
| 52 X 52   | 408                  | 304                                   | 202                 |
| 64 X 64   | 560                  | 418                                   | 278                 |
| 72 X 72   | 736                  | 550                                   | 366                 |
| 80 X 80   | 912                  | 682                                   | 454                 |
| 88 X 88   | 1152                 | 862                                   | 574                 |
| 96 X 96   | 1392                 | 1042                                  | 694                 |
| 104 X 104 | 1632                 | 1222                                  | 814                 |
| 120 X 120 | 2100                 | 1573                                  | 1048                |
| 132 X 132 | 2608                 | 1954                                  | 1302                |
| 144 X 144 | 3116                 | 2335                                  | 1556                |
| 8 X 18    | 10                   | 6                                     | 3                   |
| 8 X 32    | 20                   | 13                                    | 8                   |
| 12 X 26   | 32                   | 22                                    | 14                  |
| 12 X 36   | 44                   | 31                                    | 20                  |
| 16 X 36   | 64                   | 46                                    | 30                  |
| 16 X 48   | 98                   | 72                                    | 47                  |

## 6.3 Aztec

| Format                 | Capacity (in digits) | Capacity (in alphanumeric characters) | Capacity (in bytes) |
|------------------------|----------------------|---------------------------------------|---------------------|
| 15 X 15 compact format | 13                   | 12                                    | 6                   |
| 19 X 19                | 18                   | 15                                    | 8                   |
| 19 X 19 compact format | 40                   | 33                                    | 19                  |
| 23 X 23                | 49                   | 40                                    | 24                  |
| 23 X 23 compact format | 70                   | 57                                    | 33                  |
| 27 X 27                | 84                   | 68                                    | 40                  |
| 27 X 27 compact format | 110                  | 89                                    | 53                  |
| 31 X 31                | 128                  | 104                                   | 62                  |
| 37 X 37                | 178                  | 144                                   | 87                  |
| 41 X 41                | 232                  | 187                                   | 114                 |
| 45 X 45                | 294                  | 236                                   | 145                 |
| 49 X 49                | 362                  | 291                                   | 179                 |
| 53 X 53                | 433                  | 348                                   | 214                 |
| 57 X 57                | 516                  | 414                                   | 256                 |
| 61 X 61                | 601                  | 482                                   | 298                 |
| 67 X 67                | 691                  | 554                                   | 343                 |
| 71 X 71                | 793                  | 636                                   | 394                 |
| 75 X 75                | 896                  | 718                                   | 446                 |
| 79 X 79                | 1008                 | 808                                   | 502                 |
| 83 X 83                | 1123                 | 900                                   | 559                 |
| 87 X 87                | 1246                 | 998                                   | 621                 |
| 91 X 91                | 1378                 | 1104                                  | 687                 |
| 95 X 95                | 1511                 | 1210                                  | 753                 |
| 101 X 101              | 1653                 | 1324                                  | 824                 |
| 105 X 105              | 1801                 | 1442                                  | 898                 |
| 109 X 109              | 1956                 | 1566                                  | 976                 |
| 113 X 113              | 2116                 | 1694                                  | 1056                |
| 117 X 117              | 2281                 | 1826                                  | 1138                |
| 121 X 121              | 2452                 | 1963                                  | 1224                |
| 125 X 125              | 2632                 | 2107                                  | 1314                |
| 131 X 131              | 2818                 | 2256                                  | 1407                |
| 135 X 135              | 3007                 | 2407                                  | 1501                |
| 139 X 139              | 3205                 | 2565                                  | 1600                |
| 143 X 143              | 3409                 | 2728                                  | 1702                |
| 147 X 147              | 3616                 | 2894                                  | 1806                |
| 151 X 151              | 3832                 | 3067                                  | 1914                |

## 6.4 QRCode

### 6.4.1 Level L

| Version | Capacity (in digits) | Capacity (in alphanumeric characters) | Capacity (in bytes) |
|---------|----------------------|---------------------------------------|---------------------|
|---------|----------------------|---------------------------------------|---------------------|

|    |      |      |      |
|----|------|------|------|
| 1  | 41   | 25   | 17   |
| 2  | 77   | 47   | 32   |
| 3  | 127  | 77   | 53   |
| 4  | 187  | 114  | 78   |
| 5  | 255  | 154  | 106  |
| 6  | 322  | 195  | 134  |
| 7  | 370  | 224  | 154  |
| 8  | 461  | 279  | 192  |
| 9  | 552  | 335  | 230  |
| 10 | 652  | 395  | 271  |
| 11 | 772  | 468  | 321  |
| 12 | 883  | 535  | 367  |
| 13 | 1022 | 619  | 425  |
| 14 | 1101 | 667  | 458  |
| 15 | 1250 | 758  | 520  |
| 16 | 1408 | 854  | 586  |
| 17 | 1548 | 938  | 644  |
| 18 | 1725 | 1046 | 718  |
| 19 | 1903 | 1153 | 792  |
| 20 | 2061 | 1249 | 858  |
| 21 | 2232 | 1352 | 929  |
| 22 | 2409 | 1460 | 1003 |
| 23 | 2620 | 1588 | 1091 |
| 24 | 2812 | 1704 | 1171 |
| 25 | 3057 | 1853 | 1273 |
| 26 | 3283 | 1990 | 1367 |
| 27 | 3517 | 2132 | 1465 |
| 28 | 3669 | 2223 | 1528 |
| 29 | 3909 | 2369 | 1628 |
| 30 | 4158 | 2520 | 1732 |
| 31 | 4417 | 2677 | 1840 |
| 32 | 4686 | 2840 | 1952 |
| 33 | 4965 | 3009 | 2068 |
| 34 | 5253 | 3183 | 2188 |
| 35 | 5529 | 3351 | 2303 |
| 36 | 5836 | 3537 | 2431 |
| 37 | 6153 | 3729 | 2563 |
| 38 | 6479 | 3927 | 2699 |
| 39 | 6743 | 4087 | 2809 |
| 40 | 7089 | 4296 | 2953 |

#### 6.4.2 Level M

| Version | Capacity (in digits) | Capacity (in alphanumeric characters) | Capacity (in bytes) |
|---------|----------------------|---------------------------------------|---------------------|
| 1       | 34                   | 20                                    | 14                  |
| 2       | 63                   | 38                                    | 26                  |

|    |      |      |      |
|----|------|------|------|
| 3  | 101  | 61   | 42   |
| 4  | 149  | 90   | 62   |
| 5  | 202  | 122  | 84   |
| 6  | 255  | 154  | 106  |
| 7  | 293  | 178  | 122  |
| 8  | 365  | 221  | 152  |
| 9  | 432  | 262  | 180  |
| 10 | 513  | 311  | 213  |
| 11 | 604  | 366  | 251  |
| 12 | 691  | 419  | 287  |
| 13 | 796  | 483  | 331  |
| 14 | 871  | 528  | 362  |
| 15 | 991  | 600  | 412  |
| 16 | 1082 | 656  | 450  |
| 17 | 1212 | 734  | 504  |
| 18 | 1346 | 816  | 560  |
| 19 | 1500 | 909  | 624  |
| 20 | 1600 | 970  | 666  |
| 21 | 1708 | 1035 | 711  |
| 22 | 1872 | 1134 | 779  |
| 23 | 2059 | 1248 | 857  |
| 24 | 2188 | 1326 | 911  |
| 25 | 2395 | 1451 | 997  |
| 26 | 2544 | 1542 | 1059 |
| 27 | 2701 | 1637 | 1125 |
| 28 | 2857 | 1732 | 1190 |
| 29 | 3035 | 1839 | 1264 |
| 30 | 3289 | 1994 | 1370 |
| 31 | 3486 | 2113 | 1452 |
| 32 | 3693 | 2238 | 1538 |
| 33 | 3909 | 2369 | 1628 |
| 34 | 4134 | 2506 | 1722 |
| 35 | 4343 | 2632 | 1809 |
| 36 | 4588 | 2780 | 1911 |
| 37 | 4775 | 2894 | 1989 |
| 38 | 5039 | 3054 | 2099 |
| 39 | 5313 | 3220 | 2213 |
| 40 | 5596 | 3391 | 2331 |

#### 6.4.3 Level Q

| Version | Capacity (in digits) | Capacity (in alphanumeric characters) | Capacity (in bytes) |
|---------|----------------------|---------------------------------------|---------------------|
| 1       | 27                   | 16                                    | 11                  |
| 2       | 48                   | 29                                    | 20                  |
| 3       | 77                   | 47                                    | 32                  |
| 4       | 111                  | 67                                    | 46                  |

|    |      |      |      |
|----|------|------|------|
| 5  | 144  | 87   | 60   |
| 6  | 178  | 108  | 74   |
| 7  | 207  | 125  | 86   |
| 8  | 259  | 157  | 108  |
| 9  | 312  | 189  | 130  |
| 10 | 364  | 221  | 151  |
| 11 | 427  | 259  | 177  |
| 12 | 489  | 296  | 203  |
| 13 | 580  | 352  | 241  |
| 14 | 621  | 376  | 258  |
| 15 | 703  | 426  | 292  |
| 16 | 775  | 470  | 322  |
| 17 | 876  | 531  | 364  |
| 18 | 948  | 574  | 394  |
| 19 | 1063 | 644  | 442  |
| 20 | 1159 | 702  | 482  |
| 21 | 1224 | 742  | 509  |
| 22 | 1358 | 823  | 565  |
| 23 | 1468 | 890  | 611  |
| 24 | 1588 | 963  | 661  |
| 25 | 1718 | 1041 | 715  |
| 26 | 1804 | 1094 | 751  |
| 27 | 1933 | 1172 | 805  |
| 28 | 2085 | 1263 | 868  |
| 29 | 2181 | 1322 | 908  |
| 30 | 2358 | 1429 | 982  |
| 31 | 2473 | 1499 | 1030 |
| 32 | 2670 | 1618 | 1112 |
| 33 | 2805 | 1700 | 1168 |
| 34 | 2949 | 1787 | 1228 |
| 35 | 3081 | 1867 | 1283 |
| 36 | 3244 | 1966 | 1351 |
| 37 | 3417 | 2071 | 1423 |
| 38 | 3599 | 2181 | 1499 |
| 39 | 3791 | 2298 | 1597 |
| 40 | 3993 | 2420 | 1663 |

#### 6.4.4 Level H

| Version | Capacity (in digits) | Capacity (in alphanumeric characters) | Capacity (in bytes) |
|---------|----------------------|---------------------------------------|---------------------|
| 1       | 17                   | 10                                    | 7                   |
| 2       | 34                   | 20                                    | 14                  |
| 3       | 58                   | 35                                    | 24                  |
| 4       | 82                   | 50                                    | 34                  |
| 5       | 106                  | 64                                    | 44                  |
| 6       | 139                  | 84                                    | 58                  |

|    |      |      |      |
|----|------|------|------|
| 7  | 154  | 93   | 64   |
| 8  | 202  | 122  | 84   |
| 9  | 235  | 143  | 98   |
| 10 | 288  | 174  | 119  |
| 11 | 331  | 200  | 137  |
| 12 | 374  | 227  | 155  |
| 13 | 427  | 259  | 177  |
| 14 | 468  | 283  | 194  |
| 15 | 530  | 321  | 220  |
| 16 | 602  | 365  | 250  |
| 17 | 674  | 408  | 280  |
| 18 | 746  | 452  | 310  |
| 19 | 813  | 493  | 338  |
| 20 | 919  | 557  | 382  |
| 21 | 969  | 587  | 403  |
| 22 | 1056 | 640  | 439  |
| 23 | 1108 | 672  | 461  |
| 24 | 1228 | 744  | 511  |
| 25 | 1286 | 779  | 535  |
| 26 | 1425 | 864  | 593  |
| 27 | 1501 | 910  | 625  |
| 28 | 1581 | 958  | 658  |
| 29 | 1677 | 1016 | 698  |
| 30 | 1782 | 1080 | 742  |
| 31 | 1897 | 1150 | 790  |
| 32 | 2022 | 1226 | 842  |
| 33 | 2157 | 1307 | 898  |
| 34 | 2301 | 1394 | 958  |
| 35 | 2361 | 1431 | 983  |
| 36 | 2524 | 1530 | 1051 |
| 37 | 2625 | 1591 | 1093 |
| 38 | 2735 | 1658 | 1139 |
| 39 | 2927 | 1774 | 1219 |
| 40 | 3057 | 1852 | 1273 |

## 7. Troubleshooting Guide

### 7.1 "MW6 Demo" For The Trial Version

If you use the trial version software to print the linear barcodes such as Code 128 and Code 39, you will see "MW6 Demo" displayed in the barcode, for the full version software, this string will not be there.

## 7.2 Unknown Escape Code

The most common SAPlpd error message is "**Unknown Escape Code ...**", which indicates that SAPlpd.exe doesn't understand the data stream from the SAP spool server.

Do the following things:

- 1) Ensure that you have followed the step-by-step configuration instructions.
- 2) Ensure that the print control only contains the valid characters.

## 7.3 No Barcodes Are Printed

Ensure that you are using a correct host spool access method.

Please refer to the "[3.2.2 Host Spool Access Method](#)" for more details.

## 7.4 2D Barcode String Length Limit

Both SAPscript and Smart Forms only allow up to 70 characters for each barcode. This restriction, in some cases, will cause the problems for 2D barcodes, since they are quite often used to encode a large amount of data. Fortunately, there are a few workarounds available:

- 1) For SAPScript:
  - Select a smaller font size, please refer to the SAP Note 197177.
  - Use the new command "RAWTEXT", please refer to the SAP Note 497491.
- 2) For Smart Forms, please refer to the SAP Note 497380.

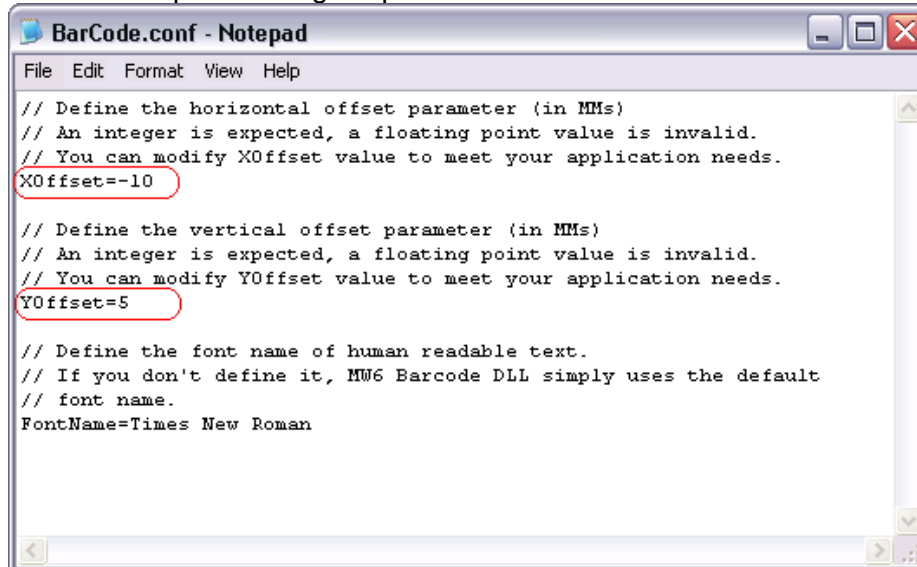
## 7.5 Wrong Barcodes Are Printed

You always get wrong type of barcodes (e.g. Interleaved 2 of 5) printed out, though you specify a different type of barcode in the print control. The reason could be that you use SAPWIN instead of SWIN as the base device type, so double check the step "Create A New Device Type" to ensure you use SWIN as the base device type.

## 8. BarCode.conf File

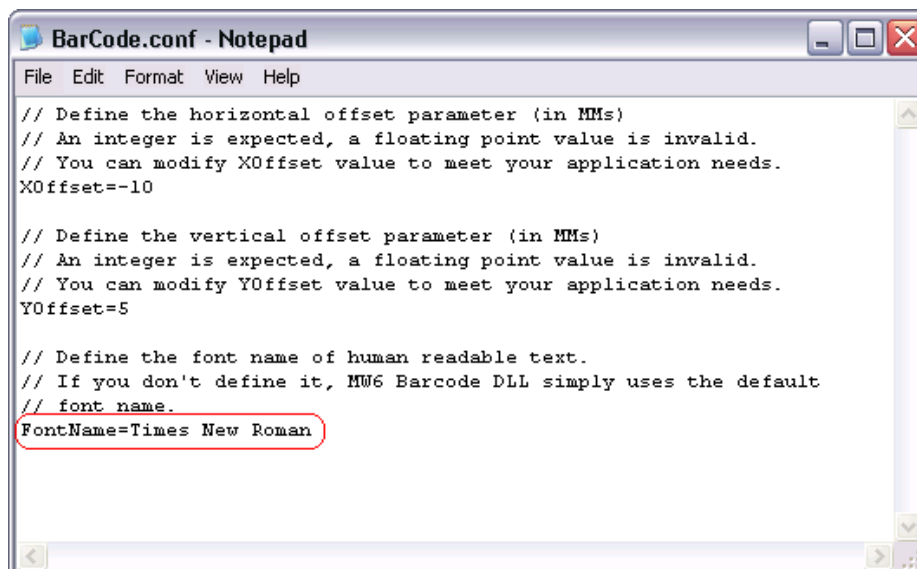
You can modify the parameters in *BarCode.conf* file to adjust the position of the printed barcode and change the font name of the human readable text, all parameters are defined line by line.

The horizontal offset parameter ("XOffset") and the vertical offset parameter ("YOffset") are defined in millimeters (MMs), a positive offset indicates that the printed barcode is positioned to the right or bottom of the original point, a negative offset indicates that the printed barcode is positioned to the left or top of the original point.



```
BarCode.conf - Notepad
File Edit Format View Help
// Define the horizontal offset parameter (in MMs)
// An integer is expected, a floating point value is invalid.
// You can modify XOffset value to meet your application needs.
XOffset=-10
// Define the vertical offset parameter (in MMs)
// An integer is expected, a floating point value is invalid.
// You can modify YOffset value to meet your application needs.
YOffset=5
// Define the font name of human readable text.
// If you don't define it, MW6 Barcode DLL simply uses the default
// font name.
FontName=Times New Roman
```

The font name parameter ("FontName") is used to define the font name of the human readable text.



```
BarCode.conf - Notepad
File Edit Format View Help
// Define the horizontal offset parameter (in MMs)
// An integer is expected, a floating point value is invalid.
// You can modify XOffset value to meet your application needs.
XOffset=-10
// Define the vertical offset parameter (in MMs)
// An integer is expected, a floating point value is invalid.
// You can modify YOffset value to meet your application needs.
YOffset=5
// Define the font name of human readable text.
// If you don't define it, MW6 Barcode DLL simply uses the default
// font name.
FontName=Times New Roman
```