

Using SAP® Smart Forms for Bar Code Label Printing from mySAP™ Business Suite



A ZEBRA BLACK&WHITE PAPER





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Executive Summary

mySAP Business Suite from SAP AG helps organizations manage comprehensive financial, manufacturing, human resources, sales, and distribution functions that are essential to their operations. While dynamic documents and reports are the predominant printed output from SAP modules, customers also want to output high-quality bar code labels with graphics for applications such as manufacturing, shipping, item tracking, and stock control. Such labels require the use of specialty bar code label printers, which SAP did not support until recently.

In response to customer requirements, SAP has extended the bar code design and printing of its Smart Forms design software. SAP added bar code support to Smart Forms by licensing and integrating bar code rendering technology from Zebra Technologies Corporation into the software, and by developing its first true bar code label printer drivers for mySAP Business Suite. The bar code printer driver supports only Zebra Programming Language (ZPL®) for its output. SAP now natively outputs PCL, Postscript®, and Prescribe for forms, and ZPL for labels. The capability to leverage the data integrity provided by SAP modules can now be realized by directly integrating bar code labeling into many common business processes, with the exact same tool—Smart Forms—used for any form printed on a laser printer.

Customers who wish to integrate bar code label printers within mySAP Business Suite are presented with the option to either design the label using SAP's Smart Forms layout tool, upload the printer programming language into a SAPscript layout, or use label design software in combination with an external service (middleware, typically on a Windows NT® or Unix® server).

This white paper focuses specifically on SAP's Smart Forms option for bar coding. The Zebra Technologies white paper "Bar Code Printing Options for SAP End Users" provides an overview of the various other methods for generating bar code output from SAP applications. See the white paper "BAR-ONE® for mySAP™ Business Suite" to learn more about Zebra's software upload solution. SAP documentation, located on SAPnet (www.sdn.sap.com), describes how label printers can be driven direct from mySAP Business Suite. Refer to SAPnet notes 750002 and 750772.

Introduction

mySAP Business Suite forms have traditionally been designed by manually coding SAPscript commands. SAPscript then requires an SAP-developed printer driver for the target device. The problem that both SAPscript and Smart Forms have faced is that neither of them, until now, have had a true bar code label printer driver. SAPscript is also not supported on some of the new modules available with mySAP Business Suite.

SAPscript users have worked around the driver limitation by uploading the label printer's command language—ZPL, for example—then sending print jobs directly to the printer via a generic ASCII line printer driver. SAP has created versions of these generic ASCII drivers for various bar code label printer manufacturers, but none of them are true printer drivers that support all the specific features bar code label printers provide.



mySAP Business Suite also supports printing with Windows® drivers via the SAPWin device type and SAPlpd. This approach is not suitable for bar code label printing and specialty bar code label printers because:

- SAPWin device type has no support for bar code label printer features such as printer-resident bar code symbologies, cutter, Flash memory, print speeds, print mode, darkness, etc.
- SAPWin device type and bar code label Windows printer drivers may send the entire label down as a graphic, and need to do this for every label with variable data. This results in slow printing and lots of network traffic, and is not suitable for industrial applications.
- Smart Forms bar codes, until recently, have not been supported with the SAPwin device type. Users need to acquire and license a third-party bar code DLL. These bar codes are downloaded as bitmap objects via Windows drivers. This approach is expensive and can reduce printer performance and bar code accuracy.
- SAPWin does not support printing directly from the server to the printer (SAPlpd must be used). SAP does not recommend using SAPlpd for industrial or high-volume applications.

Producing Bar Codes with Smart Forms

Smart Forms is a graphical forms design tool that was developed with the purposes of letting everyday SAP users design forms themselves, instead of relying on programmers, as was the case with SAPscript. Smart Forms provides high performance, even during high-volume printing, when using its native printer drivers (PCL, Postscript, Prescribe, and ZPL). Smart Forms has been available for several years, since mySAP Business Suite version 4.6c was launched, and has been used by some of the world's largest SAP sites. Now that Smart Forms supports bar code rendering and bar code printers, it can also be used for label design.

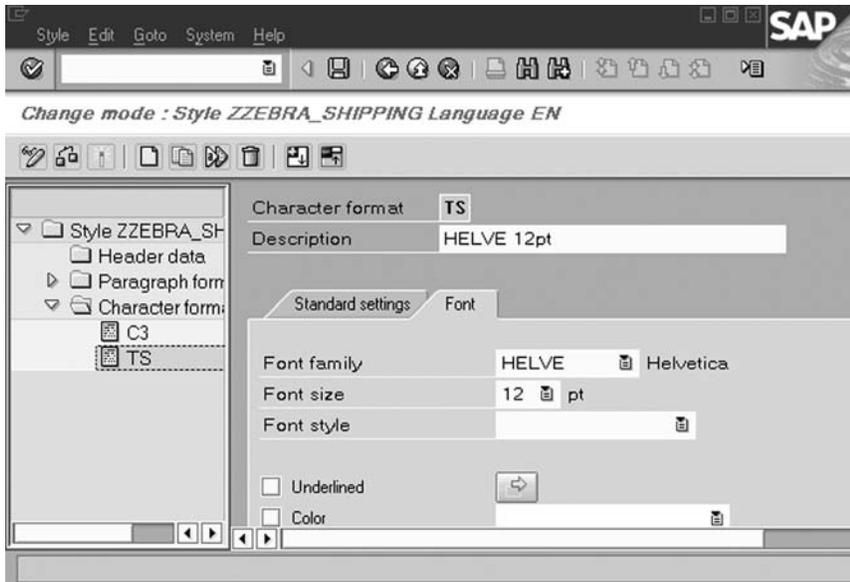
Formatting attributes on the label are easily moved, changed, added, or deleted using the Smart Forms design tool. No SAPscript programming is required to make formatting changes. Label size, font types, bar code symbology, line spacing, justification, logos, lines, boxes, and variable data can all be specified within the label design. A label can easily be modified at any time and activated all within SAPgui without the need to program ABAP or SAPscript.

After the form or label is designed graphically in Smart Forms, it simply has to be activated. Once live, the label can be printed from any other mySAP Business Suite client, anywhere in the world, on any Zebra printer on the network, without the need to purchase, set up or maintain any additional software. Smart Forms is a complete SAP-developed and -delivered solution; the printing is done direct from the mySAP Business Suite server.

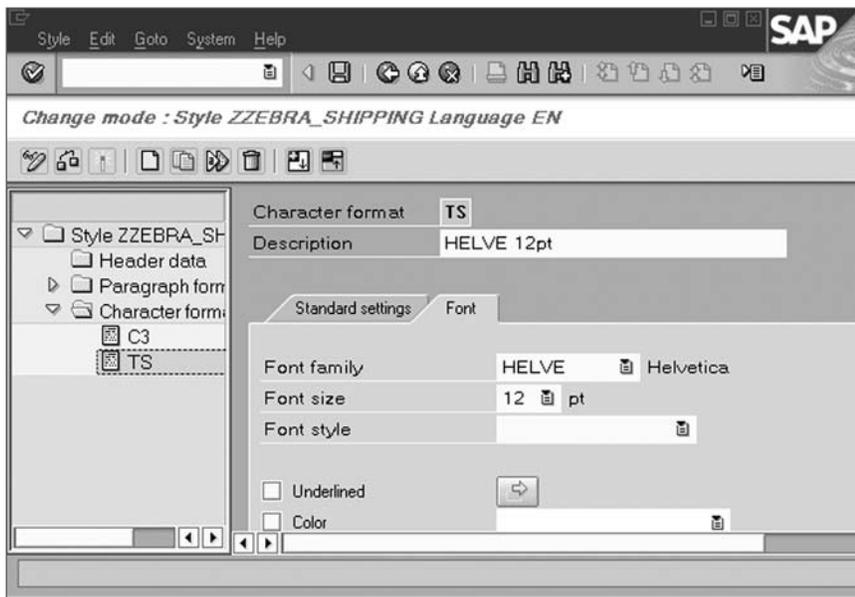
Older versions of mySAP Business Suite will require the correct SAP support pack and the relevant SAP-developed Zebra device type. The Zebra device driver for mySAP Business Suite is available from the SAP FTP site. Visit www.sdn.sap.com and refer to SAPnet notes 750002 and 750772. The driver can be installed in only a few minutes and it never needs to be maintained or modified.

Three Steps to Bar Code Printing

Step 1—Define the bar code and text styles that you will use within your labels. This style collection ensures that all of your labels will have a consistent look and feel (if required).



Step 2—Lay out the label graphically using Smart Forms. Place fixed or variable objects on the label including text, bar codes, logos, lines, boxes, etc.



Step 3—Save, activate, and test the form all with a couple of mouse clicks. The completed format resides on the server and can be used to output variable-data bar code labels on any printer on the network.



Benefits to Using Smart Forms and Zebra® Printers

In choosing the Smart Forms method over the SAPscript approach, mySAP Business Suite users can leverage much easier and less time-consuming integration with the ABAP print program. Smart Forms also provides you with a single solution that can be used for both forms and labels, on both laser printers and bar code label printers. With Smart Forms, users get the same mission-critical, proven technology as SAPscript, but with lower total cost of ownership.

The advantages of selecting Smart Forms over middleware are similar to those of SAPscript. You can use the existing SAP print spooler and eliminate the need to purchase, set up, and maintain the middleware application for every server at every separate site location. This approach can also improve process throughput.

Utilizing Smart Forms, users can now integrate bar coding into any existing mySAP Business Suite application. Smart Forms now provides the form and label design capabilities that support all the core functionality and high performance of Zebra printers. Below are a few of the benefits available from the combination of Zebra printers and SAP Smart Forms:

- Smart Forms is much easier and quicker to integrate with ABAP print programs compared to traditional SAPscript.
- SAPscript has drivers for mainstream office printers but not bar code label printers. SAPscript uses pass-through drivers that require the printers' command language to be uploaded into a form. The ZPL bar code printer driver in Smart Forms simplifies set up and enables maximum throughput.
- Smart Forms supports print preview of bar codes.
- Smart Forms supports complex forms functionality that can now be used with label printers. This includes dynamic forms, which allow subsequent labels in a batch or print run to be laid out differently to that of the first label.
- The Smart Forms ZPL driver maps all objects to printer-resident objects rather than downloading them as graphics. This means that bar codes, lines, and text are transmitted as ZPL commands, ensuring high-quality, readable bar codes and the fastest possible label throughput.
- The Smart Forms ZPL driver supports options specific to bar code printers, including darkness control, speed, print mode, and many more settings. With full support of options, printers can be optimized to provide maximum performance and label quality for the specific usage environment.
- Smart Forms now provides a single layout tool that can be used natively for both laser and bar code printers. The same designers can design forms and labels with the same user interface. This eliminates the need for proprietary bar code specialist knowledge, minimizes the impact of staff turnover, and provides independence from expensive third-party programming.

SAP's ZPL driver also offers support for international character printing similar to what it offers for HP and Lexmark. Optional PC Cards loaded with Andale™ Worldtype® fonts provides support for most of the world's major languages. Support is also provided for Zebra's own preloaded Swiss™ Unicode™ font that contains most of the languages needed for use in Europe, the Middle East, and Africa (EMEA).

All Zebra-resident scaleable fonts are fully supported, including Zebra's "EMEA ready" Swiss Unicode that contains approximately 936 characters. Windows TrueType™ fonts are also supported. TrueType fonts can even be used for variable data, including serial numbers, without slowing label throughput. Support is also included for optional Zebra-resident Unicode Asia/Pacific scaleable fonts (Andale).

The major features and benefits of using SAP Smart Forms with Zebra printers are listed below:

Feature	Benefits
Solution is 100 percent developed, tested and bundled by SAP.	No additional third-party licensing is required. Confidence of SAP reliability, stability, and future support. No new learning curve to support a new design or programming environment, which provides significant cost savings by enabling faster implementation and preventing training and programming expenses.
Smart Forms is optimized for Zebra printers (ZPL) via native drivers in the same way it is for laser printers (PCL and Postscript).	Provides full functionality and maximum performance with Zebra including maximum print speed, word wrapping, text justification, and printer settings.
Common form and label layout tool	The same staff that designs forms can now design labels. Generally, no specialists or used for both laser and label printers. Proprietary skills are required. In-house control over label design provides significant cost savings and prevents costly programming expenses.
Non-programmers can modify labels.	Easy and inexpensive to maintain. No need for ABAP or SAPscript specialists. Programming and integration expenses are avoided.
Print directly from any mySAP Business Suite server.	No need to use PCs or SAPlpd as print servers. This reduces cost and ongoing support needs, and improves print speed.



Conclusion

Smart Forms provides an easy, fast way to print complex bar coded labels on demand on Zebra printers from mySAP Business Suite. Users can count on complete data and application integrity because Smart Forms is a complete label solution that is built into the core of mySAP Business Suite.

Labels are easier to design and maintain because they are managed within a familiar environment that requires no specialist label or form skill sets. Labels can be printed on almost any native computer platform, directly from the server, while still maintaining the features and performance normally only found in PC-based labeling software. All of this Smart Forms functionality is now possible because SAP created its first true, native bar code printer driver (for ZPL only) and has integrated the Zebra bar code rendering library within the core mySAP Business Suite.

For more information on Zebra printers, SAP and other connectivity solutions, visit www.zebra.com/smartforms.



Notes



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