Integration Overview

Importing Data and Controlling BarTender

from within Other Programs

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Introduction

While BarTender label printing software from Seagull Scientific is often used as a traditional desktop application, it is also designed to integrate with other applications to provide label-printing services. This white paper will discuss importing data to BarTender from other software applications and controlling BarTender from other applications.

Executive Summary

One of the features of BarTender's Enterprise Edition is its ability to interface, with and be controlled by, other applications. Your ERP, accounting, manufacturing, inventory, shipping and other supply-chain applications (running stand-alone or across the enterprise) can easily use BarTender, running invisibly, as a label-printing engine. Your existing software can tell BarTender what data to print, which label design to use, when to print the labels, and which printer to select.

System Design

The two primary sets of decisions you will make to integrate BarTender as a label-printing engine concern:

- Importation of Data to BarTender

- Control of BarTender by the other Application

You will need to combine one of the data importation options with one of the BarTender control options in order to produce an integrated label-printing system. Some details about each set of options are in the remaining sections.

Data Importation

The first design decision to be made is how your software will import data to BarTender. You may choose from a variety of data sources. BarTender can read a single table in a single database, multiple tables in a single database, or multiple tables in multiple heterogeneous databases. There are four basic families of data sources:

- Delimited, or Fixed Width, Text Databases

- ODBC Databases

- SAP R/3 IDoc Files

- ActiveX Automation (COM) Scripts

Delimited, or Fixed Width, Text Databases

BarTender can read a variety of text formats including formats in which the data fields have fixed-widths and formats in which the data fields are delimited. Delimitation characters include tabs, quotation marks, commas, mixed quotation marks and commas, and user-selected symbols. Most of your existing software can easily generate these formats as text files. Typically, the software exports the results of a query. In such cases, users will usually have BarTender print a label from each record in the file. At other times, the exported file contains more records than required, and BarTender will perform a query on the text file to extract and use only the desired records.

Delimited text formats are most often transferred using a shared file system.

ODBC Databases

BarTender uses open database connectivity (ODBC) to read data directly from most databases. You can choose to either have BarTender join multiple tables and perform a query or, if your ODBC driver supports it, you can send the results of a query executed in your software to BarTender.

SAP R/3 IDoc Files

When integrating BarTender with R/3, IDocs are often the best solution. Using Application Link Enabling (ALE), you can specify what data to transfer in the IDoc and what transaction should generate the IDoc file. BarTender is configured to parse the IDoc file and extract the desired data.

ActiveX Automation (COM) Scripts

BarTender's ActiveX Automation interface allows you to programmatically assign values for any named sub-string in the label design. This data importation option is used only in conjunction with ActiveX Automation *control* of BarTender. For more information, see the *ActiveX Automation* section.

BarTender Control

Once you have decided how the data will be imported, you need to decide how BarTender will be controlled by one of your other applications. The application will need to tell BarTender which label design to use, what data to print, when to print it, and which printer to use. There are three ways that an application can control BarTender:

- Using the Command-Line Interface

- Using ActiveX Automation

- Using the Commander Integration Utility

Command-Line Interface

BarTender's command-line interface does not offer all the functionality of its ActiveX Automation interface, but command lines are a good choice for basic printing needs. The command-line interface is well suited for data importation that uses a shared file system or ODBC, and it can be used when you need to run BarTender using a batch file, or from a **Shell Execute** command within a programming language.

For complete documentation of BarTender's command-line interface, see the *Automating BarTender, Command-Line Parameters* topic in BarTender's help. The help file is installed with all editions of BarTender, including Trial Edition. The Trial Edition can be downloaded at www.seagullscientific.com.

ActiveX Automation

ActiveX Automation (also known as Automation, OLE Automation, or COM) is a Microsoft standard for interaction between Windows programs. ActiveX Automation allows users to control BarTender directly from their program by calling methods (functions) and reading and writing various properties (data values) in BarTender.

The Enterprise Edition of BarTender is required for ActiveX Automation support. Numerous functions are available for controlling BarTender including: loading

BarTender, specifying a label format, selecting a data source and specifying the desired network printer. As mentioned previously in this paper, Automation can also be used for data import. For complete documentation of all features available in BarTender's Automation interface, see the *Automating BarTender, ActiveX Automation* topic in BarTender's help.

Automation is well suited when the highest level of integration is needed; but, like the command line interface, it can also be used with ODBC or with a shared file system. BarTender's Automation interface requires the use of a program that supports Automation, which is true of most standard Windows development tools, including:

- Visual Basic, VBA (Visual Basic for Applications), and VBScript (Visual Basic Script)

- Visual C, Visual C++, Visual C#, and other versions of C for Windows

- Java, Visual J++, Visual J#, JavaScript, and Jscript

- Delphi

- Access, Word, Excel, or any application that supports VBA

- Power Builder

- Any language for which there is an ActiveX scripting engine that runs in the Windows Scripting Host, including PERL, Python, and REXX

Commander Integration Utility

Commander is available with the Enterprise Edition of BarTender. It typically runs as a service on Windows NT/2000/XP, and is commonly used in large, partially non-Windows, enterprise systems where directly controlling a Windows program would otherwise be difficult, if not impossible.

Commander works by monitoring your system for a triggering event such as the placement of a file in a user-specified directory or the arrival of an e-mail message in a user-specified mailbox. When the event occurs, Commander sends label-printing instructions to BarTender. For example, a non-Windows order-fulfilment application enters data about an order into a database and saves an empty file named NewOrder.dat in a directory being watched by Commander. Commander finds the file

and launches BarTender with a label format that has been configured to query the database about orders entered after a specified time. BarTender reads the data and prints the label. Commander then deletes the NewOrder.dat file and resumes monitoring the directory.

Commander is often used instead of Automation or command lines because it is simple to set up and use. There are also situations where Commander is required because Automation and command lines are not an option:

- It is not possible to issue ActiveX Automation commands from the application that you wish to use to control BarTender

- You're working with a non-Windows platform such as UNIX, AIX or AS/400 and no means exists for directly transmitting the necessary command(s) to the Windows system running BarTender. This is a common scenario in large enterprise (ERP) environments.

For more information about Commander, refer to Seagull Scientific's white paper *Commander Enterprise Integration Utility*.

Conclusion

There is often more than one way to integrate BarTender with your existing software. The best way will not just depend on the capabilities of your software, but on the integration methods you prefer to use. Fortunately, BarTender's versatile data import capabilities and powerful support for controlled execution provide you with all the tools you need to ensure a successful, painless integration.