



The Advantage of *Drivers by Seagull™*

How True Windows® Printer Drivers by Seagull
Help Make BarTender the Fastest, Easiest,
Most Reliable way to Print Labels,
Barcodes, Cards and RFID Tags



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The Leader in True Windows Printer Drivers

Seagull Scientific was the very first company to design true Windows drivers for label printers. Over the years we have added support for a great variety of industrial printers, including:

- Label printers
- Card printers (including “smart card” support)
- Print and apply systems
- RFID tag printers
- Specialty inkjet printers
- Many others

Today, we are the world’s largest developer of such drivers and proud to be the official driver supplier to many well-known printer manufacturers.

Designed for compatibility with all Windows programs, when Drivers by Seagull™ are used with our BarTender design and print software, they can take advantage of special high-performance printing features not normally accessible to other Windows programs.

The Advantage of Windows Printer Drivers vs. “Embedded” Drivers

Understanding Printer Drivers

Drivers are special software modules that are used by programs to communicate with hardware and software. The main job of Windows printer drivers is to translate the graphic control commands output by your Windows programs into commands understood by your printer. It can work in reverse too: If a printer offers status information, a full-featured printer driver can make that information available to Windows and certain programs.

To best understand the special capabilities of BarTender and Drivers by Seagull, let’s first review two different printing methods:

- Embedded Printer Drivers (used by some competing label programs)
- True Windows Printer Drivers (used by BarTender and most Windows programs)

The Problem with “Embedded” Printer Drivers

Before Microsoft created open driver standards for Windows, most of a program’s printing functions were locked (or “embedded”) inside of the program and could only be used by *that* program. Although most professional business software long ago switched to using separate, shareable Windows printer drivers, many label and card printing programs still use embedded

printing methods similar to how DOS software worked in the 1980s. This closed architecture is less flexible, less Windows compatible, and more difficult to maintain and upgrade than design and print software based on true Windows drivers.

Because it is much harder for “embedded” drivers to buffer print jobs using the Windows spooler, some companies provide proprietary alternatives to the Windows spooler and Print Manager. That means these companies spend time and money developing features that Microsoft already gives you for free with Windows. It also forces you to learn a second set of administrative utilities and it may even require an extra, dedicated server box.

In contrast, with Drivers by Seagull, you use standard Windows functions to set print access rights, configure printers, monitor job queues and delete print jobs. There’s nothing new to learn and you don’t need extra computers.

How Microsoft Helps Make Drivers by Seagull so Fast

We benefit from the effort of thousands of Microsoft programmers, instead of competing against them. Applications that embrace *true* Windows printer drivers automatically get access to the Windows’ print spooler, Print Manager, advanced printer port control, high-speed network printing, extended font capabilities, and additional Microsoft-provided features and functions.

How True Windows Printer Drivers give BarTender an edge over other Design and Print Software

BarTender was the first program to support thermal label printers *and* offer full compatibility with true Windows printer drivers. Unlike label and card printing software with “embedded” printer drivers, this gives BarTender many advantages, including:

Access to Numerous Existing Drivers

BarTender offers full compatibility with a truly remarkable variety of thermal, laser, ink-jet and dot-matrix printers – regardless of whether or not we wrote the printer driver.

Outstanding Font Variety and Better Looking Labels and Cards

When your software prints using true Windows printer drivers, you can choose from the widest possible variety of fully scalable fonts and view them with the best available accuracy on screen before you print. And, when supported by your printer, Drivers by Seagull can download the TrueType fonts to your printer so that you don’t have to print them as bitmaps. This allows for the fastest possible printing.

Easier, More Cost-Effective Upgradeability

Our printer drivers are available for free on our web site. So, if you purchase a new printer or update your printer’s firmware, or if you just need an updated driver for use with BarTender, you can simply download and install it *for free*.

Use of Windows Spooler Speeds up Printing

When software with “embedded” drivers outputs your print jobs, your computer often becomes unusable until printing is complete.

In contrast, Drivers by Seagull can optionally use the “Spooler” built into Windows. Since the Spooler can buffer data much faster than your printer, your programs finish generating print jobs faster and your computer is ready again more quickly.

Some programs that use “embedded” printer drivers also use their own proprietary spoolers and print managers to buffer print jobs. With limited development resources and less knowledge of the internals of Windows than Microsoft, it is very difficult for these companies to offer the same kind of performance.

Reduced Training, Administration and Technical Support

Whether you’re printing locally or to a network printer, all networks require a certain amount of administration. And some problems are expected, such as running out of labels or forgetting to turn a printer on. Fortunately, with BarTender and Drivers by Seagull, managing these tasks is greatly simplified. You use standard Windows functions to set access rights, configure printers, monitor job queues and delete print jobs, so there’s nothing new to learn.

In contrast, with the proprietary print spoolers and homegrown network support provided by most design and print programs that use “embedded” printer drivers, you need to learn a second set of printing utilities with its own unique behavior.

No Extra Servers Required

Some software companies not only force you to use a proprietary spooler and print manager, but require that you purchase and install a special dedicated server box that does nothing except host this extra software.

Better Network Compatibility and Speed

The same capabilities that Windows uses to intercept and “spool” print jobs are also used to redirect print jobs across your network at the fastest possible speed. That’s why BarTender’s performance advantages in comparison to using proprietary spoolers actually increase significantly when printing multiple print jobs at the same time to different locations on your network. And BarTender doesn’t require any add-on software components in order to achieve its superior network performance.

Expanding Upon the Microsoft Windows Printer Driver Standard

Many label printers move labels much faster than a laser printer can move paper. Label printers therefore often support special high-speed commands designed to minimize waiting for data from the computer. Unfortunately, access to these printer optimizations is not standard in *any* operating system, including Windows. Neither is access to features for

encoding RFID tags and smart cards. That's why Drivers by Seagull automatically adapt to your software:

Drivers by Seagull used with BarTender: You get access to all features and optimizations in the printer, including device bar codes, RFID support, smart card encoding, template caching, graphics caching, and device serialization.

Drivers by Seagull used with Other Software: When you use other software (such as Word, Excel, Access, etc) with our drivers, you can easily print graphics and access printer-based fonts. However, your other software can only access printer-based bar codes by using our driver's bar code utility fonts. Except for the font functions discussed below, the following high speed printer optimizations and advanced features are only available when using BarTender and not your other software.

Printer Optimizations and Advanced Features

Drivers by Seagull will let any of your Windows programs print labels and cards containing bar codes, text and graphics. So, whether you're using Word, Access, Excel or BarTender, you can use the very same printer drivers.

A major advantage of using BarTender and Drivers by Seagull together is that you gain access to the following optimizations when offered by your printer. (Some features, such as font downloading and caching, depend on sufficient memory being available in the printer.)

Printer-based Serialization

In print jobs that include serial numbers, many printers can accept a starting value and the incremental step size. With card and label printers, for example, this allows you to print a large number of serialized items without having to send any data after the first label or card.

Printer-based Bar Codes

Printers with built-in bar codes allow software to request complex bar codes using simple text strings (such as "1234"). This is much faster than sending bitmap images (or pictures) of bar codes that consume hundreds or thousands of extra bytes per printed label, card or other items. (When using software other than BarTender, our driver fonts give you some limited functionality.)

Printer-encoded RFID Tags

Printers with built-in RFID encoders allow you to encode RFID tags while printing. Drivers by Seagull allow BarTender to present a simplified user interface for supplying the data to be encoded in the tags. (When using software other than BarTender, our driver fonts give you some limited functionality.)

Printer-encoded Smart Cards and Magnetic Stripes

Drivers by Seagull support the encoding of data into magnetic stripes and both types of smart card memory:

- Contactless (or RFID)
- Contact (or “touch”)

Printer-based Real Time Clock

Printers with a built-in real time clock can print the time and date in a text object, bar code, or RFID tag. Drivers by Seagull allow BarTender to present a simplified user interface for accessing the printer’s clock.

Downloadable Fonts

(This feature available with Drivers by Seagull whether or not you use BarTender.)

The fastest way to print text is with a printer’s built-in fonts. However, no printer offers the full variety of font styles available in Windows. Fortunately, Drivers by Seagull can download fonts from Windows into printers that support doing so. Depending on the capabilities of your printer, these fonts may be downloaded as TrueType fonts or just as bitmap fonts. Your Windows programs can then print with these fonts as quickly and easily as if they came built into the printer.

Printer-based Format Optimization

When supported by the printer, BarTender and Drivers by Seagull can send all of the required text, bar code, and graphic formatting commands *just once* at the beginning of a print job and then send just the variable character data for each label, card or other item to be printed.

Static Graphics and Static Object Optimization

Some information is often repeated identically on each label, card or other item printed. Therefore, many printers can store the unchanging parts of your template design at the start of a print job, so it doesn’t have to be resent with each label, card or other item to be printed.

Caching of Graphics and Printer Code Templates

Most printers allow for templates and graphics to be stored indefinitely in the printer for reuse at any future time. Drivers by Seagull take advantage of these features to implement automatic graphic and template caching. So, whether you have specified a graphic that changes, a graphic that stays the same on several different documents, or you are printing several different templates, our drivers can cache this information in your printer to allow for faster printing.

Some Special Features of Drivers by Seagull™

This section discusses a variety of features in Drivers by Seagull that are not usually available in other Windows printer drivers.

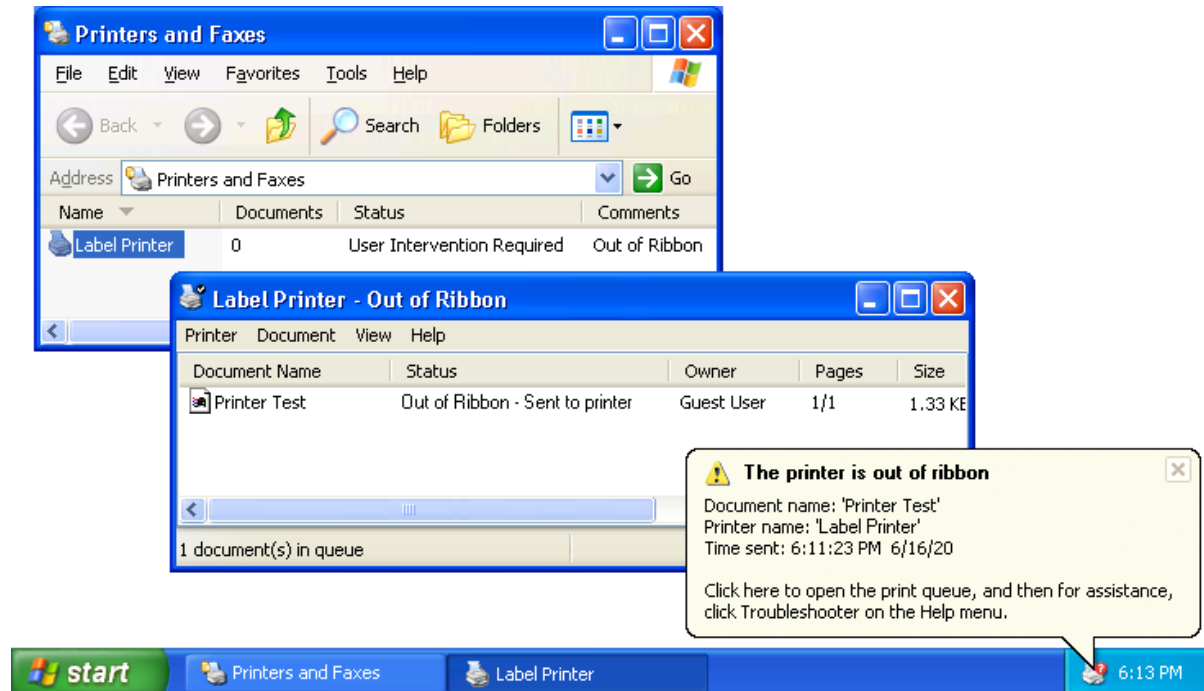
Advanced Status Monitor Support Improves Productivity

Using bidirectional printer communication (“bi-di”), many printer drivers can report basic conditions such as “Printer Offline” and “Toner Low” to the Windows spooler. But Drivers by Seagull can report a much greater variety of status conditions. These range from the basic, such as ribbon and label out, to the more advanced, such as a print-head temperature error.

Convenient Display of Status Information

You don’t need BarTender or its Printer Maestro companion application to view this enhanced printer status information. Just install the appropriate Seagull Windows printer driver on a client PC and the status of the printer, even if remotely located on the network, will be visible in:

- The Windows “Printers and Faxes” folder
- “Print Queue” windows
- The system tray



Messages from the Status Monitor display in standard Windows locations. (Actual user-interface is translated into more than 20 languages.)

Success Verification

The status monitor for Drivers by Seagull even provides options to pause for success verification for each printed page or job. (This is helpful in heavily regulated environments such as medical and pharmaceutical industries.)

More Detail Available

For more details about the Status Monitor functions of our drivers, please view the dedicated white paper:

http://www.seagullscientific.com/ftp/whitepapers/WhitePaper_StatusMonitor_Overview.pdf

Special Font Functions

As described below, by simulating certain features as fonts, Drivers by Seagull™ are able to give conventional Windows programs limited access to some printer features they would otherwise not be able to use. (These special fonts would rarely be used with BarTender because BarTender already has much more powerful access to the associated printer functions.)

Bar Code and RFID Fonts

Drivers by Seagull™ allow your conventional Windows programs to access some of your printer's built-in bar code and RFID functions as fonts. It is not possible for conventional Windows programs to access all of the functionality or to design labels and cards as easily as BarTender does, but these fonts are the only solution available in selected situations.

Printer Command Fonts

By specifying "Printer Command Font" as the font for a text string, Seagull drivers will let you can embed any printer-specific code sequence right into your document.

Driver Command Fonts

By specifying "Driver Command Font" as the font for a text string, Seagull drivers will let your programs control any of the following functions when available in your printer:

Drawing

- Line
- Box
- Circle
- Ellipse

Print Settings

- Mirror
- Inverse

Advanced Media Handling

Drivers by Seagull support a variety of cutters and sensors, including the “label taken” sensor.

Logging Functions

Drivers by Seagull can optionally generate log files of:

- General print job information, including job name, time, date and user.
- Events that occur during the print job, such as job start, pause, restart, delete, out of labels, complete and more.
- The actual print code used to generate the job.

Printer Configuration and Diagnostics

Drivers by Seagull allow you to perform printer management functions that otherwise require use of the printer’s front panel and/or a custom program from the printer manufacturer.

These functions include:

- Printing a variety of test and diagnostic labels
- Calibrating the printer
- Reading the printer’s configuration
- Managing files stored in the printer
- Configuring and formatting printer memory

Printer Driver Administration

Drivers by Seagull provide convenient functions to import and export driver settings. This lets you export a variety of printer settings, label stock specifications and other information from one driver and easily import it into the driver for another printer. This feature simplifies the administration of large numbers of printers. For example, Drivers by Seagull offer a command line interface that allows you to automate the importing and exporting of driver settings without using the drivers’ Windows dialogs. And, by replacing the default configuration settings for a driver installation package with settings you have exported, you can even create your own fully-customized driver installation packages.

International Language Support

The user-interface of Seagull’s Windows printer drivers can display in any of the more than 20 languages supported by the BarTender user-interface. This lets you view and set your printer options using a familiar language.

Conclusion

Seagull Scientific was the first company to produce Windows drivers for label printers and is today the largest developer of printer drivers for industrial and special application printers.

Printing with true Windows drivers provides maximum compatibility with the widest variety of software. When you print labels and cards using Drivers by Seagull, you monitor print jobs and maintain print settings exactly as you do when printing from programs like Word or Excel, so you don't have to learn new administrative skills. Windows drivers also provide better network compatibility and superior network printing speed. And, when you also use BarTender with your Drivers by Seagull, you take advantage of high-speed label printing features and advanced smart card encoding functions not available using standard Windows printer drivers.

Available Seagull White Papers

General White Papers

- The Advantage of Drivers by Seagull

Companion Applications

- Printer Maestro: Enterprise Print Management
- Librarian
- BarTender Security Center
- BarTender Web Print Server

Recent Upgrades

- What's New in the Latest BarTender

Integration White Papers

- Integration Overview
- Commander
- Commander Examples
- BarTender's .NET SDKs
- BarTender's ActiveX Automation Interface
- Exporting Printer Code Templates
- Using BarTender with Remote Desktop Services and Citrix XenApp
- Integration with Oracle's WMS and MSCA
- Integration with IBM WebSphere Sensor Events
- Integration with SAP

Miscellaneous White Papers

- Weighing Scales
- Dynamically Changing Objects at Print-Time using VB Script
- GHS Labeling
- Licensing for BarTender's Automation Editions
- Printing International Characters Using BarTender
- BarTender Software Activation
- Using BarTender's Application Identifier Wizard
- Optimizing Label Printing Performance
- Status Monitor Overview
- Silent Install

For downloadable versions, visit:

www.seagullscientific.com/asp/white-papers.aspx

