Using BarTender with Remote Desktop Services and Citrix XenApp

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Overview

This paper explains how to use BarTender with Windows Remote Desktop Services and with Citrix XenApp. It discusses printing and licensing issues in these two environments for each of the BarTender editions.

Remote Desktop Services

Remote Desktop Services (formerly known as Terminal Services) is a Windows Server feature that enables a client computer to connect to the server in such a way that the client's keyboard, mouse, and monitor become, in effect, directly connected to the server machine.

For more information on Remote Desktop Services, search "Remote Desktop Services" or "Terminal Services" at Microsoft's web site: www.microsoft.com.

Citrix XenApp

Citrix XenApp (formerly known as Citrix MetaFrame Server) is a thin client product that is built on top of Remote Desktop Services, allowing users to connect to corporate applications. For more information, see the Citrix web site: www.citrix.com.

Printer Redirection

Remote Desktop Services provides printer redirection, which sends print jobs from a server to printers installed locally on a client computer. There is a brief discussion of it in the Client Print Queues section of this document. For more information on printer redirection, search on "Remote Desktop Services" or "Terminal Services" with "Printer Redirection" at www.microsoft.com to find knowledge base articles, FAQs, and other types of documentation on this feature.

Printing

When a user logs into a Remote Desktop Services session, the list of printers available to them comes from two sources: the printer drivers installed on the server, and the printer drivers installed on the client. The drivers that are installed on the server are referred to as server print queues, while the drivers that are installed on the client are called client print queues.

Server Print Queues

If a printer is attached directly to the server, or is connected to the server via TCP/IP, the printer driver can be installed on the server. This creates a server print queue, which effectively makes the printer available in all remote desktop sessions.

Client Print Queues

Client print queues are created by printer redirection, a feature available with both Remote Desktop Services and Citrix XenApp. Printer redirection routes printed output from a remote desktop session to a printer available on the client computer, creating an automatic client print queue. A matching printer driver is installed on the server, all print code is generated on the server, and the resulting print code is redirected to the printer available on the client computer.

When a client logs into a remote desktop session, the server will attempt to create print queues for each of the printers that are installed on the client. A client print queue can also be used for printers that are on the server's local network, in order to make the printer available only to a particular user's sessions.

Note: Printer redirection does not support bi-directional communication, which is used to establish a two-way connection between the client and the server. If your printing procedure depends on receiving data from the printer, such as printer status information, printer redirection cannot be used.

Universal Printer Drivers

Universal printer drivers allow you to print to almost any printer, regardless of make or model. By installing a single universal driver, you eliminate the hassle of installing multiple printer-specific drivers on the server.

In Citrix XenApp, client print queues can be automatically created using the Citrix Universal Printer or Citrix Universal Printer Drivers. The Citrix Universal printer is an auto-generated printer object that replaces all printers appearing in the user's session. This installed printer can be used to print to almost any printer that you want to use.

The Citrix Universal Printer Drivers are generic printer drivers that can be used to print to most printers. Rather than adding a single printer object as with the Citrix Universal Printer, a single driver is installed. You can then create multiple automatic print queues using the universal printer driver.

The universal printer driver for Remote Desktop Services is called Remote Desktop Easy Print. The Easy Print driver provides support for multiple models of printers, without needing to install multiple drivers on the terminal server.

Installing Printer Drivers on the Server

If the server has local access to the driver that is installed on the client, the client's driver is automatically used.

If the server does not have access to the driver, then you will need to install a printer driver on the server that has the same name as the driver on the client machine. Once this is done, the print queue will be created automatically each time the client logs in.

In Windows Server 2008, select **Print Management** from the **Administrative Tools** menu. Expand the **Print Servers** node, right-click on **Drivers**, select **Add Driver**, and follow the instructions.

In Windows Server 2003, you can accomplish this by opening the **Printers Folder** in Windows, and selecting **Server Properties** from the **File** menu. Then, select the **Drivers** tab, press the **Add** button, and follow the instructions.

BarTender Editions

BarTender is available in the Basic, Professional, Automation, and Enterprise Automation editions (see below). The Basic and Professional editions are licensed per user, and the Automation editions are licensed per printer. All editions will run under Remote Desktop Services and Citrix XenApp. Licensing issues specific to each of the editions are documented below.

Basic and Professional Editions

The Basic and Professional editions of BarTender can be run by only one user at a time. If BarTender is already running in one user's session, a second user logged into the server will not be able to run the application.

Automation and Enterprise Automation Editions

The two Automation editions of BarTender allow unlimited users to run the BarTender application. Therefore, it can be run simultaneously in any number of user sessions. Instead of user-based licensing, the Automation editions are licensed by the number of printers that are actively used. Licenses can be purchased for 3, 5, 10, 15, 20, and more printers. The license system is managed by the Seagull License Server (SLS) software. Details about this system can be found in Seagull Scientific's white paper **Licensing for BarTender's Automation Editions**.

http://www.seagullscientific.com/support/white-papers

Printer Licensing with Client Print Queues

When using an Automation edition of BarTender, SLS identifies unique printers by processing information received from the printer itself. For locally installed printers, this information includes the printer model and port; for network printers, this includes the printer's IP address and TCP port.

However in Citrix and Remote Desktop Services environments, SLS is unable to retrieve some of this information from the server, including the port or IP address. If the printer is using a universal driver, it is not even possible to obtain the printer model of the printer in use. Without this information, when a printer is used from multiple clients, SLS may not recognize it as a single printer. This will cause the printer to be listed in SLS multiple times, effectively reducing the number of printers available in your license.

Seagull License Server Remote Assistant

SLS Remote Assistant is a software utility that should be installed on remote clients to prevent SLS from overcounting printers when using Citrix or Remote Desktop Services environments.

When installed, SLS Remote Assistant obtains detailed information directly from the printers installed on the client computer. Each time a print request is initiated from a client, SLS will request this information from the Remote Assistant. Using the additional print information, SLS can accurately differentiate between printers based on printer model, port, and IP address.

You can install SLS Remote Assistant on client computers directly from the installer package from the Seagull Scientific website or the BarTender Suite installation CD. Alternatively, you can install SLS Remote Assistant on computers on your network with minimal to no user interface using the Silent Install command line. *The Silent Install command line can be used to install SLS Remote Assistant on multiple computers across the network.*

Warning: If you will be using Citrix XenApp, Citrix Receiver, specifically Citrix Independent Computer Architecture (ICA) virtual channel v12.0 or higher, *must* be installed and running *before* installing the SLS Remote Assistant. You can download Citrix Receiver directly from the Citrix website at http://www.citrix.com/go/receiver.html.

Installing the SLS Remote Assistant from the Installer Package

1. If you will be using Citrix XenApp, ensure that Citrix Receiver is installed and running (see above).

2. Download and run the installer package from the "Software Downloads" section of www.seagullscientific.com or the BarTender Suite installation CD.

Installing the SLS Remote Assistant Using the Silent Install Command Line

1. If you will be using Citrix XenApp, ensure that Citrix Receiver is installed and running (see above).

2. Download the installer package from the "Software Downloads" section of www.seagullscientific.com or the BarTender Suite installation CD.

3. Open the command prompt. To do so, select the **Windows Start** button on the Desktop, and select the **Run** option. In the text box, type **cmd** and press the **OK** button.

4. Enter the desired command parameters using the syntax below.

```
msiexec.exe /I "[MSI File Location, i.e. SLS Remote Assistant.msi]"
[Install Mode] REMOVE=[Removed Features]
```

5. Press **Enter** to execute the command.

Example Installation Scripts

To install SLS Remote Assistant while monitoring the installation process:

```
msiexec.exe /I "C:\SLS Remote Assistant.msi" /qb
```

To install SLS Remote Assistant only for a Remote Desktop Services environment, even if Citrix is installed:

```
msiexec.exe /I "C:\SLS Remote Assistant.msi" /qn REMOVE=Citrix
```

To install SLS Remote Assistant only for a Citrix environment:

```
msiexec.exe /I "C:\SLS Remote Assistant.msi" /qn REMOVE=RDP
```

Related Documentation

White Papers and Manuals

- Licensing for BarTender's Automation Editions
- BarTender System Security
- Silent Install

For downloadable versions, visit:

http://www.seagullscientific.com/support/white-papers

External Documentation

To learn more, please visit the Citrix website at *http://www.citrix.com* and the Microsoft website at *http://www.microsoft.com*.

- Citrix XenApp (WEB)
  http://www.citrix.com/products/xenapp/overview.html

- Remote Desktop Services (WEB)
  http://msdn.microsoft.com/en-us/library/bb892075(v=vs.85).aspx