

Label Gallery Software for Microsoft Windows Terminal Services and Citrix MetaFrame

White Paper

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1 Introduction

Label Gallery Software for Microsoft Windows Terminal Services and Citrix MetaFrame white paper provides information how Label Gallery software can be used in these two environments. It explains the basic principles using of these systems and describes the steps to enable label printing from Label Gallery.

Microsoft Windows Terminal Services or Citrix MetaFrame environments can be very useful software when your company has decentralized offices, warehouses or places where you need to produce labels. You do not have to purchase standalone licenses for the software your are running in the company. Instead you purchase a pool of licenses that is installed to the Windows server computer. The licenses are more efficiently in use and you have an overall view to their consumption.

Key benefits of using Microsoft Terminal Services or Citrix MetaFrame are the following.

- Centralized administration
Label Gallery TruePro Network client runs only on the server, where MS Terminal Services or Citrix MetaFrame service is set up. The main benefit is that the administration of the whole environment is done only from one site. The change on the server computer is directly applied to all clients.
- Low TCO (Total Cost of Ownership)
Total cost of ownership is economical, as you only have to purchase Label Gallery TruePro Network edition and not standalone Label Gallery editions for each workstation. Price per Network workstation is significantly lower compared to standalone editions.
You can also take advantage of the older computer equipment and bring it to life. As no software is actually running on the client computer, you do not need to have state-of-the-art latest computers. All the processing is done on the server, the client only shows the output on the monitor.
- High ROI (Return on Investment)
Main reason for high ROI is better productivity. With Label Gallery software it is possible to produce advanced labels in matter of seconds, no matter where your location of the office is.

This white paper describes how to install and maintain Label Gallery TruePro Network installation for such purpose.

Windows Terminal Services

The Terminal Services component of the Microsoft Windows 2000 and 2003 server can deliver the Windows desktop, as well as the latest Windows-based applications to virtually any desktop computing device, including those that cannot run Windows. This allows more people in an organization to take advantage of the resources provided by a distributed computing environment. Terminal Services can also be used to remotely administer a Windows based server. When a user runs an application on a Windows based terminal server, all of the application execution takes place on the server and only the keyboard, mouse and display information are transmitted over the network. Each user sees only their individual session, which is managed transparently by the server operating system and is independent of any other client session.

For more information visit:

www.microsoft.com/windowsserver2003/technologies/terminalservices/default.mspx

Citrix MetaFrame

Citrix MetaFrame is a powerful solution for serving and executing applications. Citrix MetaFrame is designed specially for the Internet and Windows 2000 and 2003 server products families.

Citrix MetaFrame enable you to provide your users with uninterrupted, secure access to your organization's applications and information, from almost any device over any network connection – Internet, LAN, WAN, dial-up, or wireless.

Citrix MetaFrame allows multiple users to log on and run applications in separate, protected sessions on the same server. You install Citrix MetaFrame on computers running a multi-user operating system and install and publish the applications or other resources that you want to deploy on computers running Citrix MetaFrame.

Using the Web interface of Citrix MetaFram give users access to published resources through the Web or your interanet. Users log on to the Web. Interface using the familiar Web browser and see links to the applications that they are authorized to run.

You can group a number of servers together to form a server farm. A server farm is a group of computers that you manage as a single entity. Sever farms provide you with a flexible and robust way of deploying applications and content to users.

For more information visit:

<http://www.citrix.com>

2 Label Gallery in Terminal Server Environment

When you want to run Label Gallery software in the Windows Terminal Server or the Citrix Metaframe terminal environments, you need to install the following:

Install Label Gallery TruePro Network edition

Network edition of the Label Gallery software is designed for companies that want to use Label Gallery software on several locations with several users at the same time.

Label Gallery TruePro Network edition consists of two parts:

- server part
- client part

The server part is installed on the server computer. The server part includes the installation files for the clients, license database and common Label Gallery system components that are used by all Label Gallery clients over the network.

The client part is installed on each workstation where there is a need for label design or label printing. The client establishes a periodic connection to the Label Gallery on the server. The user is interacting with the client part on his computer and the server part is used for license purposes.

Label Gallery TruePro Network software is activated with the Key Number. There is no hardware key with the Network version. The Key Number determines the number of users that can concurrently use the Label Gallery software. The licenses are stored on Label Gallery server. The client version of Label Gallery TruePro Network is installed on each workstation computer. Each user who starts Label Gallery client takes one license from the server. When Label Gallery software is closed, the license is returned to the server and can be used by another user. For example, 5-user Network version allows five concurrent users to run Label Gallery software at the same time. Any additional user will have to wait for one of existing users to log off before he is able to run Label Gallery software.

When you install Label Gallery TruePro Network on the Terminal Server or Citrix terminal server computer, you must install the Label Gallery client only once. You do not need to install the Label Gallery client to each workstation as with ordinary Label Gallery Network installation. Windows Terminal Server and Citrix terminal server operate differently. When you are running the software from the terminal server, the applications are actually running on the server not on your workstation. You only get the screen refresh from the server. Your monitor displays the screen of the Label Gallery client application running on the server. Therefore Label Gallery server part and client part must both be installed on the server computer.

You can then run Label Gallery software from any workstation that can connect to the terminal server. Label Gallery is actually running on the server computer and your monitor shows the update to the screen so it looks like you are running Label Gallery client locally on your computer. You can connect to the terminal server using different connection methods, for example Local Area Network (LAN), internet connection, or wireless connections. The number of Label Gallery licenses you have purchased determine the number of users that can use Label Gallery software concurrently.

For more information about Label Gallery TruePro Network edition of labeling software, please refer to the White Paper: **Label Gallery TruePro Network** available on Label Gallery website at http://www.satoworldwide.com/labelgallery/LG3/dl_wp.htm

3 Installation Procedure

Installation of the Label Gallery Software

Procedures for Installing Label Gallery client in Label Gallery TruePro Network edition

Installation of Label Gallery TruePro Network on Windows Terminal Services or Citrix MetaFrame environments consists of the following steps:

1. Installation of the Label Gallery server
2. Installation of the Label Gallery client
3. Activation of the Label Gallery software

Server installation can be done locally on the server itself or remotely via any workstation that can access server disk shares in read/write mode. The installation directly on the server is preferred. The installation only copies the Label Gallery files to the server computer. There is no Label Gallery application running on the server computer.

When the Label Gallery server installation is completed, you must install the Label Gallery client only to the server computer. In a terminal server environment the Label Gallery server and client are installed on the same computer and not on separate computers as with the usual installation of Label Gallery TruePro Network.

The final step is the activation of the software. When you purchased your copy of Label Gallery TruePro Network, you received a Network Key Number in the package. Activating the software will provide you with a fully working network version.

Making Label Gallery application available in Citrix environment

With Citrix MetaFrame you can expand users' access to information. You make information available to users by publishing application – Label Gallery client.

Procedures for Publishing Label Gallery client

Making applications and content available to users in an integral function of Citrix Metaframe. Use the MetaFrame Presentation Server Console to publish applications on any server in the farm to which you log on. You do not have to run the console from MetaFrame Presentation Server on which the applications are installed. The server or servers hosting a published application must be a member of the server farm.

To publish an application:

1. Open the Presentation Server Console
2. From the Actions menu, choose New > Published Application
3. Follow the instructions in the Application Publishing wizard, Working Directory fields must contain location of the Label Gallery client program like C:\Program Files\Sato\Gallery 3\Bin" and **Publish application** field must contain name of the Label Gallery client program like "C:\Program Files\Sato\Gallery 3\Bin\lgplus3.exe".

Installation of the Printer Drivers

Printer driver installation on Citrix Server Computer

When you have your label printer attached to the server computer directly, you only need to install the printer driver on the server using the Printer Installation wizard (provided with GalleryDrivers) or the Add a Printer wizard. The printer drivers can be provided directly from the manufacturer of the label printer or, for optimal performance and fastest printout, install GalleryDrivers for your thermal printer. Only GalleryDrivers provide optimal label printing performance of the Label Gallery software. GalleryDrivers are available on the Label Gallery CD-ROM and the Web at www.satoworldwide.com.

There is no need to share the printer in your local area network as far as Label Gallery software is concerned. But you may do so if other applications, which are not using Windows Terminal Services, require it.

Printer driver installation on Workstation

The workstation is a user's computer that has Citrix client installed and connects to the Citrix server. If the printer is connected to the workstation and you would like to use the printer from the Terminal Services environment, then the printer drivers for the printer must also be installed on the server computer. The next step is to share the exact printer port occupied by the printer on the workstation. To be able to share the port, you must also install the printer driver on the workstation. Installing the printer driver on the workstation is the only way to share a printer port on the workstation. Once the printer driver is installed and the port shared on the workstation computer, the Label Gallery software on the server will be able to print label to this locally connected printer.

To properly set up the printer for printing on the workstation, please do the following steps:

1. **Connect the printer on the workstation**
2. **Install drivers for the printer on the workstation**
You must add the printer driver on the client computer using the Printer Installation wizard (provided with GalleryDrivers) or Add a Printer wizard.
3. **Share the printer on the workstation**
Select Printers and Faxes from Control Panel and then right-click the printer you want to share. In the context menu select the option "Sharing" to open the dialog box. Enable the option "Share this printer" and type in a name that describes how the printer will be shared with users through the network. Make sure to set the proper user access permissions so you are able to connect to the printer from the network. Terminal client running on terminal server will connect to this local printer over the network.
4. **Map the printer on the server**
You must map your printer on the server. Install the printer driver for the same model on the Citrix server and map the port to the shared printer on the workstation. There are two possible scenarios for the installation.
 - a) If you use the Add a Printer wizard, you can choose the option "Use a network printer, or a printer attached to another computer" during the printer installation, then browse to and select the shared printer on the workstation.
 - b) If you use the standard method to install the printer driver on the terminal server, leave the default port setting to LPT1 and then manually add the proper network port. To perform this task, you should open the dialog box Printers and Faxes, locate your printed driver, right-click on the printer driver and select "Properties" from the list of options. Then go to the Port tab. You can add new 'Local Port' and use the syntax `\\server\share` where "server" is the name of the workstation computer sharing the printer port and "share" is the name of the share you have set for the printer (in step 3).

Installation to Network

For the installation of the printer driver you can use the Printer Installation Wizard or the Windows Add a Printer Wizard. Follow these steps to change the printer port.

1. Open the properties of GalleryDriver and go to the Ports tab.
2. Click Add Port button, choose Standard TCP/IP port and click on the New Port button.
3. Type in the name and TCP/IP address of your printer as you have set it up in the printer network adapter.
4. Select Custom for the Device Type and click the button Settings. It is safe to leave the Protocol setting to Raw but make sure to select the proper Port number. Different printer network adapters might have different values for ports. If in doubt, try with the default setting or refer to the User's Manual of your network adapter.
5. Close all dialog boxes with Close or OK buttons.
The Standard TCP/IP port type is available with installation of Windows 2000 and XP. For other Windows operating systems you will have to install the appropriate TCP/IP port type driver separately.

4 Delivering Label Gallery to Users

Delivering Label Gallery with Terminal Services

Hosting the Desktop

You can use Terminal Server to host user's entire desktop environments, so that when users log on, they see their usual desktop environments or desktop environments especially designed for their remote use. In this access applications from the Windows desktop on the local computer.

Using Web Connection

The Remote Desktop Web Connection is an Active X control that provides virtually the same functionality as the executable version of Remote Desktop Connection, but it delivers this functionality over the Web even if the executable version is not installed on the client computer. When hosted in a Web page, the ActiveX Client Control allows a user to log on to a terminal server through a TCP/IP Internet or intranet connection and view a Windows desktop inside Internet Explorer.

Delivering Label Gallery with Citrix MetaFrame

Citrix MetaFrame lets users run applications published on servers by enabling connections from varied computer platforms through Citrix MetaFrame Client software. Managing the connections to your server farm involves management of network access and configuring connections to the farm.

Users can access applications on a server through ICA connections and ICA sessions. ICA connections are network protocol specific listener ports that are set up on a computer running Citrix MetaFrame. When a client links to a server through an ICA connection, it established an ICA session. The ICA session is an active link that runs on the server until the user logs off and ends the session.

To access published applications and content, users run client software on their client devices. You can deliver the appropriate client software to your users and install it with the following methods:

1. Using the Citrix MetaFrame Components CD
2. Downloading from a network share point
3. Using installation floppy disks

To choose the best method for deploying client software, decide how your users will access published applications.

Using Web Connection

If you want to deliver applications to your users through a Web page, use the Web Interface in conjunction with Citrix MetaFrame. When you deliver applications using a Web-based method, users launch Web browsers to access applications you publish in the server farm.

Users log on to the Web Interface using the familiar Web browser and see links to the applications that they are authorized to run.

The Web Interface dynamically creates an HTML page with a depiction of the server farm for each of your users. After logging on, each user sees a Web page that includes all the applications and resources in the server farm that you configure for that user. Using the Web Interface, you can create stand-alone Web sites for application access or Web sites that can be integrated into your corporate portal.

Using Direct Access

If you want to deliver applications to your users through a Web page, publish the applications for direct access. To directly access published applications and content, users launch client software.

Using Citrix Program Neighborhood, users can browse for sets of published resources (referred to as application sets) or create custom connections to individual published resources or to servers running Citrix MetaFrame Server. Icons representing application sets and custom ICA connections appear in the Program Neighborhood window.

5 Printing

Printing with Terminal Services

When you are using Label Gallery software with Windows Terminal Services, you can print labels to the printer using several connectivity methods. The printer can be available from the following:

1. Terminal server computer

Terminal Services provides usage of printer attached to the server/

2. Workstation computer

Terminal Services provides printer redirection that routes print jobs from the Terminal server to a printer attached to the client

3. Network (printer with LAN card)

As with local disk drives, net share enables users to gain access to the printer remotely from the server.

Printing with Citrix MetaFrame

The computer that will use the resources (programs, disk space and printers) available on the Citrix server must have Citrix client software installed. Without the client software, connecting to the Citrix server is denied. The Citrix client uses ICA (Independent Computing Architecture) protocol.

A client printer is any printer accessible from the ICA workstation computer. This client printer can be physically attached to the workstation computer or can be a network printer. Both physically connected and network printers can be used in an ICA session. You can manually map the client printer once the ICA session is established. The client printer can also be auto created – the Citrix server automatically connects the printer during the logon process.

Manually mapping client printers

You can manually map client printers once the ICA session is established between workstation and server. Mapping allows Label Gallery to run on the Citrix server and to print labels to locally connected (or network) printer. If you have the printer driver installed on your workstation, you can use it only from your computer. The server does not know that the printer is available on the workstation. To make the printer available from the server, you have to map the printer on the Citrix server. Because Label Gallery is running on the server and printing labels from the server, the client printer must be accessible from the server as well.

In order to map client printers, the following conditions must be met:

- The printer driver must be installed on the workstation computer. You can verify that by opening 'Printers and Faxes' folder in Control Panel. The printer must be listed in the folder.
- You must be able to print to the client printer before starting an ICA session.
- If you use a network printer, the printer driver must also be available and set up for the network printer.

Printing a test page to the printer or printing a test document from a local application is always a good way to verify that the printer is configured correctly on the workstation.

When you have verified that the printer driver is available on the local system (on the workstation), the next step is to map the client printer to the ICA session so that printing from the server is possible.

To map the client printer on the server, perform the following steps:

1. Run the ICA client, establish an ICA session and authenticate to the Citrix server.
2. Once connected go to the 'Printers and Faxes' folder on the computer in the terminal server session.
3. Click Add Printer and select the Network Printer.
4. Browse to your printer in the network and click on the client printer shared on the workstation. If the proper printer driver is already installed on the Citrix server, then the printer will simply be added with the correct connection parameters and will be available for printing. If the printer driver is not available on the Citrix server, you will be prompted to install the drivers. GalleryDrivers are available on the Label Gallery CD-ROM. You can just point to the appropriate folder on the CD-ROM.

Auto creating client printers

Auto creation is a process that occurs during the user logon procedure and eliminates the need for the manual printer mapping process. The purpose of this action is that user's locally installed printers became available also inside his Citrix session.

Then the user can work with the same set of printers in both environments, on the local computer and in the Citrix session.

Usually, the Citrix administrator must pre-install all printer drivers on the Citrix server to be later used in all Citrix sessions. The driver names of the printer on the workstation and the server must match exactly, otherwise the printer will not be auto created and the user will be unable to use the printer in the Citrix session. The availability of printer drivers on the server is one of the key elements for the auto creation process.

For more information about auto creation of the client printers in ICA session on the server please refer to the Citrix documentation or contact your Citrix server administrator.

Know issues

Auto creating client printers access

Label Gallery TruePro started on Citrix client computer as published application has no access to auto creating Citrix client printers.

Printer status not available for workstation shared printers

With Label Gallery version 3 software, it benefits from better control over your printers and printing activities. For printers that allow bi-directional communications with the GalleryDriver you can review the printer status in real time. For example, you can see the status like "out of labels", "out of ribbon", etc. Label Gallery TruePro started on Citrix client computer as published application has no availability to control printer status of workstation shared printers..

6 Glossary

Workstation	Computer that the user uses for his work. It can be used for running stand-alone applications. But in the terminal client/server environment the user works with applications at a workstation that are installed on the server.
Terminal client	Application running on the workstation computer. The terminal client allows you to connect to the server and run applications on the server. The client does not execute any actions on the workstation computer. Everything is processed on the server. Only the results are displayed on the terminal client.
Printer Installation Wizard	Application provided by GalleryDrivers (file PRNINST.EXE). Recommended and fastest method of GalleryDriver installation on the system.
Add a Printer Wizard	Included in Windows operating system. Enables users to manually add the printer driver to the system. To start the wizard, click the option "Add a Printer" in the dialog box "Printers and Faxes."
ICA session	Citrix software uses its own optimized communication protocol between server and client sessions. It is known as Citrix Independent Computing Architecture (ICA). On the server, Citrix ICA has the unique ability to separate application logic from the user interface. On the client, users see and work with the application's interface. The application executes on the server. With ICA, applications consume as little as one-tenth of their normal network bandwidth.
Printer port (when using TCP/IP protocol)	When the printer is equipped with a network (LAN) interface, it must be properly set up to allow incoming connections from the computers. The TCP/IP protocol defines the unique IP (Internet Protocol) numbers and ports to each device (computer, printer or WAN device.) in the network. IP numbers have the form of AAA.BBB.CCC.DDD where the 3-digit letter combination can be a value between 1 and 255. Ports can occupy values from 1 to 65535. The printer listens at the assigned IP number and assigned port number for incoming.
API (Application Program Interface)	A set of routines, protocols and tools for building software applications. The API is an interface by which an application program accesses the operating system and other services. For example, different software applications trigger label printing through an API from a single desktop or hand held device.

7 Appendix

Label Gallery Product Overview

Label Gallery is the most advanced professional labeling software for desktop and enterprise users. Label Gallery offers an easy-to-use interface and meets any label design and printing requirement for efficient label printing solutions to users in retail, logistics, health care, chemical, automotive and other industries.

Label Gallery TruePro: Complete software solution for any kind of label design and print requirement. Multiple connectivity options allow users to perform stand-alone printing or integrate label printing into any network environment.

Label Gallery TruePro provides you with interactive label printing capabilities such as integrating label printing to existing applications (ActiveX) or non-programming embedding of label printing to existing systems (GalleryWatch).

Label Gallery Plus: Full-featured software designed for professional label design and printing, including complete database support and ActiveX integration possibilities. A wide range of features and options makes Label Gallery Plus a perfect and easy-to-use tool for any labeling requirement.

Label Gallery Easy: Wizard-based software meeting basic barcode labeling needs. The entry-level software includes many design elements of the Plus edition with the emphasis on simplified user interaction.

Label Gallery Plus Print Only: Label Gallery Plus Print Only offers printing of pre-designed labels but cannot be used to design and alter existing labels. Advanced settings for changing the labels are not available.

Label Gallery TruePro Print Only: Label Gallery TruePro Print Only offers printing of pre-designed labels, using pre-designed forms and automatic printing from pre-designed trigger actions. Label Gallery TruePro Print Only cannot be used to design and alter existing labels, forms and trigger configuration. Advanced settings for changing the labels are not available.

Pocket Label Gallery: Pocket Label Gallery is a program package for Windows CE that brings the power of label printing to portable Windows CE computers (Windows Mobile Device). Pocket Label Gallery is part of the editions Label Gallery TruePro or Label Gallery Pocket PC Designer.

Label Gallery Developer Series:

- **Label Gallery SDK :** Label Gallery SDK is an ActiveX integrator edition of Label Gallery software developed for software publishers who needs label printing capabilities in their software.
- **Pocket Label Gallery SDK:** Pocket Label Gallery SDK is an ActiveX integrator edition of Label Gallery software developed for software publishers who needs label printing capabilities in their software under mobile devices.