



Printing in Citrix and Microsoft Terminal Server

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1. Overview

This white paper describes in detail the way we can configure printing in Thin Clients specially CE terminals. This document assumes an audience with basic knowledge on Network printing and Wyse CE terminals.

2. Reference

This white paper takes help from the following documents

Citrix Document #	Title
CTX16879	MetaFrame XP Application Server for Windows with Feature Release 3 Administrator's Guide - English
CTX102497	Advanced Concepts Guide for MetaFrame XP with Feature Release 3
Brian Madden & Ron Oglesby	The Ultimate Guide to Terminal Server Printing - Design and Configuration

3. Printing in Citrix Metaframe XP

When users run applications that are published on MetaFrame XP servers, they can print to the following types of printers:

- Printers that are connected to ports on the users' client devices on Windows, WinCE and DOS.
- Shared printers that are connected to print servers on a Windows network
- Printers that are connected directly to MetaFrame XP servers.

The printers that ICA Clients can use can be categorized by connection types.

You can set up three general types of printer connections in a MetaFrame XP server farm: client connections, network connections, and local connections.

Client Printers: The definition of a *client printer* depends on the ICA Client platform. On DOS-based and WinCE client devices, a client printer is physically connected by a cable to a port on the client device. On 32-bit Windows platforms (Windows 9x, Windows NT, and Windows 2000), any printer that is set up in Windows (these printers appear in the Printers folder on the client device) is a client printer.

Network Printers: Printers that are connected to print servers and shared on a Windows network are referred to as *network printers*. In Windows network environments, users can set up a network printer on their computers if they have permission to connect to the print server. When a network printer is set up for use on an individual Windows computer, the printer is a client printer on the client device.

Local Printers: Printers that are connected directly to MetaFrame XP servers are *local printers* within a particular server farm. This definition includes a printer that is connected to the MetaFrame XP server that hosts a user's ICA session, as well as printers that are connected to other MetaFrame XP servers in the same server farm. If a printer is

connected to a MetaFrame XP server outside of a server farm (either the server is not a member of a server farm or is a member of a different server farm), the server farm considers the printer a network printer, not a local printer.

Client Printing in ICA Sessions

The following list summarizes the types of printers that can be available for an ICA Client, based on the printer definitions above. Depending on the user's platform and the printers that exist in the farm, a user who connects to a MetaFrame XP server and runs a published application or desktop in an ICA session can print to the following:

- The user's own client printers
- Network printers that are set up for the farm
- Local printers on the MetaFrame XP server that hosts the user's ICA session
- Local printers on other MetaFrame XP servers those are set up for use in the farm

Printing Configuration Scenarios

The previous section describes printers that can be used by ICA Clients. Some printers can be used without being set up specifically for use in a MetaFrame XP server farm. For example, you can make client printers available for ICA Client users on Windows devices without configuring printers on each client device. This section describes when and how you need to set up and configure printers for ICA Clients. It gives an overview of the configuration features available in MetaFrame XP through the Management Console.

The steps required to set up printers for use by your ICA Client users depends on the configuration of the clients, the type of printers you use and their connections, and the configuration of your application servers. For example, two scenarios for printing appear below.

Scenario 1: Printers Installed on Windows Clients

Users run Windows 2000 or higher on their client devices. Printers are already setup for all users on their client devices (so they can print from applications that they run locally). Some users have PC printers connected directly to their computers, while others print to shared network printers. In this type of environment, you can set up printers in the server farm by simply installing printer drivers on a MetaFrame XP server and using the replication feature in the Management Console to distribute the drivers to all the servers in the farm.

- The printers that users normally print to are available automatically when they connect to MetaFrame XP servers, because MetaFrame XP creates each user's client printers for use during ICA sessions.
- Because printer drivers installed on client devices running Windows 2000 or higher are the same drivers you install on Windows Servers, you do not need to set up printer driver mapping. Mapping is necessary when the printer drivers you

install for Windows 9x client computers and Windows servers have different names.

- When users print from applications running on MetaFrame XP servers, the installed client printers appear in Windows in the following form: *#clientname/printername*. The *clientname* is the name of the client device and *printername* is the name for the installed client printer.

Scenario 2: Network Printers in a Mixed Environment

In a typical mixed computing environment, users run ICA Clients on a variety of operating systems. Some, but not all users, might have printers connected to their client devices. Shared printers on network print servers might be available to all users, but they might not be set up because users are untrained or because administrators do not want to set up individual clients in a new network deployment or an application service provider environment.

In these situations, you can make printers available easily through MetaFrame XP. MetaFrame XP can automatically create client printers for the client devices that have printers installed. For the entire user base, you can set up network printers to be used by ICA Client users on all client platforms.

- You make printers that are already installed on client computers available in ICA sessions by installing printer drivers on a MetaFrame XP server and using the replication feature in the Management Console to distribute the drivers to all servers in the farm. MetaFrame XP automatically creates these client printers when users connect to servers in the farm.
- When some users have Windows 9x client devices, you map client printer drivers to the drivers you install on MetaFrame XP servers. This is necessary when driver names for the same printer are different on client devices running Windows 9x and on the Windows 2000 servers. Driver mapping is not necessary for client devices running Windows 2000 or higher, because they use the same printer drivers as Windows 2000 servers.
- You import network print servers into the MetaFrame XP server farm to make the shared printers available to all users when they connect to servers in the farm.
- If some client printer drivers are not compatible with the MetaFrame XP server platforms in the farm, use the Driver Compatibility feature to prevent incompatible printer drivers from causing server errors.
- When users print from applications running on MetaFrame XP servers, the installed client printers appear in Windows in the following form: *#clientname/printername*. The *clientname* is the name of the client device and *printername* is the name for the installed client printing device.
- When users print to the network printers in the server farm, they see the original assigned network printer names in Windows dialog boxes.

4. Printing Overview in Microsoft Terminal Server session via RDP

Even with the infinite number of printing scenarios available in the real world, there are only two major types of printing scenarios available with Terminal Server. All Terminal Server printing is a variation on one of the following two themes:

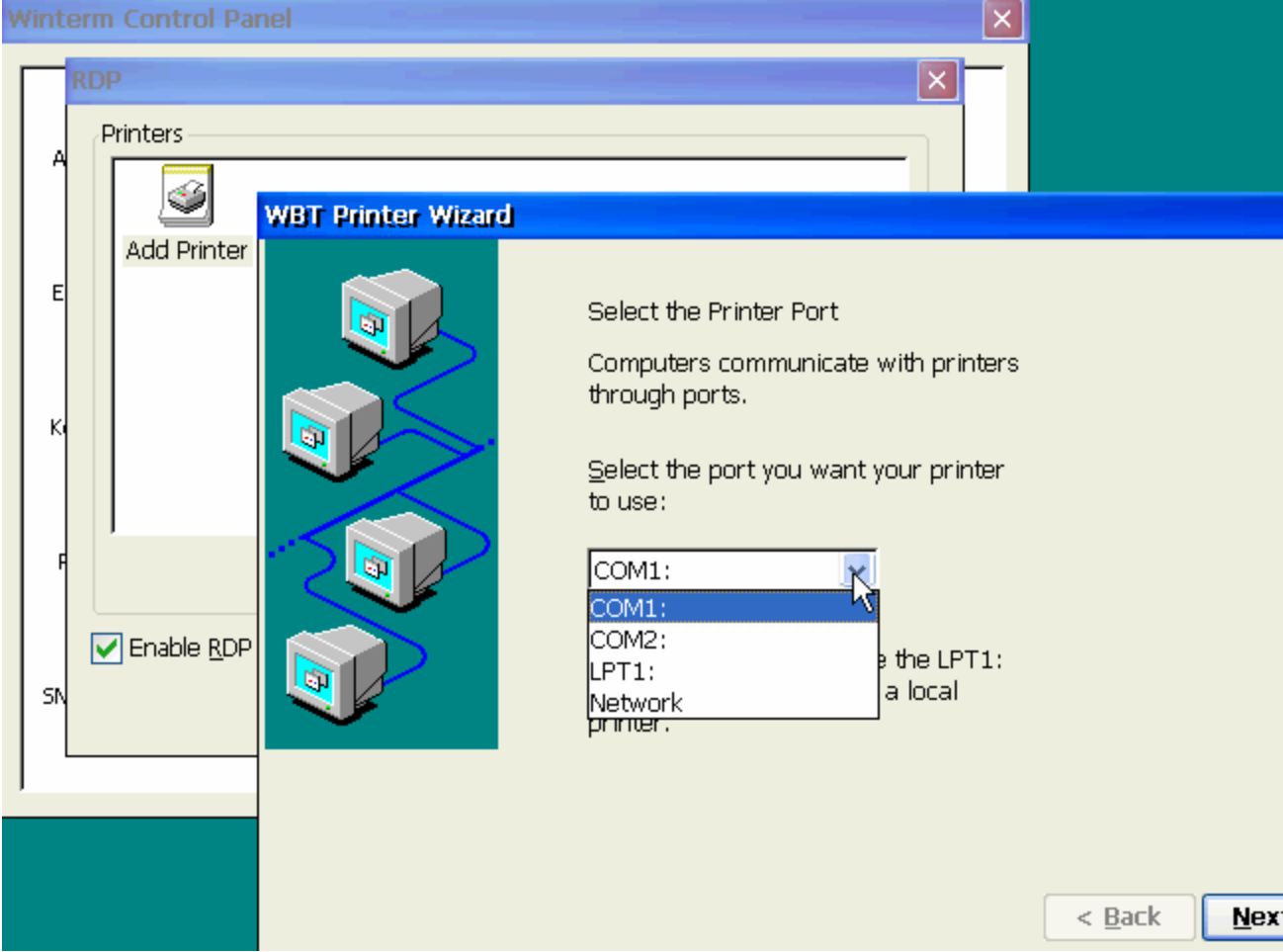
- **Server Printers.** Server printers in Terminal Server environments are printers in which the Terminal Server has direct access to the print queue. This can include standard network printers that are accessible via a \\servername\printername share. It can also include printers where the print queue is located locally on a Terminal Server itself, even including printers that are directly connected to the Terminal Server.
- **Client Printers.** These are printers that are available to a user's client device before an RDP session is launched. This can include printers that are physically attached to a client device or printers that are logically mapped through the network.

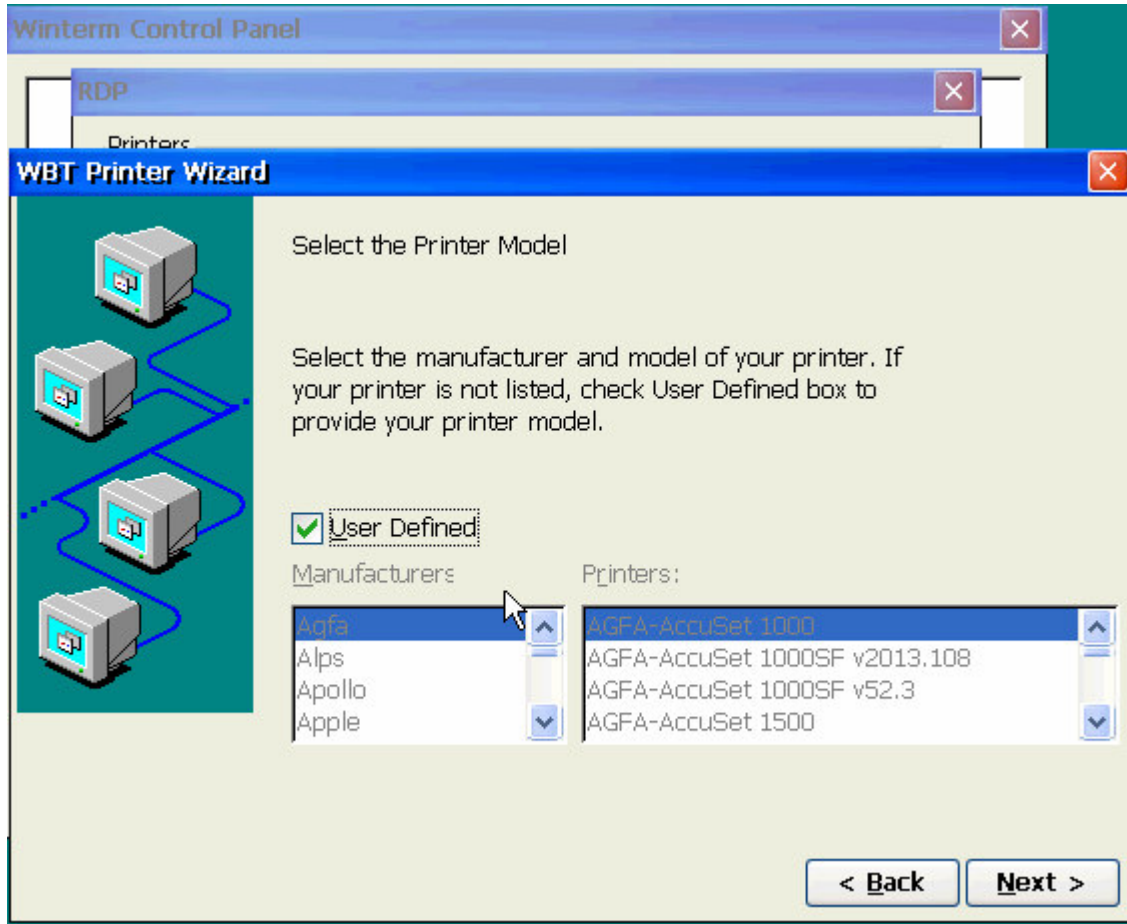
5. Configuring Printing in CE Terminals for RDP & ICA

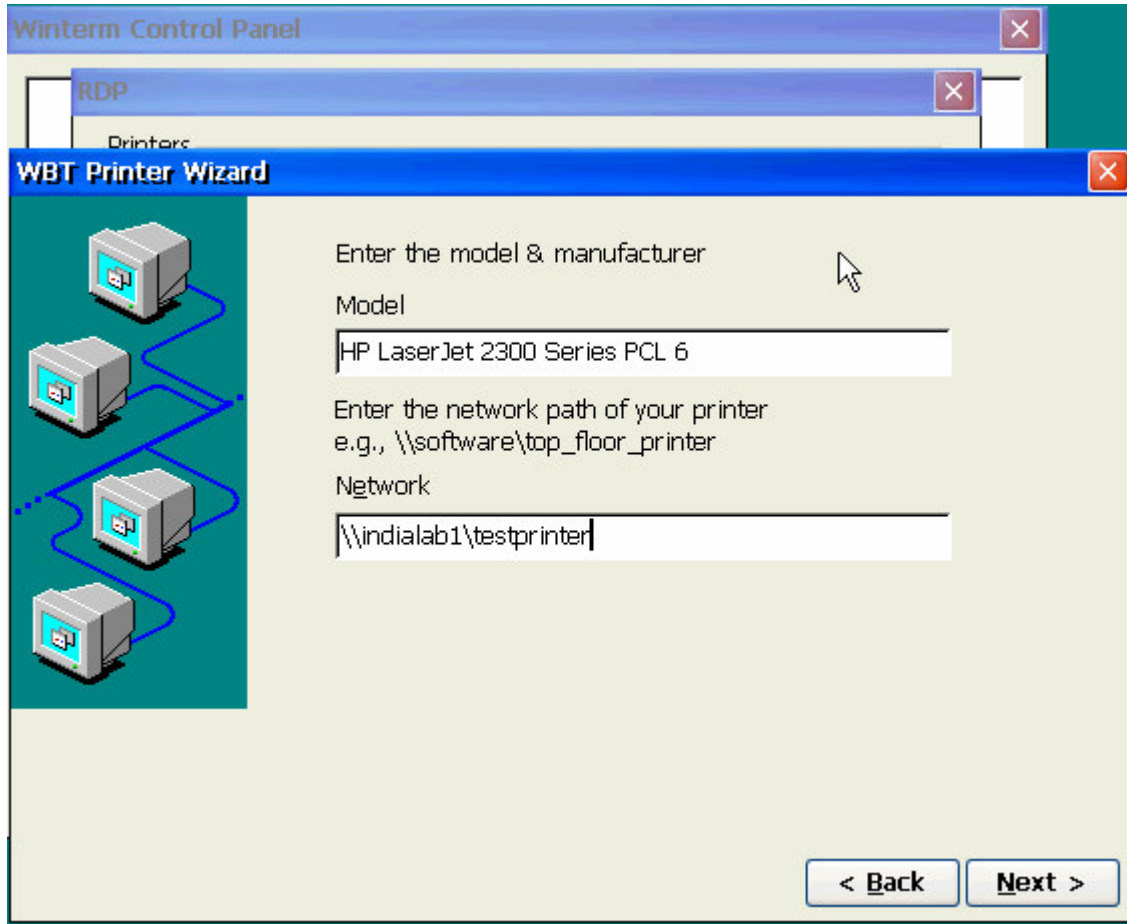
The above text dealt extensively on how Printing process works with Citrix and Microsoft RDP. Below are the steps to configure Client Printers using Wyse CE based Terminal.

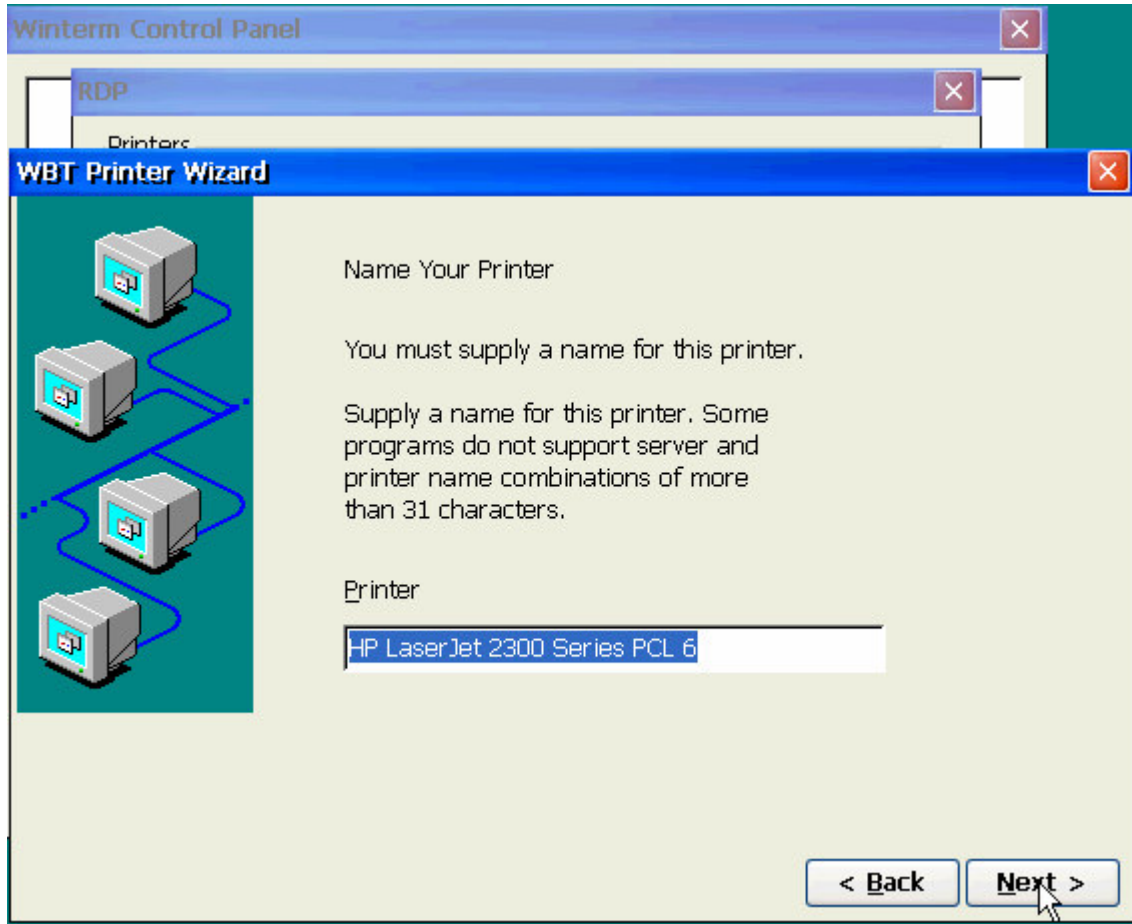
- Go to Control Panel.
- Click on Client Printer Icon in CE 5.0 or RDP Icon in CE 4.x.
- Double click Add Printer.
- Select the suitable port Local /Network/COM1/COM2
- Select Printer Manufacturer Name and corresponding Printer Model.
- Select the name for the printer.
- If it is not included in the build-in list then you have to click "User Defined" and you have to specify the Model and Printer Name. Please note that the Printer Name has to be exactly same as the Printer driver installed in the Citrix or Microsoft Terminal Server. It is case sensitive also.
- If Network port is selected then you have to mention the UNC path of the printer share in [\\Servername\Printername](#).

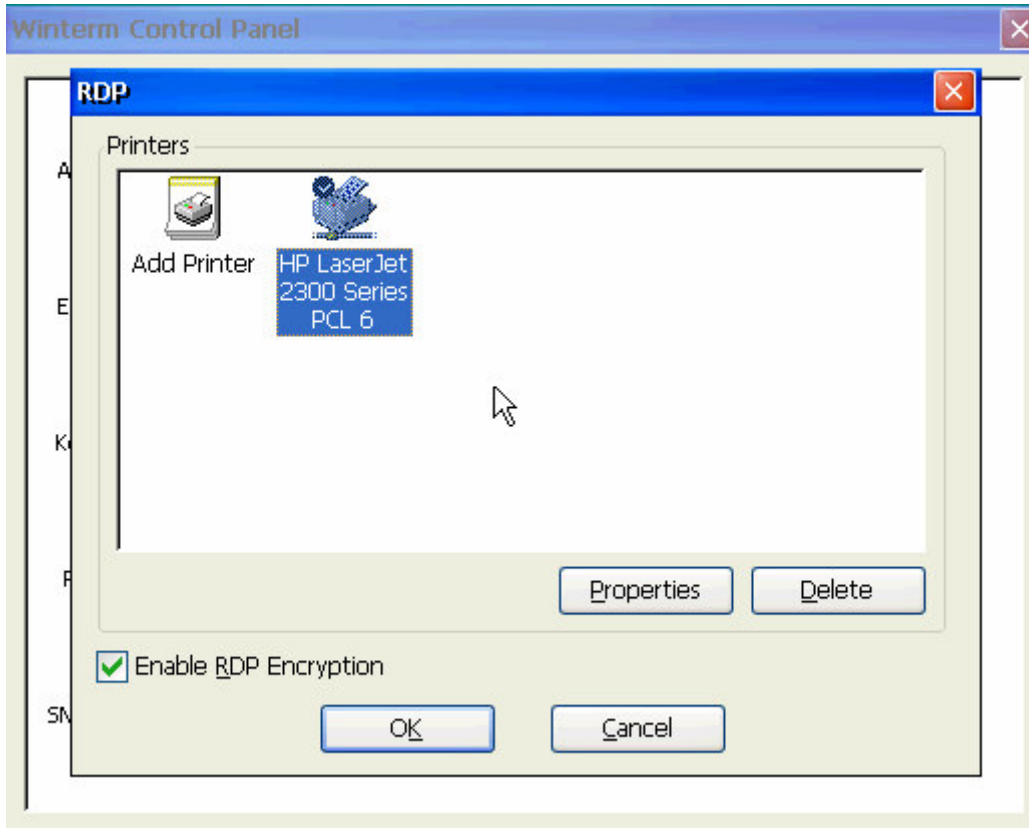
Following pictures show a step by step guide for configuring a HP LaserJet 2300 Printer which is connected as Network Share.











6. Troubleshooting

- A. Care should be taken that Printer name should exactly match with the Printer driver name already installed in the Server. This has also been found case sensitive.
- B. The drivers which we are using in Client side should be available at the Server side.
- C. In case if the driver is not present in the server you can only install the driver without installing the printer. For that you need to go to Start->Settings->Printers->File->Server Properties->Drivers->Add driver.

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