

How to improve printing for virtual desktops?

ThinPrint in a nutshell

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Issued: September 8, 2011 (v19)

How do you optimize printing in virtual desktop environments?

This brief guide describes the use of ThinPrint for virtual Windows desktops and how they can be configured with the products VMware View, Citrix XenDesktop, Microsoft Virtual Desktop Infrastructure, Sun Virtual Desktop Infrastructure (Oracle), and others.

Why use ThinPrint in virtual desktop environments?

ThinPrint abolishes the fixed coupling of applications to printer hardware. Thanks to DRIVER FREE PRINTING, a specific printer driver is no longer required on the virtual machines (VM). High compression and bandwidth management virtualize the spatial proximity too. Thus, printer hardware can be located in both remote branch and home offices.

ThinPrint likewise solves the 32/64-bit incompatibility of printer drivers. SSL encryption¹ provides the necessary security. Images for virtual machines can thus be created and managed more flexibly. Extensive management tools simplify administration and provide many additional benefits to the point of tracking print volumes.

Which environments is ThinPrint recommended for?

Use of ThinPrint is basically recommended for any virtual desktop environment where printing will take place. The higher the number of printers and, particularly, of different printer models, the sooner ThinPrint's added value becomes evident. There are two typical installation forms:

1. Virtual desktop environments with a central print server

The virtual desktops need only the virtual printer driver *ThinPrint Output Gateway*. Thanks to V-Layer the native (original) printer drivers are to be installed only on the central print server. So it's unimportant which operating system runs on workstations and thin clients (e.g. Windows 7, Linux, Mac OS, or Windows Embedded Compact 7).

2. Virtual desktop environments with no central print server

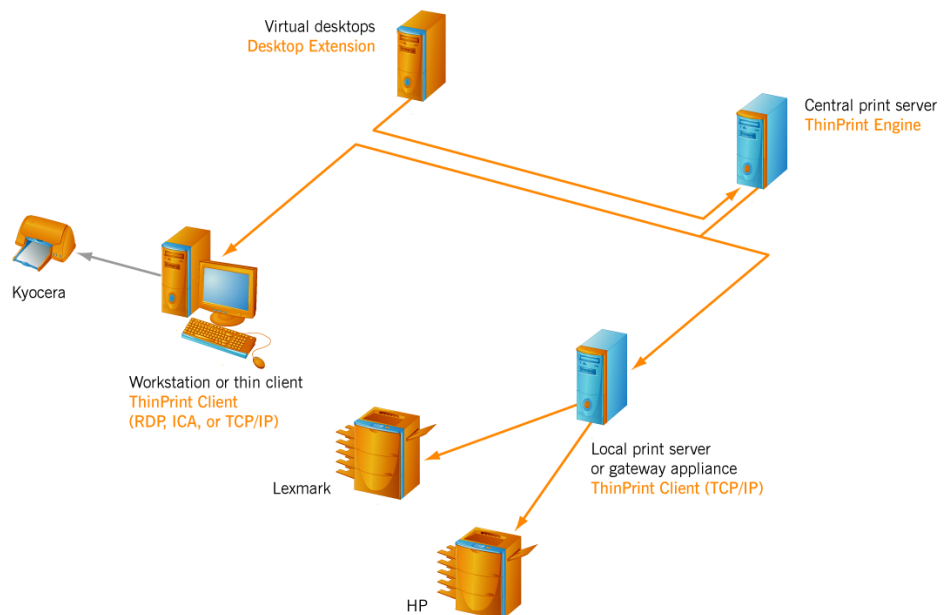
Also without a central print server *ThinPrint Output Gateway* can be used as the single printer driver – but only with Windows workstations and with thin clients on which Windows Embedded Standard 7 or XPe runs. For non-Windows devices native printer driver are to be installed on the virtual desktops.

With VMware View installations ThinPrint is a component of VMware Tools (*Virtual Printing*) and the ThinPrint Client (RDP type) is integrated in the VMware View Client.

1 Secure Socket Layer or Transport Layer Security

Installation in environments with a central print server

- Step 1** – Provide a central print server.
Requirements: Windows Server 2003 with Service Pack 2 and later, Windows Server 2008 with Service Pack 2², or Windows Server 2008 R2
- Step 2** – Download the product ThinPrint Server Engine from the ThinPrint website (www.thinprint.com → PRODUCTS → OVERVIEW → SERVER ENGINE → DEMO VERSION). Note that there is a 32-bit and a 64-bit version of the Engine. Choose the appropriate version for your print server.
- Install the software on the virtual machine with the setup program and follow the instructions of the setup routine. During the installation, enter (at least) two (demo) license keys³, which you received via e-mail or from your salesperson: Annual License Model (license key type: TLUS), user-based licensing (license key types: TPPS + TPUS), or server-based licensing (license key types: THPS or TAPS + THSA).
- Step 3** – Install the **Desktop Extension**⁴ on the virtual desktops (download from www.thinprint.com/ → SUPPORT → CLIENTS & TOOLS → THINPRINT SOFTWARE TOOLS → DESKTOP EXTENSION).
 On VMware View desktops this installation is not necessary if the Virtual Printing component of VMware Tools is installed. However an update of these components is possible using the Desktop Extension.



Illus. 1 Installation of ThinPrint components in an environment with a virtual central print server

- Step 4** – Download the **ThinPrint Client Windows** from the ThinPrint website (www.thinprint.com/ → SUPPORT → CLIENTS & TOOLS → THINPRINT CLIENTS → CLIENT WINDOWS 8.6), and install it on a workstation. Select the print proto-

² Alternative: Service Pack 1 with Microsoft-Hotfixes KB958741 (Print Job Owner) and KB958656 (Client Side Rendering)

³ Per central print server

⁴ It's free and needs no administration.

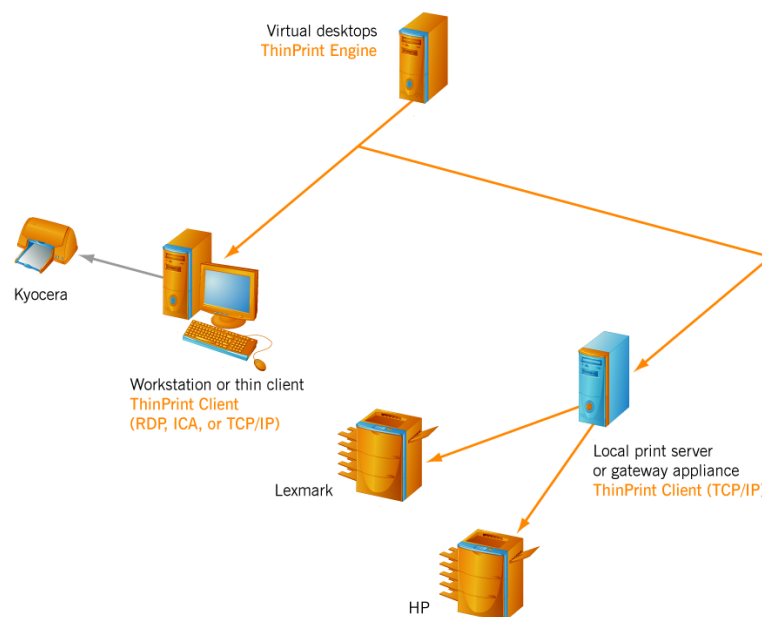
col: ICA, RDP, or TCP/IP. Or provide a terminal (= thin client) with the integrated ThinPrint Client (www.thinprint.com/ → SUPPORT → SUPPORTED DEVICES).

In VMware View environments this installation isn't necessary in either case because the RDP type of ThinPrint Client is integrated in the VMware View Client.

More information about installation and configuration of print server environments can be found in the ThinPrint Server Engine quick installation guide, in the ThinPrint Server Engine manual, in the ThinPrint Engine for VMware View quick installation guide, and in the ThinPrint Engine for VMware View manual.

Installation in environments with no print server

- Step 1**
- Create a virtual machine as the template for the Windows desktops.
Requirements: Windows XP Professional with Service-Pack 2 or later, Windows XP Professional x64, Windows Vista (Business, Enterprise, or Ultimate), or Windows 7 (Professional, Ultimate, or Enterprise)
- Step 2**
- Download the program ThinPrint Desktop Engine from the ThinPrint website (www.thinprint.com/ → PRODUCTS → OVERVIEW → DESKTOP ENGINE → DEMO VERSION). Note that there is a 32-bit and a 64-bit version.
 - Install the software on the template (of the virtual machines) with the setup program and follow the instructions of the setup routine. During the installation, enter the (demo) license key, which you received via e-mail or from your salesperson: Desktop Engine (license key type: TRDP or TADP). More information about installation can be found in the Desktop Engine manual and the Desktop Engine quick installation guide (www.thinprint.com/ → PRODUCTS → OVERVIEW → DESKTOP ENGINE → MANUALS).



Illus. 2 Installation of ThinPrint components in an environment with virtual Windows desktops with no print server

- Step 3** – Download the **ThinPrint Client Windows** from the ThinPrint website (www.thinprint.com/ → SUPPORT → CLIENTS & TOOLS → THINPRINT CLIENTS → CLIENT WINDOWS 8.6), and install it on a workstation. Select the print protocol: ICA, RDP, or TCP/IP. Or provide a terminal (= thin client) with the integrated ThinPrint Client (www.thinprint.com/ → SUPPORT → SUPPORTED DEVICES).

The installation routines of Desktop Engine and ThinPrint Client Windows are Plug&Play for printing via RDP. Immediately after the installation, you can create a Remote Desktop Connection and print from there.

Printer mapping with AutoConnect

With AutoConnect it's possible to **connect shared printers** of a central, dedicated print server **automatically** or – with no print server – to **create the printers in a virtual desktop session** which are locally installed on the workstations or thin clients. The AutoConnect Windows service is supplied with the package of the ThinPrint Engine, the Desktop Extension, and the Virtual Printing component of VMware View. So AutoConnect is already installed on virtual desktops running VMware View⁵.

To manage AutoConnect for all desktops, it can be configured centrally in Group Policies. When a user logs on, AutoConnect settings are sent dynamically to the user's virtual desktop. In a session, AutoConnect automatically connects the print server's shared printers specified in the tables Dynamic Printer Matrix and Map Additional Printers. Group Policies can be configured on any computer which is a domain member – local or remote. We recommend configuring them directly on the domain controller (Active Directory server). Furthermore the Management Center configuration can be imported into the Dynamic Printer Matrix.

More information can be found in the manuals ThinPrint Server Engine, ThinPrint Engine for VMware View, and ThinPrint Management Center on the ThinPrint website.

⁵ Under the condition that VMware Tools and View Agent including Virtual Printing option are installed