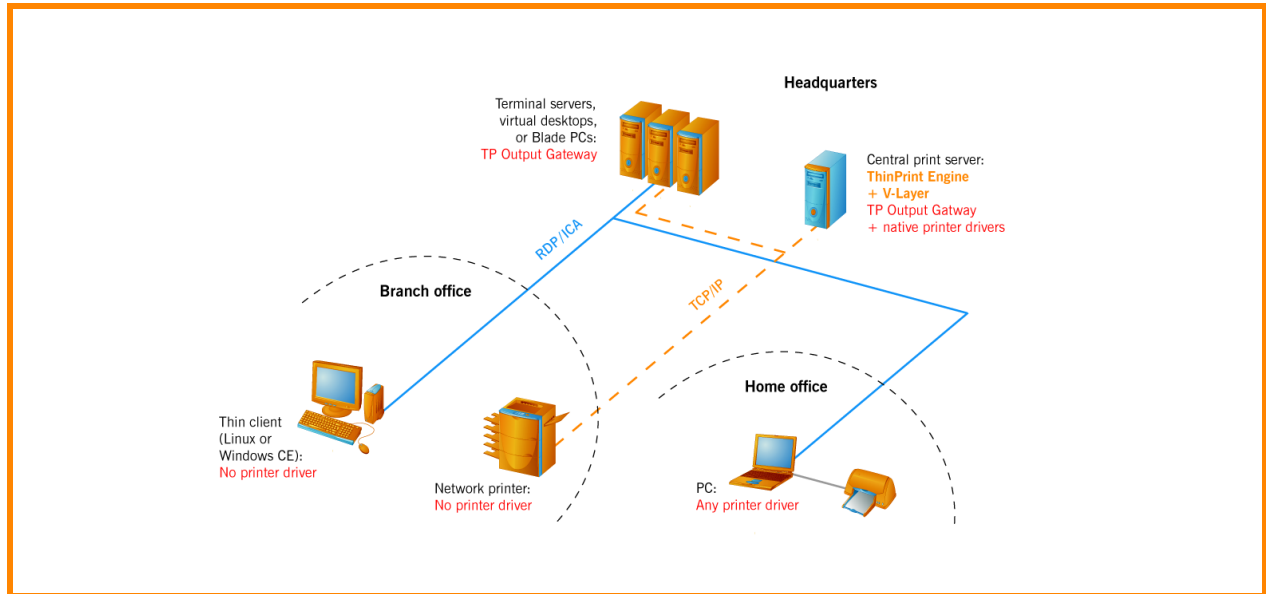


Centralize your printer drivers

Using ThinPrint Engine and V-Layer



Through the utilization of a central print server the Driver Free Printing technology can also be used for both printing to non-Windows devices and for **centralizing all printer drivers on one machine**. The ThinPrint component needed here is called V-Layer. You install V-Layer together with ThinPrint on the central print Server (see illustration). ThinPrint Output Gateway is installed as the only printer driver on the computers sending the print jobs.

If V-Layer is the only ThinPrint function you wish to use, you don't need to install anything on the client side. If, additionally, you wish for the print data to be compressed, streamed and/or encrypted, then you will need to install ThinPrint Client – a minimum of one per branch office. In this case ThinPrint Engine sends the print jobs to ThinPrint Clients that are installed on Thin Clients, local print servers, Gateway appliances or (stand-alone) network printers - irrespective of their operating systems.

Introduction

- Driver Free Printing
- V-Layer

Printer Virtualization Layer

- Preparations
- Sample configuration
- Printer mapping
- Configuring AutoConnect

Appendix

- ThinPrint Engine technology
- Licensing on a central print server

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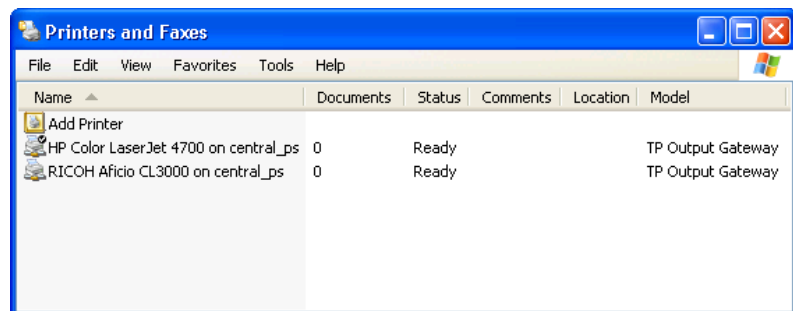
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Introduction

Driver Free Printing

In exclusively Windows environments ThinPrint architecture allows Driver Free Printing - you only need to install ThinPrint Output Gateway, rather than printer-specific drivers, on the computers initiating print jobs (MODEL column in Illus. 1).

This procedure can be followed in client-server architectures, in server based computing (SBC) and in virtual desktop environments. The printer specific (native) driver is only installed on the local client, where the printer is connected to the desktop computer.

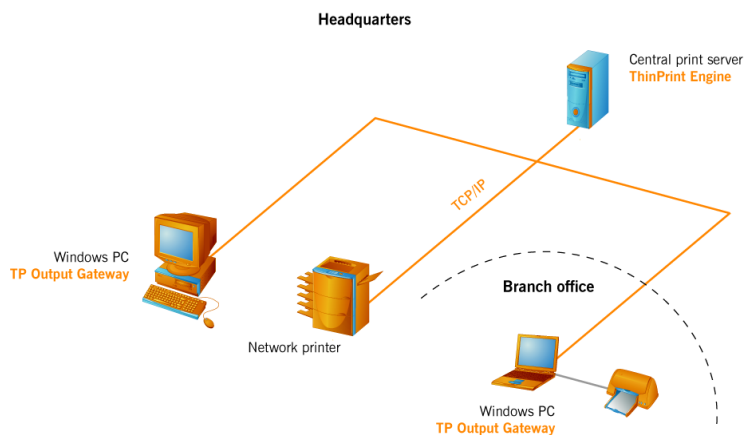


Illus. 1 TP Output Gateway instead of the native printer driver

V-Layer

Through the utilization of a central print server the Driver-Free-Printing technology can also be used for both printing to non-Windows devices¹ and for centralizing all printer drivers on one machine. The ThinPrint component needed here is called V-Layer. When using V-Layer, the ThinPrint Engine and its V-Layer components will be installed on the central print server only.

ThinPrint Output Gateway is installed as the only printer driver on the computer that initiates the print jobs². Illus. 2 shows an example for client-server architectures.



Illus. 2 Components for centralizing printer drivers in client-server architectures: ThinPrint Engine and TP Output Gateway

- 1 PCs, thin clients, local print servers, gateway appliances, or stand-alone network printers
- 2 virtual or real desktops computers, blade PCs or terminal servers

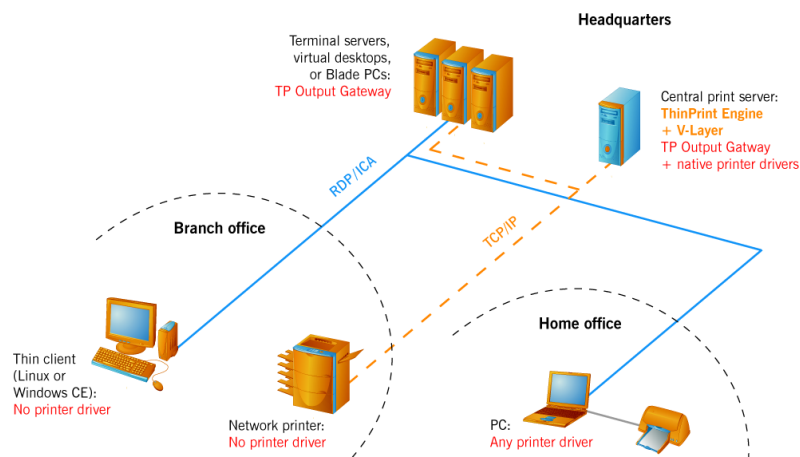
If V-Layer and bandwidth management are the only ThinPrint functions that need to be used, you will not need to install anything on the client side.

If, additionally, you wish to compress, stream³ and/or encrypt print data you will need ThinPrint Client on the client side – at least one per branch office. In this case **ThinPrint Engine** sends the print jobs to the **ThinPrint Clients** that are installed on thin clients, local print servers, gateway appliances or stand-alone network printers – irrespective of their operating systems.

With V-Layer, print data is sent from a machine that initiates the print jobs to the central print server in Windows' own EMF data format. On the central print server, it is sent from the TP Output Gateway to the printer-specific (native) driver (Illus. 3).

Benefits of V-Layer:

- Native printer drivers are not required on the computers initiating the print jobs (e.g. workstations).
- No printer drivers are required on end devices⁴ (on Windows devices one single printer driver will suffice)
- Print jobs can be sent from the central print server via ThinPrint Ports as well as via conventional printer ports (e.g. Standard TCP/IP Port).



Illus. 3 Allocation of printer drivers when using V-Layer: native or, as appropriate, Output Gateway driver (red)

V-Layer setup

Preparations

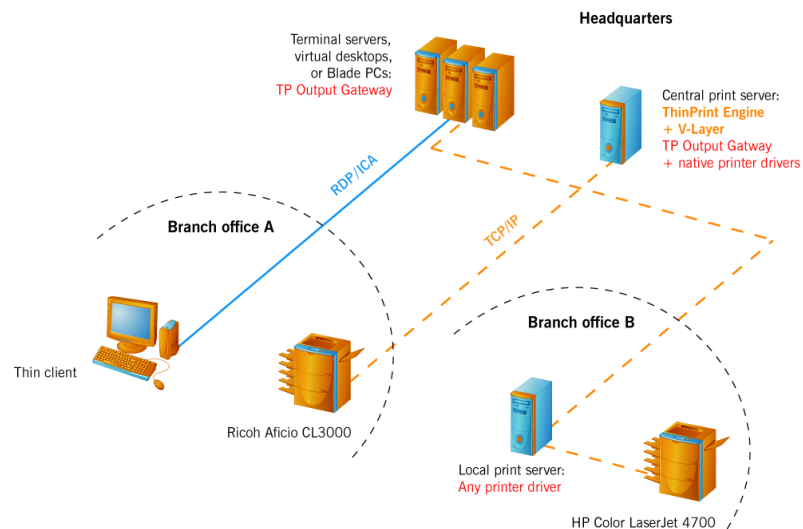
- Install ThinPrint Engine on the central print server.
- Install TP Output Gateway as a printer driver on each machine that initiates print jobs (e.g. on each workstation).

³ Sending in small packets, so that printouts start immediately

⁴ the destination to which print jobs are to be sent, i.e. (stand-alone) network printers, local print servers, gateway appliances, PCs or Thin Clients

Sample configuration

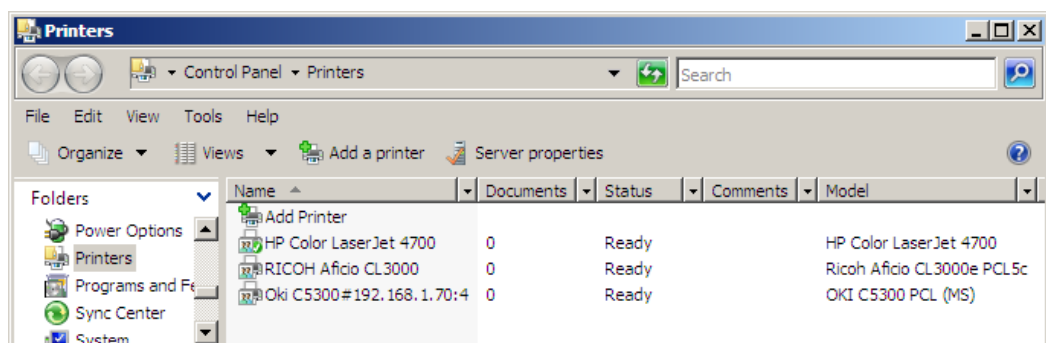
Illus. 4. shows the scenario:



Illus. 4 Print jobs are sent from the central print server to the network printer or to local print servers; ThinPrint Clients are not needed in this procedure

Printer setup

- On the central print server, add all necessary printers with their native printer drivers and share them.
- If you want to send the print jobs using ThinPrint Engine rename the printers according to ThinPrint name convention (see the Oki printer in Illus. 5), and connect them via ThinPrint Ports. Otherwise connect them via Standard TCP/IP Ports (e.g., the HP printer and the Ricoh printer in Illus. 5).



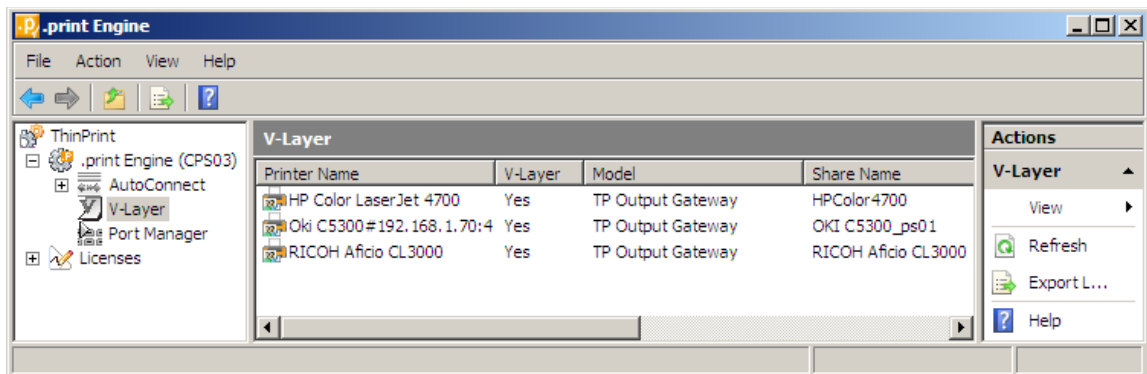
Illus. 5 An example on a central print server of printer objects that use native printer drivers

V-Layer configuration

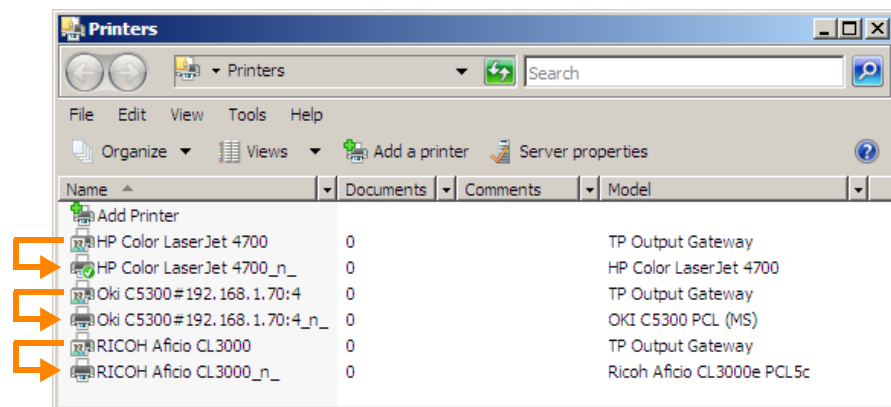
- To convert the printers use the V-Layer configuration tool; it's a component of ThinPrint Server Engine. See the respective manual.

For each (selected) printer object the V-Layer configuration (Illus. 6) creates a second object which uses TP Output Gateway as the driver. It then moves the share from the old to the new printer object. Later on the (new) shared printer object receives the

print jobs and transmits them to its paired printer object (the one containing `_n_` in its name; Illus. 7).



Illus. 6 An example of V-Layer configuration



Illus. 7 V-Layer printer pairs: The first printer of a pair uses the TP Output Gateway and the second one uses the native driver (example)

Printer mapping on terminal servers, virtual desktops, or blade PCs

With the AutoConnect ThinPrint component, printers can be conveniently connected during sessions. To do so, install AutoConnect on terminal servers, virtual desktops or blade PCs. On the workstations or on Thin Clients, however, the set-up or activation of ThinPrint Client is not mandatory.

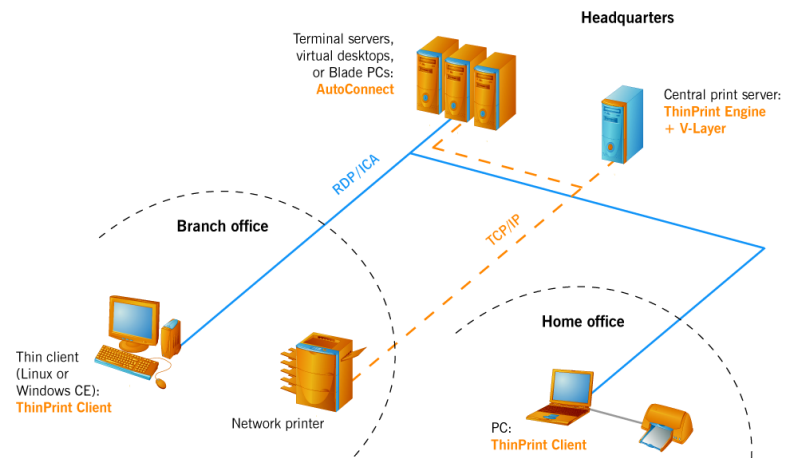
When a user connects with a session, AutoConnect will start automatically and establish the appropriate connections with the shares on the central print server.

The first example shows an environment where ThinPrint Clients can or should not be rolled out. In the second example, ThinPrint Clients are installed.

AutoConnect configuration: Example 1

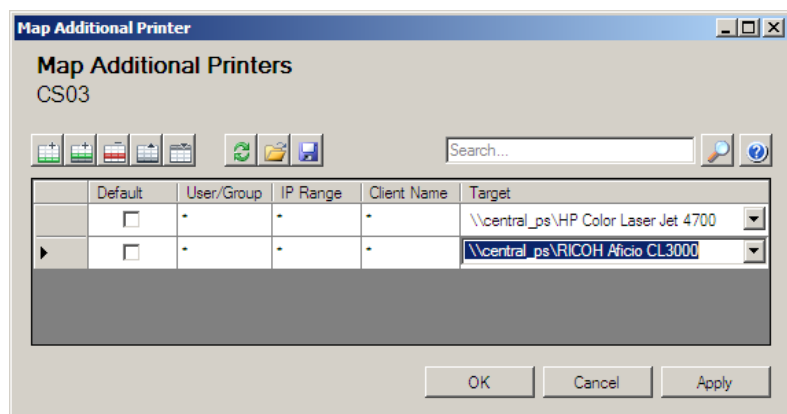
without
ThinPrint Clients

■ Illus. 8 shows the scenario.



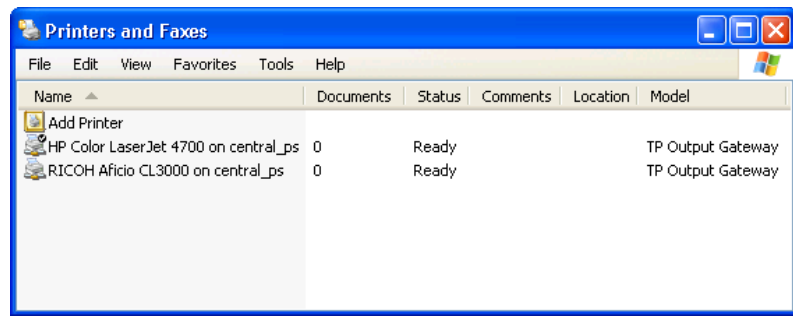
Illus. 8 Printer mapping: AutoConnect on terminal servers, virtual desktops or blade PCs, but not on ThinPrint Clients

1. Open AutoConnect configuration on the terminal server, virtual desktop or blade PC, and select the tab MAP ADDITIONAL PRINTERS (Illus. 9). Configure desktops remotely from the central print server. Alternatively, you can install AutoConnect as a group policy object (GPO) in Active Directory.
2. Enter the paths to the printer shares into central print server. Example:
`\\central_ps\HP Color LaserJet 4700`
 At this point you can define which user will be mapped to which printer, with user or group, IP addresses, address ranges and client names (using Wild-cards). Confirm by clicking on APPLY.



Illus. 9 AutoConnect configuration: Map the printer shares on the central print server and, if applicable, define conditions

3. Set up an RDP or ICA session. The result is shown in Illus. 10.

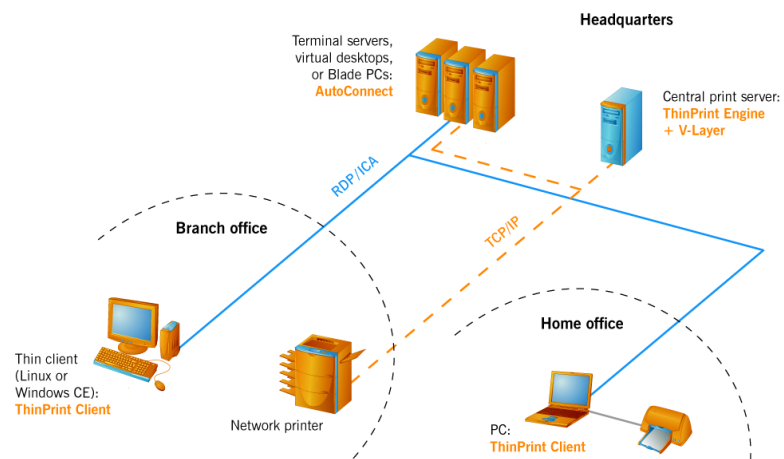


Illus. 10 Printers set up with AutoConnect in a session

AutoConnect configuration: Example 2

with ThinPrint
Clients

■ Illus. 11 shows the scenario.

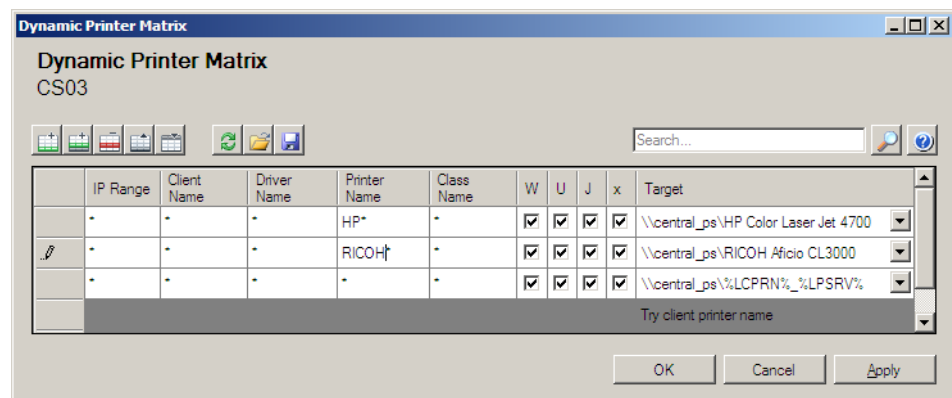


Illus. 11 Printer mapping: AutoConnect on terminal servers, virtual desktops or blade PCs and ThinPrint Clients on workstations or Thin Clients

1. Set up all those printers on the work stations and Thin Clients that should be mapped into the respective session. Activate each printer's checkbox in ThinPrint Client Manager if it is not activated automatically.
2. Open AutoConnect configuration on the terminal server, virtual desktop or blade PC and select DYNAMIC PRINTER MATRIX (Illus. 12). Configure desktops remotely from the central print server. Alternatively, you can install AutoConnect as a group policy object (GPO) in Active Directory.
3. In the TARGET column, enter the paths to the printer shares on the central print server.

Example: \\central_ps\HP Color LaserJet 4700

If you're not using variables (see below), you must name the share in at least one other column (as HP* and RICOH* in Illus. 12), that way each printer will be uniquely assigned.



Illus. 12 AutoConnect configuration: Map printer shares on the central print server and define conditions. You can use variables

The variables in the third line map all the printers of a local print server that have been connected to the workstations. Confirm by clicking on APPLY.

4. Set up an RDP or ICA session. The result is shown in Illus. 10.

Variables For more information on configuring AutoConnect - in particular the use of variables %LCPRN% for printer names and %LPSRV% for the names of local print servers (Illus. 12) – see the praxis examples in the „ThinPrint Server Engine“ and the “Thin-Print Management Center” manuals.

Appendix

Technical restrictions

Supported operating systems for the installation of ThinPrint Server Engine 8.6 on central print servers:

- Windows Server 2003 and 2003 x64 (each with Service Pack 2 or later)
- Windows Server 2008 and 2008 x64
- Windows Server 2008 R2

Supported operating systems and environments for the installation of the components AutoConnect, Virtual Channel Gateway and TP Output Gateway⁵:

- Windows XP and XP x64 (each with Service Pack 3 or later)
- Windows Vista and Vista x64 (each with Service Pack 1 or later)
- Windows 7 and 7 x64
- Windows Server 2003 and 2003 x64 (each with Service Pack 2 or later)
- Windows Server 2008 and 2003 x64
- Windows Server 2008 R2

⁵ All the components are part of Desktop Extension and Terminal Server Extension.

Note: There are various versions of AutoConnect and Virtual Channel Gateway for server and desktop operating systems (including virtual desktop environments). See also the “ThinPrint Server Engine” and “ThinPrint Desktop Extension” manuals.