

## **Documentation SLIMPRINTER**

(Build 7.9 09.06.2011 full unicode)

### **1. Purpose of the application**

SLIMPRINTER provides driverless printing on Microsoft Terminal Server using the RDP protocol.

It is necessary to install all client printer drivers on the Terminal Server for printing output on Microsoft Terminal Server 2000, 2003 and 2008 with built-in means of the RDP protocol. Some modern GDI printers may cause problems with one another while other printer models (e.g. OKI C3200(n)) are not supported at all.

The program SLIMPRINTER solves these problems. All printing output that is processed via GDI printers (most applications do so) is directly supported. Programs that only produce RAW spools (like plotter output and some programs that use receipt printers) are supported by SLIMPRINTER as well if the original printer driver is present on the server.

Another problem is the visibility of printers that have been created via RDP. In systems with a large number of installed printers and users this might become rather confusing. SLIMPRINTER allows the precise setting of client printers and their visibility on the server.

A third problem is the printer name being created by the RDP protocol. This name contains a session id that often changes after re-login to the terminal server. Thus problems with applications that save printer settings for future use arise.

SLIMPRINTER solves this problem by using a combination of the client machine and printer name as server-side printer label.

### **2. Component structure of SLIMPRINTER**

Slimprinter consists basically of 3 components:

\* server

- creates and deletes printers from client sessions
- deletes transmitted printer jobs
- contains license management

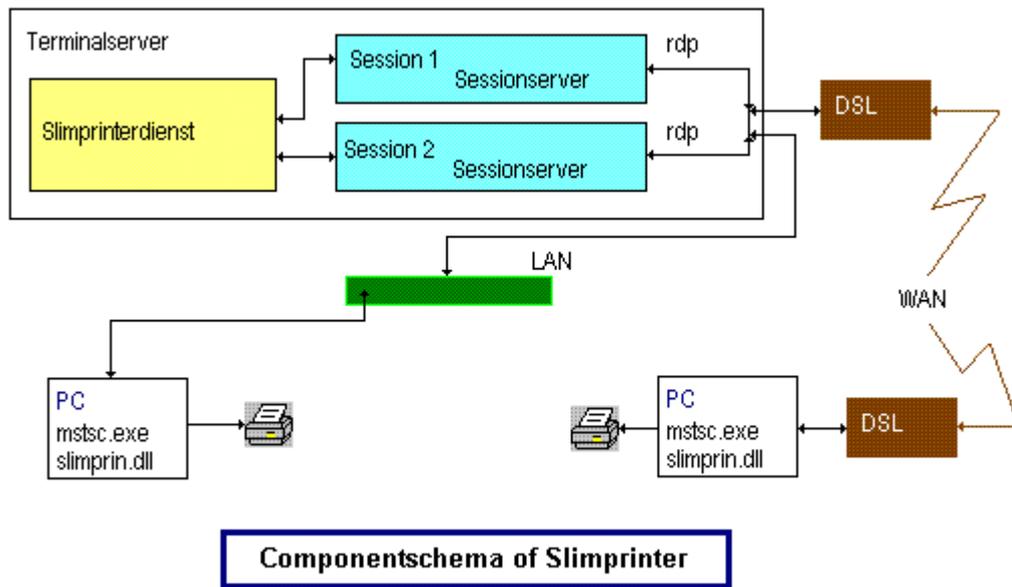
\* session server

- an instance of the session server will be started in every session, it creates a virtual channel to the client
- it receives the printer configuration of the client and sends it to the server
- compares the version info of server and client and triggers and updated if applicable

- receives the printer jobs of the printers belonging to the session
- compresses the printer jobs
- transmits the printer job via virtual channel of the RDP protocol

\* client DLL

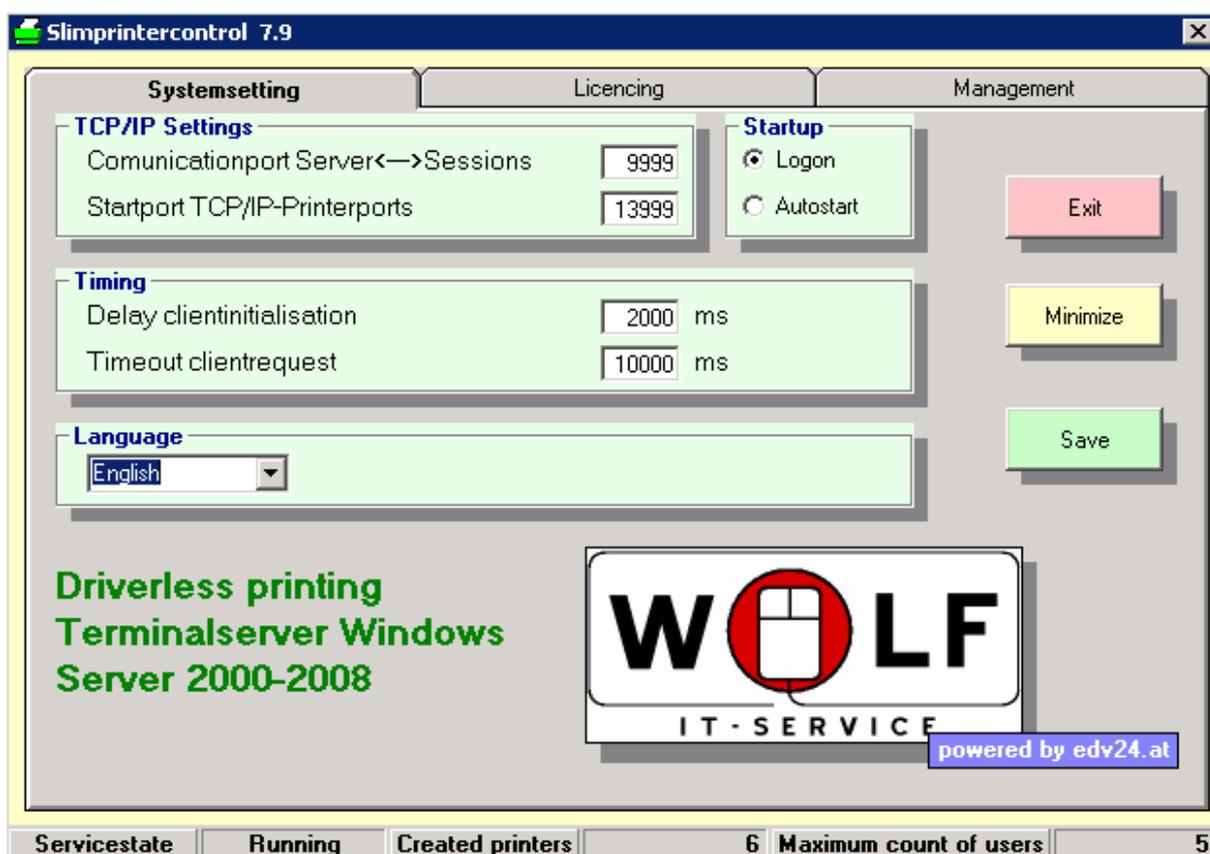
- will be load and bound by mstsc.exe according to Microsoft's specification
- receives possibly necessary updates
- receives compressed printer jobs
- decompresses the received printer jobs and sends them to the requested client printer



### 3. Installation

#### 3.1 Server installation

Execute the installer SetupSvr.exe for the Terminal Server on Windows 2000 and Windows 2003. For the Terminal Server on Windows 2008 use the installer SetupSvr2008.exe. In both cases the installer has to be executed with administrator privileges in the server console. In doing so the universal printer drivers WIT Universal and WIT Universal2, the Slimprinter Server and the session server will be installed and the service will be started afterwards. Additionally the server controller will be installed.



The whole communication between the service and the session servers and between the Slimprinter printers and the session servers happens via the loopback address 127.0.0.1. Therefore a port for the communication between the server and the session server (default 9999) and a number of consecutive ports, by default starting with port 13999, are used.

If other applications use these ports you have to change Slimprinter's ports in the server controller accordingly.

Furthermore you can influence the chronological initialization behavior in the server controller. There you can set two properties in the frame "timing". Starting an RDP session invokes startup of a session server that initiates the virtual channel to the client. You can set the time between startup of the session server and the initialization of the virtual channel with the first property.

If this initialization was successful the printer information is requested from the client DLL. Since the delivery of the data is dependent of the number of printers of the client, the speed of the local PC and the speed of the data connection, you can set the timeout value of this request according to the system constraints with the second property.

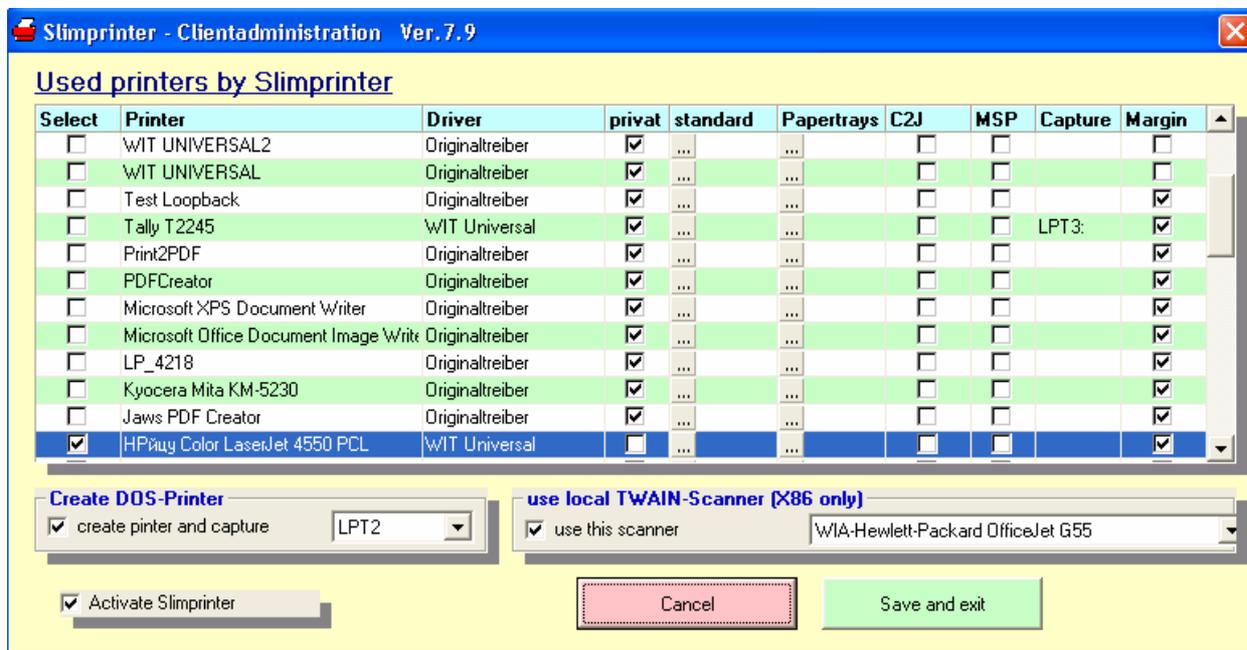
The Frame called "Startup" sets the startbehavior for the slimprintercomponent in each session. Logon means: The sessionserver will be launched during logonprocess.

This is the defaultbehavior for Server2003-2008.

Autostart means: The sessionserver will be launched via autostart with eplorer.exe. Set these option under Server 2000 or on machines with WindowsXP unlimited.

### 3.2. Client installation

Execute the installer SlimClient.exe on the client machines. After installation the client printer management will be started directly.

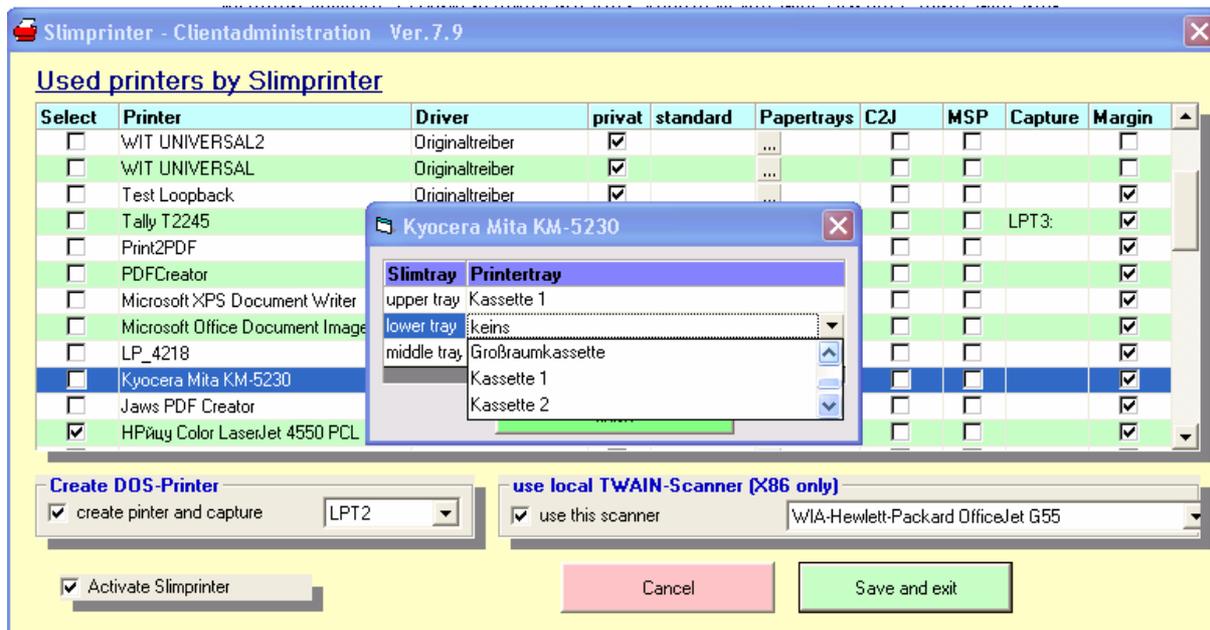


In the left column you can mark those printers that are to be used in an RDP session. The shown printer names are the names of those printers that are installed on the client. The column "driver" offers you three options:

- a) WIT universal: a universal driver for most paper formats and resolutions (even small resolutions like 72x72 dpi, asymmetrical resolutions like 360x180 dpi and fax resolutions).
- b. WIT universal2: a universal driver with additional paper formats A0, A1, A2 and A3, but without asymmetrical resolutions and a maximum resolution of 4800 dpi.
- c) original driver: Here the original printer driver is used. This driver also has to be installed on the terminal server in order to make SlimPrinter work correctly. This variant can be used if the universal drivers don't support the printing process (e.g. plotting).

The setting in the column "private" decides over the visibility of a printer in the terminal session. Private printers are only visible to the user (owner), main user and the administrator. If the printer is not set to "private" it will be visible and available for every user.

In the column "standard" a printer can be set as standard printer for the terminal session. This setting does not affect the local standard printer of the computer. If a printer has more than one paper tray you can assign a tray of the local printer to one of the three trays offered by the universal printer driver using the column "trays".



With the setting in the column "Copies2Job" (C2J) you decide whether the number of copies in a print job shall be split up into several print jobs. This is necessary if the local printer drivers don't save the number of copies in public devmode or if the printer driver only supports one copy per job due to disabled advanced settings. If this option is set for a printer, a separate print job will be generated for every copy.

The Column *MSP* provides a solution for devicedrivers which use a doublespoolfeature. Please check this row only for this specific devicedrivers!

The column *Capture* enables to share the printer or capture an LPT port. That is important to programs that send binary sequences directly to printer (Point of sale - slipprinter)..

The column *Margin* provides a correction for the margins. The universaldrivers of Slimprinter are borderless. The physical attached printer has nonprintable areas depending of the model. The checkbox Margin corrects this behaviour. A worddocument with left margin of 30mm will be printed exactly with 30mm left margin when this box is checked. Some bad Programms print without any margin. In this case uncheck this box.

Below the printergrid you'll find the settings for Addons (implemented with Version 7.3) for DOS-Printing and using of TWAIN-Scanners. These addons are documented separately.

Checkbox „Activate Slimprinter“ explained by itself.

An unattended installation is possible. Launch the installer with a parameter /VERYSILENT.

The local defaultprinter will be set as selected. Later modifying is always possible using the clientcontroller of slimprinter.

#### 4. Using Slimprinter

After installation of the server and client components you can initiate an RDP session with the client. You can disable the usage of printers as local resources in the RDP settings. If you do so, only the printers you have selected in the client management (see 3.2) will be used.



After logging on to the terminal server the session server will be started and the chosen printers will be created. On the server the client printers will be created using the naming schema "client name printer name". The advantage of this method is that the cumbersome usage of the session id for naming with the RDP protocol becomes obsolete.

However, having machines with the same name in a WAN might cause some problems. Please contact your system administrator if you run into such issues.

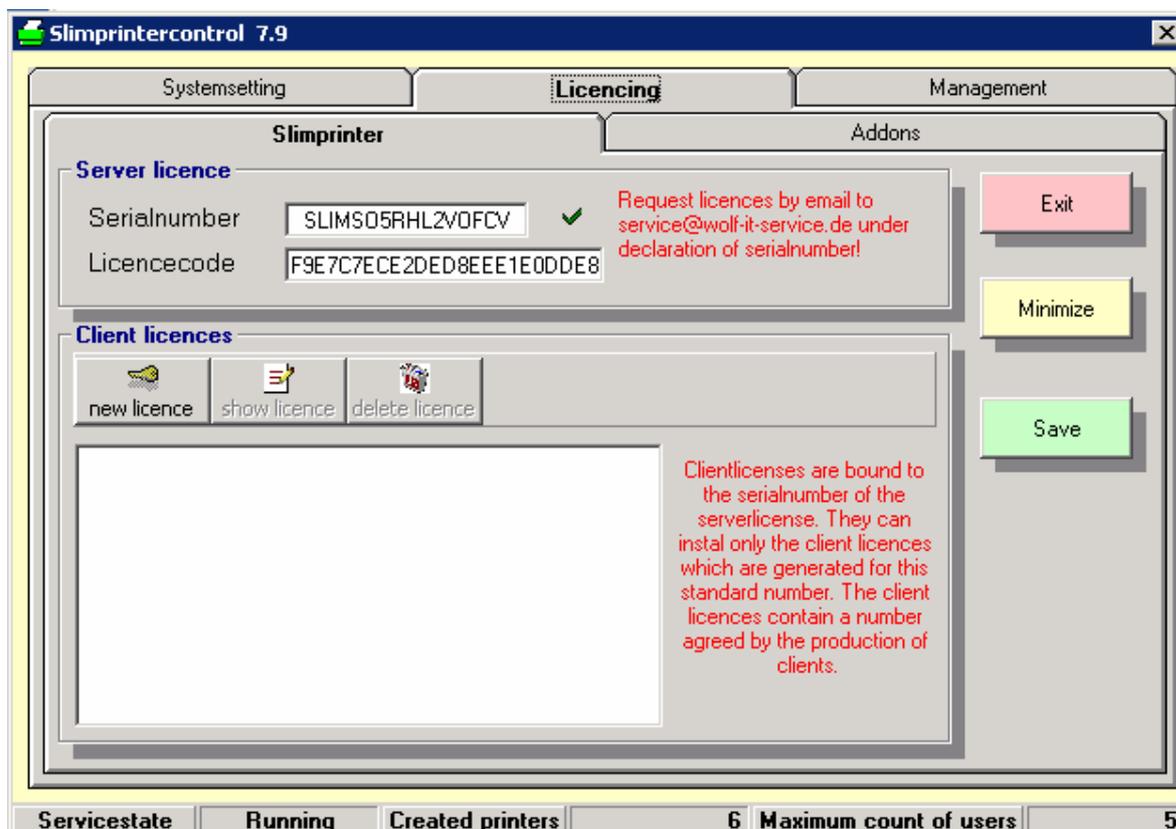
All client printers will be created using the same default settings like the corresponding printer on localside.

Slimprinter is now ready for printing.

Printing from applications happens in the usual way. If you change any parameters for a print job, these new settings will be passed to the client printer (e.g. using landscape orientation or a different resolution). If a client printer has less parameters (resolution, paper format etc.) then these parameters will be disabled on the server (and will be marked with a "!" and a yellow background). The GDI commands being sent to the Slimprinter printer during the execution of the job will be compressed and sent to the client via a virtual channel of the RDP protocol. On client side they will be decompressed again and sent to the appropriate printer. The local printer driver renders the print job.

## 5. License management

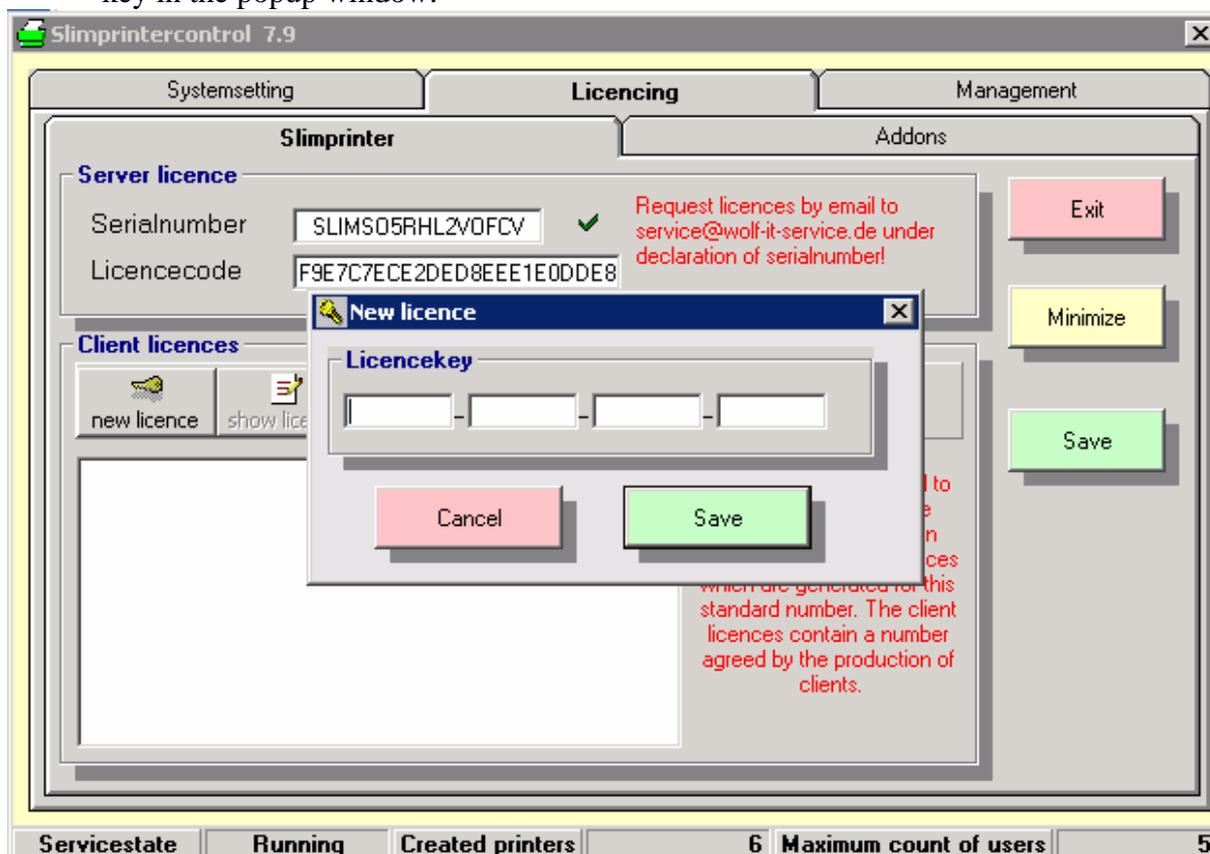
The demo version of Slimprinter can be turned into a full version if you enter a license code matching the serial number



In the basic version a maximum of five concurrent users is allowed. The number of client printers is unlimited. If you want to upgrade your version for more concurrent users, you have to install additional client licenses.

These additional licenses are bound to the serial number as well. Client licenses are available for different numbers of clients.

To enter a client license you have to click on "New license". Then enter your license key in the popup window.



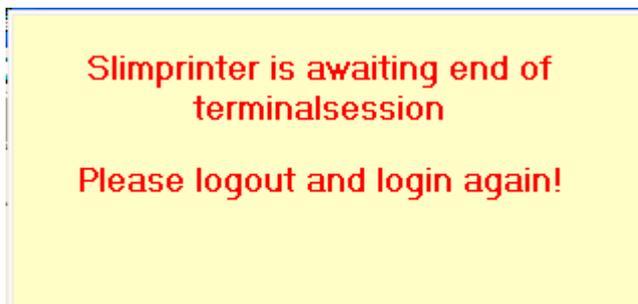
## 6. Program updates

Program updates will be published on the website of Slimprinter.

In general these updates have to be installed once on the server. If an update of the client software is necessary, this will be performed right after initiation of the RDP connection. After the update a restart of the RDP connection is necessary, otherwise no new client printers will be installed. On server side the client update will be announced with the following message box:



On client side the following message will be shown:



Clientupdate starts after terminating all instances of mstsc.exe and close this window..

## 7. Slimprinter intern

### 7.1 Building of printernames

The default method of building printernames is clientname + printername. This behavior can be modified by 2 registrykeys:

#### **HKCC\Software\WIT\Slimprinter\NotUseStation**

0 or empty = Clientname is used

1 = Clientname isn't used

#### **HKCC\Software\WIT\Slimprinter\UseUsername**

0 or empty = Username isn't used

1 = Username is used

### 7.2 Constant Portnames

Some applications use the printername and the portname to store printing behavior, like MS Access-reports. Inside the printermappingprocess Slimprinter checks the file SlimPort.txt with the following Syntax:

Printername|Portname

Printername|Portname

e.g.

TestPC HPLaserjet|PC1HPLJPort

PC2 EPSONStylus|PC2Stylus

(each line one entry Printername|Portname (Pipe as delimiter)). This file must exists in %windir%\System32 ( %windir%\SysWow64) at terminalserver.

During printermapping this file will be searched for the printername. If printername is found, the port will be named by the corresponding entry (Attention! Portnames must be unique!).

### 7.3 Activate Debuglogs

For diagnostics logfile can be activated, separated on client- and serverside.

Set the following key on terminalserver or client:

#### **HKCC\Software\WIT\Slimprinter\DebugLog**

0 or empty = Debuglog off

1 = Debuglog on

Logfiles will always saved in users temp-directory.

You will find the files Slimlog.txt at both sides and SlimSendLog.txt (transfer of spooldata) on server.

## 7.4 Bandwidthmanagement

Depending on spoolfilesize slimprinter uses a variable bandwidth to transfer the spoolfile. This feature can be modified by following registrykey:

**HKCC\Software\WIT\Slimprinter**

**NoAutoBandwidth** = 0 or empty :automatic bandwidth on

**NoAutoBandwidth** = 1 :automatic bandwidth off

## 7.5 Important registryentys by Slimprinter

### 7.5.1 Registry at terminalserver

Most settings of Slimprinter stored at

**HKCC\Software\WIT\Slimprinter** .

If 'Logon' is selected at startup one spezial enty will be written by every servicestart of slimprinter at

**HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon**

at value **AppSetup**. The defaultvalue *usrlogon.cmd* will be extended in *usrlogon.cmd*, *Slimstart.exe* . On each userlogin the file Slimstart.exe will be executed and TSPrintSessionSvr.exe is launched.

Otherwise 'Autostart' is selected TSPrintSessionSvr.exe will be launched via **HKLM\Software\Microsoft\Windows\CurrentVersion\Run\Slimprinter** .

The file TSPrintSessionSvr.exe will be registered at

**HKLM\SYSTEM\CurrentControlSet\Control\Terminal Server\SysProcs** as a Systemprogram.

### 7.5.2 Registry at clientmachines

Most settings of Slimprinter stored at **HKCC\Software\WIT\Slimprinter**.

The different settings for each printer will be stored at the keys of each printer at

**HKLM\SYSTEM\CurrentControlSet\Control\Print\Printers**.

Linking of DLL slimprin.dll at rdp-client mstsc.exe follows the rules of Microsoft at

**HKCU\Software\Microsoft\Terminal Server Client\Default\Addins\Slimprinter**

At the value **Name** „C:\Windows\System32\Slimprin.dll“ is stored, if the client has Slimprinter activated.