

# **.print Client DOS**

(version 5.0.25.2)

# Manual

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Issued: August 12, 2009 (v09)

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### Safety warning

All ThinPrint products are pure software solutions. Please note the safety warnings in the technical documentation from your hardware vendor and from the manufacturer of each device and component. Before beginning installation, we recommend closing all windows and applications and deactivating any virus scanner.

### How to use this manual

The following conventions are used throughout this manual to represent recurring actions and text types.

#### Conventions

Note!	Important tip, explanation, exception
SMALL CAPS	Menu, command, dialog panel, option
<i>Italic</i> "Name"	Proper name, emphasis, variable
Courier	Keyboard input
→	Consecutive menu or command
■	Enumeration, head note
Example	Example
–	Procedural steps
1.	
2.	
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<a href="http://www.thinprint.com">www.thinprint.com</a>	

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## .print Client DOS

The *.print Client DOS* enables DOS client machines to receive and decompress .print print jobs and forward them on to a print device. This print devices can be installed on the local port (e.g., *lpt1:*, *lpt2:*). This extends terminal clients like the Citrix ICA Client to include the following .print features:

- Connection specific bandwidth control for print data
- Print data compression
- Print data streaming (print data sent in a stream of 32 KB packets).

TCP/IP is used for print data transmission – regardless of the session protocol in use. Furthermore, the .print Client DOS supports the *ThinPrint AutoConnect* tool for automatically creating the client printers in a session. *Driver Free Printing* with *ThinPrint Output Gateway* is not supported.

### Requirements

#### Server-side

- *ThinPrint Server* or *.print Server Engine for Terminal Services*, version 5.0 SR-2 and later
- *ThinPrint AutoConnect*
- The value `PACKAGEACCESS` must be at 1 in the server registry under

```
hkey_local_machine\software\thinprint\portname
```

for each ThinPrint Port (default starting version 5.0 SR-3).

#### Client-side

- Recommendation for DOS version: 6.22
- 380 KByte free RAM space min.
- TCP/IP as network protocol (LAN Manager 2.2c or later with TCP/IP stack installed and running *Socket.exe*)
- Citrix ICA client DOS 32 bit
- A running ICA session (Citrix ICA Client must be active for printing over the .print Client DOS to function).

### Preparations

#### Server-side

##### *Server Engine for Terminal Services*

A plug-and-play installation runs the first time .print Server Engine for Terminal Services is installed, so that .print Clients Win32 can print without any further configuration. For .print Clients DOS, though, a few settings must be made after installation.

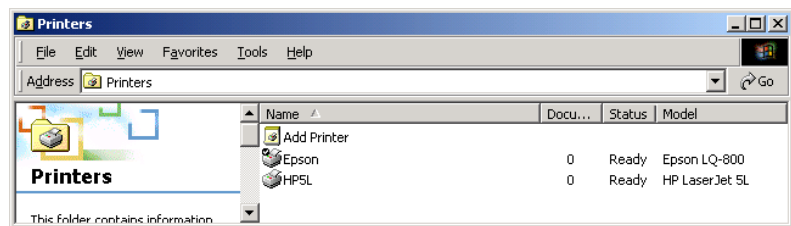
##### *Templates for AutoConnect*

Templates are printer objects in the server's Printers folder from which session printers inherit their properties (e.g., bandwidth, network protocol, and printer driver).

```
_#ThinPrint Output Gateway
```

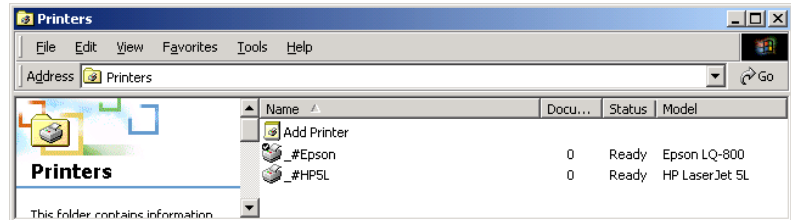
appears in the terminal server's Printers folder after plug-and-play installation. This template cannot be used for .print Clients DOS. Instead, other printers<sup>1</sup> must be installed on the server for the print devices found on the client side.

- Open the Printers folder on the terminal server and install the necessary printer, either a separate printer driver for each type of client printer, or a universal driver for all client printers (or a combination of both). All of these printers must be connected to a ThinPrint TCP/IP port. An example of one printer object for all HP compatible print devices and one for all Epson compatibles is shown in Illus. 1.



Illus. 1 Installing universal printers on the server (example)

- Change these printer objects into templates by placing a `_#` in front of each printer name, deleting the permissions for all users except ADMINISTRATOR, and adding SYSTEM with *full* access. The result is shown in Illus. 2.



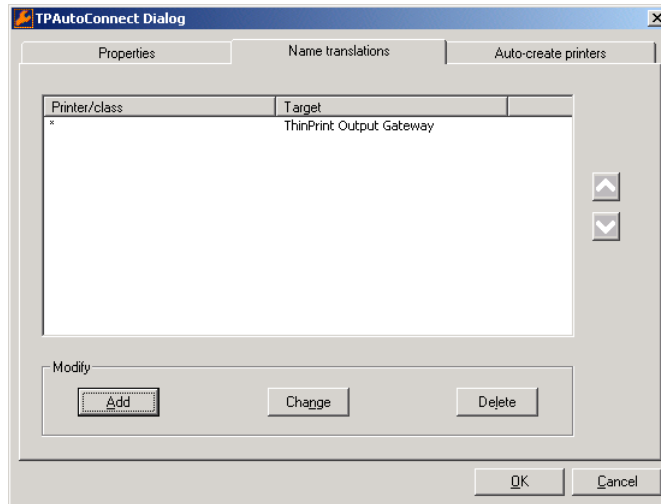
Illus. 2 Changing printer objects into templates (example)

*AutoConnect* The ThinPrint tool AutoConnect is also installed during plug-and-play installation. The following entries are also automatically made in the AutoConnect name translation table (Illus. 3):

\* ThinPrint Output Gateway

- This entry has to be deleted, because ThinPrint Output Gateway cannot be used under Linux.

<sup>1</sup> with native printer drivers



**Illus. 3** Name translation table in AutoConnect: Delete all entries

*Without AutoConnect* The client printer can also be created on the terminal server manually. .print printer object name is composed as follows:

Names of printer objects	
<b>either:</b>	<i>clientname:ID#printer</i>
Example:	client1:1#Kyocera FS-850
<b>or:</b>	<i>IPaddress:ID#printer</i>
Example:	191.168.1.17:1#Kyocera FS-850
<b>or:</b>	<i>printer#clientname:ID</i>
Example:	Kyocera FS-850#client1:1
<b>or:</b>	<i>printer#IPaddress:ID</i>
Example:	Kyocera FS-850#191.168.1.17:1
The printer ID is assigned by the .print Client DOS (= 1). ID and can also be omitted, because the .print Client DOS only recognizes one printer - its current printer.	

**Client-side**

*LMHOSTS* The terminal server's address must be added to the file LMHOSTS2 on the DOS for WINS name resolution to work under DOS:

LMHOSTS entry:      *IP\_address*      *hostname*

Example:              192.168.1.2      termserver1

*Start sequence*

The following start sequence must be observed on the DOS client to start the .print Client DOS:

	Directory <sup>2</sup>
1. MS-DOS	c:\dos
2. LAN Manager with TCP/IP Stack and <i>Socket.exe</i>	c:\net
3. .print Client DOS	c:\thinprin
4. Citrix-ICA-Client	c:\wfclient

The start sequence can be set with *Autoexec.bat*. Create the necessary directories. Illus. 4 shows an example.

```
c:\dos\share
path c:\;c:\dos;c:\net;c:\thinprin;c:\wfclient
lh mouse

lh c:\net\net start netbind
lh c:\net\umb.com
c:\net\tcptsr.exe
lh c:\net\tinyrfc.exe
lh sockets

lh c:\thinprin\tpdos -c HP5L

lh vs1
wfclient termserver1
```

Starting LAN Manager with TCP/IP

.Starting .print Client

Starting Citrix ICA Client

Illus. 4 Example of starting program with *Autoexec.bat*

## Configuration

The .print Client DOS does not have a special configuration menu. All settings can be made in the command line as parameters for starting the client. The Client can be run either with or without printer class support. The individual parameters are defined below.

<sup>2</sup> Create the necessary directories and copy the program files into them.

Command line  
or Autoexec.bat

Run:

```
tpdos [-h] [-p port] [-b bandwidth] [-t timeout] [-c classname]  
[LPT{1|2|3}:]
```

<i>Parameters</i>	-h	help	Displays available parameters and their function.
	-p	port	TCP port for the connection to the .print Engine; Default: 4000 (must agree with the setting in the ThinPrint Port Manager = server settings)
	-b	bandwidth	You can enter a bandwidth value which is the same or smaller than that set in .print Engine. If the value is larger or if client control is disabled at the server, server settings are applied. No input or 0 (zero) means that the .print Engine value will be applied; default: <b>0</b> (corresponds to server setting; server default: 256 000 bit/s)
	-t	timeout	Maximum waiting period until next attempt to print in case of blocked printer (paper jam, offline, etc.) in minutes; Default: <b>10</b>
	-c	class	Printer class name for AutoConnect (optional; maximum length: 7 characters; without spaces); Default: <b>DOS</b>
	LPT{1  2 3}:	device	Printer port to which the printer is configured; Default: <b>LPT1:</b>

*.print without  
AutoConnect* Without AutoConnect, only printer objects which have been created manually on the server can be used in the session. See Page 6.

*.print with  
AutoConnect* AutoConnect is started along with the terminal session. AutoConnect detects the .print Client DOS parameters: printer name (= DOS), printer ID (= 1), default printer in the terminal session (= printer with ID 1), class name (can be specified with -c) and printer port (can be specified with LPT).

If the entry for class name is missing, AutoConnect searches the server for the template `_#DOS`. If a class name has been entered (-c), AutoConnect searches for the template `_#classname`.

For more info please refer to the [.print Engine Manual](#) Chapter “.print Autocreated Printer (ThinPrint AutoConnect)” or to the white paper [ThinPrint AutoConnect](#).

## Starting the client

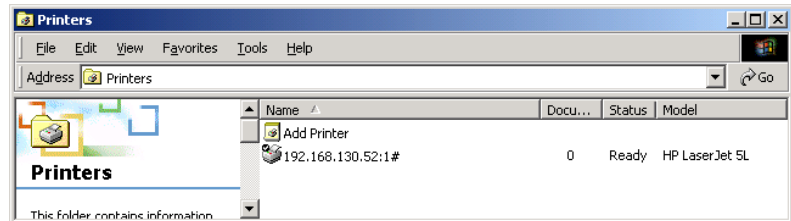
- Start the DOS machine as described above. After the network has been initialized, the .print Client DOS is started; finally, the Citrix ICA Client establishes a connection to the specified terminal server (*termserver1* in the example in Illus. 4).

The session printer objects resulting from the example in Illus. 4 are shown in Illus. 5<sup>3</sup>.

The printer object

```
192.168.130.52:1#
```

has been created according to its class name (HP5L; Illus. 4) using the template `_#HP5L` (Illus. 2) and has thus inherited its attributes: bandwidth, TCP/IP protocol, HP LaserJet 5L printer driver.



**Illus. 5** Session printer objects created by AutoConnect s shown in the example in Illus. 4

If, in contrast, the class name is omitted in `Autoexec.bat`:

```
lh c:\thinprin\tpdos
```

AutoConnect tries to connect to the (default) class name `DOS`. The template `_#DOS` would then be necessary on the terminal server.

## Quitting .print client DOS

The .print Client DOS is a resident DOS program (terminate and stay resident) and as such, cannot be quit directly. Either the operating system must be restarted or an appropriate TSR tool use to remove the .print Client DOS from main memory.

<sup>3</sup> If DNS name resolution functions, the client name could also be used instead of the IP address.

## .print Clients and supported features

.print Client	Network protocol			.print AutoConnect	Compression and streaming	Bandwidth control	SSL/TLS encryption	Output Gateway	.print Viewture	Virtual Channel Gateway	Connection Service
	ICA	TCP/IP	RDP								
Windows (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	+	+	+	-	+
Windows (ICA)	+	-	-	+	+	+	+	+	+	+	-
Windows (RDP) <sup>b</sup>	-	-	+	+	+	+	+	+	+	+	-
Service Windows (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	+	+	-	-	+
ActiveX Windows (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	+	+	+	-	+
Linux (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	+	-	-	-	+
Linux (RDP)	-	-	+	+	+	+	+	-	-	+	-
Java (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	+	-	-	-	+
Java as an applet (ICA)	+	-	-	+	+	+	+	-	-	+	-
Win16 (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	-	-	-	-	-
Win OS/2 (TCP/IP)	-	+	-	+	+	+	-	-	-	-	-
MS-DOS (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	-	-	-	-	-
Windows CE (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	-	-	-	-	-
Windows CE (ICA)	+	-	-	+	+	+	-	-	-	+	-
Windows CE (RDP)	-	-	+	+	+	+	-	-	-	+	-
Windows Mobile (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	-	-	-	-	-
Windows Mobile (ICA)	+	-	-	+	+	+	-	-	-	-	-
Windows Mobile (RDP)	-	-	+	+	+	+	-	-	-	-	-
ActiveX Windows Mobile (TCP/IP) <sup>a</sup>	-	+	-	+	+	+	-	-	-	-	+
LPD device	-	+	-	-	+ <sup>c</sup>	+	-	-	-	-	-

- a Also usable for ICA/RDP sessions, provided a TCP/IP connection exists between server and client
- b RDP 5.0 required
- c If a decompression filter can be installed