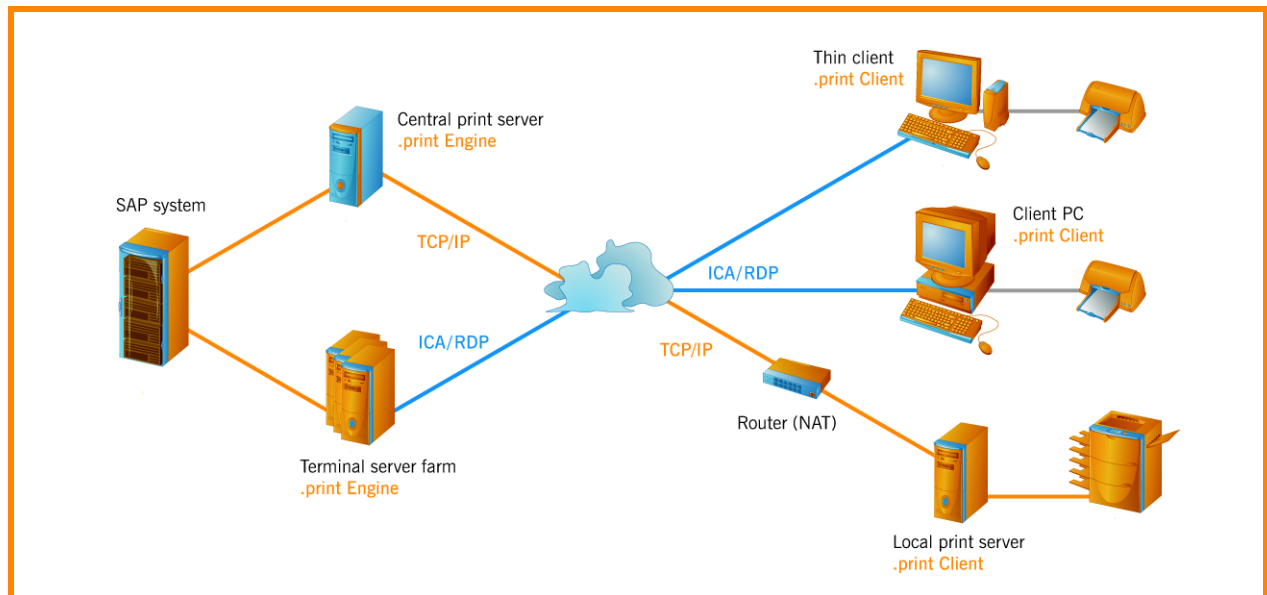


## SAP and ThinPrint .print

High-performance, user-friendly printing



Printing with SAP has always been a serious matter. Until now, though, solutions from SAP and third parties have mainly focused on high volume corporate output management. Modern work models like home offices, small, flexible satellite offices, or mobile workers create completely different demands on printing. Whereas with the SAP GUI, local printing functions at least on the default printer, direct printer support is not accommodated for the web GUI, Enterprise Portal, and mySAP Mobile. When using Citrix or Microsoft terminal servers for publishing the SAP GUI, system limits are quickly reached because here, the terminal server itself represents the front end.

ThinPrint .print offers optimal support in these cases: from flexible front end printer management to bandwidth control, compression, and encryption of print data to embedded clients for almost every end device.

### Introduction

- Printing problems with SAP
- ThinPrint .print features
- Supported environments
- .print solutions for SAP

### Printing via central print servers into masked networks

- With .print Connected Gateway

### Front end printing via terminal servers

- With .print Host Integration Service

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## Introduction

### Printing problems with SAP

As central element of every office activity, printing is a business critical process. In SAP environments, each of the various print tasks like production printing, mass printing, and front end printing, demand specific solutions. The following are just a few of the problems which can arise, especially when printing via WAN connections to a Citrix or Microsoft terminal servers client network:

- Heavy load on server resources like CPU caused by print data rendering
- Threat to system stability from printer driver conflicts and incompatibilities
- Complex administration due to necessary management of a multitude of printers and drivers
- Degradation of application performance from non-existent or inadequate bandwidth management for print data
- High online costs due to transmission of voluminous print jobs
- Limited flexibility for mobile workers and home offices
- Problems with long printer names
- Default printer restrictions

To resolve these issues, professional and future-oriented print management is indispensable. The **.print Engine** was developed as a solution against exactly this background. As component of the ThinPrint .print framework, it offers a purely software based, scalable solution for optimal print data transmission in server based IT environments.

### ThinPrint .print features

- Reduction of data volume by print data compression
- Minimization of bandwidth usage by connection specific bandwidth control
- Bandwidth control for both server and client
- Acceleration of print processing by compression and streaming
- SSL/TLS encryption of all print data possible
- Remote administration
- Flexible and automatic creation of client printers

#### Supported environments

- Windows 2000 Service Pack 4 and later or Windows 2003 Service Pack1/ Windows 2003 x64 or Windows 2008
- Citrix servers (MetaFrame, XP, Presentation Server, or XenApp)

## .print solutions for SAP – overview

This white paper will show two possible solutions for SAP R/3 environments:

1. **Printing via central (dedicated) print servers into masked networks** (print protocol: TCP/IP): with **.print Connected Gateway**
2. **Front end printing via Citrix or Microsoft terminal servers** (print protocol ICA or RDP): Lower demand on resources with **.print Host Integration Service**

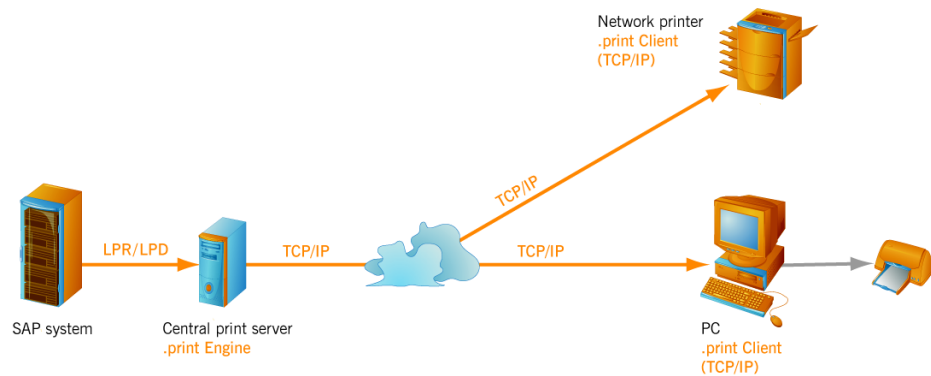
Environment	Settings/areas of application	ThinPrint licenses	More information
1. Printing via central <b>print servers</b> into masked networks (Illus. 2)	<ul style="list-style-type: none"> <li>• Printing possible via TCP/IP despite NAT</li> <li>• Direct printing to network printers</li> <li>• Bandwidth control, encryption, compression, and print data streaming</li> <li>• Print data received from the SAP system by shared printers</li> <li>• Especially well suited for printing to local print servers</li> </ul>	<ul style="list-style-type: none"> <li>• One .print Server Engine per central print server</li> <li>• When using NAT: .print Connected Gateway per local print server</li> </ul>	<a href="#">Page 6</a> and “.print Connected Gateway” user manual ( <a href="#">Page 9</a> )
2. <b>Front end printing</b> via Citrix or Microsoft terminal servers with <b>.print Host Integration Service</b> (Illus. 3)	<ul style="list-style-type: none"> <li>• Low-resource printing via ICA or RDP</li> <li>• Bandwidth control, encryption, compression, and print data streaming</li> <li>• Print data can be received by any LPR</li> <li>• .print Host Integration Service only needs to be installed on one server</li> <li>• Only one printer driver – of any type – has to be installed on the terminal servers and (if present) central print server.</li> </ul>	<ul style="list-style-type: none"> <li>• One .print Application Server Engine per terminal server</li> <li>• Min. 1 x .print Host Integration Service</li> </ul>	<a href="#">Page 8</a> and “.print Host Integration Service” user manual ( <a href="#">Page 9</a> )

## 1. Printing via central print servers into masked networks

Central (dedicated) print servers (spool servers) are usually set up for production or mass printing to provide network printers with rendered print data. This relieves the application server of the task of rendering print jobs. ThinPrint .print can be used when sending voluminous print jobs to the client network in this print scenario to regulate bandwidth, compress and encrypt print data (Illus. 1 and 2).

### Solution with ThinPrint: .print Connected Gateway

The .print Engine is installed on a central (dedicated) print server. The .print Client can be installed either on each end device in a remote office (Illus. 1) or on a local print server (Illus. 2). The local print server can receive, decompress, encrypt, and render all print jobs for the remote office and then distribute them conventionally throughout the network. If the printers have been installed once on local print servers, they can be read automatically onto the central print server with the .print AutoConnect component.



**Illus. 1** .print Engine sends print jobs via TCP/IP to client computers in a remote office (example)

With this solution, Network Address Translation (NAT) does not pose a problem; the .print Connection Service ensures delivery. The .print Clients on the local print servers connect to the .print Connection Service on the central print server, thereby establishing a connection through which print data can be delivered despite NAT.

Central print servers	Local print servers
<ul style="list-style-type: none"> <li>.print Server Engine (Windows)</li> </ul>	<ul style="list-style-type: none"> <li>.print Client Windows</li> <li>.print Client Service Windows (installation as a Windows service)</li> </ul>
<ul style="list-style-type: none"> <li>.print Engine Unix</li> </ul>	<ul style="list-style-type: none"> <li>.print Client Linux</li> </ul>

The Windows and the Unix world can easily be combined here. The .print Server Engine is only needed on the central print server here for the use of .print AutoConnect.

Component	Required license(s)	Environments
<ul style="list-style-type: none"> <li>.print Engine</li> <li>.print Connection Service</li> <li>.print Clients</li> </ul>	<ul style="list-style-type: none"> <li>.print Server Engine per central print server</li> <li>.print Connected Gateway per local print server</li> </ul>	<ul style="list-style-type: none"> <li>Windows 2000 and later or Unix (Linux, Solaris, AIX, or HP-UX) on central print server(s)</li> <li>Windows NT 4 and later or Linux on local print server(s)</li> </ul>

**Tip!** Detailed information can be found in the ".print Connected Client Gateway" user manual ([Page 9](#)).

## 2. Front end printing via terminal servers

Front end printing with help from the .print Host Integration Service has the advantage that no resources on the Citrix or Microsoft terminal servers are used.

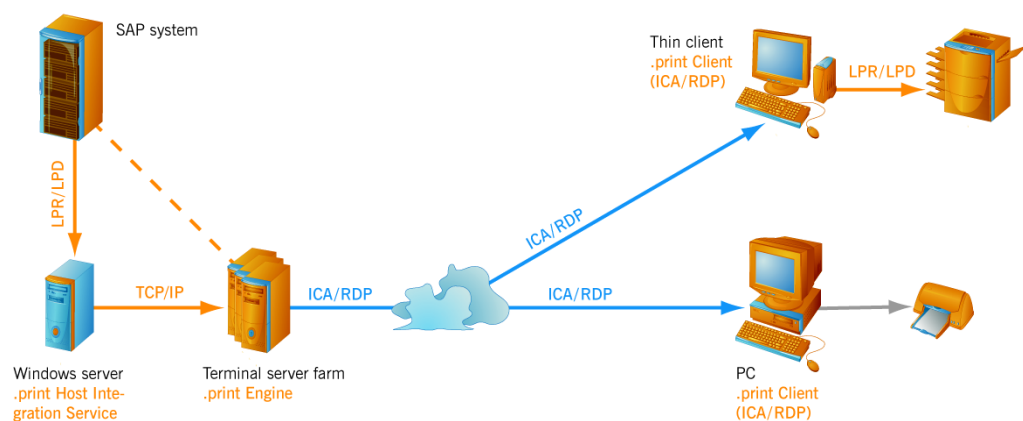
### Solution with ThinPrint: .print Host Integration Service

The users in a SAP system use thin clients or PCs. They connect to a terminal server with ICA or RDP clients installed on the thin clients or PCs. The terminal server is connected to the SAP system and provides the ICA or RDP clients with the *SAP GUI for Windows*.

Protocol for the terminal sessions is ICA or RDP, which is also to be used as print protocol (Illus. 3). There are three possible constellations:

1. A standalone terminal server on which the .print Host Integration Service is installed.
2. A terminal server farm in which the .print Host Integration Service is only installed on one of the servers.
3. The .print Host Integration Service is installed on a separate Windows machine (Illus. 3).

In each of these three cases, the .print Host Integration Service receives print jobs from the LPR – the SAP system. The print job contains information about the user who initiated it. In 2 and 3, the .print Host Integration Service must first use this information to identify the server on which the user's terminal session is running. It then sends the print job to that terminal server (protocol: TCP/IP); from there, .print Engine compresses and encrypts the print data and forwards it over controlled bandwidth to the user (protocol: ICA or RDP).



**Illus. 3** .print Host Integration Service on a separate server in a terminal server farm (example)

**Tip!** Detailed information can be found in the “.print Host Integration Service” user manual ([Page 9](#)).

## Appendix

### Additional sources

- At [www.thinprint.com/](http://www.thinprint.com/) → FIND PRODUCT → <product name> → MANUAL(S) you will find the user manuals for the server and client components of **ThinPrint .print**.
- At [www.thinprint.com/](http://www.thinprint.com/) → FIND PRODUCT → <product name> → WHITE PAPERS or [www.thinprint.com/](http://www.thinprint.com/) → SUPPORT & SERVICES → WHITE PAPER DOWNLOAD you will find additional documentation on ThinPrint.
- Download the .print Engine: [www.thinprint.com/](http://www.thinprint.com/) → FIND PRODUCT → .PRINT APPLICATION SERVER ENGINE → DEMO
- Download the .print Client Windows: [www.thinprint.com/](http://www.thinprint.com/) → SUPPORT & SERVICES → SOFTWARE DOWNLOAD → CONTINUE → .PRINT CLIENT COMPONENTS → .PRINT CLIENT WINDOWS 7.6

### Abbreviations

<b>CPU</b>	Central Processing Unit
<b>ICA</b>	Independent Computing Architecture
<b>IT</b>	Information technology
<b>LPR</b>	Line Printer Remote
<b>NAT</b>	Network Address Translation ("IP masking")
<b>RDP</b>	Remote Desktop Protocol
<b>SBC</b>	Serverbased Computing
<b>TCP/IP</b>	Transport Control Protocol/Internet Protocol
<b>TP</b>	ThinPrint
<b>VC</b>	Virtual Channel
<b>ULA</b>	User License Agreement
<b>WAN</b>	Wide Area Network