ThinPrint .print®

# ThinPrint .print

Professional print management for Citrix Presentation Server®

## Added value for your Citrix environment:

- More security
- Greater reliability
- Reduced bandwidth requirements
- Extended platform support
- Simplified administration
- Better scalability
- Broader integration capabilities

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# ThinPrint .print – the print management platform for Citrix Presentation Server™


Citrix and ThinPrint have worked in partnership since 1999 as part of the worldwide Citrix Business Alliance on the optimization of server based architectures, to the good fortune of their customers. Whereas Citrix is the undisputed world leader in access infrastructure, ThinPrint's technology and worldwide partner network in more than 45 countries have established ThinPrint as market leader in bandwidth optimizing print management solutions.

Designs, invoices, meeting transcripts, orders. Businesses print everything toner can produce. Precisely this central office activity – printing – is, however, often neglected or forgotten during the planning of IT infrastructures. Server based architectures, though, place very high requirements on printing. Weaknesses in print management usually first become apparent in the productive operation and therefore threaten the success of the entire project.

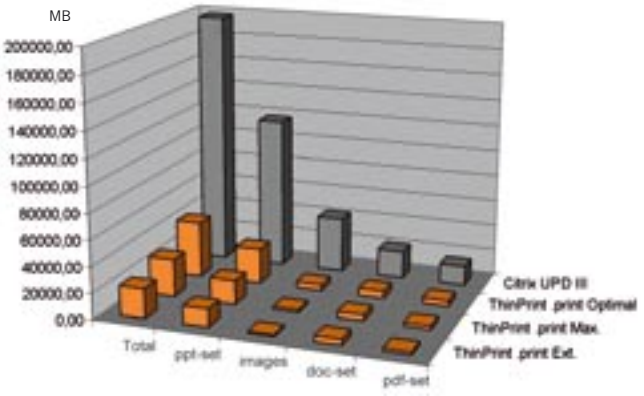
ThinPrint is the only company in the world to offer a complete platform, ThinPrint .print, which covers all aspects of printing in Presentation Server architectures.

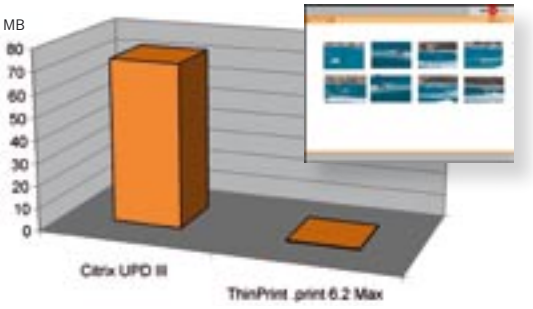
ThinPrint .print extends and optimizes the print functions of your Citrix environment and brings you considerable added value:

- **Security**
  Encryption of print streams
- **Reliability**
  Stabilization of connections and increased fault tolerance
- **Efficient bandwidth management**
  Drastically reduced print data volume, connection-based bandwidth control
- **Extended platform support**
  More protocols (RDP, ICA, TCP/IP), more operating systems, dedicated print servers, thin clients, local print servers, network printers, print servers
- **Integration capabilities**
  Incorporation of print jobs from SAP and Unix spool servers

ThinPrint .print and the Citrix Presentation Server offer the enterprise customer the ideal method of implementing efficient, cost-effective IT infrastructures.

# Reduction in bandwidth requirements




As quickly as available bandwidth increases in a company, it is claimed by new services like Voice over IP. A considerable reduction in print data volume – still one of the leading causes of bandwidth bottlenecks – quickly pays for itself and builds for the future.

### Intelligent compression – 80–99 % less data volume

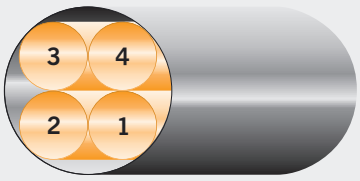
Both Citrix Presentation Server 4.0 and ThinPrint .print DRIVER FREE PRINTING process EMF data. While EMF data is the best possible format for printing in server based computing, one property may at first glance make this format seem questionable for transmission across low bandwidth: its data volume. In contrast to other formats, such as PCL, print data in EMF format can quickly mushroom into very large volume. To be used as data format for transmission in SBC environments, then, intelligent compression is an absolute requirement. The DRIVER FREE PRINTING technology therefore applies an adaptive compression that reduces data volume up to 99 %. Compared to the new Citrix Presentation Server 4.0 with its new print architecture, which, incidentally, only optimizes printing to Windows 2000/XP workstations, ThinPrint .print creates on average 80 % less data volume.

At the same time, specific algorithms prevent extreme cases so that even PowerPoint slides, which already create data volume of over 70 MB per slide with the Citrix Universal Printer Driver (UPD III), create only half a MB with ThinPrint .print.

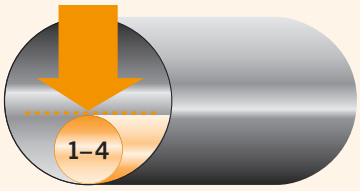
### Realistic bandwidth management

Connection-based bandwidth control is a must in every distributed network. In practice, the deciding factor is that a limitation of the amount of bandwidth used for printing can be set per connection and, furthermore, that an addition of these limits – unlike with Citrix Presentation Server 4.0 – is prevented. Only in this way can bandwidth also be maintained when the number of users changes.

**Citrix Presentation Server:** Actual used bandwidth depends on number of active users – addition of bandwidth.




**ThinPrint .print:** Real, connection-based bandwidth management without addition of bandwidth limits.



# Total security

Today, security has the highest priority, but almost nobody thinks about security in printing. However, print data often contains information in clear text that in all other circumstances would be highly protected. Even when using Citrix Presentation Server, print data is only encrypted as long as it is sent with the ICA protocol. Print data, however, is more commonly sent directly via TCP/IP (e. g., when using dedicated print servers, local print servers, network printers, or to relieve the ICA protocol). With ThinPrint .print, this security leak is also closed. The print data transmission is completely encrypted all the way to the printing workstation and the printout itself is only possible for trusted end devices. Printout of sensitive company information therefore does not wind up in the wrong hands.

# Reliability and speed

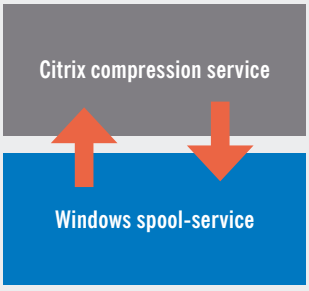
### High speed printing

The speed of a printout is a main concern for users. Whereas with the Citrix UPD III, a second, dependent compression service is required in addition to the Windows spool server, the DRIVER FREE PRINTING technology is completely integrated in the Windows spool service. The print process is therefore not only more stable, but 4–5 times faster.

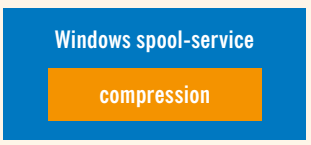
### Reliable delivery

Besides speed, the reliability of printing is also of great importance. Especially in geographically distributed systems, fluctuations in connection quality, down end devices, or plain old-fashioned neglectful users prevent important documents from reaching their target. ThinPrint .print extends Citrix Presentation Server here with a wide range of improvements.

**Citrix Presentation Server:**
A second, dependent service is necessary in addition to the Windows spool service.




**ThinPrint .print:**
Entirely integrated into the Windows spool service. That results in considerably higher stability and speed.

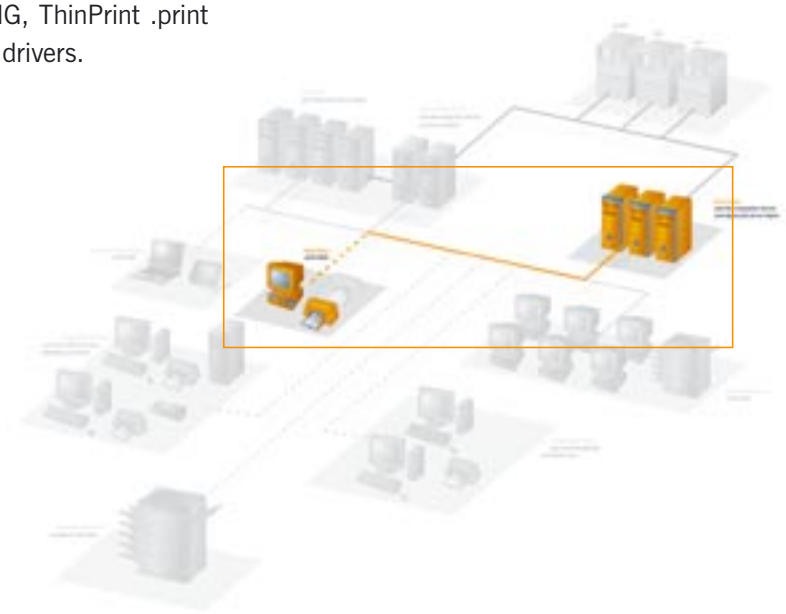


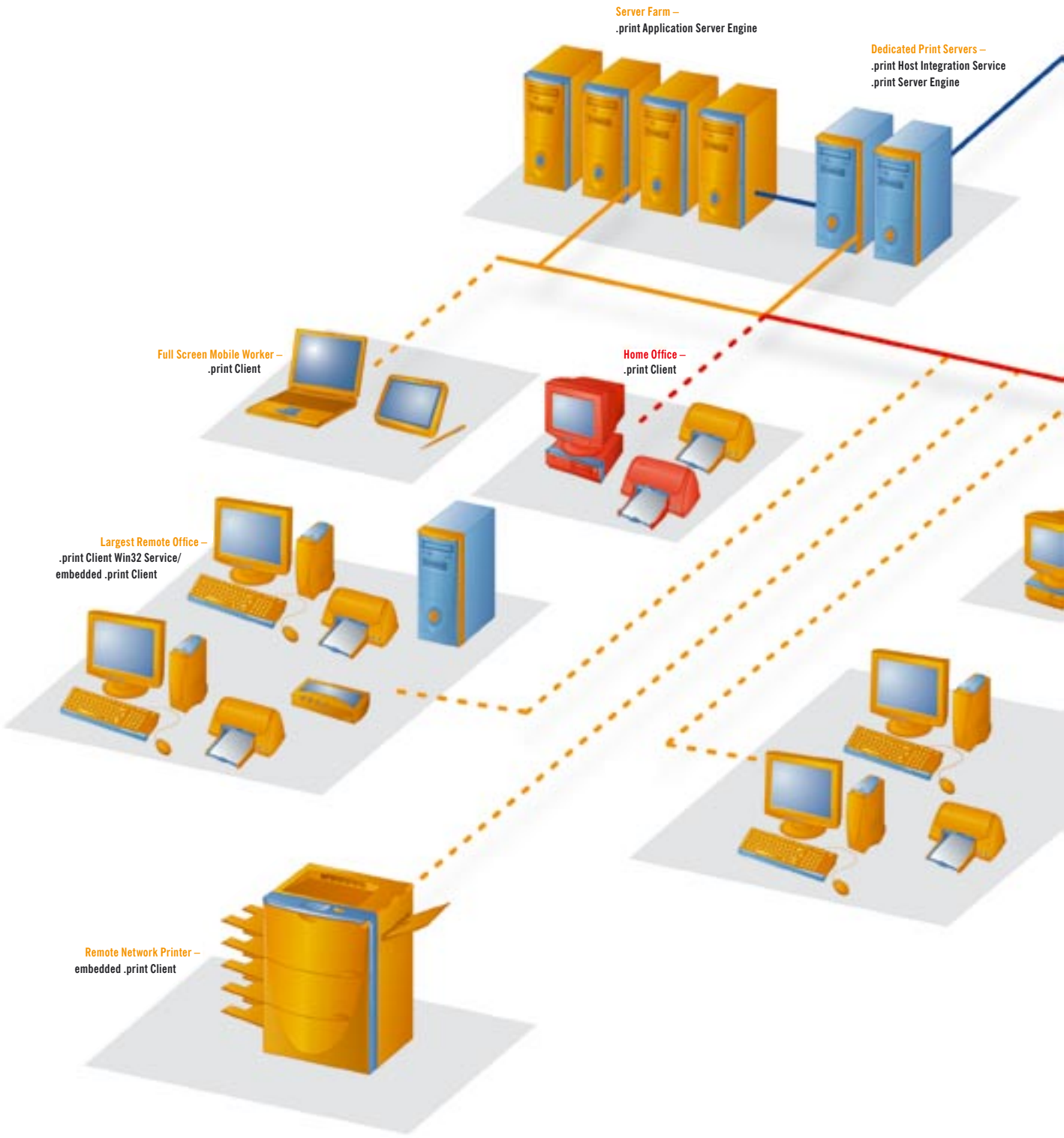
For example, the .print Queue Manager controls print queues in your Citrix environment. Connection retries can be defined individually for each printer queue, including the number of retries, the time between retries, and the time after which the print job will be permanently deleted.

Another solution is the .print Connected Client Gateway. Remote offices are increasingly being connected via low-cost VPN connections instead of expensive leased lines. The .print Connected Client Gateway bridges the connection breaks of instable DSL connections up to 90 seconds long and thus prevents unnecessary disruptions in printing. Moreover, network printers in remote offices can also be addressed via TCP/IP even when they are protected by a masked network.

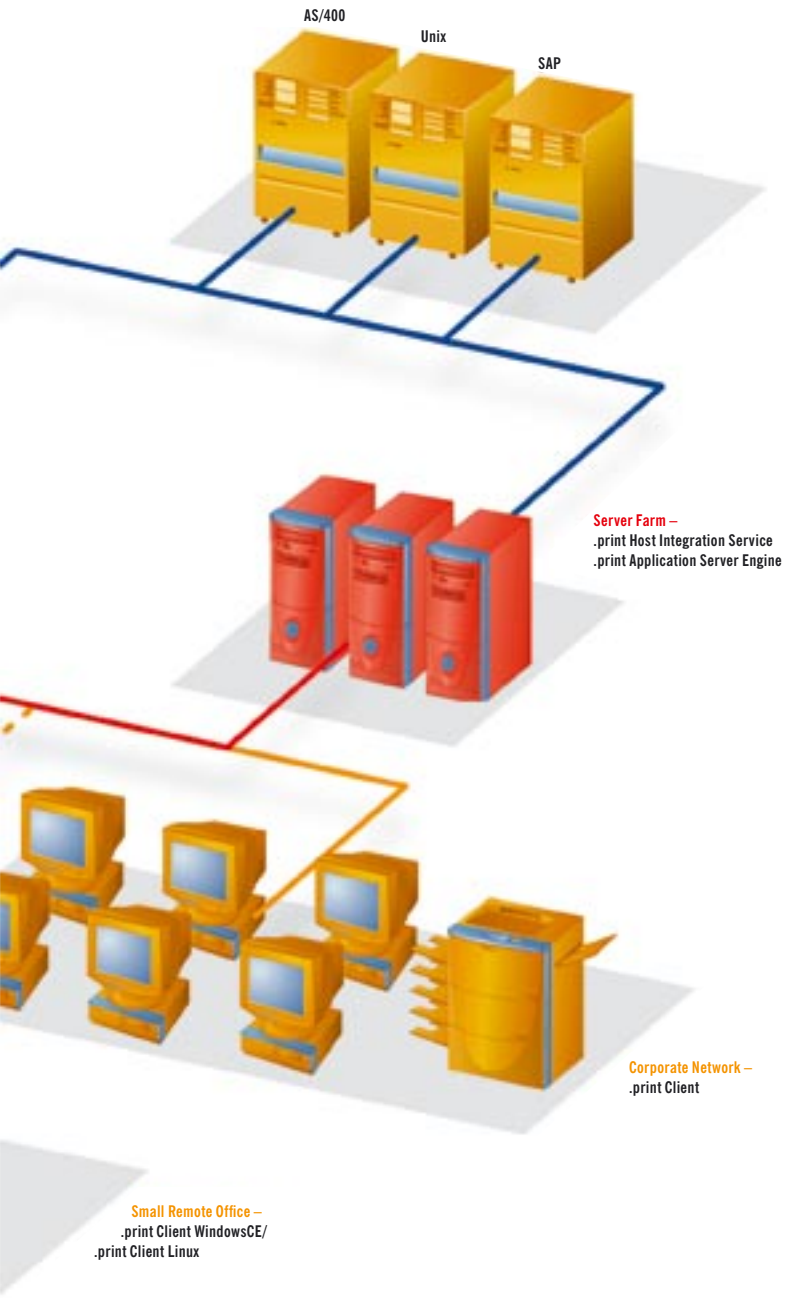
## Extended platform support

The Citrix Presentation Server perfectly implements application access in heterogeneous environments. The print management system, though, is greatly limited in this regard. For instance, the newest generation of the Citrix Universal Printer Driver (UPD III) can only be used if documents are printed from a Citrix Presentation Server 4.0 via ICA to a desktop computer with at least Windows 2000 to a printer reachable from this computer. In addition, if the document contains image data, sufficient bandwidth must be available for it. The .print DRIVER FREE PRINTING system goes far beyond this and in addition to dedicated print servers and desktops with Windows NT, 95, 98, ME, also supports RDP sessions as well as printing via TCP/IP. With a gateway, DRIVER FREE PRINTING can also be used with Windows 3.5.1, Windows 3.1, Linux, OS/2, DOS desktops, and thin clients as well as network printers.
In addition to DRIVER FREE PRINTING, ThinPrint .print optimizes printing with original printer drivers.




Server Farm –
.print Application Server Engine
Dedicated Print Servers –
.print Host Integration Service
.print Server Engine
Full Screen Mobile Worker –
.print Client
Home Office –
.print Client
Largest Remote Office –
.print Client Win32 Service/
embedded .print Client
Remote Network Printer –
embedded .print Client

# ThinPrint .print – Professional print management for Citrix Presentation Server®




**The red marked portion** of the shown architecture illustrates the area of network support offered using Citrix's basic printing component.

**The ThinPrint orange marked** area (including the red portion) shows the complete coverage and scalability provided with the solution ThinPrint .print .

## .print Application Server Engine

The main component of ThinPrint .print. Application Server Engine runs on all Citrix Presentation Servers and adds a broad range of features to ensure the highest level of security, reliability, and efficiency in the print management of your Citrix environment.

## .print Server Engine

The right license for use in network environments with dedicated print servers. In addition to TCP/IP, also enables print data to be embedded in the ICA virtual channel in these environments.


## .print Queue Manager

Add-on component that ensures the highest level of reliability when sending print data. Individual definition of connection retries for each printer queue prevents problems during print processing.

## .print Connected Client Gateway

The ideal solution to connect remote offices quickly, easily, and inexpensively. The .print Connected Client Gateway stabilizes print data transmission and allows network printers to be addressed via TCP/IP in masked networks.

## .print Host Integration Service

With this license, SAP or Unix spool servers can be embedded in the ICA protocol directly and without using SAPLPD. Print data spooled there can be distributed dynamically, user-specifically, highly compressed, and across controlled bandwidth.

### Native support for thin clients

One particular advantage of ThinPrint .print is its broad industry support. Today, almost every renowned terminal manufacturer uses .print technology and offers thin clients with a directly integrated .print Client component or provides relevant firmware updates. Not only can thin clients with .print support print directly to connected printers; they can map local network printer queues and target network printers directly via LPR.

### Direct support for network printers and print servers

In addition to the use of thin clients, .print technology is also directly supported by the network printers and print servers of renowned manufacturers. Print data is decompressed directly on the device. Bandwidth management is therefore ensured right up to the network printer. A complete overview of all terminals, print servers, network printers, and other devices available with a .print Client is found at www.thinprint.com/supported_devices.htm.

## Simplified administration and high scalability

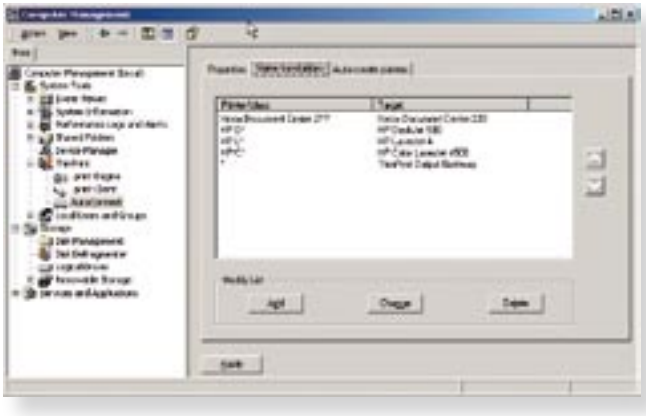
.print technology is more than secure, reliable, efficient, and cross-platform; it also simplifies the administration of your Presentation Server environment and offers a high level of scalability. This is particularly valuable because many Presentation Server environments are in a constant state of change.

### Professional printer mapping

The .print technology includes .print AutoConnect, a high performance tool that automatically creates printer objects on your Presentation Server. The printer objects are created with defined mapping templates without the printer drivers having to be loaded automatically. .print AutoConnect gives you complete control during the automatic creation of client printers in the Presentation Server session, absolutely regardless of whether the printers are local devices, network printers, or shared on other PCs. Different printers can be grouped in so-called printer classes as printer groups and locations. A name translation table, in which wildcards (* and ?) can be used, makes class creation and printer assignment especially clear.

### Load balancing for printing (port pooling)

Port pooling is a feature of the .print technology that load balances printing by evenly distributing print processing between multiple printer ports. The number of print jobs that can be processed simultaneously is thus greatly increased. Port pooling not only ensures maximum print performance, though; combined with .print AutoConnect, it also enables particularly simple and convenient administration.



**Easy, practical printer mapping:**
A name translation table that also allows wildcards

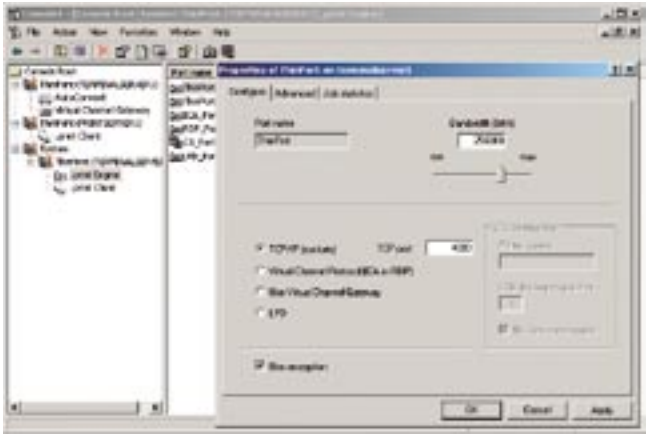
### Integration in Microsoft Management Console

Thanks to Microsoft Management Console, ThinPrint .print is completely integrated in the Windows computer management. Almost all .print components can therefore be administrated centrally. Because .print Engine conforms to WMI specifications, the complete configuration can be performed by script.

### Dedicated print servers

ThinPrint .print is the only print management software in the world that also supports the use of dedicated print servers – without any limitation to function. All optimizations, such as DRIVER FREE PRINTING, Advanced Adaptive Compression, and .print AutoConnect, can also be used in these environments.

In addition to printing via TCP/IP, supporting the Citrix virtual channel offers many advantages. You can even use the ICA protocol when running dedicated print servers. ThinPrint .print gives you the option of sending print data generated on the central print server with the ICA protocol instead of via TCP/IP. This makes it easier to address clients, even when the user changes workplace, and makes it unnecessary to open additional TCP/IP ports in masked networks.



**Integration**: Central administration of ThinPrint .print with Microsoft Management Console

# Integration of SAP and Unix spool servers

SAP and Unix systems play an important part in almost every medium-sized to large Citrix Presentation Server environment. ThinPrint .print extends the Citrix Presentation Server to include the option of integrating the print data from SAP and Unix spool servers in this environment and in these cases to distribute it dynamically and user-specifically.

### .print Host Integration Service

If a user initiates a print job on an application or spool server, the .print Host Integration Service first detects the Presentation Server on which that user is working and forwards the print job via TCP/IP to that terminal server. From there, the print job is greatly compressed and sent with the ICA protocol across controlled bandwidth to the workstation, where it is printed with no loss of quality. If the spool server itself creates PDF data, this can optionally be sent unchanged but greatly compressed directly to the end device and printed directly with the Adobe reader. The .print Host Integration Service thus offers a broad range of advantages. For example, print data in such environments can be sent securely through the Citrix virtual channel. Use of SAPLPD and static, IP based print data assignment is thus unnecessary. This increases the level of security as well as flexibility; at the same time, the network load is reduced with bandwidth management and high compression.

### Application spectrum of ThinPrint .print compared with Citrix Presentation Server 4.0

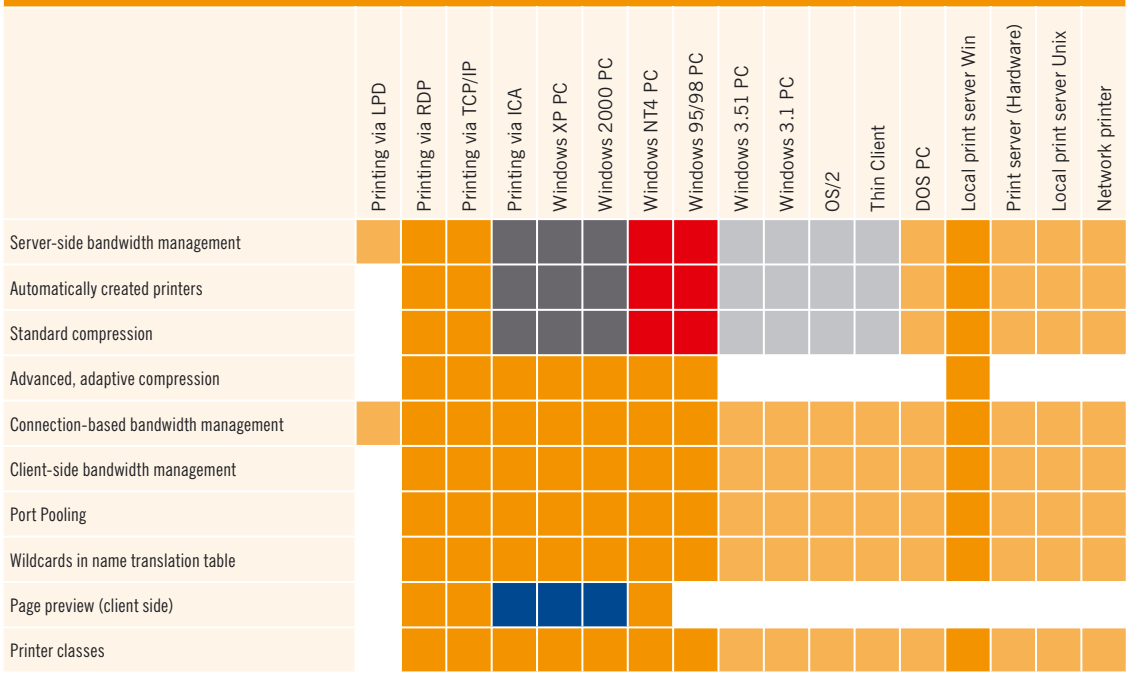
The new Citrix Presentation Server 4.0 features reworked print management. Additional properties supported by the UPD III in Citrix Presentation Server 4.0 compared with the UPD II are marked in blue (■); properties that UPD III no longer supports compared with the UPD II are marked in red (■).

**Platform support**

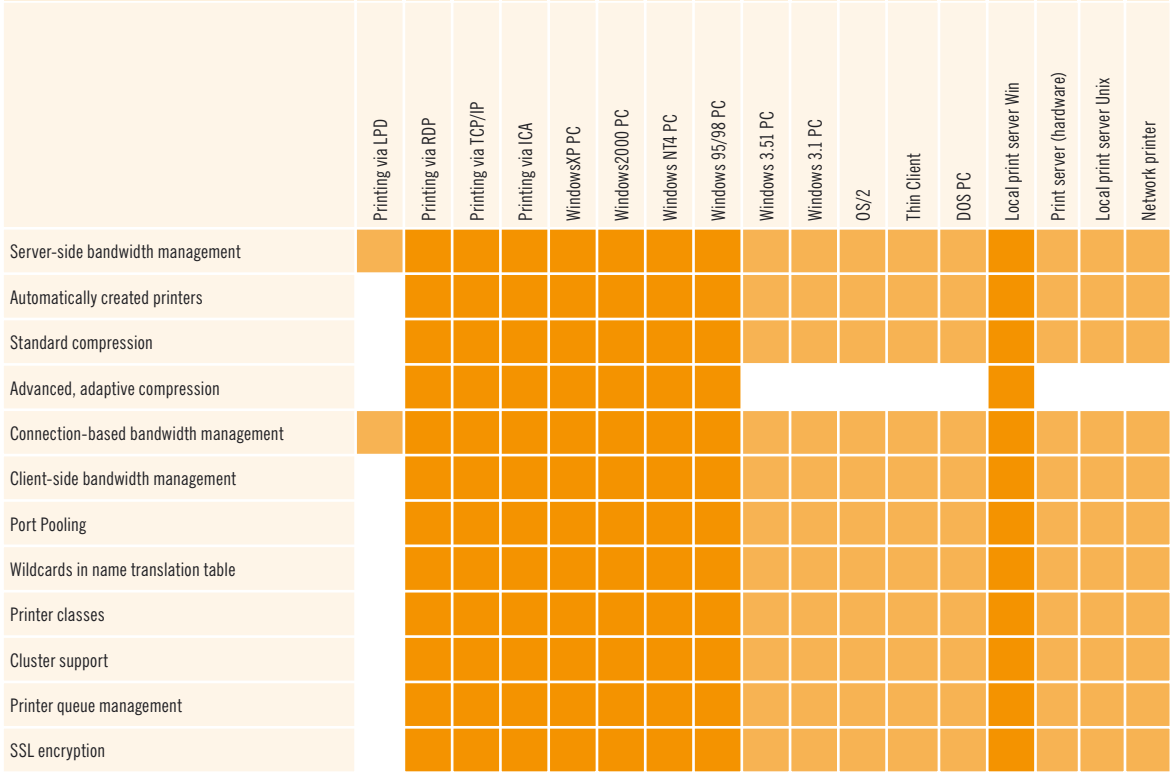
| | Printing via LPD | Printing via RDP | Printing via TCP/IP | Printing via ICA | Windows XP PC | Windows 2000 PC | Windows NT4 PC | Windows 95/98 PC | Windows 3.51 PC | Windows 3.1 PC | OS/2 | Thin Client | DOS PC | Local print server Win. | Print server (Hardware) | Local print server Unix | Network printer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Citrix Presentation Server 4.0 | | | | | | | | | | | | | | | | | |
| Citrix Presentation Server XP | | | | | | | | | | | | | | | | | |
| Citrix Presentation Server 1.8 | | | | | | | | | | | | | | | | | |
| MS Terminal Services 2003 | | | | | | | | | | | | | | | | | |
| MS Terminal Services 2000 | | | | | | | | | | | | | | | | | |
| MS Terminal Services NT4 | | | | | | | | | | | | | | | | | |
| Windows XP | | | | | | | | | | | | | | | | | |
| Dedicated print server | | | | | | | | | | | | | | | | | |
| Cluster Server | | | | | | | | | | | | | | | | | |
| SAP/Unix Spool Server | | | | | | | | | | | | | | | | | |
| Mainframe | | | | | | | | | | | | | | | | | |

- ThinPrint .print with native printer drivers
- ThinPrint .print with DRIVER FREE PRINTING
- Citrix Presentation Server with native printer drivers
- Citrix Presentation Server UPD
- Not possible
- No longer possible with UPD III
- New with UPD III

## Printing from Citrix Presentation Server 4.0




## Printing from a dedicated print server



# Additional ThinPrint products

## Remote Desktop Printing products


**RDP Engine:** the fast, easy print solution for Microsoft Terminal Services

**Remote Desktop Suite:** the all-in-one solution for central application deployment with Windows Server 2003

## Content Beamer for BlackBerry


The complete solution for printing with BlackBerry.

**ThinPrint .print features at a glance:**

- DRIVER FREE PRINTING
- Advanced Adaptive Compression
- Connection-based bandwidth management
- SSL-encryption of print data
- Administration with Microsoft Management Console
- Automatic tray and duplex recognition
- Printer class management
- Port pooling for load balanced printing
- Printing via TCP/IP, LPD, ICA, and RDP
- Printing with server-side, native printer drivers
- Printer driver matching
- Direct support for thin clients
- Direct support for network printers
- Support for Linux, Windows Mobile, and Symbian clients
- Printing via dedicated print servers
- Virtual Channel support when running dedicated print servers
- Support for Windows Cluster Service
- Fault tolerant distribution of print jobs
- Optimized printing via VPN connections
- Integration of SAP/Unix spool servers

| Supported server operating systems | Supported client operating systems |
|---|---|
| Windows NT 4.0 | Windows NT 4.0, 2000, XP, 2003 |
| Windows 2000 | Windows 3.11, 95, 98 und ME |
| Windows 2003 | Windows CE, Pocket PC, Smartphone |
| Windows XP | MS-DOS |
| Unix | Win OS/2 |
| IBM-Host-Systems: MVS, OS/390, z/OS | Linux, Solaris |
| | Java (for Windows, Linux, Mac OS, OS/2 etc.) |
| | Symbian UIQ, Symbian Nokia Series 60 |

ThinPrint .print components are available from authorized dealers. A list of authorized dealers is found at www.thinprint.com/buy.htm. All licenses include a 12-month Update Service for registered customers: www.thinprint.com/cr.

## Test ThinPrint .print now for free!

**All .print components can be tested free for 30 days:**
www.thinprint.com/free-demo.htm

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