

ThinPrint Tracking

Print job statistics (version 8.6)

Manual

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Safety warning

All Cortado 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.

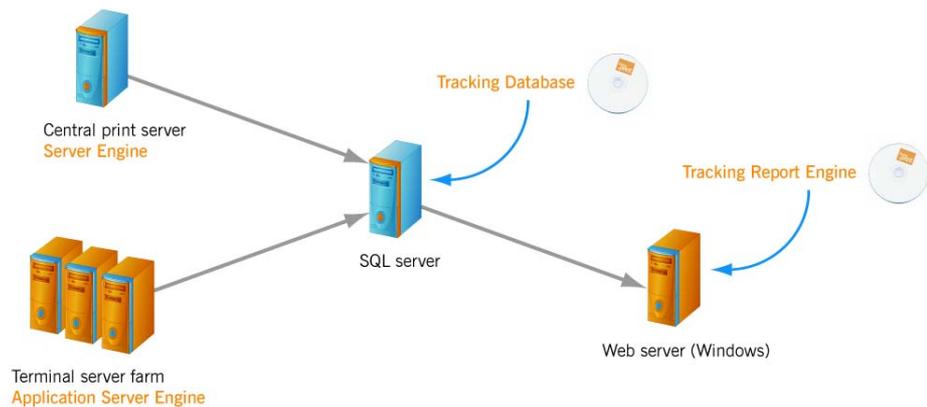
Overview	4
Tracking Service	4
Tracking Report Engine	5
Installation and configuration	6
Technical requirements	6
Installation of Tracking Database	6
Authentication mode	8
Installation of Tracking Report Engine on the webserver	13
Personal Printing	15
ThinPrint Engine	15
Installation	15
Preparing ThinPrint Engine and Tracking Service	15
Analyzing tracking data	17
ThinPrint Tracking Report Engine	17
Overview	18
Distribution	20
Trend	22
Manage Groups	22
Costs	25
Appendix	27
Customer service and technical support	27
SQL server management tools	27
Overview	27
Data from the ThinPrint Tracking Service	27
Additional sources	29
Abbreviations	30

Overview

Print job tracking gathers information about print activities using ThinPrint Engine or Personal Printing. With it, print related data is gathered on the server and forwarded to an SQL database (Illus. 1). Print job tracking has the following components:

- **ThinPrint Engine or Personal Printing**
sends data to the ThinPrint Tracking Service
- **ThinPrint Tracking Service**
receives data and writes it to an SQL database
- **ThinPrint Tracking Report Engine**
web component for clear analysis, summary, and graphic report of tracking results

If not yet installed, an SQL server must be installed to enable use of the tracking feature within the ThinPrint Engine. This program is not included in the ThinPrint Engine software.



Illus. 1 Example for using ThinPrint Tracking with ThinPrint Engine

Tracking Service

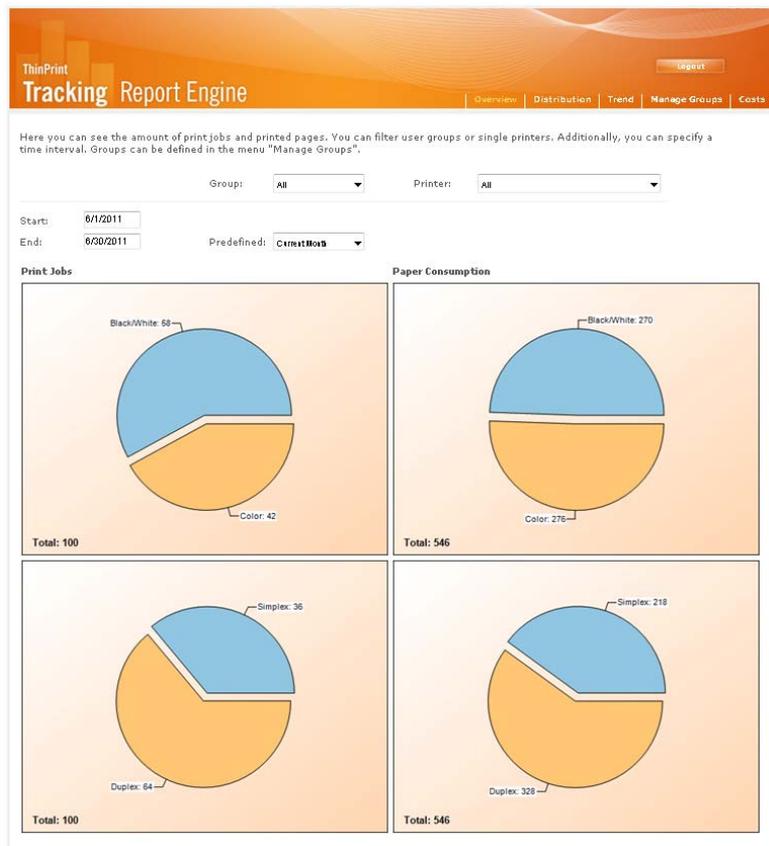
You can gather information about the print jobs sent with the ThinPrint Engine for your statistics (tracking). To do so, you must set up a Microsoft SQL server. The ThinPrint Engine sends its tracking data to the server that has the tracking service installed. Print data which can be analyzed and displayed by Tracking Report Engine:

- Author of a print job (user/group)
- Printer used
- Settings used
- Number of pages printed
- Information on any errors
- Costs
- Compression rates (ThinPrint Engine only)
- Print duration
- Print data during a defined period

The SQL server can collect print data from different sources – from ThinPrint Engines on application or print servers or from Personal Printing servers.

Tracking Report Engine

ThinPrint Tracking includes a web application for viewing the tracking data. This program represents the SQL data graphically in its web interface – installed on a web server. The tracking data can therefore be analyzed from the web browser on any workstation (Illus. 2).



Illus. 2 Analyzing SQL data in a web browser (example)

Installation and configuration

Technical requirements

Your architecture must meet the following requirements for running ThinPrint Tracking:

- **ThinPrint Engine + ThinPrint Tracking Service:**
See the “ThinPrint Server Engine” or “ThinPrint Application Server Engine” manual.
or **Personal Printing:** See “Personal Printing” manual.
- The **SQL server** additionally requires:
 - Microsoft SQL Server 2005, 2008 or 2008 R2
- The **ThinPrint Tracking Report Engine** can be run on the following servers (as a web server):
 - Windows Server 2003 x86 with Service Pack 2 or later
 - Windows Server 2008 x86 and x64 Service Pack 2
 - Windows Server 2008 R2 x64 Service Pack 1The following is required:
 - Microsoft .NET Framework version 3.5 SP 1
 - ASP .NET (can be enabled as a Windows component or installed as a part of the .NET Framework)
 - Internet Information Services (IIS) 5.1 or later. Port 80 is used by default. Do not change this port number and make sure that no other programs are using this port.

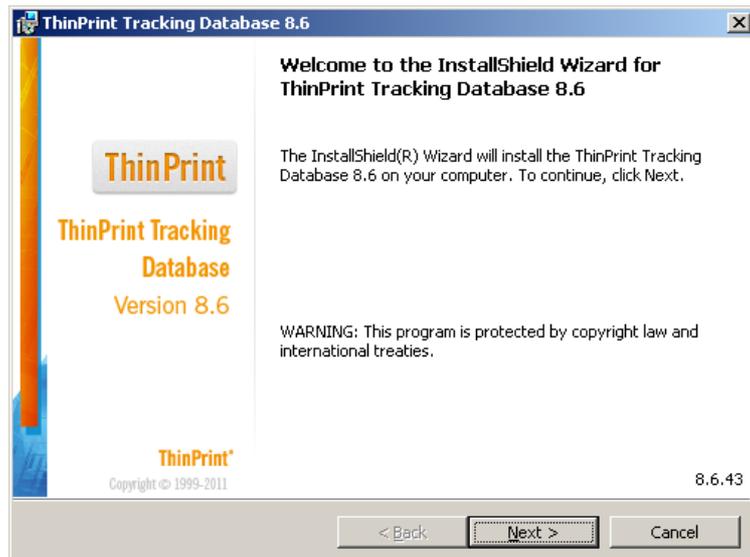
Note! Please note with ThinPrint Tracking, that data printed via a ThinPrint Port is collected.

Administrator permissions Administrator permissions are required for all installation and configuration procedures. It is therefore best to log on under Windows as **Administrator**.

Installation of Tracking Database

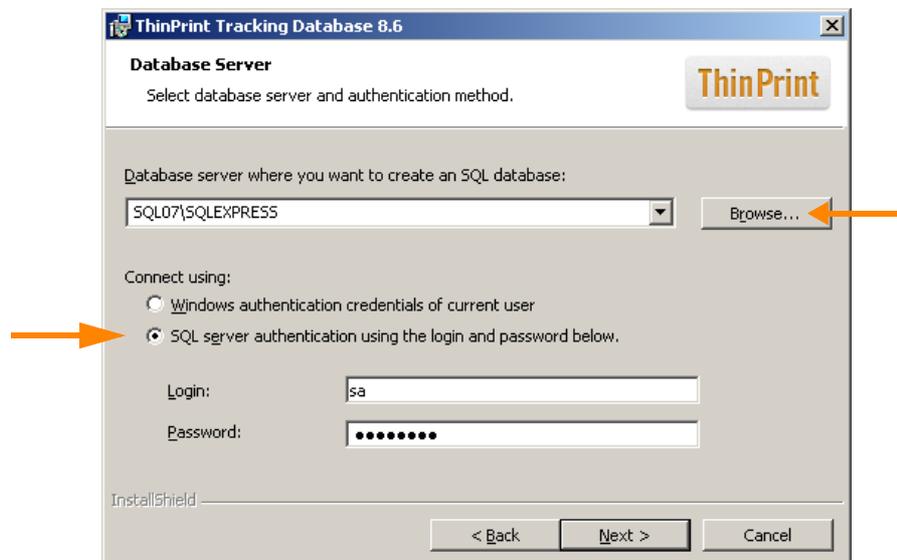
Copy Setup.exe onto the SQL server and open it with a double click. Select the desired language and confirm with OK.

InstallShield Wizard opens, see Illus. 3.



Illus. 3 Start Install Wizard

Click NEXT, another window opens, see Illus. 4.



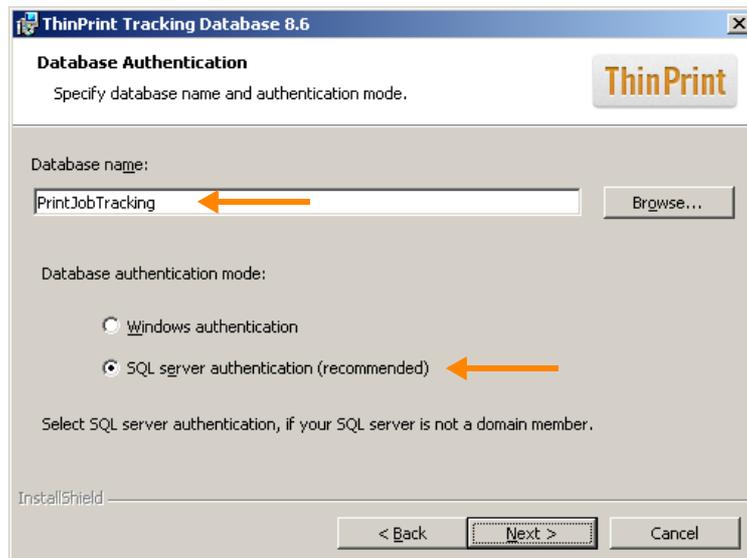
Illus. 4 Choose Database server and authentication to SQL server

Select the SQL server, on which you wish to install Tracking database (arrow above in Illus. 4).

Then specify how do you wish to access the database (Illus. 4, bottom arrow):

- Windows authentication or
- SQL server authentication

Confirm with NEXT. Another windows opens (Illus. 5).



Illus. 5 Choose database server and Authentication mode

Choose a name for the database in which the information about print jobs will be stored: PRINTJOBTRACKING for example (Illus. 5, top arrow).

Authentication mode

Authentication mode (Illus. 5, lower arrow) defines how the users and Tracking Service access the stored print data via Tracking Report Engine.

Note! SQL server authentication is recommended.

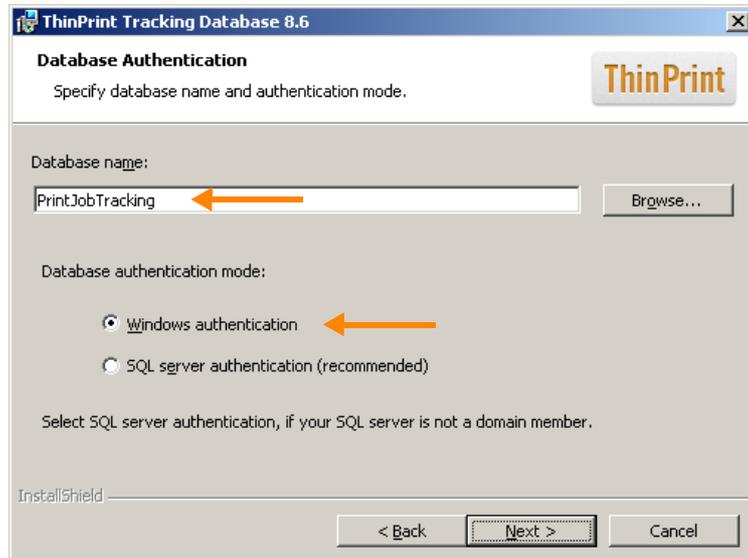
SQL server Authentication

- Create an account with administration permissions (Illus. 6), TRACKINGSERVICE for example. Note the user name and password. Confirm with NEXT and close InstallShield Wizard with FINISH.



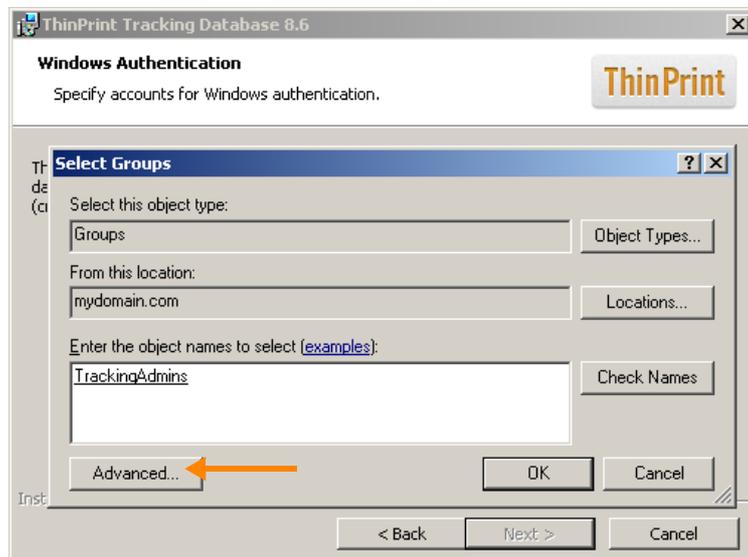
Illus. 6 Create administrator account for the Database

Windows authentication If you choose Windows Authentication (Illus. 7), all users and servers need to be members of the same domain. Users can log on with their user name and their domain password.



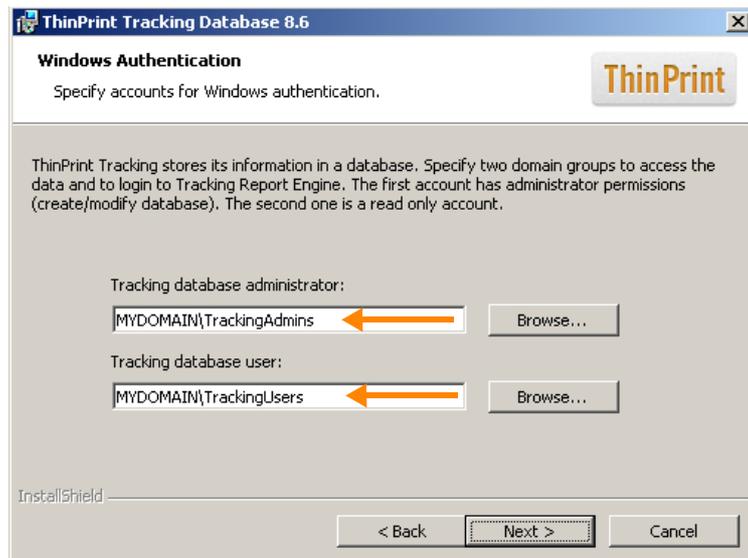
Illus. 7 Choose Windows authentication mode

- Here, select also a database (Illus. 7, arrow above) on which you wish to install Tracking Database. Choose WINDOWS AUTHENTICATION (bottom arrow) and confirm with NEXT.



Illus. 8 Inherit groups from Active Directory

You can select user groups from the Active Directory which should be able to access Tracking Database. For this, click ADVANCED (arrow in Illus. 8).



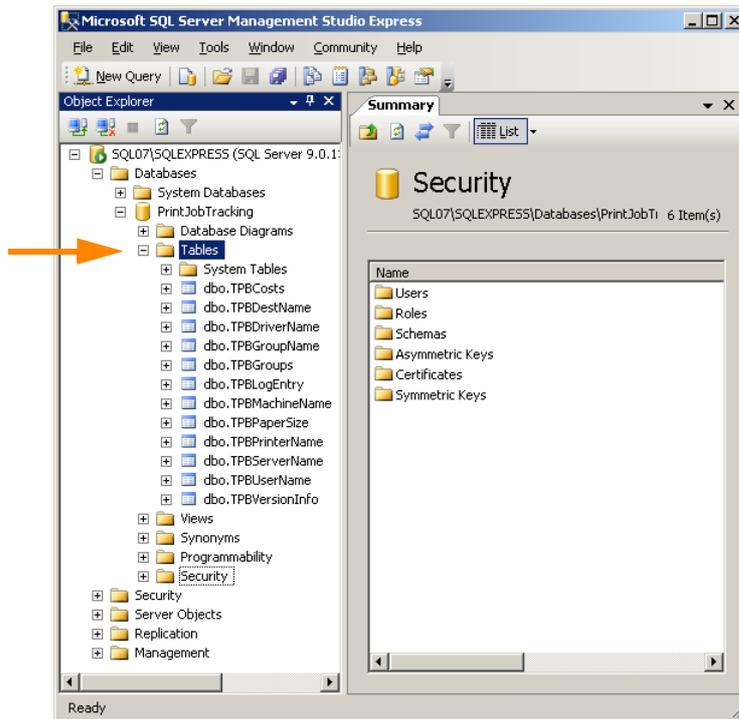
Illus. 9 Define administrator groups and user groups

During installation of Tracking database, Tracking database administrators (Illus. 9, arrow above) with read and write permissions will be created, as well as users with read permissions only (see Illus. 9, bottom arrow).

- Finally, conclude Tracking database installation in InstallShield Wizard with INSTALL and FINISH.

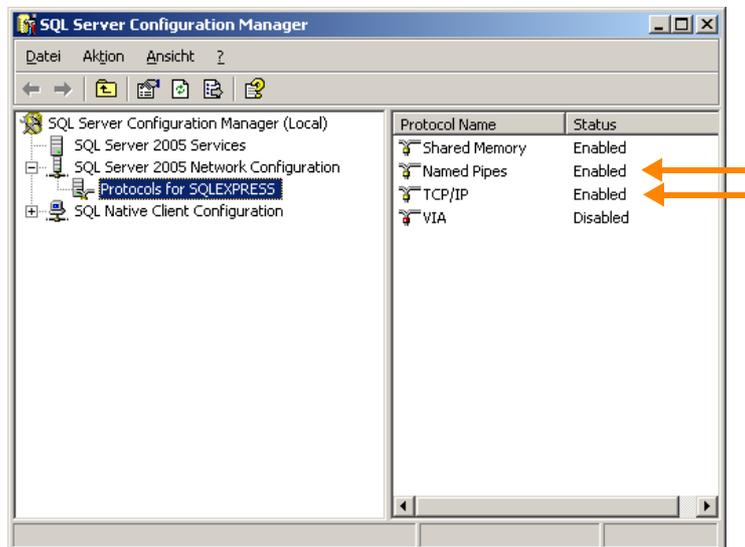
Open a management tool for the database, as for example Microsoft SQL Server Management Studio Express¹. With this tool, you can administer the database created by the installer (Illus. 10).

¹ free download from Microsoft website ([Page 30](#)); (pay attention to the system requirements)



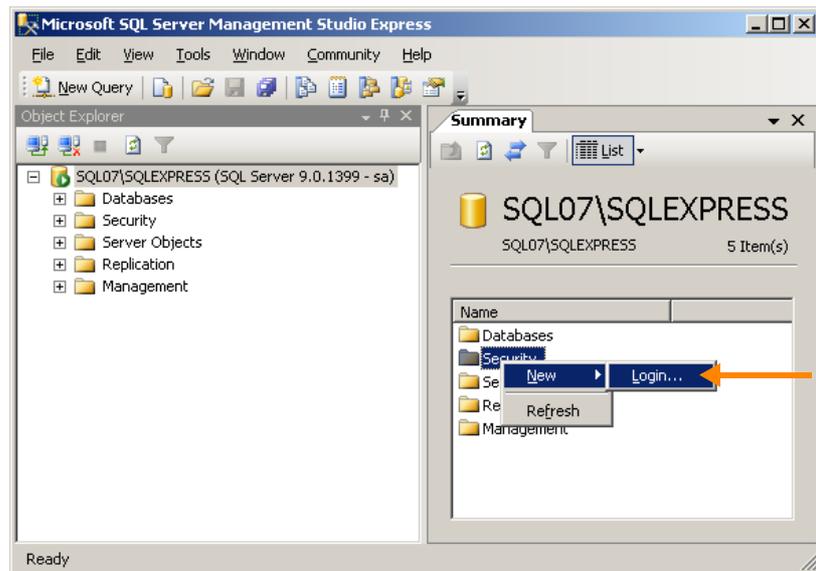
Illus. 10 Database PrintJobTracking

When you install Tracking database with SQL authentication, a user account will be created with read permissions on the database. This name of the user account will be TRACKINGUSER, and the password is: THINPRINT-1.



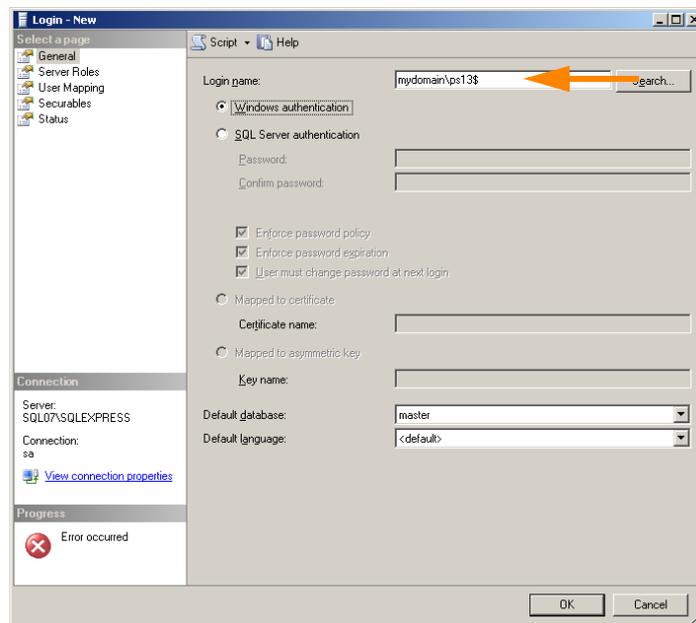
Illus. 11 Enable protocols

To access the SQL server remotely, open SQL Server Manager and enable the protocols NAMED PIPES and TCP/IP (Illus. 11). Then start the SQL SERVER BROWSER in the services folder.



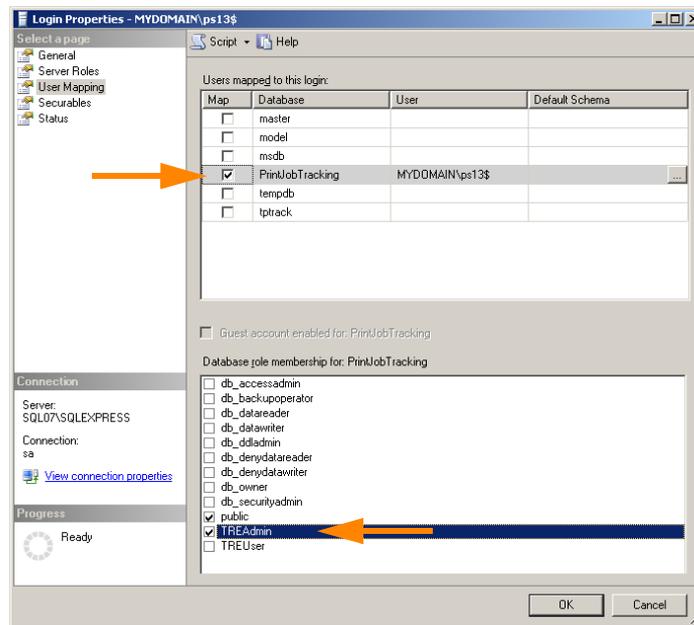
Illus. 12 Install access for Tracking Service on the SQL server

To ensure the Tracking Service gets access to the SQL server (only in case of Windows authentication), open Management Studio Express (Illus. 12) and enter with a right click in the FOLDER SECURITY on NEW and LOGIN. A new window opens (Illus. 13).



Illus. 13 Install login for Tracking Service

Create a new account according to this sample:
 <domain>\<Server name of Tracking Service>\$
 Here: mydomain\ps13\$



Illus. 14 User mapping

Put a checkmark at the database, which is configured for Tracking, here: PRINTJOB-TRACKING (arrow above in Illus. 14) and a checkmark at TREAADMIN, lower arrow in Illus. 14.

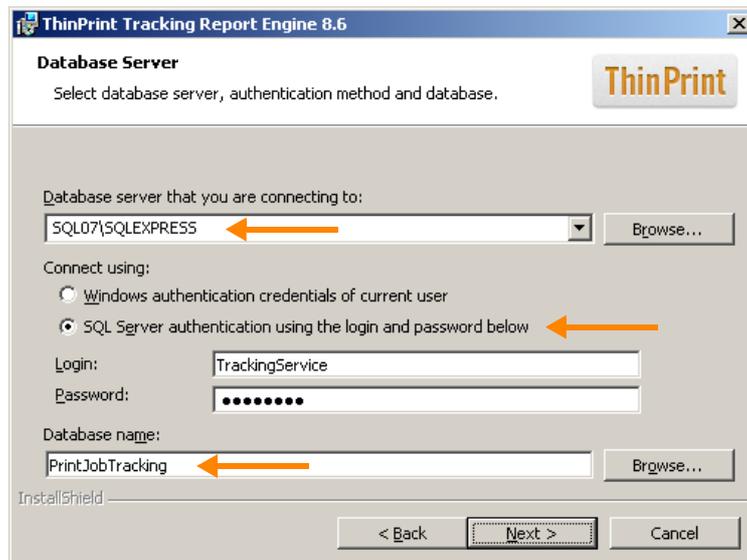
Then Tracking Service can access the database with Windows authentication.

Installation of Tracking Report Engine on the webserver

Please consider that Tracking Report Engine cannot be installed on Windows 2003 x64 machines.

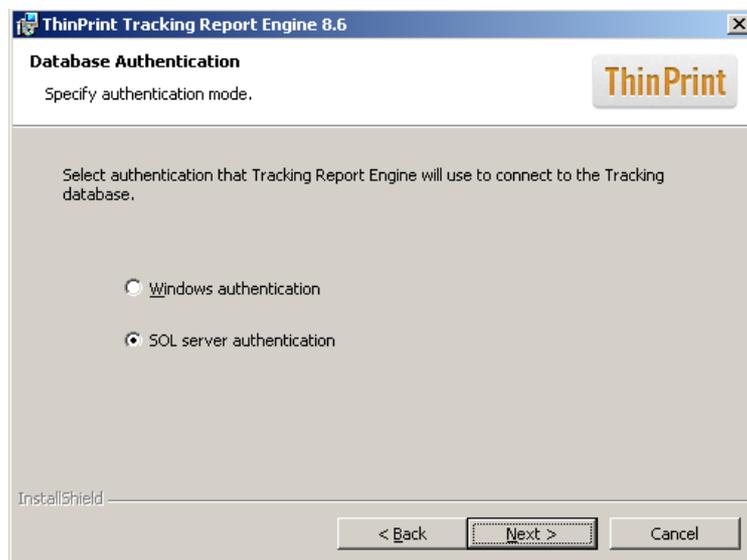
Make sure that the following Windows components are installed and started: IIS and ASP.NET.

Copy SETUP.EXE of Tracking Report Engine onto the web server and open it with a double click. Select the desired language and confirm with OK. InstallShield Wizard opens.



Illus. 15 Choose database and authentication mode

- Select the database server on which Tracking Database has been installed (Illus. 15, arrow above). Then select the same authentication mode which you have selected during Tracking database installation (Illus. 5), here SQL SERVER AUTHENTICATION (Illus. 15, middle arrow). Finally, indicate the database which has been created by Tracking database installer, here: PRINTJOBTRACKING, (Illus. 15 lower arrow).
- Confirm with NEXT. Another window opens, see Illus. 16.



Illus. 16 Choose authentication mode

- Here, select the authentication mode with which Tracking Report Engine establishes a connection to Tracking Database. Confirm with NEXT and close InstallShield Wizard with FINISH.

Personal Printing

The settings for Tracking are described in the Personal Printing manual ([Page 29](#)).

ThinPrint Engine

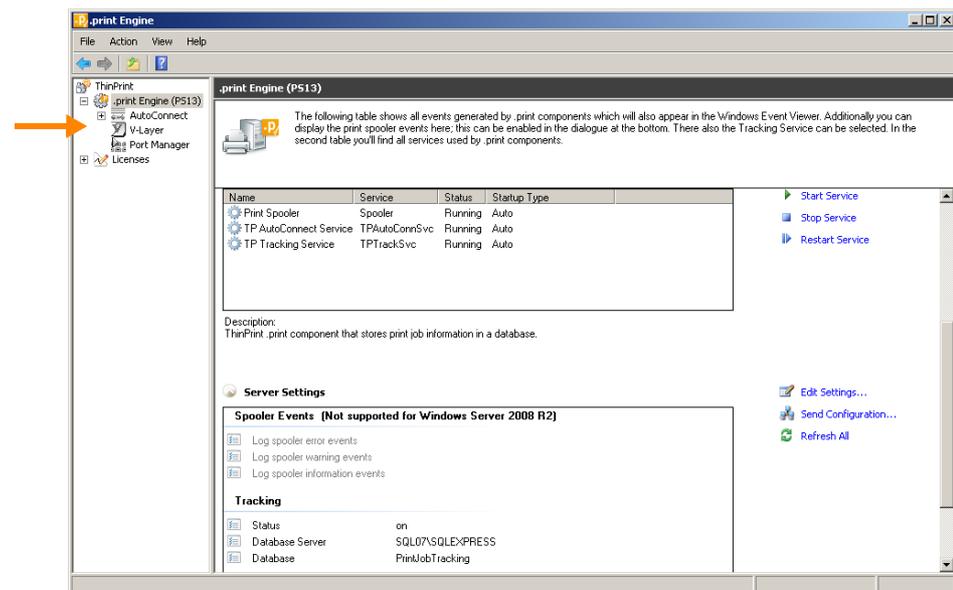
Installation

Please consult the ThinPrint Engine user manual for installation information ([Page 29](#)).

Preparing ThinPrint Engine and Tracking Service

To prepare the ThinPrint Engine for sending data of sent print jobs to the SQL server, you must make the following settings in the configuration for the ThinPrint Engine:

1. Open configuration with START→ (ALL) PROGRAMS→ THINPRINT ENGINE→ CONFIGURATION.
2. Mark the respective THINPRINT ENGINE node (Illus. 17) and select EDIT SETTINGS.



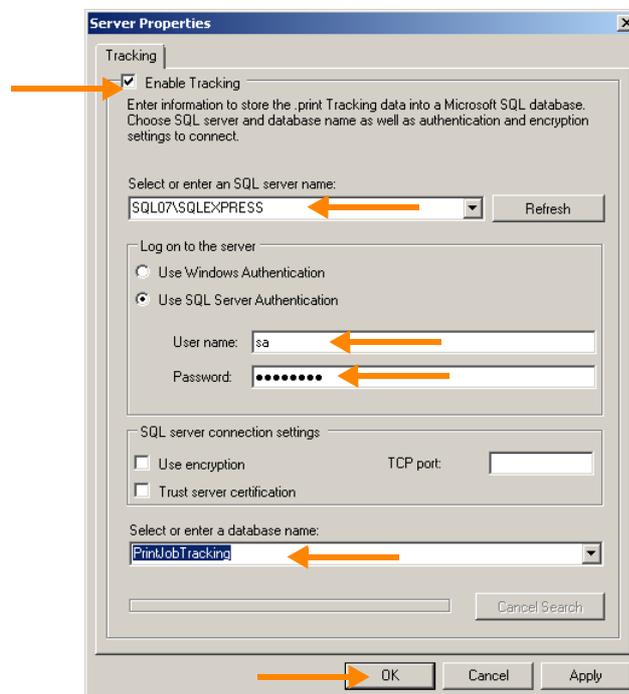
Illus. 17 Selecting TRACKING SETTINGS

3. Enter the following settings in the TRACKING tab (Illus. 18):
 - ENABLE TRACKING
 - SQL server's address and name
 - SQL server/Windows authentication: an account or the which has write per-
missions for the installed database PRINTJOBTRACKING
 - Encryption settings if the data are to sent encrypted to the SQL server
 - Name of the Tracking database (PrintJobTracking).
 - Click OK to confirm.

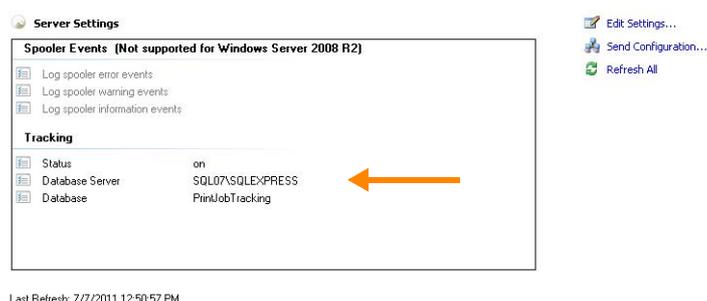
The Result is shown in Illus. 19.



Caution! The Tracking Service is licensed with ThinPrint Server Engine and ThinPrint Application Server Engine. If you enable Tracking Service with another product, printing won't be possible.



Illus. 18 Enable Tracking and enter settings



Illus. 19 Print job tracking enabled

For information about preparing Tracking on a print server cluster see the “Microsoft Failover Clusters and ThinPrint” white paper ([Page 29](#)).

Analyzing tracking data

ThinPrint Tracking Report Engine

The ThinPrint Tracking Report Engine makes it possible to display data from the SQL database as an overview in a web browser. All significant information on print jobs can be summarized by various criteria, sorted, and graphically displayed.

You can analyze the data with the included Tracking Report Engine, or any other tool, to retrieve the database.

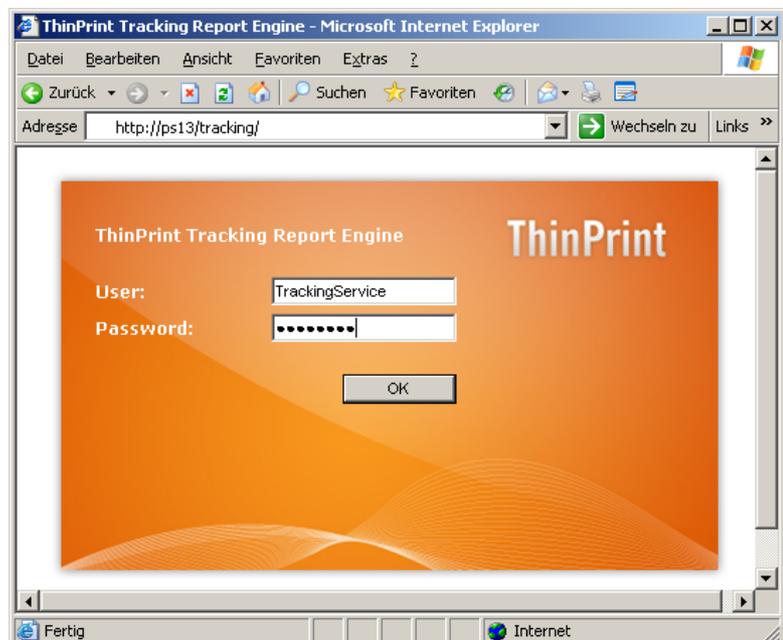
- To analyze the tracking data, start your web browser and call up the website of the server that ThinPrint Tracking Report Engine is installed on:

`http://<webserver>/tracking`

Example:

`http://ps13/tracking`

- Enter the account created on the SQL server (here: TRACKINGSERVICE) which has write permissions for the database PRINTJOBTRACKING (Illus. 20). Confirm with OK.



Illus. 20 Open the Tracking Report Engine in a web browser

Overview

The page OVERVIEW appears (Illus. 21). You see the following information for analysis:

- Number of print jobs
 - Color and b/w (grayscale)
 - Simplex and duplex

- Paper consumption
 - Color and b/w (grayscale)
 - Simplex and duplex

You can also specify the information as follows:

Function	Description
GROUP	Choice between a specific or all user groups (see “Manage Groups”, Page 22)
PRINTER	Choice between a specific or all printers
START	Start of a report period (display and input)
END	End of a report period (display and input)
PREDEFINED	Choice of a report period

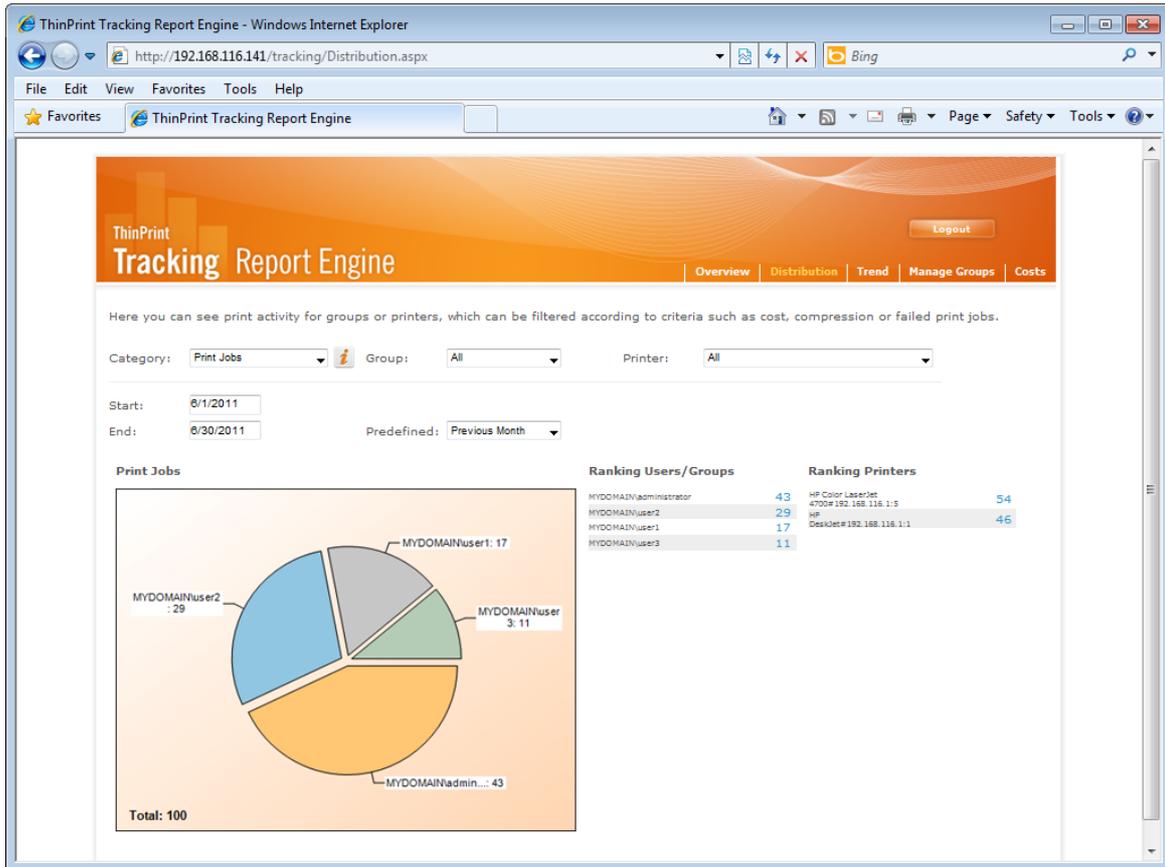


Illus. 21 Overview of number of printouts and paper usage

Distribution

The DISTRIBUTION page allows analysis of which users, groups, or printers have printed the most (Illus. 22). You can specify the information as follows:

CATEGORY	Description
PRINT JOBS	Number of print jobs
COSTS	Print costs for the number of pages printed by the respective selection (group(s) or users), taking into account printer-specific costs per page
PAPER CONSUMPTION	Number of sheets used for printing
SIMPLEX	Number of pages printed one-sided
DUPLEX	Number of pages printed on both sides
BLACK/WHITE	Number of pages printed in black-and-white
COLOR	Number of pages printed in color
ERRORS	Number of failed print jobs
GROUP	Choice between a specific or all user groups (see “Manage Groups”, Page 22)
PRINTER	Choice between a specific or all printers
START	Start of a report period (display and input)
END	End of a report period (display and input)
PREDEFINED	Choice of a report periods

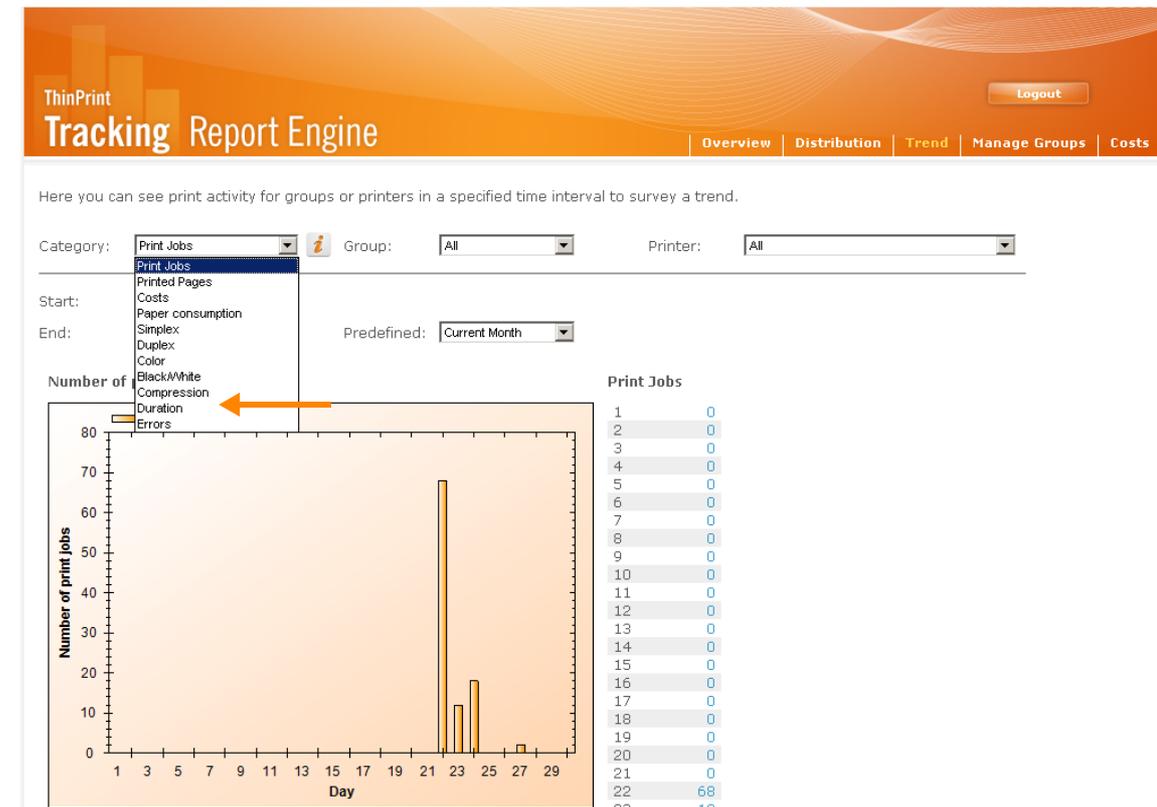


Illus. 22 Ranking

Trend

The TREND page gives an overview of how the frequency of printing has developed across a set timeframe. The example in Illus. 23 shows a cost trend. See above for a description of available functions.

Additionally you have the option to display compression rates of print jobs, when printing with a ThinPrint Engine (arrow in Illus. 23).

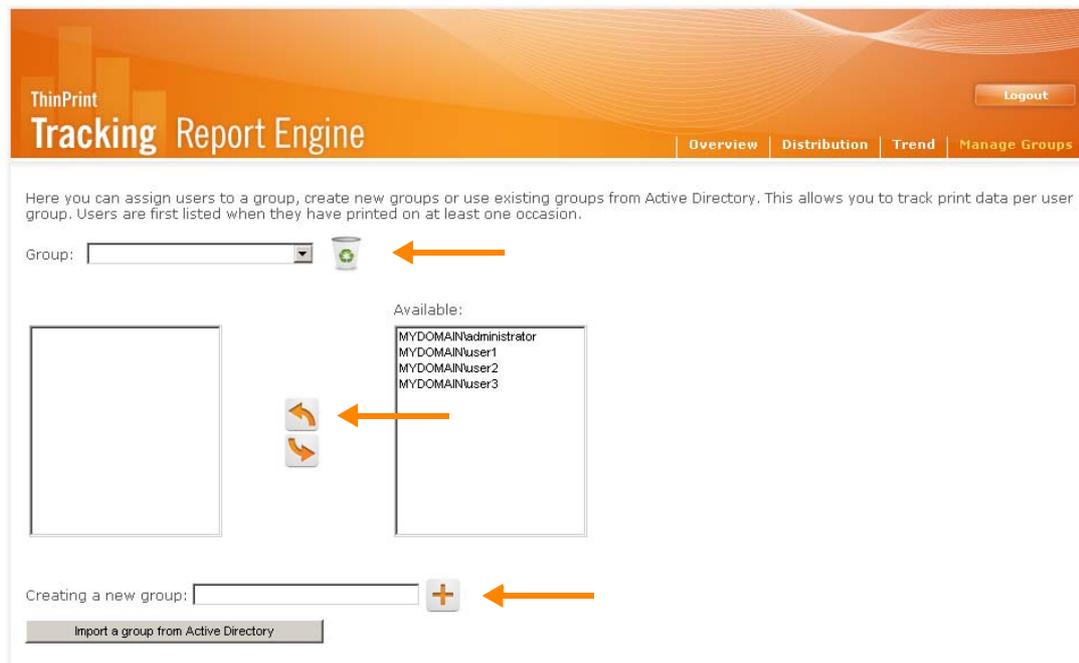


Illus. 23 Displaying trends (here, number of print jobs)

Manage Groups

On the MANAGE GROUPS page (Illus. 24) you can define user groups to make the previous pages easier to read. Include each user in one group only to avoid possible corruption of the general overviews. Users can be arranged or redirected in any groups.

Note that users will only appear here after they have printed at least once or have been imported from a Active Directory group.



Illus. 24 Defining user groups

If the Tracking Report Engine runs remotely and you wish to import groups from Active Directory, it is necessary to run the Tracking Report Engine in Internet Explorer. Additionally, you have to run the CASPOL² script on the command line on the local computer (see Illus. 25 and 26).

- install CASPOL.EXE (component of .NET Framework)
- run `caspol -m -ag All_Code -allcode FullTrust -n ThinPrint`

```

c:\temp>dir
Volume in Laufwerk C: hat keine Bezeichnung.
Volumeseriennummer: F8C9-9E11

Verzeichnis von c:\temp

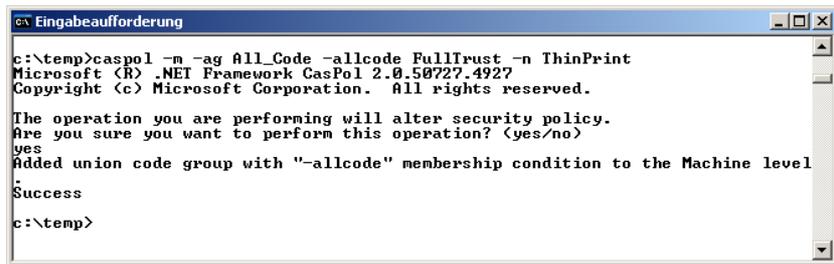
06/29/2011  11:10 AM  <DIR>          .
06/29/2011  11:10 AM  <DIR>          ..
06/29/2011  10:51 AM                57 caspol-kommandozeile.txt
06/10/2009  11:22 PM             106,496 CasPol.exe
                2 Datei(en),    106,553 Bytes
                2 Verzeichnis(se),  96,342,016 Bytes frei

c:\temp>caspol -m -ag All_Code -allcode FullTrust -n ThinPrint
Microsoft (R) .NET Framework CasPol 2.0.50727.4927
Copyright (c) Microsoft Corporation. All rights reserved.

The operation you are performing will alter security policy.
Are you sure you want to perform this operation? (yes/no)
yes
Added union code group with "-allcode" membership condition to the Machine level
Success
c:\temp>

```

Illus. 25 Run caspol.exe



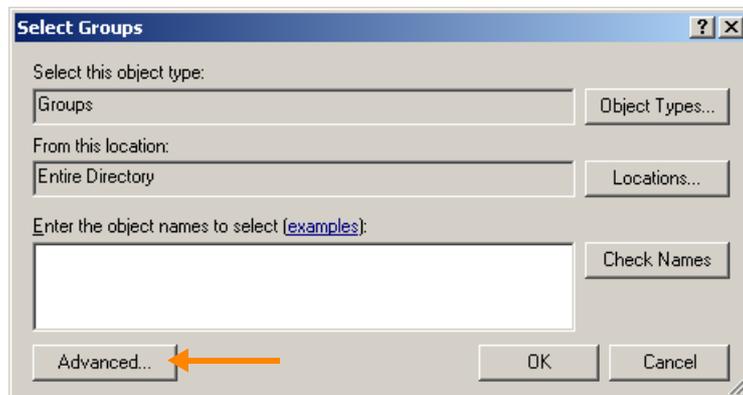
```
c:\temp>caspol -m -ag All_Code -allcode FullTrust -n ThinPrint
Microsoft (R) .NET Framework CasPol 2.0.50727.4927
Copyright (c) Microsoft Corporation. All rights reserved.

The operation you are performing will alter security policy.
Are you sure you want to perform this operation? <yes/no>
yes
Added union code group with "-allcode" membership condition to the Machine level
Success
c:\temp>
```

Illus. 26 Run Caspol script successfully

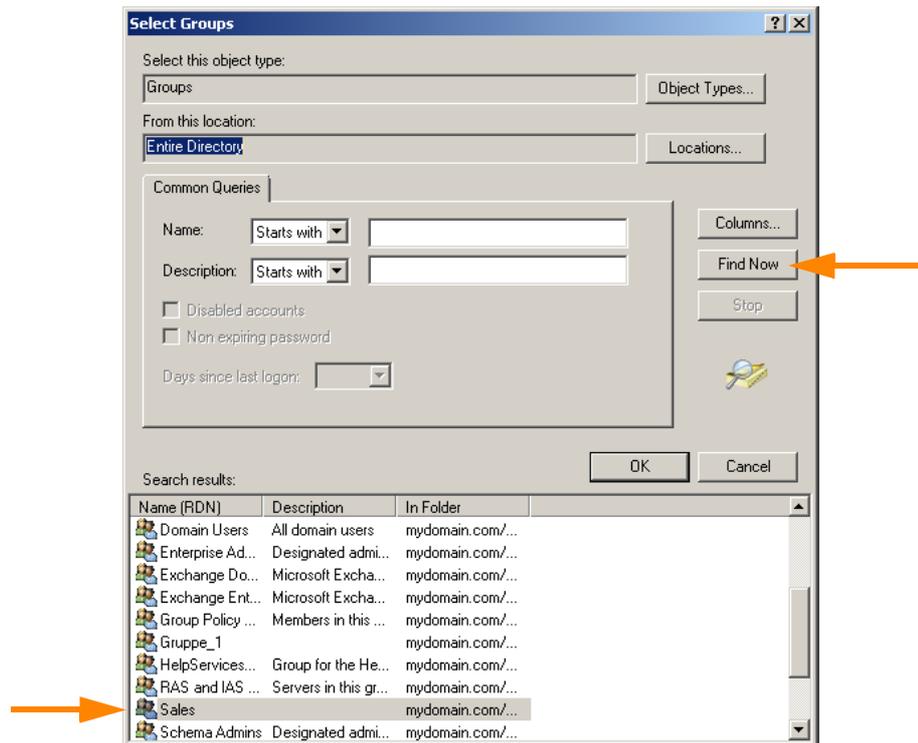
If you import a new group from Active Directory, You can also import users which have not yet printed. To do so, click the button IMPORT GROUP FROM ACTIVE DIRECTORY, (SEE Illus. 28, arrow). Another window opens, see Illus. 27.

Click ADVANCED then choose the desired group from the Active Directory (arrow in Illus. 28).



Illus. 27 Choose database and authentication mode

Another window opens, see Illus. 30. If you click FIND NOW (arrow above right), groups are displayed. Checkmark the desired group and confirm with OK.



Illus. 28 Database PrintJobTracking

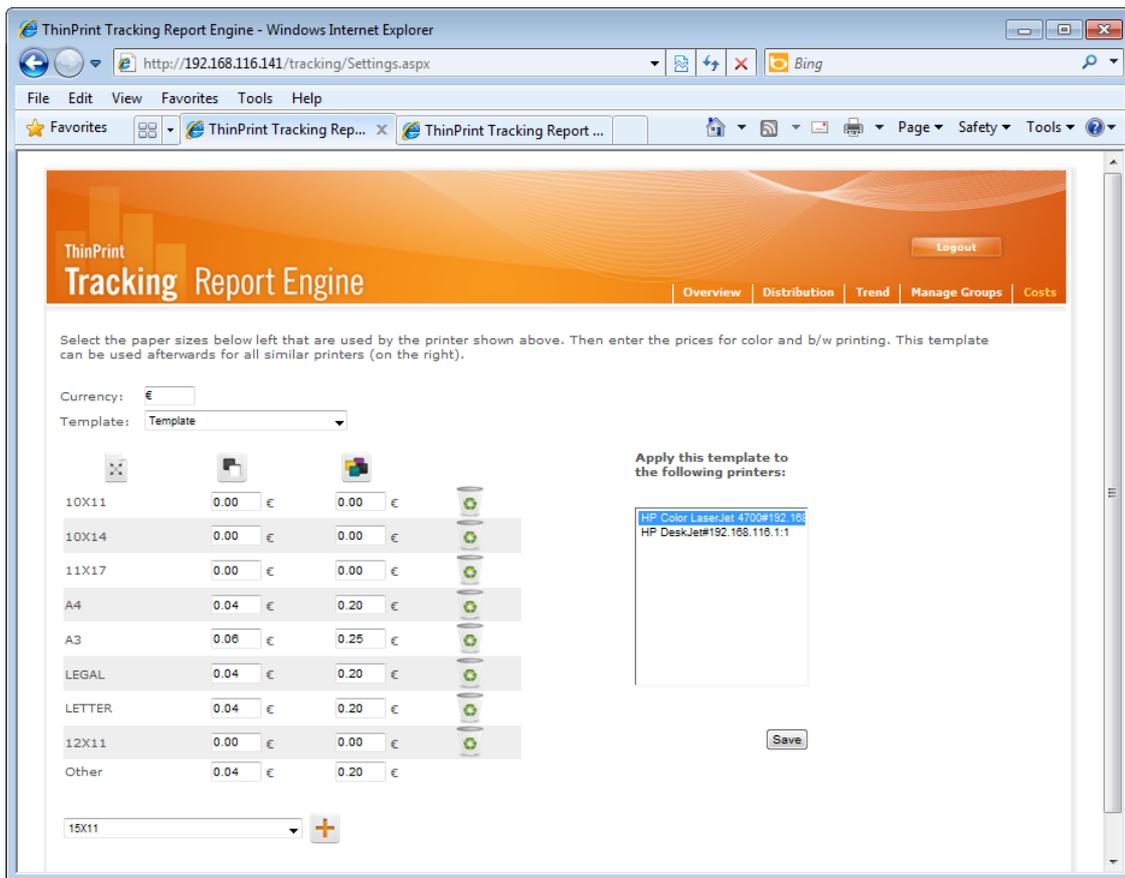
The selected group will be displayed with the included users.

Costs

On the COSTS page (Illus. 29) you can define costs to analyze the financial effects of printing. Given values are the estimated values of toner and paper consumption. Because these costs can vary greatly for different printers and types of printouts, ThinPrint recommends changing the default values to reflect your individual factors.

To do so, select a PRINTER and enter its average costs.

Function	Description
CURRENCY	Enter a currency (three characters)
PRINTER	<ul style="list-style-type: none"> Select printer or change template (= default value)
NEW PAPER SIZE	Define additional paper formats
SAVE SETTINGS	Save cost values for b/w and color for the template or the selected printer
DELETE	Delete paper format
APPLY	Apply the same settings for other printers (multiple selection with Ctrl and Shift keys)



Illus. 29 Settings for estimated costs

Appendix

Customer service and technical support

Customer Service www.thinprint.com/ → SUPPORT
www.thinprint.com/Support/SupportRequest.aspx

SQL server management tools

Overview

In addition to the ThinPrint Tracking Report Engine, you can also use management tools for directly accessing the SQL database, such as Microsoft SQL Server Management Studio Express³. This has the advantage that you can both create a database and analyze all data stored in the database (Illus. 30).

PrintQuality	Color	Duplex	XRes	YRes	TTOption	dmCollate	FormName	JobSize	JobID	Pages	TStamp	Duration
600	c	s	600	300	b	y	Letter	0	1149	1:3	27.02.2006 ...	NULL
-3	c	s	-3	300	b	y	Letter	0	186	1:2	27.02.2006 ...	NULL
-3	c	s	-3	300	b	y	Letter	0	186	1:2	27.02.2006 ...	NULL
300	c	v	300	300	b	n	Letter	0	187	1:2	27.02.2006 ...	NULL
300	c	v	300	300	b	n	Letter	0	187	1:7	27.02.2006 ...	NULL
-3	m	s	-3	300	b	n	A4	0	1150	1:1	27.02.2006 ...	1533
-3	m	s	-3	300	b	n	A4	0	1150	1:3	27.02.2006 ...	NULL
-3	m	s	-3	300	b	y	A4	0	1151	1:1	27.02.2006 ...	NULL
-3	m	s	-3	300	b	y	A4	0	1151	1:1	27.02.2006 ...	NULL
-3	m	s	-3	300	b	y	A4	0	1152	1:1	28.02.2006 ...	NULL
-3	m	s	-3	300	b	y	A4	0	1152	1:1	28.02.2006 ...	NULL
-3	m	s	-3	300	b	y	A4	0	1153	1:1	28.02.2006 ...	NULL
-3	m	s	-3	300	b	y	A4	0	1153	1:1	28.02.2006 ...	NULL
600	m	s	600	600	d	n	A4	0	1103	1:2	28.02.2006 ...	NULL

Illus. 30 Microsoft SQL Server Management Studio Express (example)

Data from the ThinPrint Tracking Service

If printer drivers and applications in use on the source computer⁴ provide certain values and the specific version of ThinPrint Engine (or Personal Printing) also supports

- 3 Can be downloaded from the Microsoft website for free ([Page 30](#); note system requirements!)
- 4 The computer creating the print jobs that ThinPrint Engine sends to the ThinPrint Tracking Service

them, the following information can be sent with each print job to the ThinPrint Tracking Service, which will write it to the **PrintJobTracking** SQL database:

Value in the database	Meaning	Supported by ThinPrint Output Gateway
MachineName	IP address of the source computer (e.g., 192.168.131.30)	●
DriverName	(not currently used)	
DestName	Host name of the target computer (e.g., client-22)	●
ServerName	Host name of the source computer (e.g., server-03)	●
PrinterName	Name of the printer on the source computer (e.g., HP LaserJet 4#client-22:6)	●
ID	ID in the SQL database	
UserName	Name of the person who printed (= Account)	●
Orientation	Orientation Paper orientation (portrait or landscape)	●
PaperSize	Papersize Paper format (e.g., A4, Letter, Executive)	●
PaperLength	Paper length (cm)	For user defined paper formats,
PaperWidth	Paper width (cm)	otherwise value = 0
Copies	Number of copies	●
DefaultSource	Default paper source	●
PrintQuality	Printout quality (maximum value of XRes and YRes; e.g., 600 dpi) or quality level (e.g., fine)	●
Color	Color or grayscale (b/w)	●
Duplex	Double-sided or single-sided (duplex or simplex)	●
XRes	Horizontal resolution (dpi)	
YRes	Vertical resolution (dpi)	
TTOption	TTOption Load TrueType fonts embedded in the file as bitmap, as soft font, or outline or information about what printer font is to be replaced	●
dmCollate	Sorting option; e.g., print longer documents consecutively	depending on the application
FormName	Name of the paper format	●
JobSize	(not currently used)	

Value in the database	Meaning	Supported by ThinPrint Output Gateway
JobTSize	(not currently used)	
JobID	Print job ID	●
Status	Values: 1 = Print job delivered 2 = Successfully printed 3 = Print job cancelled	●
ClientID	(not currently used)	
Pages	Number of printed pages	●
TStamp	Time of print job (start of communication between ThinPrint Engine and ThinPrint Tracking Service)	●
Duration	Duration of the printout (ms)	●
DevMode	device mode Data as blob (binary large object)	
PrintType	Format of print data values: m = EMF; r = RAW	●
CompressionRate	compression rate of the print job (divides the value jobTsize by value jobsize). With ThinPrint Engine only.	●
DocumentName	name of the document	●

Additional sources

Further information about ThinPrint can be downloaded from our website.

Manuals The following manuals (amongst others) are available at:
www.thinprint.com/ → PRODUCTS → OVERVIEW → <product name>

- ThinPrint Application Server Engine
- ThinPrint Server Engine
- Personal Printing

Current program versions ■ Download the ThinPrint Engine: www.thinprint.com/ → PRODUCTS → OVERVIEW → <product name> → DEMO VERSION

Update subscriptions If your software is more than one year old, you also require a current license key for product updates. This key can be purchased inexpensively as a so-called **update subscription**. For more information, contact your dealer or info@thinprint.com.

Microsoft website Management software for SQL servers “Microsoft SQL Server Management Studio Express” can be downloaded (for free) at:
www.microsoft.com/downloads/details.aspx?FamilyId=C243A5AE-4BD1-4E3D-94B8-5A0F62BF7796&displaylang=en

Abbreviations

ASP	Active Server Pages
DLL	Dynamic Link Library
dpi	dots per inch
EMF	Enhanced Metafile
ID	Identification (number)
IIS	Internet Information Service
MMC	Microsoft Management Console
Output Gateway	ThinPrint Output Gateway
SQL	Structured Query Language