steadyPRINT®

The Software for centralized printer administration, monitoring and reliability.

User Manual
for Version 9.1

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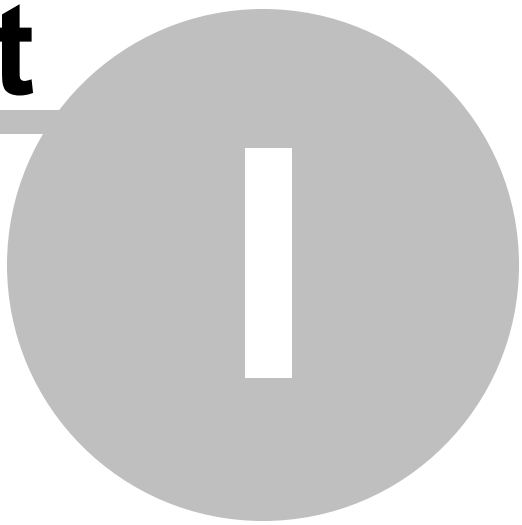

1 Welcome

The **steadyPRINT** team wishes you a warm welcome. With **steadyPRINT**, data loss due to printer failure now belongs to the past. In the event of a print server failure, print jobs are redirected to a backup print server by means of a centralized printer management system. This allows administrators to direct their attention to the defective system without ruffle or excitement as users are able to continue printing despite the failure. Not a single print job will be lost. Particularly when it comes to complex printing environments, **steadyPRINT** is the ideal solution while also making an expensive cluster system superfluous. In addition, further-reaching possibilities are put at your disposal when it comes to overseeing your printers - as in job monitoring, for example.

This user manual introduces you to the basic installation process with its individual components as well as to **steadyPRINT**'s mode of operation. It highlights the fundamental technology employed by **steadyPRINT** together with its various functions. The following section provides some tips and suggestions for the establishment and possible consolidation of your printer environment.

Information	
	Please read the accompanying readme.txt file before beginning with a possible installation. It will provide additional topical information and references concerning - in particular - the current version of **steadyPRINT**. Additional information is also available in the Internet at www.steadyPRINT.com: • Registration option, to receive a regular newsletter, for example, • free downloads for test versions and individual components of **steadyPRINT**, • current patches and hot-fixes with a listing of changes, • announcements and roadmaps for the **steadyPRINT** product line, • technical problem solutions, • frequently asked questions (FAQ).

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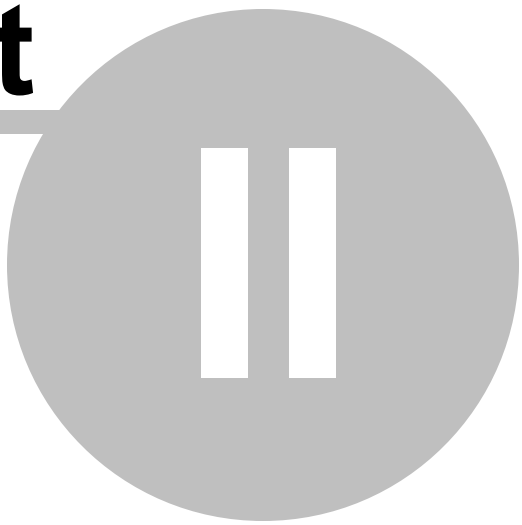

2 Older Versions

You would like to refer to an older version of the **steadyPRINT** manual? No problem! In this section you will find older versions in pdf format.

steadyPRINT User Manual Version 8.5.

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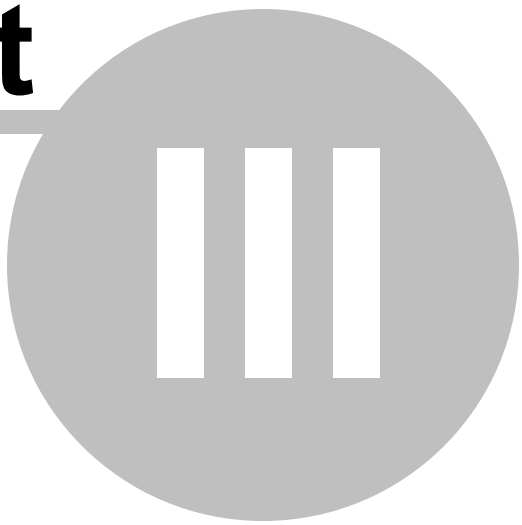

3 steadyPRINT Overview

steadyPRINT is a software that simplifies the administration of printing environments and enhances certain core functions. The benefit of using **steadyPRINT** increases with the complexity of the printing environment in which it is deployed. Particularly in the terminal server domain, special challenges may arise an administrator has to deal with.

3.1 steadyPRINT's Objective

steadyPRINT helps you to meet these challenges. The software enables comprehensive and central printer management. You can directly access local user and Citrix (or Microsoft-based) terminal server sessions. The aspect of session location remains transparent when it comes to the administration of the printing environment.

With **steadyPRINT**'s integrated reliability, the risk of a central failure point is reduced. In the event that a print server is no longer available, the users' printer connections are shifted to a backup server. In this way, printer availability continues to be maintained for the users. The administrators can now calmly concentrate on the problem at hand without encountering bottlenecks and unnecessarily stressful situations.

To implement the points mentioned in a computerized environment, **steadyPRINT** has various components at its command. More details will be given in the following sub-chapters Overview and The Technology.

3.2 Overview

steadyPRINT is composed of several software components that are distributed in the environment. The following figure - Overview of the steadyPRINT Components illustrates a simplified overview of software distribution in a network.

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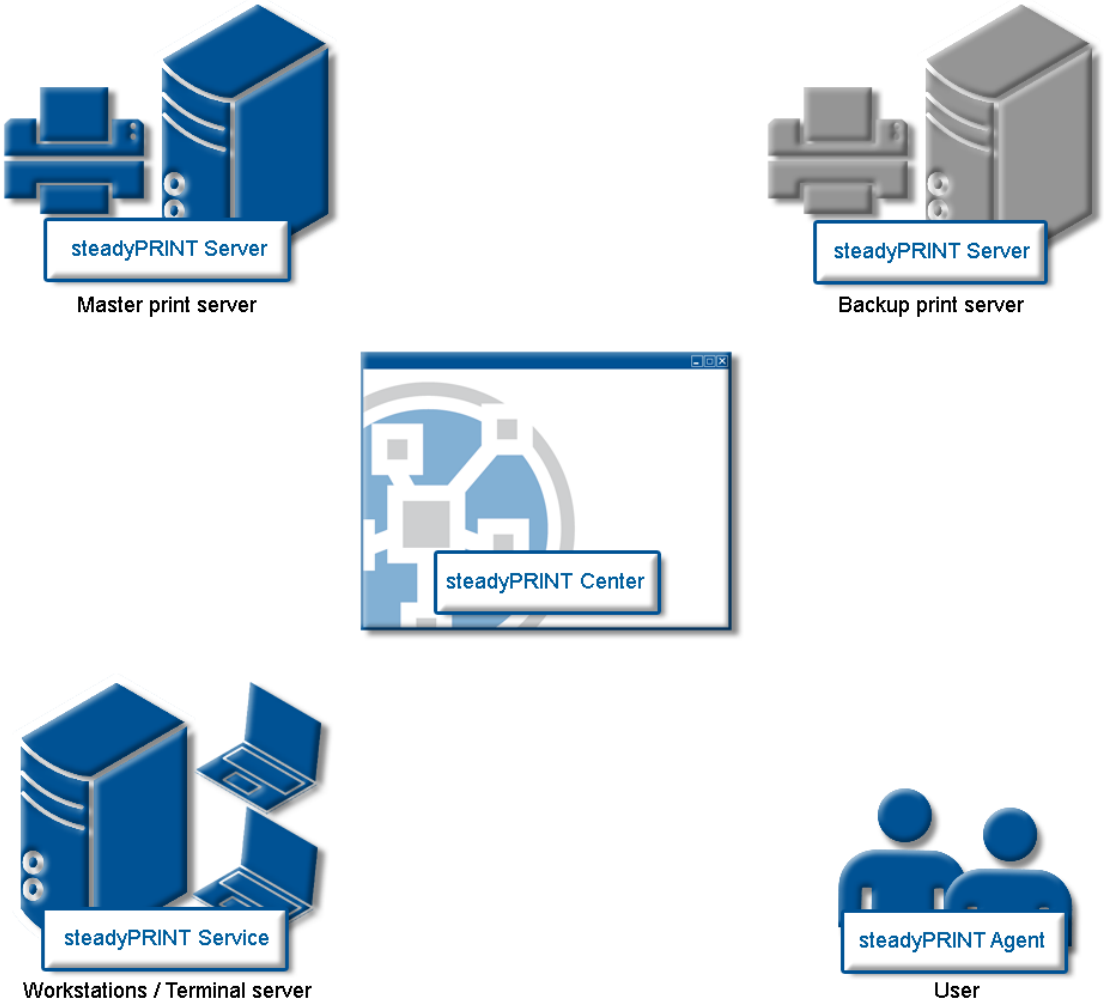

Figure 1: Overview of the steadyPRINT components

The master print server holds the printer sharings. An additional print server monitors the master print server and, in case of a failure, takes over this printer sharing responsibility. The servers and workstations with their user sessions must ultimately administer **steadyPRINT**'s printing environments. The administration takes place using network tools which communicate with the other components and services.

3.3 The Technology

steadyPRINT consists of different service components that run as Windows services on the servers and/ or workstations. The following table provides an overview:

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Process/Service	Installation Location / Program Component	Description
steadyPRINT Agent	Terminal Servers and Workstations (Client)	Used for printer administration on terminal servers and workstations. The ***steadyPRINT Agent*** sets up the printer connection according to the configuration as pre-defined by the administrator and/or user.
steadyPRINT API	(Arbitrary) (Server)	Used for the administration of the environment via a RESTful API.
steadyPRINT Center	Print Servers (Management)	Used for the central administration of your printing environment and is ideally installed on each print server.
steadyPRINT SecurePrint	Arbitrary (Server)	Web server for ***Secure Printing***.
steadyPRINT Server	Master and Backup Print Server (Server)	A list of responsibilities below: • Synchronization of printer and print server information • Collection of information for ***Dashboard and Monitoring*** • Monitoring of primary or secondary print server • Server side ***VPD*** print
steadyPRINT Service	Terminal Servers and Workstations (Client)	Service the remote administration of the printing environment.
steadyPRINT Microsoft Office Outlook Add-In	Terminal Servers and Workstations (Client)	Integration of **steadyPRINT** to Microsoft Office Outlook as Add-In.
steadyPRINT Virtual Printer Driver	Terminal Servers and Workstations (Client)	Used to process and display print jobs which are sent via ***steadyPRINT VPD***.
steadyPRINT WebCenter	Arbitrary (Server)	Serves the web-based central administration of your printing environment.

Table 1: Overview of steadyPRINT components

Additionally, a background process runs during every user session, which establishes a communication channel to the ***steadyPRINT Service***. A database system on Microsoft SQL Server basis serves as data storage. Using the free SQL Server Express Version is also possible.

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3.4 Features

steadyPRINT offers several necessary features for the management of a printing environment. Moreover, the functionality of the Windows print servers is extended by many useful operations. You will find an overview of the most important features in the most recent version of **steadyPRINT** under http://www.steadyprint.com/download/ in the area Technical Documentation > Key Features.

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Part

4 Installation

To install **steadyPRINT** you will need the installation package. It is available for download in the download area at www.steadyPRINT.com. Please note that it is absolutely necessary to back up your data before beginning with the installation. Details will follow in chapter Installing the Database.

For more detailed information on the system requirements, click here.

In case the system requirements in your print environment vary, please contact our steadyPRINT Support.

4.1 Installing the Database

For the use of **steadyPRINT** it is necessary to install the ***steadyPRINT database***. The set-up is done with the help of the CreateSteadyDB application provided. Start up this application with a double click. The following figure - Installing the database with CreateSteadyDB shows the application after start up with filled-in database and credential information.

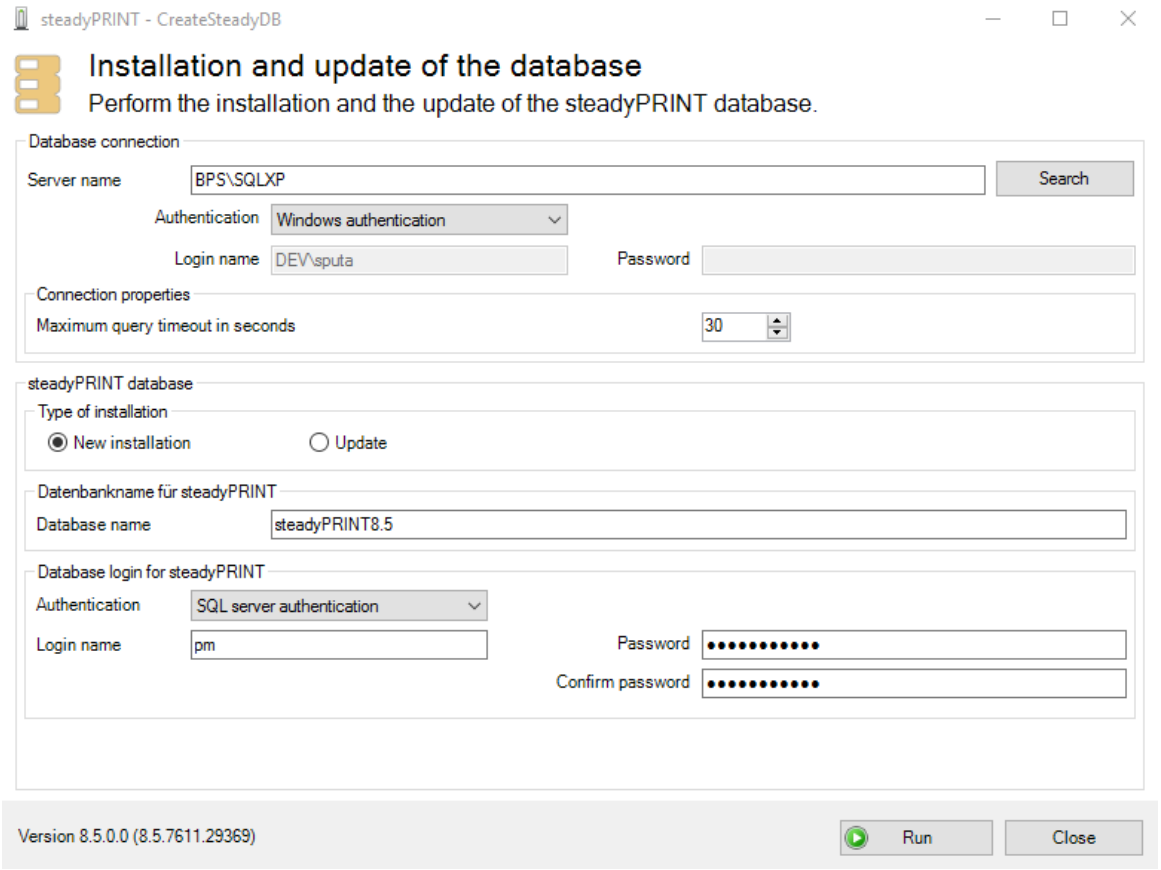

Figure 2: Installing the database with CreateSteadyDB

Database Connection

Enter the name of the database server or the database instance on which the database is to be set up.

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Subsequently, select the required authentication at the database server:

- Windows authentication: Uses the currently logged-in user for the connection to the server.
- SQL Server authentication: In this case, a SQL login with all respective System Administrator (sa) authorizations has to be entered in order to be able to access the database server or the database instance and to create a database.

Important	*Setting up a steadyPRINT Database with Windows Authentication*
	The currently logged-in user must at least have the authorizations of the dbcreator and securityadmin roles on the database server. *For further information regarding the Microsoft SQL server roles, please refer to* http://msdn.microsoft.com/en-us/library/aa337562(v=sql.110).aspx.

Important	*Setting up the steadyPRINT Database with SQL Server Authentication*
	Enter the user log-in data of an SQL System Administrator **(sa)** in order to successfully conclude full implementation of the process. **Here, the** CreateSteadyDB **application expects the user log-in data of an SQL System Administrator or an equivalent account with "sysadmin" server role status.** *For further information (technical background) please refer to the* **steadyPRINT** *website* www.steadyPRINT.com *under FAQ/Technical Support.*

Extended Connection Parameters

For the creation and the update of the database, the ***CreateSteadyDB*** sends SQL instructions to the SQL server. If the process is not executed within the specified time frame, the current action is aborted and the error message "query timeout expired" is displayed. This problem frequently occurs if the server is fully utilized or the instruction to be processed cannot be executed quick enough due to their complexity. The increase of the max. query time out guarantees a successful execution of the necessary SQL instructions.

steadyPRINT Database

Enter the name of the ***steadyPRINT database*** used to create the database on the database server. When updating the database, enter the recently used ***steadyPRINT database name***.

Important	*Old Database Name*
	Since version 5.0.1 the name of the ***steadyPRINT database*** can be freely selected. In older versions, the name PrinterMap was used by default for the installation.

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Database Login for steadyPRINT

At this juncture, the entry of a separate database user for the ***steadyPRINT Database*** will be made. The user is ***automatically*** created by using the entered login (and password) which is later necessary when Installing the Program Components. When updating the database, the recently used login and password are required.

Note	*Windows Authentication*
	During the installation of the steadyPRINT components, the generated domain user must be specified as service user.

Note	*Update - Using another Login*
	In the course of updating the ***steadyPRINT database***, a new user can be specified. This is ***automatically*** done by ***CreateSteadyDB*** by using the given login. Activate the checkmark Create as new Login (only available with installation type Update).

Installation Type

Here, you have two options to choose from, to be more precise, either a new installation of **steadyPRINT** or an upgrade of the ***steadyPRINT Database*** currently in operation. The latter carries out an adjustment of the database to a newer version that is equivalent to the ***steadyPRINT Components*** currently in use.

Provided that a **steadyPRINT** database has not yet been set up on the database server or database instance, or if you would like to discard an existing ***steadyPRINT Database***, select the New Installation option.

Should a database from an earlier version of **steadyPRINT** already exist on the database server or database instance, it is possible to update it to the current version. To do so, select the installation type Upgrade.

Starting the Database Installation

After the necessary entries have been made, the new installation or update of the ***steadyPRINT database*** is initiated via the **Install** button.

4.2 Installing the Program Components

In this chapter we are going to address the various installation procedures for ***steadyPRINT Components*** – both on client and on server side. The following components are available to choose from:

- *Client (end user)*
- *Management (administrative surface and API)*
- *Server (synchronization, reliability,monitoring, VPD and SecurePrint).*

All three installation types will be shown and described as step-by-step instructions in the following sub-chapters. An overview of the program components and their tasks will be given in chapter "The Technology"

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Important	*Installing Server Roles for Print Servers (when using Reliability)*
	Installing ***steadyPRINT Server*** components makes it necessary to have the "Print Server" role installed on a Windows server (the designation can vary depending on the Windows server versions being used).

Note	*Program Components*
	The installation of the program components for workstations and Clients, the servers as well as the management takes place by starting the installation using the accompanying installation package steadyPRINT.msi.

Tip	*Installation Location for the Management Components*
	The **steadyPRINT** team recommends that the management components be directly installed on the corresponding print server.

4.2.1 Combined Installation Steps

After starting the installation routine, you will see the Welcome Screen with the words "Welcome to the steadyPRINT Wizard" (see figure - Installation - the welcome screen).

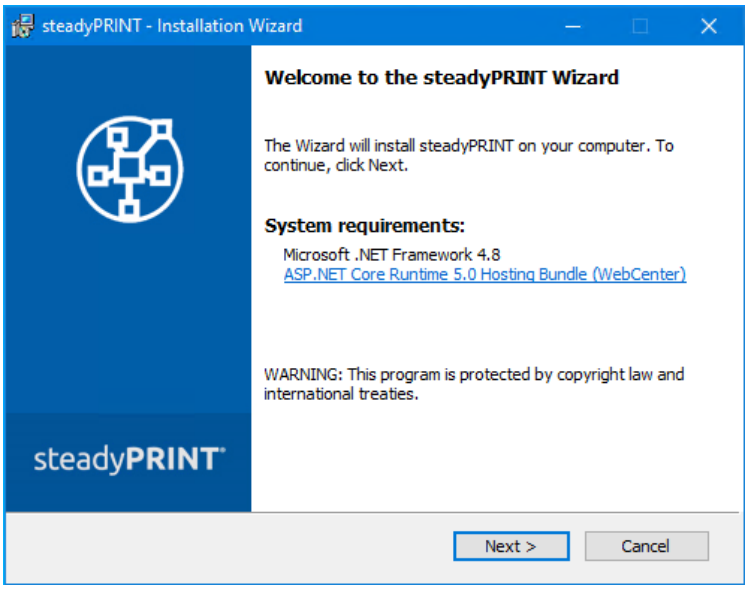

Figure 3: Installation - the welcome screen

By clicking on the Continue button, you will progress to the next dialog box. This displays the ***license agreement*** (see figure - Installation - the license agreement).

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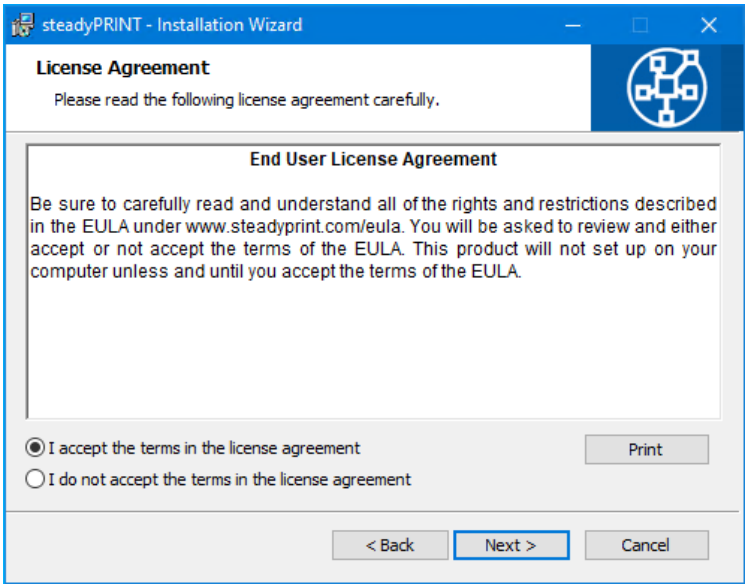

Figure 4: Installation - the license agreement

You will now be asked to confirm the license agreement. You are advised to read the ***steadyPRINT Software License Agreement*** conscientiously. Accepting the license agreement is necessary to continue with the installation. To do this, select "I accept the conditions of the license agreement" and confirm your selection by clicking on the Continue button, thus bringing you to the user information particulars.

By declining to accept the license agreement, the installation routine ends.

Important	***Accepting the License Agreement***
	In order to install the **steadyPRINT** program components you must agree to the software license contract. **The installation cannot continue should you decide not to accept the license agreement.**

Then click on the Continue button to configure the components for installation.

4.2.2 Component Selection for Installation

The following is a user-defined installation interface offering you the ***steadyPRINT Components*** to be installed. Here you can select the feature desired and disable the other components. Deselecting a corresponding feature is done by double-clicking it and then selecting "This feature will not be available." To enable a feature, it is necessary to click on the menu item "This feature will be installed on a local hard drive." The figure - Installation - adapted setup shows, as an example, the selection of the ***steadyPRINT Server*** and ***steadyPRINT Webserver*** components.

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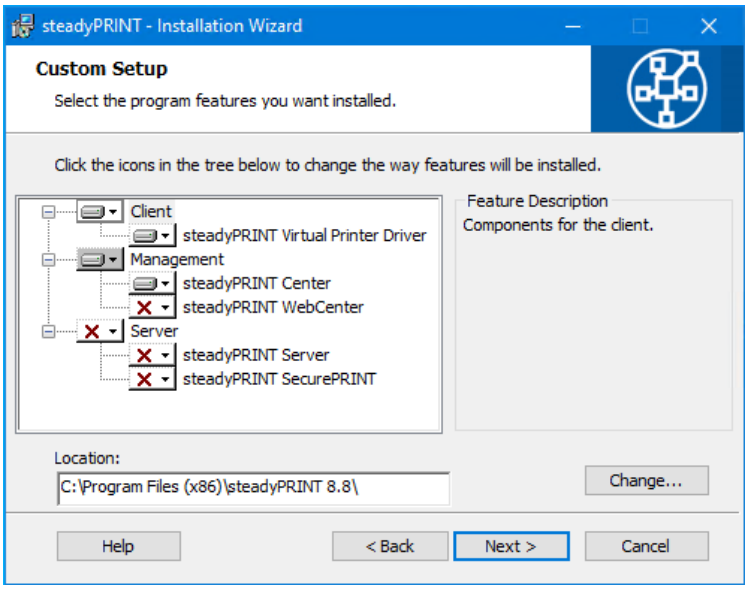

Figure 5: Installation - adapted setup

To conclude the adapted - or custom - setup for ***steadyPRINT Component*** selection, click on Continue. The next step of the installation requires that the name of the database server or database instance be entered.

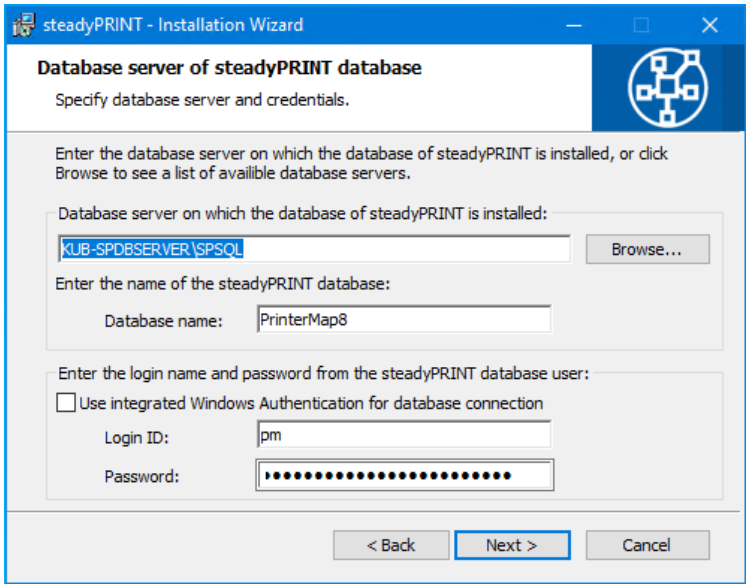

Figure 6: Installation - database server

Enter the information for the database server, the steadyPRINT Database and the separate steadyPRINT Database User from Installing the Database (figure - Installation - database server), which was added previously while creating the database with the CreateSteadyDB application. Then click **Continue** to proceed.

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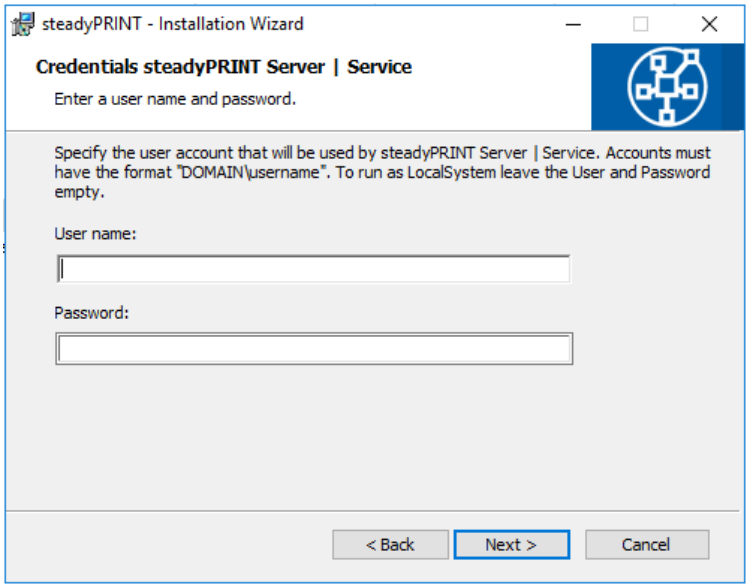

Figure 7: Installation - credentials

The next installation step, (see figure - Installation - credentials), requires the entry of the *domain authentication data* (credentials) of an administrator account. This requires the login data of a user with appropriate administrative privileges in order to query, for example, the status of the print jobs in the queue of the monitored print server. For a usual Client installation (***steadyPRINT Agent***) you can leave the fields empty. This means that the localsystem user is used. Then finalize the installation by clicking the **Continue** button.

Important	***The Installation of the Service Components Fails***
	To install the ***steadyPRINT Service and steadyPRINT Server*** components you will need to have adequate administrative authorizations. When indicating a service account, please make sure that the specified user has been added to the local safety directive Log on as a Service. Alternatively, enter the local system account localsystem which is predefined by default and leave password space empty to continue this installation step. *You will find further information (technical background) in chapter Support under FAQ/Technical Support.*

During the installation of ***steadyPRINT Client*** components for workstations and terminal servers as well as for management, the name of the database servers or database instance will also be asked for once selected. Entering the domain authentication data will not be necessary, however.

4.2.3 Completing the Installation

The necessary entries for the installation of the ***steadyPRINT Program Components*** have been made by you. The **steadyPRINT** Wizard's program assistant is now ready to copy the program files to your local hard drive and to make the necessary system entries (see figure - Installation - ready to install the

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program).

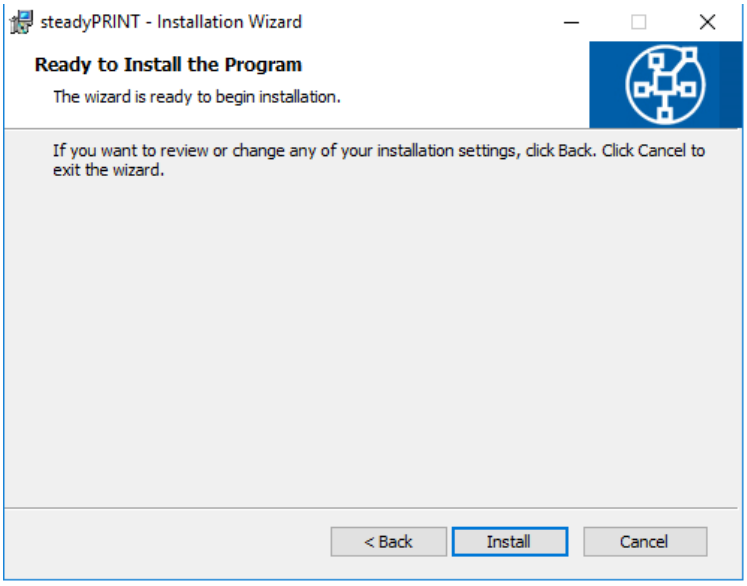

Figure 8: Installation - ready to install the program

Click Install to execute the installation with the specifications you have made.

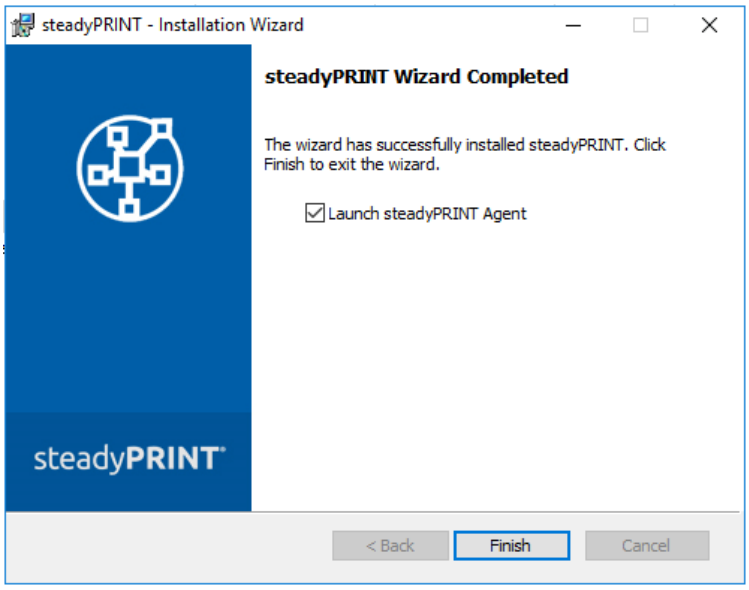

Figure 9: Installation - InstallShield Wizard completed

The ***steadyPRINT Program Components*** have now been fully installed. Click Finish to complete the installation (see figure - Installation - InstallShield Wizard completed).

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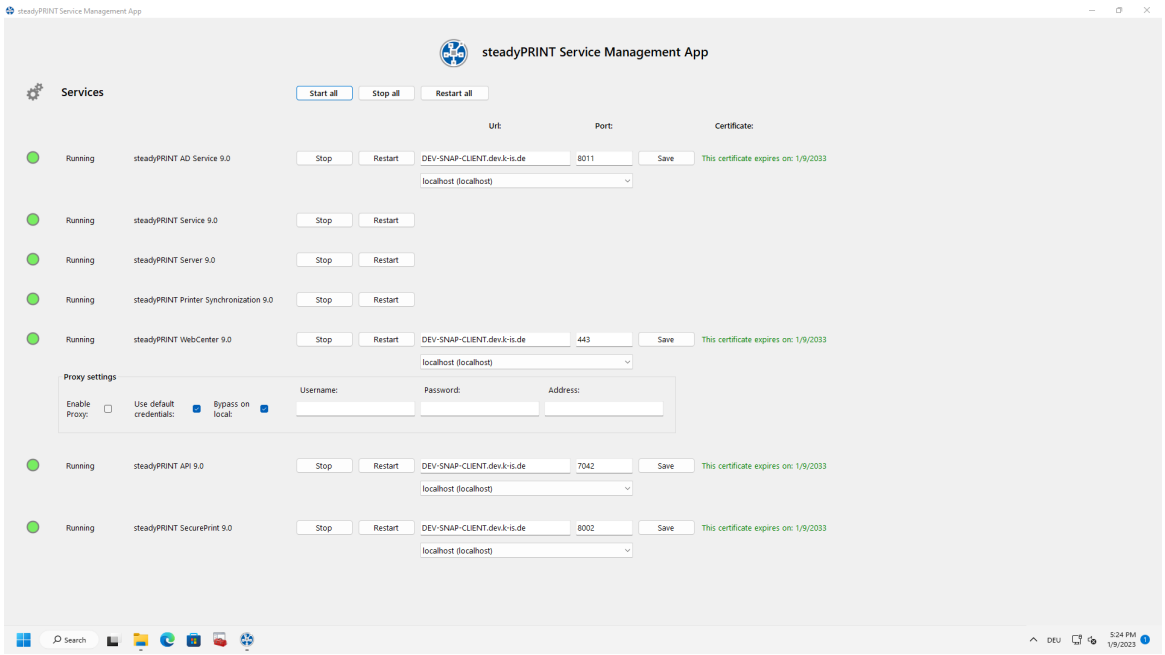
4.2.4 Software Distribution per Active Directory (AD)

The automatic distribution per Active Directory is provided by the supplied MSI package (***steadyPRINT.msi***). An example instruction for the creation of the Silent Installation can be found in the Download Area under Documentation on our homepage www.steadyprint.com.

4.3 steadyPRINT Service Management App

The ***steadyPRINT Service Management App*** is provided with the installation package of **steadyPRINT**. This tool is used to configure individual ***steadyPRINT Services***. The **certificate**, **URL** and **port** of the respective service can be adjusted here. In order to use the adjusted configuration, you must first save them and then restart the services. The ServiceMgmtApp.exe is to be found in the Installation ZIP archive in a folder called ServiceMgmtApp.



Function	Description
Start	Starts the respective service if it is turned off.
Stop	Stops the respective service if it is turned on.
Restart:	Restarts the respective service if it is turned on. Should the service be turned off, it will be started as usual.
Start/stop all and restart	Runs the respective action for all services.
URL:	The host must be entered here if it differs from the selected URL of the certificate.
Port:	Port of the service.
Certificate drop down	Select the certificate of the service.
Store:	After adjusting the configuration, click the **Save** button in order to save all.
Expiry date of certificate:	Here you can see when the selected certificate expires or begins. If it has already expired or is not yet valid, this text will be displayed in red.
Enable proxy:	Use proxy server.
Default login details:	Use the default login details for the current security context in which the application is run.
Locally ignore:	In case of requirements concerning local internet resources, do not use the proxy server.
User name:	User name of the proxy server.
Password:	Password of the proxy server.
Address:	Address of the proxy server.

Note	***Storage and Backup***
	When saving the configuration file, a backup of the previous configuration is simultaneously created. The backup is saved in the directory of the ***steadyPRINT Service Management App*** under "Backup Configuration".

4.4 Installation WebCenter

Choose the ***steadyPRINT WebCenter*** component in the ***steadyPRINT Installation components***.

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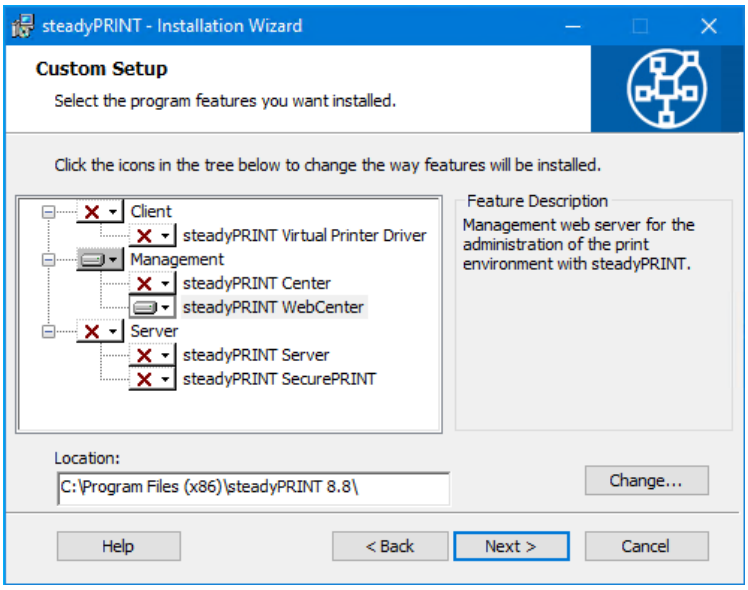

Figure 10: Installation of WebCenter

The next installation step, see figure Installation - Credentials, requires the entry of the *Domaine Authentication Data* (Credentials) of a Windows user. For a usual installation, you can leave the fields empty. This means that the localsystem user is used. To complete the installation click the button **Next**.

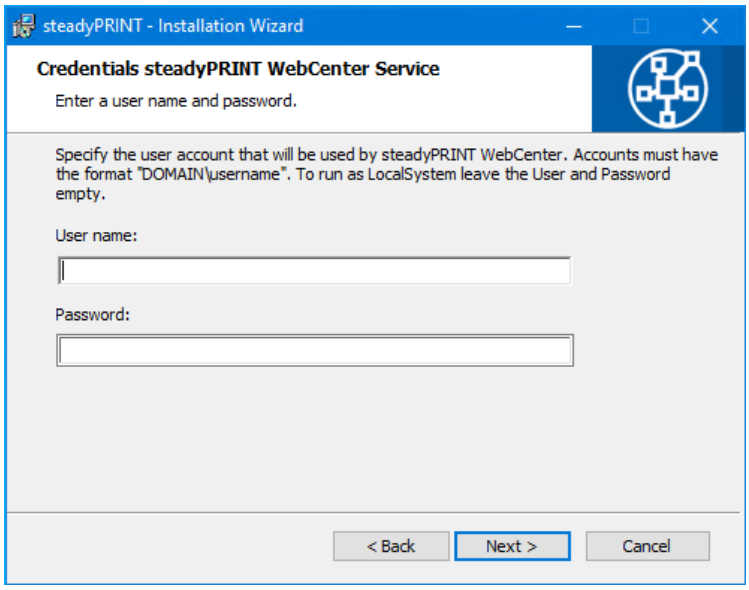

Figure 11: Installation - Credentials

Important	***Installation of the Service component(s) fails***
	In order to install the ***steadyPRINT WebCenter*** component you must have sufficient administrative rights. Please make sure before that the ASP.NET Core 5.0 Runtime Windows Hosting Bundle has been installed.

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When indicating a service account please make sure that the specified user has been added to the local security policy Run as a service.

As an alternative, you can continue the installation step with a blank password by using the local system account localsystem which has been pre-defined by default.

For more detailed information (technical background) please refer to chapter Support.

Configuration of Ports

The WebCenter comprises two services, the ***steadyPRINT WebCenter*** and ***steadyPRINT AD Service***.

In case the default port is desired to be adjusted, this must be done manually via the respective configuration file appsettings.json.

Adjustment of port for steadyPRINT AD Service
Open the configuration file [Install]\install.AdService\appsettings.json. Subsequently, the adjustment is done via the property `ServerDefaultOptions.HttpsPort` of the HTTPS ports.

In the next step the adjustment of the ports in the configuration file [Install]\install.WebCenter \appsettings.json has to be repeated. For this purpose, the HTTPS port has to be assigned with the value entered before. In any case, make sure that both HTTPS ports are the same. Otherwise, the ***steadyPRINT WebCenter*** and ***steadyPRINT AD Services*** will not be able to communicate.

Adjustment of ports for steadyPRINT WebCenter
Open the configuration file [Install]\install.WebCenter\appsettings.json. Subsequently, the adjustment of the ports (for http(s)) is done via both properties `Kestrel.Endpoints.Http.Url` and `Kestrel.Endpoints.Https.Url`.

Restart the service steadyPRINT AD Service after adjusting the ports.

Configuration of Certificate for WebCenter

Open the configuration file [Install]\install.WebCenter\appsettings.json. Subsequently, the adjustment of the DNS name which is to be accessed via the WebCenter is done via the adjustment of the property `Certificates.Default.Subject`.
Make sure that a valid and suitable certificate has been stored to the certificate store of the local computer (local machine certificate store), so that the DNS name correspond to the applicant of the certificate (subject).

Restart the service steadyPRINT WebCenter after adjusting the ports.

4.5 Update

This chapter describes the procedure of a manual update in an existing **steadyPRINT** environment. It particularly aims not to affect the running operations. The procedure described below enables the administrator to carry out an update successively and without any time pressure. The goal is to keep the ***steadyPRINT Database*** parallel. This means that all Clients combine to the new and parallel running

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database without any effect on older Clients.

Backup of the Existing Database

The first step is to restore the existing ***steadyPRINT Database***. A backup is for example done via the Microsoft SQL Server Management Studio under [INSTANZNAME] > Databases > [STEADYPRINT DATENBANK] > Tasks > Back Up ....

Parallel Import of Backup

The previously created backup of the database now has to be imported again under a different name. This procedure can for example be performed via the Microsoft SQL Server Management Studio under [INSTANZNAME] > Databases > Restore Database. The use of a suffix describing the respective **steadyPRINT** version is recommended:
Example (old database name): PrinterMap
Example (new database name): PrinterMap_510

Important	***No Permission after Restoring the Database***
	After restoring the database, the permission for the SQL user may be lost. Adjust the permissions according to the knowledgebase entry on www.steadyprint.com.

Update the steadyPRINT Database

The update of the ***steadyPRINT Database*** must be done analog to chapter Installing the Database. Enter the name of the restored database as database name on the interface and select the installation type upgrade. In the example above this would be the database PrinterMap_510.

Update of the Components

The update of the other **steadyPRINT** components (***steadyPRINT Center***, ***steadyPRINT Agent*** etc.) is performed in line with chapter Installing the Program Components. It is a matter of choice to carry out an update or a new installation. Enter the restored database as a database name in the installation routine. In the example above this would be the database PrinterMap_510.

Server-Side Parallel Installation of Server Components

If you want to provide your printers with the ***Virtual Printer Driver*** (VPD), the ***steadyPRINT Server*** service generally needs to be installed on each print server. The parallel installation of the server components (***steadyPRINT Server*** and ***steadyPRINT Center***) simplifies the update of a print environment in which ***VPD*** is used. In order to use several environments with different **steadyPRINT** versions in parallel, a separate installation medium `steadyPRINT_parallel.msi` is available. This medium is provided on request by the steadyPRINT Support and has been developed especially for the server-side parallel operation.

All information is provided without guarantee of completeness, accuracy and currentness.

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Part V

5 Centralized Administration

The ***steadyPRINT Center*** is available to help you administer the printer environment in **steadyPRINT**. All functions necessary for the central administration of your printers have been brought together here.

The following will explain the individual program steps to be taken for the initial setup of a new print server using the administrative tools in **steadyPRINT**.

Note	*License Necessary*
	When starting ***steadyPRINT Center***, the license will be verified which is necessary to work with **steadyPRINT**. For more information concerning licensing, see section License.

As an alternative, it is also possible to activate a demo version. Please proceed as follows:

Note	*Activate Demo*
	On the first start, the ***steadyPRINT Center*** asks whether you wish to activate the demo mode for 30 days or import a purchased license. To proceed, choose between those two options. For questions concerning licensing, please contact the ***steadyPRINT-Support*** (see Chapter Support).

5.1 WebCenter

As of version 9.0 the ***steadyPRINT WebCenter*** can be used to centrally manage your printers.

The ***steadyPRINT WebCenter*** is to implement the full functionality of the printer management and will be extended in the future.

The workflow actions are provided in categories:

- Settings: General settings as well as settings for ***steadyPRINT SecurePRINT*** or ***steadyPRINT API***
- Assignments: Assigning all types for users/computers/groups on the basis of printers or ActiveDirectory
- SMTP: View status information for printers

5.1.1 steadyAPI

The ***steadyPRINT API*** serves as an interface for the retrieval of data and the provision of functions. It is necessary for the ***WebCenter*** and ***SecurePrint***.

The ***API*** is dependent on the ***steadyPRINT AD Service*** which is automatically installed during the installation of the ***API***.

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The ***steadyPRINT API*** is used to retrieve data from **steadyPRINT** or to write them and to combine **steadyPRINT** with your existing infrastructure. All functions in the ***steadyPRINT Webcenter/SecurePrint*** can be implemented without user interface via the ***API***.

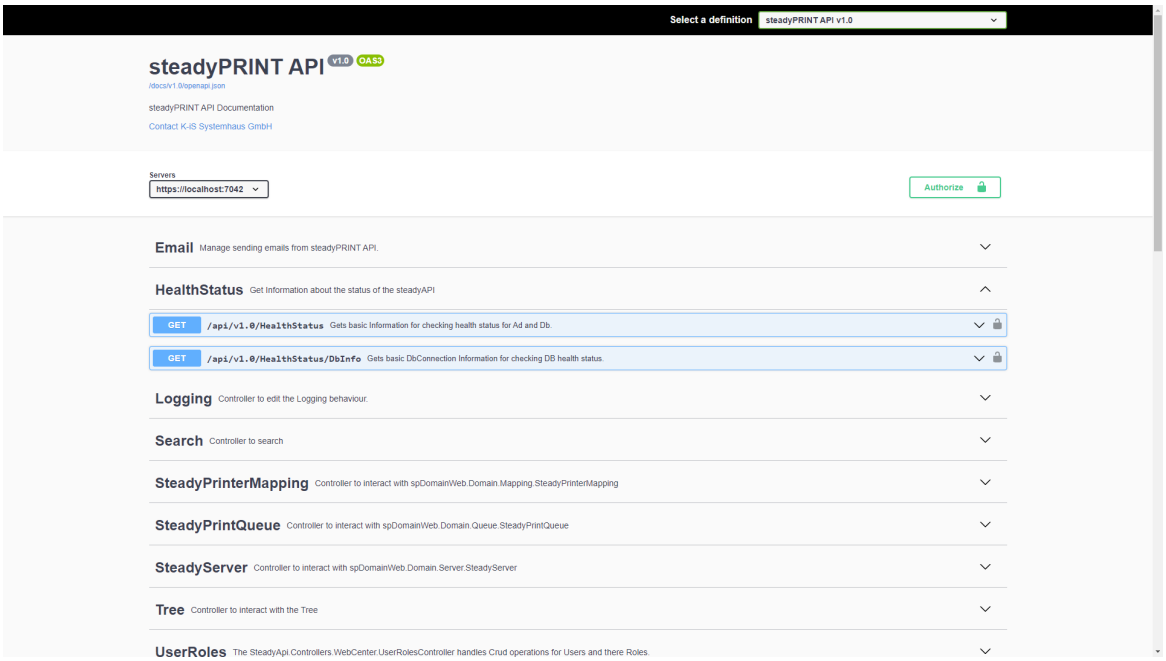
For the use of the ***API***, a Json Web Token is required which can be obtained via the Login or the token administration in the ***WebCenter*** settings. The access rights for the ***steadyPRINT Webcenter/ SecurePrint*** can also be used for the ***API***.

Once the API is installed, a detailed list of all current functions provided by the API can be viewed in the included interactive API documentation. If installed locally, the documentation can be found under: https://localhost:7042/docs/index.html

Your configuration can vary depending on the specified URL and the port. The URL is generated according to the following scheme:
https://computername:Port/docs/index.html

The documentation describes all existing endpoints which can tried out directly via the web interface.

Warning	***Usage of productive database for testing the API***
	Any changes you make as e.g. deleting printers or renaming folders will be run in the **steadyPRINT** environment. To test the ***API***, it is recommended to either test only reading accesses or to use a test database.



To create a token, you can use the login or a create a service token via the settings in the ***WebCenter***. The token is necessary to access authorized endpoints of the ***API***.

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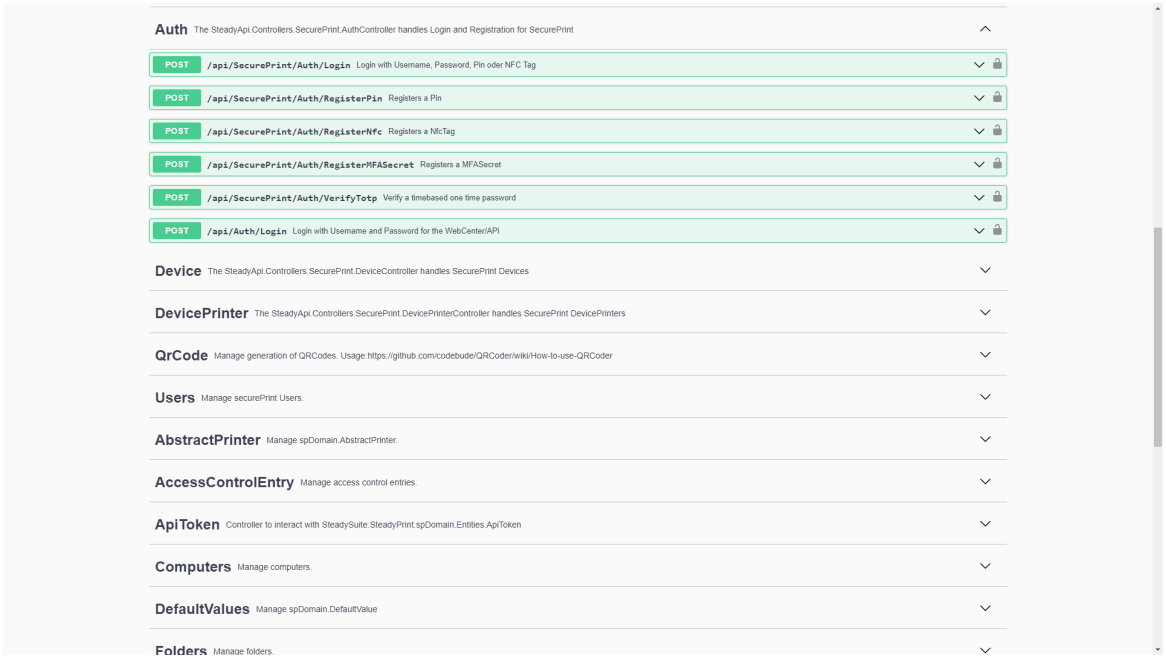
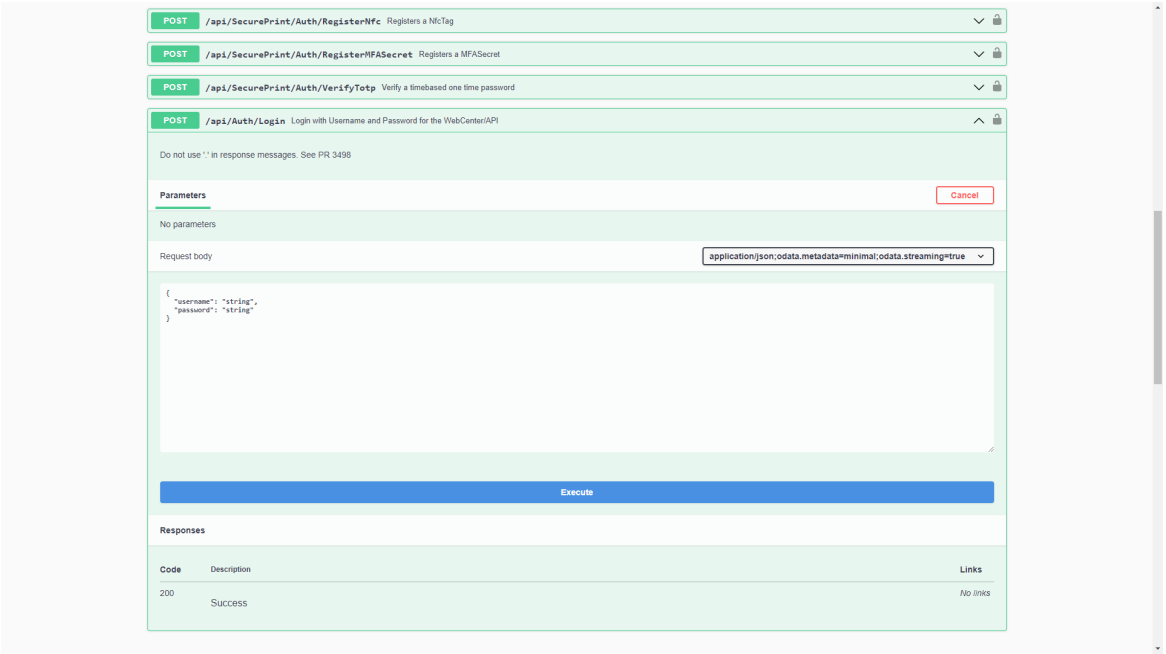


Use e.g. the endpoint /api/Auth/Login and enter your user name and your password in order to create a token. This token can then be used to access other endpoints for which the user is authorized.



The created token can be stored in the Web interface by clicking the **Authorize** button.

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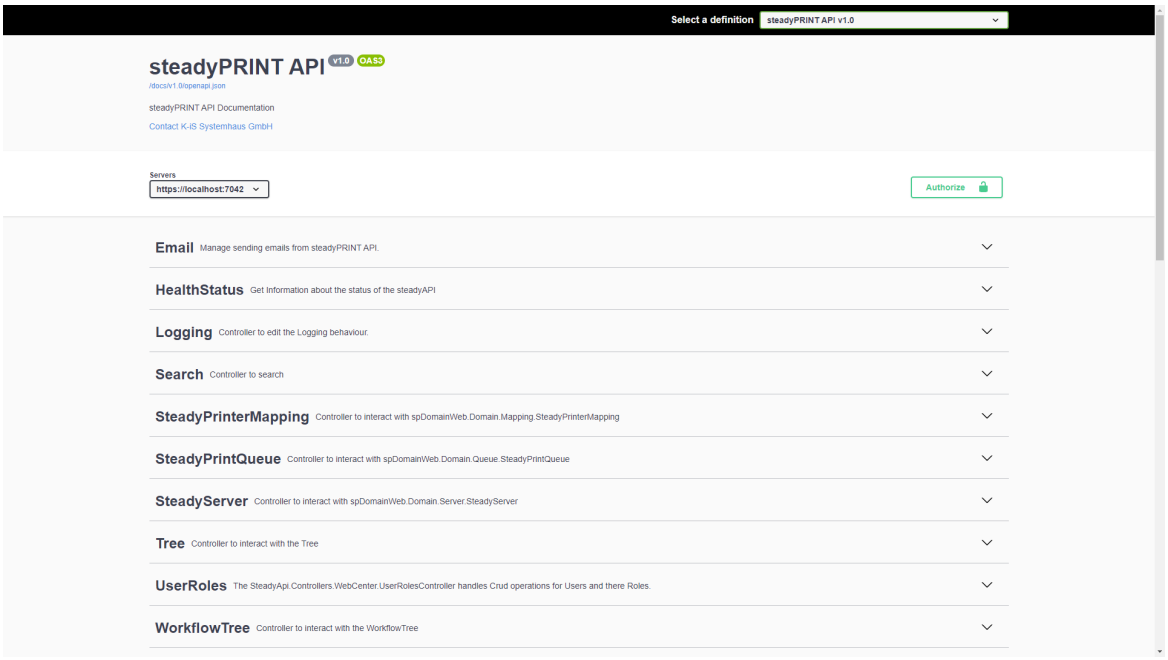

Now you can research the ***API*** and use all endpoints that are available to this user.

Note	*Validity of the token*
	The approach outlined here to create a token is the same as used in the ***steadyPRINT WebCenter***. This token is valid for 60 minutes. In order to create a token that will be used for a service or a 3rd party application, please refer to the chapter on service tokens in the ***WebCenter*** under Settings.

5.1.2 PowerShell

The ***steadyPRINT PowerShell Module*** enables administrators and developers to write PowerShell scripts with connectivity to the ***steadyPRINT API***. Our Cmdlets for general applications build the core for automation tasks. The entire ***API*** can be accessed via HTTP requests.

Detailed instructions and the download of the module can be found in the ***WebCenter*** in the menu item Settings under PowerShell.

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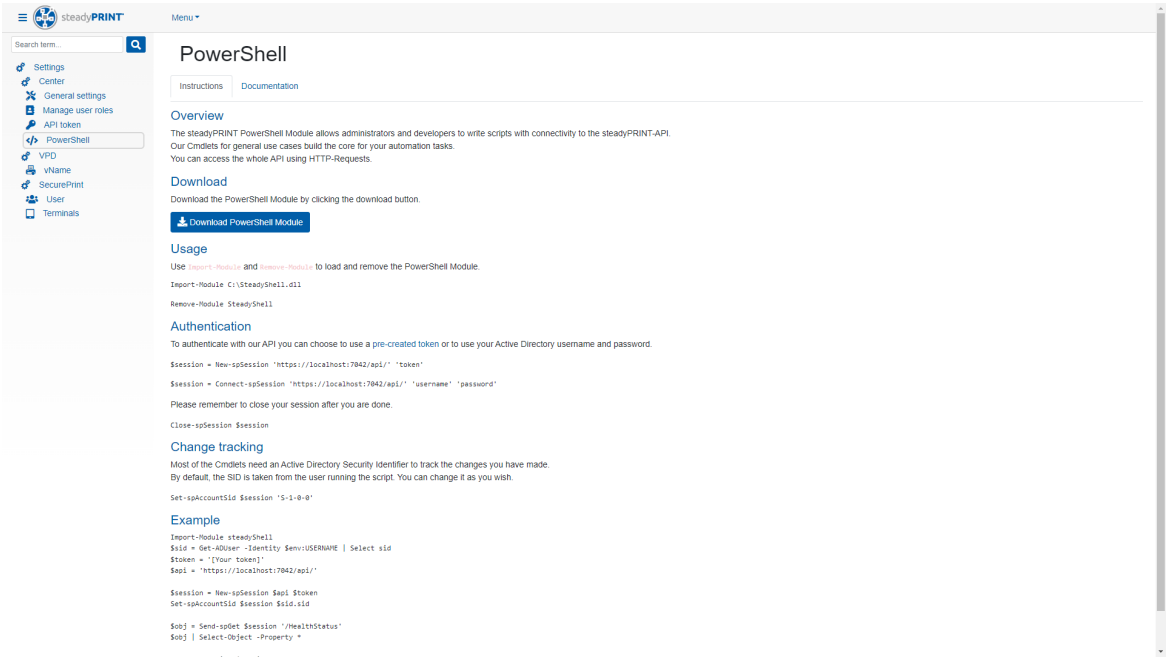

5.2 Print Server Administration

To administer print servers and printers with **steadyPRINT**, it is first of all necessary to integrate them into the ***steadyPRINT Center***. This is done by using the context menu of the administrative tool's tree view (see figure - steadyPRINT Center - Setting up a new print server via the context menu).

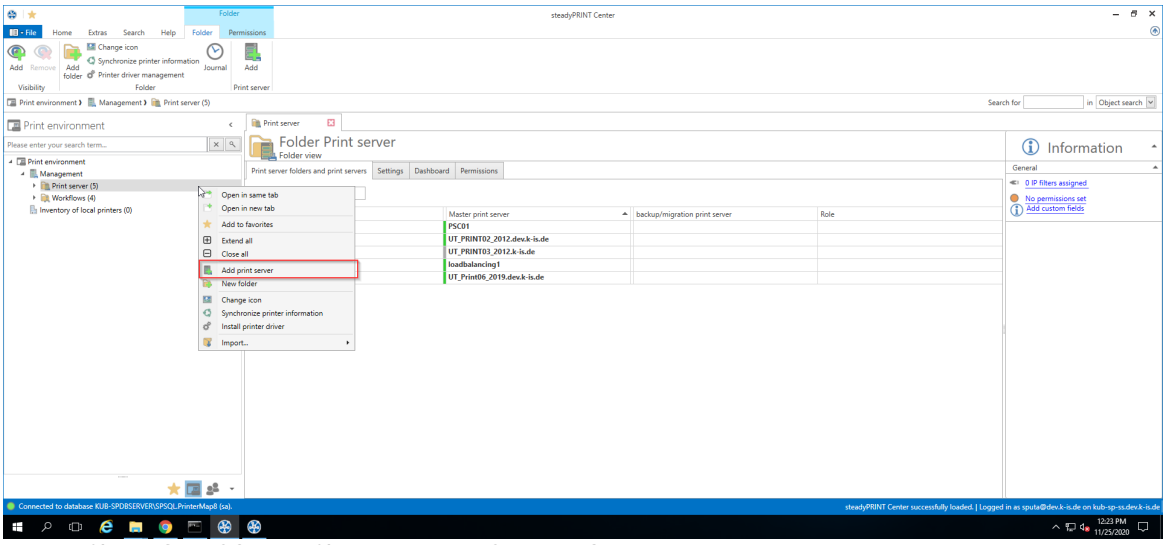

Figure <%HM FIGURECOUNTER%: steadyPRINT Center – Setting up a new print server via the context menu

Adding a print server in the required role is done via the tree node Branch Office Print Server and Print server.

Importing Print Servers and Printers

Now the name of a print server is entered in the window seen in figure - steadyPRINT Center - Importing a print server allowing its connected printers to be listed. Disabled print servers can be re-enabled here by entering the name (also see Disabling and Deleting Print Servers).

Note	*Importing a Disabled Print Server from the Database*
	When importing please note that all existing printer assignments remain set to *disabled ("locked")* by default in order to avoid accidentally connecting printers to the Clients. Otherwise, these assignments would have a direct impact.

To administer your printers with **steadyPRINT**, select them and then continue by clicking on the Import button.

Tip	*Organizing Printers in Folders*
	Organize your printer environment in a clearly arranged folder structure. This can be done subsequently.

After completing this action, the new print server with the selected printers appears in the tree view.

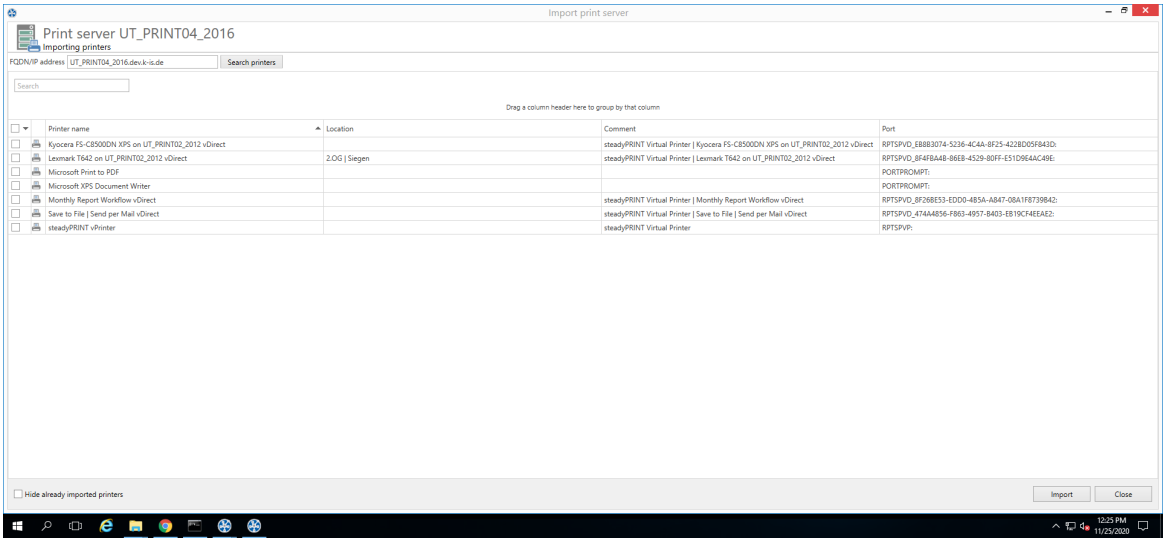

Figure <%HMFIGURECOUNTER%: steadyPRINT Center – Importing a print server

Note	*Import of Print Servers via CSV File*
	Importing print servers can also be done via a CSV file. This way, for example, you can simply import your print servers and printers from an inventory to **steadyPRINT**. This procedure is described in chapter Import of print servers from a CSV file.

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Disabling and Deleting Print Servers

Removing a previously imported print server is possible using the context menu of the corresponding print server. By adding the check mark in figure - steadyPRINT Center - deleting a print server, you will erase the selected print server - with all its printers and their assignments - irrevocably from the database.

If this check mark is not set, the print server is only disabled and subsequently no longer visible in the ***steadyPRINT Center***. If required, a disabled print server can be re-imported for further usage by stating the name, analogous to Importing Print Servers.

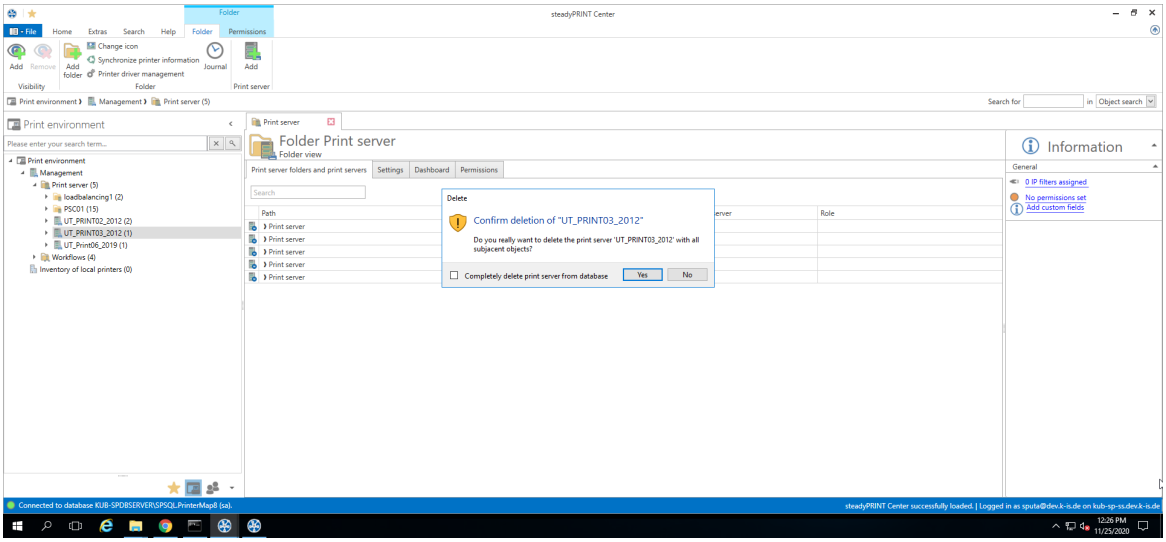

Figure <%HMFIGURECOUNTER%: steadyPRINT Center – Deleting a print server

Note	*Disabling a Print Server*
	Please note that only one disabled print server with the same name is allowed in the database. After disabling an additional print server, however, you can overwrite the existing one.

5.2.1 Local Printers

Administration of Local Printers

For the administration and configuration of the local printers of a workstation, **steadyPRINT** provides a separate interface (see figure Administration of local printers) with all necessary setting options for a remote management. In order to install a new printer, select [Computer] > Install printer via the context menu. For managing an existing printer, please go to [Local Printer] > Open printer. For uninstalling, please go to [Local Printer] > Uninstall printer and finally confirm the process.

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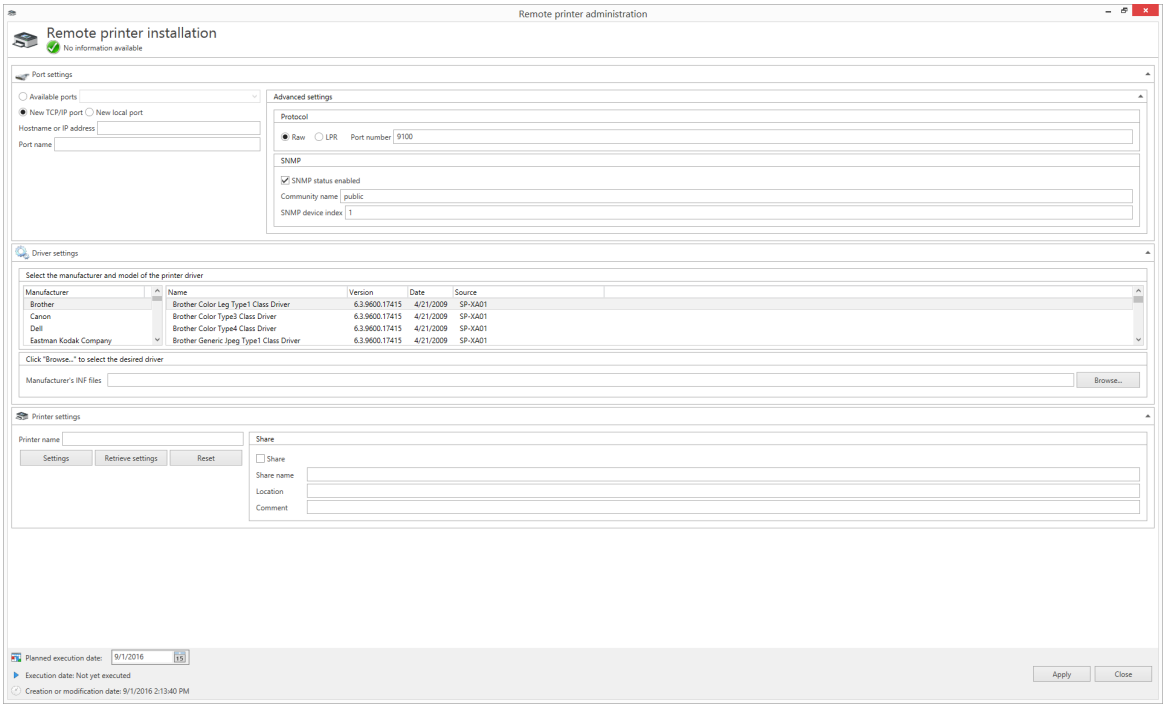

Figure <%HMFIGURECOUNTER%: Administration of local printers

Connection Settings

The printer connection can be selected or configured in the settings. In this context, the following options are available:

- Existing connections: Select an already existing connection
- New TCP/IP connection: Configure a new connection and if necessary further settings.
- New local connection: Configure a new local connection.

In order to keep the printer connections available even in switched-off state, the option Inventory Computer Information under Settings > Agent-Profile > [Profile] > Inventory should be enabled. If the computer is accessible, the ***steadyPRINT Center*** additionally performs the inventory of the connections.

Driver Settings

Open the diver settings and select the printer diver which is to be used during the printer installation. By default, the ***steadyPRINT Center*** attempts to determine the current and available drivers on the target system. If this procedure fails, a fallback to the supplied Inbox drivers of the operating systems is carried out.

As an alternative, a printer driver can be provided for installation via the INF file of the respective manufacturer. To do this, click **browse...** and select the required file. Subsequently, a list of all drivers is displayed.

Important	***File Shares***
	Make sure that during the installation process the specified share can be accessed .

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Printer Settings
Enter the printer name here and configure its share. Furthermore, it is possible to define the printer settings.

Execution Time of Printer Configuration

After saving the printer configuration for the (de-) installation, the ***steadyPRINT Center*** attempts to notify the affected computer directly. Should the notification fail, an error message is displayed. In addition, the ***steadyPRINT Service*** checks on each start and at configurable intervals if any changes have been made and realizes them respectively. The interval can be adjusted via the option Local Printer: Update Interval for Local Printers under Settings > Performance > [Profile] > steadyPRINT Service.

Important	*Necessary Components*
	To run the printer installation on the branch office print server, the ***steadyPRINT Agent*** and ***steadyPRINT Service*** are necessary.

Important	*Required Authorizations*
	To run the printer installation or de-installation, a service account for the ***steadyPRINT Service*** is required performing administrative processes (e.g. printer driver installation and access to an optional file share for the manufacturer's INF file). The information is given during the installation of **steadyPRINT** or subsequently via the Windows Service Manager.

Frequent Errors and Warnings

After the execution of the printer configuration, a feedback message on the installation status appears in the upper configuration window (see figure Local Printers). In the following, a list of frequent errors and warnings that might occur during the remote printer installation is displayed.

Error message: The printer driver [name] which is possibly not available on the computer [Client] could not be installed.
Possible causes:
- Specified driver not found
- Driver architecture not compatible with target system

Error message: The printer [printer name] could not be added to the print server [print server name]: Access denied.
Possible causes:
- Configured service account of ***steadyPRINT Service*** has no administrative rights to access target system
- Configured service account was not added to the local safety setting Register as service.

Error message: The printer [printer name] could not be added to the print server [print server name]: The format of the specified share name is incorrect.
Possible causes:
- Share name contains invalid characters
- Share name already exists

Error message: The printer [printer name] could not be added to the print server [print server name]: The

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printer driver is unknown
Possible causes:
- Configured printer driver could not be installed
- Configured printer driver was not found
- Driver architecture not compatible with target system

Warning: When trying to notify the computer „[computer name]“ of the modified printer configuration, an error occurred.
Error message: Service PAS cannot be opened on the computer [computer name]. Access denied.
Possible causes: The current user running the steadyPRINT Center has no administrative rights to access the target system
Note: The implementation of the printer configuration is done according to the interval (see chapter Execution Time).

Warning: When trying to notify the computer „[computer name]“ of the modified printer configuration, an error occurred.
Error message: The service control manager on the computer [computer name] cannot be opened. You are possibly not authorized to run this process. The RPC server is not available.
Possible causes:
- Target system is switched off or inaccessible
- Target system is inaccessible due to firewall and/or routing settings.
- The current user running the ***steadyPRINT Center*** has not administrative rights to access the target system

Note: The implementation of the printer configuration is done according to the interval (see chapter Execution Time).

5.2.2 Print Server Management

The print server management is a central tool for conveniently configuring all print servers of the **steadyPRINT** environment according to the model of the Microsoft printer management at the print server. Local administrative rights on all print servers that are to be configured are required.

All printers, drivers and ports can be configured within the print server management, even those that are not managed by **steadyPRINT**. All relevant information is presented in the grid view (see figure Print server management - driver).

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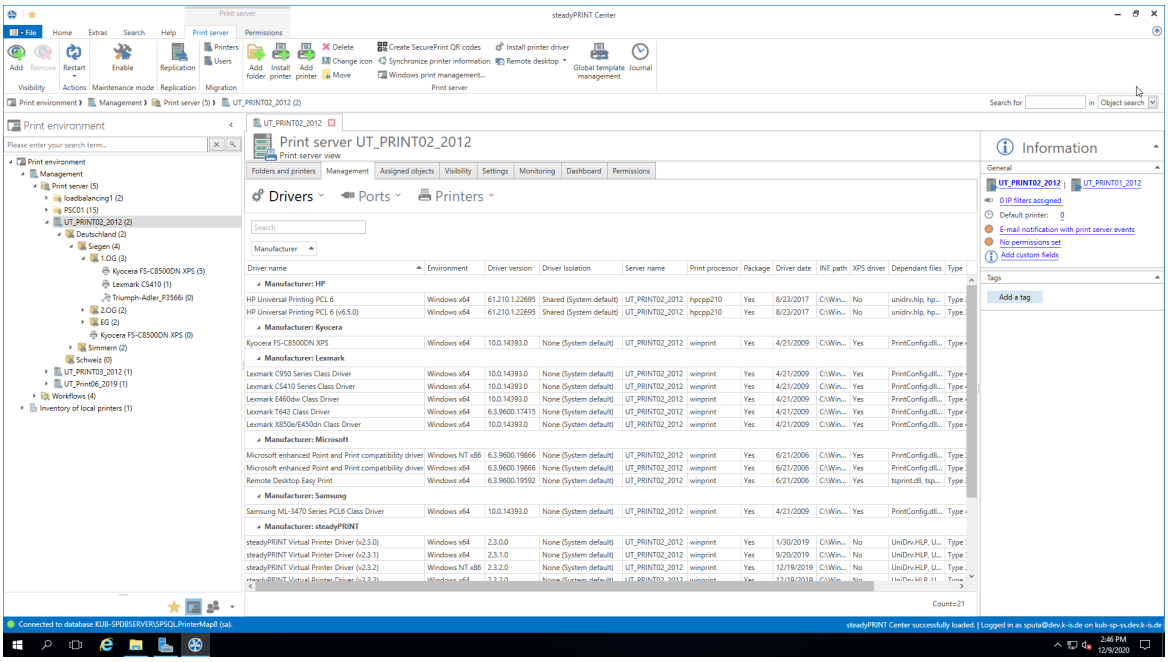

Figure 12: Print server management - driver

Note	***Window for driver-, port and printer management dependent on operating system***
	In this manual, the print server management is only described for the area of the ***steadyPRINT Center***. Depending on the operating system of the print server, the processes in the Microsoft windows such as "Add" or "Settings" can deviate from the steps described here. For a detailed description, please refer to the Microsoft documentation.

Drivers:

You can add or delete drivers or open the Windows driver settings.

Ports:

You can manage or delete ports (see figure Print server management - ports).

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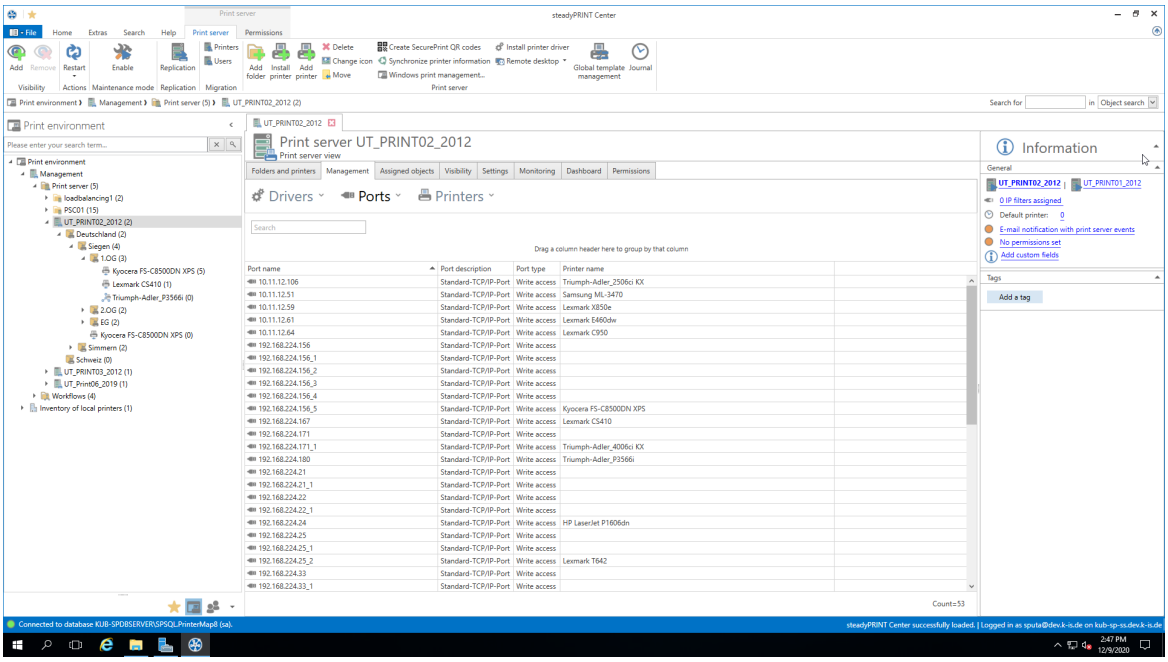

Figure 13: Print server management - ports

Printers:

You can install, rename or delete a printer on the print server or open the Windows printer settings.

Note	***Rename printers***
	Renaming printers on the print server is recommended via the Rename function of the **steadyPRINT** Print server management. In case you have to rename a printer via the Windows printer settings, you have to remove the printer in the **steadyPRINT** tree and add it again.

Printer queue:

You can stop, continue or view the printer queue or print test pages.

Printer sharing:

You can manage the printer sharings (see figure Print server management - print).

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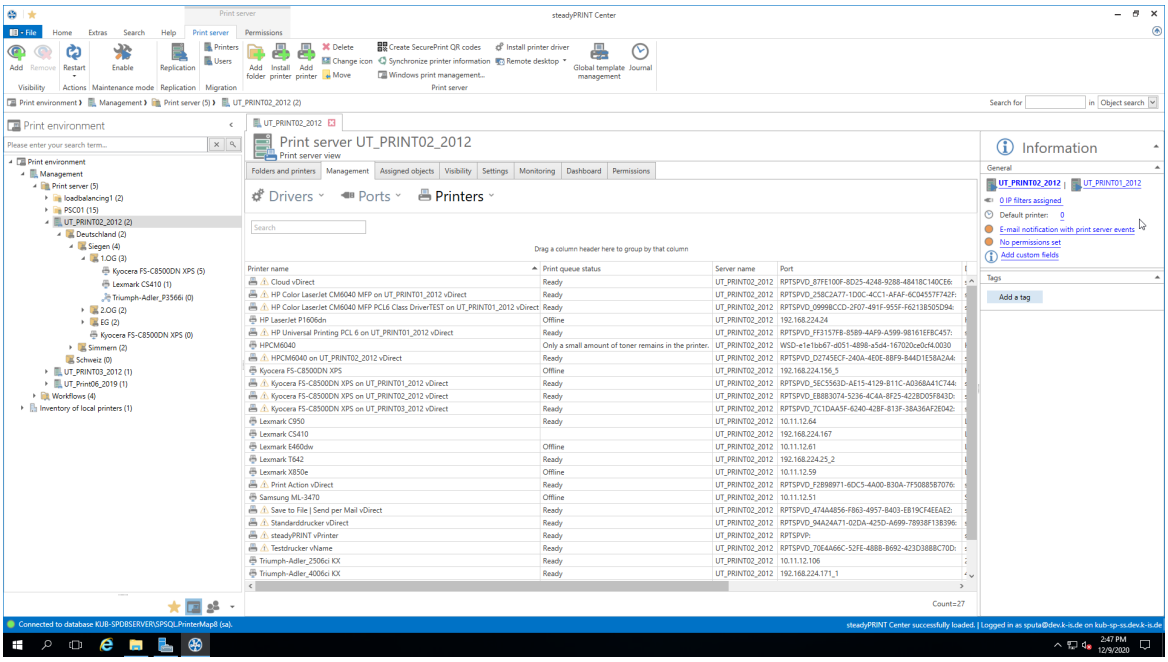

Figure 14: Print server management - printer

5.2.3 Load Balancing

As of version 8, **steadyPRINT** offers a ***print server Load Balancing*** for VPD-based printing. This way, it is possible to verify before printing whether or not a print server is available. In case a print service fails, it can be transferred to another print server which is available. The user will not notice anything at all of the failure. From a user's point of view the ***VPD printer*** always remains the same, no matter from which server the print job is being processed. Unlike ordinary printer connections, a remapping to a different print server is not required, an adjustment of the printer name (UNC path) thus fails to appear. Some programs, however, repeatedly have problems with changing printer connections. This transparent procedure prevents a considerable load on workstations, terminal servers and the affected print servers by an adjustment of the connections which is no longer frequired.

Load Balancing takes place via the definition of a cluster with a pool master. The latter serves as a reference for the integrated printers, settings and print templates in the cluster. Below the cluster, the organziation into groups takes place. Each group can be assigned several nodes and provides a ***Load Balancing*** status due to the health conditions of the respective nodes within the group. The ***Load Balancing*** itself will be effected between the groups and finally between the individual servers within a group. This way logically related servers can be defined as a project/grouping.

Definition of a Cluster

In order to define a cluster, at least one print server has to be integrated into the **steadyPRINT** environment. This is usually done via the import function of the ***steadyPRINT Center***. Subsequently, the installation can be started via the settings (Center > file > settings > Load Balancing).

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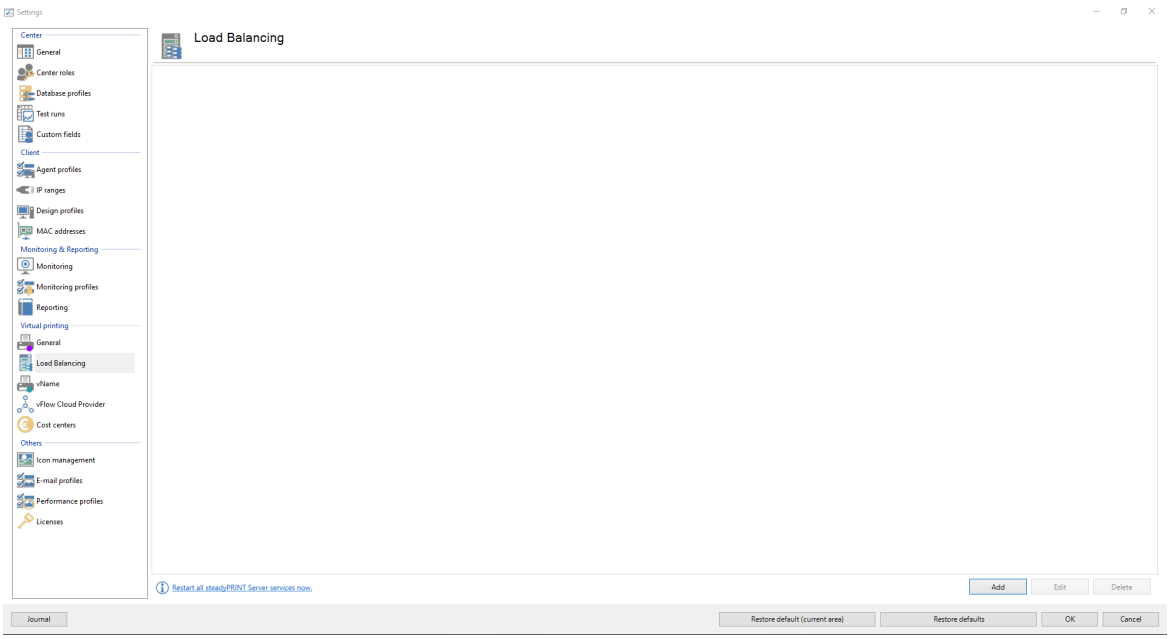

Figure 15: Load Balancing - Installation Cluster

The cluster name defines the name of the cluster. At the same time it is used to name the printers on the Client. A printer of the cluster "sP-Cluster-Germany" is created on the client with the name "test printer on on sP-Cluster-Germany". In this example the administrator uses the group "Main" to combine several print servers to one group. A further group might serve as a load balance between the groups. By setting the "Force" flags it is possible to prefer a group. Only if the whole group is given the status "Down", **steadyPRINT** prints via the subordinate print server.

Note	***Nodes require steadyPRINT Server and replicated printers***
	Each print server which is used in the Cluster has to have a steadyPRINT Server service installation and a correct VPD installation. Moreover, a Cluster requires the replication of the printers on all nodes. (see Print server replication and migration).

Note	***Modification of settings***
	If settings are modified, the affected steadyPRINT Server services have to be restarted on the print servers. This can be done either directly via the offered buttons or manually.

Available Load Balancing Algorithms

At the beginning, two algorithms are available:

- Random (simple): Randomly selects a print server without considering the status
- Random (status-based): Randomly selects a print server considering the status
- Random (status-based) with backup groups: Randomly selects a print server considering the status. Backup groups are used when all primary groups are inaccessible.

Service Member Persistence

The activation of the Service Member Persistence ensures that the printing process will continue during the entire client runtime on the same Service Member node. It is dependent on the respective location of

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the client. This way, different print servers can be used for printing in different IP areas.

Backup Groups

The backup groups serve as a fallback for a primary group. In case all included print services are not available, an application of the backup groups with its stored servers will apply. Define backup groups analogously to ordinary groups in the main window of a print server cluster. They can then be integrated via the **Backup Groups** tab of a group. For this to succeed, the algorithm random (status-based) with backup groups must be selected.

IP Ranges

The storage of IP ranges for a group is used for location-based ***Load Balancing***. The configured IP ranges usually map locations. Take advantage of these ranges within the ***Load Balancing*** component in order to send print jobs based on the location from the Client to the next/best possible print server. For the evaluation of the IP ranges stored in the group, the Client IP address is used. Only if this address is part of the linked IP ranges, the stored servers of the respective group are applied or considered for processing the print job. For this to succeed, the algorithm random (status-based) with backup groups must be selected.

5.3 Printer Assignment

Printer connections are generated in **steadyPRINT** through the assignment of Active Directory objects (Users, Computers, Groups and Organizational Units) from ***steadyPRINT Center***'s User and Computer-Administration. All objects stem from Windows' Active Directory, which is mapped in an analog structure. If assignment changes take place, these immediately take effect on the workstations and clients on which the ***steadyPRINT Agent*** has been installed. They are continuously notified of any changes made. In this way, for instance, an adjustment of the printer assignments for a specific user leads to the communication of this fact to the user and also to an updated configuration of printer connections.

To assign objects to a printer, first select the printer in the tree view and then select Add Printer Assignment in its context menu or alternatively via the ribbon of the selected printer. The figure - steadyPRINT Center - user and computer administration shows the User and Computer Administration view in which users, computers, groups and organizational units from their Active Directory are available for the printer assignment. To create a printer connection, you can add an object to be administered – the user Mrs. Herzog on the upper right side, for instance - via the Add button to the assignment list. Once this action is completed, the log in item will be found in the selected printer's listing.

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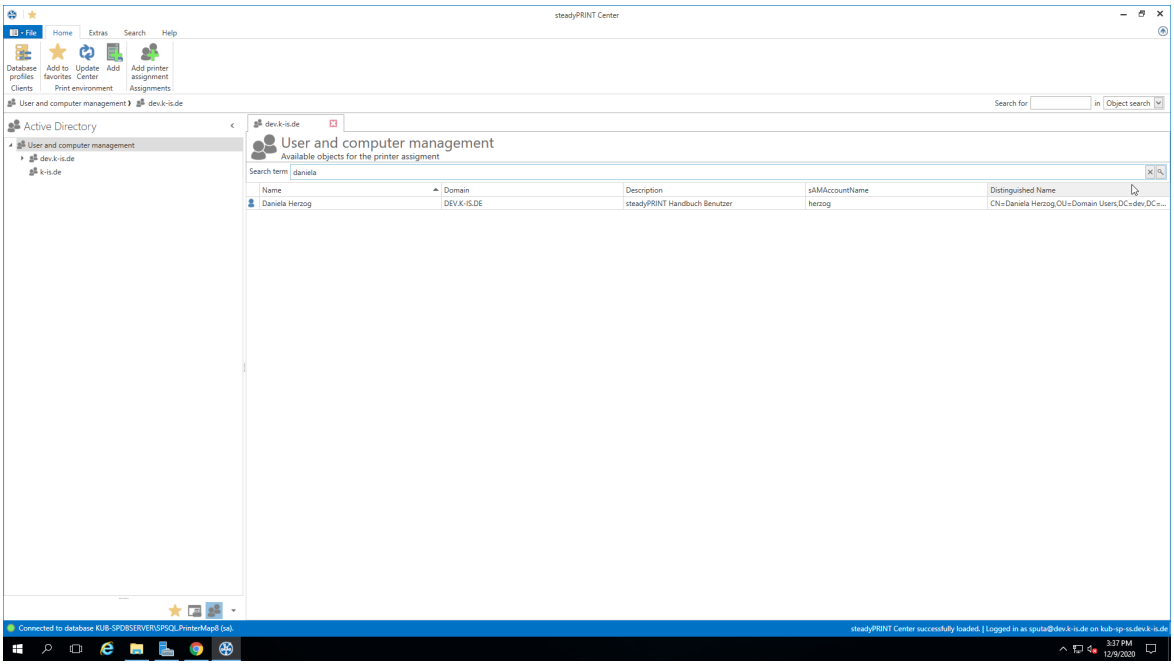

Figure <%HMFIGURECOUNTER%: steadyPRINT Center - user and computer administration

Note	*Assignment of Nested Groups*
	The evaluation of nested groups and recursive organizational units is disabled by default. For further information please refer to Nested Groups.

Note	*Import of Printer Assignments via CSV File*
	In **steadyPRINT**, the printer assignment can also be realized via CSV file. This way, you can, for example, simply import your printer assignments including default printer from an inventory to **steadyPRINT**. The procedure is described in chapter Import of printer assignments from CSV file.

Assignment via MAC address

Since version 7.0.1, **steadyPRINT** supports the assignment of printers based on a MAC address. For this purpose, the MAC address must first be collected via the ***steadyPRINT Center*** (ribbon **Extras > MAC-Adressen**). The printer can then be assigned to a MAC address, analogous to AD objects. To do so, select **Create printer assignments** in the context menu of the desired printer. In the following window, switch to the tab MAC addresses and select one or more of the previously created MAC addresses for your printer assignment.

Note	*Prerequisites*
	The assignment of MAC addresses is supported for - Windows Workstations with a local session and - VMware View Client.

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Adding Printer Connection

steadyPRINT offers the possibility to create different assignment types (see chapter Overview Assignment Types). The administrator selects the type when creating the respective assignments.

For this purpose, please select one of the following two methods:

1. Create via ribbon entry
2. Create via context menu of the assignment view. To do this, please proceed as follows: (see figure steadyPRINT Center - Adding different types of assignment)
   2.1. Select the filter of the assignment type that is to be created.
   2.2. Open the context menu within the table.
   2.3. Select "**Add**"

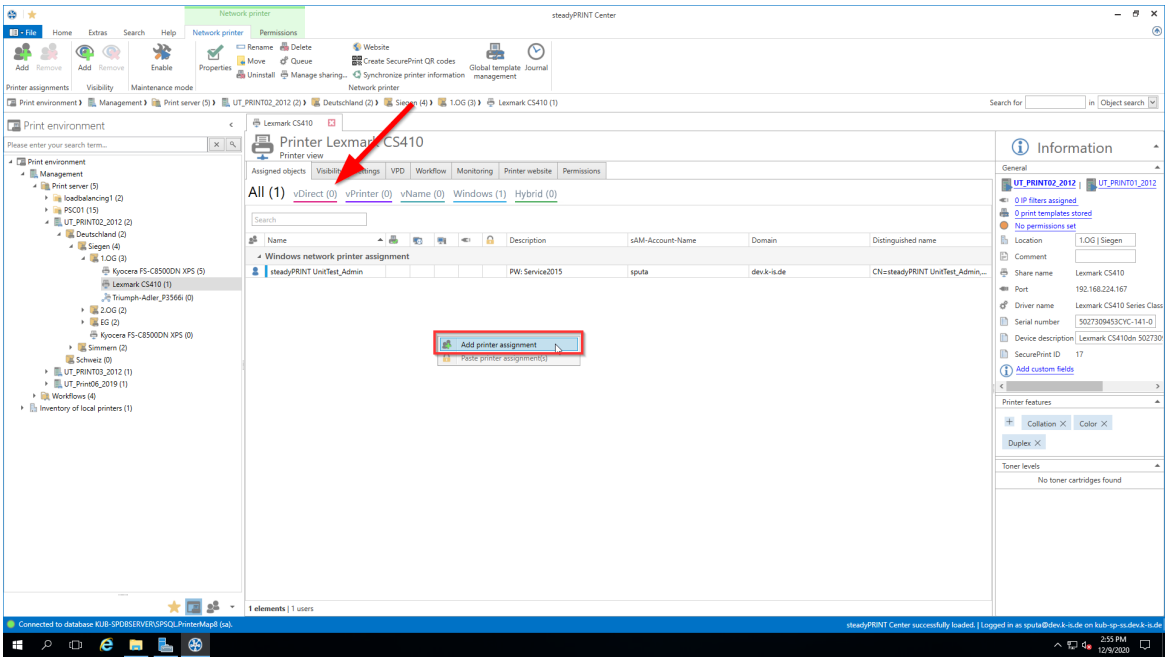

Figure 16: steadyPRINT Center - Adding different types of assignment

Sharing and Blocking Printers

Printers administered with **steadyPRINT** can be shared and blocked in a precise, fine-tuned way by means of the Active Directory objects at your disposal (see figure - steadyPRINT Center - connection settings for printer – the first check mark). By default, all assignments are enabled. It is possible to configure the share either by using the printer display or via the context menu of the respective object.

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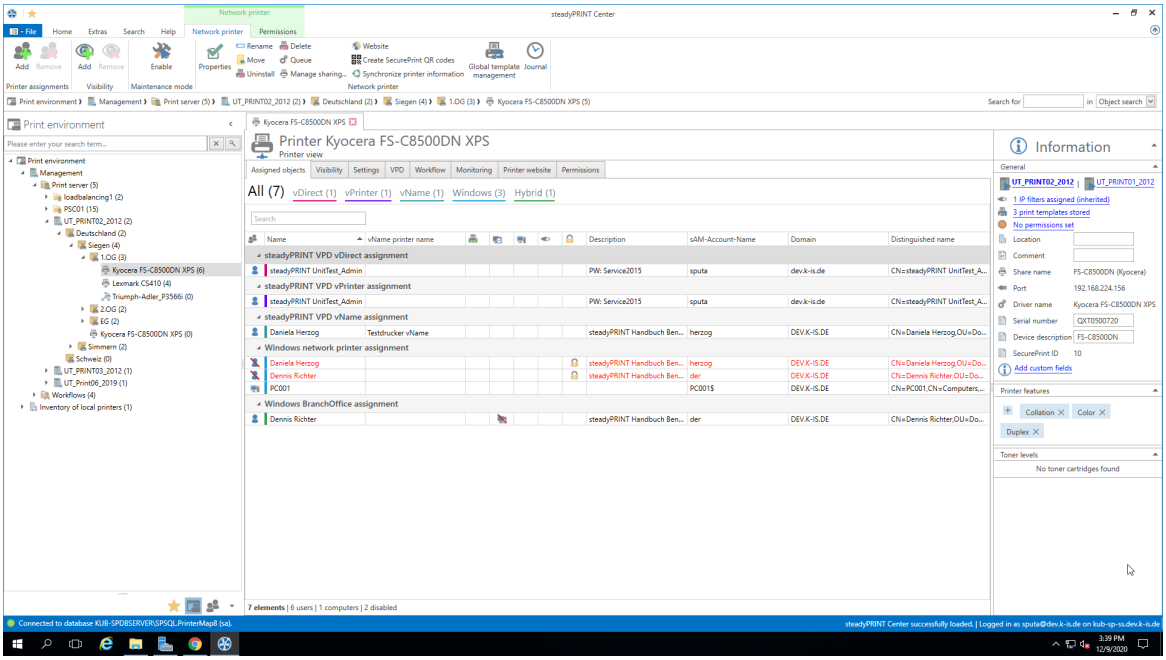

Figure <%HMFIGURECOUNTER%: steadyPRINT Center – connection settings for printer

Blocking a printer with **steadyPRINT** means that it is no longer connected to the user, the computer or the group. Furthermore, it is not possible for the user to add it with the ***steadyPRINT Agent***.

In addition, you have the possibility to share blocked printers with individual users, computers and/or groups. In this context, it is necessary to pay attention to the priority of the respective assignments:

- User = Priority 1 (high),
- Computer = Priority 2,
- Group = Priority 3 and
- Organizational unit = Priority 4 (low).

Tip	***Sorting Assignments by Priority***
	Use the first column of figure - steadyPRINT Center - Connection Settings for Printer - Connection Settings for Printer in order to sort the assignment by its priority.

The following scenarios describe the behavior in various constellations with the user Dennis Richter being in the group Domänen-Benutzer and working on computer PC001.

Scenario 1

Figure - steadyPRINT Center - scenario 1 for assignment shows the assignments of the printer Brother MFC-660CN for the user Dennis Richter, the computer PC001 and the group Domänen-Benutzer.

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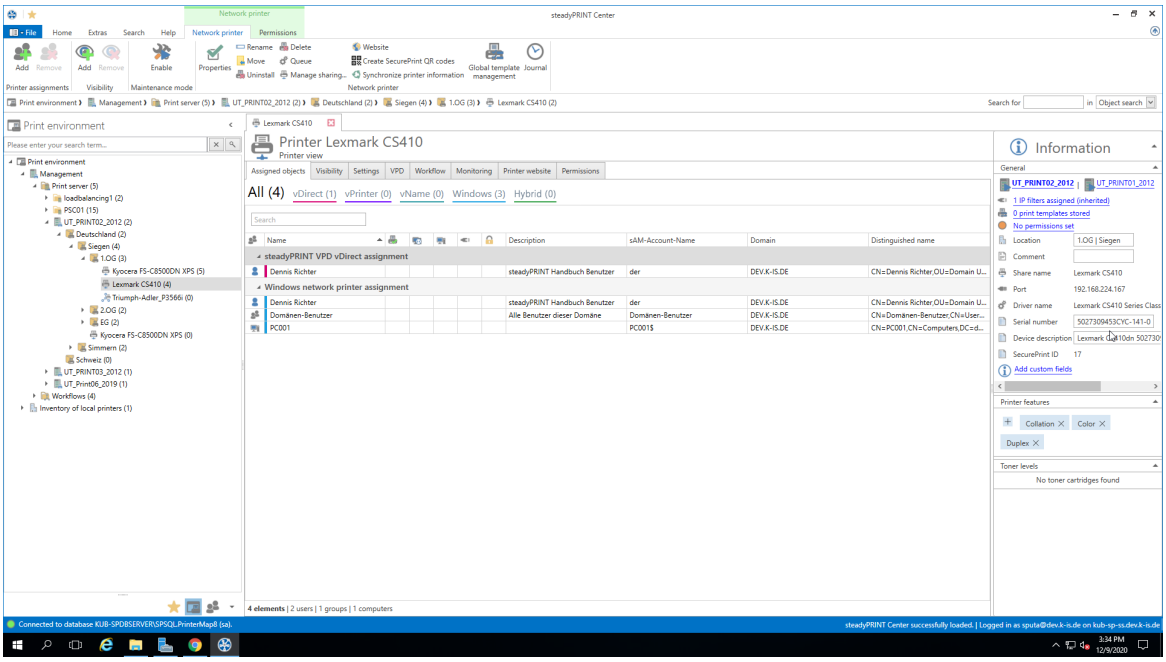

Figure <%HMFIGURECOUNTER%: steadyPRINT Center - scenario 1 for assignment

Scenario 2

Figure - steadyPRINT Center - scenario 2 for assignment shows the assignment of the printer Brother MFC-660CN for the user Dennis Richter and the computer PC001. This printer is not available to the other users of the group Domänen-Benutzer.

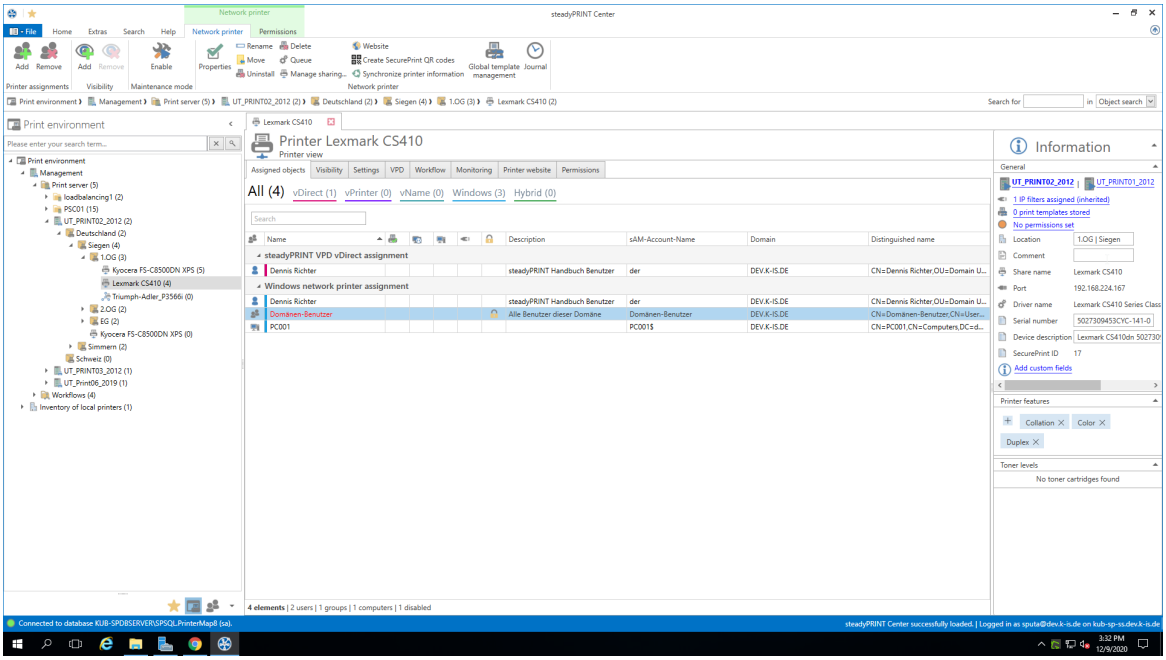

Figure <%HMFIGURECOUNTER%: steadyPRINT Center - scenario 2 for assignment

Scenario 3

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Figure - steadyPRINT Center - scenario 3 for assignment shows the assignment of the printer Brother MFC-660CN for the group Domänen-Benutzer. The user Dennis Richter as well as all other users working on computer PC001, do not have access to the printer.

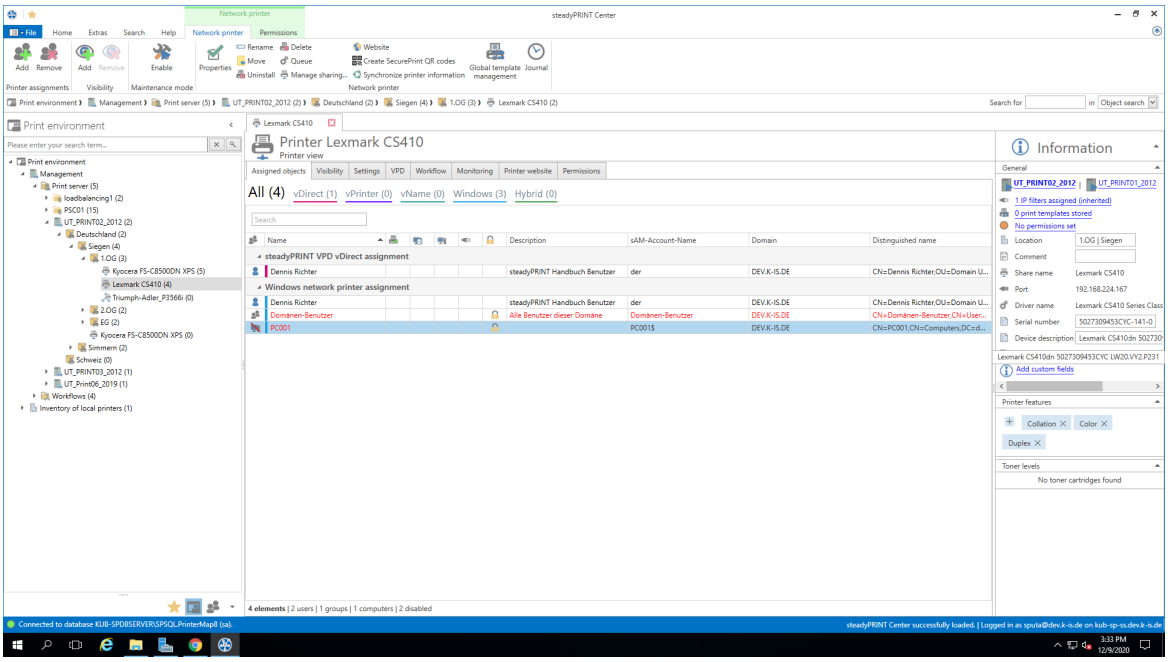

Figure <%HMFIGURECOUNTER%: steadyPRINT Center - scenario 3 for assignment

Tip	***Deleting Manually Created Printer Connections***
	Using Settings under Agent Profile, you can select whether or not the printer connections not being administered by **steadyPRINT** are to be deleted from the ***steadyPRINT Agent*** at startup. With this, it is possible to automatically remove printers that were added manually by the user via the Windows printer directory.

A further option to show or hide printers to users is the configuration of visibilities.

Connecting Printers on Terminal Servers and/or Workstations

For every Active Directory object in **steadyPRINT**, you can decide whether the assigned printer should be specially connected to a terminal server and/or a workstation (see figure - steadyPRINT Center - connection settings for printer - column 3 and 4). This allows a dedicated and differing printer connection for the user in the local as well as a terminal server session.
In order to use this function, just double-click the respective cell in the table.

Setting IP Filters

An IP filter allows providing printers for selected IP address areas. If the user's Client does not have an IP address that falls within the range of the configured filter, neither can a connection be made to the

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respective printer nor will it be displayed in the ***steadyPRINT Agent***. Only an optionally definable exception (see figure - steadyPRINT Center - Connection Settings for Printer – column 6) allows the suspension of the IP filter for individual log in items (users, computers, groups and organizational units).

You can configure IP filtering for print servers, folders and printers (accessible over the corresponding tab ***settings*** of the respective view). Established IP filters automatically pass on their settings to the objects lying below until these objects are either overwritten or canceled.

Tip	***Location-based Printer Assignments***
	Display your business locations in ***steadyPRINT Center*** in the form of folders and define the respective IP address areas. On the basis of IP filters, you then let the printers be displayed and connected based upon their location.

Setting Default Printers

Setting the default printer is done via the properties of the respective log-in item and is possible for users, computers, groups and organizational units. Additionally, **steadyPRINT** offers the possibility of defining a default printer for folders and print servers (accessible via the respective tab Settings of the respective view).

It is possible to define several default printers for every log in item. If this is the case, a selection dialog box automatically appears for the user. The user can then select a particular default printer from the defined printers.

Important	***Observe the settings for default printer performance***
	Observe the setting options for the default printer performance in order to attain the desired configuration.

Visibilities

The visibilities allow to show or hide printers in the Agent if a user changes to the view for connecting a new printer. In general, printer assignments remain unaffected of the visibilities. The following scenarios describe a possible setting:

Show printer for selected groups

The figure steadyPRINT Center - Scenario 1 for visibilities shows a configuration that initially suppresses the display of the printer for all users (group everyone). Only members of both groups Purchase or Sales can see the printer in the ***Agent***. Other users are not able to see the printer in the selection of available printers.

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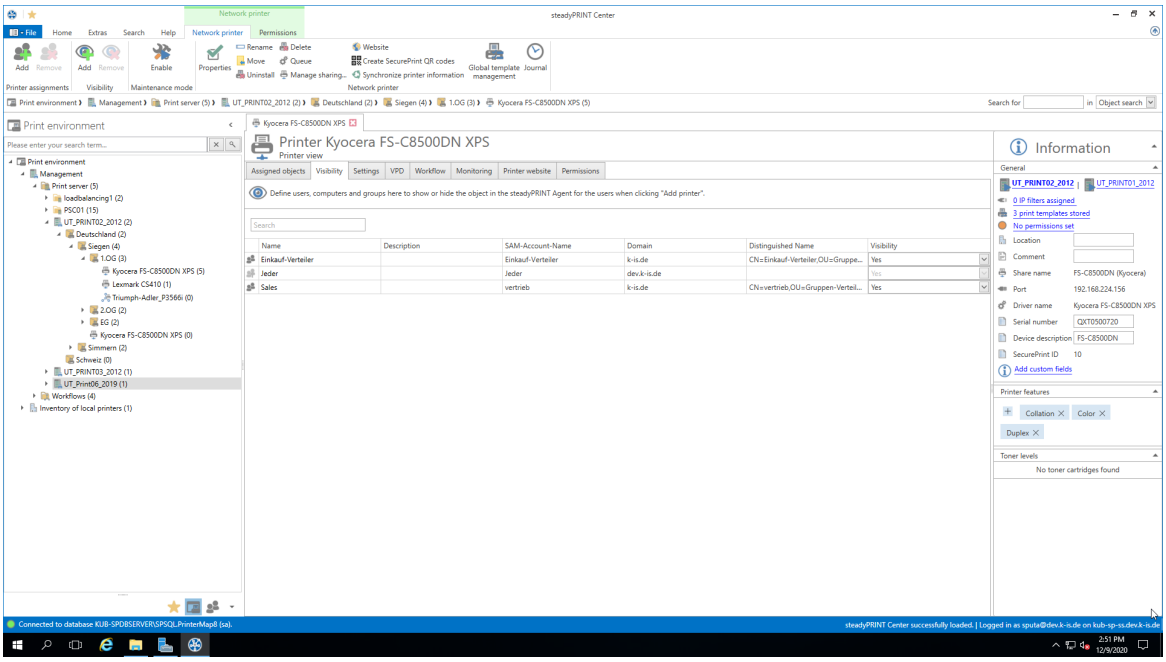

Abbildung 17: steadyPRINT Figure <%HMFIGURECOUNTER%: Center - Scenario 1 for visibilities

Hide printers for selected groups

The figure steadyPRINT Center - Scenario 2 for visibilities shows a configuration that allows all users (group everyone) the display of the printer in the selection of available printers. Only for members of the group visitor the printer is not visible in the ***Agent***.

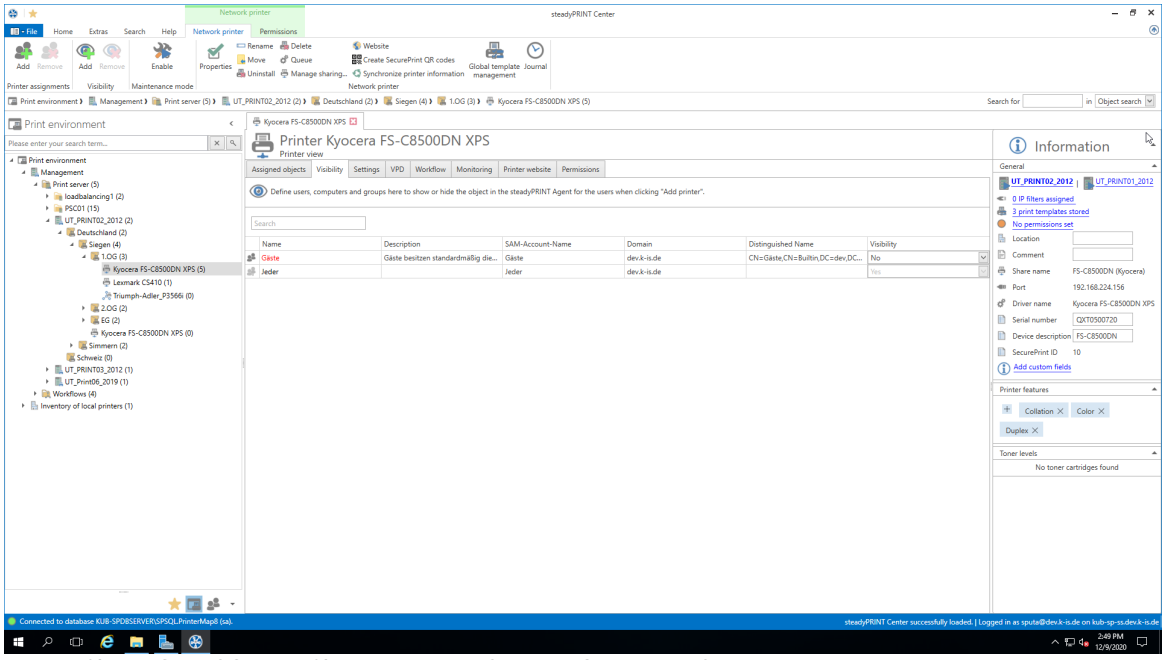

Figure <%HMFIGURECOUNTER%: steadyPRINT Center - Scenario 2 for visibilities

Inheritance of visibilities

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Analogous to the printers, the visibilities can also be defined on print server folder-, print server- and folder level. An automatic inheritance to the subordinated printers is carried out. An inheritance can be deselected by adding an AD object on a subjacent level.

5.3.1 Automatic Printer Assignment

As of version 6.5, you have the possibility to define automatic printer connections for print servers and folders by using other assignment types (See Overview Assignment Types).
This facilitates the distribution of printer assignments to each employee who is located in the appropriate IP area without the necessity to give him/her an assignment.

Adding automatic printer connections

The maintenance of automatic printer connections is available in the detailed view of print servers and folders in the tab "settings" (see figure steadyPRINT Center: Creating automatic printer connections).

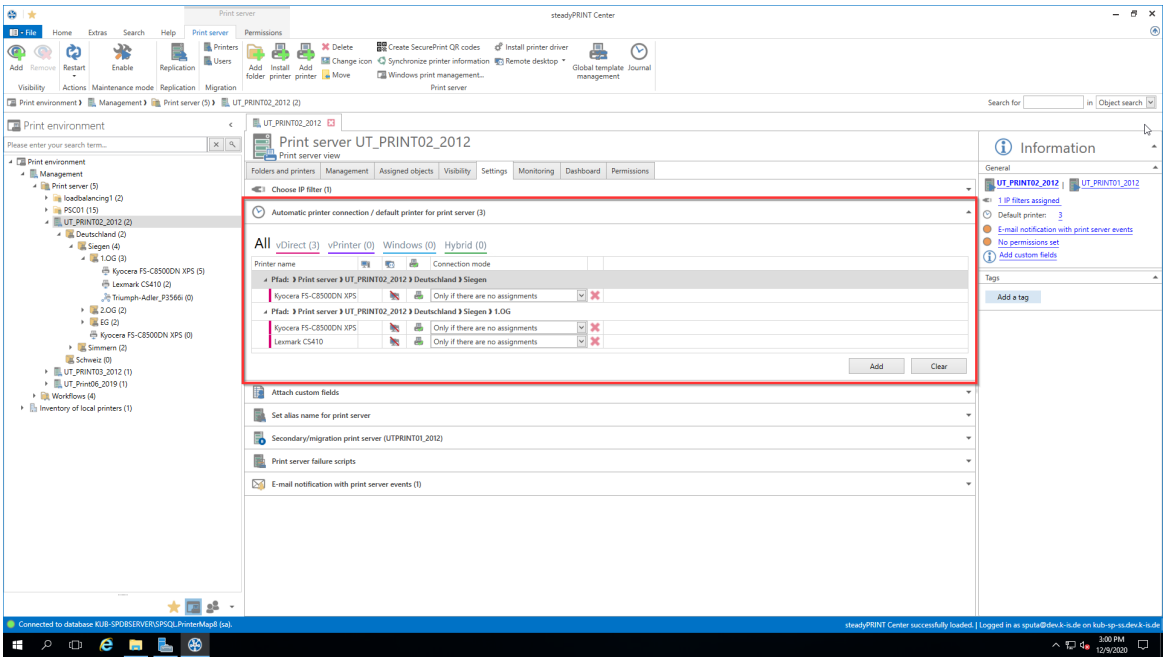

Figure 18: steadyPRINT Center: Creating automatic printer connections

Click **Add** and select the assignment type which is to be created.

Important	***Availability of automatic printer connections***
	In order to use the automatic printer connections it is mandatory to assign an IP filter to the object.

Now you have the possibility - as you are already used to from the assignment view - to restrict the connection to terminal servers or workstations or to store the connection to be created as default printer. In addition, you will only need to create the connections to be created if the user has no other assignments yet (see figure steadyPRINT Center: Customization of automatic printer connections)

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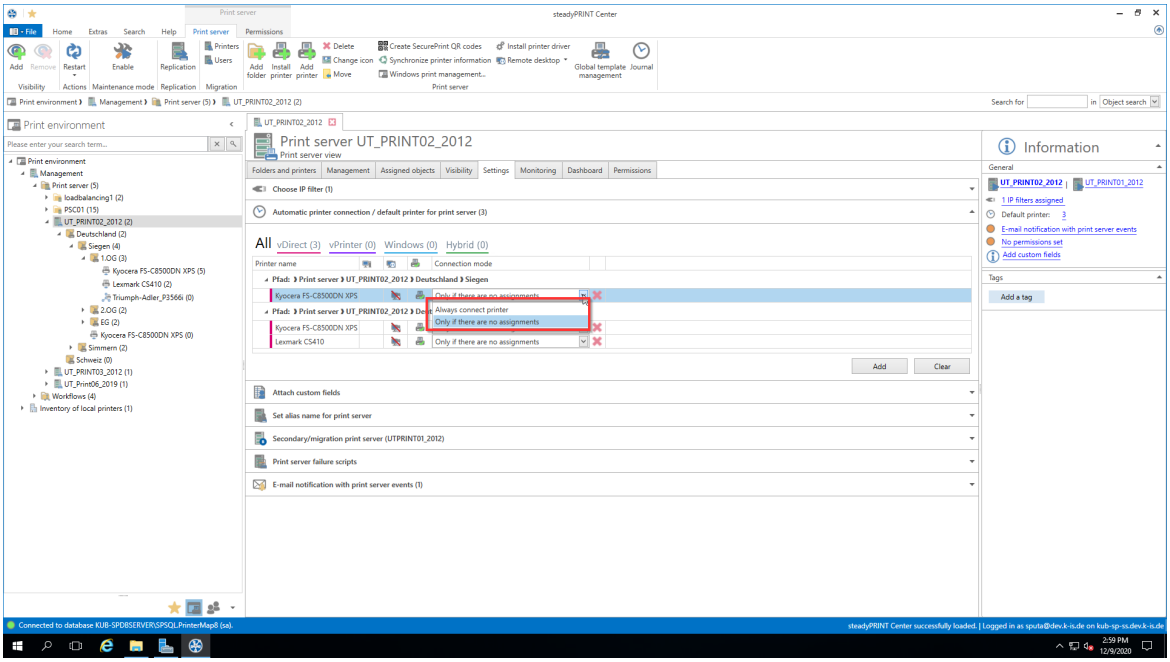

Figure 19: steadyPRINT Center: Customization of automatic printer connections

Example: User A has assignments on user level. The administrator has stored automatic printer connections which are only connected for users without any assignments. This means, user A would only get the assignment which has been assigned to him on user level.

Display of automatic printer connections for users

If a user has been connected such an automatic printer connection it will also be displayed within the assignment view of a printer (see figure steadyPRINT Center: Display of temporary assignments).

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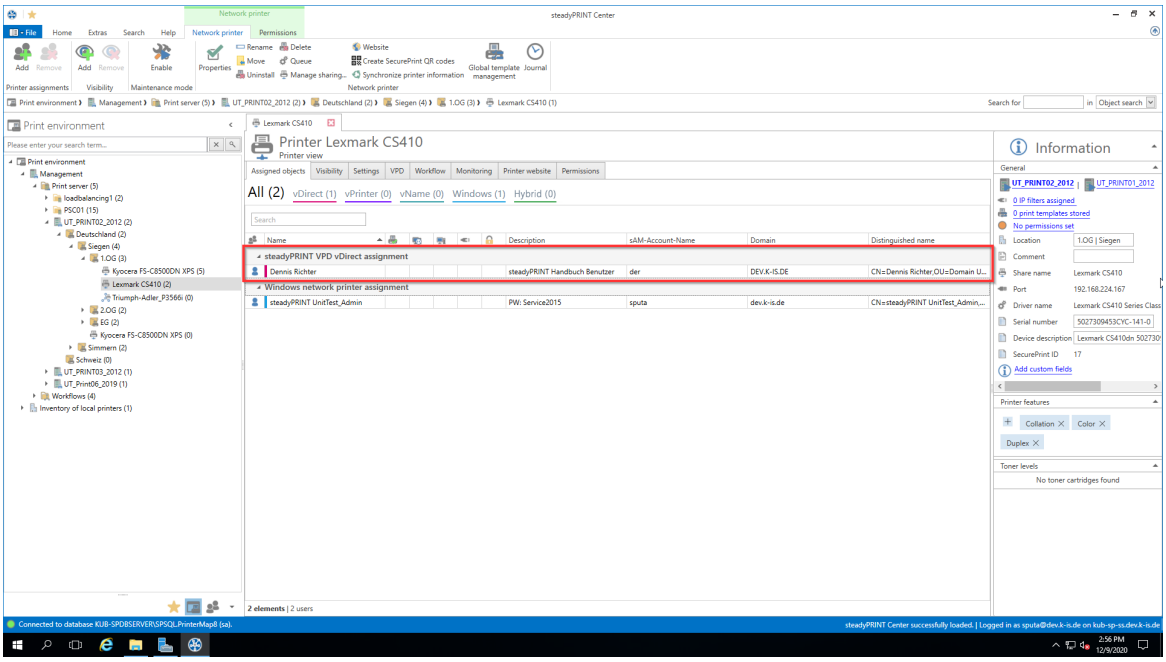

Figure 20: steadyPRINT Center: Display of temporary assignments

Important	*Cache in the steadyPRINT Center*
	In this context, please pay attention to the influence that cached data base entries might have to the view. (See Data Base Cache).

5.3.2 Overview Assignment Types

Windows

Description: A Windows assignment is a classical network printer assignment based on a provided Windows print server.
Type: Printer connection with native manufacturer printer driver
Use: Central provision of printers
Print server reliability: Yes, by swiveling the printer connection to a backup print server.

Hybrid

Description: A Hybrid assignment is a local printer based on the printer configuration of a provided Windows print server. **steadyPRINT** takes the printer properties centrally provided on the print server over to the printer locally installed on the Client.
Type: Local printer with native manufacturer printer driver
Use: Central provision of printers; relief of WAN connections in order to route print jobs to a local printer instead of the print server.
Print server reliability: Not necessary for the actual print process. For providing the configuration via the use of a backup print server.

vDirect

Description: A vDirect assignment is a local virtual printer with a **steadyPRINT**-specific generic printer

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driver independent of manufacturer.
Type: Local virtual printer with generic printer driver
Use: Central provision of printers with a printer driver. "Driverless" printing without vendor driver installation on terminal servers and clients.
Print server reliability: not necessary for actual print process. On the server side by the use of a backup print server.

vPrinter

Description: A ***vPrinter*** assignment is a local virtual printer with a **steadyPRINT**-specific generic printer driver independent of manufacturer. The user always selects the steadyPRINT vPrinter and then decides in a new context, what should happen to the printout (printout with a physical printer, batch print, PDF print, sending by e-mail etc.).
Type: Local virtual printer with generic printer driver and user interface.
Use: Central provision of printers and functions by using a printer and a printer driver. "Driverless" printing without manufacturer driver installation on terminal servers and clients.
Print server reliability: not necessary for actual print process on the client. On the server side by the use of a backup print server.

vName

Description: A ***vName*** assignment offers advantages particularly for HIS and ERP systems. The administrator assigns any name of his choice (e.g. ERP Printer) and stores this printer in the special systems. The users will now always use the ERP printer. In the background however, different physical printers can be assigned on this printer type for groups or users. This way, each user uses the ERP printer, the printout, however, appears where the user wants it to. In addition, several assignments can be created in the background for one user – e.g. for different IP areas.
Use: Central provision of uniform printers with one printer driver.
Print server reliability: not necessary for actual print process on the client. On the server side by the use of a backup print server.

SecurePrint

Description: SecurePrint printing offers a secure and flexible way of printing. When using the SecurePrint printer, the user first prints to a directory where the print job is cached. Then the user selects the printer of his choice. Via the ***steadyPRINT App*** he can see his print jobs and send the selected print jobs immediately to the printer via the QR code attached to the printer or, as an alternative, via the printer ID.
Type: Local virtual printer with generic printer driver
Use: Central provision of uniform printers with one printer driver for SecurePrint function
Print server reliability: not necessary for actual print process on the client. On the server side by the use of a backup print server.

Workflow vPrinter

Description: A workflow assignment is a local virtual printer with a **steadyPRINT**-own generic printer driver which is independent of the manufacturer. The user always selects the ***steadyPRINT vPrinter*** and decides in a new context what is going to happen with the printout (processing the input document with a workflow).
Type: Local virtual printer with generic printer driver and user interface.
Use: Central provision of workflows by using a printer and printer driver. "Driverless" printing without vendor driver installation on terminal servers and Clients.

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Print server reliability: not necessary for actual print process on the client. On the server side by the use of a backup print server.

Workflow vDirect

Description: A workflow assignment is a local virtual printer with a **steadyPRINT**-own generic printer driver which is independent of the manufacturer. In case of the workflow vDirect, the user selects the workflow in form of a printer bearing the name of the workflow for which the printer was created. The printer finally performs the underlying workflow by processessing the incoming document.
Type: Local virtual printer with generic printer driver and user interface.
Use: Central provision of workflows by using a printer and printer driver. "Driverless" printing without vendor driver installation on terminal servers and Clients.
Print server reliability: not necessary for actual print process on the client. On the server side by the use of a backup print server.

5.3.3 Local Default Printers

With the implementation of **steadyPRINT** version 5.1, it is now possible to define local default printers even from the **steadyPRINT** ***Center***.

This enables the user via the **steadyPRINT** ***Agent*** as well as the administrator via the **steadyPRINT** ***Center*** to turn a printer that exists on the local computer of a user into a default printer.

Note	*Availability of Local Printers*
	To be able to manage local printers in the **steadyPRINT** ***Center***, it is necessary to take inventory beforehand. You will find more detailed information under Inventory.

In case the inventory has not been completed before the user turns a local printer into a default printer, the **steadyPRINT** ***Agent*** automatically performs a one-time inventory.

Procedure in the steadyPRINT Center

The management of local default printers works in line with the already known settings of network printers. Please go to chapter Printer Assignments to learn more about the functioning.

Note	*Options of Local Default Printers*
	Setting up local default printers is only allowed at user level.

Behavior of the Priority Lists

In the settings of the **steadyPRINT** ***Center,*** a new entry for the local default printers is listed in the priority lists.
Its behavior seamlessly interacts with the existing methods of the priority lists.

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5.4 Virtual Printer Driver (VPD)

In each printer, a separate software ensures the control of its hardware. The operating system does not know all special features of the printer. Therefore, the operating system transfers the printing process to the respective printer driver. The driver gets all relevant information of a document to be printed from the operating system and converts them to a format the printer will understand.

An upstream virtual printer driver (here: ***steadyPRINT Virtual Printer Driver***) can be implemented as an additional step between the printing dialog of the user and the actual print processing by the proprietary printer driver. The advantage of this functioning is that no native printer driver is required for printing via a network printer connection, on a workstation or a terminal server.

From the user's point of view, a ***steadyPRINT VPD*** printer technically consists of two components. One local virtual printer in connection with the appropriate virtual printer driver. The virtual printer replaces the common network printers and can be provided to the user in several ways.

- ***steadyPRINT vPrinter*** - A virtual printer with intermediate user interface for the selection of the target printer.
- ***steadyPRINT vDirect***: A virtual printer with fixed target printer.
- ***steadyPRINT vName***: A vDirect printer with specified name.

Printing with steadyPRINT vPrinter

For the actual printing process, the user selects the virtual ***steadyPRINT vPrinter*** printer provided in his/her program. Figure steadyPRINT vPrinter - Printing in Windows printer folder shows the virtual printer.

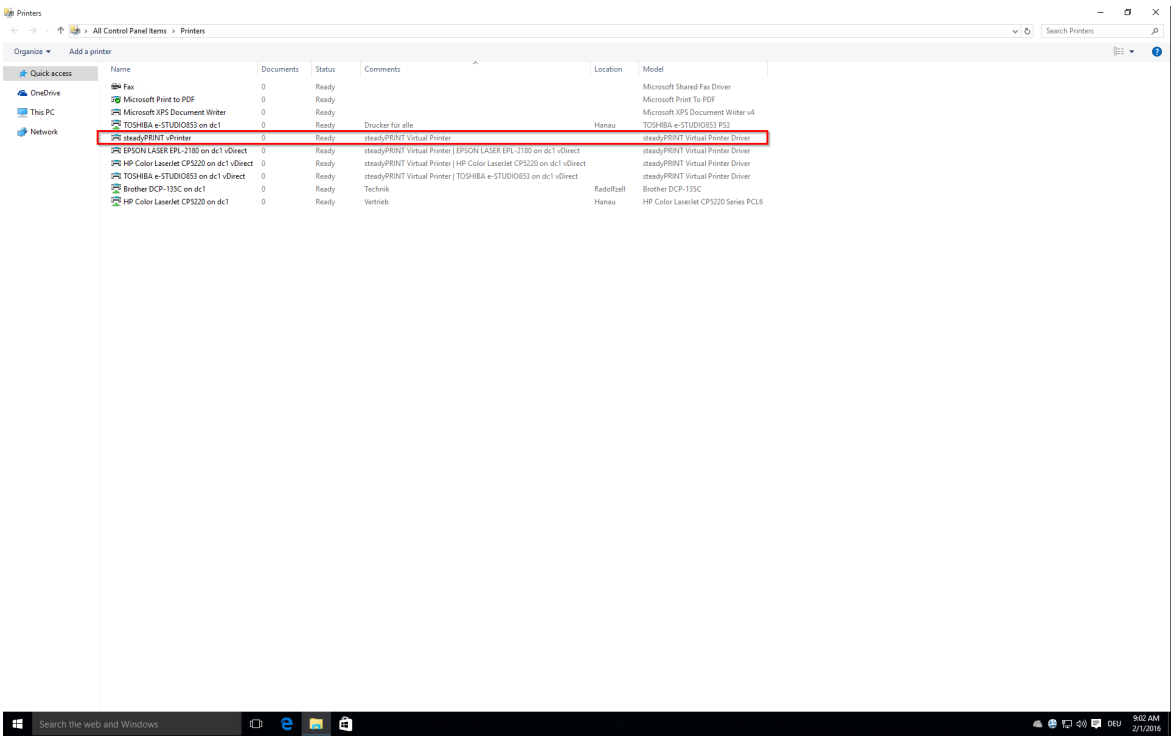

Figure 21: steadyPRINT vPrinter - Printing in Windows printer folder

After sending the print job out of the application, a dialog of the ***steadyPRINT vPrinter*** appears with a selection of all printers provided to the user (see chapter User). Dependent on the configuration, these

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can be network printers, local printers, batch printers, PDF printers, e-mail printers and vFlow printers. In the following, the respective functionality is listed and briefly explained:

- Network printer: The print job is directly forwarded to the physical printer via the respective print server. Dependent on the configuration, **steadyPRINT** stores the print job for the required period.
- Local printers: The print job is directly forwarded to the physical printer via the Client.
- Batch printer: The print job is stored in the selected batch. The storage period is dependent on the configuration. Stored print jobs can be reviewed and processed or printed via the print job view in the ***steadyPRINT Agent*** or ***steadyPRINT vPrinter***.
- PDF printer: The print job is converted into a PDF file and stored to the path previously selected.
- E-mail printer: The print job is converted into a PDF file. Subsequently, **steadyPRINT** opens the default e-mail program and a new message appears with the created PDF file in the attachment.
- vFlow printer: The print job is forwarded to the workflow for further processing.

Printing with steadyPRINT vDirect

For the actual printing process, the user selects one of the virtual ***steadyPRINT vDirect*** printers provided in his/her program. Figure steadyPRINT vDirect - Printer in Windows printer folder shows examples of printers ending in "vDirect". The ***steadyPRINT vDirect*** contains a permanently stored target printer that can be recognized, among others, by its name in the Windows printer folder. This target printer forwards the print job via the virtual printer driver and behaves like a common printer.

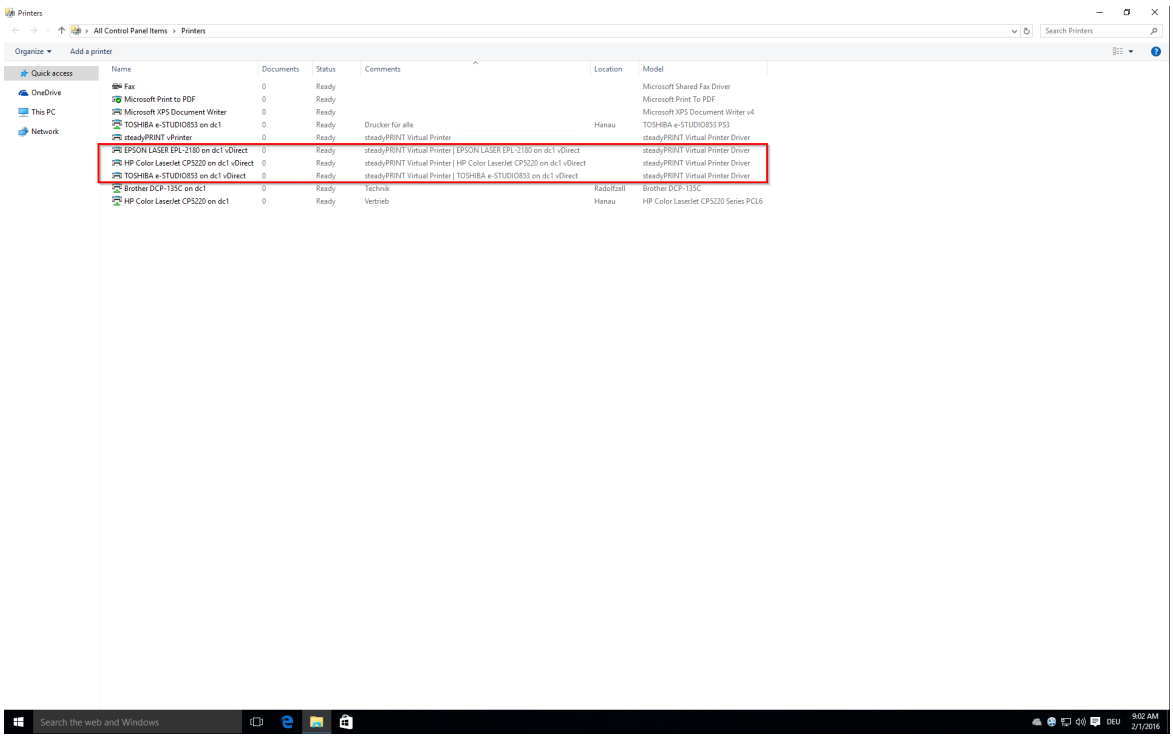

Figure 22: steadyPRINT vDirect - Printing in Windows printer folder

Printing with steadyPRINT vName

For the actual printing process, the user selects one of the provided virtual **steadyPRINT *vName printers*** in the program. [figure 123-tolles-bild] shows examples of printers with names freely definable by the administrator. When printing on-the-fly, the **steadyPRINT *vName printer*** evaluates the stored target

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printer based on the respective login context of the user. Afterwards, it forwards the print job using the virtual printer driver and behaves like a normal printer. Examples of applications can be found here.

Print Processing

The ***steadyPRINT VPD*** stores the print job to a print job directory in an encrypted form and independent of the manufacturer. A ***steadyPRINT Server*** service which is installed on the print server is notified of the new job and forwards it, including all settings, to the required target printer. In doing so, **steadyPRINT** uses the driver manufacturer stored on the print server. Figure steadyPRINT VPD - Short technical description shows the step-by-step processing of a print job from the application to the physical network printer.

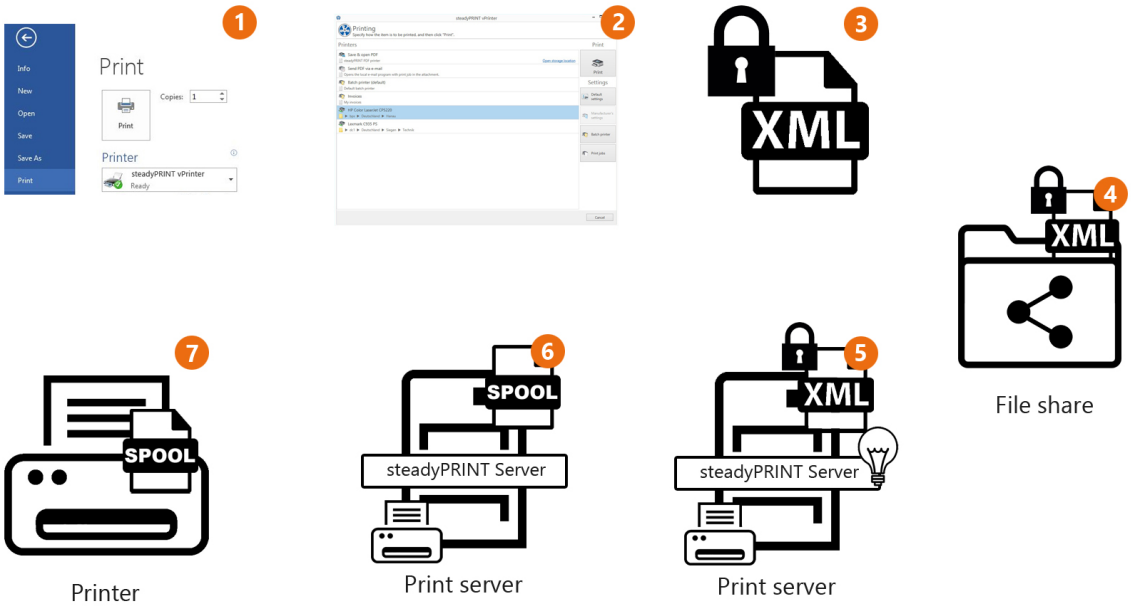

Figure 23: steadyPRINT VPD - Short technical description

Advantages

The following abbreviated list contains the advantages of using ***steadyPRINT VPD***:

- Driverless printing (with all printer settings),
- Batch print even without physical printer,
- integrated PDF printer,
- integrated sending of PDF documents as e-mail,
- Realtime mapping even with running applications,
- individual access to past print jobs,
- print server reliability (with constant printer name).

5.4.1 Administration

This chapter describes the installation and configuration of ***steadyPRINT VPD*** from the administrator's perspective.

Installation

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The use of ***steadyPRINT VPD*** requires the ***steadyPRINT Server*** service being installed on each print server. Print servers without an installed ***steadyPRINT Server*** cannot be used in connection with the ***steadyPRINT VPD***. Furthermore, the ***steadyPRINT Virtual Printer Driver*** has to be installed on at least one of the participating ***steadyPRINT VPD*** print servers. You will find the virtual printer driver in the **steadyPRINT** installation directory (usually: "C:\Programs\steadyPRINT\Virtual Printer Driver").

For the installation of the ***steadyPRINT Virtual Printer Driver*** driver, please proceed as follows:
1. Copy the folder "Virtual Printer Driver" from the ***steadyPRINT*** installation directory to the respective print server.
2. Log on to the required print server with administrative rights and open the printer administration of your operating system for the installation of the driver (Start > Control Panel > System and Safety > Administration).
3. Switch to printer administration > Print server > [Print server] > Driver.
4. Via the context menu **Add printer driver...** you directly access the assistant for the printer driver installation.
5. Follow the installation steps up to the selection of the driver.
6. Click **data medium** and navigate to the **steadyPRINT** printer driver directory from step 1.
7. There, you select the file xpsdrv.inf for your architecture (32 - or 64 bit).
8. The ***steadyPRINT Virtual Printer Driver*** driver appears for selection.
9. Follow the subsequent installation steps to complete the process.

Now the installation of the driver has been completed.

Configuration

The ***steadyPRINT VPD*** stores the print jobs in encrypted form in a freely selectable directory. You can individually determine this directory for each print server or use the same directory for all print servers. Please make sure that the UNC path for the specification is correct (e.g.: "\\fileserver\SpVpdJobs") and that the directory **has been shared with read and write access for all users who are supposed to use *steadyPRINT VPD.*** Figure steadyPRINT Center - Settings steadyPRINT VPD shows a possible configuration example. All settings are shown in the following table.

Setting	Description
Print server	Indicates the affected print server for which the settings are valid.
steadyPRINT Server Installation	Indicates whether the necessary ***steadyPRINT Server*** service has been installed on the print server and is now available.
steadyPRINT VPD printer driver	Indicates whether the required ***steadyPRINT VPD*** printer driver has been provided on the print server.
Path	Indicates the print job directory to which the print jobs are to be stored.
Store print jobs	Indicates whether the print jobs are to be stored for a certain period or to be deleted immediately after the printing process.
Storage period print jobs	Indicates the storage period for print jobs. After exceeding this period, the print job and all related files are automatically deleted.
Type of notification	Indicates the type of notification for a print job. • Windows OS (default): Windows operating system sends a notification to ***steadyPRINT Server***. • Internal: steadyPRINT clients independently send a notification to ***steadyPRINT Server***.

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Sorting	If activated, the order of print jobs is maintained according to the order ID according to the order ID per user. This way, current print jobs of a user are given priority over others. Note: In cluster operation mode make sure that the option Service Member Persistence is enabled in the cluster configuration.
Batch printing > Store batch print jobs to database	Stores all batch print documents to the database in encrypted form. When changing computers, the access to the print jobs thus remains. When disabled, a local storage to the user profile is performed until the print job has been printed from the batch.
Batch printing > Max. print job size	Indicates the max. size of print jobs to be stored to the database. Jobs on a higher level will not be stored to the database by ***steadyPRINT VPD***.

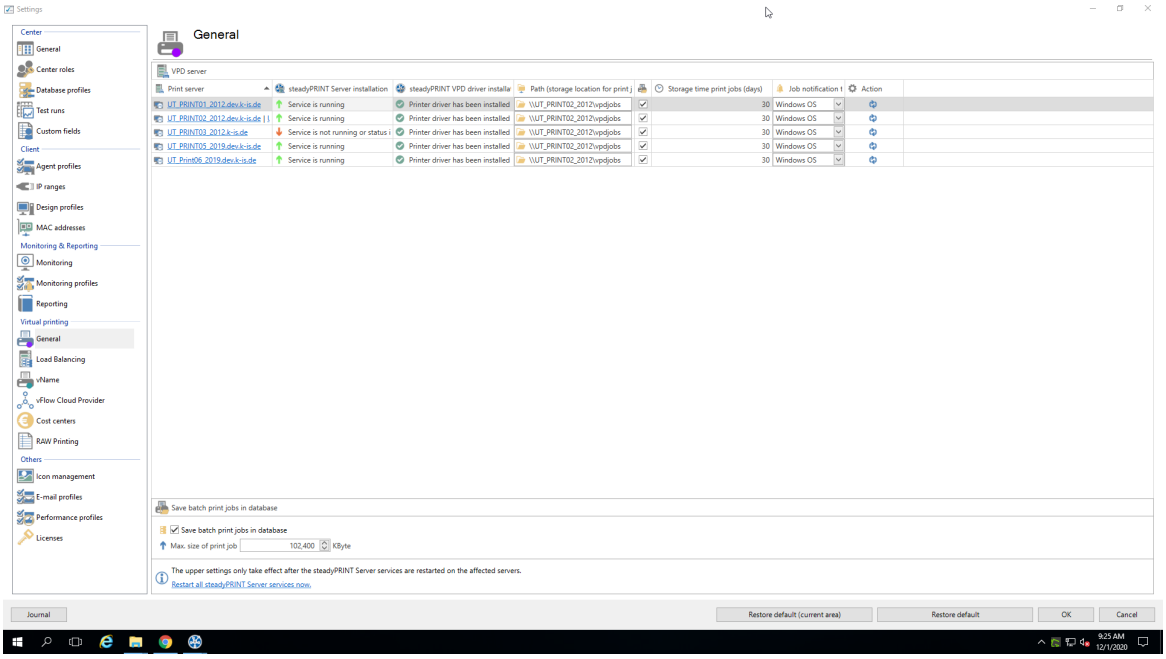

Figure 24: steadyPRINT Center - Settings steadyPRINT VPD

Note	***Restart required***
	Once the settings for the ***steadyPRINT VPD*** have been modified, a restart of the ***steadyPRINT Server*** services is required. This can be done manually or directly via the configuration interface in the settings.

Activating steadyPRINT VPD for Workstations and Terminal Servers

By default, the ***steadyPRINT VPD*** for workstations and terminal servers is disabled! It can be activated to 1 by setting the respective controller for the installation under steadyPRINT Center > File > Settings >

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Performance Profile > [Profile] > steadyPRINT VPD. Unless this is done, the local printer ***steadyPRINT vPrinter*** cannot be installed on a workstation or a terminal server! Furthermore, at least one steadyPRINT VPD printer assignment is required (see Adding assignments for steadyPRINT VPD).

Adding assignments for steadyPRINT VPD

Adding printer assignments for the ***steadyPRINT VPD*** is done analogous to the usual network printer assignment in **steadyPRINT**. In all assignment windows, you will find the distinction between normal Windows network printer- and steadyPRINT VPD assignments.

Note	***Parallel assignment of Windows- and VPD printer assignment***
	The parallel assignments of usual Windows network printer assignments and VPD-printer assignments can be done without any problems.

Summary and check list for the installation and configuration:

- Installation of ***steadyPRINT Server*** service on print server
- Installation of ***steadyPRINT Virtual Printer*** driver on print server
- Configuration of print job directory
- Restart of ***steadyPRINT Server*** service on affected print servers
- Activation of ***steadyPRINT VPD*** in performance profiles
- Printer provided as ***steadyPRINT VPD*** printer assignment

Display of print jobs from administrator's point of view

In the ***steadyPRINT Center***, administrators have the possibility to access print jobs that have been sent by the user (accessible via the ribbon Extras). However, this view is very restricted for reasons of data privacy. Only print servers, printers as well as the print and change date of the respective print job are displayed in the ***steadyPRINT Center***. It is not possible to have additional information displayed manually.

Known problems

Incorrect Display of Printout (Printer does not properly interpret EMF format)

Depending on manufacturer and device, the printed document can be displayed incorrectly. For solving this problem, please proceed as follows:

1. First, open the printer properties of the affected printer on the print server and click the tab "Extended".
2. Adjustment of printing features: Disable the function "Activate extended printing features"

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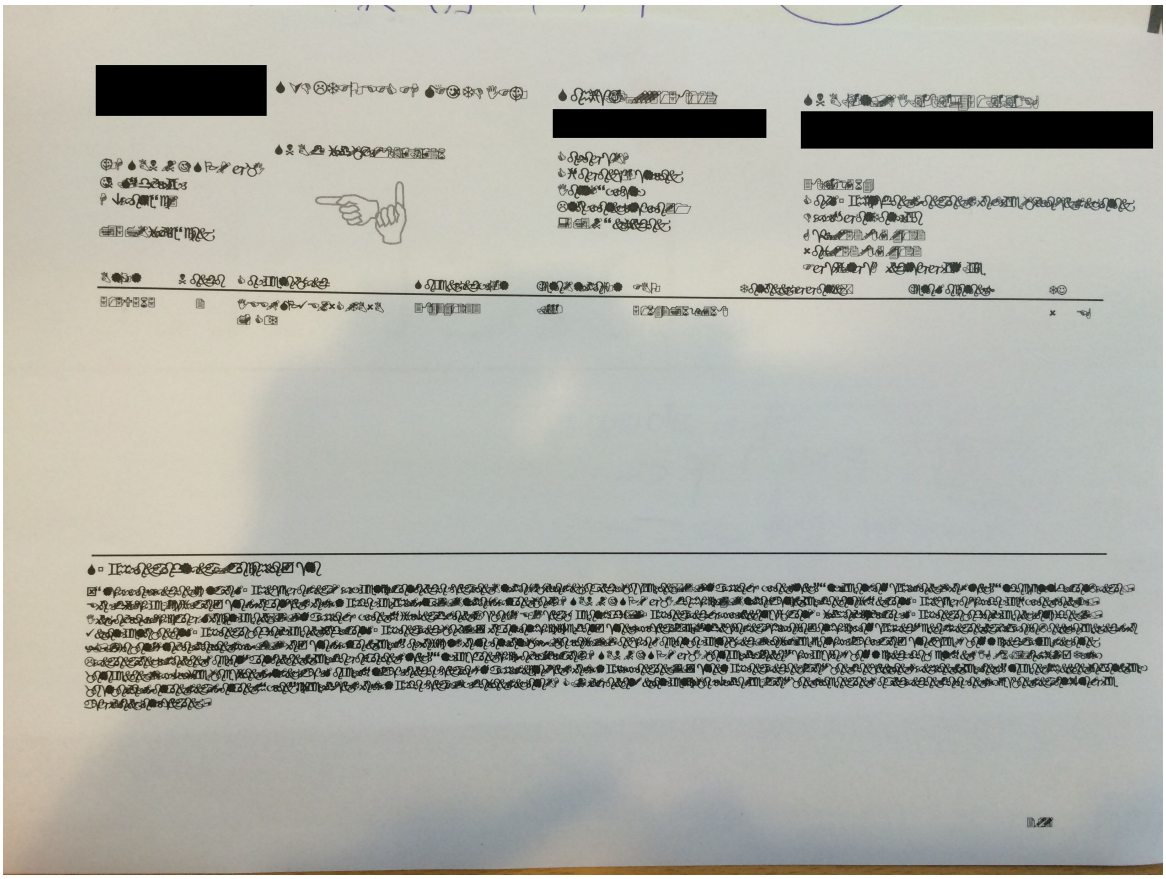

Figure 25: steadyPRINT VPD - Example for incorrect printout

No Network Printers in steadyPRINT VPD Interface

The available printers are transferred to ***steadyPRINT VPD*** via the ***steadyPRINT Agent***. Make sure that the ***Agent*** is performed for the respective user and that printers have been assigned to the user.

Different Page Numbers in User's Print Job Overview

Among others, the number of pages for the print job is visible in the user's print job overview. In larger documents, this number deviates from the actual page number and the one displayed in the preview. For the preview, **steadyPRINT** uses DIN A4 as a standard format which might be the reason for the deviation.

steadyPRINT offers the management of the printer features. Printer features include

- Tray management
- Finishing options
- Zoom

5.4.1.1 Print Templates

Print Templates represent a central topic in the ***Virtual Printer Driver***. They offer the printer administrator the possibility to store central printer settings for the print jobs of the users.

The different template types force or predefine printer settings for selection.

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Template Type	Description	Priorität (höchste zuerst)
Protected	Protected Templates specify printer settings that the user must use in the same way and that cannot be modified.	1
Public	Public Templates specify printer settings that can be modified by the user.	2
Private	Private Templates are considered as Public Templates and are individually created by the user. The user can select a template for a print job either from the Public or Private Templates.	2

The ***Print Templates*** are managed via the printer settings in the Center under "VPD" (see figure steadyPRINT Center - Overview of Print Templates). The stored templates are provided to all vPrinter-based printers (vDirect, vPrinter, vName).
In addition, ***Private Templates*** are displayed as well. The owner of the templates will be displayed as a template tooltip.

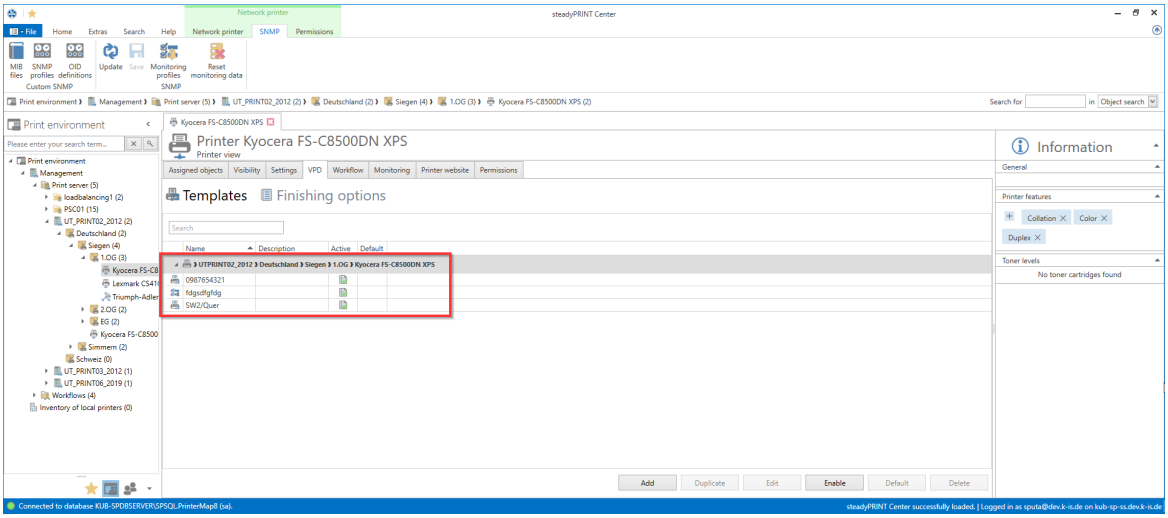

Figure 26: steadyPRINT Center - Overview of Print Templates

Via the button **Default**, a template can be specified as default for printer assignments. If the user creates a print job, this template is stored as the printer setting for this job. However, the user has the option to modify the template for this job before the job is printed.

If no default template is specified, the first entry in this list is automatically used as default for the users. A ***print template*** that has the default printer settings at the print server is automatically created for each printer. This automatic entry is removed as soon as a first, individual ***print template*** is created.

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Important	*Simultaneous creation of Protected and Public Templates*
	Protected templates have the highest priority. As soon as a printer has at least one protected template, **steadyPRINT** automatically disables the public templates for this printer. This means that public templates will no longer be offered to the user. Even the private templates will no longer be selectable for the user.

5.4.1.1.1 User Print Templates

The user can create and use individual templates in the ***steadyPRINT Agent***, if this feature has been activated for him in the Center (see figure Activation of user templates).

Note	*User guide*
	A detailed description for the use of Private Print Templates for users can be found in each Agent installation under "user guide".

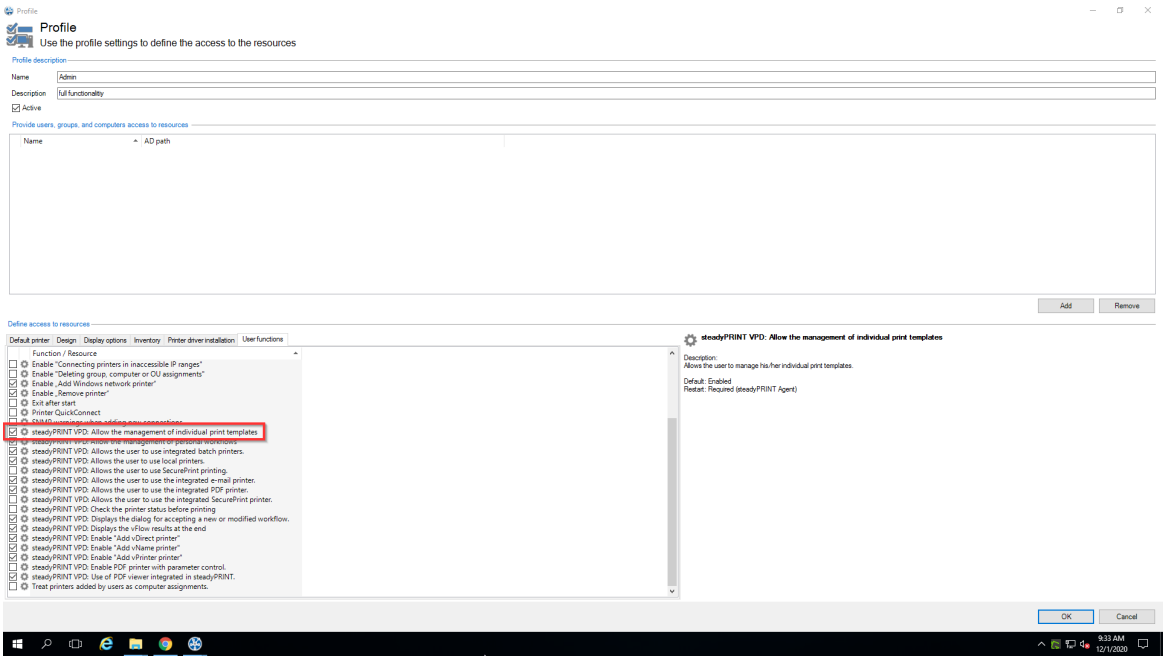

Figure 27: Activation of user templates

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Figure 28: Activation of administrative driver installation via steadyPRINT on Client

In order to create templates in the ***Agent***, the native printer driver must be installed on the client. This function has to be activated in the Agent profiles (see figure Activation of administrative driver installation via steadyPRINT on Client).

In the Center, the icons of ***user templates*** contain a user. The administrator cannot create or modify ***user templates*** in the Center but only delete them. By deleting the templates, they are also removed for the user.

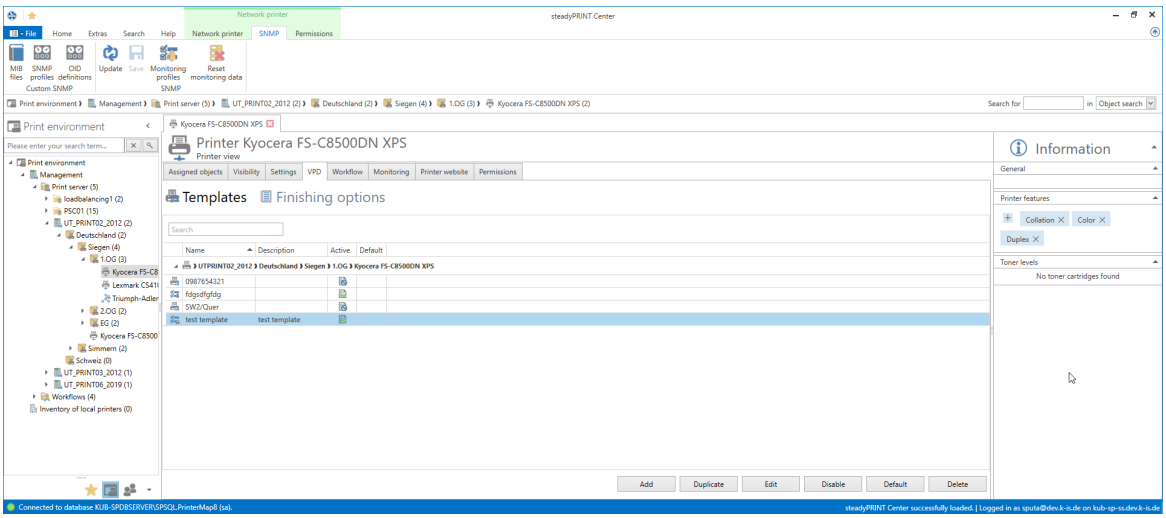

Figure 29: Overview of templates per printer

5.4.1.2 Finishing Options

Multifunction printers offer functions that go far beyond the actual printing process of documents. By means of the ***finishing options***, documents can for example be punched and stapled. **steadyPRINT** supports the finishing options of punching and stapling with the following default values:

Punching Option	Description
Punching LeftEdge	Punching at the left edge
Punching RightEdge	Punching at the right edge
Punching TopEdge	Punching at the top edge

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Punching BottomEdge	Punching at the bottom edge

Stapling Options	Description
Staple TopLeft	One staple in the upper left edge
Staple DualLeft	Two staples at the left edge

These standards are offered to each user as an option for selection within the VPD driver dialog (see figure VPD2 Print settings: Selection of punching standards):

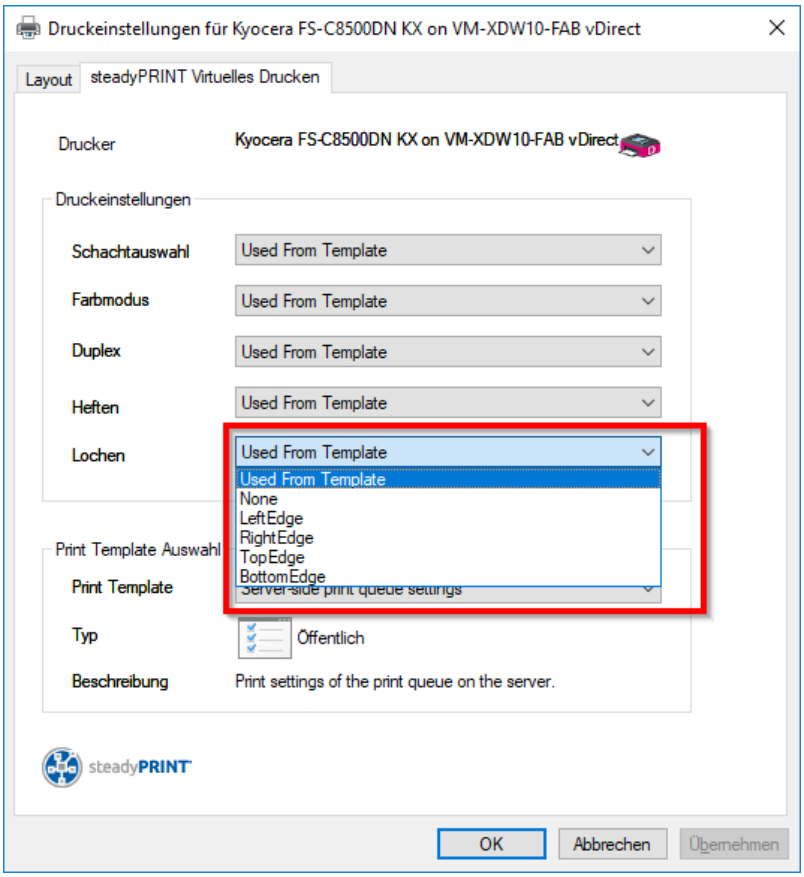

Figure 30: VPD2 Print settings: Selection of punching standards

Multifunction printers can offer further options for punching and stapling that go beyond the default options. They are imported and assigned in **steadyPRINT** via the ***Center***.

The administration of the Finishing Options is available under [Printer] > VPD > Finishing Options. Here you have the option to create individual finishing options by means of the manufacturer printer driver.

Note ***Individual Finishing Options***

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As soon as individual finishing options are created, the default options are hidden and no longer displayed to the user.

5.4.1.3 Native Printer Tray Control

The ***Printer Tray Control*** enables the native printer/paper tray selection for users. The administrator is able to select the trays the users are allowed to use via [Printer] > VPD > Printer trays.

It is important to synchronize the printer information beforehand. The required function is offered under „Synchronization of Printer Information“.

5.4.1.4 Media Size Selection

The ***Page Media Size Selection*** enables the users to select the native page media sizes of the printer. The administrator can select the paper formats for the users to use via [Printer] > VPD > Forms. It is important to synchronize the printer information beforehand. The required function is available under „Synchronization of Printer Information“.

5.4.1.5 Parametrize PDF Printers

The ***steadyPRINT vPrinter*** offers the possibility to have PDF documents generated in a parametrized way. First, the following setting has to be activated in the Agent profiles: steadyPRINT VPD: Activate PDF printer with parameter control. Subsequently, each print job is scanned for parameters via the printers Send PDF via e-mail and Save and open PDF file. Depending on the respective definitions, the relevant parameters will finally be implemented.

The following parameters are currently available:

Parameter	Description
Email (only for e-mail printers)	E-mail address to which the PDF document will be sent.
EmailCC (only for e-mail printers)	CC-e-mail address to which the PDF document will be sent.
EmailBCC (only for e-mail printers)	BCC-e-mail address to which the PDF document will be sent.
EmailSubject (only for e-mail printers)	E-mail subject for the message to be sent.
EmailBody (only for e-mail printers)	E-mail text for the message to be sent.
DocName (only for e-mail printers)	File name of the PDF document to be generated..
E-mailAttachmentsList (only for e-mail printers)	Additional files that will be attached to the e-mail.
StationeryPathStationeryAllPages	PDF document that is used as watermark for the PDF document to be generated. Only the first page will be applied.

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The parameters below have to be entered into the original document. Each parameter begins with the prefix "#_ " and ends with the suffix " _#".
Important: All parameters can be used independent of upper and lower case character. Manual line breaks are inserted with "\r\n".

The following table shows the above overview with application examples:

Parameter	Description
Email (only for e-mail printers)	Arguments: semicolon separated list of e-mail addresses. Example: #_ Email support@steadyprint.com _#
EmailCC (only for e-mail printers)	Arguments: semicolon separated list of e-mail addresses. Example: #_ EmailCC info@steadyprint.com _#
EmailBCC (only for e-mail printers)	Arguments: semicolon separated list of e-mail addresses. Example: #_ EmailBCC sale@steadyprint.com _#
EmailSubject (only for e-mail printers)	Arguments: e-mail subject for the message to be sent. Example: #_ EmailSubject Message from steadyPRINT _#
EmailBody (only for e-mail printers)	Arguments: e-mail text for the message to be sent. Example: #_ EmailBody Dear Sirs, Thank you for your inquiry. We will contact you immediately. Kind regards steadyPRINT-Team _#
DocName (only for e-mail printers)	Argument: File name of the PDF document to be generated. Example: #_ DocName Inquiry_2016-11-23-032 _#
EmailAttachmentsList (only for e-mail printers)	Argument: semicolon separated list of additional files that will be attached to the e-mail. Example: #_ EmailAttachmentsList C:\Files\Info.pdf;C:\Files\DefaultImage.png _#
StationeryPathStationeryAllPages	Argument: File name of the PDF document that will be placed as a watermark behind each page of the PDF document to be generated. Example: #_ StationeryPathStationeryAllPages C:\Files\watermark.pdf _#

The following example shows an application of the parameters in one text block. It effects the creation of a PDF document and the opening of the default e-mail program with a new message. The specified addresses are support@steadyprint.com and info@steadyprint.com in the cc address field. The message contains the indicated subject and the text. The file name of the PDF document to be generated is "Inquiry_2016-11-23-032". When creating the PDF document, the first page from "watermark.pdf" is placed behind each page as a watermark.

#_ Email support@steadyprint.com _#

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#_ EmailCC info@steadyprint.com _#
#_ EmailSubject Message from steadyPRINT _#
#_ EmailBody Dear Sirs,

Thank you for your inquiry. We will contact you immediately.

Kind regards,

steadyPRINT-Team _#
#_ DocName Inquiry_2016-11-23-032 _#
#_ StationeryPathStationeryAllPages C:\Files\watermark.pdf _#

5.4.1.6 Cost Centers

A cost center is the place of cost incurrence and performance. It is created according to areas of responsibility or spatial, functional, organizational or accounting aspects.

In the field of printer management, cost centers serve the administration, analysis and evaluation of printing costs. Printing costs are neither evaluated in a personalized way nor stored!

The data is stored with regard to the respective cost center correlating with the months.

Quick access:

- Create cost centers
- Store users
- Store printing costs for the printer (monitoring tab)
- Print

Managing cost centers

For creating a cost center, navigate to the cost centers and click the **Add** button.

A cost center just needs a name. Optionally, you can store a description and an identification number (see figure Cost centers in settings). In order to edit a cost center, click the **Edit** button.

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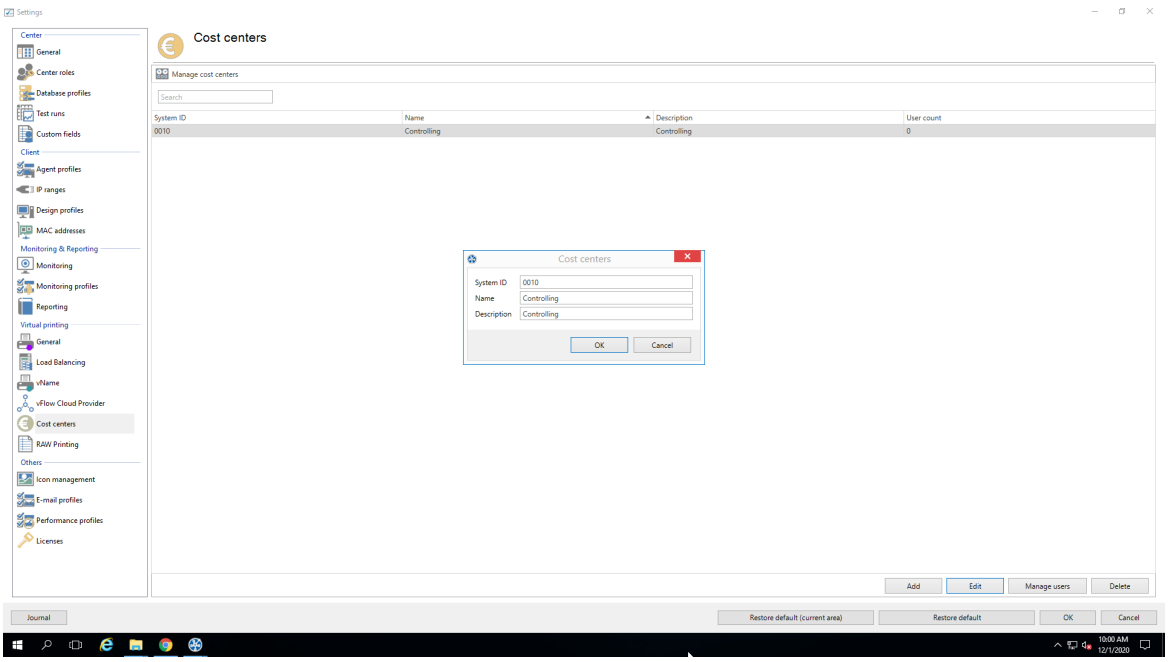

Figure 31: Cost centers in settings

Managing members for a cost center

Adding members to a cost center:

In order to add a user to a cost center, select a cost center and click "Manage users". The view for the member management of a cost center is displayed as shown in figure Adding users to a cost center.

When double-clicking the cost center, the window is displayed.

Click Add in order to open the Active Directory search for users.

Select the desired users and click OK.

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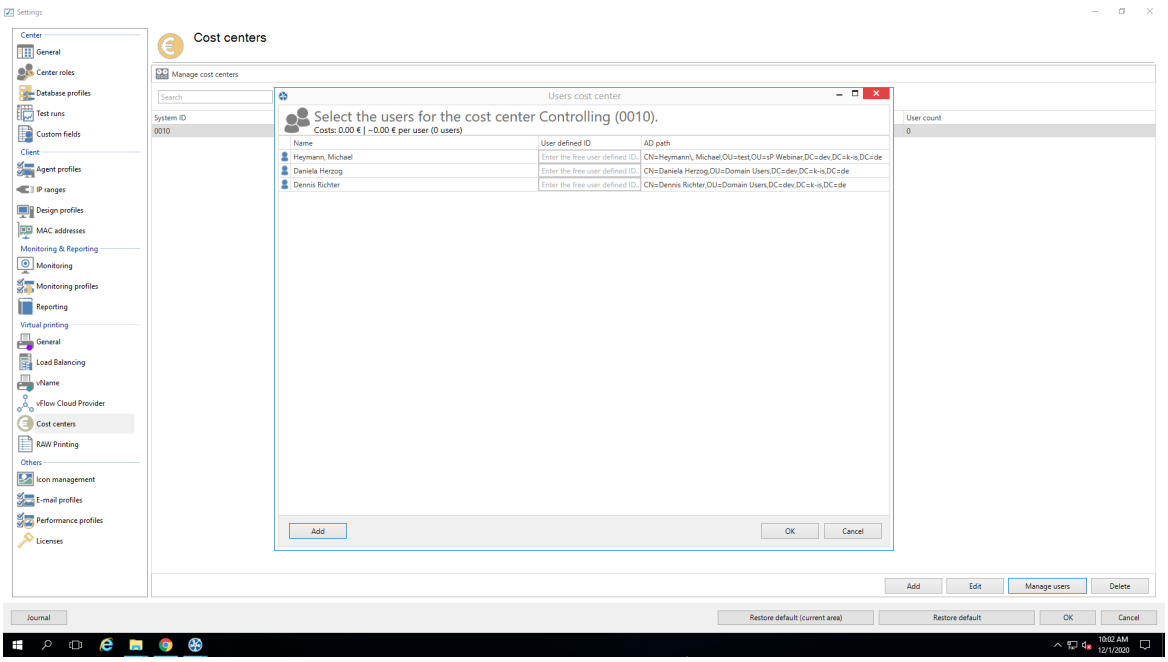

Figure 32: Adding users to a cost center

For a user, the user name, the user-defined ID and the Active Directory path are displayed. The user-defined ID can be assigned optionally for an easy identification of users (personal number, reference etc.).

In order to remove a user, select him/her with the right mouse button and click **Remove**.

Printing Costs

The printing costs are assigned to a cost center if the costs for printing are stored at the respective printers (see chapter Monitoring - Printing costs). The stored printing costs refer to DIN-A4 for color or monochrome prints. The cover ratio of single pages is not calculated, the reference value is used instead. (see figure Store printing costs at printer).

If other paper sizes are used, the calculation is done on the basis of the DIN A4 reference value. The costs for DIN-A3 would e.g. be the costs for DIN-A4 times two.

Mixing paper sizes and color and monochrome prints in single print jobs is supported and taken into account in the cost analysis.

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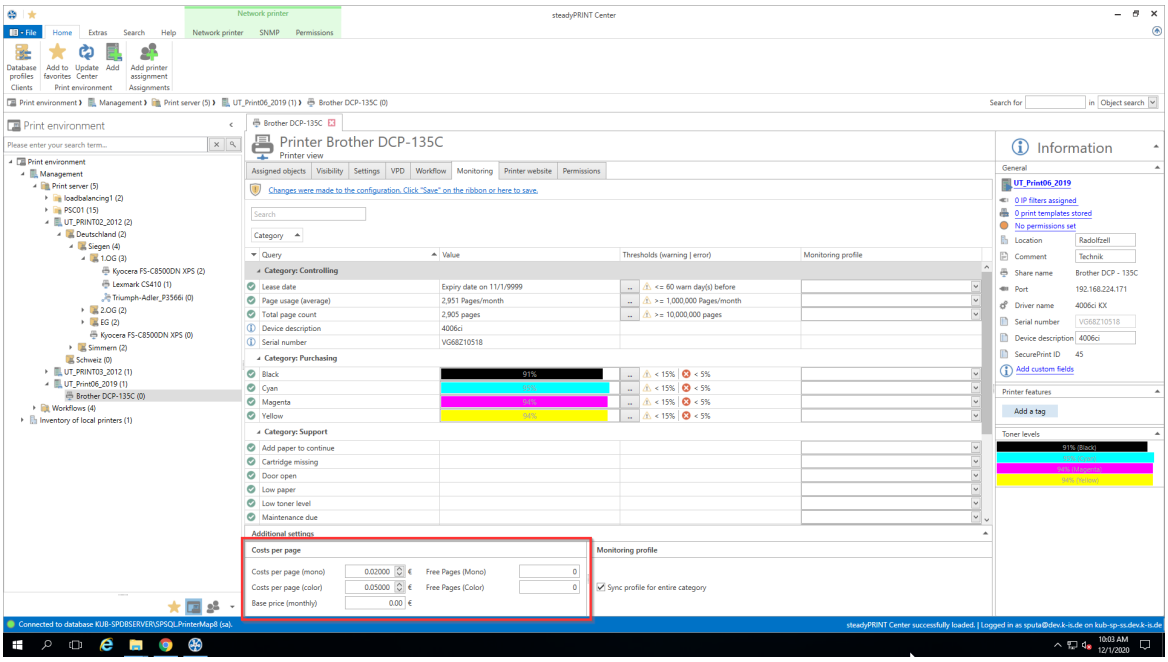

Figure 33: Store printing costs at the printer

Evaluating cost centers

The evaluation of cost centers serves the inventory of printing costs per year or month for a cost center. Person-related data is not retrieved. Printer-related data is also not colltected in this evaluation. (Reporting: Costs per printer). In order to look at the evaluation, click **Extras**-> **Reporting** and select the report **Full cost center overview**. (see figure Cost center report).

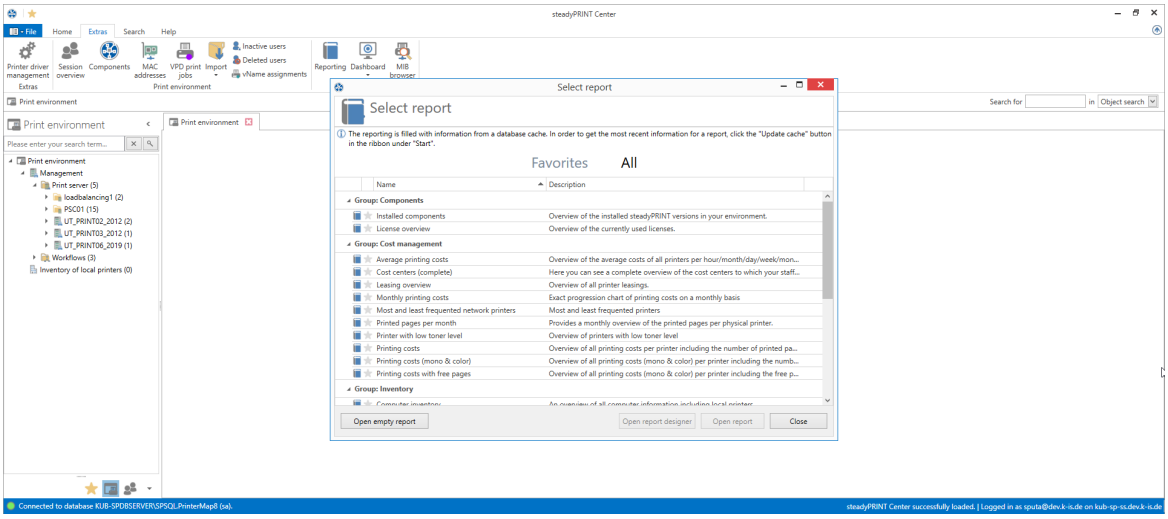

Figure 34: Cost center report

All cost centers are displayed with the respective costs for color and monochrome pages for the months and years since the existence of the cost center.

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5.4.1.7 RAW Printing

In the context of VPD-based printing, ***RAW Printing*** means the "loop-through" of print jobs as-it-is. In this process, depending on the input format and the selected settings, there is usually no change of the print stream which is routed 1:1 to the printer. The use of a manufacturer-specific printer driver on the workstations and terminal servers is still not required.

For printing with VPD, an XPS document is required as input document. This is usually created correctly by using the VPD printer driver. When using special systems, such as SAP, Dedalus Orbis (formerly known as Agfa Orbis), IBM System i (AS/400, eServer iSeries, System i5), Microsoft Navision etc., the input document may be considered invalid by default and thus VPD printing may be cancelled or the printout may not be displayed as desired. In this case, ***RAW Printing*** becomes effective. Due to a configuration of ***RAW Printing***, a wide variety of document formats can be recognized and manipulated. This enables a significantly extended area of application for ***VPD*** in the corporate environment.

Configuration

By default, ***RAW Printing*** is disabled and can be enabled via the performance profiles in the settings of the ***steadyPRINT Center*** (File > Settings > Performance-Profiles > [Performance-Profile] > steadyPRINT VPD > Enable extended RAW printer function).

Note	*Restart required*
	After (dis-)enabling RAW-Printing, a restart of the ***steadyPRINT Server*** services is required. Moreover, the ***steadyPRINT Agents*** of the users must be restarted so the the change is applied to the user.

For configuring the behavior, the area RAW Print is available in the settings of the ***Center***. The properties available there influence the behavior when processing the input document. In the following there are some common scenarios that use ***RAW Printing*** and may require a configuration.

Label Printer

The print stream usually has content that is to be passed through to the label printer 1:1.

Setting: LabelPrinterDriverNames

Description: This property specifies the driver names of label printers. On the server side, it is checked before printing whether the driver name of the target printer matches (a part of the name is sufficient). In case of a match, the printout is unchangedly (as-it-is) forwarded to the printer as a byte stream.

Permissible values: comma-separated list of strings

Example values: CAB, Citizen, Zebra

Fanfold printer

The print stream usually has content that is to be passed through to the label printer 1:1

Setting: ContinuousPaperPrinterDriverNames

Description: This property specifies the driver names of fanfold printers. On the server side, it is checked

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before printing whether the driver name of the target printer matches (a part of the name is sufficient). In case of a match, the printout is unchangedly (as-it-is) forwarded to the printer as a byte stream.

Permissible values: comma-separated list of strings

Example values: Generic

Document Formats

Depending on the used application, which sends the print job via the VPD printer, a wide variety of document formats can occur as input documents. Usually this is an XPS document (default with VPD). However, these can also be input documents representing e.g. content in PostScript or PDF format. At this point, many other formats are conceivable. Currently, RAW Printing has two ways of identifying the document type in order to be able to process it correctly afterwards.

Identification of the document type by means of a preamble in string representation
Setting: PreambleStrings

Description: This property specifies document preambles. This way, the format of the document is identified and can then be manipulated by further optional processing steps and finally forwarded to the printer.

Permissible values: comma-separated list of strings

Example values: ^XA,%!PS-,%PDF

Identification of the document type by means of a preamble in character representation
Setting: PreambleChars

Description: This property specifies characters that may occur at the beginning of the document in order to identify the printout as a RAW document and forward it to the printer without changes. They serve as a replacement of a preamble as defined for the property "PreambleStrings".

Permissible values: comma-separated list of numbers, the numbers representing the decimal value (NCR) of a character from the ASCII-table.

Example values: 27, 14

Extract ASCII table for value 27: `U+001B (Unicode) | &#x001B; (Hexa NCR) | &#27; (Decimal NCR) | 1B (UTF8) | \u001B (Escaped Unicode) | Escape Character (Description)`
Extract ASCII table for value 14: `U+000E (Unicode) | &#x000E; (Hexa NCR) | &#14; (Decimal NCR) | 0E (UTF8) | \u000E (Escaped Unicode) | Shift Out (Description)`

IBM System i (AS/400, eServer iSeries, System i5)

The IBM systems have different output formats in order to send a printout to the printer. If the document is displayed as ASCII Extended, it is possible to manipulate the document content before printing. For this purpose, the following properties are available:

Property	Description
PdfFontSizePortrait	This property is to specify the font size for documents

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	aligned in portrait. Permissible values: float Example values: 11.5
PdfFontSizeLandscape	This property is to specify the font size for documents aligned in landscape. Permissible values: float Example values: 11.5
PdfMarginLeft	This property is to specify a margin in millimeters for the left margin. Permissible values: float Example values: 5
PdfMarginTop	This property is to specify a margin in millimeters for the top margin. Permissible values: float Example values: 5
PdfMarginRight	This property is to specify a margin in millimeters for the right margin. Permissible values: float Example values: 5
PdfMarginBottom	This property is to specify a margin in millimeters for the bottom margin. Permissible values: float Example values: 5
DynamicBestFitForPortrait	This property (dis)enables the dynamic adjustment of the content to the document size (A4 portrait). For this purpose, the reference font size from the property "PdfFontSizePortrait" is used. The page content is scaled down until it fits completely on one page. Permissible values: bool (True, False)
DynamicBestFitForLandscape	This property (dis)enables the dynamic adjustment of the content to the document size (A4 landscape). For this purpose, the reference font size from the property "PdfFontSizeLandscape" is used. The page content is scaled down until it fits completely on one page

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	Permissible values: bool (True, False)
NumberLettersPerLineToPrintLandscape	Specifies the number of characters from when a page is treated as landscape. Note: The system cannot provide any information on page orientation. Permissible value: int Example values: 121
DocumentHeaderSpaceString	Documents with a bland area (several blank lines) at the beginning of the document are mostly document printouts. This may be too large causing the page content to move to the next page. This area can be identified by this "pattern" and replaced by the content of the property "DocumentNormalizedHeaderSpaceString". Permissible values: String Default value: \r\n\r\n\r\n\

performance even with high print volumes – regardless of whether printing is done from headquarters or a branch office.

Repeat print and print job history

Furthermore, **steadyPRINT** offers the option of repeat printing. When printing from SAP, the print job is assigned to a Windows domain user. Via this user, the print job history can be opened in order to view already printed or even incorrect print jobs and to print them again directly via Windows. In addition, there is also the possibility to save the selected print job as a PDF document.

Support of different SAP systems with one steadyPRINT instance

The ***steadyPRINT OMS*** supports several independently installed SAP systems with one **steadyPRINT** instance. In this process, the same ***steadyPRINT Server service*** can be integrated and used several times together with the Windows print server. The ***steadyPRINT OMS*** is able to dedicatedly communicate with different SAP systems which reduces the Windows and steadyPRINT side complexity and saves ressources in deployment, configuration and operation.

Workflows

The ***steadyPRINT OMS*** supports a specific document control by means of workflows (vFlow) in order to process printed incoming dociments (s.vFlow Actions). This includes actions for logic, adaption, output, printing and the use of pre-defined templates.

5.4.1.8.1 Configuration

This article describes the procedure for the setup of **steadyPRINT** as OMS within SAP and is divided into a steadyPRINT and SAP side configuration.

5.4.1.8.1.1 Configuration in steadyPRINT

Requirements

For the installation of a SAP system on **steadyPRINT** side, the required print server has to be added and configured first according to the manual (see Print Server Administration). Moreover, the print server has to be configured for VPD (see Virtual Printer Driver (VPD)), the VPD RAW Printing has to be enabled accordingly (see RAW Printing) and it has to be ensured that the notification type for new print jobs is set to default Windows BS (steadyPRINT Center > Settings > Virtual Printing > General > [Print server] > Notification type).

Note	***Microsoft C++ Runtime DLLs Version 14.x***
	For the communication with the SAP application servers, the Visual C++ Redistributable package for Visual Studio 2015, 2017, 2019 or 2022 is required as a dependency (Microsoft Download Page) and is thus to be installed on the print servers.

Configuration of profile for communication with SAP

If the basic installation for ***steadyPRINT VPD*** on the selected print server VPD is terminated, the configuration of a SAP configuration profile can be started (steadyPRINT Center > Settings > Virtual Printing > SAP OMS)

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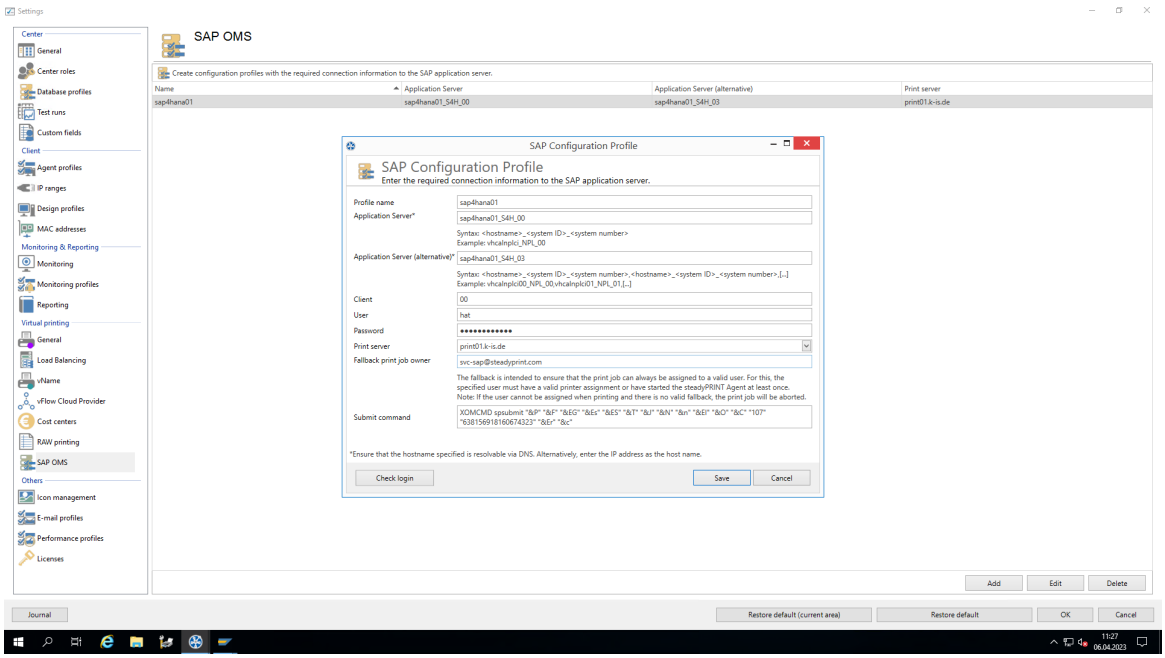

Figure 35: Configuration of SAP OMS profile

The configuration (see Configuration of SAP OMS profile) contains the following settings:

- Profile name: Freely selectable profile name for the description of the SAP application server
- Application server: SAP server name in the appropriate syntax `[hostname]_[SystemID]_[SystemNumber]`
- Application server (alternatively): Alternative SAP server names in the appropriate syntax `[hostname]_[SystemID]_[SystemNumber],[hostname]_[SystemID]_[SystemNumber],[…]`, serve as response targets in case the server mentioned under "application server" fails.
- Client: Specification of the client number
- User: Specification of SAP user: Note: The user to be specified needs permissions for RFC communication.
- Password: Specification of password to SAP user
- Print server: Specification of print server which is to be used for printing SAP print jobs.
- Fallback print job owner: The fallback is to ensure that the print job can be assigned to a valid owner in any case. For this, the specified user must have a valid printer assignment or have started the ***steadyPRINT Agent*** at least once. Note: If the user cannot be assigned during printing and if no valid fallback exists, the print job will be cancelled.
- Submit command: Needed in the configuration of the LOMS (auto-generated) for forwarding the print jobs from SAP to **steadyPRINT**.

The further configuration within SAP requires the following specifications for configuring the LOMS and necessary **steadyPRINT** scripts:

- Settings > Virtual printing > General > [Print server] > Path for saving print jobs. Example: `\\fileserver01\VpdJobs\sap`
- Settings > Virtual printing > SAP OMS > [Profile] > Submit command. Example: `XOMCMD spsubmit "&P" "&F" "&EG" "&Es" "&ES" "&T" "&J" "&N" "&n" "&EI" "&O" "&C" "[PRINTSERVER_ID]"`

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```
"[SUMIT_PROFILE_ID]" "&Er" "&c"
```

5.4.1.8.1.2 Configuration in SAP

Requirements

The configuration of ***steadyPRINT OMS*** on SAP side requires some preparations:

- Path for File Server for saving print jobs (see VPD - Administration)
- IP address of File Server
- Windows user for File Server login via SMB (Server Message Block)
- Configuration of profile for communication with SAP (see SAP Integration - Configuration in steadyPRINT)
- Deployment of scripts for LOMS submit command by steadyPRINT consultants
- Program for the transfer of scripts to SAP server
- User with respective permissions to perform the SAP side setup within SAP and on file system level
- Contact our steadyPRINT Consultants for setup

Configuration of steadyPRINT OMS in SAP

For the integration of steadyPRINT as OMS in SAP, the configuration steps described below are required.

ROMS

First a configuration for a ROMS (Real Output Management System) has to be set up. The following figure: SAP - Configuration of ROMS shows the required configuration.

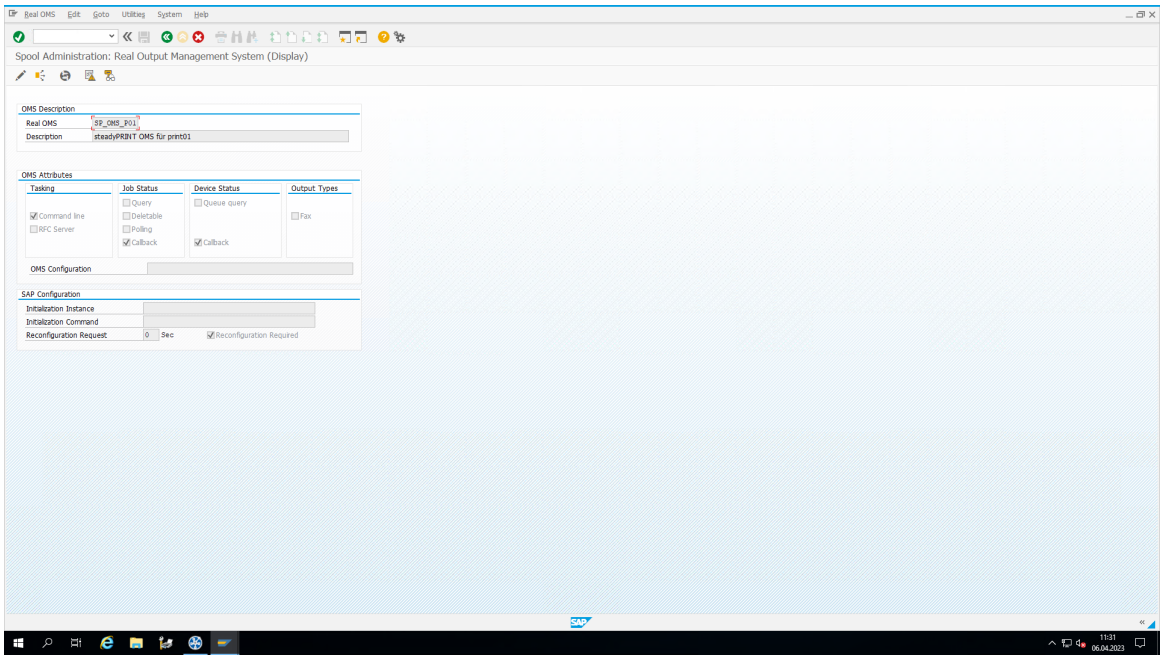

Figure 36: SAP - Configuration of ROMS

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LOMS

In the next step a configuration for a LOMS (Logical Output Management System) must be created. The following figure: SAP - Configuration of LOMS shows the required configuration.

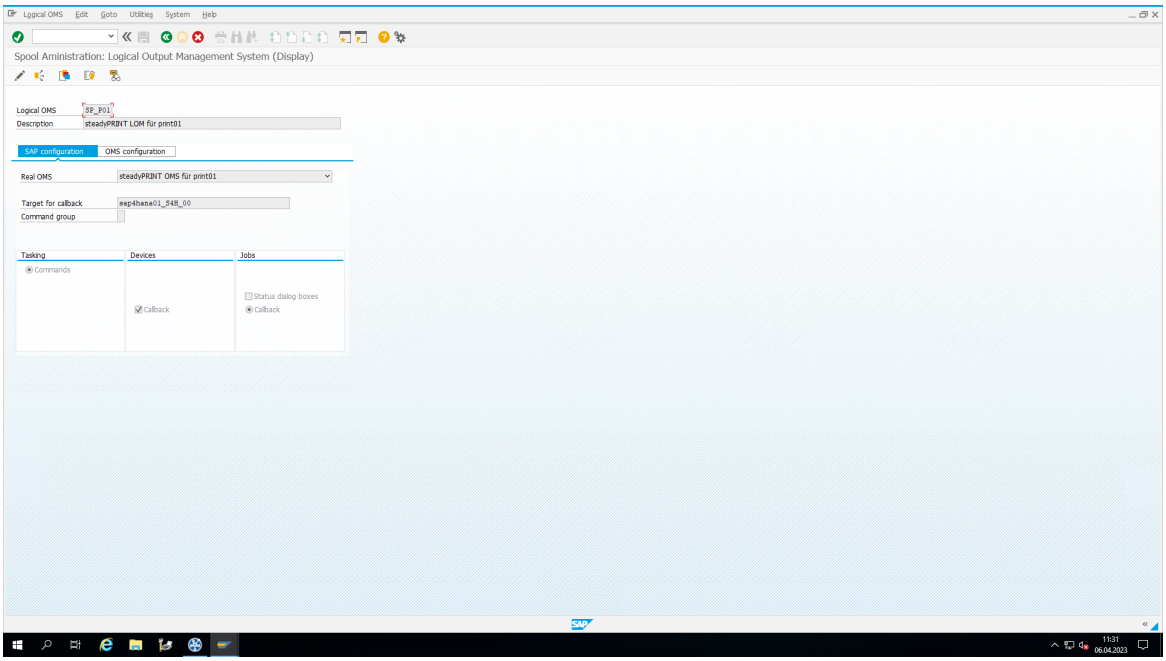

Figure 37: SAP - Configuration of LOMS

Deployment of steadyPRINT scripts on Linux system

This step describes the deployment of scripts provided by **steadyPRINT**. These scripts are used to submit the print jobs and meta information to the ***steadyPRINT OMS***. First create a subfolder below `bin` in the home directory of the user `sap` (`/home/sap/bin/sP`) and assign rights as specified in figure: SAP - Creation of subfolders for steadyPRINT scripts.

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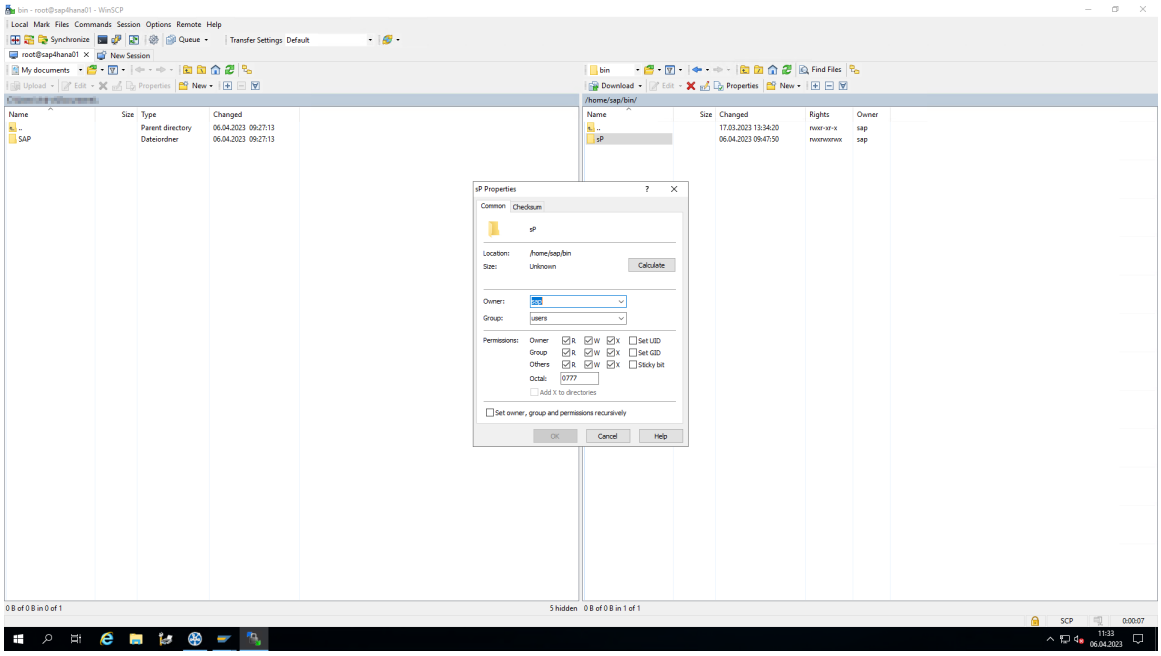

Figure 38: SAP - Creation of subfolders for steadyPRINT scripts

Now copy the files as shown on the left of the following figure SAP - Copying steadyPRINT scripts from a Windows computer to the SAP system. Then assign the outlined rights for the files marked on the right by using e.g. WinSCP as a tool.

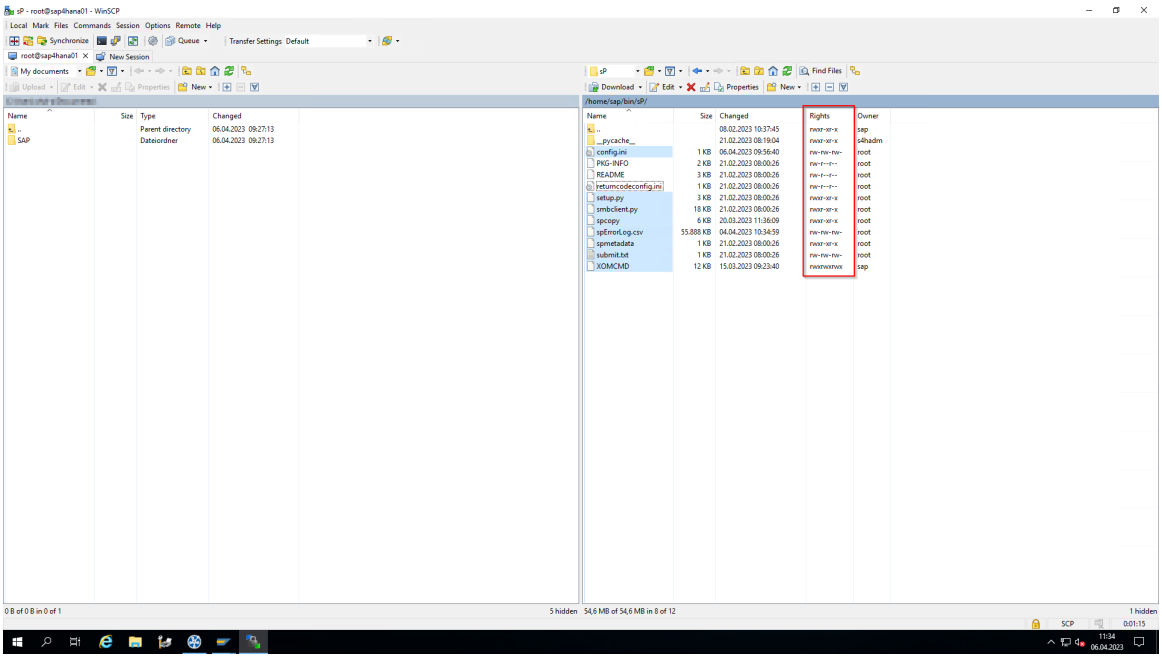

Figure 39: SAP - Copying steadyPRINT scripts

Adjustment of line ends for steadyPRINT scripts

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When transferring the ***steadyPRINT*** scripts to the Linux system, it may happen that the line ends are modified. This needs to be corrected as described below:

Files created under Windows use carriage return (`\r`) and line feed (`\n`) for line ends. However, files under Unix/Linux are exclusively using line feed (`\n`).
Therefore, when transferring a file from one system to another, make sure to convert the files afterwards. There are different ways to perform the conversion. The following explanation is based on the command `dos2unix`.

Install the tool by running the following command on the Linux system:
```
sudo apt install dos2unix
```

Note: If you are using a different package management for installation, adjust the command mentioned above accordingly.

Now you can download a file created under Windows to your Linux system and convert it with the command `dos2unix`:
```
dos2unix [File name]
```

Run the command `dos2unix` to convert the following files:
- spcopy
- spmetadata
- XOMCMD

Adjustment of the config.ini

For the communication to the VPD Share, it is necessary to specify its address as well as a Windows user with appropriate permissions.

The adjustment of the config.ini requires the following values (see figure: SAP - Store login information for VPD Share in configl.ini):

- serverip: IP address of file servers from the steadyPRINT-side VPD configuration (Settings > Virtual printing > General > [print server] > Path for storing print jobs)
- vpdprintjobpath: Complete path of the storage location for print jobs from the steadyPRINT side VPD configuration (Settings > Virtual printing > General > [print server] > Path for storing print jobs)
- username: Windows domain user for login to share
- userpassword: Password of Windows domain user for lgoin to share
- userdomain: Domain of Windows domain user for login to share

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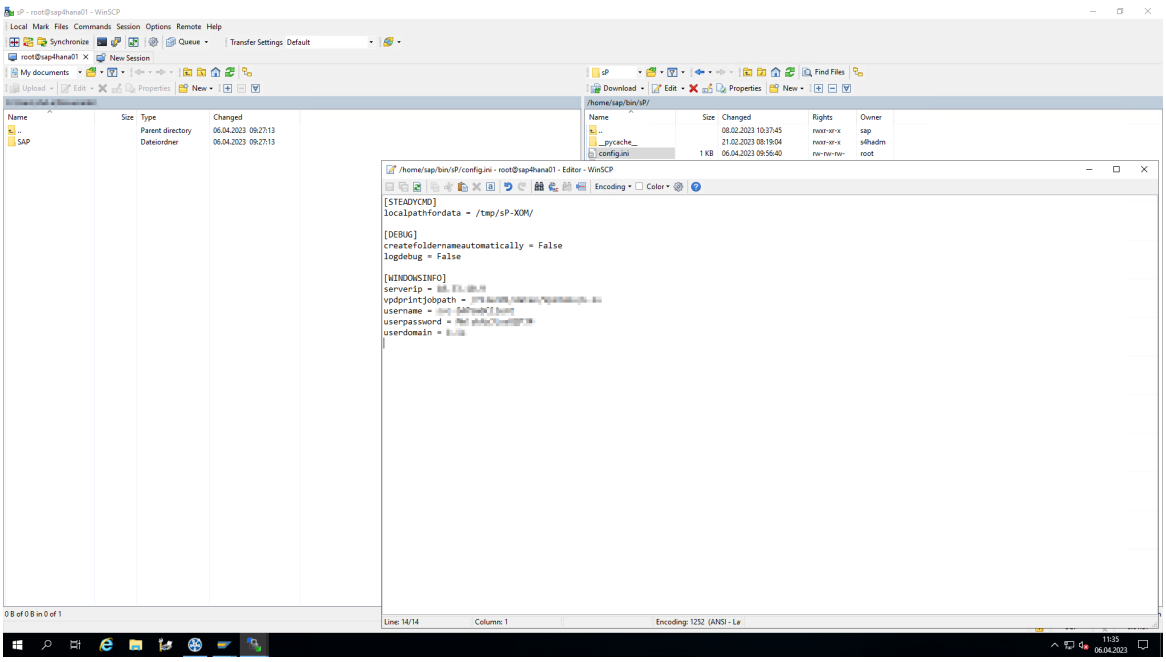

Figure 40: SAP - Store login information for VPD Share in configI.ini

Adjustment command for LOMS for Linux operating system

For the defined LOMS, the adjustment of the commands based on the above configuration is now required. For this purpose open the Linux commands of the LOMS created under LOMS and follow the specifications below.

The following information is to be specified (see figure: SAP - Adjust command for LOMS):

- Command path: `/home/sap/bin/sP/` (Important: Do not forget the `/` at the end!)
- OMS command Submit: `XOMCMD spsubmit "&P" "&F" "&EG" "&Es" "&ES" "&T" "&J" "&N" "&n" "&EI" "&O" "&C" "141" "123456789" "&Er" "&c"` (Note: This should be copied from the SAP configuration profile out of the ***steadyPRINT Center*** (see Configuration of profile for communication with SAP).

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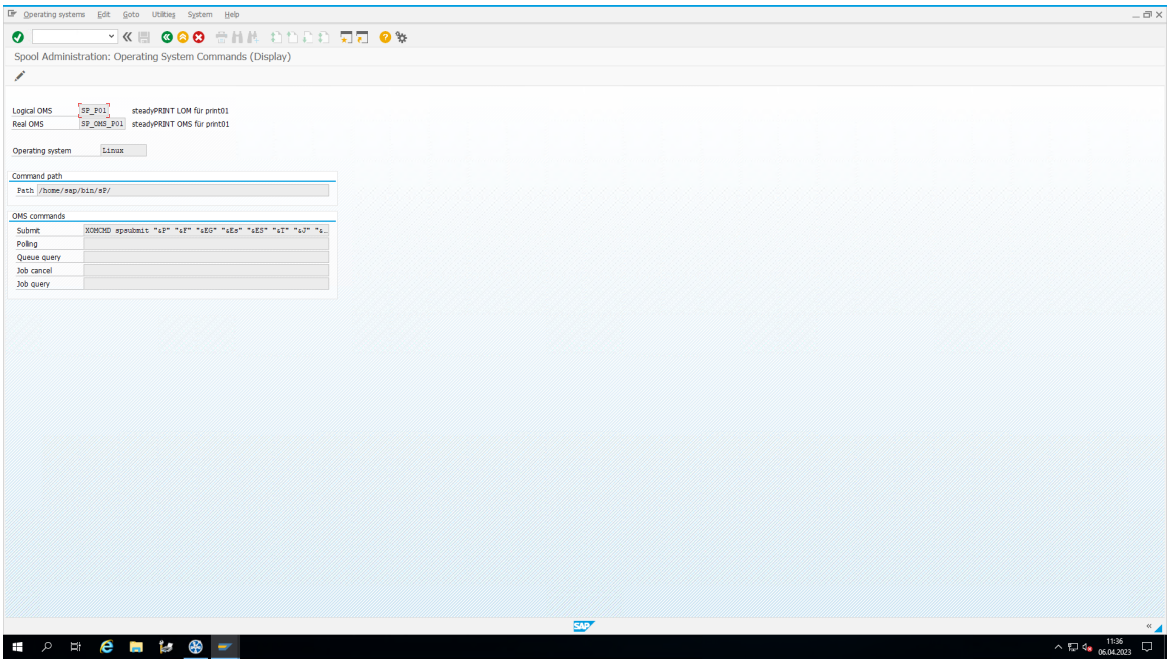

Figure 41: SAP - Adjust command for LOMS

Definition of output device

The last configuration step is the configuration of an output device (printer) used by the ***steadyPRINT OMS***. For this purpose, a new output device with the following settings is to be created via the SAP spool administration.

The following values have to be assigned to the device attributes (see figure: SAP - Assign device attributes):

- Output device: Name of the print spooler on the Windows print server specified above (see Configuration of profile for communication with SAP).
- Gerätetyp: `PDF1: PDF ISO Latin-1 4.6D+`
- Device class: `Normal printer`

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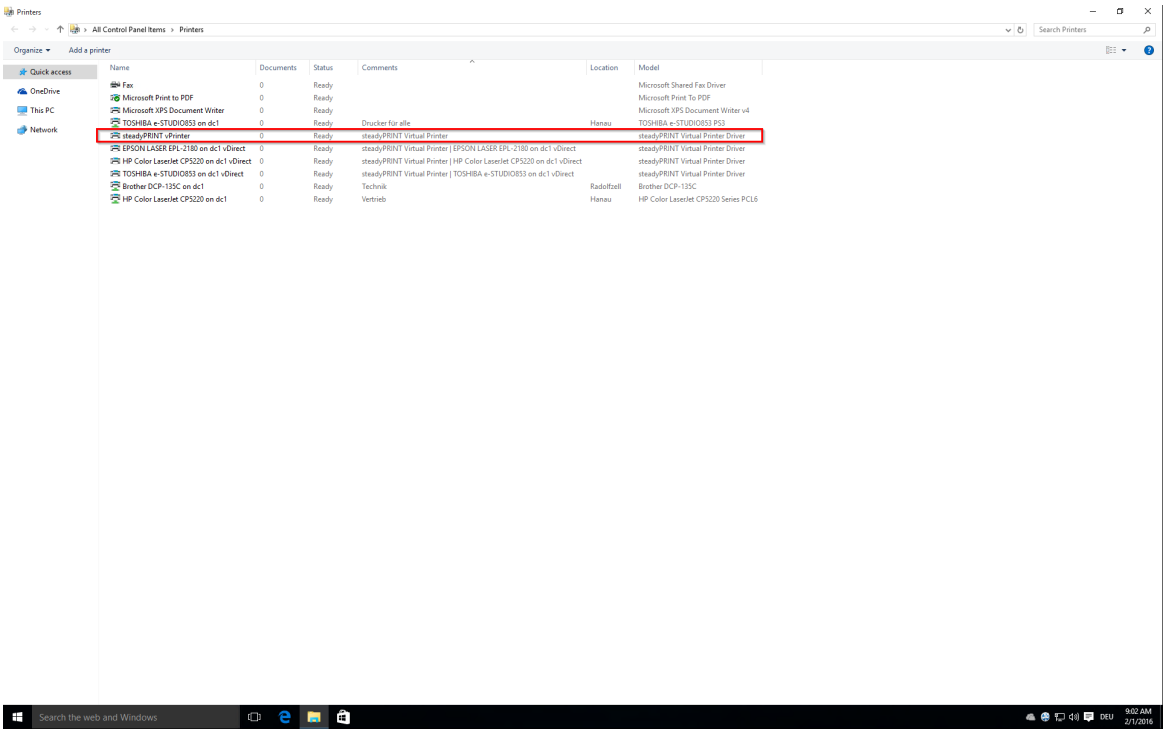

Figure 42: SAP - Assign device attributes

The following values are to be assigned to the hotspot access (see figure: SAP - Define hotspot access):

- Access method to host spool: E: External Output Management System
- Host printer: Name of the print spooler on the specified Windows print server under Configuration of profile for communication with SAP.
- Logical OMS: LOMS defined above.

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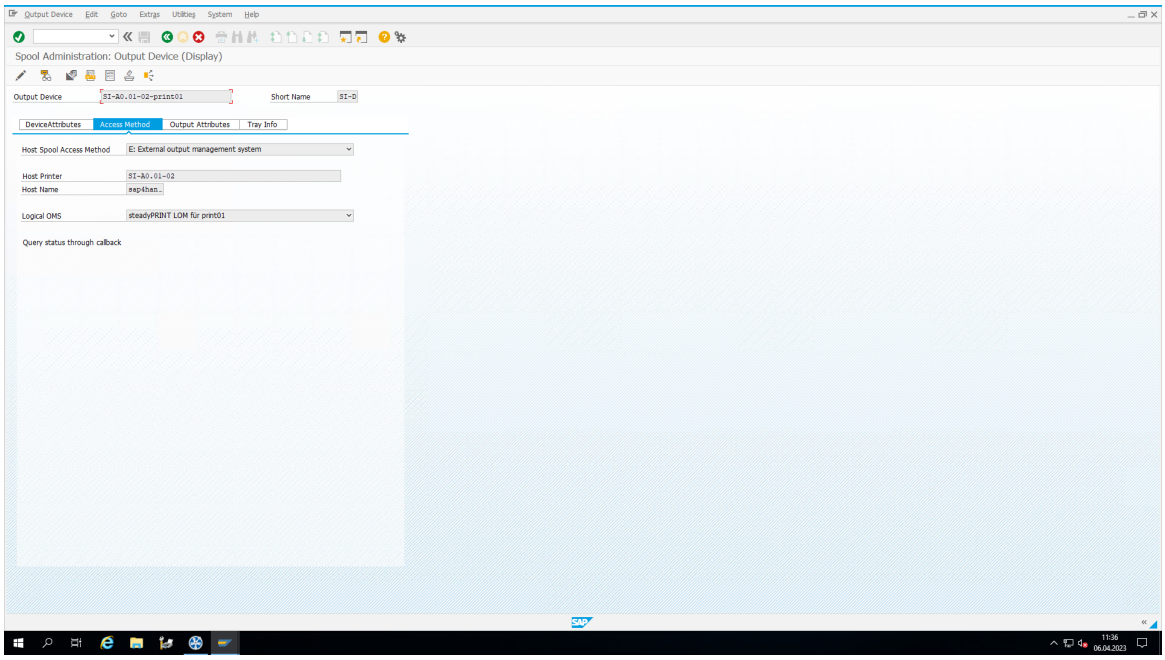

Figure 43: SAP - Define hostspool access

Completion

The SAP side configuration is now completed and should enable the communication with the ***steadyPRINT OMS***.

5.4.1.8.2 Troubleshooting

This chapter deals with the topic Troubleshooting for resolving configuration problems and errors at runtime.

The SAP system calls the **steadyPRINT** script in order to be processed in SAP via the defined submit command. The script gathers some information to provide them to the ***steadyPRINT OMS***. Then the print job and all related meta information are transferred to the file server. From there the Windows-side ***steadyPRINT Server service*** takes over the print job to be further processed and finally forwards it to a print queue defined on the Windows print server.

The following table shows all error patterns as well as the appropriate checks and solutions:

Status/Error message	Problem	Check and solution
Job remains in status „in progress“	The print job including meta information was not transferred correctly to the file server.	• Print job files not available/ complete in the specified directory on the file server. The following files must exist in a subfolder (`JobID`): o `[File name].[SystemID]` o `steadyprint.log` o `XOMCMD_SAPmetadata_[JobID` • Make sure that the submit command corresponds to the

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		steadyPRINT Center SAP profile and is correct. • Check the log entries from `/home/sap/bin/sP/spErrorLog.csv`. • Check the correctness of the entries in `/home/sap/bin/sP/config.ini`. • Check whether the line ends for the **steadyPRINT** scripts are correct. If they are incorrect, the scripts cannot be run. The conversion procedure with the command `dos2unix` was explained in the instructions for setting up the scripts.
Job remains in status „in progress“	The print job including meta information was transferred correctly to the file server but could not be processed.	• Has the ***steadyPRINT Server service*** been started on the stored Windows print server? • Is the ***steadyPRINT Server service*** running correctly on the stored Windows print server? • Ensure the installation of the ***steadyPRINT Server service*** on the stored Windows print server. • Restart the ***steadyPRINT Server service*** on the stored Windows print server. • Check the **steadyPRINT** logs on the Windows print server (see https://www.steadyprint.com/knowledge-base_en/20142/). Tip: Provide redundant servers for a **steadyPRINT** reliability including the Windows print servers (see Reliability).
Error (copyToWindows in spErrorLog.csv)	The print job could not be transferred to the file server.	• Check the log entries from `/home/sap/bin/sP/spErrorLog.csv`. • Check the specified file server in `/home/sap/bin/sP/config.ini`.
Error (copyToWindows; NT_STATUS_HOST_UNREACHABLE in spErrorLog.csv)	The print job could not be transferred to the file server.	• Check the log entries from `/home/sap/bin/sP/spErrorLog.csv`. • Check the specification for serverip and vpdprintjobpath in `/home/sap/bin/sP/`

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		`config.ini`.
Error (copyToWindows; NT_STATUS_LOGON_FAILURE in sPErrorLog.csv)	The print job could not be transferred to the file server.	• Check the log entries from `/home/sap/bin/sP/spErrorLog.csv`. • Check the specifications for `userdomain`, `userpassword` and `userdomain` for login to the file server in `/home/sap/bin/sP/config.ini`.
Error ([…] Open printer \\[PRINTSERVER] \[PRINTERNAME] with access mask […])	The print job was terminated with an error.	The specified host printer does not exist on the Windows print server.
Error (The fallback user " was not found in the Active Directory.)	Der Druckauftrag wurde mit Fehler beendet	• The registered SAP user could not be found in ***steadyPRINT.*** In order to be found, the specified user must have a valid printer assignment or started the ***steadyPRINT Agent*** at least once. • A fallback print job owner SAP configuration file was not defined. The fallback is to ensure that the print job can in any case be assigned to a valid user. For this, the specified user must have a valid printer assignment or started the ***steadyPRINT Agent*** at least once. Note: In case the user cannot be assigned during printing and no valid fallback exists, the print job will be cancelled.
Error with login (No RFC authorization for function module RFCPING.)	The specified user to RFC communication is not able to log in.	Check whether the specified user is authorized to perform RFC functions.
Complete (Successfully printed)	The print job has been successfully processed by ***steadyPRINT OMS*** and sent to the Windows print spooler and printed without error.	

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5.4.2 vName Assignment View

You can have all ***vName*** assignments of your environment displayed via the ribbon. (See chapter Overview Assignment Types / see chapter VPD vName)

To do so, click the button **vName assignments** (see figure steadyPRINT Center: Open VPD vName assignment view).

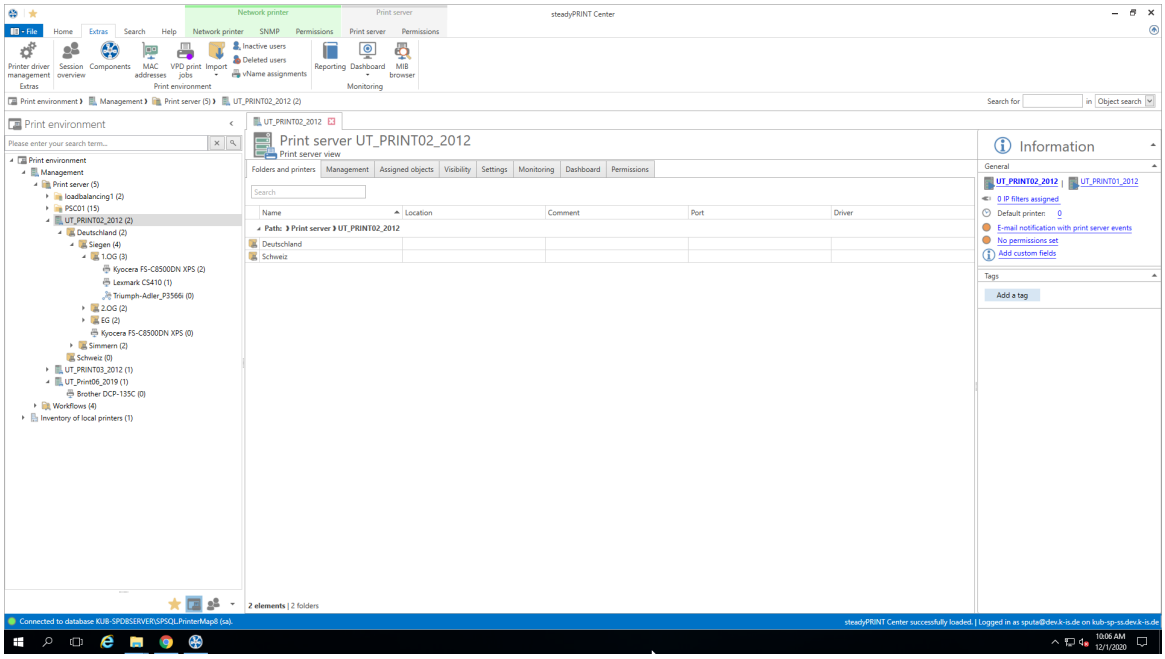

Figure 44: steadyPRINT Center: Open VPD vName assignment view

A list of all ***vName*** printer assignments in your print environment is displayed (see figure steadyPRINT Center: VPD vName assignment view).

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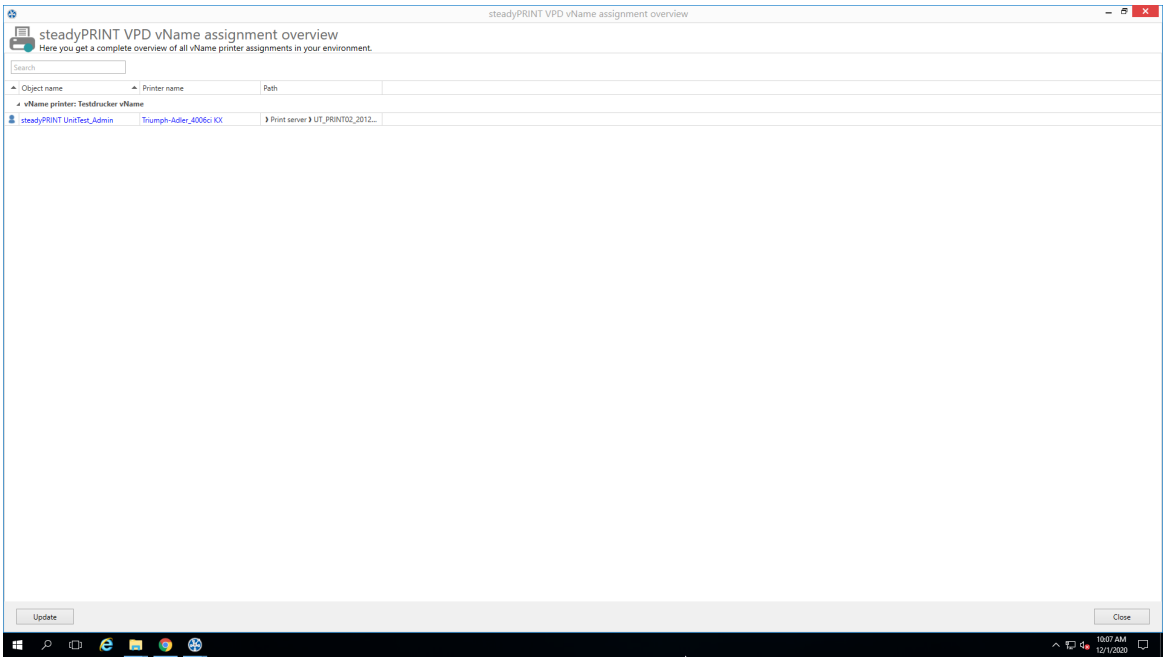

Figure 45: steadyPRINT Center: VPD vName assignment view

5.4.3 User

This chapter describes the use of ***steadyPRINT VPD*** from the user's perspective.

Printing with steadyPRINT vPrinter

When printing a document, the ***steadyPRINT vPrinter*** makes slight modifications from the user's point of view. The user selects the printer in his/her program and starts the printing process. Subsequently, **steadyPRINT** processes the print job and displays all printers provided to the current user as well as the login context in a separate interface. The user now selects how the printing process should be proceeded and which target printer is to be used (see figure steadyPRINT vPrinter - Printers provided to current user).

Note	*Favorite printer*
	Each user can set the available printers as favorites. If at least one printer is marked as favorite, the ***steadyPRINT vPrinter*** interface is started in the user-defined favorite view accelerating the selection of the required printer. Please note that due to a configured location filtering the respective favorite printer might not always be available and thus not be displayed.

Note	*View "My Printers"*
	The view My Printers displays all printers provided for the current login context. Moreover, it includes the local printer on the computer.

Note	*View "All Printers"*
	The view All Printers displays all ***vPrinter*** printer assignments for the current login

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context. If activated, it may also contain printers that are hidden via IP filters and that have therefore not been connected. In order to display those printers, the administrator must activate the option "Activate connection of printers to inaccessible IP areas" via an Agent profile.

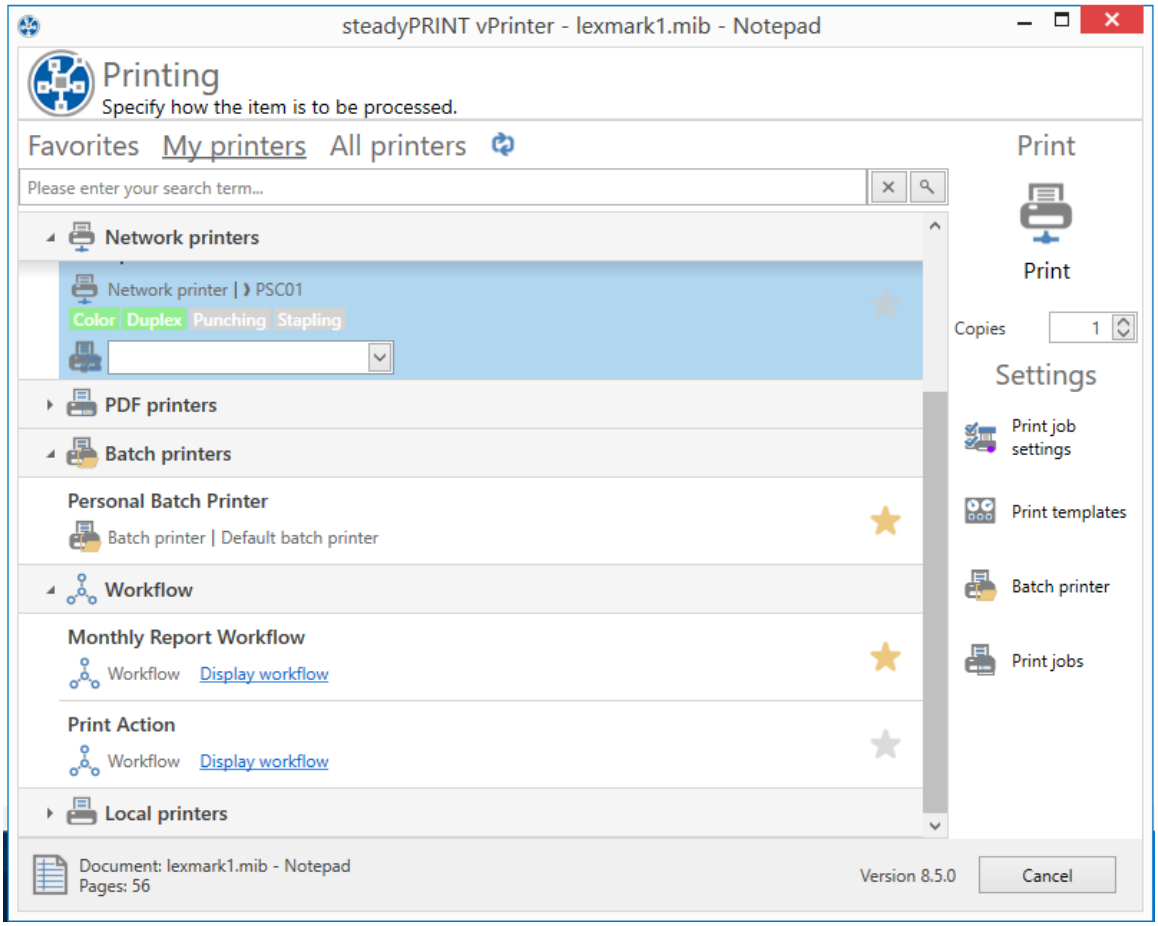

Figure 46: steadyPRINT vPrinter - Printers provided to current user

By default, the user has several printing options available.

Save and Open as PDF

Converts the print job into a PDF file and subsequently enables the storage in a desired location as well as the immediate opening of the created PDF document. to a desired.

Send PDF via E-mail

Converts the print job into a PDF file and subsequently enables that the created PDF document can be sent via e-mail. For this purpose, **steadyPRINT** opens the local e-mail program and attaches the PDF file.

Batch Printer

The batch printer enables the user to store print jobs to a batch without printing it immediately. All batch print jobs can then be reviewed via the print job view and finally be printed. It is optionally possible for the user to create further individual batch printers.

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Network Printer
The user receives his virtual network printers via VPD assignments in **steadyPRINT**. A printing process immediately sends the document to the selected printer.

Settings in steadyPRINT VPD

Settings for printing the document can directly be made in the respective program via the ***steadyPRINT VPD*** printer settings. Further settings options which vary depending on the selected printer type are available via the print dialog of the ***steadyPRINT VPD***. Please see the following list with options and descriptions:

Default settings
Displays the printer settings of the vPrinter for the selected network printer.

Manufacturer settings
The user can make print job settings directly in the printer model manufacturer's native printer driver.

Note	*Temporary Installation of the Native Printer Driver*
	In order for the print job settings to be made in the native printer driver, it is temporarily installed on the user's session machine. The driver will be uninstalled automatically after closing the window.

Manage batch printers
In this view, the user has the option to create and manage further batch printers.

Print Jobs
Opens the view for accessing print jobs that have already been sent. The opening can also be done directly via the ***steadyPRINT Agent***.

Each print job has printer settings. In case a network printer has been selected, its stored printer settings from the print templates are used.

Note	*Automatic Selection of Printer Settings*
	The printer settings of the selected printer are selected depending on the stored print templates. If a default template is specified for the printer, it will be used. Otherwise the first template stored. The user is able to modify the printer settings for this job and the selected printer via the option "default settings".

Review Print Jobs

This view has two tabs. One for reviewing all batch print job and another one for the display of print jobs that have been sent.

Batch Print Jobs
Displays all documents which have been stored in batches. By default, ***steadyPRINT VPD*** filters all batch print jobs that have already been printed. The filter can be reset and all batch print jobs can thus be displayed via the **X** in the lower part.

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Print Jobs
Displays all documents already printed and currently being printed on network printers.

Options

Please see the following list with all possible functions within the print job display.

Batch Print (only available in view for batch print jobs)
Prints all selected documents of the respective batches. For sending the print jobs, the ***steadyPRINT VPD*** print dialog opens and the target printer can be selected.

Repeat Print (only available in view for print jobs)
Repeats the printing of all selected print jobs. For sending the print jobs, the ***steadyPRINT VPD*** print dialog opens and the target printer can be selected.

Print Preview
Shows the print preview for the selected print job in a separate window. If there are various documents in the print job, the first one will be opened in the preview.

Manage Batch Printers
In this view the user can create and manage further batch printers.

Update
Updates the selected view.

5.4.4 vFlow

The ***steadyPRINT vFlow*** is a document processing and forwarding tool. The document is printed via a print job from an application to a VPD printer queue. The ***vFlow*** processes the document and forwards it according to the administrator's and also the user's specifications.

A workflow consists of actions and a document. The actions are compiled in the ***Workflow Designer***. A print job sends the document into the workflow and the actions are executed.

5.4.4.1 Actions

The workflow actions are stored in categories:

- Logic: Actions for controlling the workflow process.
- Adjustment: Actions that change the document.
- Output: Actions with a document output.
- Support: Special actions that should only be executed after consultation of the ***steadyPRINT Support***, if possible.
- Templates: Compiled actions for common applications (e.g. reliable printing) and referencing of individually built workflows.

Logic

The actions in this category control which actions are executed when on the document.

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Action	Function
Conditional performance of actions:	Controls the workflow process on the basis of conditions.
Selection:	Provides the user with choices from which he/she has to choose one.
Display message window:	Displays a message window during the execution of the workflow.
Text search:	Browses the document for a certain search term.
Terminate workflow:	Terminates the workflow without executing any further actions.
Sub workflow:	Creates a copy of the document and starts a separate workflow.
Page selection:	Select the pages that will be affected by the following indented actions.

Adjustments

These actions change the document and adjust it.

Permissions:	Protect the opening or the settings of the document by using a password.
Watermark:	Provide the document with a watermark by entering a free text. This text can then be displayed at different positions of the pages. In addition, select an adequate font size and color.
Background image:	Add a background or foreground image to the pages of the document. The image can be a PDF or PNG file.
Merge documents:	Merge individual pages into one document.
Archive document format:	Converts the document into one of the following archive formats:

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	• PDF/A-1A: The document supports the specification PDF/A-1a (accessible) and contains tags which can be used by assistive technologies. • PDF/A-1B: The document supports the specification PDF/A-1b (ISO 19005-1). • PDF/A-2A: The documents supports the specification PDF/A-2a (accessible) and contains tags which can be used by assistive technologies. • PDF/A-2B: The document supports the specification PDF/A-2b (ISO 19005-2:2011). • PDF/A-3A: The documents supports the specification PDF/A-3a (accessible) and contains tags which can be used by assistive technologies. • PDF/A-3B: The document supports the specification PDF/A-3b (ISO 19005-3:2012).

Output

Output actions create an output of a document. Possible outputs include saving the document to a file system or even sending it by e-mail.

A workflow without an output action discards the print job and its document.

Saving to the file system:	Save the document to the file system and directly open the respective folder or file with the default program.
Sending by e-mail:	Send the document as an e-mail attachment.
Printing:	Print the document to a printer.
SecurePrint:	Sends the document to the SecurePrinter
Saving to batch:	Saves the document to the batch.
Saving to cloud:	Enable the user to have the document stored to the cloud.

Printing

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Printing actions are only intended to print the document.

vPrinter:	Opens the ***vPrinter*** for further actions.
vName:	Print the document without assignment and without local availability of the ***vName printer*** with a template.
Virtual printing:	Print the document without assignment and without local availability of the printer with a template.
Default printer:	Print to the current default printer of the user.
User-defined printing:	The user can freely choose the printer.

Important	***Only Output Actions Create Documents***
	Only the output actions create documents from the print job. A workflow without an output actions does not create a document. The print job from the program is discarded after the workflow is executed.

Templates

Templates are a set of pre-defined actions representing frequently occurring applicatons and individually built workflows that can be used again.

Reliable printing:	A target printer cannot be used, a replacement printer is to be used automatically.
Printing or sending by e-mail:	If the text search is successful, the user should be given the choice of whether to print the document or send it by e-mail. If the search was unsuccessful, the document should only be printed.
Workflow references:	Use a workflow that has already been created again in this workflow. This way, you can use workflows with certain settings again and again and adjustments have to be made only at one place.

5.4.4.2 Workflow Designer

The workflow and the respective actions are compiled and configured in the workflow designer (see figure The main window of the Workflow Designer).

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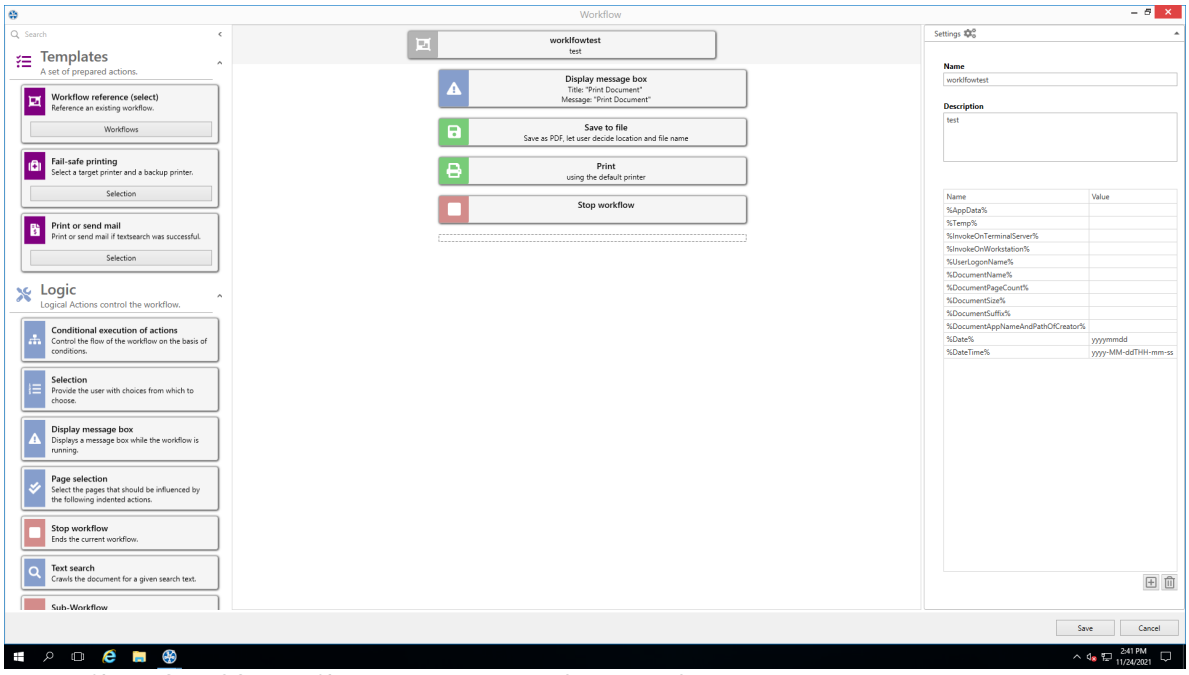

Figure <%HMFIGURECOUNTER%: The main window of the Workflow Designer

The designer's view is divided into three main areas:

- Action bar
- Workflow design
- Workflow settings

The left area offers the selection of all possible actions sorted by categories. A search field In the upper area of the selection list can be used to search and filter for action names. Actions are dragged & dropped from this area into the center area, which is the actual workflow.

In the center area the workflow process is defined. The document enters the first action as seen from the top and runs through the workflow towards the bottom. Indented areas are either passed through completely or not at all.

On the right are the general workflow settings with which the workflow is saved. In this process, runtime variables can be created and configured as environment variables in the workflow design on the clients. Pre-defined variables cannot be edited.

5.4.4.2.1 Configuration of Actions

Many actions must be configured for use in the workflow. This happens after having dragged & dropped an action into the workflow. For this purpose, the action in the workflow must be clicked in order to open and offer the configuration options.

Conditional Execution of Actions

The conditional execution of actions is used to determine whether certain actions in the workflow should be performed.

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A condition is a phrase that results in "True" or "False" during the execution of the workflow. Even several conditions can be linked with the logical operators "And" and "Or". „And“-linked conditions have priority over "or"-linked conditions.

Each conditions includes four or 5 elements:

1. Type of condition: Documents, printers, Windows
2. Which value is to be examined.
3. Operator to examine the values
4. Comparable value
5. If there is a follow-up condition, there is still the logical operator for this follow-up condition at the end.

There are three sources for which conditions can be queried.

- Printer
- Document
- Windows

In the case of the printer, it is only possible to select a printer whose status is to be queried. For all other types, multiple sources for the query are possible.

Document Conditions

Name	Name of the document that will be printed. Is specified by the application from which the printing is done.
Size	Size of the document in bytes.
Page Count	Number of pages in the document.
Suffix	Document name suffix.
App Name	Path and name of the application.

Windows Conditions

AppData, Temp, User Logon Name	Query the respective environment variable.
Terminal server, Workstation	Query of the license model of the Microsoft Operating System.

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IP Adress	Selection of an IP address from the IP address list stored in the Center whether the client is listed.

Important	***If the Condition does not Apply (Else Condition)***
	If the condition does not apply or the conditions do not apply, an alternative branch can be connected. In this branch called "Else" actions can be stored that are to be executed if the condition does not apply.

Selection

During printing the user is displayed a selection window. During the display, printing is stopped.

The window displays title and message. Each case has its own description.

Any number of cases can be given for selection, but at least two.

Display Message Window

Shows the user a message window with title and message. The user has to confirm the message for the workflow to be continued.

Text Search

The text search is a special case of the conditional action. The text search searches for words in the document on pages to be specified. Optionally, the search can be switched with regard to upper and lower case.

Page Selection

The page selection selects pages on which subordinate actions are to be performed. The specification of the page selection is based on the same form that is used in the printer settings dialog for specifying page areas (e.g. 1-* for all pages).

Terminate Workflow

Terminates the workflow, no further actions are performed.

Sub-Workflow

The sub workflow is a special action. It starts its own workflow, which continues working independently with a copy of the document. From this point on, both workflows run in parallel. The action „Terminate workflow“ in the sub workflow does not terminate the other workflow.

Permissions

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The document can be protected from unauthorized access with password protection. Access includes opening and modifying/using the document. In doing so, a password can be specified by the administrator. As an alternative, the user can be asked to specify the password protection as soon as the document enters the workflow. In this case, the user is displayed a dialog.

Watermark

This action draws a text centered on all (active) pages as a watermark.

Background Image

This action places a background image on all (active) pages. The image file must be in PDF format. The image must support transparency for those areas where the text must be visible.
The path to the image file must be available during workflow printing.

Merging Documents

Here, the ***PDF merger*** opens for the user to merge documents.

Archive Document Format

The document is converted into an archive format.

Saving to File System

The document is saved in the file system as a PDF file. It can be specified whether the user is displayed a file path selection dialog or whether the administrator pre-defines it. A corresponding configuration is also possible for the file name.

E-Mail Dispatch

The document will be sent as an e-mail attachment. For this purpose, the locally installed e-mail client opens during the workflow is printed. The administrator can already provide the e-mail details to the e-mail client in the workflow (recipient list, cc, bcc, subject etc.).

Printing (Obsolete)

The document is printed to a printer. The administrator has the option to provide the following printers:

- Default printer of the user
- Printer selection by the user
- vPrinter
- VPD printer optionally with stored template (=printing settings)
- vName printer.

vPrinter

Opens the ***vPrinter*** for further actions.

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Important	*vPrinter Actions Enabled*
	When using the ***vPrinter*** in the workflow, the ***vPrinter*** actions must be made available. They are enabled by default.

vName

Print the document without assignment and without local availability of the ***vName printer*** by using templates.

Virtual printing

Print the document without assignment and without local availability of the printer by using templates.

Select a printer from **steadyPRINT** with a suitable template to which the user is supposed to print.

Default printer

Print to the current default printer of the user.

User-defined printer

The user can freely choose the printer.

Printing

The document is printed to a printer. Here, the administrator has options to configure specific printers for the user.

- Default printer of the user
- User may select printer himself
- To vPrinter
- To a VPD printer, optional with stored template (=print settings)
- Or to a vName printer.

SecurePrint

This action sends the document directly to the ***SecurePrinter***. There are not further setting options here.

Store to Batch

The document is stored to a batch. In doing so, the user's default batch can be used, or the user selects an available batch.

Store to Cloud

The document is stored to the configured Cloud at the desired location. In order to set up the necessary cloud provider, please switch to the setting "vFlow Cloud Provider" and configure it according to the following articles listed in our Knowledge Base :

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- vFlow - Installation of Cloud Service Provider Citrix ShareFile
- vFlow - Installation of Cloud Service Provider Microsoft OneDrive

5.4.4.3 Agent Workflow

In the ***steadyPRINT Agent*** the workflow administration can be accessed via the **button workflows** (see figure Agent - Tile for PDF Merger). In this window all assigned workflows are displayed.

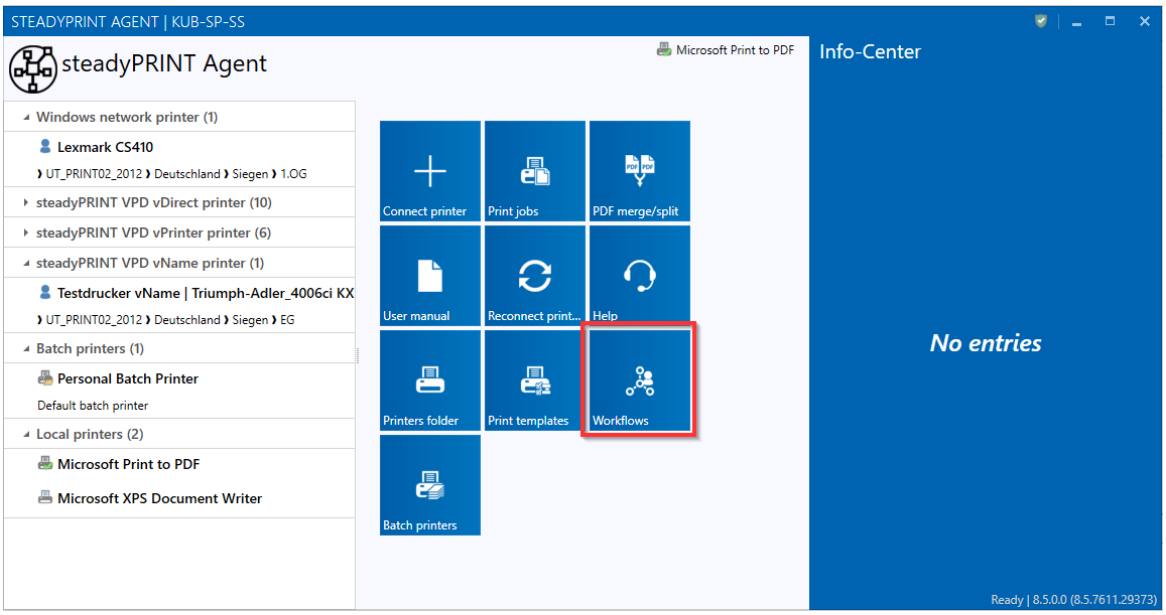

Figure 47: Agent - Tile for PDF Merger

Additionally, new workflows, so-called Private Workflows, can be created with the Workflow Designer. These are exclusively available to the current user.

The creator can set these workflows to "Share" mode. If a workflow has this mode, the Private Workflow can be converted into a Private Shared Workflow and assigned to other users.

5.4.4.4 Workflow behind Printer

If a workflow behind a printer is referenced, only this workflow will be executed when printing to the assignment of the printer.

Installation

In order to reference a workflow behind a printer, a workflow has to be created. This workflow can then be assigned to a printer. This can be done via the **Workflow** tab of the respective printer.

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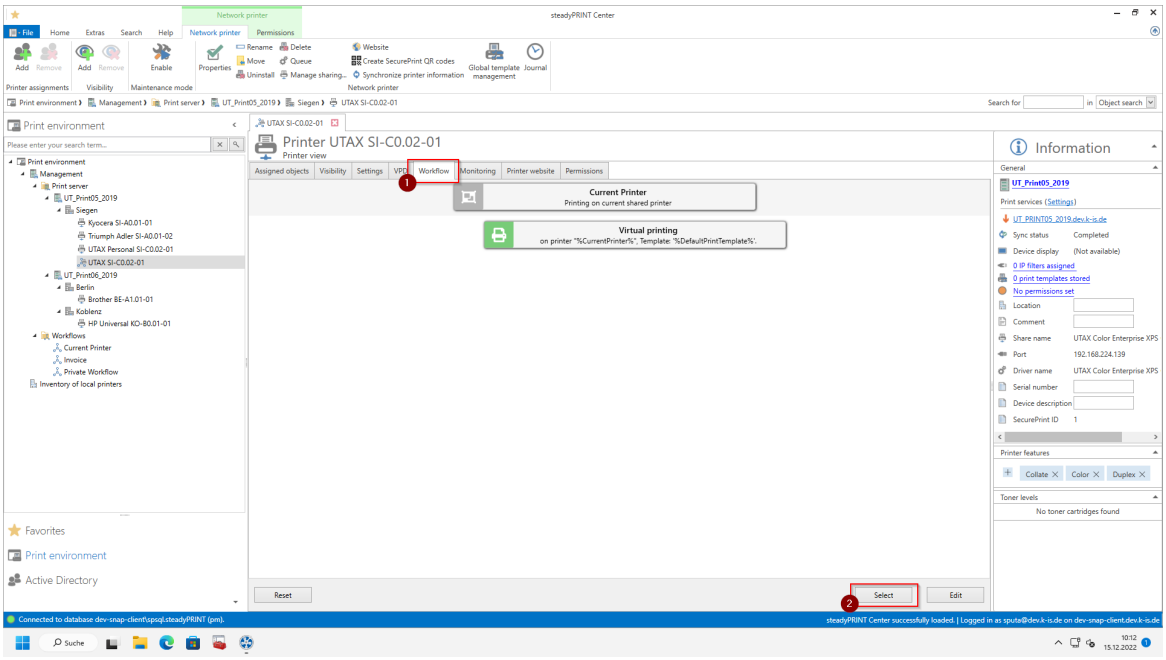

Figure 48: Reference a workflow behind a printer

As an alternative, a workflow can also be assigned to a printer via the **Printer** tab. This tab shows to which printers this workflow is assigned. In addition, you can also assign this workflow to new printers.

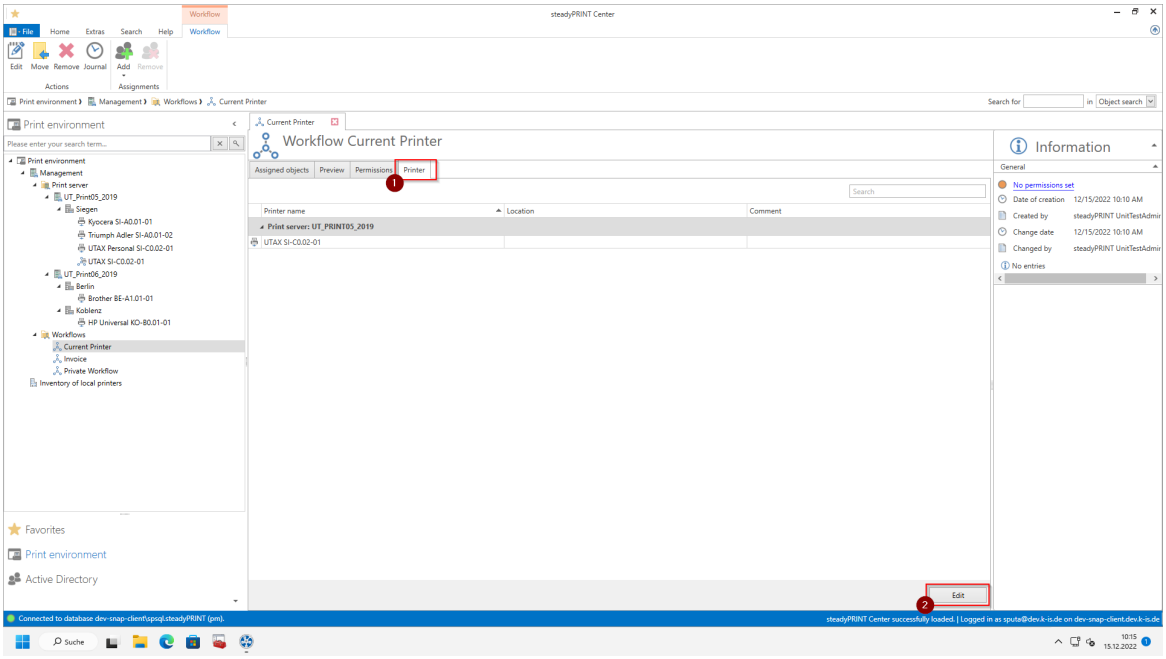

Figure 49: Reference a workflow behind several printers

Printing with the printer in use

In order to use the printer of the workflow, you can use the variable "%CurrentPrinter%".

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This variable can be added to the "printer" column within the action **Virtual Printing**. This way, the printer to which the workflow is assigned is always used. The workflow can thus be referenced behind each printer without having to adjust the action **Virtual Printing**.

Important	*Printing with Variable "%CurrentPrinter%"*
	When printing with the variable "%CurrentPrinter%", the default template is used.

5.4.5 Batch Printing

Each user can individually use one or several batches. For example, create a batch for invoices or collect all the documents you need for a project or an appointment in a batch first.

Store your printouts in a batch if you are on the move and have no physical printer within your reach. As soon as you get back to the office, you will be reminded of open print jobs which can then be printed.

Administration of Batches

In order to configure your batches, click the tile **Batch printers** (see figure Open batch print via the Agent).

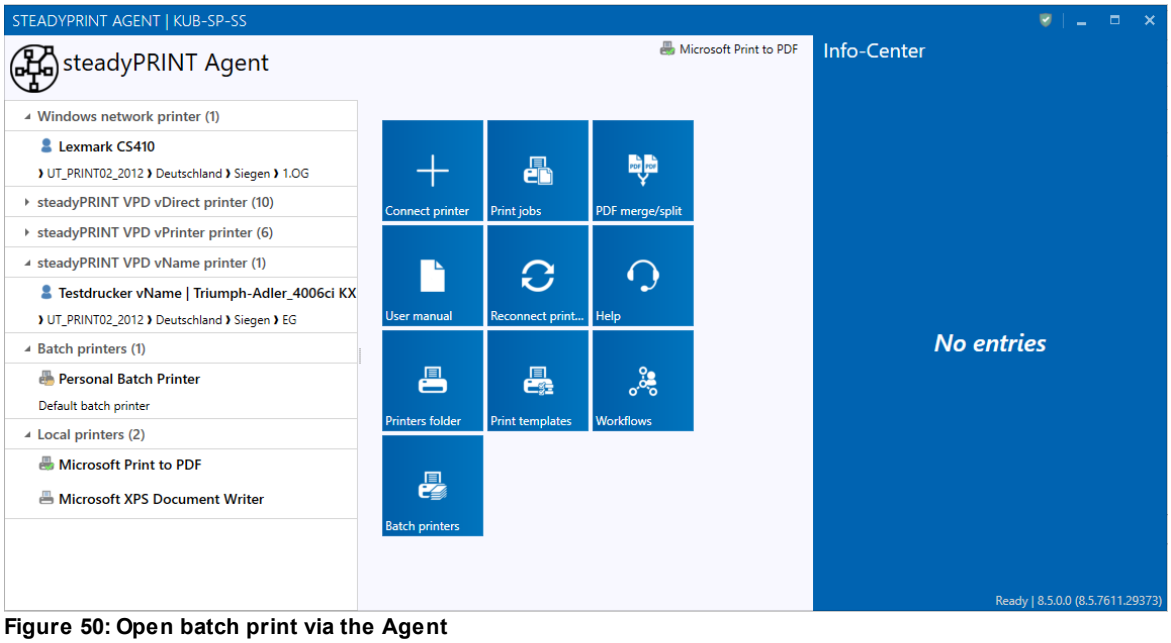

Figure 50: Open batch print via the Agent

Here you get to the view for the print jobs. Under **Manage batch printer** (see figure Manage batch printers) you can add, edit or remove a batch.

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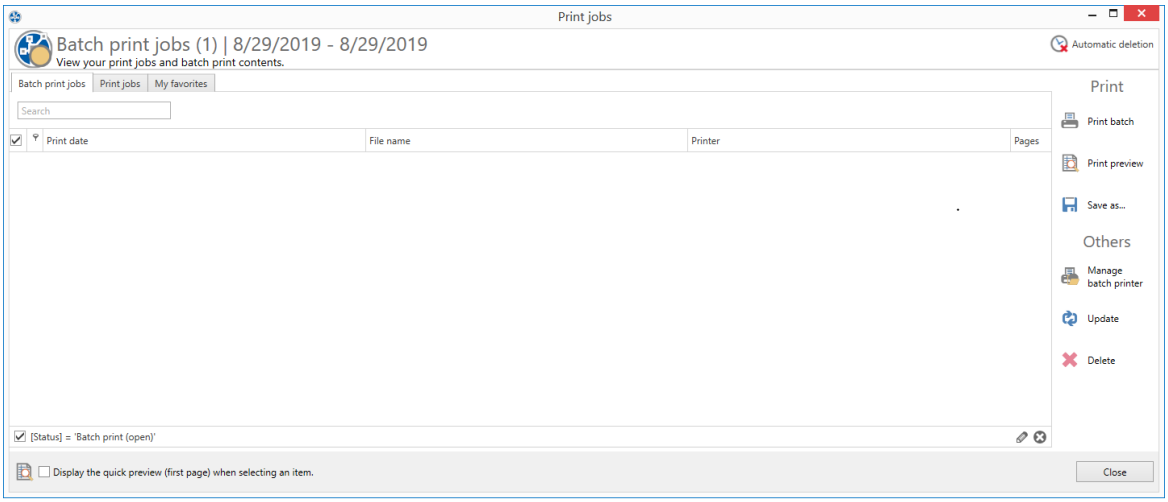

Figure 51: Manage batch printers

Create or delete a batch or edit an existing batch in the view Batch printer (see figure View of individual batch printers).

For creating a batch, enter a new name and optionally a comment in the first line of the grid.
For editing a batch, you can modify the text in a line.
For deleting a batch, click the X button or work via the context menu.
Share a selected batch with other users via the Share button at the bottom left.

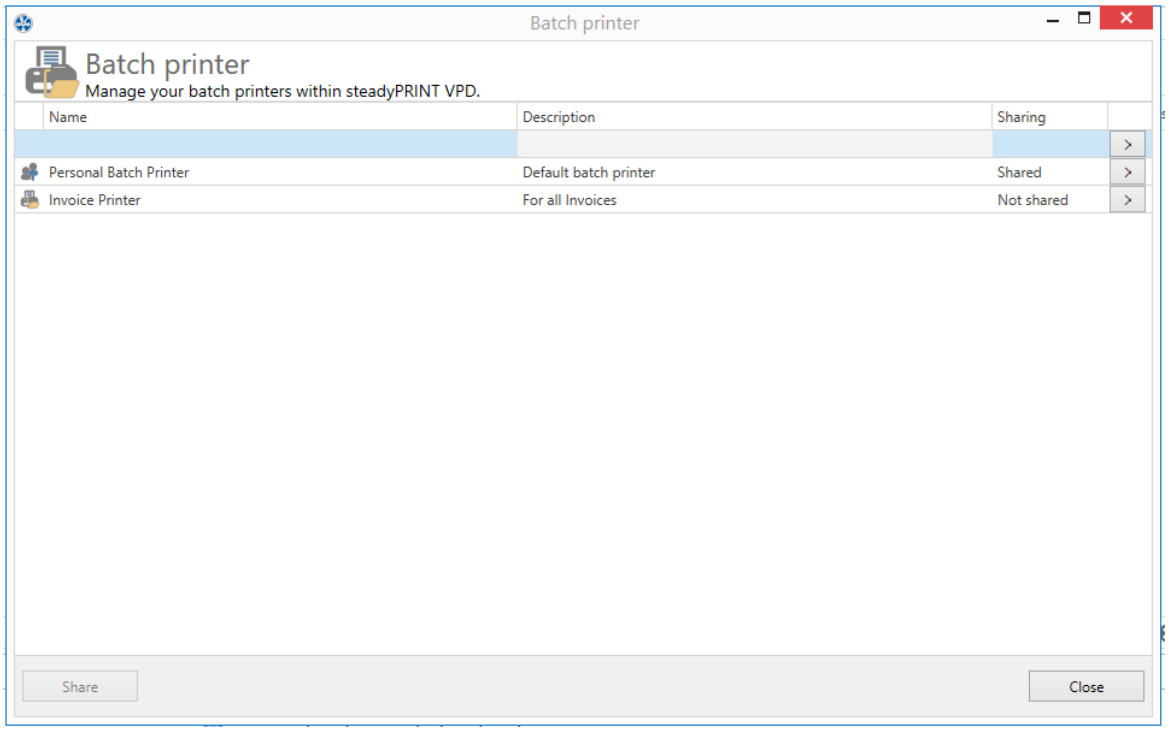

Figure 52: View of individual batch printers

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Use of a Batch

Once a batch is created, you can print documents to this batch (see figure Batch printer in vPrinter). A batch is available via the ***vPrinter*** or the batch action in the workflow.

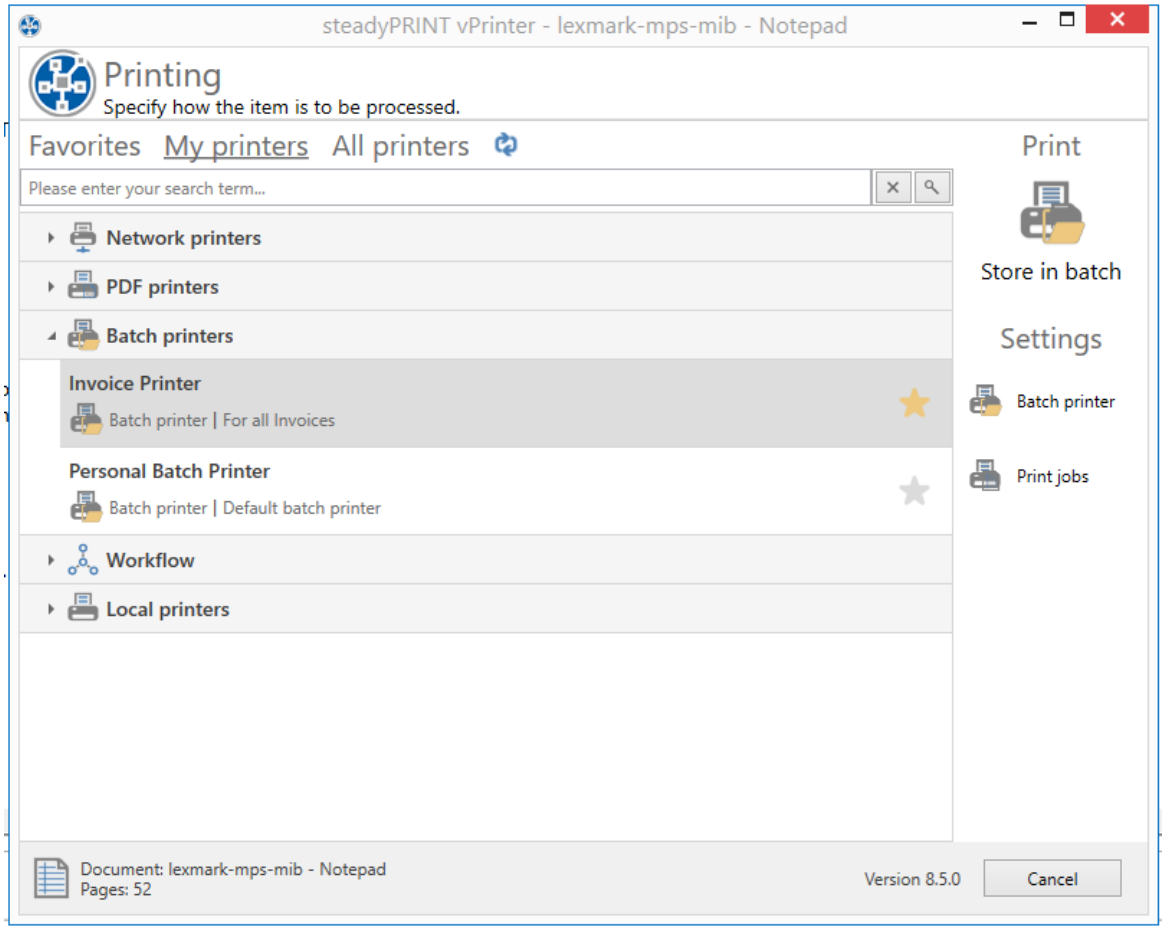

Figure 53: Batch printer in vPrinter

By storing the document in a batch, it is automatically stored in the database in encrypted form. The print job view (see figure View of printed jobs in a batch printer) in the **Batch print jobs** tab displays all documents printed into the batch.

Now you can print your documents or process them in a workflow.

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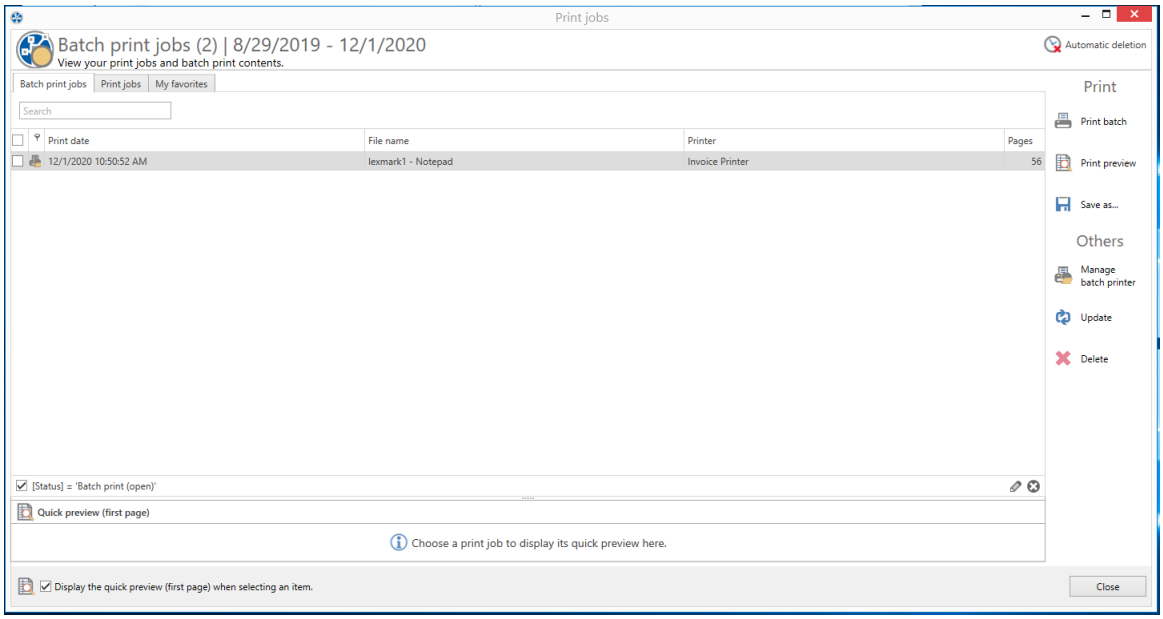

Figure 54: View of printed jobs in a batch printer

5.4.5.1 Group Batches

The group batch is a batch for several users. You can share your batches to allow several persons to get insight into your batches.

In order to convert a batch into a group batch select the desired batch and click **Share** (see figure Sharing batch printers).

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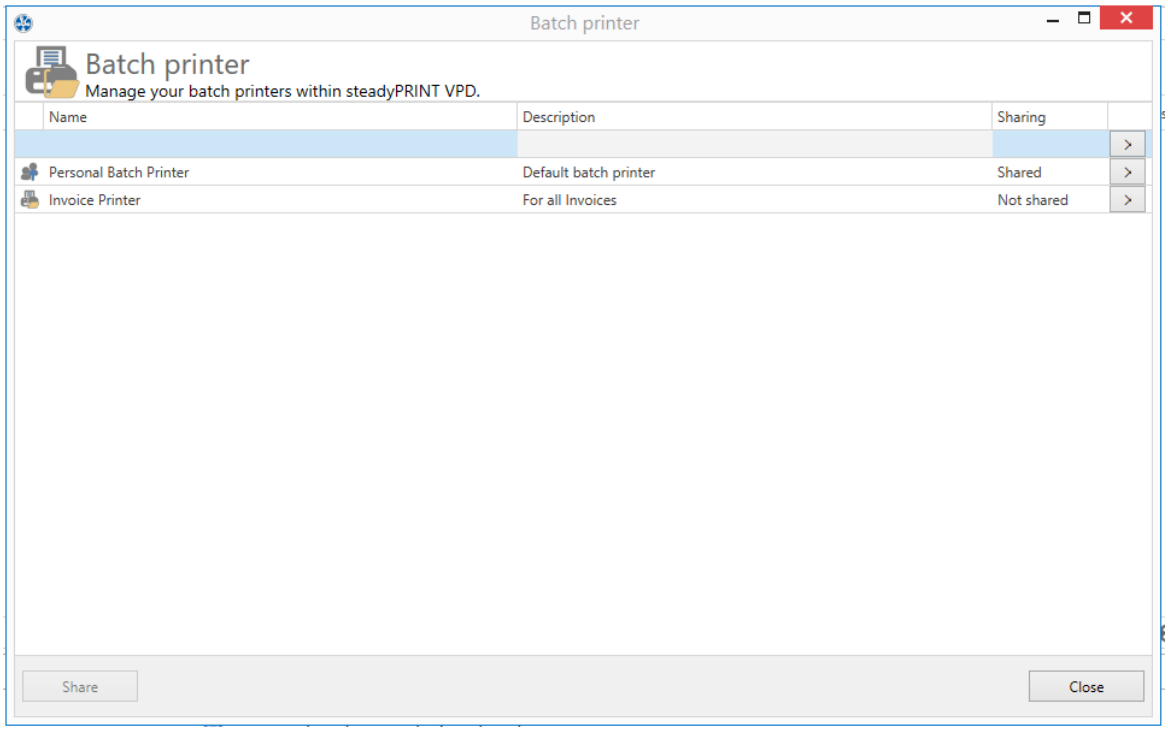

Figure 55: Sharing batch printers

Enable the group batch by selecting **Shared=On** (see figure Add users to the batch printer). In the search field you can search for users from the Active Directory with whom you would want to share the batch.

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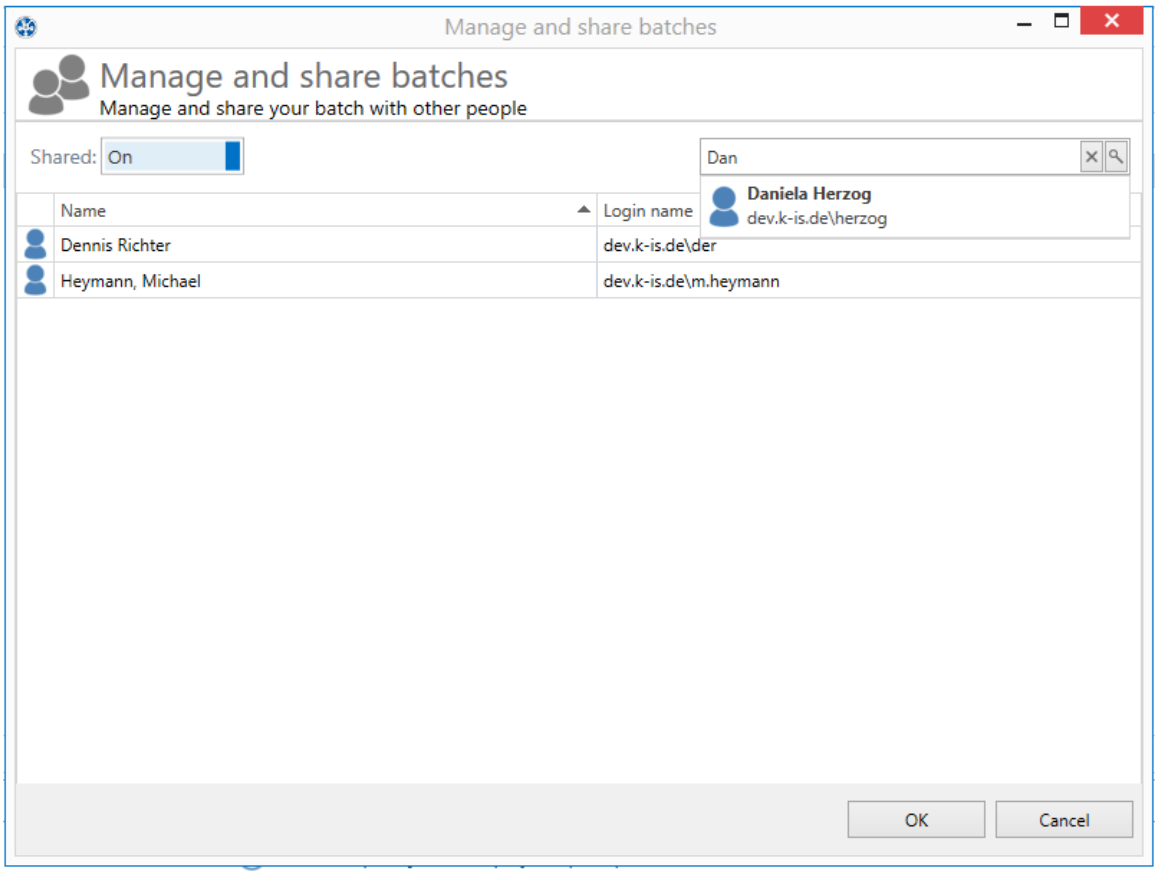

Figure 56: Add users to the batch printer

The batch is now shared with the appropriate users who can continue processing the documents in their print job view.

Note:

If you want the users to be able to manage not only the documents you printed but also to print into the batch, you can define a workflow with batch printing action. See workflow action "Saving to batch"

5.4.6 SecurePrint v2

SecurePrint has been developed in order to provide an interface on the printer so that the presence of a person can be confirmed. This person can then print the sensitive documents on site without them being viewed by strangers. With this interface, the owner gets full control over the intellectual property until the documents are finally printed. Such solutions are also known as „Print & Follow“, „Follow Me Printing“ or „Pull Printing“.
However, ***SecurePrint*** differs from the standard solutions on the market, as this interface does not only have a special focus on certain printer labels, but has been designed universally and is compatible with all printers.

SecurePrint is offered in two variants. One variant is the „Printer Terminal“ offering public access to **steadyPRINT** at the printer or in a printer room. The second variant „BYOD“ provides an App for a mobile device enabling private access to **steadyPRINT** at the printer.

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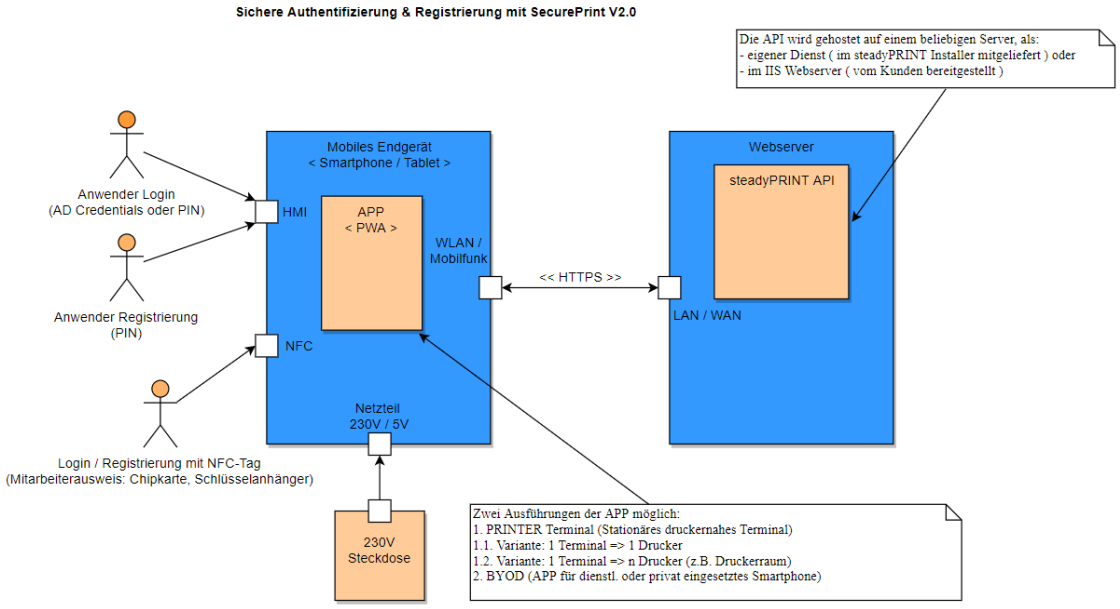

Figure 57: SecurePrint Overview

Variant: „Printer Terminal“

Using the „Printer Terminal“ guarantees the presence of a person by one of the following login options:

- Employee identity card: This can be any chip card or key fob having a NFC tag. For a compatibility list please refer to chapter: Installation.
- PIN: This personal identification number can be assigned independently. However, it must have at least 4 digits and comply with certain rules. For a description of the rules please refer to chapter: Application.
- AD Credentials: These are personal access data consisting of user name and a password which was specified in the local Active Directory.

The registration of the employee identity card and PIN can also be done via the "Printer Terminal". At the printer on site, the terminal is connected to the ***steadyPRINT Server*** via WLAN.
The communication with the ***steadyPRINT API*** is taking place via a https connection.

Variant: „BYOD“

The app for mobile devices (BYOD – Bring Your Own Device) enables the reading of QR codes which are attached to the printers and contain the printer ID. This ID which serves to confirm the presence is scanned with an app and sent to the ***steadyPRINT Server***.

Cross-variant

The following is valid for both variants: Upon successful authentication at the printer, it is possible for the user to see the print jobs, edit the number of copies and choose the print template.

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5.4.6.1 Requirements

Depending on the variant used, different requirements are necessary.

Variant: „Printer Terminal“

The variant “Printer Terminal” requires a mobile device (smartphone or tablet) which is equipped with an android operating system and a NFC reader. The power supply is provided directly by the printer via USB cable or separately with a power supply unit at a 230V socket.

Recommendations for mobile devices

	Nokia G21 (smartphone)	Galaxy Tab Active3 (tablet)
Operating system	Android 11	Android 11
Resolution	720 x 1600 pixel	1920 x 1200 pixel
Display	6,52 inches	8 inches
Battery	5050 mAh	5050 mAh
NFC	Yes	Yes
WLAN	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac	IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11n IEEE 802.11ac IEEE 802.11ax
Frequency range	2,4 GHz, 5 GHz	2,4 GHz, 5 GHz
Special features		Touchscreen can be operated with gloves

Recommendations for a holder/rack for mobile devices

For a solution individually adapted to your requirements as shown in the following picture, please contact us under: sales@k-is.com.

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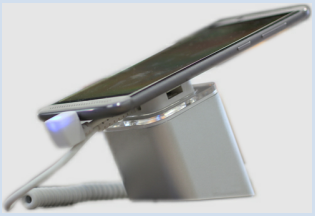
Figure 58: Individually adapted holder at printer

As an alternative we recommend the following ready-made solution:

	Nokia G21 (smartphone)	Galaxy Tab Active3 (tablet)
Mechanics		Android 11
	Link	Link

Recommendations for a theft protection of a mobile device

	Nokia G21 (smartphone)	Galaxy Tab Active3 (tablet)

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Mechanics		Android 11
Reference	Link	Link

Recommendations for employee identity cards (compatibility list)

In the following you will find a compatibility list with different NFC tags that can be read via the NFC reader. No appropriate cards or no idea how to figure out the correct NFC type? Contact us under: sales@k-is.com.

	NFC tag	compatible
1	NTAG 213	yes
2	NTAG 215	yes
3	NTAG 216	yes
4	NTAG 413 DNA	yes
5	NTAG 424 DNA	yes
6	ULTRALIGHT EV1	yes
7	ICODE SLIX	yes
8	DESFIRE EV1	yes
9	DESFIRE EV2	yes
10	DESFIRE EV3	yes
11	MIFARE CLASSIC	yes
12	EM4200	No - as NFC tag is controlled with 125 KHz (RFID band)

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Variant: „BYOD“

The system requirements for a BYOD device are:

	Terminal
Operating system	Android | iOS | Windows
Camera	yes
WLAN	yes

5.4.6.2 Installation

In order to use the ***SecurePrint App***, the ***SecurePrint Server*** has to be provided on a web server first. For this purpose, the **steadyPRINT** installation package offers to host ***SecurePrint*** on a separate web server (Kestrel).

System requirements for hosting SecurePrint

The following requirements have to be fulfilled in order to install ***steadyPRINT SecurePrint*** on the server:

- Windows Server 2012 R2 or higher
- Microsoft .NET Framework 4.8
- ASP.NET Core 5.0 Runtime Windows Hosting Bundle

Installation of the SecurePrint server

When installing **steadyPRINT**, additionally select the ***SecurePrint*** installation component. Moreover, ***steadyPRINT Server*** and ***steadyPRINT API*** have to be installed for ***SecurePrint*** to work. All further steps remain unchanged.

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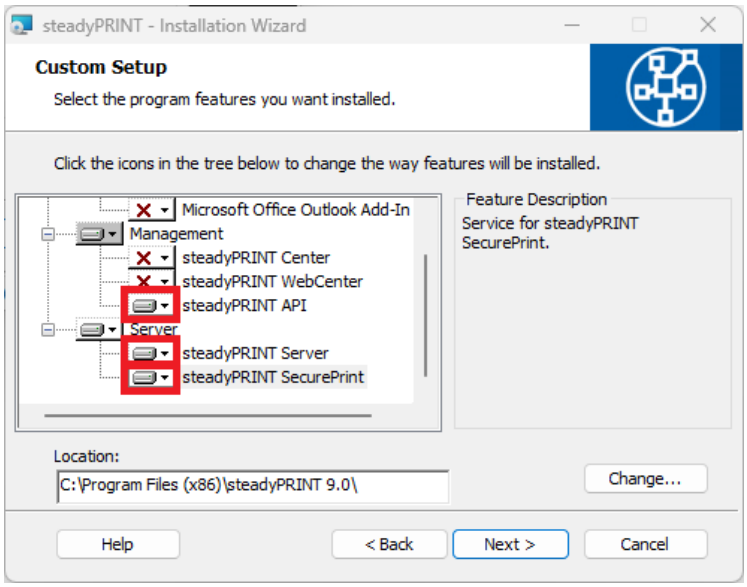

Figure 59: Installation of SecurePrint

Configuration of the required port

By default, the ***SecurePrint Server*** runs on port. If an adjustment is desired, it must be done manually via the respective appsettings.json configuration file. For this purpose, open the configuration file [Install]\install.SecurePRINT\appsettings.json. Then the HTTPS port is adjusted via the property ServerDefaultOptions.HttpsPort. After the adjustment of the port, restart the service ***steadyPRINT SecurePrint***! The port can be configured very easily via the ***steadyPRINT Service Management App***.

Installation of the required certificate

By default, the ***SecurePrint Server*** runs with the certificate common name: localhost. If an adjustment is desired, it must be done manually via the respective appsettings.json configuration file. For this purpose, open the configuration file [Install]\install.SecurePRINT\appsettings.json. Then the certificate is adjusted via the property ServerDefaultOptions.CertCN. After the adjustment of the certificate, restart the service ***steadyPRINT SecurePrint***! The certificate can be configured very easily via the ***steadyPRINT Service Management App***.

5.4.6.3 Set-up

In order to set up ***SecurePrint*** for operation, the license has to be activated first. Then user roles have to be assigned and if the use of printer terminal devices is desired, they have to be connected to the printers.

Set up users for SecurePrint

In order to set up users for ***SecurePrint***, you have to switch to the ***steadyPRINT WebCenter***. Here, the roles for the ***SecurePrint*** users must be defined. For this purpose, the user changes to the **settings** and then to the **administration of roles**. Here, the desired users are already listed, in case they have already tried to log in, or the user creates a new user via the **plus** icon. ***SecurePrint*** users have to have the role: Admin oder ***SecurePrint*** besitzen.

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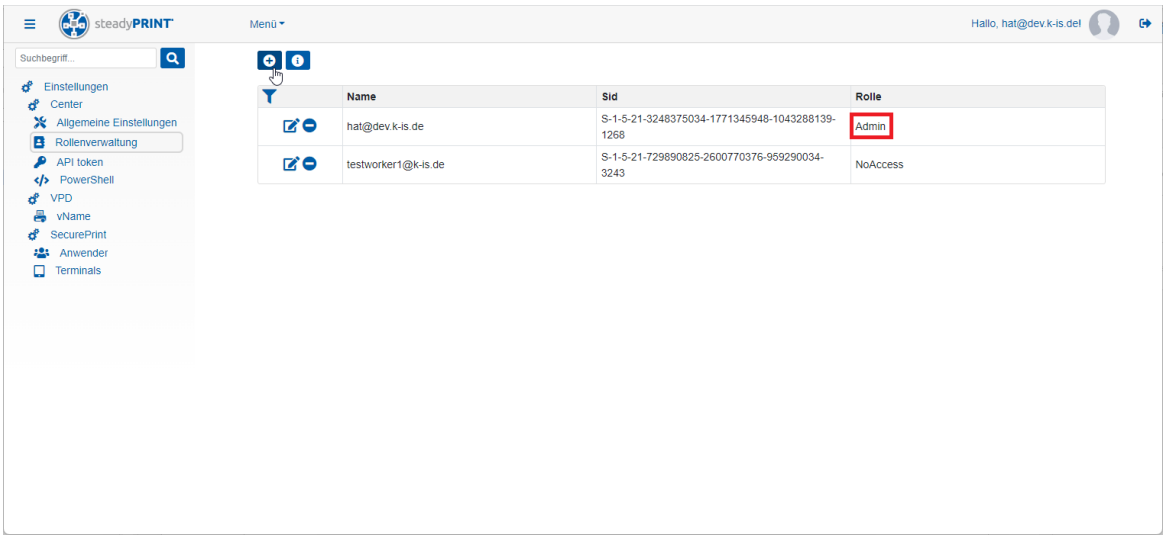

Figure 60: WebCenter Role Administration

If a user has the role provided for ***SecurePrint***, he will be found under the menu item ***SecurePrint*** => **user**. New users can be added from the Active Directory under **Add user**. Here, the user can also be adjusted or certain settings can be reset, as e.g. a blocked PIN which can be unblocked here after three invalid entries. Moreover, the link to the ***SecurePrint App*** can be forwarded to the user by e-mail via the **Action** button. This is done by selecting the user and clicking the link Roll out BYOD-App.

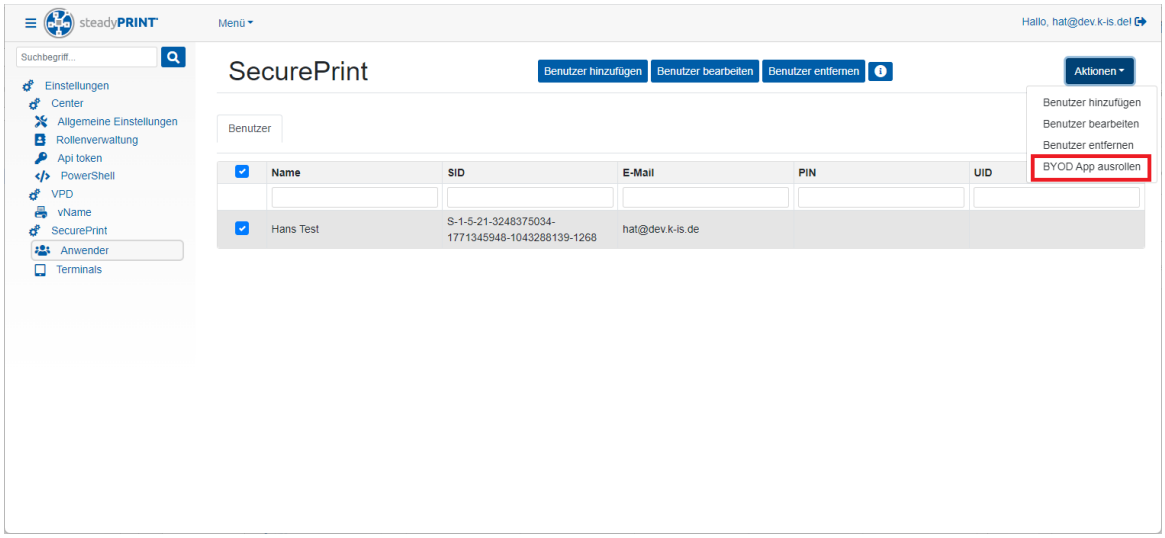

Figure 61: WebCenter - Create SecurePrint User

By selecting the stored e-mail profile (see chapter: E-Mail Profiles), a corresponding e-mail will be forwarded to the user.

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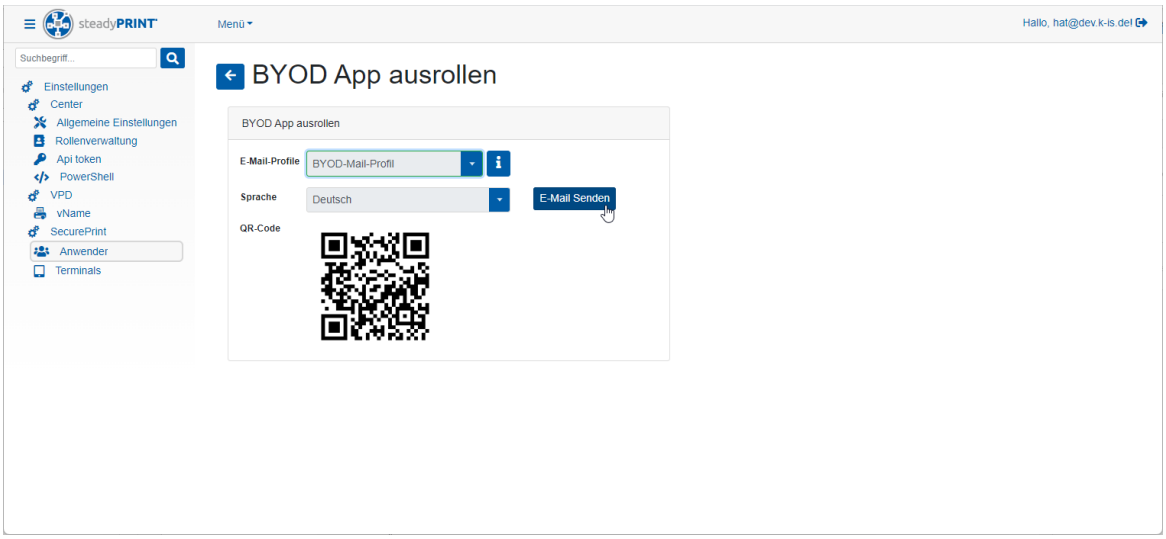

Figure 62: WebCenter - Distribute SecurePrint App

This e-mail is as follows and by clicking the link or scanning the QR code with your smart phone, the correct URL to the hosted ***SecurePrint App*** will be accessed.

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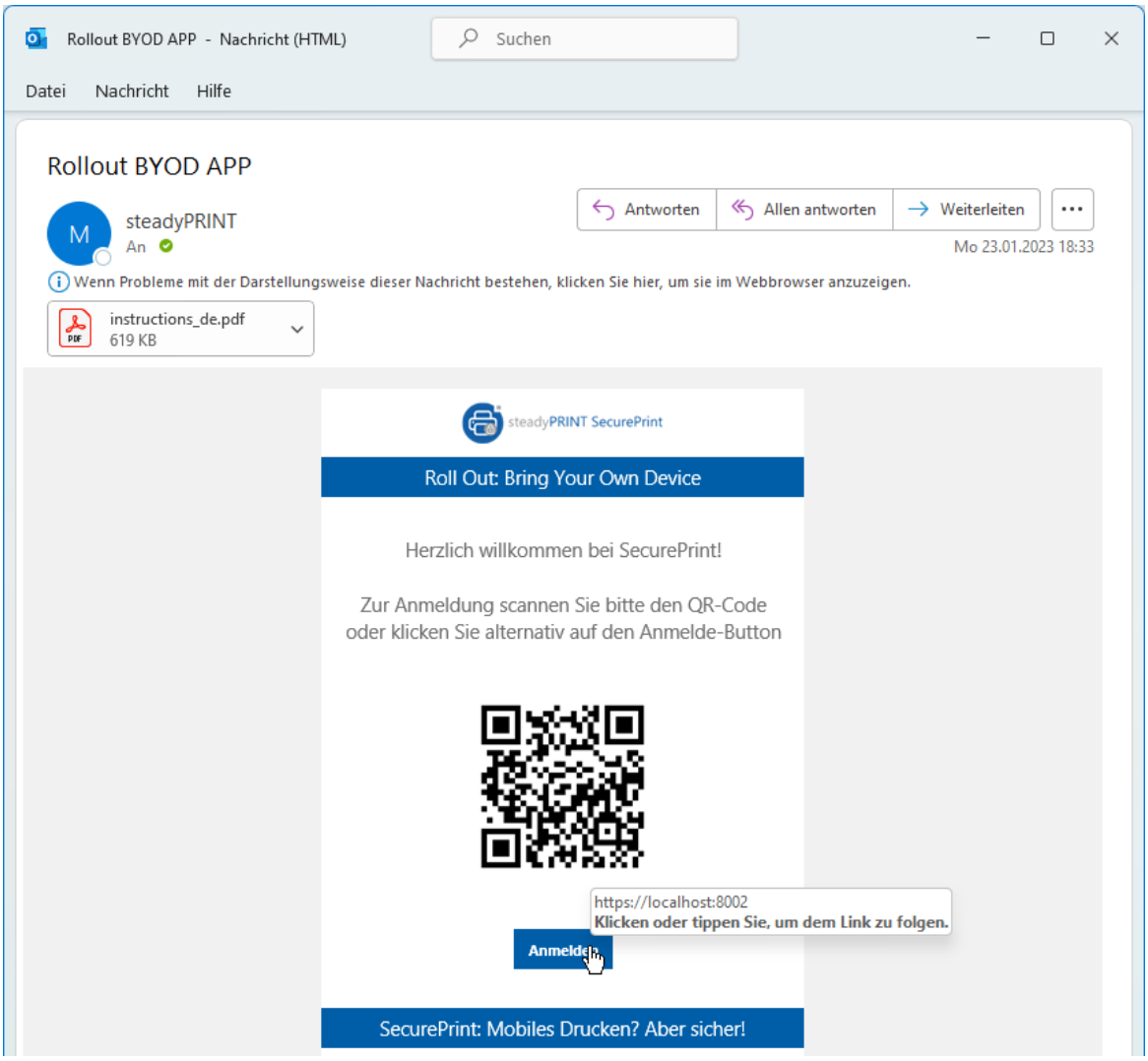

Figure 63: WebCenter - SecurePrint App Rollout Mail

„Printer Terminal“ - set up devices

New terminal devices can be set up and virtually linked to one or several printers under the menu item ***SecurePrint*** => **Terminals**. For this, an explicit name has to be given first. Then the QR code is displayed which contains the explicit link to the appropriate ***SecurePrint App***. Then, one or several printers can be added (for application in a print room).

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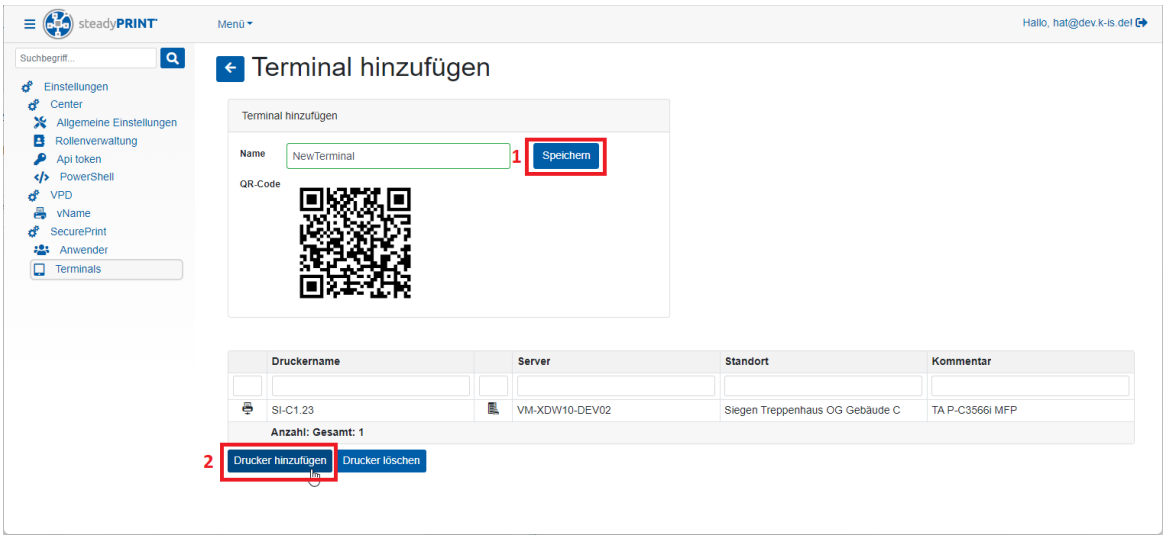

Figure 64: WebCenter - Set up terminal

After that, the link to the correctly hosted ***SecurePrint App*** can also be forwarded to any e-mail address. The respective e-mail address is also to be stored under an e-mail profile (see chapter: E-Mail Profiles). The e-mail for the terminal is then similar to the e-mail for the BYOD App, but with a correct link.

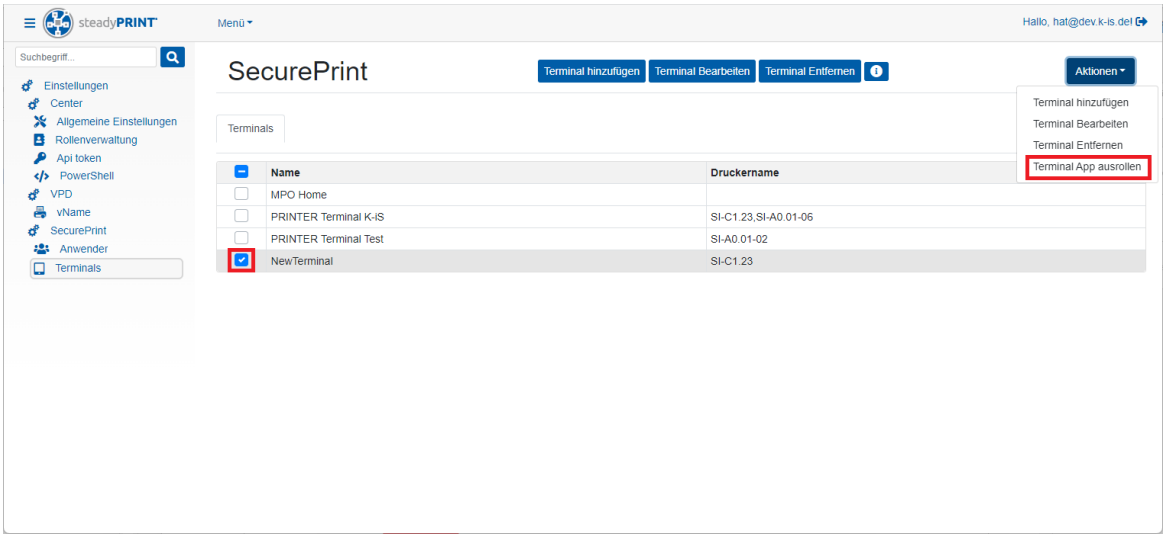

Figure 65: WebCenter - Roll out terminal app

Installation of the SecurePrint App

When the link to the ***SecurePrint App*** is called up (whether ***Printer Terminal*** or ***BYOD*** device), the user has the option to always access the app in the browser or to install the app (Progressive Web APP – PWA) in the smartphone and to use it as a normal app. Shortly after calling up the app the message **Add SecurePrint to Home Screen** will be displayed at the bottom of the screen. If the user clicks this message, ***SecurePrint*** can be installed as an app. A custom icon will then be created so that the ***SecurePrint App*** can always be accessed.

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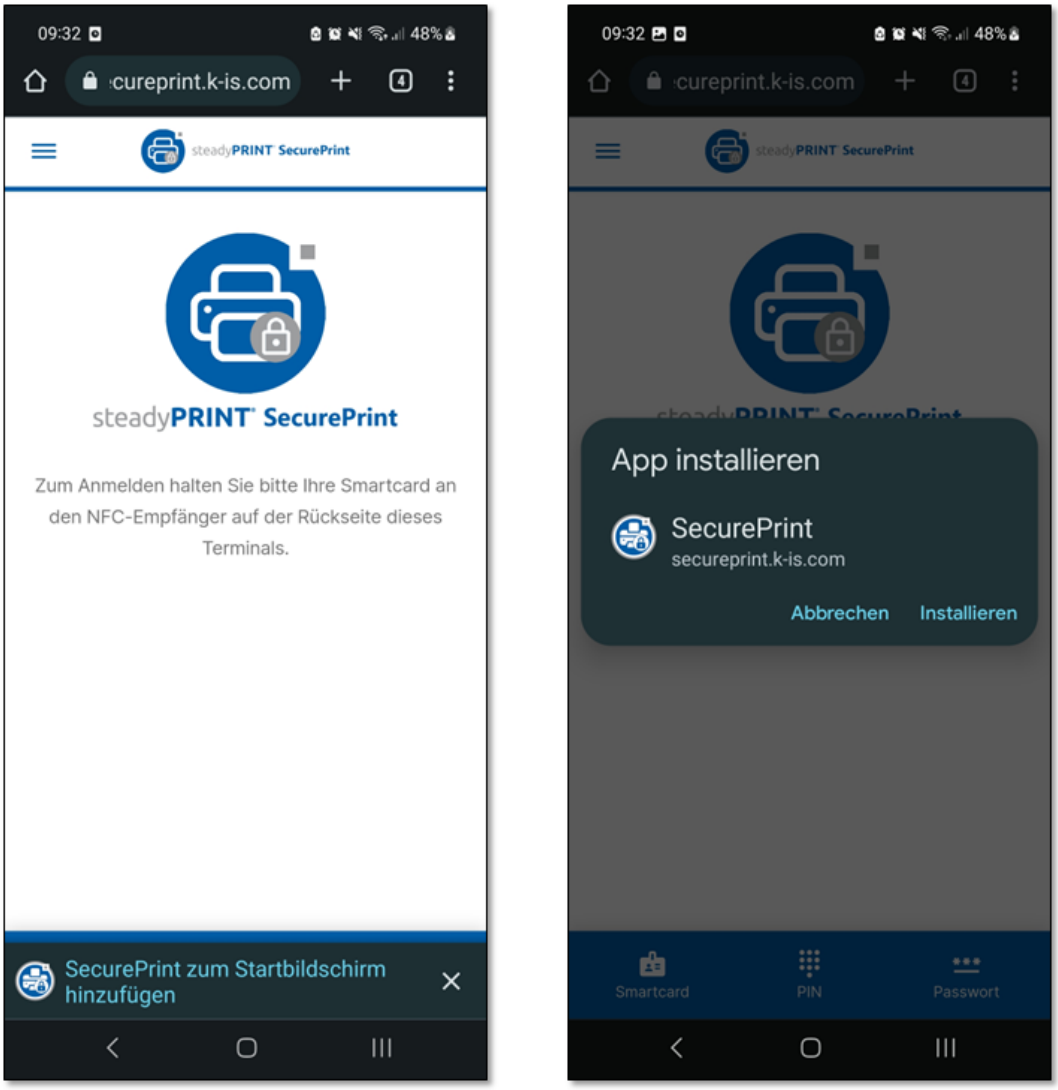

Figure 66: Installation PWA

Printer Terminal - Set devices in Kiosk mode

In order to avoid that the Printer Terminal is arbitrarily changed, it should be set to the kiosk mode. On Android, the kiosk mode is also called Window Pinner. To enable it, navigate through the following sections in the Android settings:

1. Biometric data and security
2. Other security settings
3. Enable the function: **Pin window**
4. As an alternative, the user can enable the option **Request PIN before unpinning** for reasons of security.

By clicking the button Current application (see 1 in the following figure) and a subsequent click on the ***SecurePrint*** icon (see 2), the menu with the enabled function Pin this App appears (see 3). When this

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function is enabled, the app is pinned and can only be disabled again by simultaneously using the hot keys: Current application and Back.

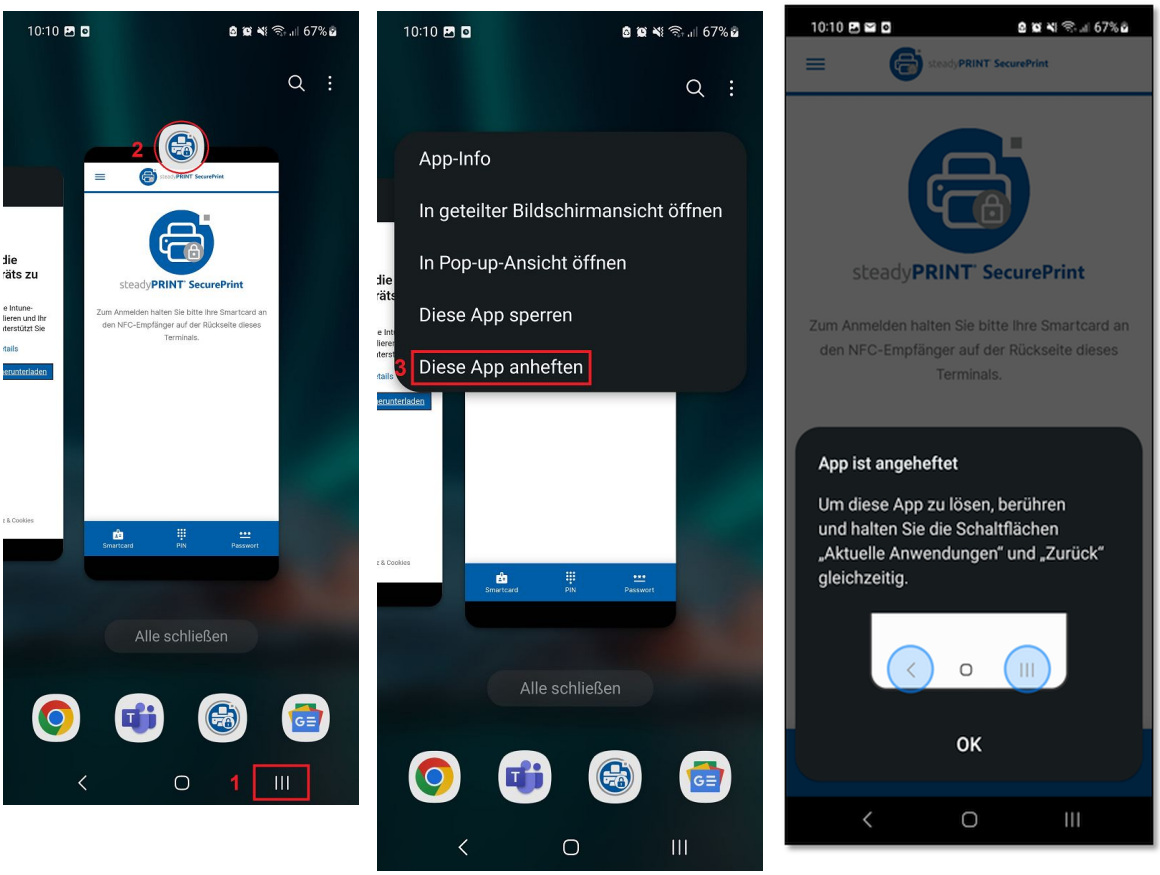

Figure 67: Set up Kiosk mode

5.4.6.3.1 Creation of QR Codes

As of version 6.5, the option of creating QR codes for the use of the ***steadyPRINT SecurePrint*** functions is available at different points in the ***steadyPRINT Center***.
For example in the ribbon of a print server or folder or the respective context menu. (see figure steadyPRINT Center: Opening the SecurePrint QR code settings)

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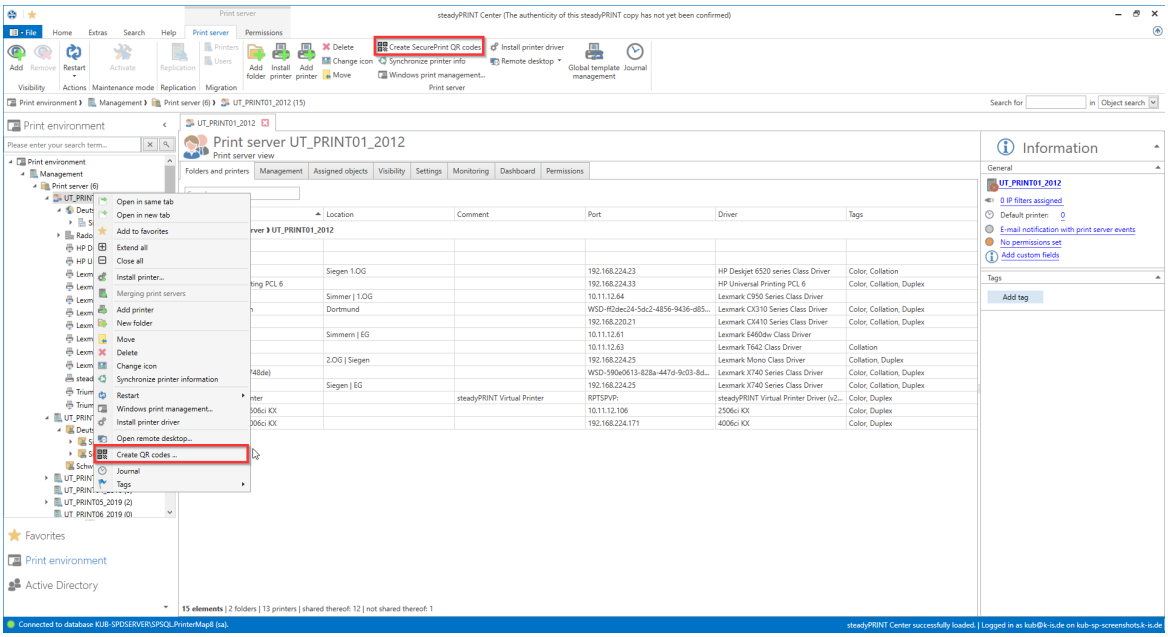

Figure 68: steadyPRINT Center: Open - Opening the SecurePrint QR code settings

Important	***Availability of buttons***
	The buttons shown above are only available if the option for using the ***steadyPRINT SecurePrint*** function has been activated in one of the Agent profiles (see Agent Profiles) registered in the system. (see Activation of the SecurePrint Functionalities).

You now have the option to create a QR code for all printers selected in the upper part. In any case, the value of the bar code is the unique SecurePrint-ID of the printer assigned by the system. This SecurePrint-ID is available in the detailed view of the printer (see figure steadyPRINT Center: Display of the SecurePrint-ID).

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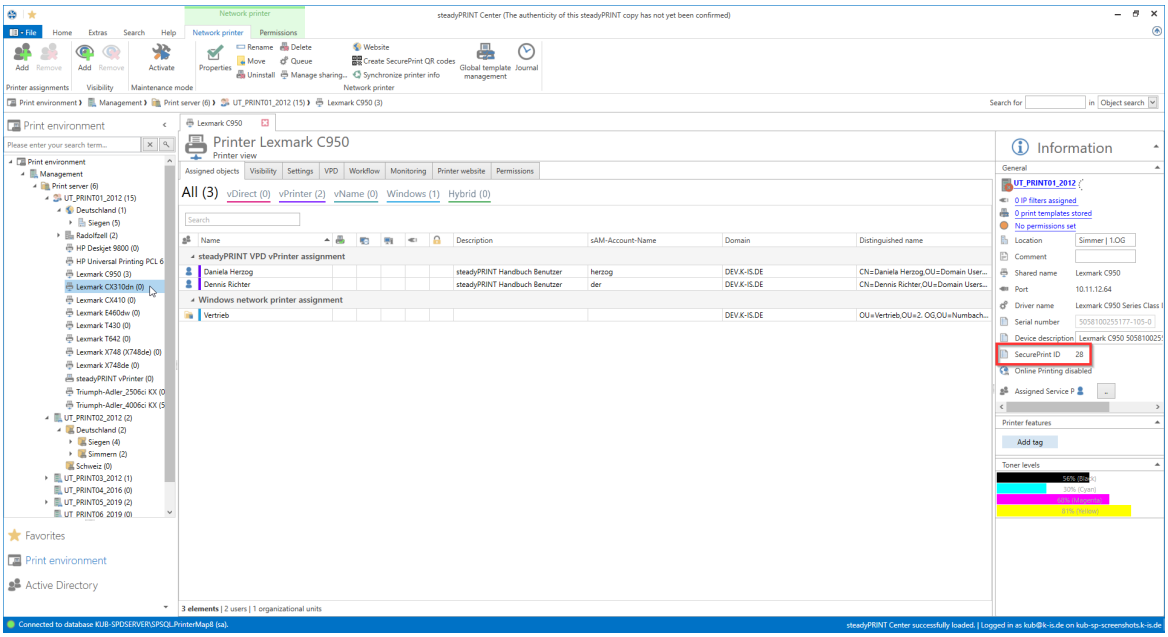

Figure 69: steadyPRINT Center: Display of the SecurePrint ID

Moreover, additional bar code labels can be added.
The following values are available:

- Printer name
- Printer location
- Printer comment
- SecurePrint ID
- All assigned user-defined fields (See User-defined fields)

For each additional field you have the option to specify whether it is to be printed in bold, in italics of with a prefix (see figure steadyPRINT Center: Adjusting the SecurePrint QR Code Labels).

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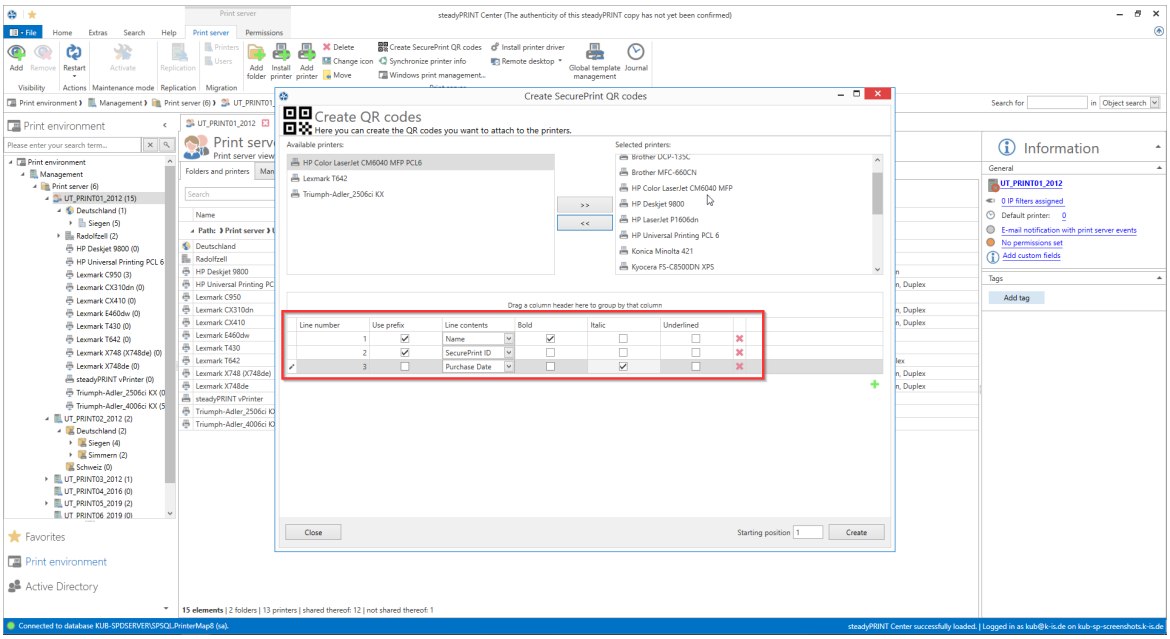

Figure 70: steadyPRINT Center: Adjusting the FollowMe QR Code Labels

You have the option to print up to 10 additional information on one QR code.

Note	***Specifying the start position of bar codes to be printed***
	It is also possible to specify at which position of the labeling paper the bar code print should begin. Example: You have already printed 6 bar codes but would like to continue to use the labeling paper. The start position would now be set to "7". (See "5" in screenshot).

As soon as the master configuration has been completed, confirm by clicking **Create** and move to the selection of the labeling paper.

Here the labeling paper can be selected.

Note	***Specifying the start position of bar codes to be printed***
	In case your labeling paper does not appear for selection, the paper dimensions can be adjusted manually. Our ***steadyCONSULTANTS*** will be glad to help you.

Then just click **Continue**.

In the following, the report designer opens. You now have the option to eventually adjust the layout, to have the report displayed via "print preview" in the ribbon and to print (see figure steadyPRINT Center -

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Printing SecurePrint QR Codes).

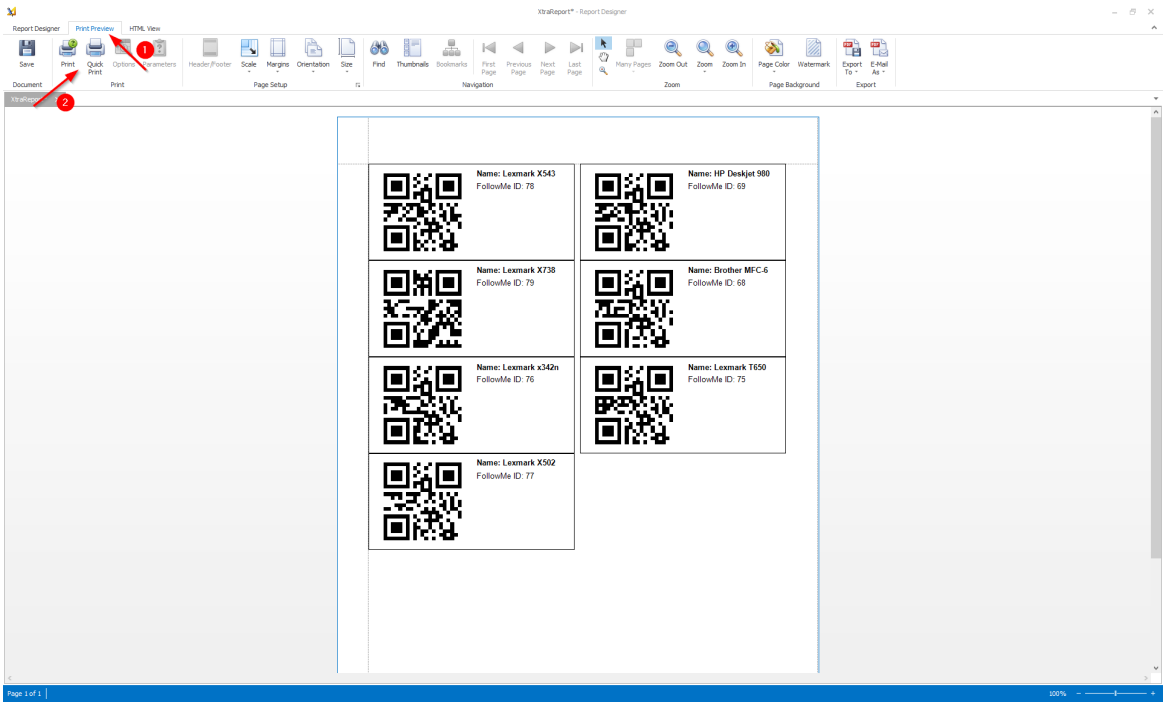

Figure 71: steadyPRINT Center: Printing SecurePrint QR Codes

5.4.6.3.2 Activation of the SecurePrint Functionalities

The functionality of ***steadyPRINT SecurePrint*** printing can be enabled/disabled via the Agent profiles (See chapter Agent profiles).

Use the options in the tab "User Functions".

- "***steadyPRINT VPD***: Allows the user to use ***SecurePrint Printing***". In this case, the ***steadyPRINT Agent*** installs the ***SecurePrint Printer*** as a local printer.
- "***steadyPRINT VPD***: Allows the user to use the integrated ***SecurePrint Printer***". The ***SecurePrint Printer*** is integrated in the ***vPrinter*** as an additional printer.
- "***steadyPRINT VPD***: Set ***steadyPRINT SecurePrint Printer*** as default printer"

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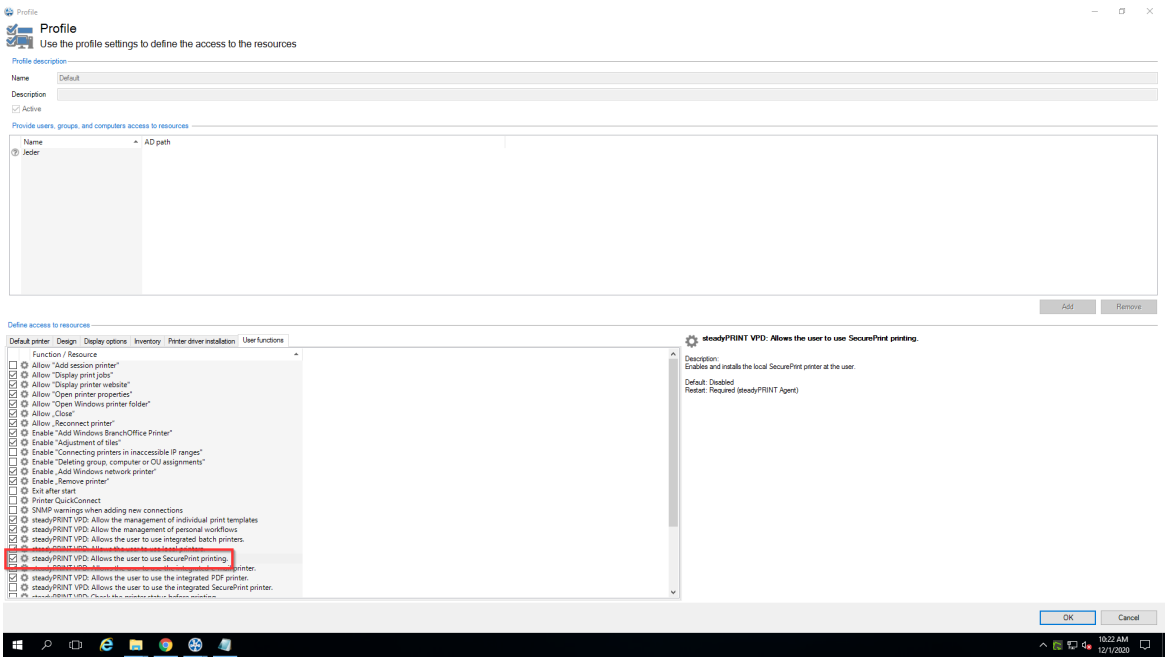

Figure 72: User permissions for the use of SecurePrint

5.4.6.4 Application

Depending on the variant, there are different applications that can be run with ***SecurePrint***. The user can for example log on to the printer terminal by means of a smart card, a personal PIN or the AD credentials. Moreover, a new smart card can be registered or a new PIN can be assigned. The BYOD-variant, however, allows users to log on with their AD credentials only and perform the on-site-confirmation by scanning a QR code. After successful login, both variants display the own print jobs, which can then be printed.

5.4.6.4.1 Variant: "Printer Terminal"

Login with smart card

In order to log in with the smart card, the user has to change to the smart card menu first. The smart card is then swiped across the NFC reader and read. Please note that the NFC reader is located in the upper third on the back of the smartphone and that the user has to swipe the smart card across this point in order to log in. The smart card can touch the smartphone, but can also be read from a distance of max. 5 cm. If the smart card is read, a confirmation tone sounds and the user is forwarded to the next menu.

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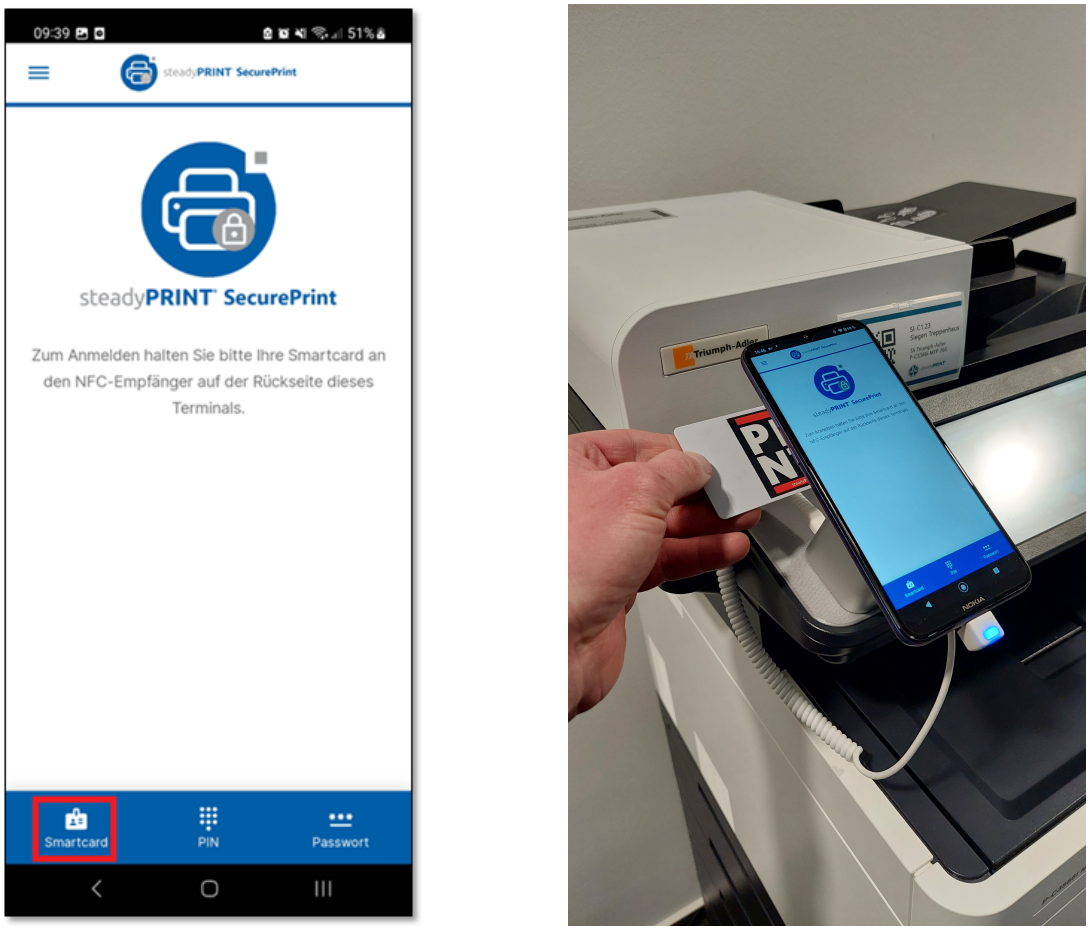

Figure 73: Login via smart card

Login with PIN

In order to log in with a PIN, the user has to change to the PIN menu before he/she can log in with user name and PIN. Once the user has forgotten his PIN, he can directly get to the registration page for a new PIN via the link "Forgot/register PIN". If the PIN is incorrectly entered three times, the PIN access for this person is blocked and can only be released again via the WebCenter. Moreover, there is the option to save the user name in the system in order not to have to enter it again at next access.

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Figure 74: PIN menu

Login with AD credentials

In order to log in with the AD credentials, the user has to change to the password menu before he/she can log in with user name and password. Moreover, there is the option to save the user name in the system in order not to have to enter it again at next access.

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Figure 75: Passwort menu

Registration of the smart card

In order to register a new smart card, it is necessary to log in with the AD credentials via the password menu first. Then the function Register smart card is displayed in the burger menu. If a smart card is now held in front of the NFC reader, it will be registered for the logged in user. Please note that the NFC reader is located in the upper third on the back of the smartphone and that the user has to swipe the smart card across this point in order to log in. The smart card can touch the smartphone, but can also be read from a distance of max. 5 cm. If the smart card is read, a confirmation tone sounds and indicates that the smart card was registered. A failed registration could be due to an incompatible smart card in connection with the NFC reader. For more information please refer to the compatibility list in chapter Requirements.

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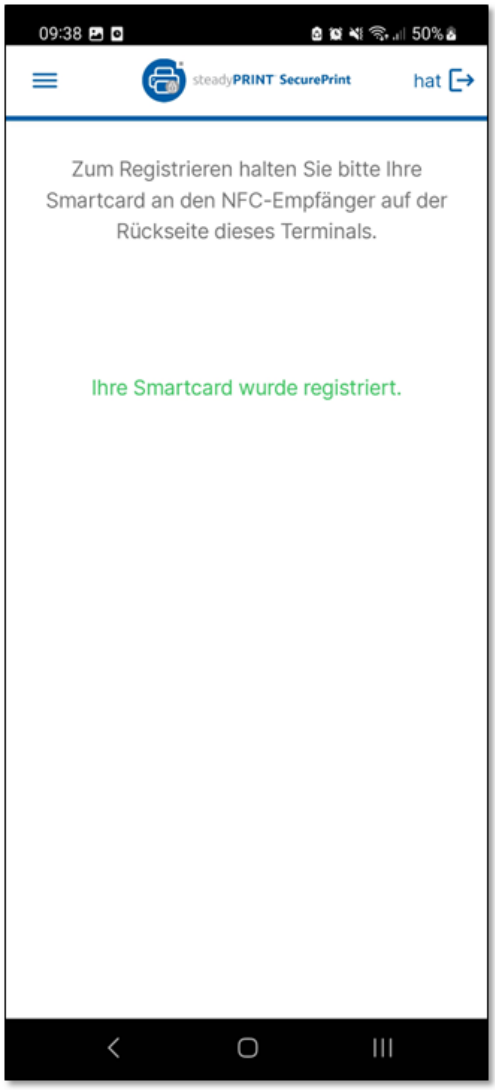

Figure 76: Register smart card

Registration of the PIN

In order to register a new PIN, it is necessary to log in first with the AD credentials via the password menu. Then the function Register PIN is displayed in the burger menu where a new PIN must be entered and repeated for security reasons. A valid PIN must have at least 4 digits and may not always contain the same number e.g. 0000 or a sequence of numbers e.g. 1234 or 987654.

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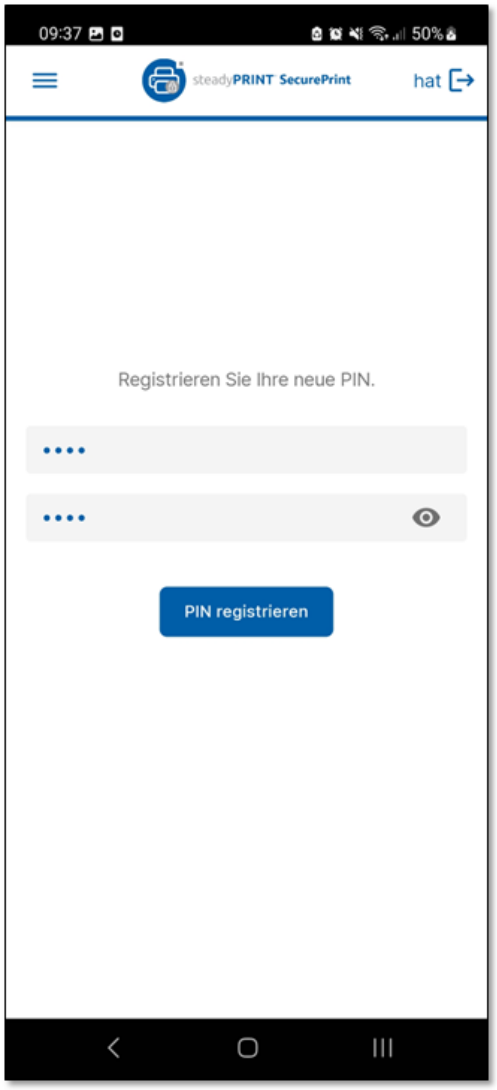

Figure 77: Register PIN

Dialog for printer selection

If a Printer Terminal is connected to more than one printer, an overview of all connected printers is displayed after the login. Here the user can choose on which printer the current document should be printed.

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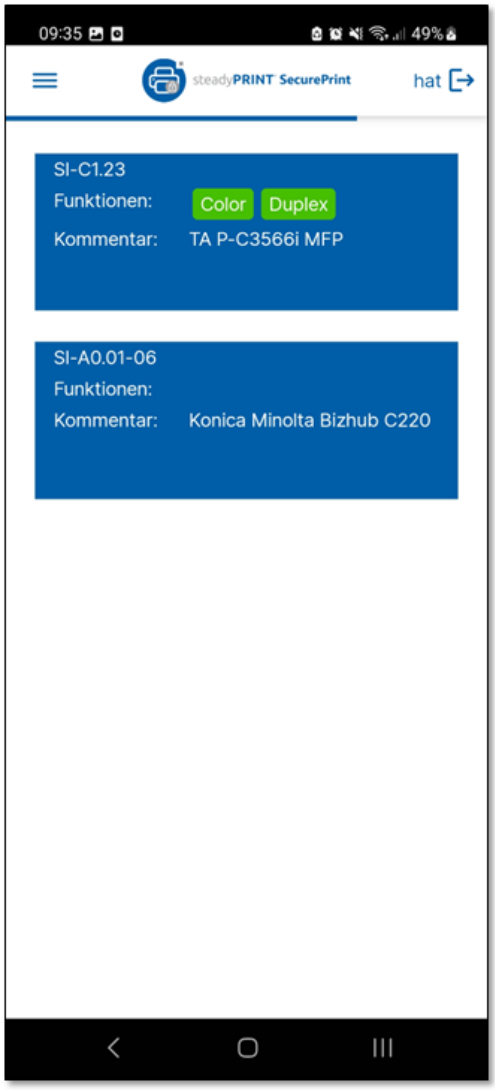

Figure 78: Dialog for printer selection

Automatic logout

In order not to forget a manual logout and thus offering strangers the possibility to view sensitive prints, the automatic logout has been designed. After 30 seconds without any action, the currently logged in user is automatically logged out. The elapsed time is indicated via the progress bar below the header.

5.4.6.4.2 Variant: "BYOD"

If the BYOD variant is started, the user is directed to the login dialog first. Here he can log in with his AD credentials. After successful login, the user is directed to the QR Code Scan Dialog. The camera function is enabled so that the QR Code can be scanned at the printer and the user's presence on site can be confirmed. Then the user is directed to the print job overview. For the creation of QR codes please refer to chapter: Creation of QR Codes.

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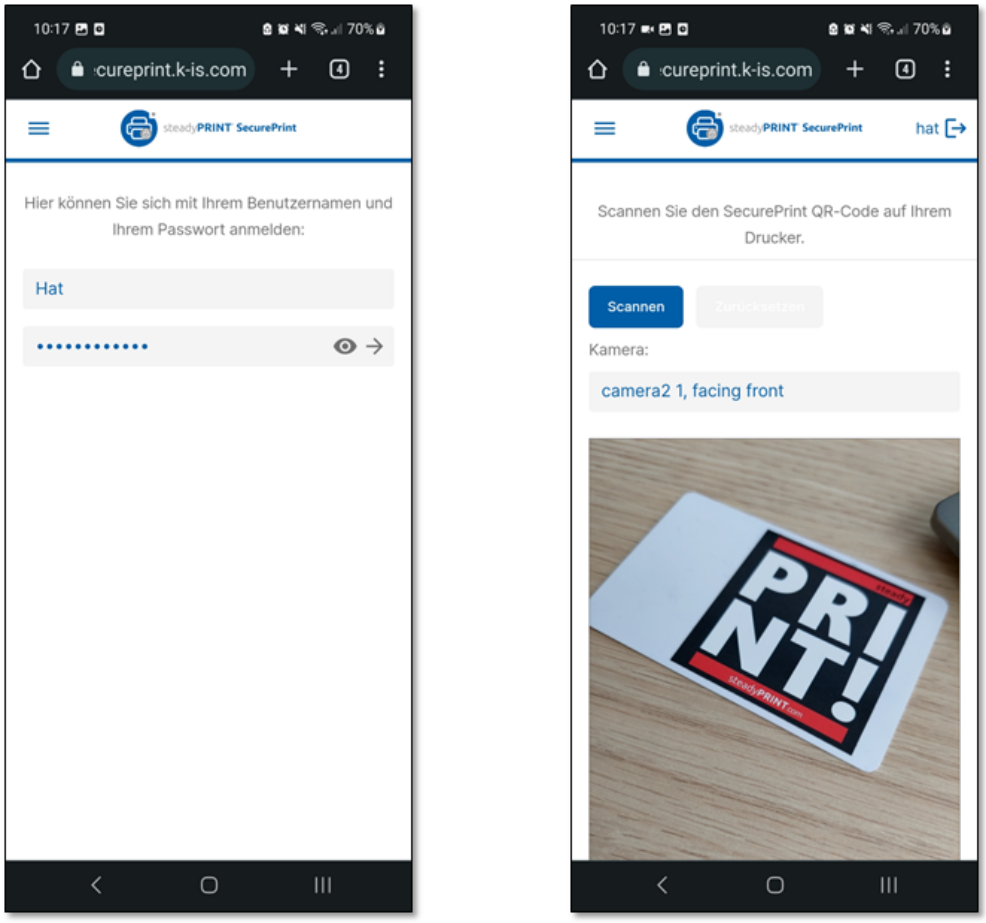

Figure 79: BYOD App

5.4.6.4.3 Cross-variant

All functions that are available across all variants, i.e. that are provided in both the Printer Terminal App as well as the BYOD App, are listed and described in the following.

Print job view

After successful login, the user is directed to the print job view. Here, the user's print jobs are listed. The colored bullets of the respective print job defines the respective print status. New print jobs are marked in green, printed print jobs in orange and erroneous print jobs in red. In addition, the print jobs can be filtered by individual batches and it is possible to search for certain print jobs or to delete them. Moreover, the pre-defined template and the number of copies can be selected in the settings.

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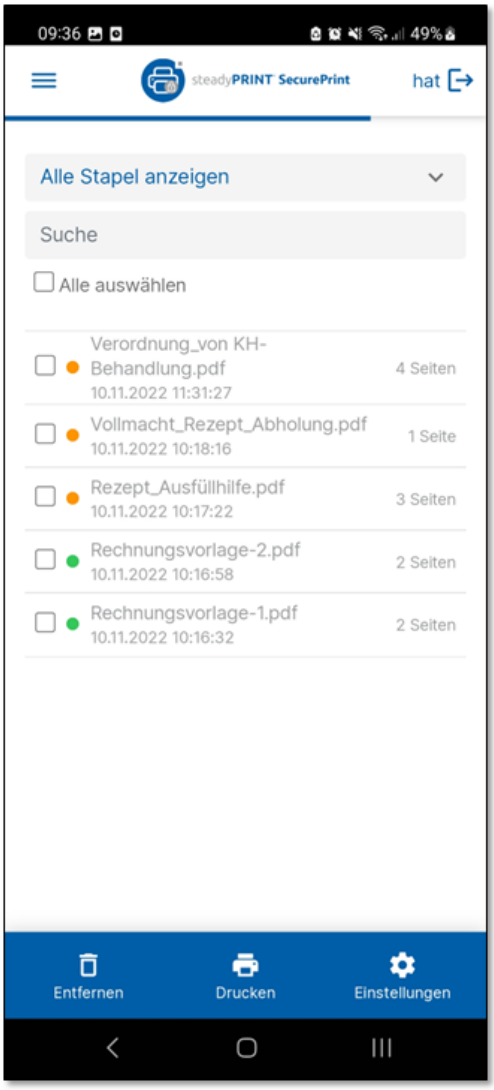

Figure 80: Print job view

5.4.6.5 Security

In order to offer maximum safety, the ***SecurePrint App*** is conntected to the ***steadyPRINT Server*** via a https secured connection. Moreover, the ***SecurePrint App*** ensures with the Cross-Origin Resource Sharing (CORS) mechanism that the ***SecurePrint App*** only makes legitimate requests to the ***steadyPRINT Server***.

5.4.6.6 Update

When performing a **steadyPRINT** update, the ***SecurePrint*** update is run as well. All ***SecurePrint Apps*** will display a notification that the system has been updated and that a restart is required which can be carried out with one click.

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5.4.7 VPD Update Guide

When the Virtual Printer Driver (VPD) needs to be updated, please note the steps described in the following chapters.

5.4.7.1 Before the update

Before you start the update, please check the system requirements which you will find here.

In this context, please also refer to the communication overview:

https://www.steadyprint.com/download/steadyPRINT-Communication_Overview.pdf

In case the update is carried out with a parallel installation, the additional software package has to be requested via support@steadyprint.com.

The new version can be received via the homepage: https://www.steadyprint.com/download-en/#layer_slider_3.

5.4.7.2 Update of the database

1. Backup of the database

2. Restore database under new name

3. Update of the new database (CreateSteadyDB.exe)
   a. Before you start the update, please check whether user and password of the SQL user are still valid.

From that moment both databases are running in parallel without causing any interruption within the environment. Please note that there will be a delta between the databases until all clients are updated. Within this period changes to the printer connections have to be maintained twice.

5.4.7.3 Update as of 7.x

Update without VPD

With one print server:

1. Create installation package
   a. steadyPRINT - Software distribution of steadyPRINT using Active Directory (AD)

2. Update of the server components (Center und Server)
   a. Often installed on admin server or print server

3. Distribution of **steadyPRINT** client components to clients and terminal servers (Citrix):
   a. Distribution can be done via script, GPO or software distribution.
   b. The old version must not be uninstalled in advance.

4. As soon as all clients are updated, the old database can be disabled/deleted.

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With two print servers (reliability)

1. Create installation package
   a. steadyPRINT - Software distribution of steadyPRINT using Active Directory (AD)

2. Update of the server components on primary print server
   a. Backup is not updated before at least 50% of the clients/terminal servers are updated in order to maintain the reliability function for most clients.

3. Distribution of **steadyPRINT** client components to clients and terminal servers (Citrix):
   a. Distribution can be done via script, GPO or software distribution.
   b. The old version must not be uninstalled in advance.

4. As soon as all clients are updated, the old database can be disabled/deleted.

Update with VPD

With one print server:

1. Create installation package
   a. steadyPRINT - Software distribution of steadyPRINT using Active Directory (AD)

With the update of the print server VPD is not functional until the rollout of the clients. A maintenance window is recommended!

2. Update of the server components (Center und Server)
   a. Often installed on admin server or print server

3. Distribution of **steadyPRINT** client components to clients and terminal servers (Citrix):
   a. Distribution can be done via script, GPO or software distribution.
   b. The old version must not be uninstalled in advance.

4. As soon as all clients are updated, the old database can be disabled/deleted.

With two print servers (reliability)

1. Create installation package
   a. steadyPRINT - Software distribution of steadyPRINT using Active Directory (AD)

2. Update of the server components on backup print server
   a. After the update of the server, the Center has to be started and the maintenance mode enabled on the primary print server

3. Distribution of **steadyPRINT** client components to clients and terminal servers (Citrix)
   a. Distribution can be done via script, GPO or software distribution.
   b. The old version must not be uninstalled in advance.

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4. As soon as the clients are updated:
   a. Update of the primary print server
   b. Deactivation of the maintenance mode
   c. Disable/delete the old database

5.4.7.4 Update as of 8.0.x

Update without VPD

With one print server:

1. Create installation package
   a. steadyPRINT - Software distribution of steadyPRINT using Active Directory (AD)

2. Update of the server components (Center and Server)
   a. Often installed on admin server or print server

3. Distribution of the **steadyPRINT** client components to clients and terminal servers (Citrix):
   a. Distribution can be done via script, GPO or software distribution.
   b. The old version mus not be uninstalled in advance.

4. As soon as all clients are updated, the old database can be disabled/deleted.

With two print servers (reliability)

1. Create installation package
   a. steadyPRINT - Software distribution of steadyPRINT using Active Directory (AD)

2. Update of the server components on primary print server
   a. Backup is not updated before at least 50% of the clients/terminal servers are updated in order to maintain the reliability function for most clients.

3. Distribution of **steadyPRINT** client components to clients and terminal servers (Citrix):
   a. Distribution can be done via script, GPO or software distribution.
   b. The old version must not be uninstalled in advance.

4. As soon as all clients are updated, the old database can be disabled/deleted.

Update with VPD

1. Create installation package for parallel and normal installation.
   a. steadyPRINT - Software distribution of steadyPRINT using Active Directory (AD)

2. Update of the server components with parallel installation package (Center and Server) on the print servers
   a. After the installation, the Center has to be started.
      i. Open the settings
         1. Select General
            a. Adjust communication ports

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a. Service = 8020
b. Server = 8021
c. Sync Service = 8022

b. Restart of the services (steadyPRINT Server, Service and Sync Service)
c. If necessary, the firewall has to be adjusted.

3. Distribution of the **steadyPRINT** client components to clients and terminal servers (Citrix) with normal installation package:
   a. Distribution can be done via script, GPO or software distribution.
   b. The old version must not be uninstalled in advance.

4. As soon as all clients are updated:
   a. Disable all services of the old version on the print servers.
   b. Disable/delete the old database.

5.5 Custom Fields

As of version 6.5 you have the option to add custom fields for the objects in the environment managed by **steadyPRINT**.

For more information please refer to the following chapter.

5.5.1 Creation of Custom Fields

Custom fields can be created in the settings of the ***steadyPRINT Center*** (see figure steadyPRINT Center: Create custom fields).

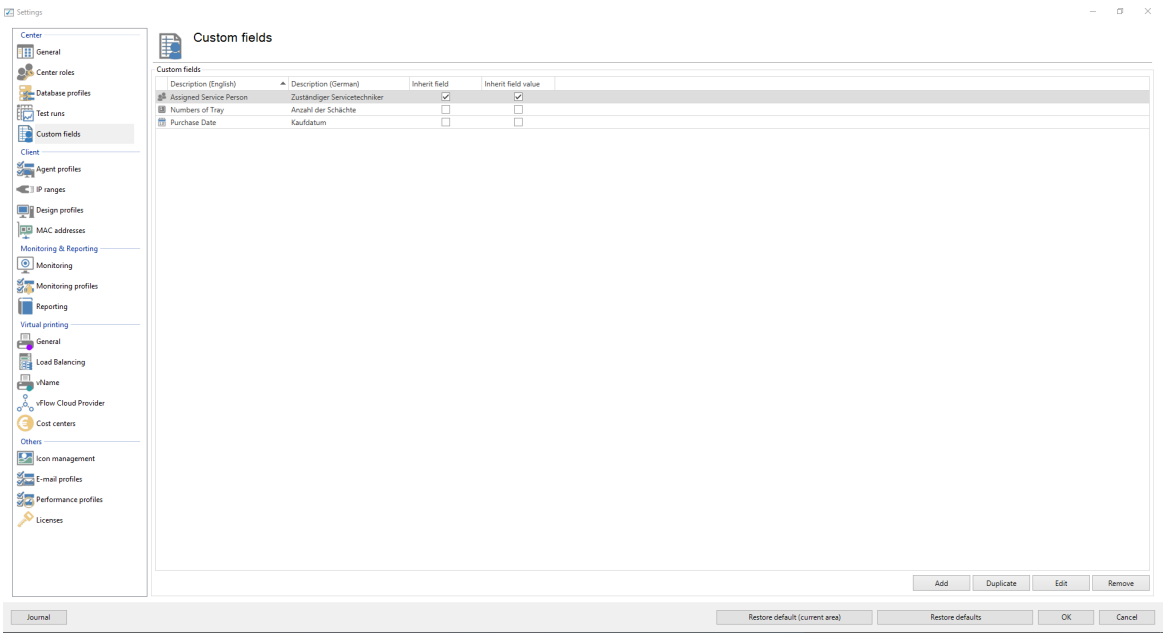

Figure 81: steadyPRINT Center: Create custom fields

The following object types are now available:

- Date field
- Number field
- Free text fields
- Currency field
- Phone number field
- ActiveDirectory link
- E-mail address field
- Hyperlink field

Moreover you have the option to assign different names for the languages used in your environment.

Inheritance

In **steadyPRINT** you can specify inheritances for the defined fields. This way you can make sure that a field is set on all elements below a folder or a print server.
Apart from the mere inheritance, you can also specify that the value/content of a field should be inherited.

Example: We are using a date field "Purchase date" and define it with "inherit field". This field is assigned to our print server Print-01. As a result, it will automatically be inherited to all underlying printers and folders. Subsequently, we can assign values for the individual fields (see figure steadyPRINT Center: Inheritance of custom fields).

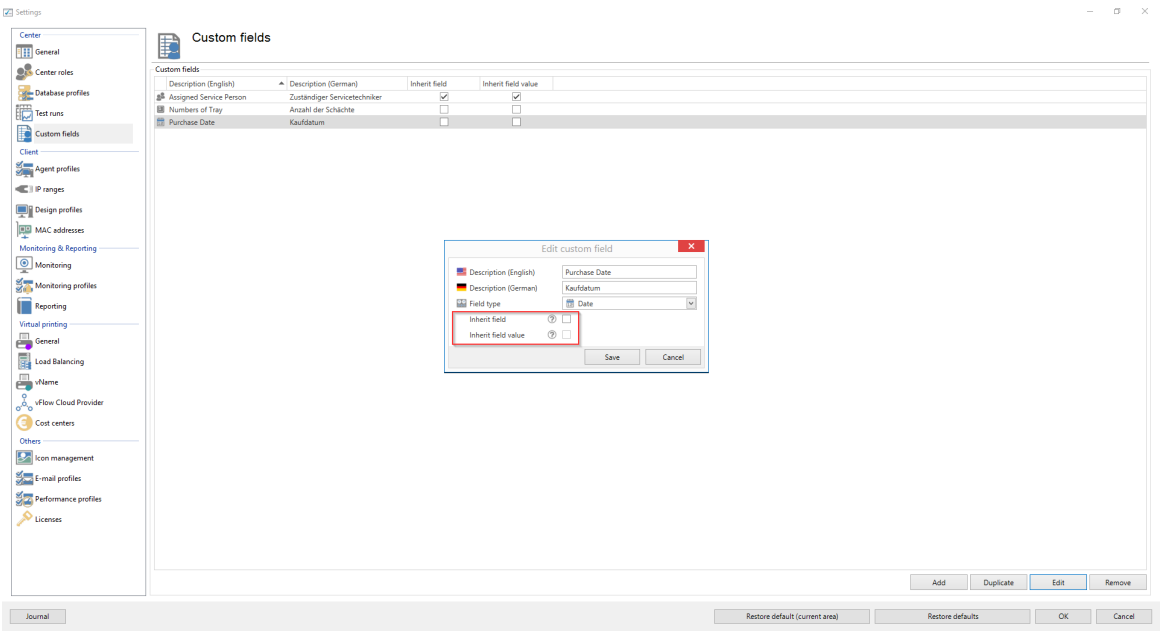

Figure 82: steadyPRINT Center: Inheritance of custom fields

5.5.2 Assignment of Custom Fields

The assignment of custom fields to elements is done via the settings of the element (see figure steadyPRINT Center: Assignment of custom fields).

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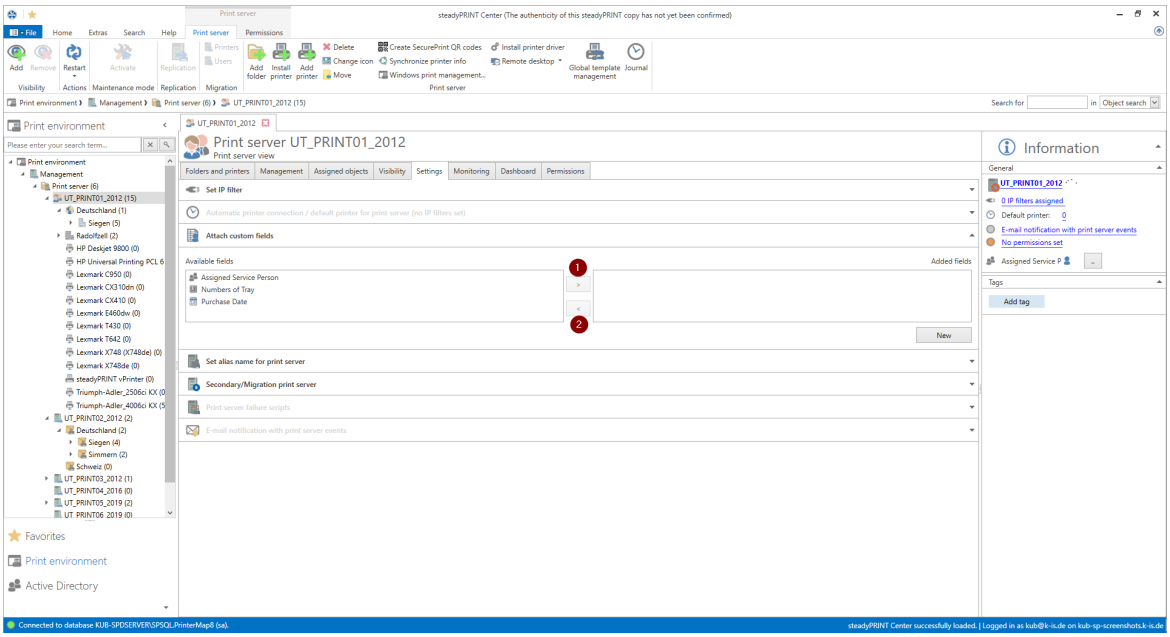

Figure 83: steadyPRINT Center: Assignment of custom fields

Use the arrows between the tables in order to add or remove a field (mark 1 / mark 2).
Use "Create new field ..." in order to create a new field. (mark 3)

The fields will then be added on the right side and values can be assigned.

5.6 Printer Tags

Printer Tags

As of version 7.5, so-called printer tags can be assigned to printers. By means of these tags, printers can be searched, filtered and categorized. The tags are automatically or manually assigned and edited within the Center. In order to create printer tags automatically, the printer is analyzed and specified tags, such as color or duplex, are created (see figure Display of Printer Tags).

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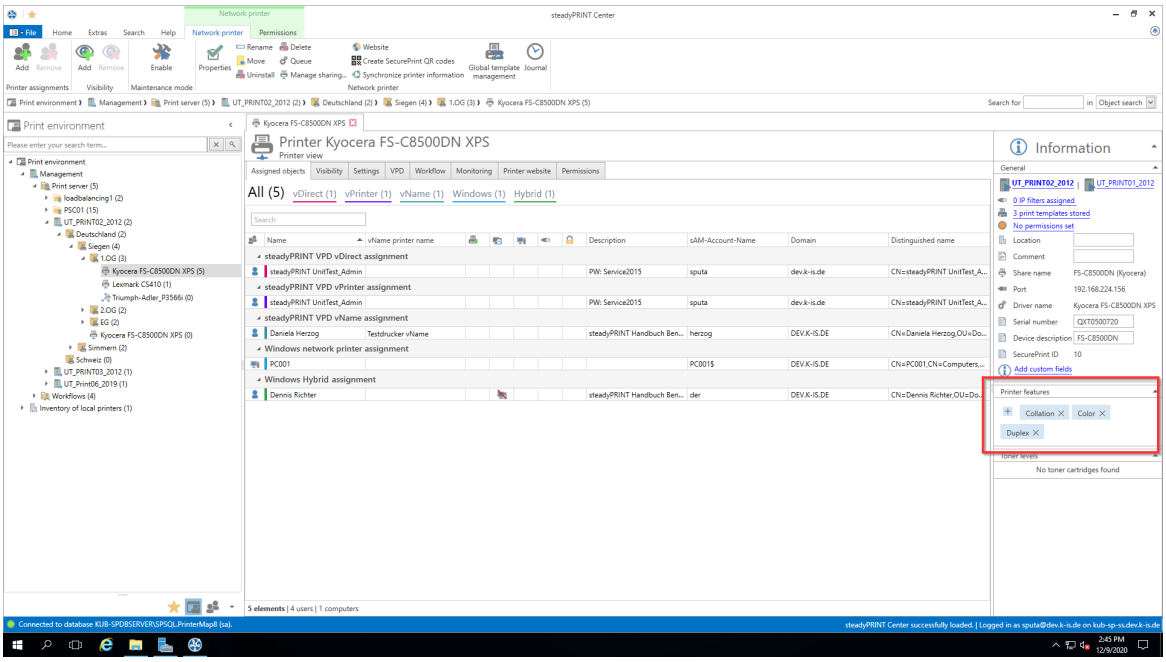

Figure 84: Display of PrinterTags

Add-ons for folders and print servers

As of version 7.6, it is possible to assign tags even to folders and print servers. This way complete folders and print servers can be categorized and filtered in the ***steadyPRINT Center.***

Inheritance of tags

If the checkbox "recursive" is ticked when creating a new tag, all subordinated elements will also be provided with the same tag. This affects all subordinated folders, print servers and printers. The assignment is done recursively, which means that not only the direct subelements but all subordinated elements contain this tag.

5.7 Overview

General

In version 5.1 of **steadyPRINT** the new home screen is introduced for the first time (see figure steadyPRINT home screen).

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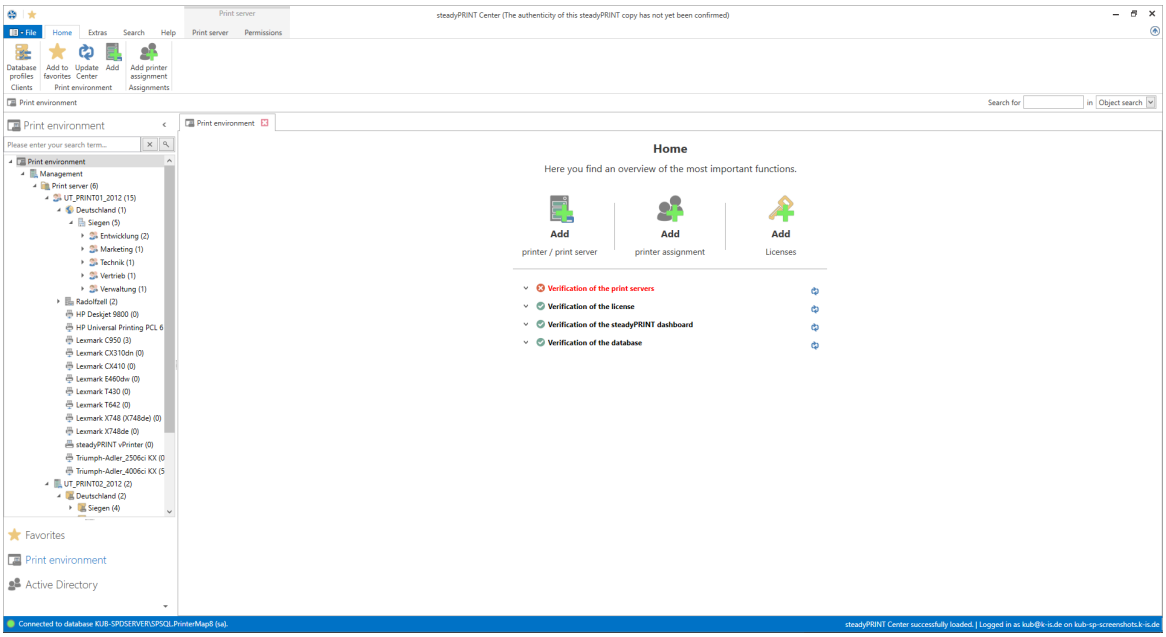

Figure 85: steadyPRINT Home Screen

Here, you get quick access to the functions

1. Add Print Server / Add Printer
2. Add Authorizations
3. Add Licenses

Test Runs

Furthermore, thanks to the new test runs, you get a visual feedback on the state of your system as soon as the ***steadyPRINT Center*** is started.

Until now, the following cases have been tested:

- Examination of the master print server
  - Accessibility per Ping
  - Status of the print spooler (Also see Warming up period of the print spooler)
- Examination of the backup print servers
  - Which print servers are protected against failures?
  - Existing print servers:
    - Accessibility via Ping
    - Status of the print spooler (Also see Warming up period of the print spooler)
    - Status of the **steadyPRINT** Server service
- Examination of the **steadyPRINT** Agents
  - Which Agents in the **steadyPRINT** environment need an update?
- Examination of the **steadyPRINT** Services
  - Which services in the **steadyPRINT** environment need an update?
- Examination of the Microsoft SQL Server Native Client version on the server of the ***steadyPRINT Dashboard***
  - For an error-free performance of the ***steadyPRINT Dashboard***, at least version 11 of the Microsoft SQL Server Native Client is necessary.

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- Examination of the configuration of the ***steadyPRINT Dashboard***
- Examination of the ***steadyPRINT Dashboard*** service
- Examination whether a server is set for collecting printer status information.
- Examination of the validity of your license
- Examination of the expiration date of your license
- Examination of the available memory of the ***steadyPRINT Database***
- Examination of the response time of the ***steadyPRINT Database***
- Examination of incorrect assignments
  - Are there any assignments of users locked in the Active Directory?
  - Are there any assignments of users who no longer exist in the Active Directory? (check using the SID)

Component Overview

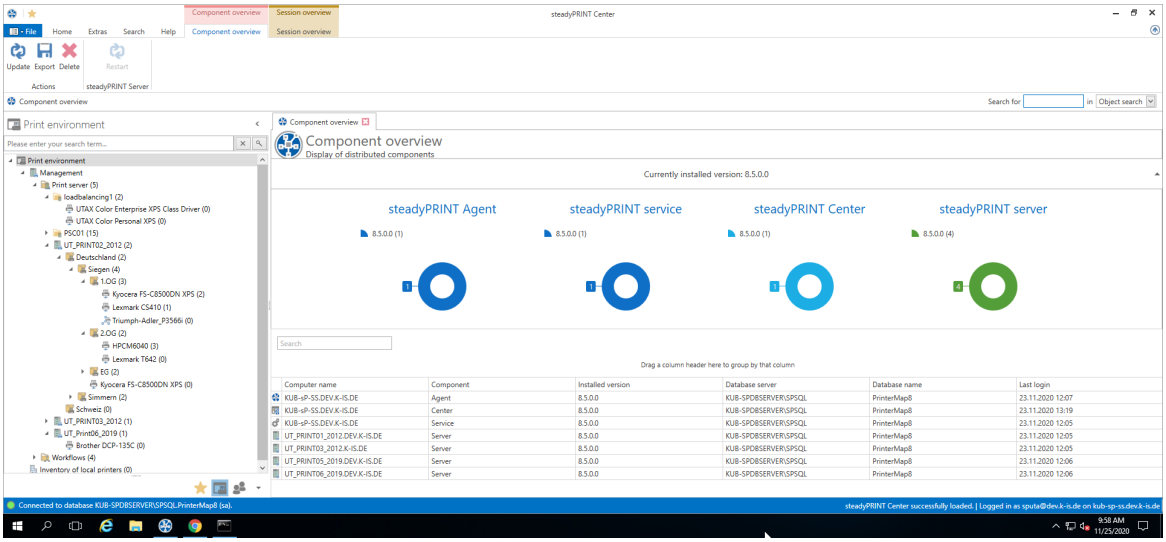

Figure 86: Home Screen - Component Overview

The component overview (see figure Home Screen - component overview) shows the distribution of the individual components including the version number in your environment.

You have the possibility to export the list or to manage components via the ribbon or the context menu.

Session Overview

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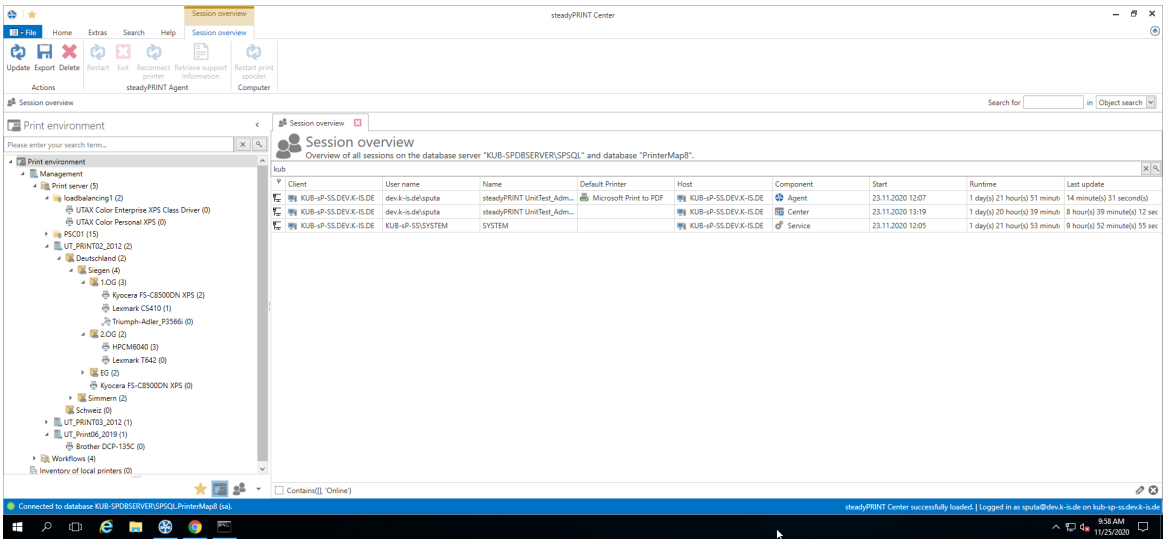

Figure 87: Home Screen - Session Overview

The Session Overview (see figure Home Screen - session overview) shows all sessions in the current database. Sessions on older databases are no longer displayed.

Via the context menu, you have the possibility to perform various actions with the notification system:

- Via Update, the whole view can be updated
- Via Export, the list can be exported as usual
- Via Delete Entry, the selected entries can be removed
- Under ***steadyPRINT Agents***, you have several possibilities to control the Agents remotely:
  - Via Reboot the Agent is restarted
  - Via Close the Agent is terminated
  - Via Update the automatic Agent Update is started
  - Via Reconnect printers the Agent is caused to recreate the printer connections
  - Via Support-Log a support log can be requested from the Agent and saved as a file

Important	***Notification System***
	In order to send notifications via the steadyPRINT Center, you might have to adjust the service user and/or the ports in the settings. The default port for the steadyPRINT Service is 8009 and for the steadyPRINT Server 8008.

steadyPRINT Search

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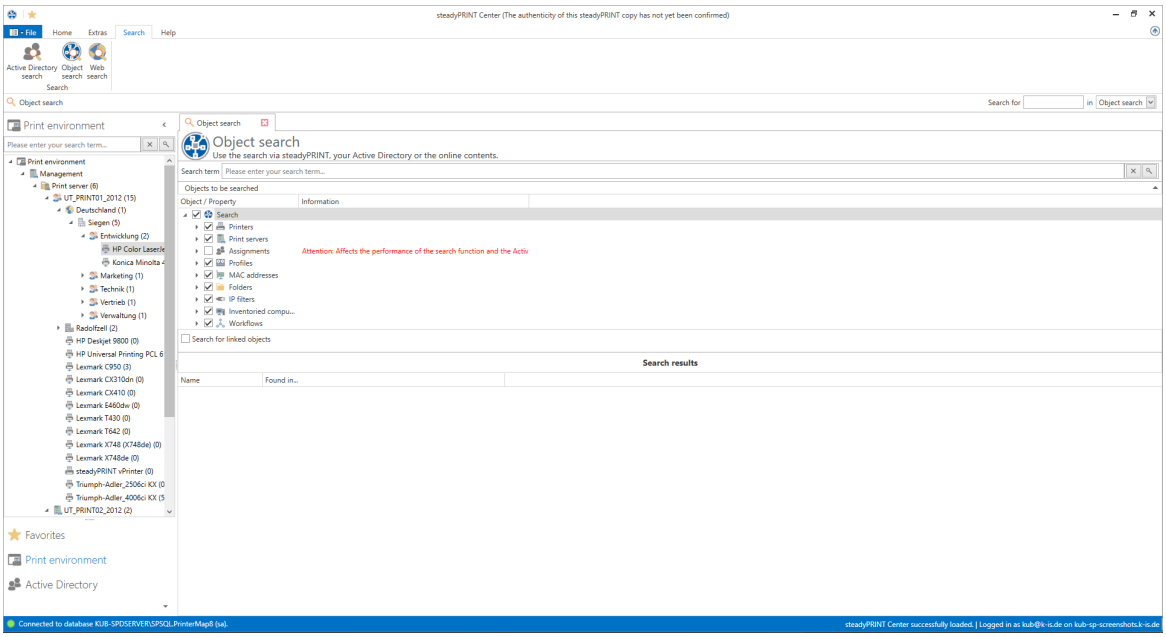

Figure 88: Home Screen - Search

The ***steadyPRINT Search*** (see figure Home Screen - search) enables you to search for objects in your entire **steadyPRINT** environment and to have all links displayed.

This way, you can find out in an instance which Agent profiles are assigned to a user, which objects share a certain IP filter, and the like.

Moreover, a new and improved Active Directory Search has been added via this interface allowing a cross-domain search and also restricting the search for certain object types.

In order to complete this component, you can also extend the search function to our online Knowledge Base and our Manual by using the tab Online Search.

For further information on this component and its various capabilities, please click here.

5.8 Multi-Client Capability - Database Profiles

Configuration of the multi-client capability - database profiles

The database profiles can be used to change the database for the ***steadyPRINT Center*** during the runtime. This way, test systems and productive systems can easily be switched or the ***Center*** can be started with customer data bases.

Open the ***steadyPRINT Center*** and go to the settings -> database profiles (see figure: Database profiles in the settings).

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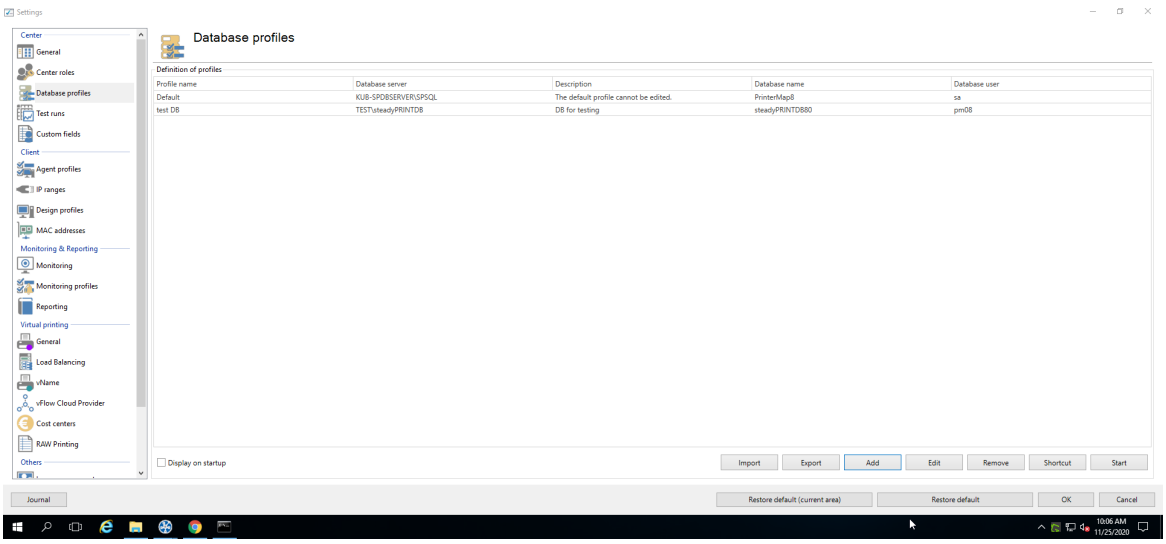

Figure 89: Database profiles in the settings

Create a new profile

Click **Add** in order to create a new database profile (see figure: Database profiles - create a new profile).

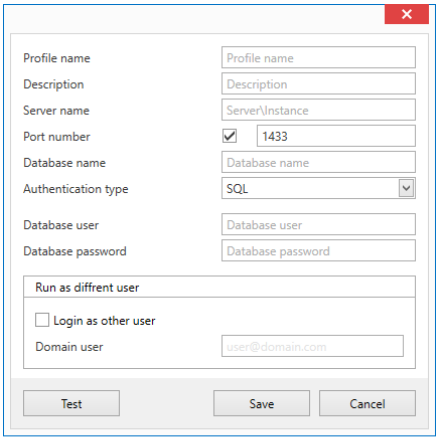

Figure 90: Database profiles - create a new profile

Name	Description	Options
Profile Name	The displayed profile name.	Necessary.

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Description	The description of the profile.	Optional.
Server Name	Server name\Instance of the Sql server or IP address of the Sql server	If you try to access a remote database (VPN) it is recommended to use the IP address instead of the SQL server or to enter the DNS name to the host file under C:\Windows\System32\drivers\etc. More information: https://www.petri.com/easily-edit-hosts-file-windows-10
Port	Port to be used for the shortcut to the database server.	If you do not select the check mark, no special port is used for the connection.
Database Name	The name of the database, that is connected to the port.	Necessary
Authentication Type	Select Windows or SQL authentication.	
User Name	User name for the shortcut to the SQL server.	The current Windows user is automatically used in case of Windows authentication.
Password	The user password	Automatically assigned in case of Windows authentication.

Login as different user

You can use a different user in order to start the ***steadyPRINT Center.*** This becomes necessary if your Windows user is not registered in the Center roles and thus not able to access the Center stored in the database.

If you start the ***steadyPRINT Center*** as a different user, the Center is started on the current system as the selected user. The database stored in the database profile is used as the data source. In a Windows console you will be asked for the user password only once. The user has to have rights to access the Center on the current system as administrator (local administrator).

Create a shortcut

Having created the profile, you can create a new shortcut of the Center.exe which starts the profile. In doing so, the ***steadyPRINT Center*** will be started with additional starting parameters.
For the creation of a shortcut, you select the desired profile and click **Shortcut**. Select the storage location for the shortcut and click **OK**.

Edit a profile

Click **Edit** in order to modify the settings made under „Create a profile“.

Delete a profile

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Select a profile in order to delete it.

Display database profiles when starting the Center

Select this check mark in order to have the selected profiles displayed any time the ***Center*** is started.

Export profiles

You can make the database profiles accessible to other users.
To export profiles, click **Export**, go to the list of available profiles, select all those you want to export and click **Export**.
All relevant information will be encrypted and stored as a .xml file to the selectable target and can be imported by other users in the database profile view (see figure Database profile - export of profiles).

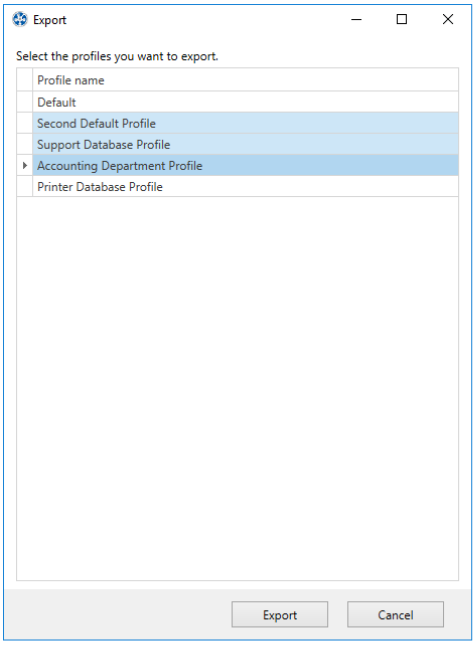

Figure 91: Database profile - export of profiles

Import profiles

To import profiles, click **Import** and select the desired .xml file. All profiles that are stored to the .xml file will be imported automatically.

Error analysis

If there are any problems with the registration or the database profile, it is recommended to test the connection by clicking **Test** in the window **New Profile**.
If there are any problems with the authentication as Different User, it is recommended to open a console and to run the Target: of the created shortcut so that the error message becomes visible. Make sure to

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run the console as administrator (see figure Database profile - Error analysis in the console).

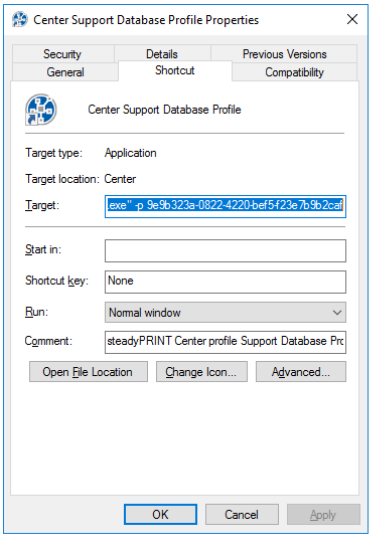

Figure 92: Database profile - Error analysis in the console

5.9 The Favorite System

As of **steadyPRINT** version 6.0, the maintenance of personal favorites is available to all users of the ***steadyPRINT Center*** (see figure steadyPRINT Center - Favorite System).

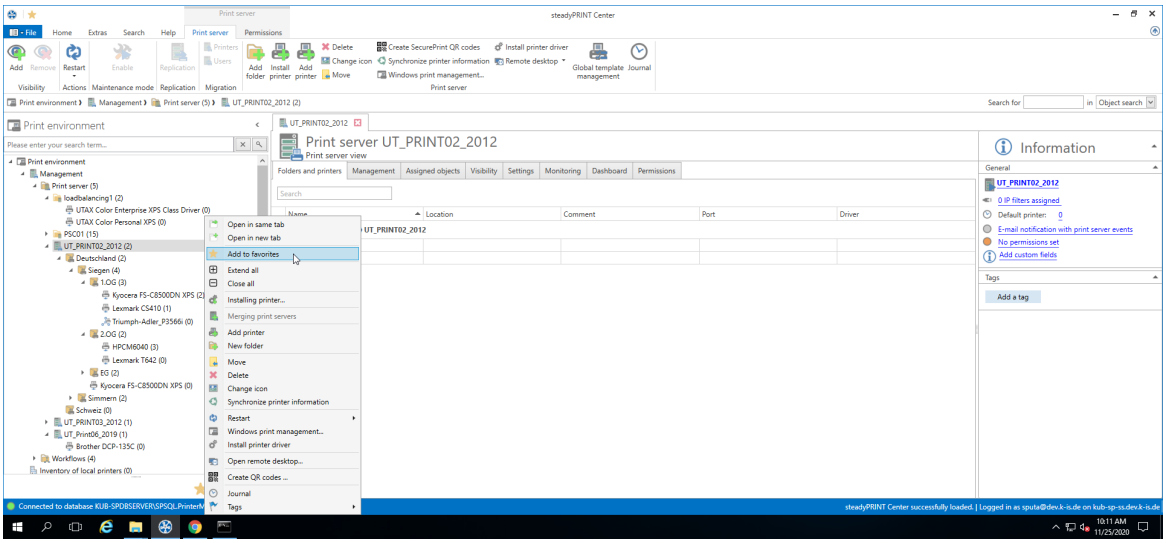

Figure 93: steadyPRINT Center: Favorite system

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The user favorites are stored in the file favorites.xml of the respective user profile and are thus made available to the user in any Center he is currently working with.

There are different ways for the user to add such a favorite:

1. The context menu of an opened tab
2. The context menu of an entry in the printing environment tree
3. The context menu of selected elements in the ribbon

The user can integrate the favorite tree into his folder structure in a way that best suits his working methods.

For this purpose he uses the context menu which the favorite tree is based on (see figure steadyPRINT Center: Organizing favorites).

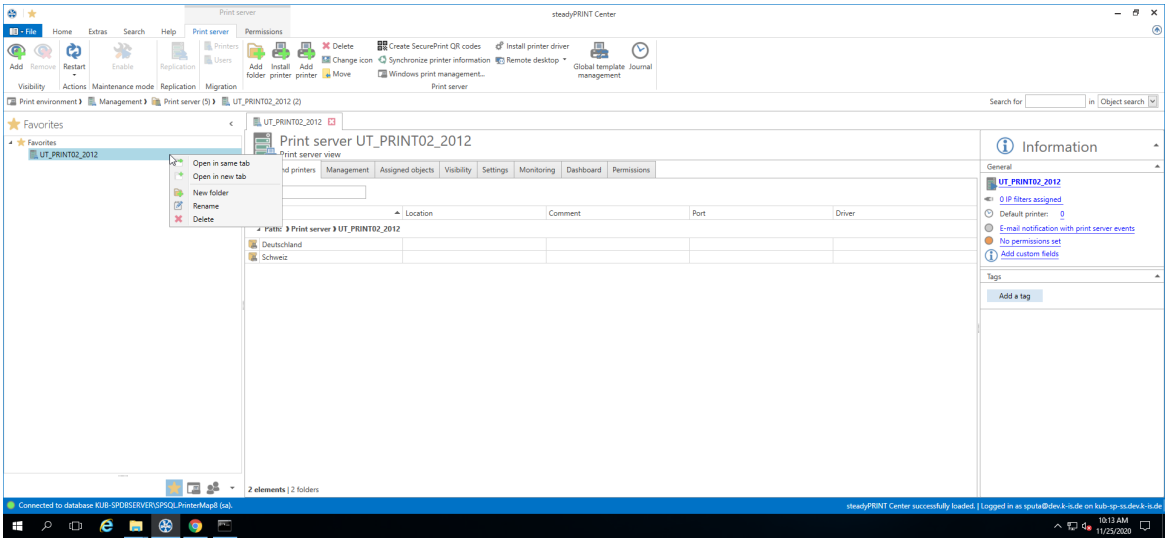

Figure 94: steadyPRINT Center: Organizing favorites

Important	*Click Behavior for Entries in Favorite Tree*
	The entries in the favorite tree are only links to already existing elements in other parts of **steadyPRINT**. Example: Should a user have a printer in his favorite tree and lose the permission - by Center roles - to use this printer after creating this favorite, the entry in the favorite tree will nevertheless remain. At this point, however, the user will no longer be able to access this printer.

5.10 Working with Tabs

As of **steadyPRINT** version 6.0, users of the ***steadyPRINT Center*** can now open tree elements in tabs which enables them to jump back and forth between printers, print servers, computers and others.

In order to open an elements in a new tab, just open the context menu of the element and select "Open in new Tab" (see figure steadyPRINT Center: Open in active tab / open in new tab).

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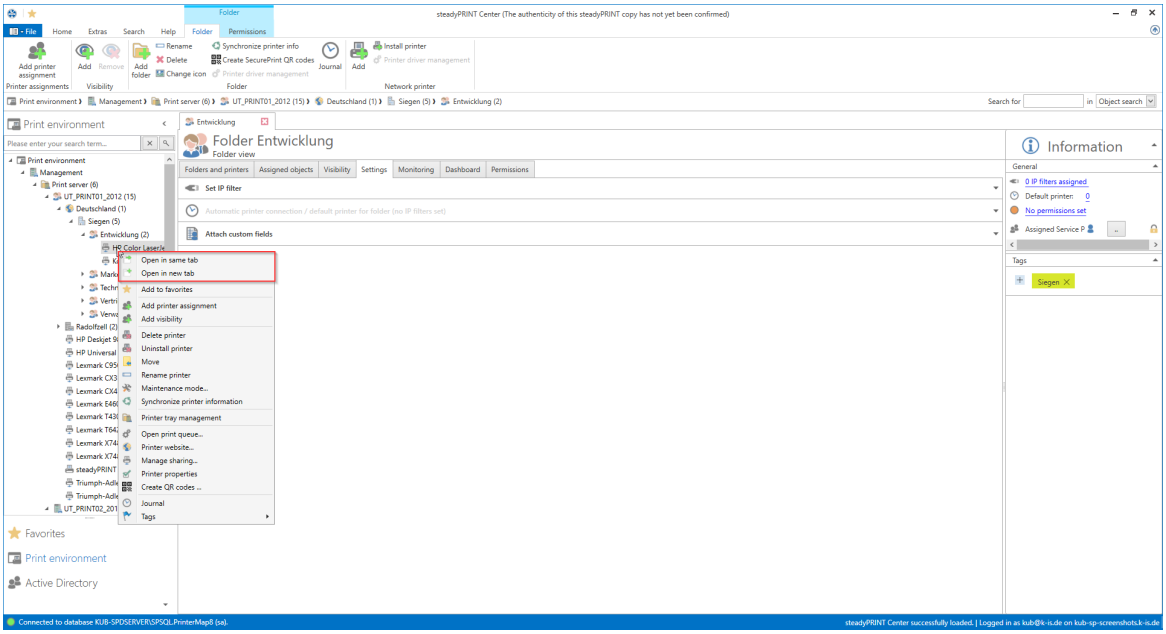

Figure 95: steadyPRINT Center: Open in active tab / open in new tab

You can close your open tabs via the context menu of the tab or the small "x" in the right area of the window (see figure steadyPRINT Center: Closing tabs).

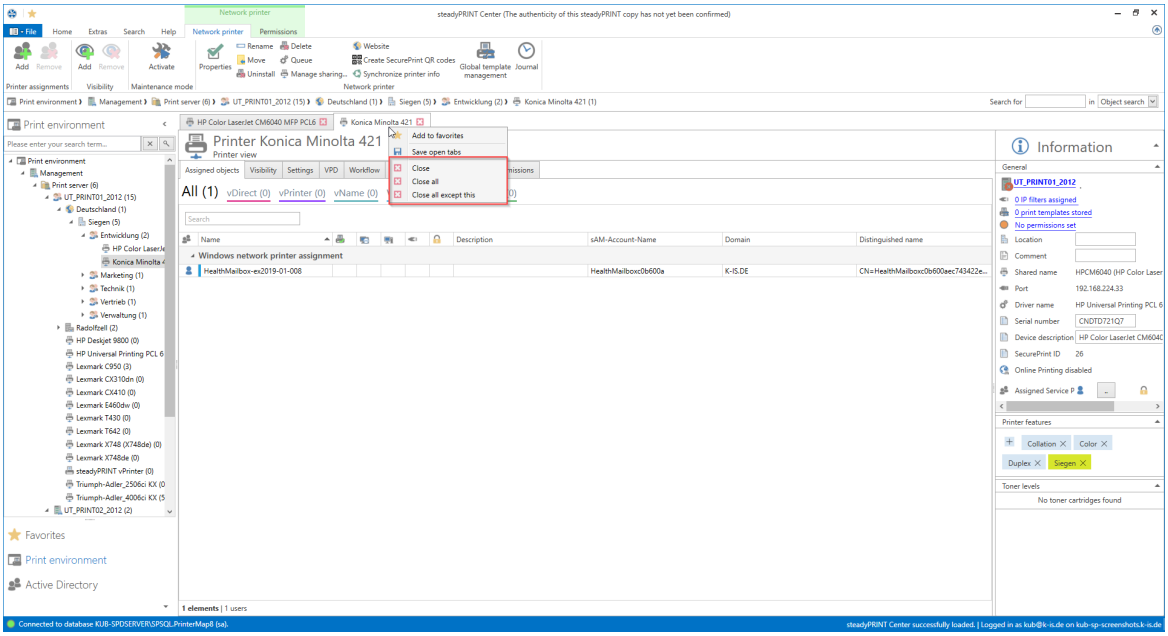

Figure 96: steadyPRINT Center: Closing tabs

If you want to change the default behavior of **steadyPRINT** when clicking an element, you can do this by accessing the settings of the ***steadyPRINT Center*** (see figure steadyPRINT Center: Default behavior of tabs).

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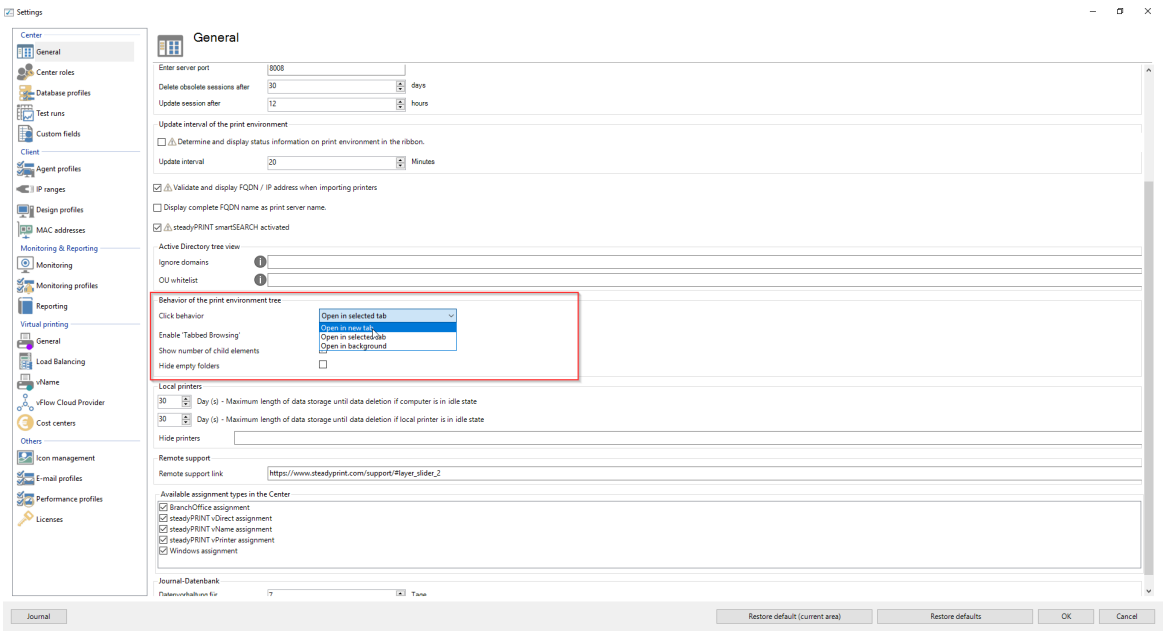

Figure 97: steadyPRINT Center: Default behavior of tabs

steadyPRINT can store the open tabs and automatically open them at your next start.
To do this, just click any open tab and select "Store open tabs" - the rest will be done by **steadyPRINT** (see figure steadyPRINT Center: Storage of tabs).

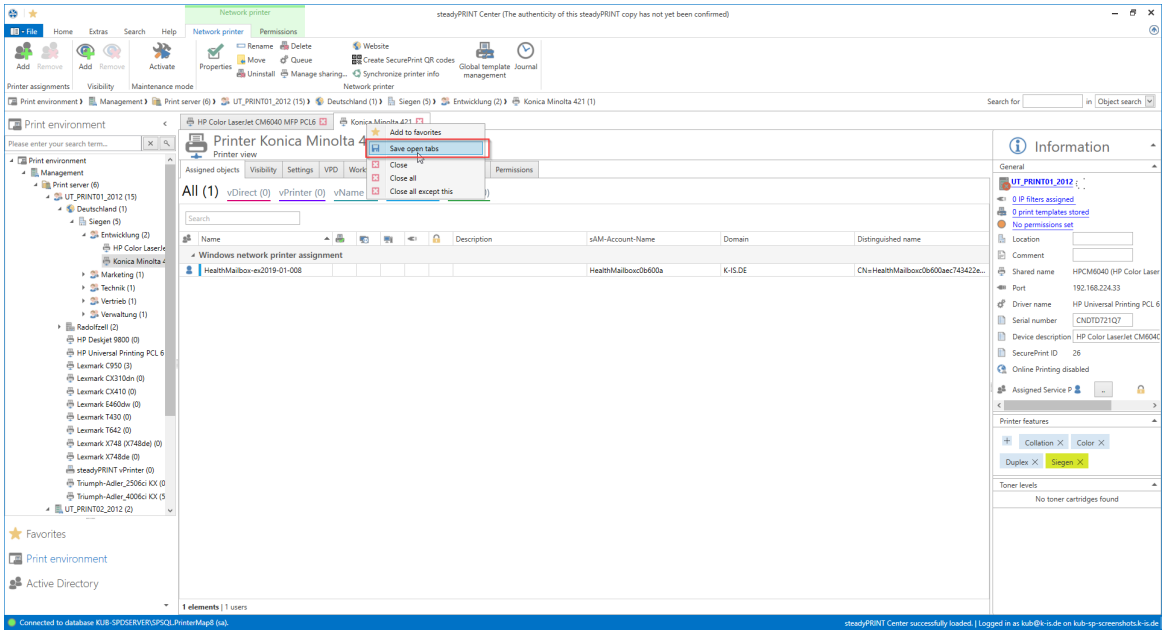

Figure 98: steadyPRINT Center: Storage of Tabs

5.11 Quick Access

All static functions that you can find in the ribbon of the ***steadyPRINT Center*** can be stored as a quick access.

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To do this, make a right mouse click on the desired function and then click **Add to quick tool bar** (see figure steadyPRINT Center: Creating a quick access).

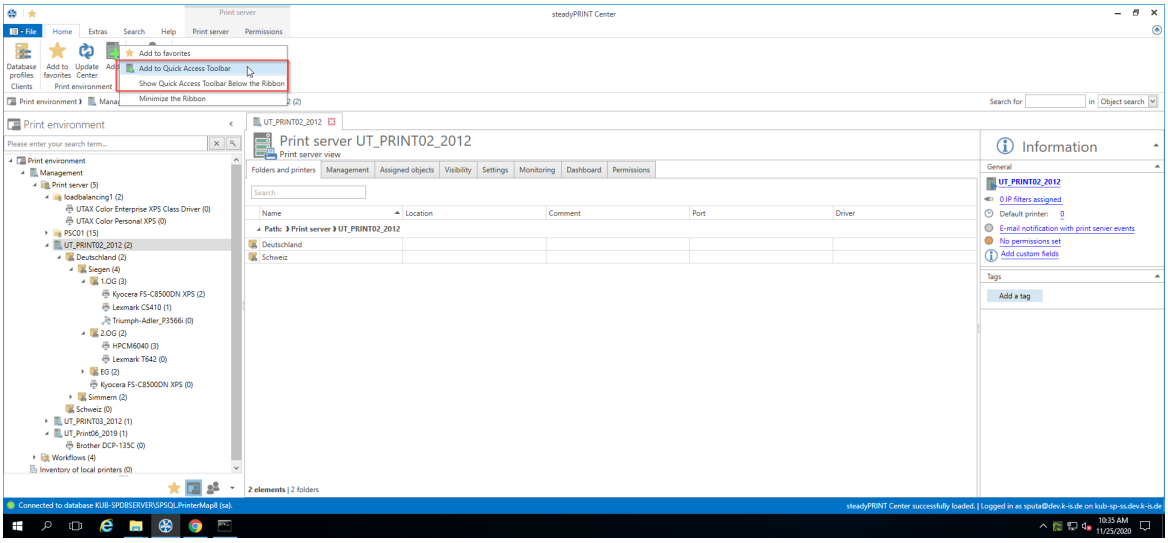

Figure 99: steadyPRINT Center: Creating a quick access

Then, you will find your quick access in the upper left area of the window (see figure steadyPRINT Center: Quick access).

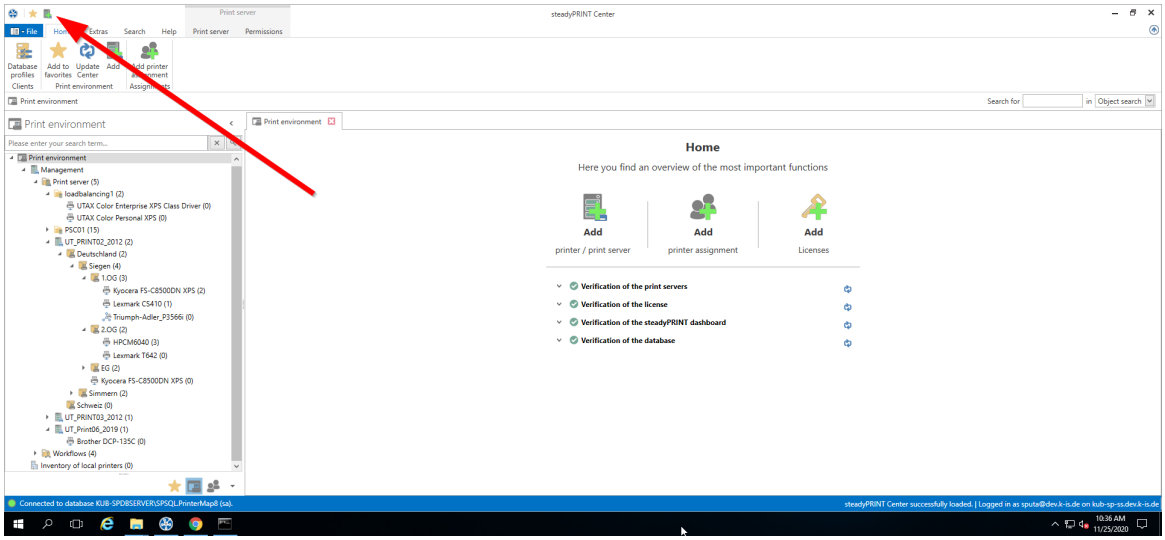

Figure 100: steadyPRINT Center: Quick access

These quick accesses are stored in the data base and will be re-loaded at each new start of the ***steadyPRINT Center***.

5.12 Notifications

The ***steadyPRINT Center*** has a notification system that allows to send and receive push notifications. If, for example, an assignment is modified for a user, this information is automatically forwarded to the respective client - the printer assignment is subsequently updated.

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Since version 7.5.0, all Center administrators who are currently active are additionally notified. This way, they are notified of any changes in the **steadyPRINT** print environment during operation. The message is displayed in an infobar below the menu bar (see figure Push Notifications).

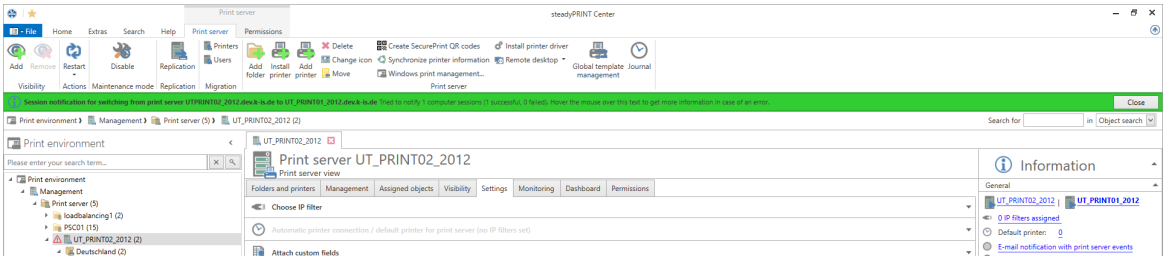

Figure 101: steadyPRINT Center: Push Notifications

Note	*Push Notification*
	Push notifications use 8009 by default and can be modified via the settings in the ***steadyPRINT Center***. When using the integrated Windows authentification, please store the specified service user in the settings of the ***steadyPRINT Center***.

5.13 steadyPRINT Dashboard

As of version 6.5 you have the option to have the status of your complete print environment displayed in the ***steadyPRINT Dashboard***.

This is done via the ribbon (see figure steadyPRINT Center: Accessibility of the Dashboard (a)) and the detailed view of the objects in the tree (see figure steadyPRINT Center: Accessibility of the Dashboard (b)).

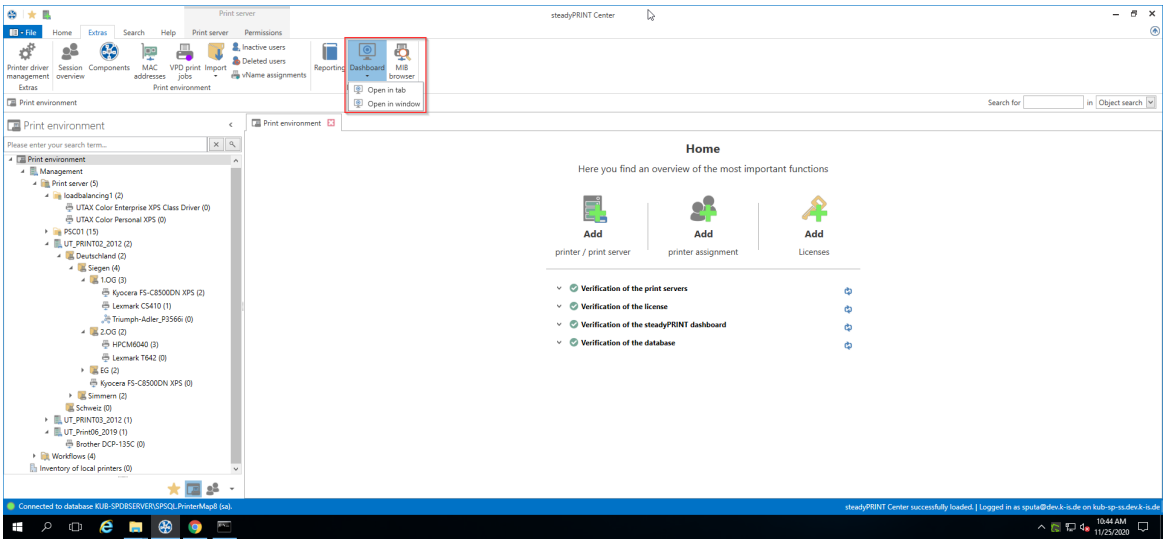

Figure 102: steadyPRINT Center: Accessibility of the Dashboard (a)

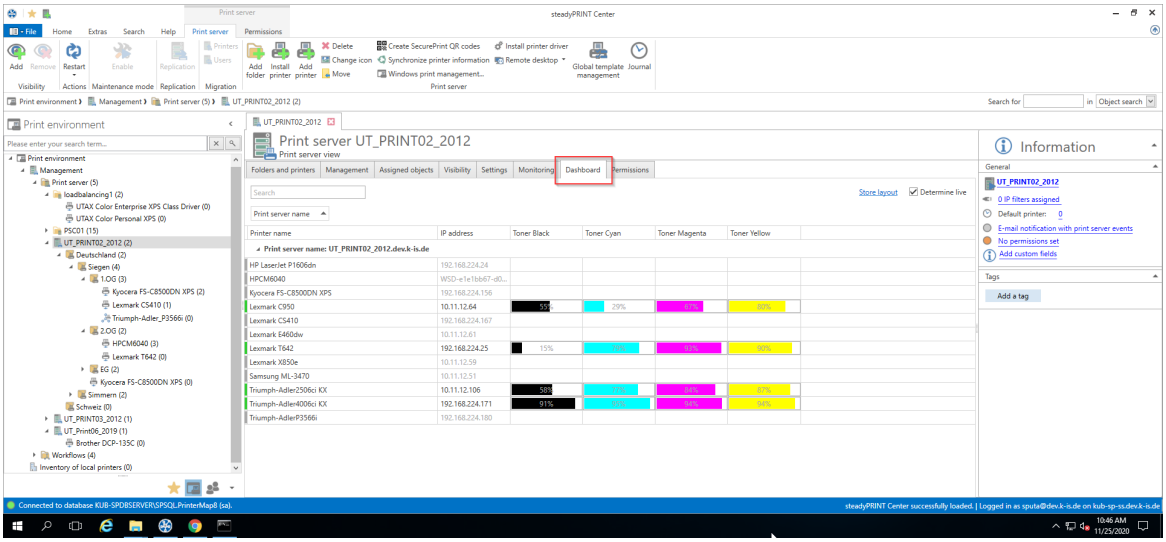

Figure 103: steadyPRINT Center: Accessibility of the Dashboard (b)

All information that you see here are live data which are collected in the environment in real time.

Additional properties

In the table you can have further information such as serial number, page number and more displayed (see figure steadyPRINT-Overview of roles).

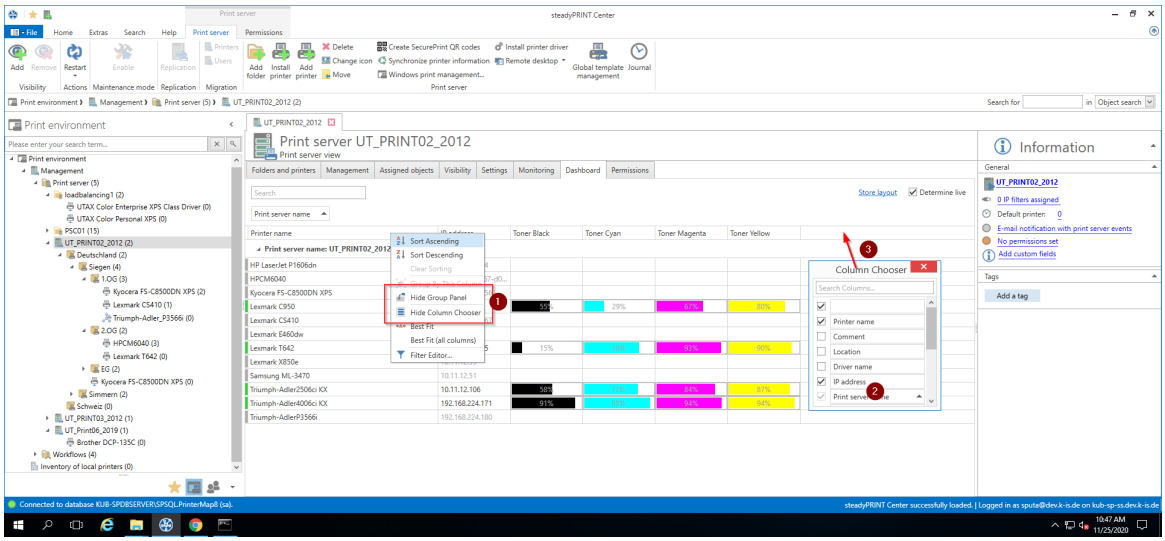

Figure 104: steadyPRINT - Overview of roles

5.14 Authorizations in the steadyPRINT Center

The ***steadyPRINT Center*** has its own permission system on the basis of roles handling the authentication as well as authorizations to access functions and objects.

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Roles

Individual roles can be defined and domain accounts added via file > settings > Center roles in the ***steadyPRINT Center*** (see figure steadyPRINT Center - overview of roles).
At first, a newly created role has no permissions - these must be granted in a dedicated mode. The mandatory and predefined role sysadmin, however, has full access to all objects and settings in the ***steadyPRINT Center***. When initially creating the sysadmin role, **steadyPRINT** automatically adds the group Builtin\Administrators as well as the user who starts the ***steadyPRINT Center*** for the first time. An adjustment of authorized administrators, however, can be done subsequently.

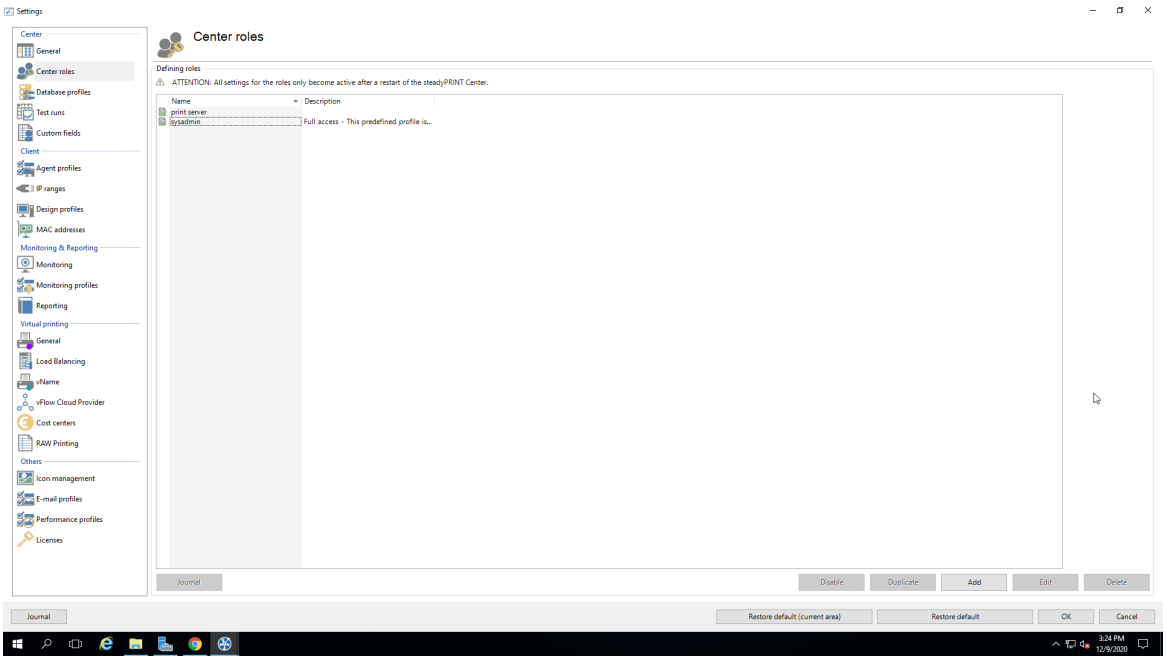

Figure 105: steadyPRINT Center - overview of roles

Role Properties

In the properties of a Center role, access permissions for the stored accounts (users, groups and computers) are granted within the ***steadyPRINT Center***. The permissions themselves are divided into different areas and assigned to certain levels. (see figure steadyPRINT Center - roles).

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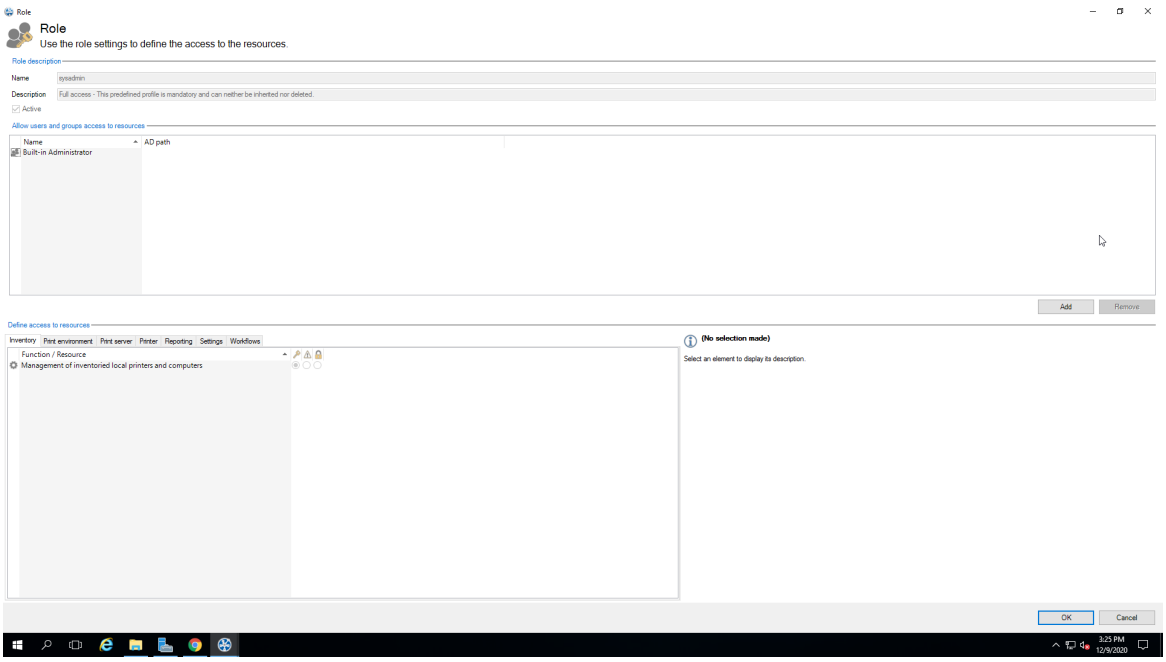

Figure 106: steadyPRINT - roles

Permissions

There are 3 levels available for granting permissions to access functions and objects:

- Grant: Grants full access to the function and/or object.
- Read only: Grants reading access to the object.
- Deny: Denies the access to the function and/or object.

Note	***Hiding particular print servers, printers and folders in the tree***
	By assigning the permission Deny to the administration of print servers and printers, you can hide them for desired accounts. Print servers, printers or folders are thus not displayed in the ***steadyPRINT Center*** (see Linking roles to objects).

Linking roles to objects

In the ***steadyPRINT Center***, permissions are granted to print servers, printers as well as folders by linking the available roles.

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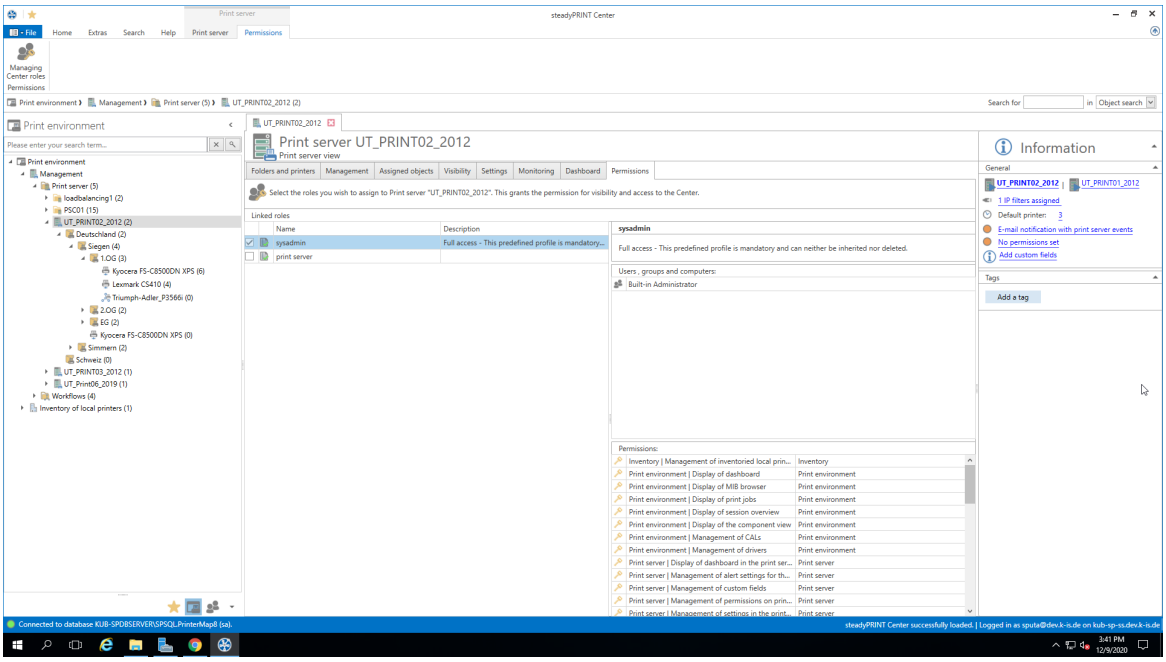

Figure 107: steadyPRINT - linking the roles

The figure steadyPRINT Center - linking the roles shows the granting of a permission on folder level below the print server bps. Thus, the role Access Admin DE gets access to the folder Deutschland as well as all other objects (printers and folders) below.

Note	*Linking the role sysadmin*
	The mandatory and predefined role sysadmin is neither visible nor can it be deselected.

Inheritance

By marking the check box Inherit permissions from figure steadyPRINT Center - linking the roles, roles are inherited from the object lying above. An inheritance takes place until it is canceled again by linked roles on an object lying below.

Authentication and Authorization

The ***steadyPRINT Center*** authenticates a user on the basis of the roles and the included accounts. If the authentication against the available roles fails, the ***steadyPRINT Center*** enables a login with an alternative user or the termination. (see figure steadyPRINT Center - authentication failed).

Note	*Authentication by group affiliation*
	The ***steadyPRINT Center*** authenticates the user due to his/her group affiliation. In doing so, an evaluation of nested groups takes place.

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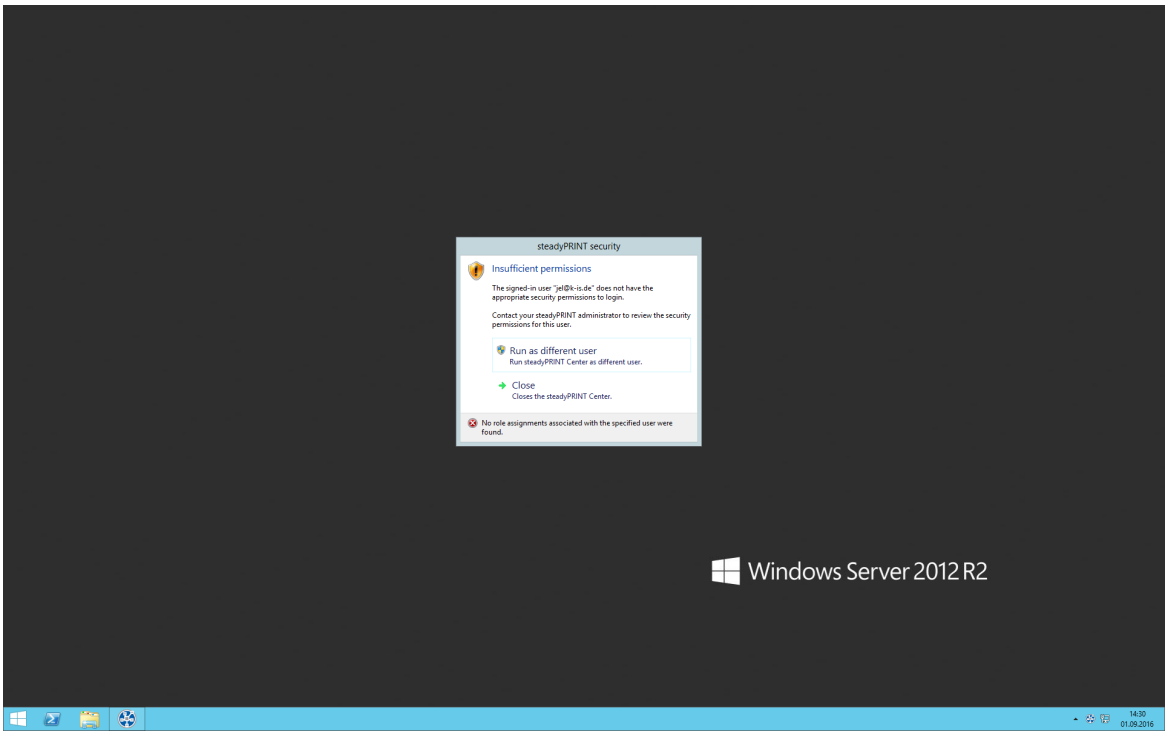

Figure 108: steadyPRINT - authentication failed

In order to authorize the access to a function or an object, the ***steadyPRINT Center*** verifies all available roles assigned to the user. Finally, the highest permissions level (high = Grant, low = Deny) will be used for the authorization process. The following figure steadyPRINT Center - authorization shows an example for an unauthorized access to functions and objects.

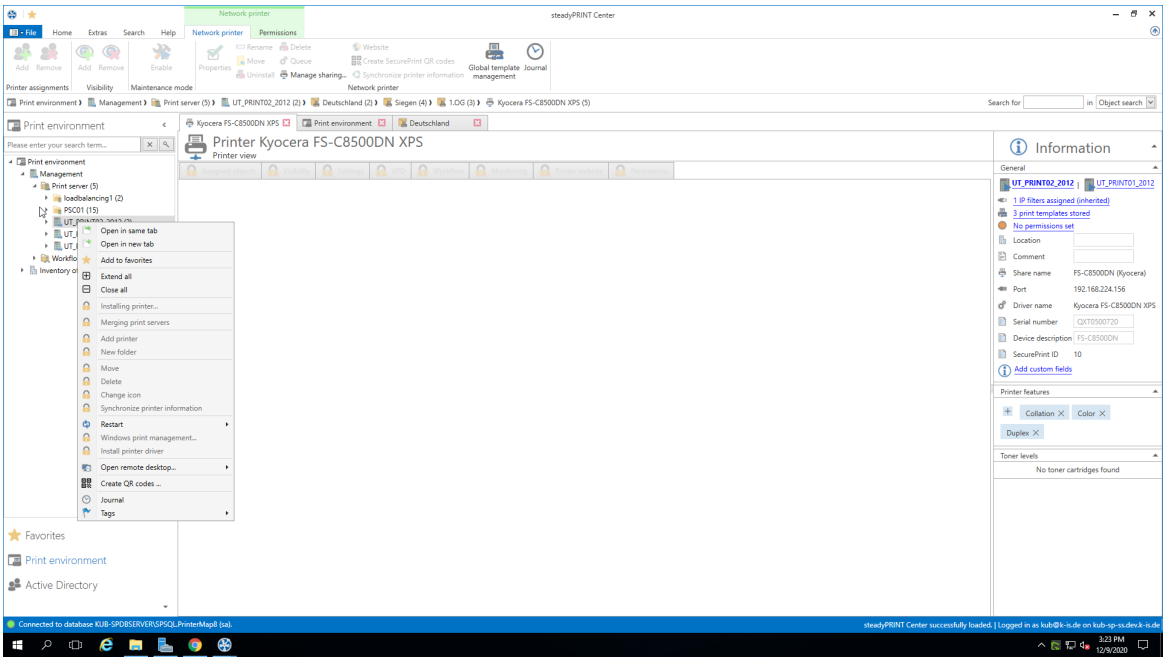

Figure 109: steadyPRINT - authorization

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5.15 Taking Inventory of Computers and Local Printers

Taking inventory allows you to have a comprehensive view of computers and local printers connected to clients. These include for example the resources of a computer as well as printers connected via USB or LPT interface. Thin Clients are currently excluded.

The ***steadyPRINT Agent*** is responsible for the inclusion of computers and printers. The inventory process takes place every time the Agent is started. After gathering the information, computers and local printers can be found in the ***steadyPRINT Center*** under the separate tree node Inventory of Local Printers. To guarantee this overview of the respective printers, they are assigned to the client and the IP network. The network address is determined by the client's IP address and the subnet mask available. If the client is located in different IP networks due to multiple network adapters, the ***steadyPRINT Agent*** creates a separate entry for each network. Additional information like users logged on to the client and other diverse details can be found under the detail view of the respective device (see figure steadyPRINT Center - inventory of local printers).

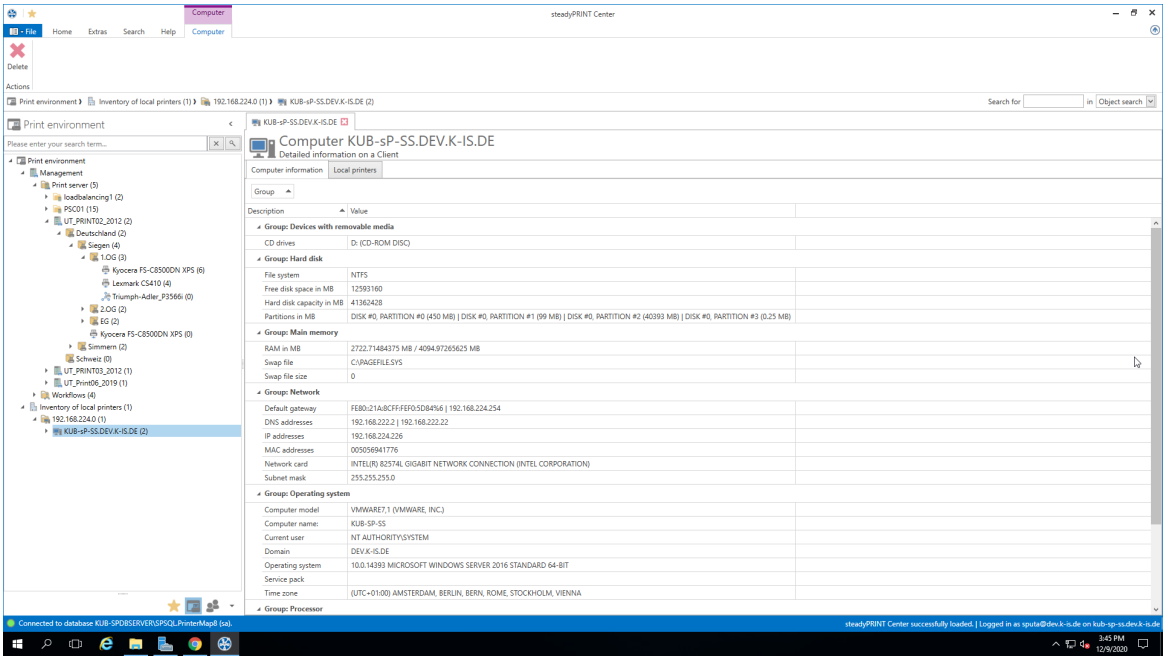

Figure <%HMFIGURECOUNTER%: steadyPRINT Center – inventory of local printers

To enable the inventory process for computers and/or local printers, the setting Inventory of computer information and/or Inventory of local printers must be enabled under Settings > Agent Profiles > [Profild] > Inventory in the ***steadyPRINT Center***. You can also configure the maximum data storage size for local printers here.

Note	***No Inventory for Remote Sessions***
	The ***steadyPRINT Agent*** performs an inventory only in a local workstation-session.

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Note	*Clients without Printer*
	To ensure a better overview, clients without printers are not displayed by the ***steadyPRINT Center*** in the tree node.

Note	*steadyPRINT VPD*
	Printers that are run with the ***steadyPRINT VPD*** driver are hidden in the inventory.

5.16 Citrix Client Printer (Citrix Universal Printer Driver) with steadyPRINT

Citrix offers the possibility and technology to transfer a client printer into the terminal server session without having to install additional manufacturer drivers on the Citrix XenApp Server. In this way, this feature offers a compression of the print data stream. To ensure the functionality, Citrix-owned drivers and services that are locally installed on the Citrix XenApp Server are required and used. Citrix describes the entire subject in the following document: https://docs.citrix.com/en-us/xenapp-and-xendesktop/7-15-ltsr/printing.html

Procedure for Using Citrix Client Printers with steadyPRINT

Installing the ***steadyPRINT Agent*** on the workstation and the Citrix XenApp Server is a prerequisite for the automatic set-up and transfer of client printers to the terminal server session by using the Citrix Universal Printer Driver. The printers can also be used on the client without Agent, the management of the client-printer connection, however, has to be done manually.

Steps:

1. Activate the option Use Citrix Universal Printer Driver (UPD) on XenApp-Server under Agent-Profiles in the ***steadyPRINT Center*** settings.
2. Add a printer assignment to the client or the Citrix XenApp Server via the ***steadyPRINT Agent*** or to a user, a group or a computer via the ***steadyPRINT Center***.
3. The ***steadyPRINT Agent*** on the client connects the required printer for the effected printer assignment.
4. Finally, the ***steadyPRINT Agent*** on the Citrix XenApp Server creates the client printer using the Citrix Universal Printer Driver.
5.

Note	*Connection Period of Citrix Client Printers*
	In case the printer is not directly available on the client, the set-up of the client printer on the Citrix XenApp Server may take a moment and is thus available after a short waiting period.

Note	*Disabling the Option for Administrative Driver Installation on a Terminal Server*

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	Make sure that the option Administrative Driver Installation on a Terminal Server is disabled. Otherwise the manufacturer driver is automatically installed from the print server to the Citrix XenApp Server by the ***steadyPRINT Agent.***

Note	***Use of Pre-Installed Manufacturer Drivers***
	When installing the printer connection, the ***steadyPRINT Agent*** at first tries to use the manufacturer driver. Only if this is not available and the option Administrative Driver Installation on a Terminal Server is disabled, the ***steadyPRINT Agent*** used the Citrix Universal Printer driver for installing the session printer.

Note	***Restoration of Old Session Printers***
	By default, a restoration of old session printers is done by means of a pre-defined Citrix guideline. Thus, the user might see the client printer multiple times resulting from different user sessions. To prevent this effect, you can disable the corresponding Citrix guideline and assign it to the respective users. You will find the guideline itself in the Citrix AppCenter under [guideline] > ICA > Print > Client Printer > Stored and Restored Client Printers.

5.17 Maintenance Mode for Printers

steadyPRINT offers a maintenance mode for printers in order to be able to perform e.g. maintenance work. Please proceed as follows:

You can put a certain printer into the maintenance mode either via the context menu or the button "Enable" in the ribbon of the printer (see figure - steadyPRINT Center - Enable maintenance mode for printers).

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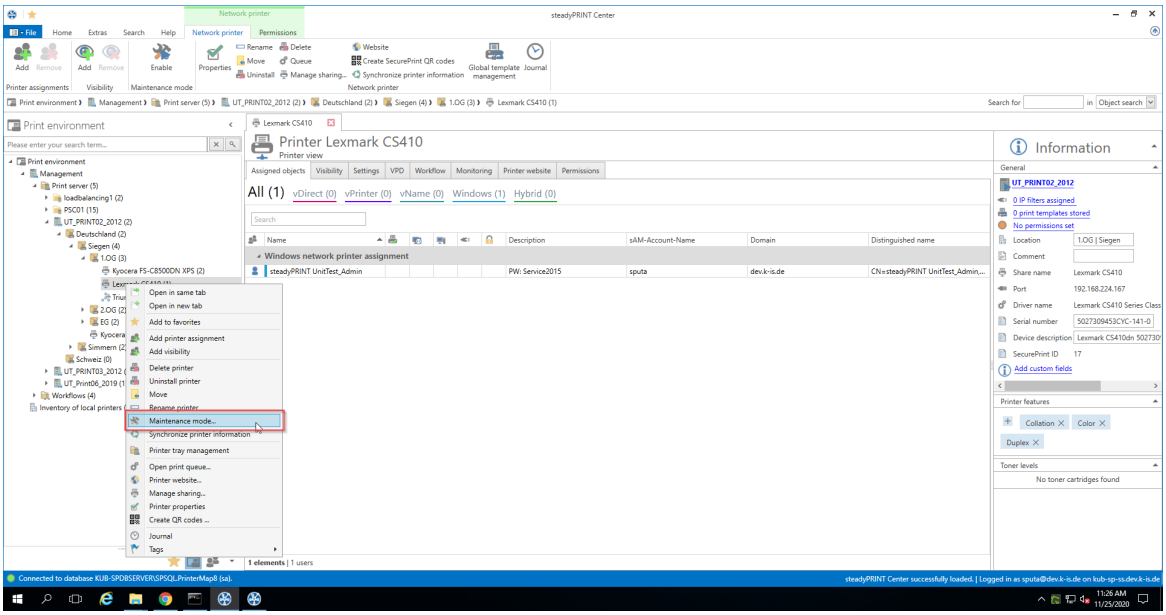

Figure <%HMFIGURECOUNTER%: steadyPRINT Center - Enable maintenance mode for printers

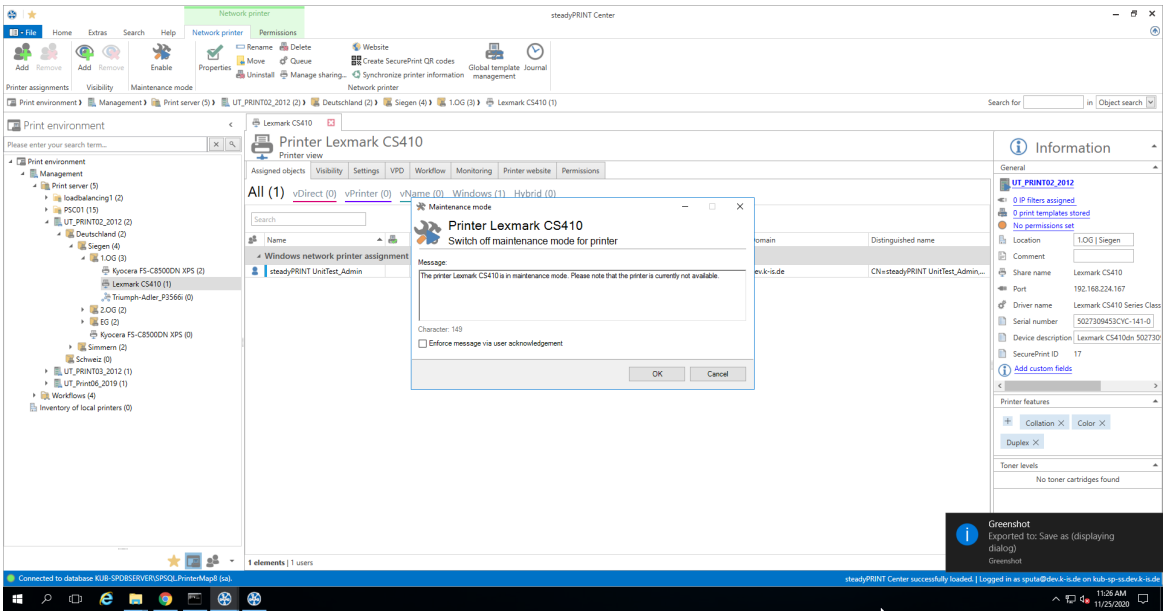

Figure <%HMFIGURECOUNTER%: steadyPRINT Center - Enable maintenance mode for printers

In order to disable the maintenance mode for a printer, please proceed in the same way. In the subsequent window "Maintenance Mode" a default message is displayed which can be adjusted for the maintenance at any time. Moreover, you can optionally adjust whether a user authorization for this message should be enforced.

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The printer assignment is removed from all users so that inadvertent printing will no longer be possible. Moreover, the users are informed about the maintenance mode via a pop-up window (see figure - steadyPRINT Agent - user notification). This is also displayed in the ***steadyPRINT Center*** and ***steadyPRINT Agent***, also see figure - steadyPRINT Agent - printer in maintenance mode.

Figure <%HMFIGURECOUNTER%: steadyPRINT Agent - User notification

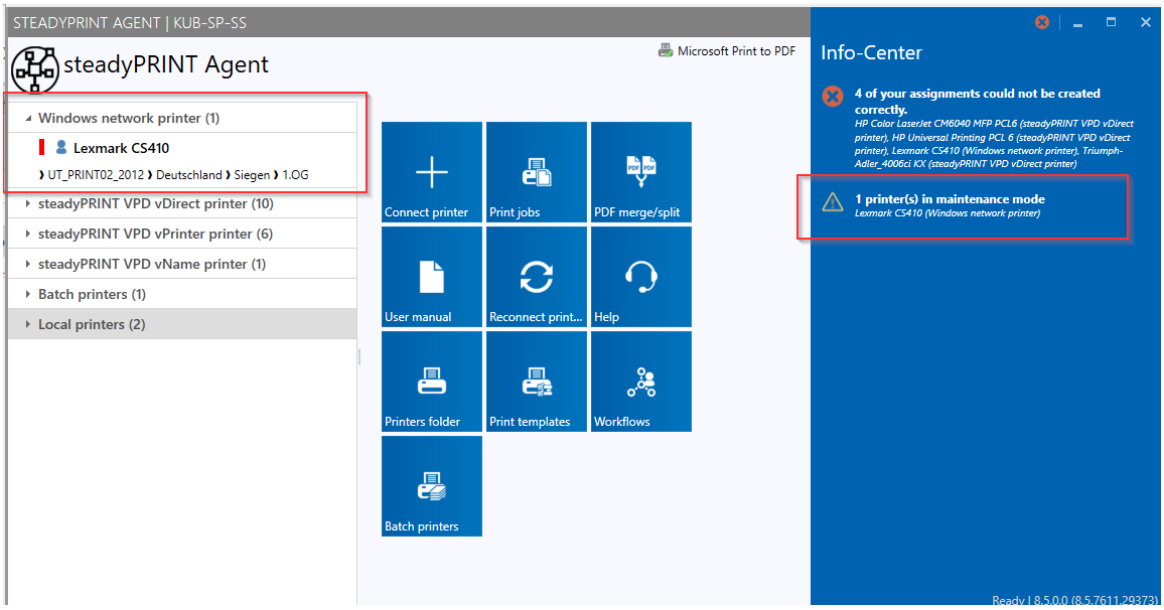

Figure <%HMFIGURECOUNTER%: steadyPRINT Agent - Printer in maintenance mode

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5.18 Synchronization of Printer Information

General

All printer information can be synchronized in 5 ways:

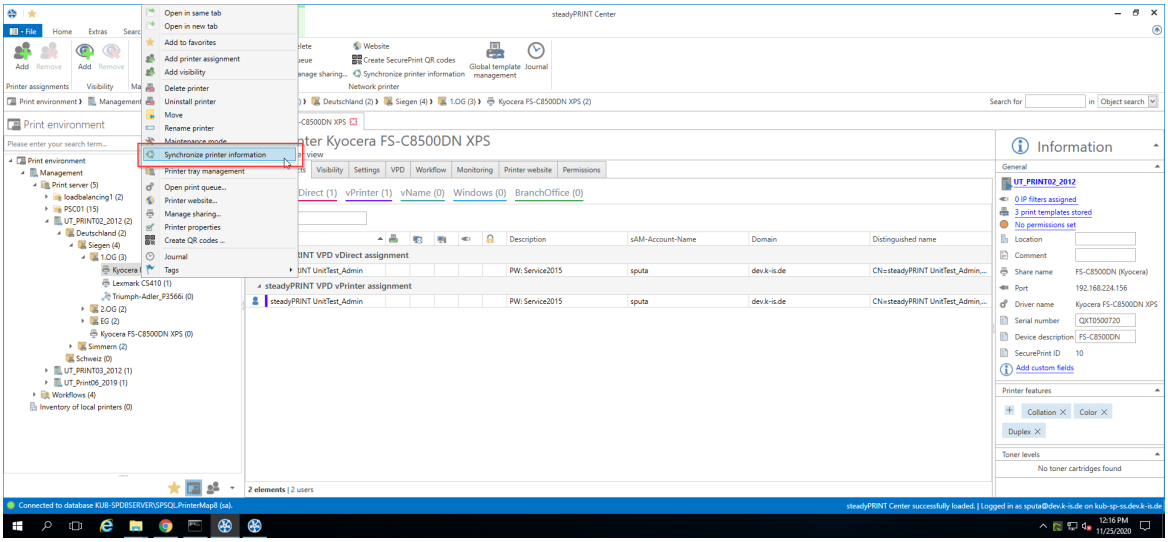

Figure 110: Synchronization of printer information via context menu

1. By the administrator via the context menu of the printer tree or its ribbon (see figure Synchronization of printer information via context menu) - print server-side synchronizsation via ***steadyPRINT Server***
2. By the administrator via the dashboard of a print server or folder - print server-side synchronization via ***steadyPRINT Server***
3. At each start of the ***steadyPRINT Server Service*** (to be activated via Settings > Performance Profile > [Performance Profile] > steadyPRINT Server > Synchronization of printer information: Perform at service start - print server-side synchronization via ***steadyPRINT Server***
4. With an interval set by the administrator - client-side synchronization via ***steadyPRINT Center***
5. At each start of the ***steadyPRINT Center*** - client-side synchronization via ***steadyPRINT Center***

When adding a new printer, its latest information is automatically written to the system. In order to be able to see the current printer information, it is possible to set an interval for the update of printer information.

Setting Options

You will find the options in the settings (see figure Synchronization of printer information via interval settings) of the ***steadyPRINT Center***.

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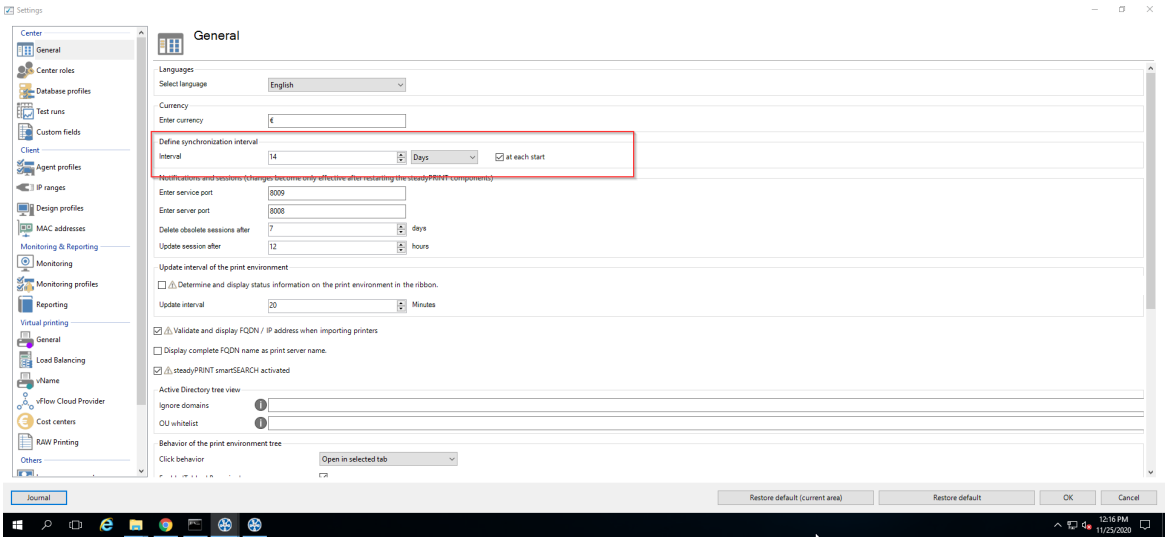

Figure 111: Synchronization of printer information via interval settings

Here, you can have the information updated during the life time of the ***steadyPRINT Center*** (or even beyond) or uniquely query the latest information from the environment at each start of the ***steadyPRINT Centers***.

5.19 Journal

The Journal (see figure Journal - Overview of the last 7 days) is used to track which changes have been made to relevant data in ***steadyPRINT***. The journal can be opened in the ribbon in the ***steadyPRINT Center*** (see figure steadyPRINT Center - Open Journal). The journal gives a global overview.

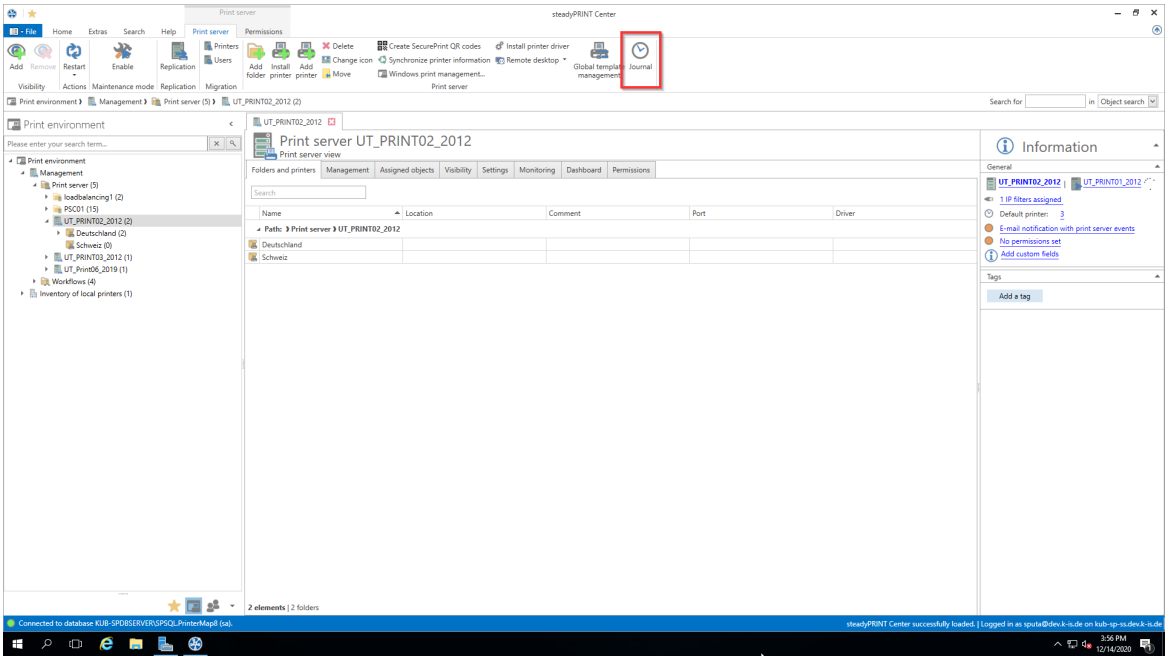

Figure 112: steadyPRINT Center - Open Journal

You can search in the table or group by column content.

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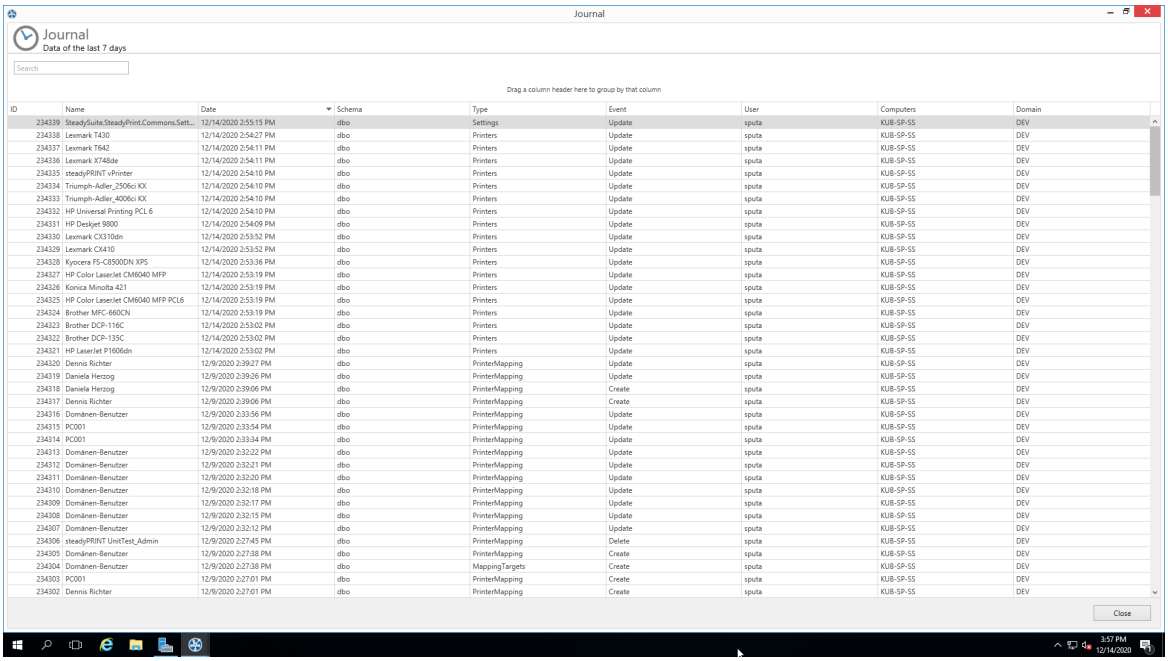

Figure 113: Journal - Overview of the last 7 days

When double-clicking an entry, you can see which data has changed compared to the previous version (see figure Journal - Overview of a change).

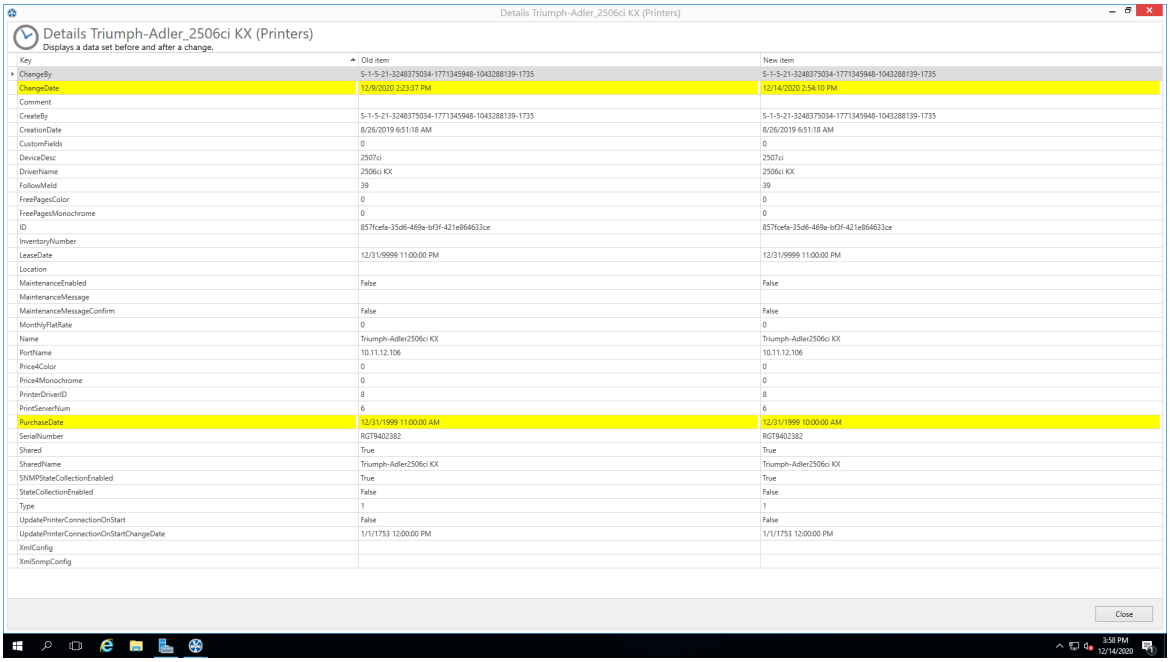

Figure 114: Journal - Overview of a change

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5.20 Search and Find

There are many search buttons in the ***steadyPRINT Center*** with identical functions. You can simply search for terms or perform a wildcard, positive or negative search. With this, objects can be quickly and effectively selected from their Active Directory Structure and printing environment. The search itself is performed within the respective object description and its visible properties (e.g. columns or tooltip-texts) in the ***steadyPRINT Center***. Some examples for the view User and Computer Management are given below.

Search term	Description
PC	Selects all Active Directory Objects where the term "PC" appears in the object name or in one of the visible properties.
PC*	Selects all Active Directory Objects whose object name or one of the visible properties start with “PC”.
***PC**	Selects all Active Directory Objects whose object name or one of the visible properties end in “PC”.
PC	Selects all Active Directory Objects where the term "PC" appears in the object name or in one of the visible properties.
!PC	Selects all Active Directory Objects whose object name or one of the visible properties do not contain the term “PC” .
!PC*	Selects all Active Directory Objects whose object name or one of the visible properties do not start with „PC“.
!*PC	Selects all Active Directory Objects whose object name or one of the visible properties do not end in „PC.

It should be noted that the Active Directory Path is excluded from the search within the view User and Computer Management as this would lead to undesirable results e. g. with the terms „cn“, „ou“, „dc“, „=“. see figure - steadyPRINT - Search for AD objects beginning with "PC": visualizes again the search for Active Directory objects.

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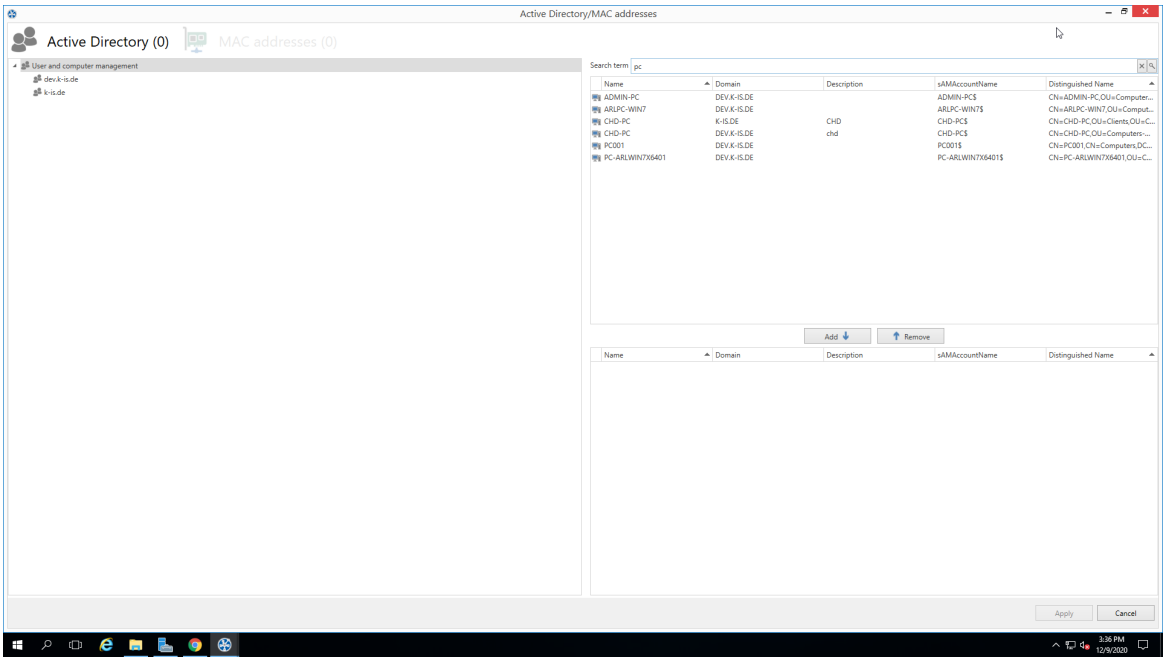

Figure 115: steadyPRINT – Search for AD objects beginning with "PC"

Search in the Printer Tree

The search for the printer tree basically works according to a Boolean logic. The search keys are separated from each other by quotation marks. To ensure that the search successfully finds a printer, all criteria within the quotation marks must be fulfilled as well as all tags specified by means of #entry. By doing so, it is possible to combine several search criteria so that the desired search result can be defined more accurately.

5.20.1 steadyPRINT Search

As of version 5.2, **steadyPRINT** offers three new possibilities to search for a variety of objects in your environment:

- Active Directory Search
- **steadyPRINT *Object Search***
- Online Search

Active Directory Search

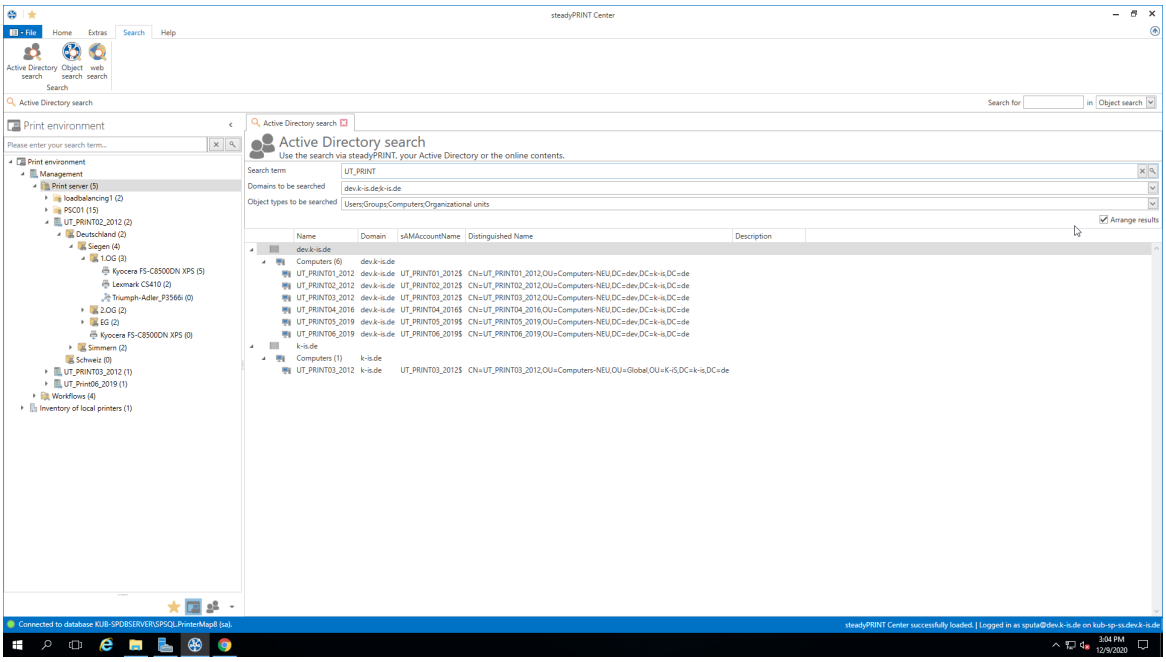

Figure 116: Search in the Active Directory

In the ***Active Directory Search*** (see figure Search in the Active Directory), you have the possibility to restrict your search by using "*" in the well-known way.

Additionally, you can now indicate in which known domain and object type the search is to be carried out. This way, the search can easily be adjusted to your needs and memorizes the entries for the next search.

Furthermore, you can choose whether you wish to receive a flat list or (as shown in the screen shot above) a grouping by domain and object type.

Note	***Key Combination for Active Directory Search***
	You can globally access this view via the key combination Ctrl + F.

Note	***Availability Active Directory Search***
	Please note that for the search within the Active Directory, a connection to the same has to be guaranteed.

steadyPRINT Object Search

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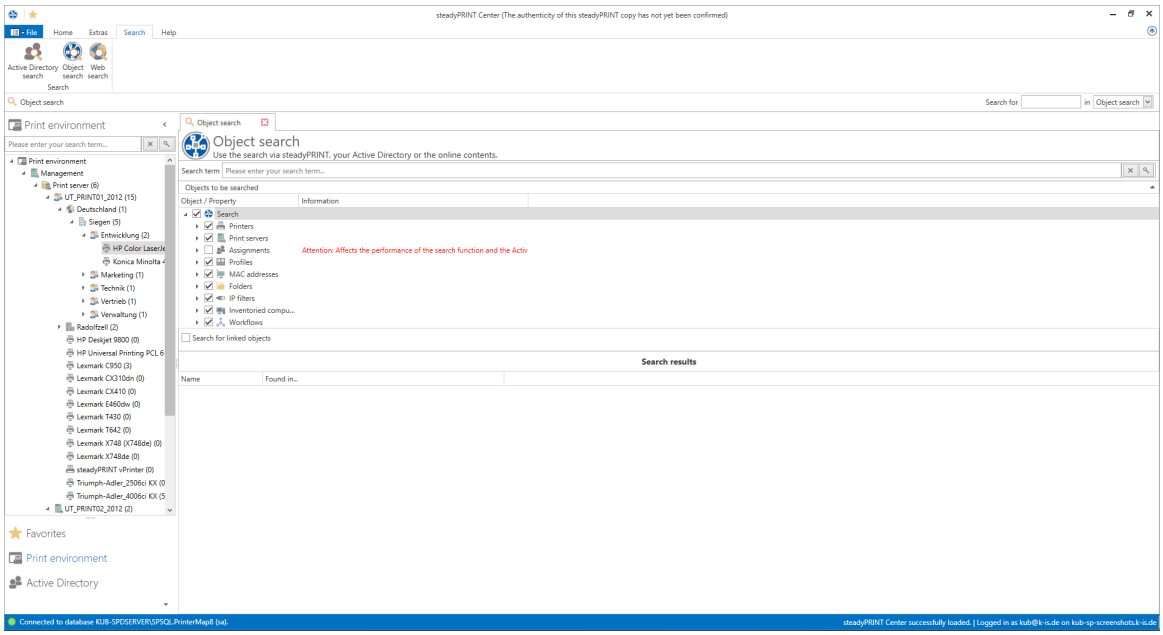

Figure 117: Search in the objects within steadyPRINT

In this view (see figure Search in the objects within steadyPRINT), as you can see, you have the possibility to restrict the object type to be searched.

The search options are identical to those of the well-known Active Directory Search enabling you to further restrict the search by using "*" as a prefix or suffix.

The subsequent result view does not only show the direct results but also the properties in which the search term was found (e.g. the driver name of a printer).
Moreover, you receive a list of all objects related to this search result.

If your search generates an IP filter, for example, you will also see the performance profiles or print servers related to this filter.
If your search contains a printer, you will immediately see the printer assignments.

Note	***Search Limits in the Object Search***
	In this view, the user will only be displayed those elements that were not denied by the Center roles.

Online Search

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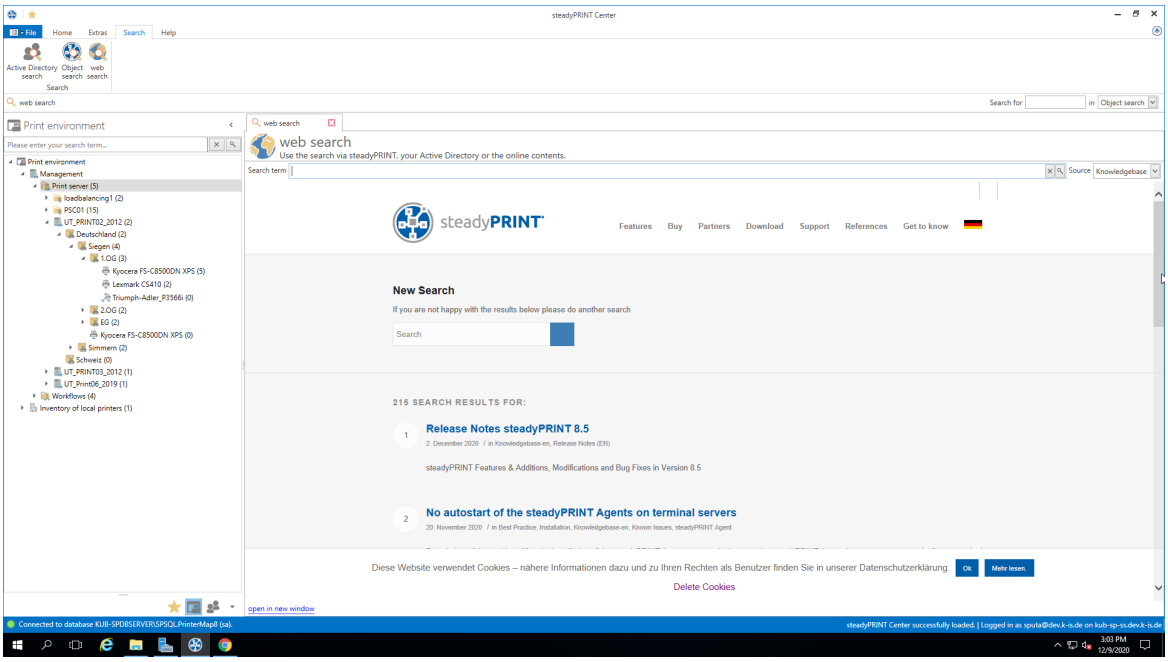

Figure 118: Search within online contents

The Online Search (see figure Search within online contents) offers the option to extend your search to our Knowledge Base, the Online Manual or the general website.

Note	***Availability Online Contents***
	Please note that in order to access our online contents, an available internet connection has to be guaranteed.

Tag Search

Within the printer tree as well as the object search, it is possible to search for tags that have been assigned to printers, folders or even print servers. By #entries, it is possible to enter tags that have already been assigned as filter terms within the search. In doing so, a list of recommended tags is displayed taking into account the specified tag description. By reconfirming this tag, it is included into the search so that no results are displayed that do not include the specified tag. Should several tags be specified as a search term, only those objects will be found whose tags correspond with all specified search terms. A combined search of tags and normal search terms is also possible.

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Part VI

6 Monitoring and Reporting

The chapter ***Monitoring and Reporting*** illustrates the methods for collecting and using the information of your printing environment. Monitoring allows to display all relevant information for your printing environment through the embedded ***Dashboard*** on the one hand - more detailed information in chapter Dashboard. On the other hand, you can collect individual information for a specific printer through ***SNMP queries*** - more detailed information in chapter SNMP.

Finally, you can store and provide all relevant information in form of ***Reports*** - see Reporting

Important	*Monitoring Profile*
	The collection of information requires a ***Monitoring Profile*** for the ***Dashboard*** as well as ***SNMP queries***. If no profile is created and no link established, no storage of information will take place.

6.1 SNMP

In order to open the ***Monitoring*** flag in **steadyPRINT,** the printing environment in the tree view and a print server or a printer have to be selected. **steadyPRINT** distinguishes between ***Default SNMP Queries*** and ***User-Defined SNMP Queries:***

- **steadyPRINT** automatically provides Default SNMP Queries for all printers accessible via ***SNMP***.
- With User-defined SNMP Queries, you can individually generate specific information on your printing environment.

Note	*Basics SNMP*
	For the usage of the SNMP protocol, a general knowledge is indispensable. You will find a short definition of terms in chapter Terms. If you are not able to assign the terms SNMP, OID, or MIB Browser, we recommend an initial training before you focus on this chapter.

Important	*Synchronize IP Addresses*
	For a printer query via ***SNMP***, a valid IP address or DNS printer name is necessary. For this purpose, the ***steadyPRINT Center*** stores the necessary information to the database when adding a printer. For already existing printers, the synchronization can be done later or for update purposes via the respective print server node in the context menu with Synchronize printer information (see chapter Synchronization of Printer Information).

Important	*Monitoring Profiles*

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	Collecting information requires a ***Monitoring Profile*** for the ***Dashboard*** as well as the ***SNMP queries*** themselves. If this has not been created and linked, a storage of the information will not take place.

6.1.1 Default SNMP Queries

steadyPRINT provides a collection of frequently used SNMP queries by default. This collection is divided into three categories: Controlling, Purchasing and Support. To open the ***Monitoring*** tab in **steadyPRINT**, a print server, folder or printer has to be selected. Then switch to the Monitoring tab. Depending on whether the ***Monitoring*** tab has been called up on a print server or a printer, different functions are available.

Important	***Saving the Settings***
	All changes that are made in the SNMP tab, have to be confirmed via the **Save** button in the ribbon. Configurations that have not been saved will get lost after a change of view.

Monitoring in the Print View

The following figure Monitoring View of Printer gives an example of the Monitoring view of a printer.

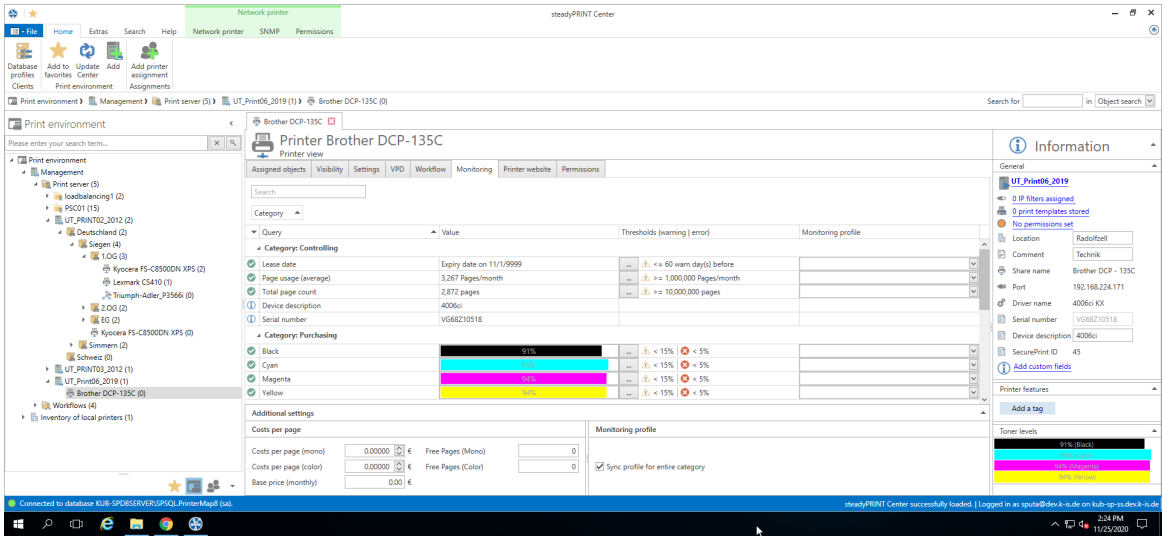

Figure 119: Monitoring View of Printer

Printer Status (only available in tree view)

The ***steadyPRINT Center*** displays the printer status directly in the tree (requires activation in the settings). Possible status are No problems (green), Warning (Yellow) and Error (red).

The status of a printer is made up of the status of all assigned SNMP queries (even ***Own SNMP Queries***). Errors are of highest priority followed by warnings. Only if all ***SNMP queries*** return the status No problems, the printer status is set to No problems. An error or a warning for the return value of a single SNMP query would set the printer status to error or warning - only the status with the highest priority will be displayed.

Status of a SNMP Query

As with the printer status, possible status of a SNMP query are No Problems (green), Warning (yellow) and Error (red). Which status a SNMP query returns is determined by the saved settings. A query by truth (true or false) is the most simple form and only returns No Problems or Error. When it comes to queries with complex settings, you can define which threshold is supposed to trigger a Warning and which one an Error.

Search

The search function enables you to search for a category, the name of a SNMP query or an assigned Monitoring Profile.

Assignment of Monitoring Profiles

To make sure that you are notified of Warnings or Errors of a SNMP query, a Monitoring Profile has to be assigned to a SNMP query. The column Monitoring Profile shows a list of all Monitoring Profiles from which the desired profile is selected (also see Monitoring Profile). By default, a Monitoring Profile is always assigned to an entire category of SNMP queries. This behavior can be changed to single selection by removing the check mark Select entire category.

List of Default SNMP Queries

In the following, you will find a list of all firmly integrated SNMP queries that are included in the standard:

Name	Description	Options	Category
Expiry date	Date when printer leasing expires.	Specify the expiry date. Define how many days before the expiry this date has to be notified.	Controlling
Total counter reading	Number of all printed pages	Specify at which number of the total of printed pages a warning shall be sent for this printer.	Controlling
Page consumption (average)	Average number of printed pages in a period to be defined.	You can define a time interval for which the average page consumption should be calculated. (Hours, days, weeks, months, etc. or years),	Controlling
Cyan	Fill level of the color cartridge Cyan.	Selection of thresholds (in per cent) for warnings or errors when fill level is below the specified value.	Purchasing
Yellow	Fill level of the color cartridge Yellow.	Selection of thresholds (in per cent) for warnings or errors when	Purchasing

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		fill level is below the specified value.	
Magenta	Fill level of the color cartridge Magenta..	Selection of thresholds (in per cent) for warnings or errors when fill level is below the specified value:	Purchasing
Black	Fill level of the color cartridge Black.	Selection of thresholds (in per cent) for warnings or errors when fill level is below the specified value.	Purchasing

For the following queries no individual thresholds can be saved as they are specified by the respective manufacturer.

Note	***Page consumption***
	Please note that in order to evaluate a precise average value, the Monitoring has to be active over a longer period of time. The Dashboard itself shows this value only if at least two different counter readings are available.

Note	***Toner Levels***
	As some devices do not return a precise fill level, an accurate display and evaluation are not possible. In such cases an additional information is displayed next to the respective toner cartridges.

Name	Description	Category
Output tray almost full	The output tray of the printer is almost full.	Support
Output tray missing	The output tray is missing.	Support
Output tray full	The output tray is full.	Support
User intervention necessary	A user intervention is necessary. This error occurs when an error has not been defined by the printer.	Support
Cartridge missing	A cartridge is missing or was not properly inserted.	Support
Low toner level	The fill level of a cartridge is low.	Support
Offline	The printer is not accessible.	Support
Paper empty	The paper is empty.	Support
Add paper to continue	Paper has been used up during printing.	Support
Paper tray missing	The paper tray is missing.	Support
Paper jam/print job got stuck	A paper jam might have occurred or a print job cannot be processed.	Support
Due maintenance	A maintenance is due.	Support

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Not enough paper	There is not enough paper in the printer.	Support

Prices per Page

The prices per page are assigned per print server or folder for all subjacent printers . An evaluation and calculation of costs for color pages is done through the configuration of custom SNMP queries (see chapter Custom SNMP Queries).

Monitoring View in Print Server and Folder View

The actual configuration does not differ from the configuration of a printer (see figure Print server - folder view Monitoring). Only the display of information varies in some details.

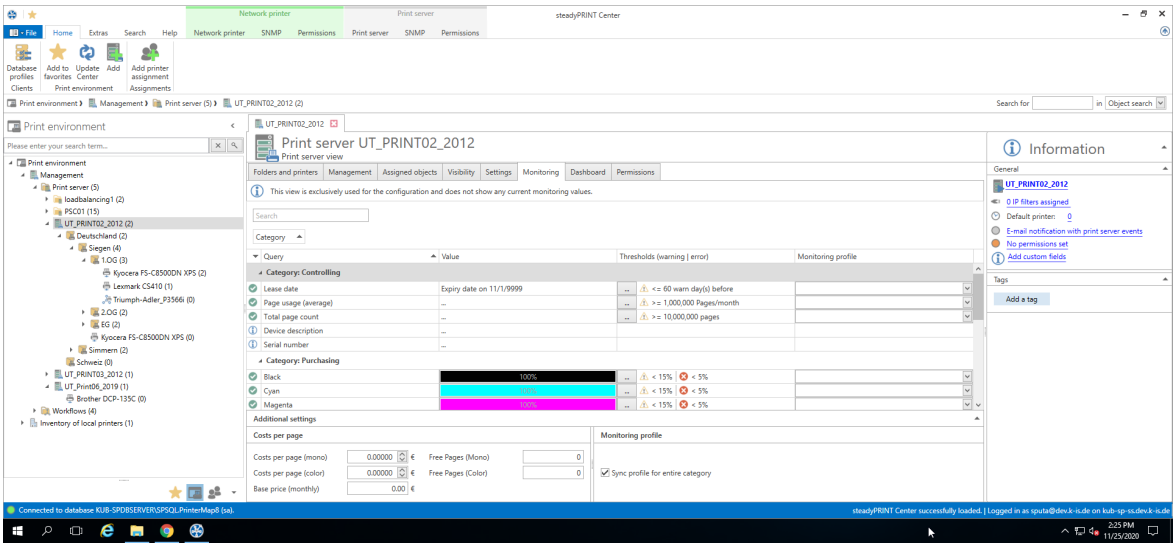

Figure 120: Print server - folder view Monitoring

Important	***Print Server and Folder View - Global Configuration of Printers***
	All modifications for SNMP queries that have been done in such a configuration view are taken over by the steadyPRINT Center for all subjacent printers.

Important	***Saving the Settings***
	All modifications that are done in the SNMP Tab have to be confirmed by the Save button in the ribbon. Configurations that have not been saved will get lost after a change of view!

Note	***Print Server and Folder View Compared to Printer***
	The only difference between the print server or folder view and a printer view is that no SNMP queries are performed for print server and folder. The print server and folder views only serve as a global configuration of the subjacent printers.

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6.1.2 Custom SNMP Queries

You can create custom SNMP queries and have them displayed individually in the ***steadyPRINT Monitoring***. For creating a SNMP query, click the button **SNMP profiles** in the ribbon bar Custom SNMP. In the following chapters we will explain in detail how you should proceed.

6.1.2.1 SNMP Profiles

A SNMP query is stored with a name and a category (printer, toner, custom). **steadyPRINT** groups the queries by manufacturers and the appropriate printers (see figure steadyPRINT Center - Overview of SNMP profiles).

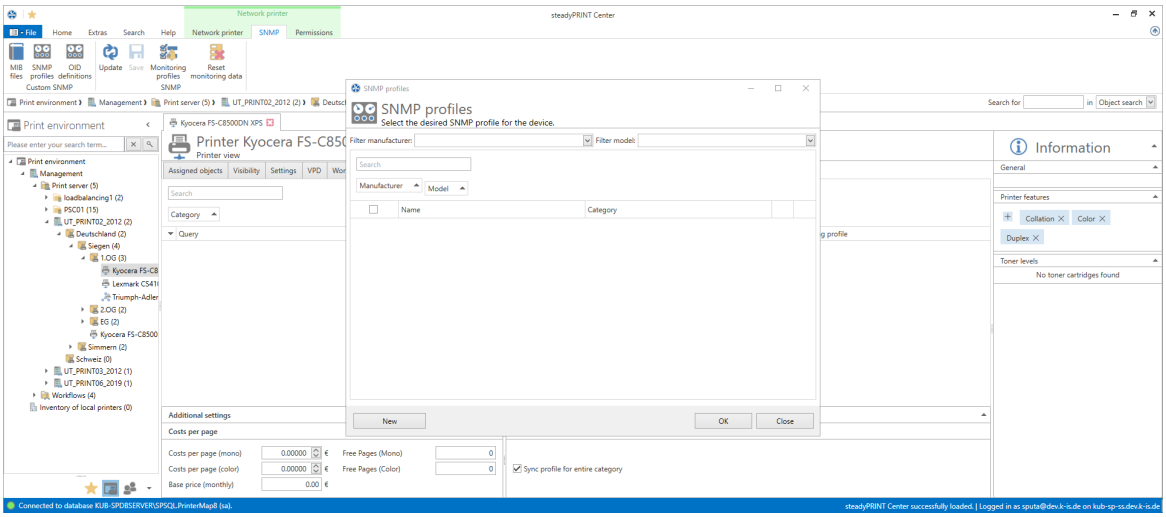

Figure 121: steadyPRINT Center - Overview of SNMP profiles

New

To create a SNMP profile, click the button **New** in the view SNMP profiles. For the definition of the new SNMP profile, please proceed as explained in chapter Definition of SNMP Queries.

Edit

To edit a SNMP query, select it in the table and click the button **...** in the same line. The window Definition for SNMP Queries with all selected presettings will be loaded.

Delete

To delete a SNMP query, select it in the table and click the button **X** in the same line. The SNMP query will be deleted.

Filter

The filter option enables you to filter all SNMP queries. Manufacturers and/or models can be used as filters.

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Search
This function browses the table for entries in question.

6.1.2.2 Definition of SNMP Queries

The definition of a SNMP query consists of different specifications (see figure steadyPRINT Center - Definition of SNMP query). In the following you will find the respective explanation.

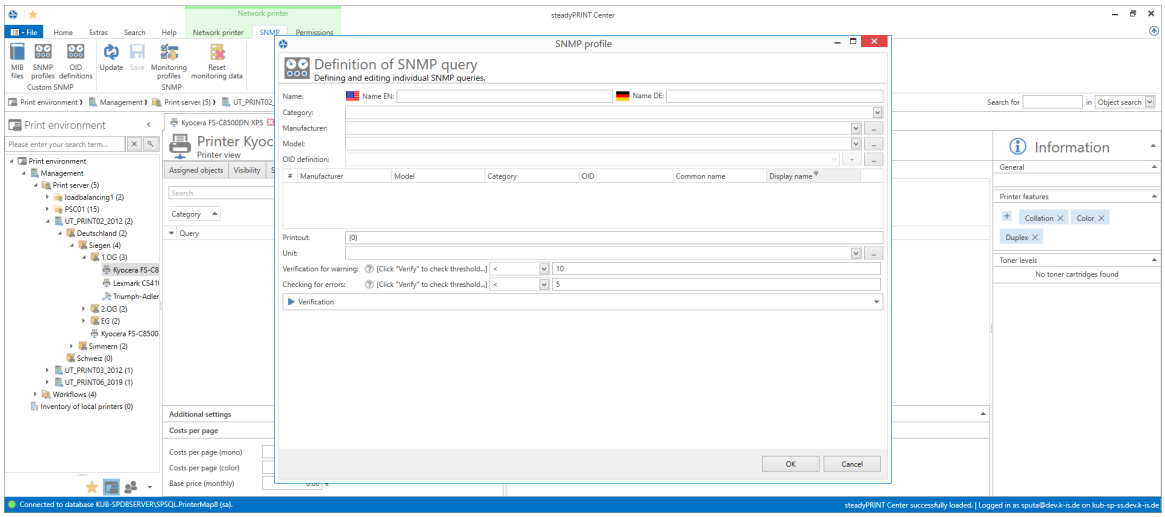

Figure 122: steadyPRINT Center - Definition of SNMP query

Name
Enter a name for your SNMP query. The English name is a mandatory field as it is used as default value. The German name is optional and is used when the language setting of **steadyPRINT** is set to German.

Category
Select one of the categories (Custom, Printer or Toner) for your SNMP query. Depending on the category you have selected, different functions for the setup of the SNMP query are available.

Custom
The category Custom offers the possibility to arrange all further steps individually. The Monitoring tab displays Custom SNMP queries under "Others".

Toner
The category Toner enables you to store a color for the toner level. If you create a SNMP query in the category Toner, all default SNMP queries for Toner (grouped by Purchasing) will be overwritten. Usually, toner queries are only requested if the pre-defined SNMP queries do not provide any values or if additional fill levels of other printer components are desired.

Printer
SNMP queries of the category Printer are displayed in the tab Controlling.

Manufacturer
Select a manufacturer or create a new entry for a manufacturer by clicking **...**. In order to create a manufacturer, enter the name and press **OK**.

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Model

You can select or create a model. To create a model, click **...**. Enter the name of the model and subsequently select the corresponding manufacturer from the drop-down list. Confirm your entry with **OK**.

OID Query

Having selected category, manufacturer and model, you can now determine the OID queries that are to be evaluated by this SNMP query. Select a OID query from the list and add it with **+**. Several OIDs can be combined to one expression. Accordingly, you can add several OIDs to one SNMP query. A new OID query can be created by clicking the button **...** in the line OID definition opening the window Overview of OID queries.

Expression

The value analysis from the OID queries can be determined via the expression. The ***steadyPRINT Center*** shows the result in the SNMP view later on. Each OID query receives a number which is marked with # in the table of OID queries with the first entry having the number 0, the second on the number 1 and so on. The validity of each expression is checked and can either result in a binary value (1 (true) or 0 (false)), a number or a character string.

The following arithmetic operators are supported in numeric expressions.

Operator	Description
<	less than (logical operator)
>	greater than (logical operator)
<=	less than or equal (logical operator)
>=	greater than or equal (logical operator)
<>	unequal (logical operator)
=	equal (logical operator)
IN	Comparison of a list of elements (e.g.: Ready,Printing,Warming Up)
LIKE	Comparison of a character sequence. It completely or partly corresponds to the pattern (e.g.: *mode*). Placeholders in form of * or % can be used. They are permitted at the beginning or the end, but not within the search term, e.g. mo*us.
+	Addition of two numeric values (numerical operator).
-	Subtraction of two numeric values (numerical operator).
*	Multiplication of two numeric values (numerical operator).
/	Division of two numerical values (numerical operator).
%	Residual value (Modulo) from a division of two numeric values (numerical operator).

The result of an OID query can be used in the input field by comprising the number of the expression with curly brackets.

The expression {0} + {1} would for example add the numbers (#) 0 and 1 to the query results of the OID

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query and send back the sum as the result of the expression.

Example (numeric expression): The query result of the first OID query be the numeric value 5 and the result of the second OID query the numeric value 7. The result of the previously defined calculation be 12, this is 5 + 7 = 12.

The expression {0}{1} would bring together the query results of the OID query with the numbers (#) 0 and 1.
Example (character sequence): The query result of the first OID query be the character sequence X738de and the result of the second OID query the sequence Printer. The result by using the expression {0}{1} be a combination of both character sequences X738deDrucker.

Note	*SQL Expressions (for Experts)*
	Generally, you can use the entire SQL syntax for the expressions and its evaluations. For more detailed information https://msdn.microsoft.com/de-de/library/system.data.datacolumn.expression(v=vs.80).aspx.

Some examples are shown and explained in chapter SNMP: Terms .

Unit

At this point you can define the unit for the display of the result of your expression. As a default value, no unit is used. The unit percentage (%) can be selected from the list. In order to generate a custom unit, click the button **...** in the line Units in order to open the window for generating units. Enter the name (multilingual) and confirm with **OK**. Finally, select the just created unit from the list. Which unit is selected has no influence on the calculation of the expression! It merely serves the purpose of understanding and legibility.

Evaluation as Warning and Error

Define here when the result of your expression is to produce a warning or an error. The validation of the event consists of an operator and a threshold or one or more reference values. You can select the required logical operator from the list under warning or error.

When creating relational expressions the following operators are permitted:

Operator	Description
<	less than (logical operator)
>	greater than (logical operator)
<=	less than or equal (logical operator)
>=	greater than or equal (logical operator)
<>	unequal (logical operator)
=	equal (logical operator)
IN	Comparison of a list of elements (e.g.: Ready,Printing,Warming Up)
LIKE	Comparison of a character sequence. It completely or partly corresponds to the pattern (e.g.: *modus*). Placeholders in form of * or % can be used. They are permitted at the

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	beginning or the end, but not within the search term, e.g. mo*us.

Validation

In order to validate your expression, unfold the group box Validation. Enter the information necessary for the query of the device:

IP: Enter the IP address of the device that you want to query
Port: The SNMP port to query the device. By default, SNMP uses the port 161.
Operation: The command of the SNMP query. Three possible commands are available for selection:
- GET: Query of single values.
- GET_NEXT: Query of the following value.
- GET_BULK: Query of all following values (recursive) depending of the specified OID.

Community String: The community string represents a user ID or a password. Usually, most SNMPv2 devices use the factory-set community string public for reading.

Note	*Use SNMP Version*
	For the query of network components steadyPRINT uses SNMPv2 by default.

Result

Click **Validate**, in order to validate your expression. At first, **steadyPRINT** checks whether the network component is accessible by using the specified connection information. Then, the specified OIDs are checked in order to validate the expression as a whole. The following figures show different scenarios for a results evaluation.

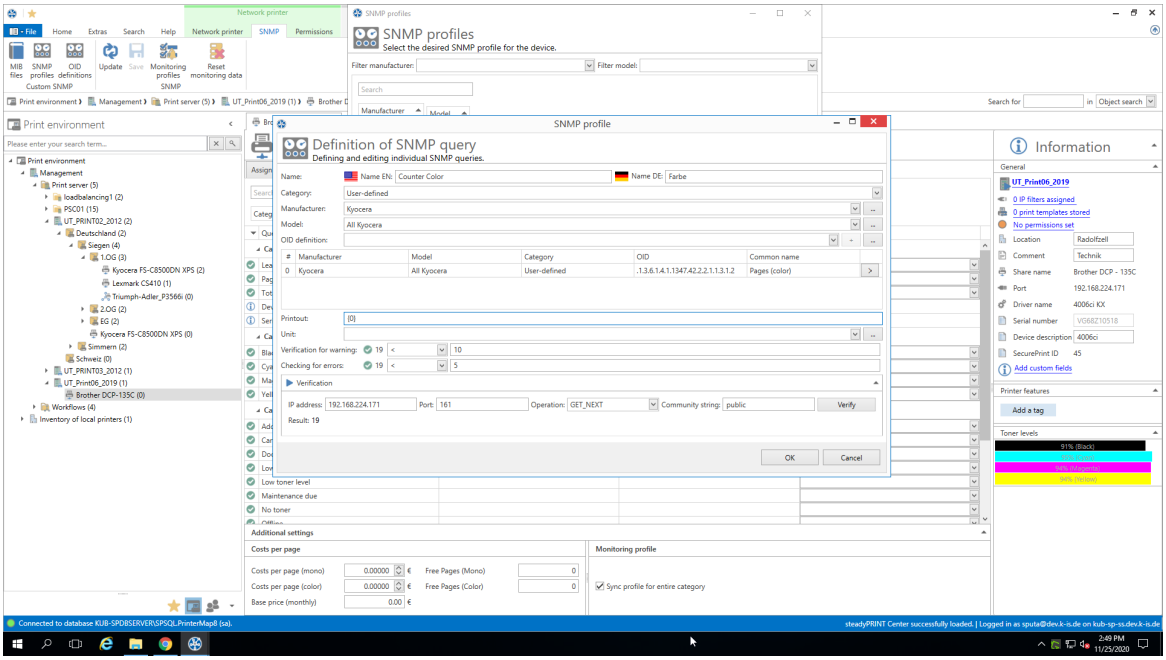

Figure 123: steadyPRINT Center - SNMP query ok

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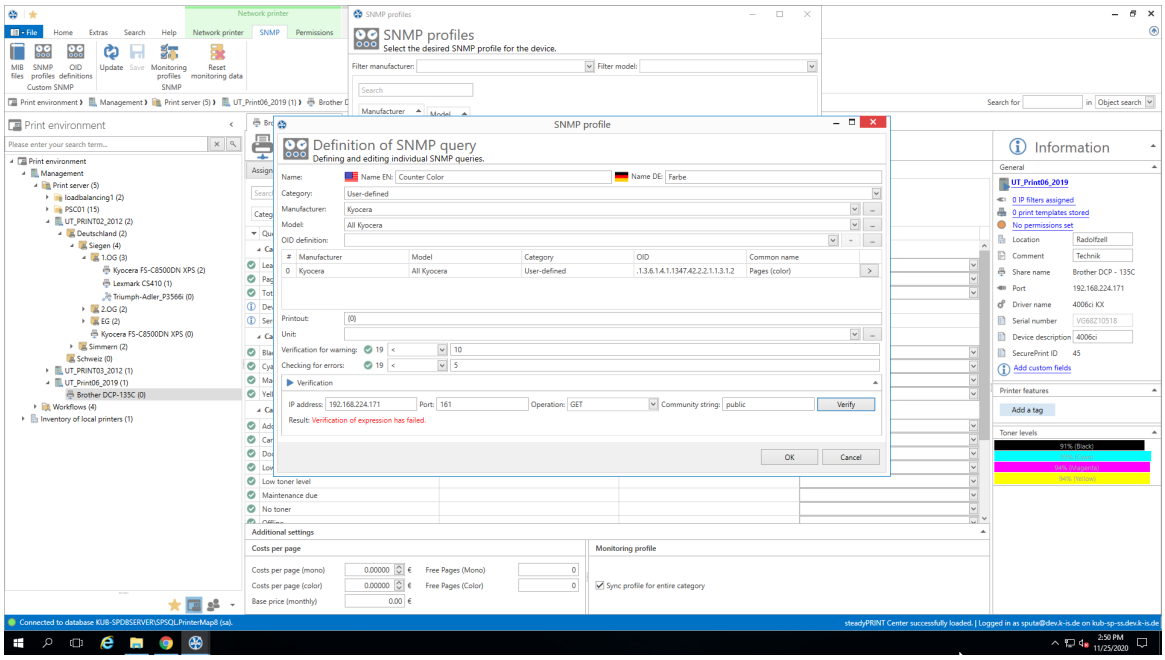

Figure 124: steadyPRINT Center - SNMP query failed (Device inaccessible)

Solution: The device cannot be accessed at the specified IP address, the port and/or by using the community string.

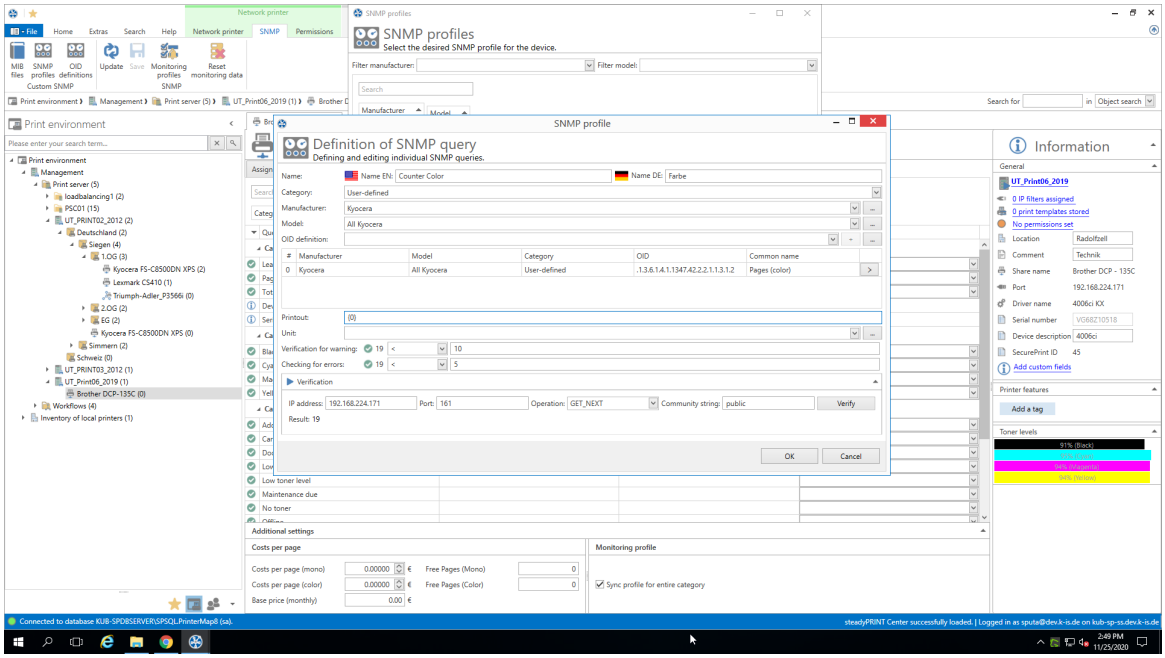

Figure 125: steadyPRINT Center - SNMP query failed (incorrect expression)

Solution: An evaluation of the queried values by using the specified expression is not possible. In this example, the leading curly bracket in the expression has been forgotten.

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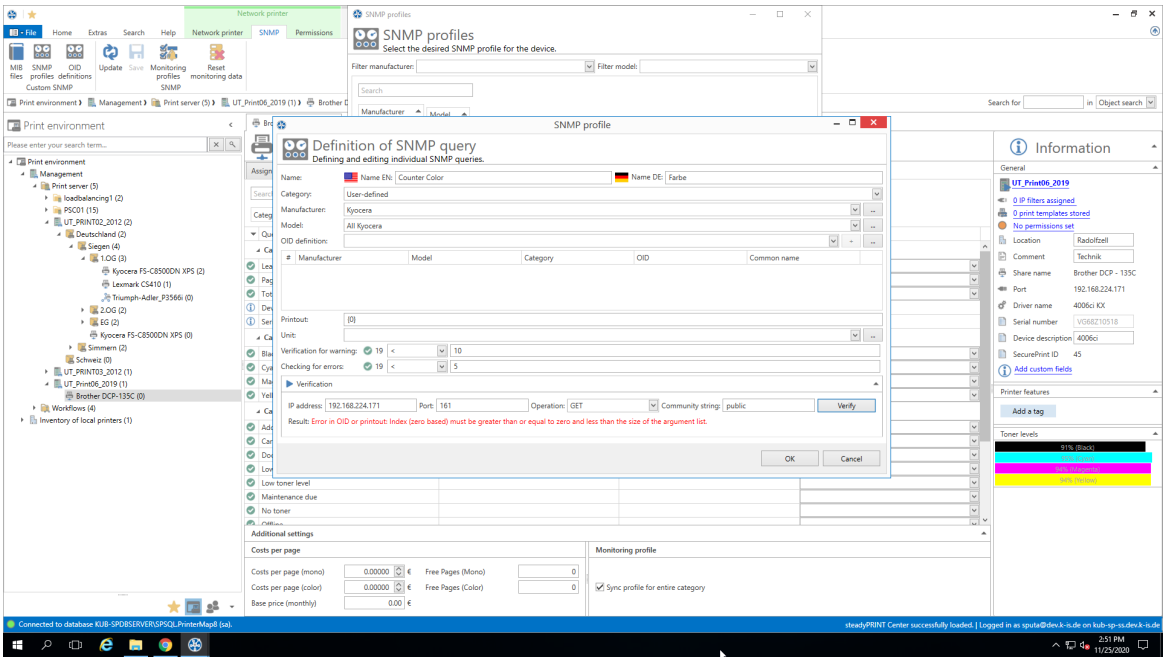

Figure 126: steadyPRINT Center - SNMP query failed (OID not found)

Solution: At least one OID could not be assigned in the defined expression. In this example, no OID was specified at all. The user forgot to add the selected OID of the query via the **+** button

6.1.2.3 Overview of OID Queries

The window Overview of OID queries shows all individually created OID queries (see figure steadyPRINT Center - Overview of OID queries). They are structured by manufacturers and the appropriate models.

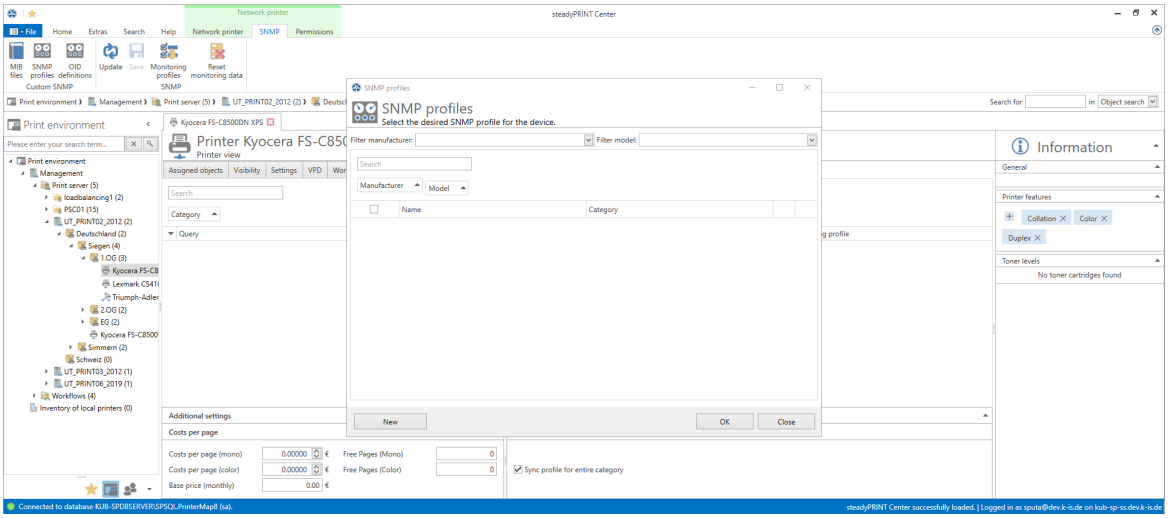

Figure 127: steadyPRINT Center - Overview of OID queries

Each OID has a category (custom, printer or toner), a name and is part of a model which was assigned to a manufacturer.

Search

This function searches the table for the presence of the desired entry.

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New
To generate a new OID query, the window Definition of OID queries opens by selecting the button **New**. To define the OID query, please proceed as described in chapter Definition of OID Queries.

Delete
To delete a OID query, select the query in the table and click the button **X** in the same line. The OID query will subsequently be deleted.

Edit
To edit an OID query, select the query in the table and click the button **...** in the same line. The window Definition of OID queries with all selected presettings will be loaded.

6.1.2.4 Definition of OID Queries

Each OID has a category (custom, printer or toner), a name and is part of a model which has been assigned to a manufacturer. (see figure steadyPRINT Center - OID query).

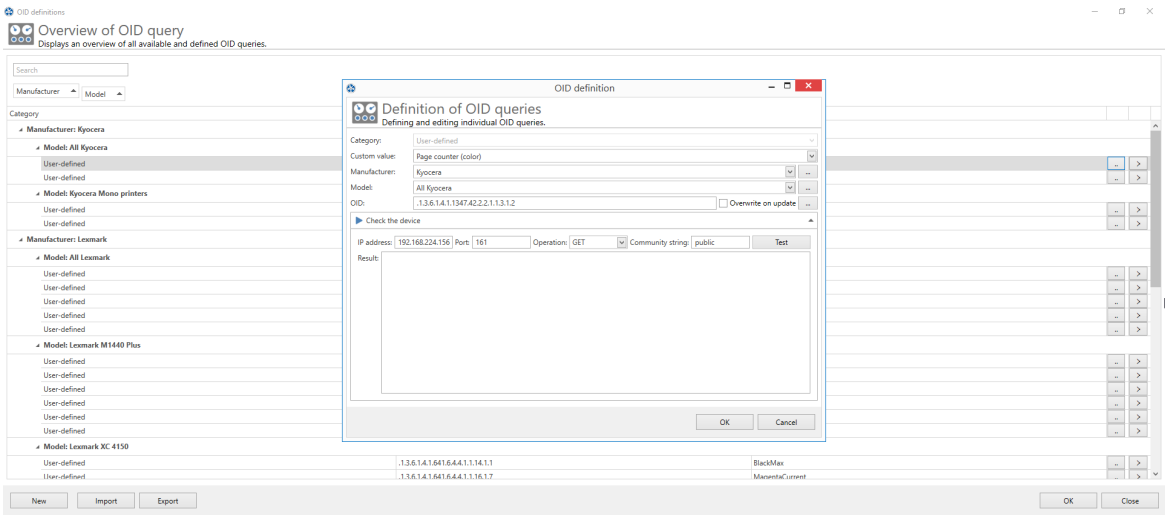

Figure 128: steadyPRINT Center - OID query

Category
Select one of the categories (Custom, Printer or Toner) for your SNMP query. Depending on the category you have selected, different functions for the setup of the SNMP query are available.

Manufacturer
Select a manufacturer or create a new entry for a manufacturer by clicking **...**. In order to create a manufacturer, enter the name and press **OK**.

Model
You can select or create a model. To create a model, click **...**. Enter the name of the model and subsequently select the corresponding manufacturer from the drop-down list. Confirm your entry with **OK**.

OID
Enter an OID or open the MIB Browser to select the OID from a MIB file.

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Validation of the Device

In order to validate your expression, unfold Validate Device (figure steadyPRINT Center - Query OID of device shows an example). Enter the information necessary for the query of the device:

IP: Enter the IP address of the device that you want to query
Port: The SNMP port to query the device. By default, SNMP uses the port 161.
Operation: The command of the SNMP query. Three possible commands are available for selection:
- GET: Query of single values.
- GET_NEXT: Query of the following value.
- GET_BULK: Query of all following values (recursive) depending of the specified OID.

Community String: The community string represents a user ID or a password. Usually, most SNMPv2 devices use the factory-set community string public for reading.

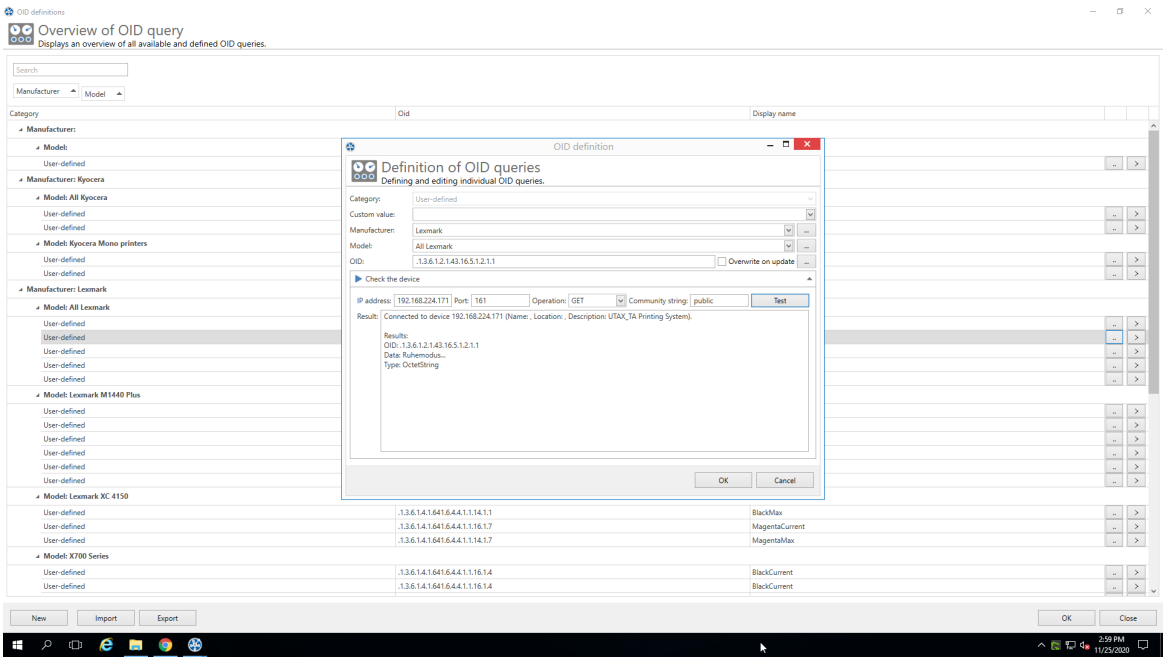

Figure 129: steadyPRINT Center - Query OID of device

Note	*Use SNMP Version*
	For the query of network components steadyPRINT uses SNMPv2 by default.

Result

Click **Test**, in order to validate your specified OID. At first, **steadyPRINT** checks whether the network component is accessible by using the specified connection information. Then, the specified OID is validated

6.1.2.5 MIB Browser

You can access the MIB browser (see figure steadyPRINT Center - MIB-Browser) via the ribbon under Extras or via the OID Definition. If you open the MIB browser via the OID Definition, the OID which is selected in the MIB browser is automatically applied. In the MIB browser you can display and browse all MIB files linked to a MIB profile.

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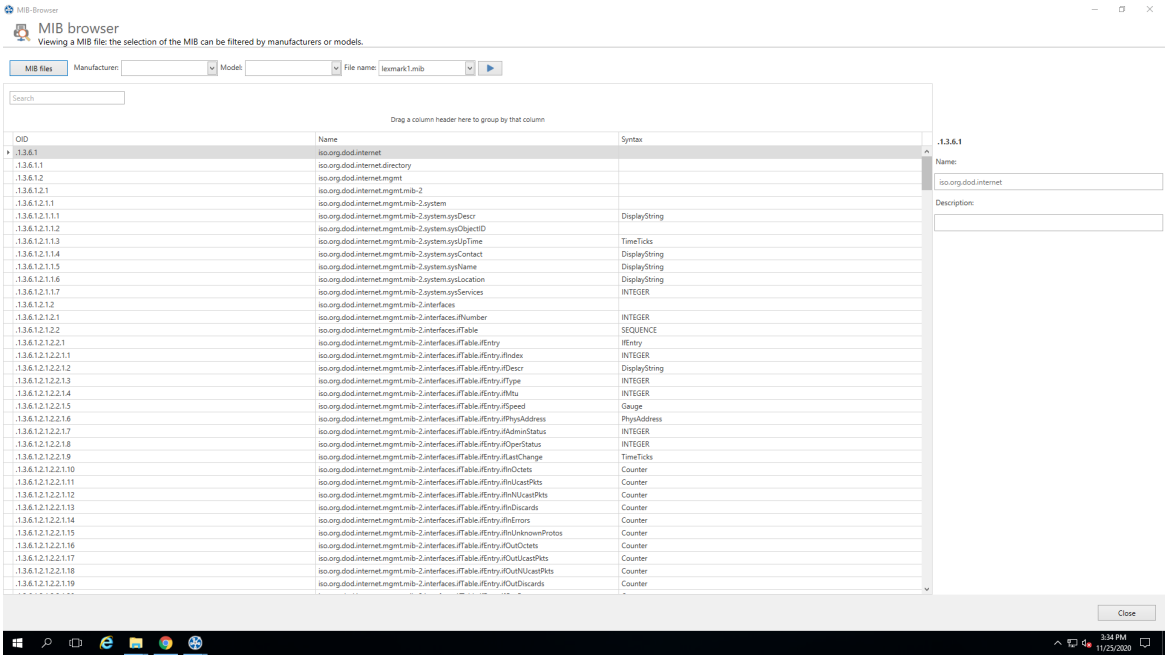

Figure 130: steadyPRINT Center - MIB-Browser

Filter

The MIB files can be filtered by manufacturer and/or models.

Search

This function browses the MIB files according to the specified character sequence.

Confirm

Once you have found the specific OID, you can copy it (Ctrl+C or mouse context menu) and close the MIB browser. If you have started the MIB browser from the OID Definition window, the last selected OID is automatically transferred from the MIB browser when clicking the button **Apply**.

6.1.2.6 MIB-Profile

steadyPRINT uses MIB profiles to assign a MIB file to a selected model of a certain manufacturer (see figure steadyPRINT Center - MIB profiles). This way a MIB file is exactly linked to a model and the respective manufacturer.

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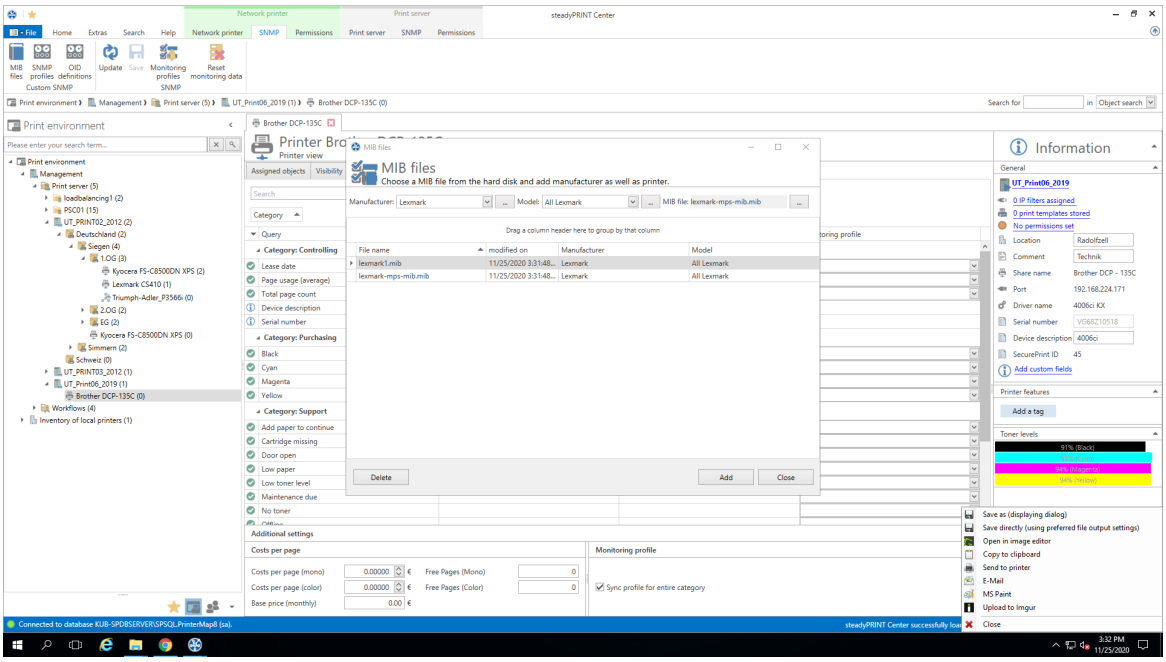

Figure 131: steadyPRINT Center - MIB profiles

Create a MIB Profile

For a new MIB profile, you have to select a manufacturer or create a new entry for a manufacturer by clicking **...**. To create a manufacturer, enter the name and press **OK**. Then, you have to select or create a model. To create a model, click **...**. Enter the name of a model and select the appropriate manufacturer from the list. Confirm the entry with **OK**.

If the manufacturer and model are determined for the SNMP query, you can select a MIB file via the file browser of your computer. The MIB file will be stored under the path steadyPRINT Center > File> Settings > Monitoring > MIB Directory. As a presetting, all MIB files are stored in the installation directory under [SP_INSTALL]\Center\mibs.

Note	*MIB Directory*
	steadyPRINT saves all used MIB files to a directory which is stored under File > Settings > Monitoring > MIB Directory. In case you change this directory, the MIB files will not be applied and have to be manually copied to the new directory.

If manufacturer, model and MIB file are selected, the profile is ready and can be completed and confirmed by pressing the **OK** button.

Delete MIB Profiles

To delete a MIB profile, select it in the table and click **Delete**.

Replace a MIB file

To replace a MIB file, you can either delete the used profile and re-create it, as described above, or directly replace the MIB file in the MIB directory.

6.1.3 Terms

This chapter briefly introduces the terms used in chapter SNMP.

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6.1.3.1 SNMP (Simple Network Management Protocol)

The Simple Network Management Protocol (SNMP) is a network protocol used to monitor and control network elements.

6.1.3.2 MIB (Management Information Base)

The Management Information Base (MIB) describes the information that can be queried or modified via the Network Management Protocol SNMP. This information is called Managed Objects. MIB files are created by its manufacturer for different devices or functions.

6.1.3.3 OID (Object Identifier)

An OID (Object Identifier) represents a node in a hierarchically assigned name space which is defined by the ASN.1 standard. Each node is clearly identified through a sequence of numbers indicating the node's position starting at the root of the tree. The root node of a MIB file (Management Information Base) is "iso,org.dod.internet". This name corresponds to the OID 1.3.6.1.

New nodes for own use can be requested from the respective authorities of the next higher node. The rules for the allocation and registration of OIDs are specified in the standards ISO/IEC 9834 and DIN 66334. The management of the OID tree and the guarantee for the uniqueness of OIDs are based on the transfer of jurisdiction for the subordinate nodes to the owner of an OID.

The node "iso.org.dod.internet.private.enterprises", respectively 1.3.6.1.4.1, represents the node that enables companíes to add their own contents to a MIB file. The subsequent node indicates the name of the company. 1.3.6.1.4.1.641, for example, is the node of Lexmark. If the OID of a device is queried via SNMP, the device returns the value stored under this OID:

6.2 Reporting

In **steadyPRINT** you can have various information on the actual state and the progress of your print environment displayed.
For this purpose, the internal ***steadyPRINT Reporting*** can be used.

Use of the reports

In order to access the report selection, use the ribbon in the ***steadyPRINT Center*** (see figure Report selection).

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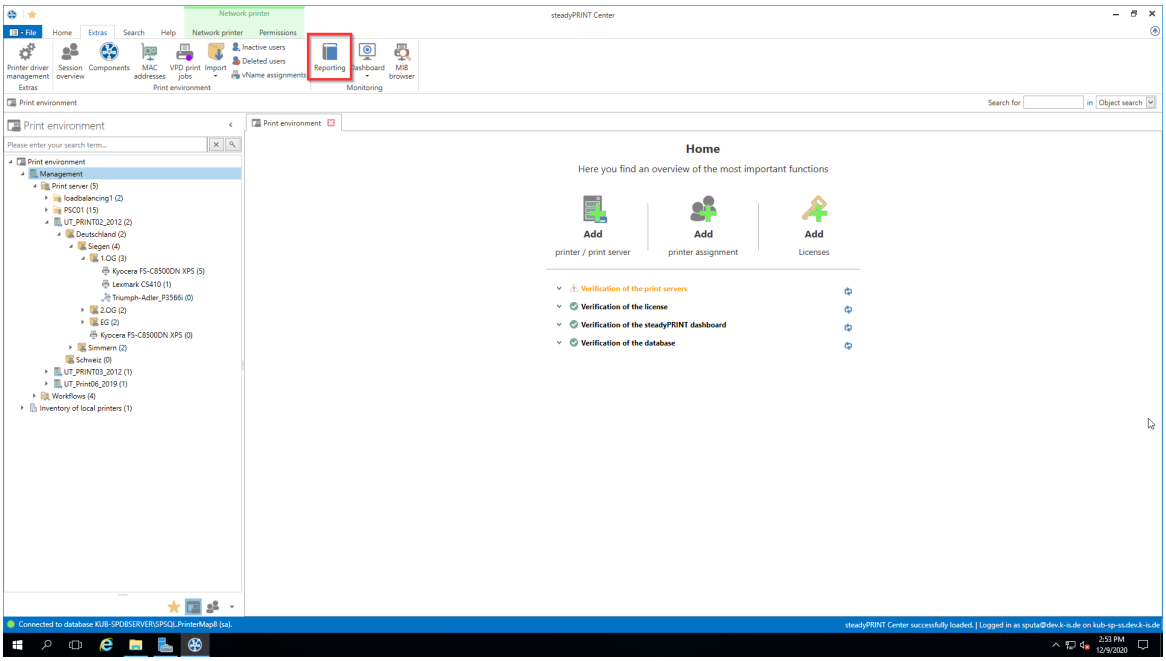

Figure 132: Report selection

Important	***Inventory and Monitoring***
	As a prerequisite, some reports need an enabled inventory and an active monitoring so that complete data output can be guaranteed.

Note	***Currency***
	For reports in the category Cost Overview, the currency unit can be modified in the settings.

Note	***Page prices for the reporting of printing costs***
	Page prices are stored in the Monitoring tab of the respective printer (see Default SNMP Queries). A configuration is also possible on print server and folder level.

You now have the possibility to open the report in the **Design View** (see chapter Designer View) or the **Preview View** (see chapter Preview) or even to create an empty report and adjust it subsequently. Moreover, you can have all reports that are available in the system (predefined reports as well as self-created reports) sent to you by e-mail periodically (see chapter Sending Reports).

6.2.1 Preview View

Once you have opened the selection view - as described in chapter Reporting - you can have any number of reports displayed in the preview view.

For this purpose, select a report - or even several by means of the control-/shift buttons - and click **Open Report** (see figure Opening reports in the preview view).

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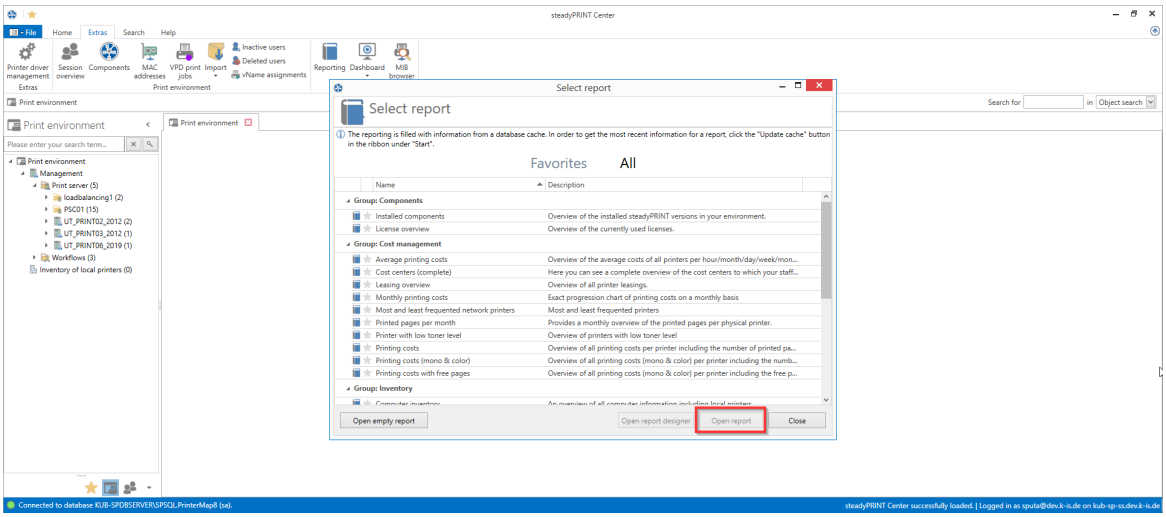

Figure 133: Opening reports in the preview view

In the new view you have the possibility to export, print or filter the report afterwards.

6.2.2 Designer View

Once you have opened the selection view of the reports - as described in chapter Reporting - you can have any number of reports displayed in the designer view.

For this purpose, select a report - or even several by means of the control-/shift buttons - and click **Open report designer / Open empty report** (see figure Opening reports in the designer view).

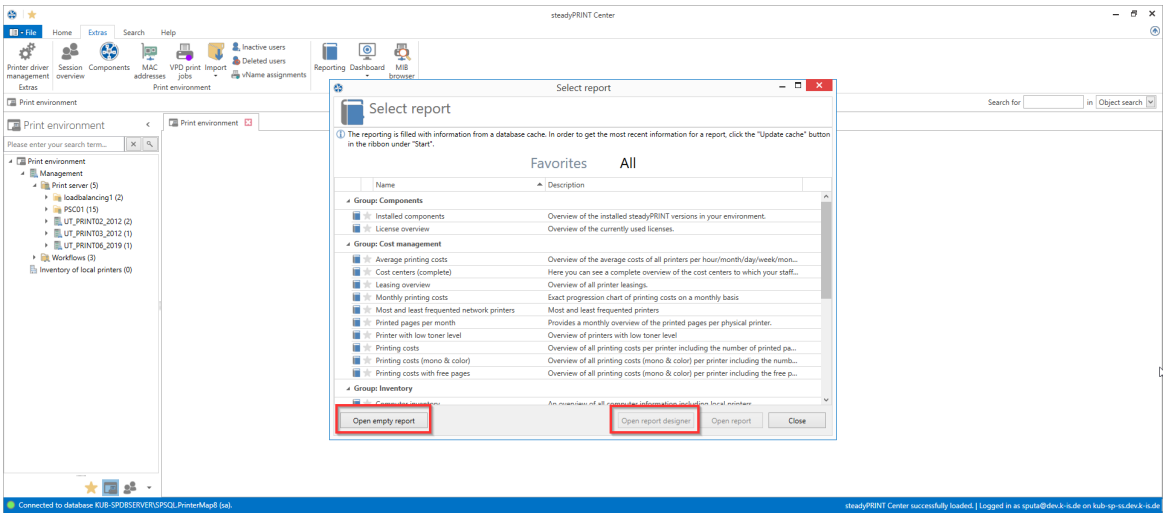

Figure 134: Opening reports in the designer view

The new view offers various adaptation options - depending on the button you have chosen.

Opening existing reports in the designer view

Here, you have the option to adjust an already existing report and to save it under a new name.
In our example we use the report **Printing costs**.

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First, you will see the ribbon at the top of the window - as you already know from the ***steadyPRINT Center***. Here, settings for the page orientation or a watermark can be added.

At the left edge of the window, you will see the available control elements (e.g. diagrams or bar codes) that can be added to the report.

At the bottom edge of the window, you will see how the data is arranged and sorted in your report. Groups and sortings can be added, removed and sorted.

At the right edge of the window, you will see the elements that are already part of your report in the upper area, the fields that have been made available through the data connection and below the properties of the element, selected on stage.

Having adjusted the report according to your ideas and wishes, you can view it including live data via the button **Print Preview** in the upper right corner of the window.

In order to save the report in the system, use the button **Save in database** in the ribbon and enter a name, a description and a category.
In addition, you can save a definition file in the file system via **Save** and **Save as** which can later be retrieved via the button **Open** in the ribbon.

Creating empty reports

Here, a completely new report with a customized data connection can be created.

Having clicked the button **Open empty report**, a completely empty window appears. Now click **+** at the top left edge, above the ribbon. A wizard window opens leading you through the basic configuration of your new report.

Having arranged the report according to your ideas and wishes, you can save the report as described in chapter Opening existing reports in the designer view.

6.2.3 Sending Reports

As already known from previous **steadyPRINT** versions, it is possible to have the reports that are stored in the system sent by e-mail at regular intervals. .

For more information, please refer to chapter Reporting Profile.

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Part VII

7 steadyPRINT Reliability

steadyPRINT offers failure security for your printing environment. This means that, should a print server failure occur, a backup system can take over for the duration of the failure. The user-side printer connections run over the second system up to the time that the responsible administrator puts the primary print server (referred to as the Master Print Server below) back into operation.

7.1 The Backup Print Server

The backup print server constitutes an exact copy of the first print server for **steadyPRINT**. With the help of the ***steadyPRINT Center***, you port the existing network printers from the master to the backup print server. It is possible to consign a backup print server for every master print server in the ***steadyPRINT Center***.

Specifying a New Backup Print Server

In the settings section of the respective print server (Settings tab) you can specify the desired server. With the takeover of the backup print server, the registered server is saved in the database. The ***steadyPRINT Center*** checks if the **steadyPRINT** monitoring service is installed and active on this server. A comparison of the installed network printers also takes place. In the event that a network printer is missing on the backup server, a status window points out this circumstance. In this case, it is absolutely necessary to commence with a manual printer replication of the servers in the ***steadyPRINT Center***. Otherwise, smooth running operations of the backup print server with all printer connections cannot be guaranteed.

Note	*Use of Migration Print Server*
	If the specified backup print server is not exclusively used for reliability purposes, negate the emerging dialog when setting the print server in the setup Backup-/ Migration Print Server. This way **steadyPRINT** skips the validation of the backup print server and takes over the specified server for all migration work to be carried out.

Note	*Activating RPC*

	For replicating the printers to the backup print server, it is necessary that the Allow Print Spooler to accept Client Connections policy permits access.
	
	The following entry in the Windows Registry should have the `1`:
	
	`GPO: Allow Print Spooler to accept client connections`
	`Key: HKLM\Software\Policies\Microsoft\Windows NT\Printers`
	`Value: RegisterSpoolerRemoteRpcEndPoint (REG_DWORD)`
	
	Access should nevertheless be allowed by default, whereby a subsequent activation will not be necessary.

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Specifying Script Files

Under the print server settings (Settings tab), it is possible for you to deposit script files for the installed print servers in the ***steadyPRINT Center***, which are configurable for a print server swap from master to backup print server or vice verse (see figure - steadyPRINT Center - specifying script files).

When specifying a script file for a print server, the set script is saved in the ***steadyPRINT Database***. As long as the script is not disabled in the ***steadyPRINT Center***, it will be called up from the ***steadyPRINT Database*** and executed one time during the next print server change by the ***steadyPRINT Service*** on the respective system – this can also be a terminal server or workstation.

Should interaction between the script and the Windows user interface (Windows GUI) be necessary, an adjustment to the ***steadyPRINT Service*** on the respective system will be needed to ensure the script is properly executed. To this end, please see the reference at the end of the text passage.

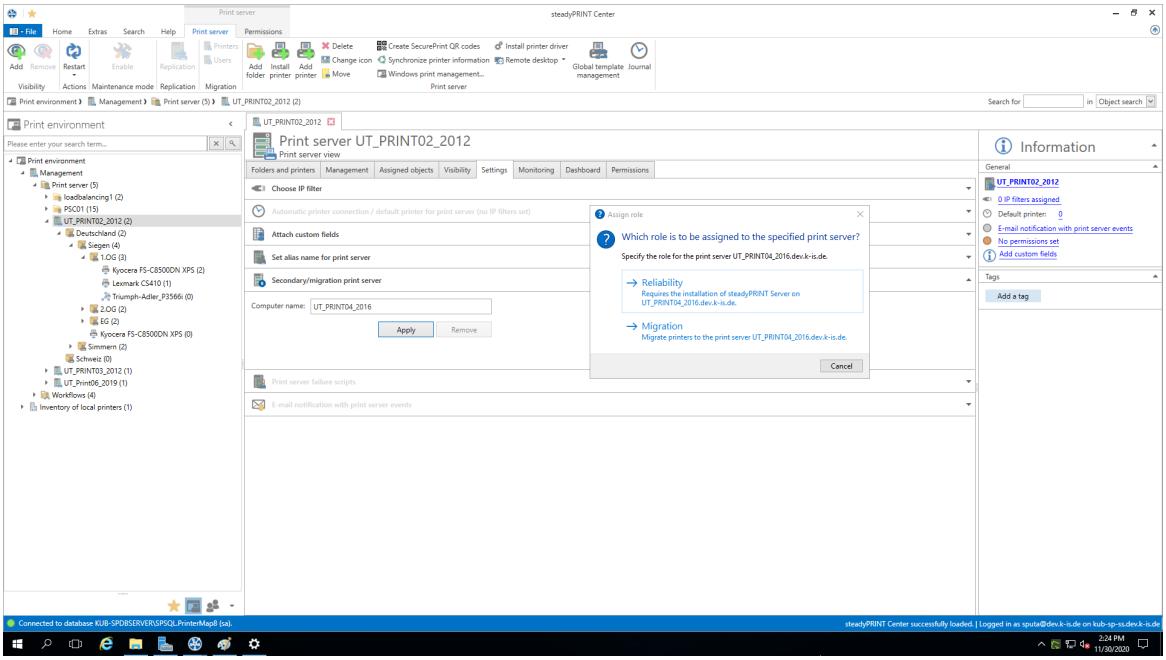

Figure 135: steadyPRINT Center – specifying script files

Note	***Adjusting the steadyPRINT Service for Interaction with the Windows GUI***
	For data exchange between service and desktop during script execution, it is necessary that the service be configured for access. The following entry under the service properties area of the ***steadyPRINT Service*** needs to be enabled: `Allow Data Exchange between Service and Desktop.` **Access is not allowed by default, thus making a subsequent activation**

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necessary.

E-Mail Notification

This option allows you to add e-mail addresses which will be used for notification purposes in the event of a print server failure.

Print Server Replication

Open the replication view of a print server via the Replication button (see figure - steadyPRINT Center - printer replication: ***steadyPRINT Center*** – Print Server Replication).There you will have an overview of all master and backup print server printers as well as the necessary replications.

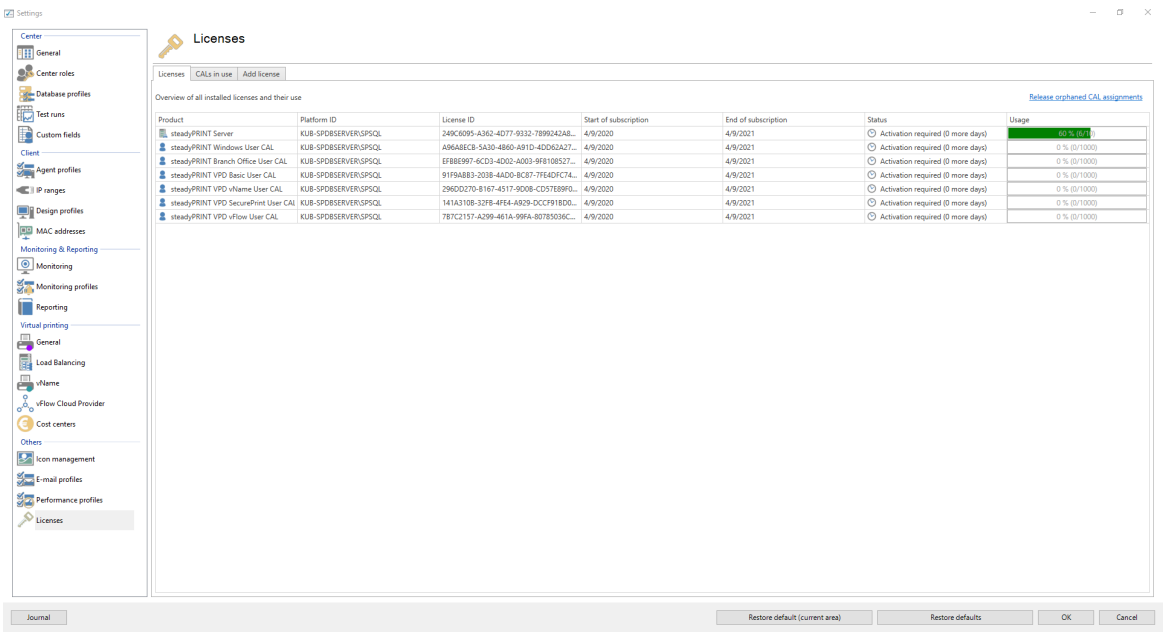

Figure 136: steadyPRINT Center – printer replication

The various network printers seen in the ***steadyPRINT Center*** view are marked with different colors. Red means that the printer on the target system is not available. Green, on the other hand, represents a printer that has already been installed on the target system.

Note	*See details*
	Highlight an entry in the list to have more information displayed about a printer in the lower area. You can also hover the mouse pointer above the respective control element to get additional information.

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To ensure reliability with **steadyPRINT**, print server replication is absolutely necessary and must be carried out successfully. A complete replication is distinguishable by the circumstance that all printers have been provided with a green symbol. Keep reading under Print Server Replication and Migration to get more detailed information about the respective control elements used in the Replication View.

7.2 Scenario: Print Server Failure

Should **steadyPRINT** determine the failure of the master print server, a specific series of actions will then be carried out in order to swap the printer connections to the backup print server.

Initial Situation

Your master print server (primary print server) has a **steadyPRINT** backup print server (secondary print server) configured. The printer replication has already been carried out and the ***steadyPRINT Server*** service for monitoring the primary print server is running on the secondary print server. In addition, the printer connections were created for the user sessions which are currently running over the primary print server. The following figure - Initial situation before printer failure displays the scenario as described thus far.

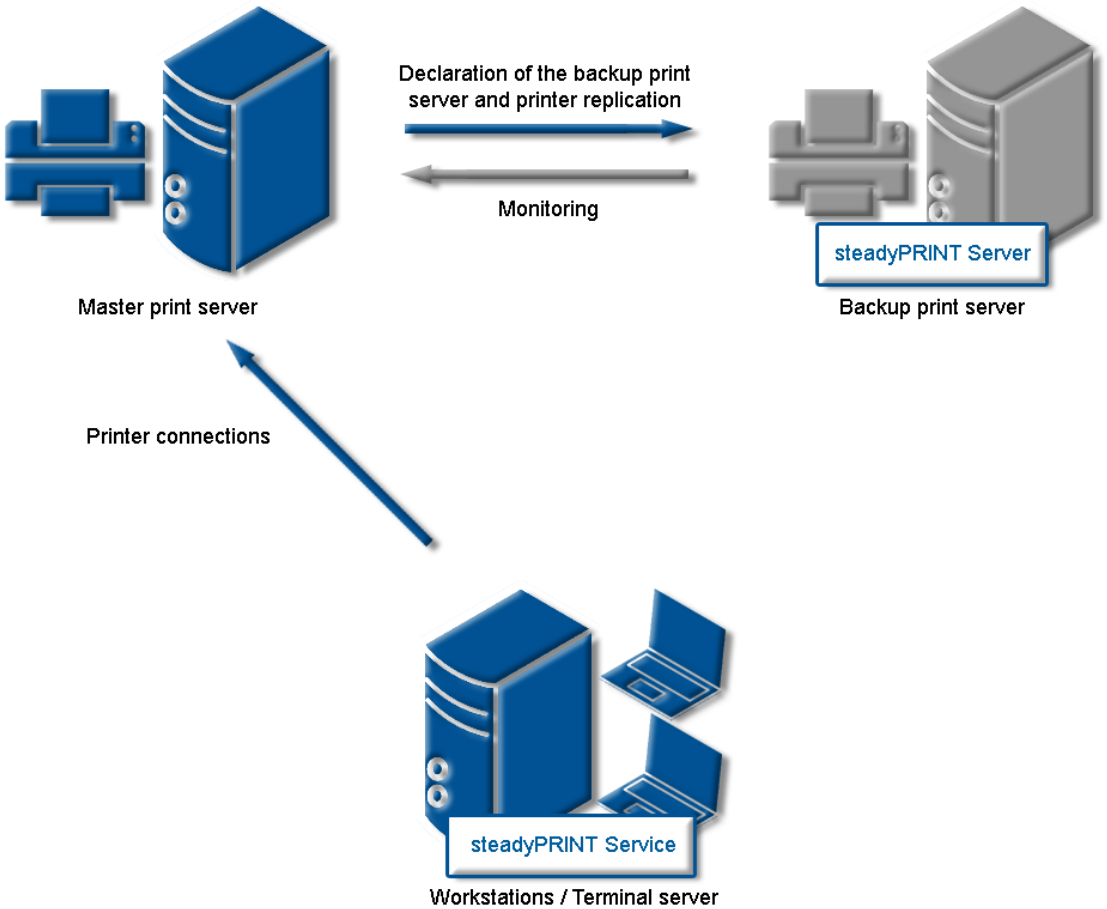

Figure 137: Initial situation before printer failure

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Order of Events

As soon as the backup print server's monitoring service determines a failure of the master print server, an immediate swap of the printer connections is triggered. The ***steadyPRINT Server*** service carries out the necessary updates in the data storage of the SQL server. Subsequently, the notification service ***steadyPRINT Service*** informs the terminal servers and workstations of the print server failure.

The ***steadyPRINT Service*** has its own communication channels within the running sessions. A call for a swap of the printer connections is sent over these. The current printer settings in the network remain unchanged in the process (see figure - After the failure of the master print server) shows the course of the events leading to a swap of the printer connections as just described.

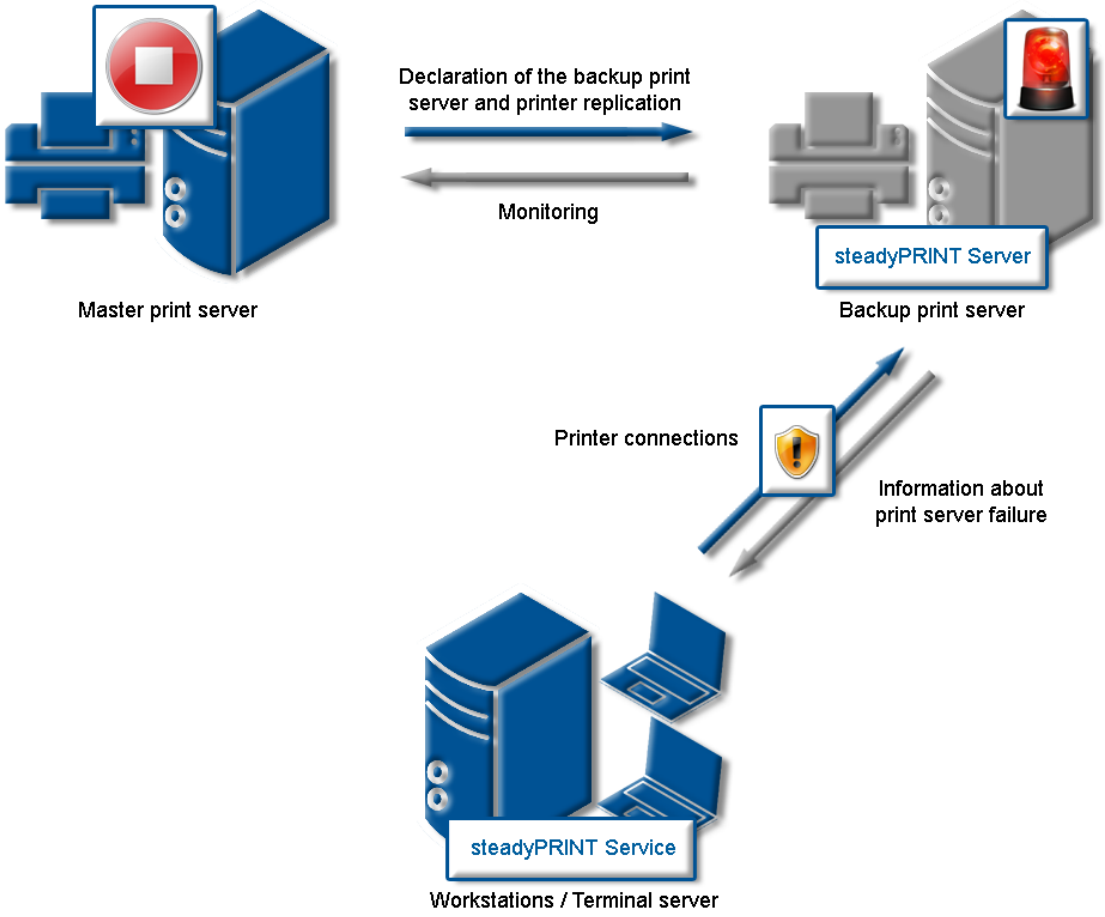

Figure 138: After the failure of the master print server

Procedure without Database Connection

As of version 5.2, an active database is no longer required for ensuring the print server failover (change from master- to backup print server). In case of a failure, the ***steadyPRINT Server*** service sends a push notification with the new server configuration to all sessions in order to inform the Clients. In case they identify printer connections which are affected by the failure, a changeover to the backup print server is performed.

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Important	*Precondition for Failover without Database*
	A precondition is that the database could be contacted at least once by the ***steadyPRINT Server*** Service in order to determine the required information for a failover.

Note	*Push Notification*
	By default, the push notification uses 8009. A modification can be done via the settings in the ***steadyPRINT Center***. In case integrated Windows authentications are used, please store the used service user in the settings of the ***steadyPRINT Center***.

In case the database can be accessed again after the failover, the ***steadyPRINT Server*** includes the current failover status into the database. This way, all **steadyPRINT** components are notified of the possible change of configuration.

7.3 Activating the Master or Backup Print Server

To enable the master or backup print server you must change to the detailed view of the corresponding print server. Using either the **ENABLE Service Mode** button (enables the backup) or **DISABLE Service Mode** button (enables the master) enables the respective server (see figure - Activating the master print server).

You can use this function after a system failure or for server maintenance purposes. If the failure of your primary print server (master print server) has been redressed in your network and the primary print server is again operational, the swap of the printer connections can take place during operation.

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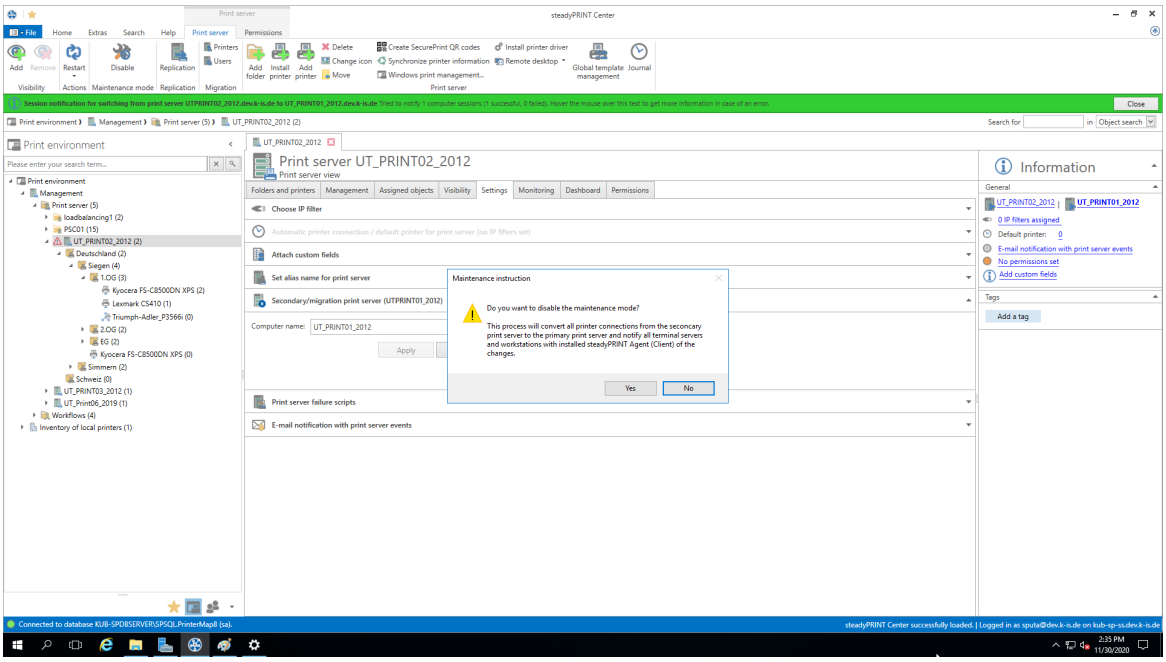

Figure 139: steadyPRINT Center - Activating the master print server

7.4 Functional Testing of Print Server

General

During the run time of a print server or its failover partner, a variety of possible errors can occur. **steadyPRINT** therefore checks the most frequent ones in an adjustable interval.

This includes the following errors:

Check	Master print server	Backup print server
Accessibility via Ping	X	X
Accessibility of print spooler (Compare Warming up time of printer spooler)	X[1]	X[1]
Accessibility of **steadyPRINT** Service		X
Value below minimum hard disk space (default value 500 MB) [2]	X	X
Value below minimum free working memory (default value 256 MB) [2]	X	X

[1] Compare Warming up time of print spooler

[2] These values (in megabyte) can be changed via entries to the database.

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Setting options

For this test, the following 9 parameters can be modified via the Performance Profiles (see figure Setting for functional testing of print server).

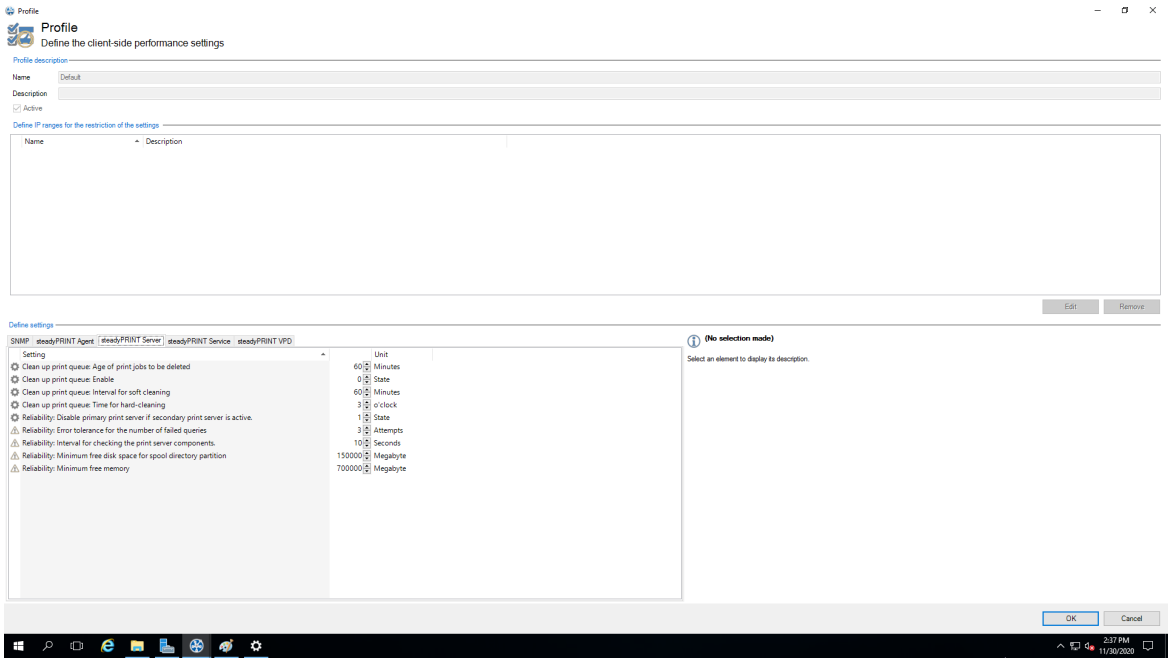

Figure 140: Setting for functional testing of print server

[1] Interval in seconds in which the print servers check the free hard disk space of the partner server.
[2] Interval in seconds in which the print servers check the free working memory of the partner server.
[3] Minimum free hard disk space. In case a lower value is identified, an error message will be sent.
[4] Minimum free working memory. In case a lower value is identified, an error message will be sent.
[5] Number of trials until the spooler of the backup print server is recognized as offline.
[6] Number of trials until the spooler of the master print server is recognized as offline.
[7] Interval in seconds in which the print servers check the mutual operational capability.
[8] Number of trials until the ***steadyPRINT Server*** of the backup print server is recognized as offline.
[9] Number of trials until the partner server is recognized as offline (Check via Ping)

If an error occurs during one of the tests, an email notification will be issued.
The e-mail profile can be saved in the settings of the print server to be tested (see figure E-mail profile in case of errors in functional testing).

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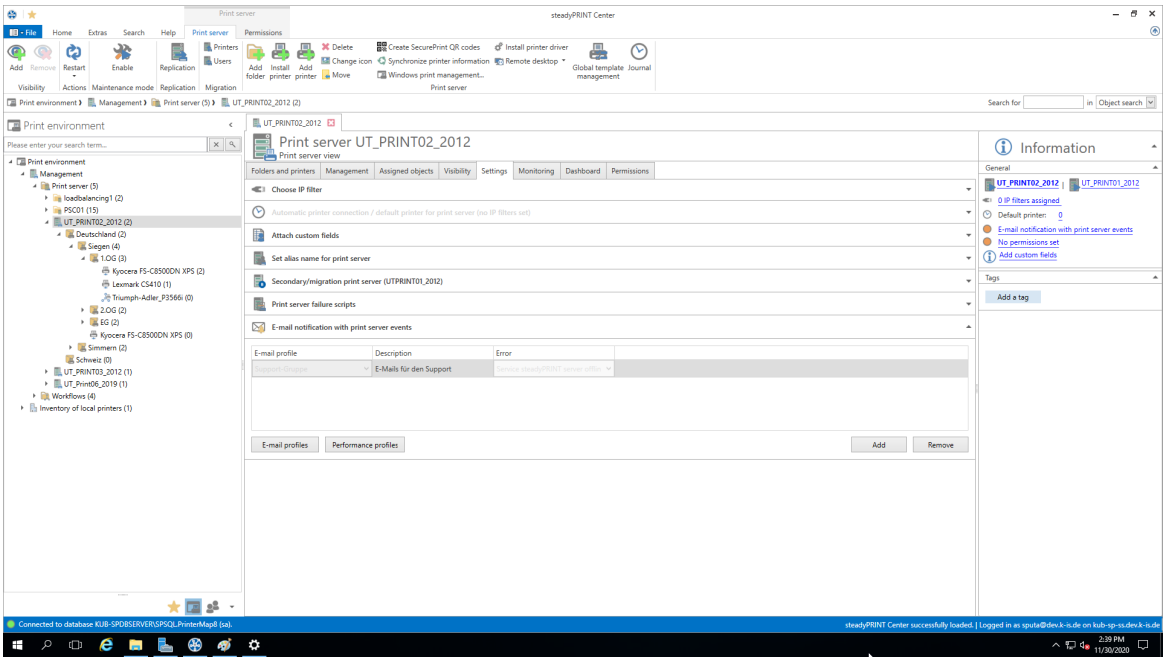

Figure 141: E-mail profile in case of errors in functional testing

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Part

8 Print Server Replication and Migration

steadyPRINT offers the functions of replication and migration so that printers can be copied from a source to a target print server. The former allows simple copying of the printers to another print server with the same operating system. Migration, on the other hand, provides additional options. These make it possible to copy printers between different operating systems, for instance from Windows Server 2003 to Windows Server 2008 R2.

For both functions, **steadyPRINT** copies the given port, the print processors, the drivers and the settings for the selected printer and then installs the printer on the target system.

Print server replication and migration can be accessed via the respective print server view in the ***steadyPRINT Center***. For both functions a separate window opens which finally leads to the operation of the different processes.

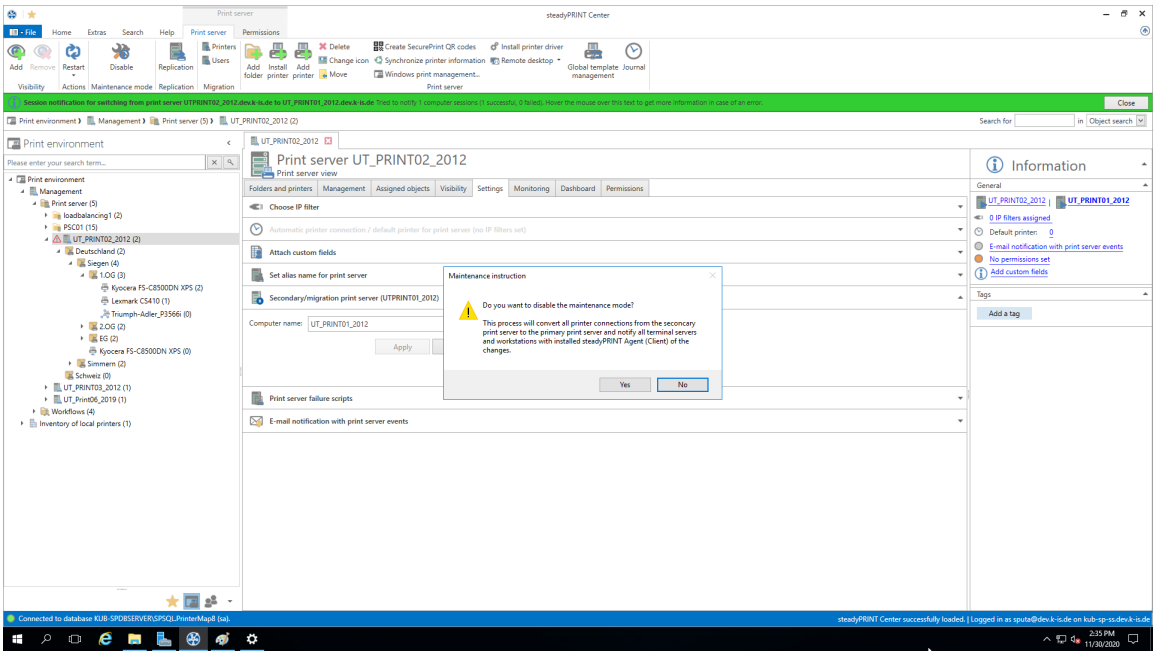

Figure 142: steadyPRINT Center - Selection of print server replication and migration

With **steadyPRINT** you are not only able to perform the print server migration but at the same time also to change all users to the new print servers. For more information, see chapter User Migration.

Note	*Indication of Backup or Migration Print Server*
	For the replication/migration it is necessary to indicate a backup and/or migration print server via the ***steadyPRINT Center***. Proceed as described in The Backup Print Server.

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8.1 View

Basically, the same components can be found in both the replication and migration screens. The following explanation will be in reference to the migration view as it also contains special supplementary operations in addition to the standard ones. References will be made at the appropriate junctions as to which functions will not be available in the replication screen.

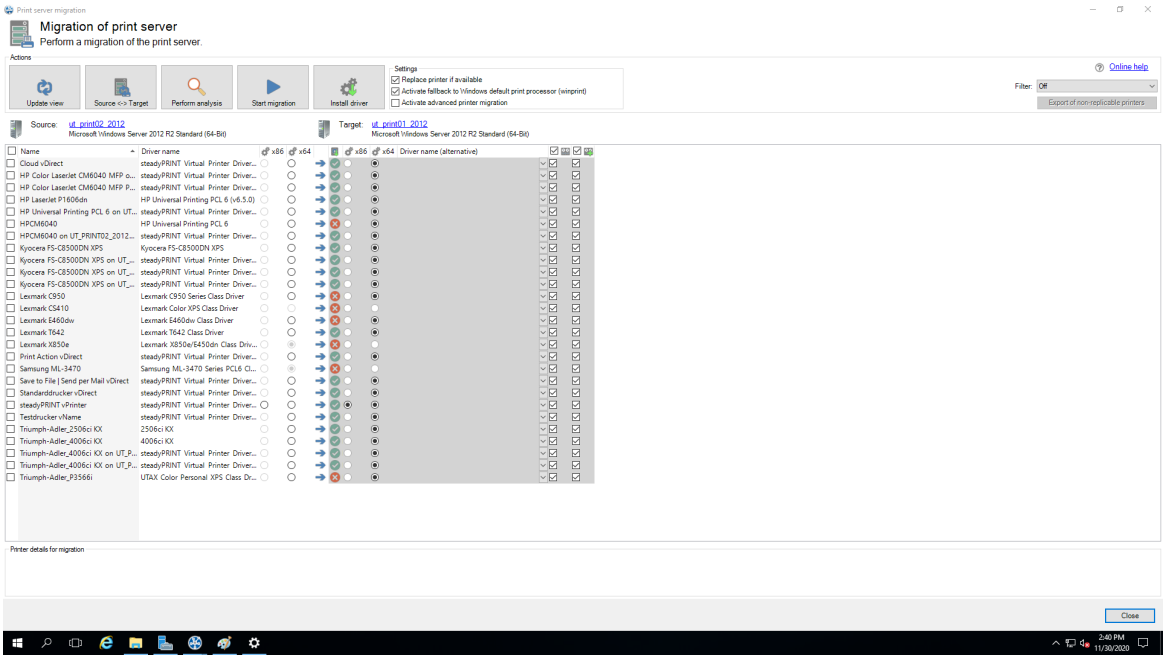

Figure 143: steadyPRINT Center – migration view

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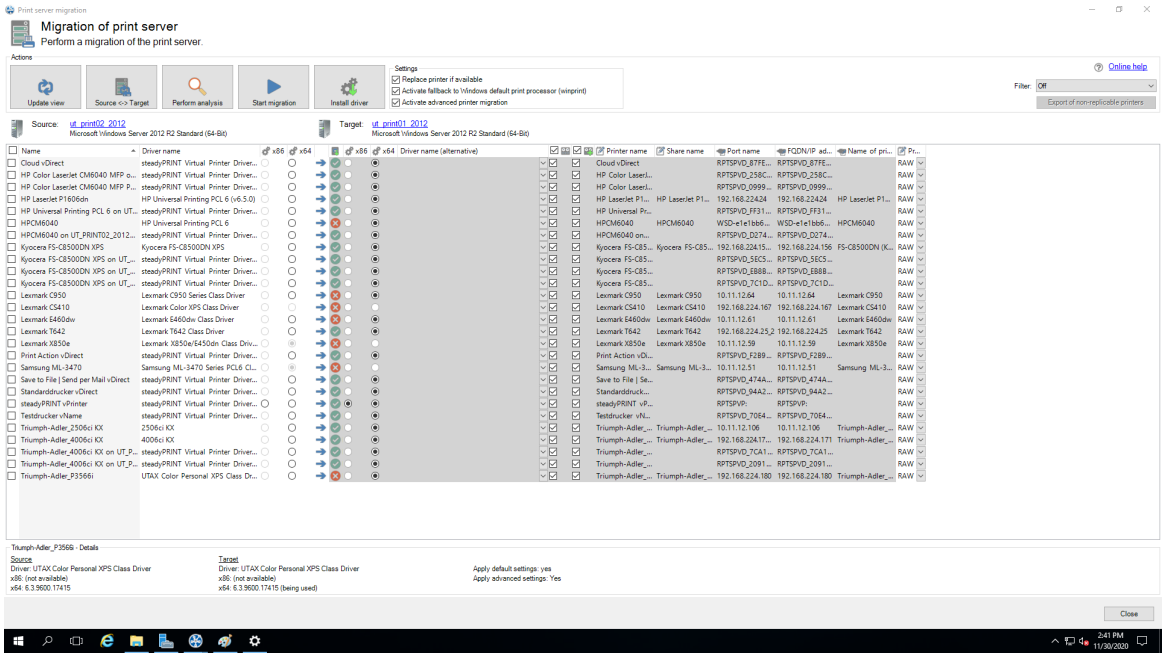

Figure 144: steadyPRINT Center - extended migration view

First, please find below a legend (see table 2) with an explanation of the individual control elements found in Figure - steadyPRINT Center - migration view and Figure - steadyPRINT Center - extended migration view.

Control element	Description
1 – Refresh View	Loads the necessary data from the print server and refreshes the view.
2 – Perform Analysis (migration only)	Analyzes the printers for migration and highlights them with various colors: - Orange: Different driver versions on target and source systems. - Red: No matching printer driver - with regard to name - found on both systems.
3 – Start Replication/ Migration	Starts the replication or migration process. This can last several minutes or even hours, depending on the number of printers, drivers, etc. to be copied.
4 – Install Drivers	Opens the dialog screen to install an additional printer driver (only possible locally).
5 – Print Processor	When active, the Windows print processor "winprint" is used as a fallback if the migration with the default print processor setting from the source system fails. When migrating from a 32- to a 64-bit system, the print processors might not be compatible.
6 – Source	Displays the name and the version of the source system.

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System	Tip: Click on the name of a print server to open a remote desktop connection.
7 – Target System	Displays the name and the version of the target system. Tip: Click on the name of a print server to open a remote desktop connection.
8 – Filter	Filters for the printer displays: - [Off]: Filter off - Printers installed: Filters for printers that have been installed on source and target systems. - Printers not installed: Filters for printers that are installed on the source system but not on the target system. - No suitable driver found (migration only): Filters for printers for which no drivers with the same name can be found on the target system. - Driver version unequal (migration only): Filters for printers for which different driver versions on source and target system were found.
9 – Details	Displays the details concerning a selected printer.
a – Printer Selection	Selects a printer for either replication or migration.
b – Name	Displays the name of the printer.
c – Driver Name	Displays the driver name of the printer.
d – x86 (Source)	Displays whether a 32-bit driver is installed on the source system.
e – x64 (Source)	Displays whether a 64-bit driver is installed on the source system.
f – Installed (Target)	Displays whether the printer and its dependencies are installed on the target system: - green – printer installation complete - yellow – driver and/or port different - red – printer not installed.
g – x86 (target)	Displays whether a 32 bit driver is installed on the target system.
h – x64 (target)	Displays whether a 64 bit driver is installed on the target system.
i – Alternative Drivers (migration only)	The possibility to select an alternative driver that can be used during migration. This column is predefined after an analysis if the same printer already exists on the target system with another driver. Should a 64-bit driver do not exist on the source or target

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	systems, you will be requested to select an alternative driver for the migration so that the process can be completed successfully. Please note: All available drivers for the respective target system are listed for selection. They can be viewed under Printer Administration > Print Server > [COMPUTER] > Drivers on the Windows Print Server.
i – Extended Printer Migration (migration only)	Activates the view for the extended migration. The additional columns are initialized with default values which can be adjusted as described under [...].
j – Apply Default Settings	Indicates whether the default printer settings are to be transferred to the target system.
k – Apply Extended Settings	Indicates whether the extended printer settings are to be transferred to the target system.
l – Printer Name (extended migration only)	Indicates which name the printer to be migrated has on the target system after migration. This value is editable.
m – Port Name	Indicates which name the port to be migrated has on the target system after migration. This value is editable.
n – FQDN/IP-Address	Indicates which FQDN or IP address the port to be migrated has on the target system after migration. This value is editable.
o – Name of the Print Queue	Indicates to which print queue the port shows after migration. Only necessary for protocol "LPR". This value is editable.
p – Protocol	Indicates the protocol the printer port communicates with. This value is editable.

Table 2: steadyPRINT Center: Replication/migration legend

Extended Printer Migration and Adaption of Default Values

The columns of the extended printer migration are initialized with default values. During a migration, the same pattern for printer names, port names etc. is frequently used. **steadyPRINT** allows a configuration of these default values which enables you to influence the initialization and thus to reduce the administrative work during a printer migration. Once the migration view has been opened, this configuration file can be found under %APPDATA%\steadyPRINT\migrationTable.xml as XML file. These files can be edited with a usual text editor (e.g. notepad). While doing so, indices of the respective default pattern can be adapted by using the definitions listed below.

Excerpt of the configuration file migrationTable.xml:

```
[...]
19 <SOAP-ENC:Array id="ref-3" SOAP-ENC:arrayType="xsd:anyType[5]">
20 <item id="ref-9" xsi:type="SOAP-ENC:string">[PortProtocol - Modify here!]{0}</item>
```

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```
21 <item id="ref-10" xsi:type="SOAP-ENC:string">[PrinterName - Modify here!]{0}</item>
22 <item id="ref-11" xsi:type="SOAP-ENC:string">[PortQueue - Modify here!]{0}</item>
23 <item id="ref-12" xsi:type="SOAP-ENC:string">[PortAddress - Modify here!]{0}</item>
24 <item id="ref-13" xsi:type="SOAP-ENC:string">[PortName - Modify here!]{0}:{1}</item>
25 </SOAP-ENC:Array>
[...]
```

The following table shows the meaning of the respective lines and values. The patterns can also contain combined values (see line 24). Applied to the printer name, you could thus define for example the prefix Printer_ for every printer to be migrated.

Line	Entry	Index	Default Pattern	Example for Index 0
20	PortProtocol	0 = RAW (default) 1 = RAW 2 = LPR	{0}	RAW
21	PrinterName	0 = printer name from source 1 = print server name from source	{0}	Lexmark T642
22	PortQueue	0 = shared name from source 1 = printer name from source	{0}	T642
23	PortAddress	0 = FQDN/IP address of port from source 1 = print server name from source 2 = port name from source	{0}	192.168.100.150
24	PortName	0 = print server name from source 1 = printer name from source 2 = port name from source	{0}:{1}	DE_Client123:Lexmark T642

Table 3: steadyPRINT Center - Definition of configuration file for printer migration

Note	*Transfer of Changed Printer Settings*
	Changed printer settings are identified but not visualized by **steadyPRINT**. Simply select the desired printer and perform the replication or migration in order to transfer the changed settings from the source to the target system.

Note	*Extended Migration*
	The extended migration is mainly used to transfer local printers to a print server. For this purpose different types of terminals, that can be configured, are necessary (USB port turns into TCP/IP port). All arrays that belong to the extended migration are initialized with default values. A description of how to adjust these values can be found in [...].

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8.2 Printer Driver Management

With the release of **steadyPRINT** version 5.2, a large-scale printer driver management has been implemented for the administrators.

Here, you have the option to select between 3 scenarios:

1. Installation of a printer driver on one or more print servers
2. Distribution of a printer driver from a source print server to one or more target print servers
3. Exchange of a driver in one or more existing printers

8.2.1 Installation of Printer Drivers

The installation of printer drivers has been considerably simplified in **steadyPRINT** 5.2.

There are several options:

1. Installation of a printer driver by means of an *.inf-file on 1 target system
2. Installation of a printer driver by means of an *.inf-file on several target systems
3. Copying a printer driver from a source print server to one or more target print servers

Installation of a print server by means of an *.inf-file on 1 target system

For this purpose, **steadyPRINT** uses the Windows-owned wizard comfortably guiding you through the installation of the printer driver on the target system.
You will find this function in the context menu of the tree under the print server, to which you wish to install a driver (see figure Availability via the context menu of a printer driver).

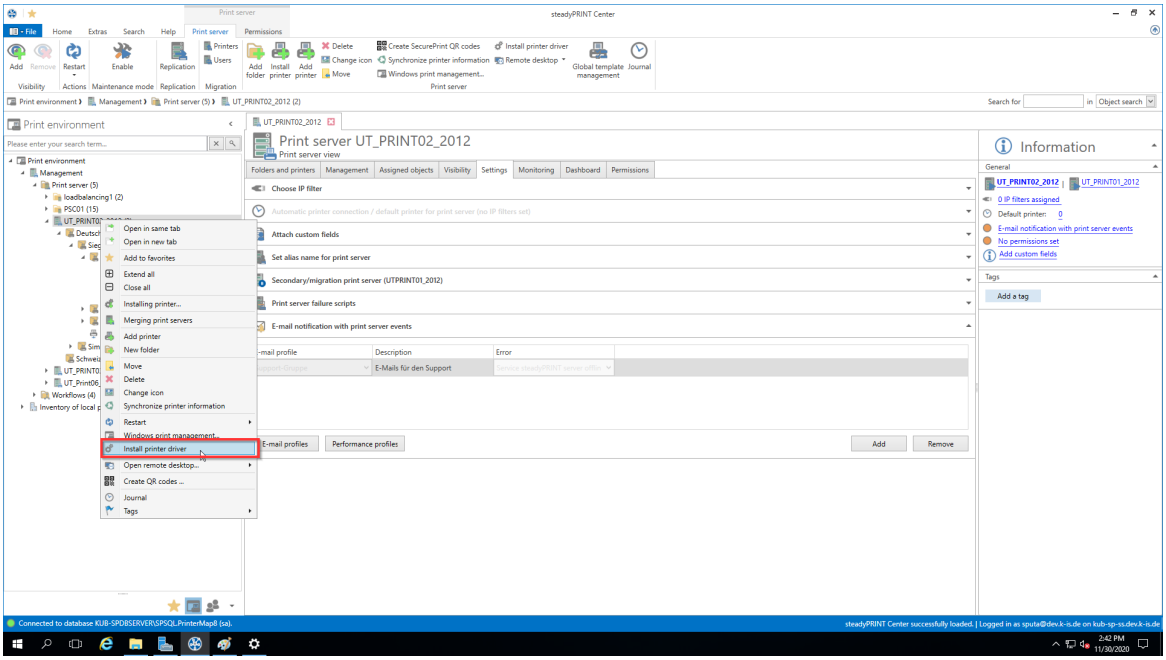

Figure 145: Availability via the context menu of a printer driver

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Installation of a printer driver by means of an *.inf-file to several target systems

There is a new interface in **steadyPRINT** that can be called up via the respective entry in the context menu of the tree (see figures Availability via the context menu of all print servers and Selection of a printer driver and the print servers).

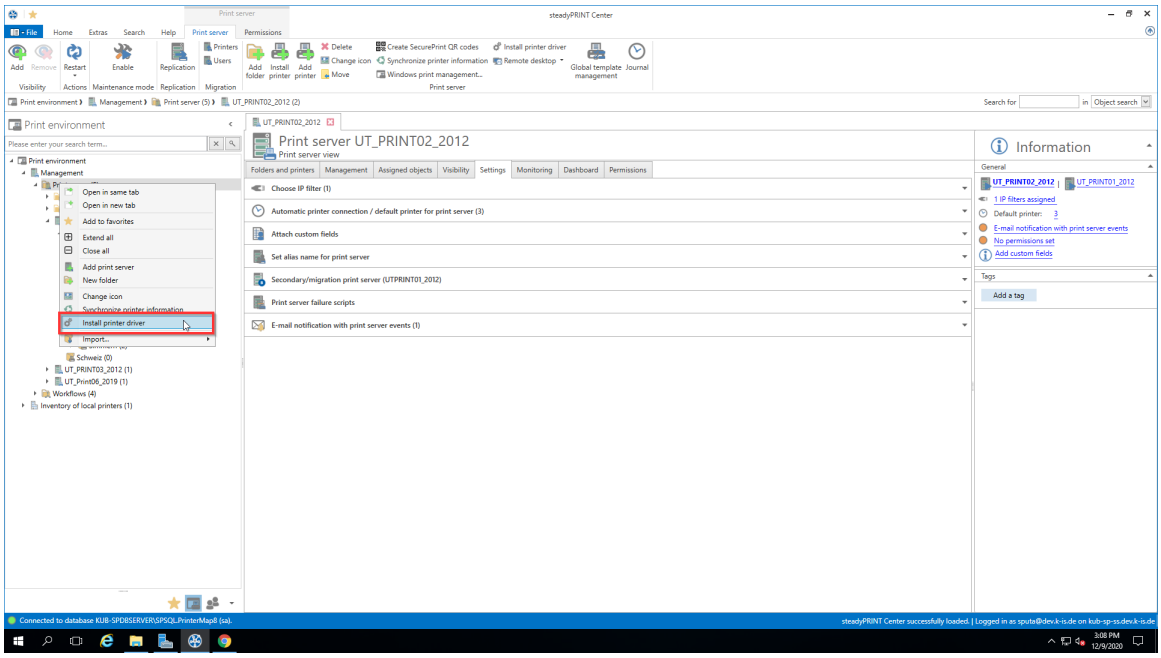

Figure 146: Availability via the context menu of all print servers

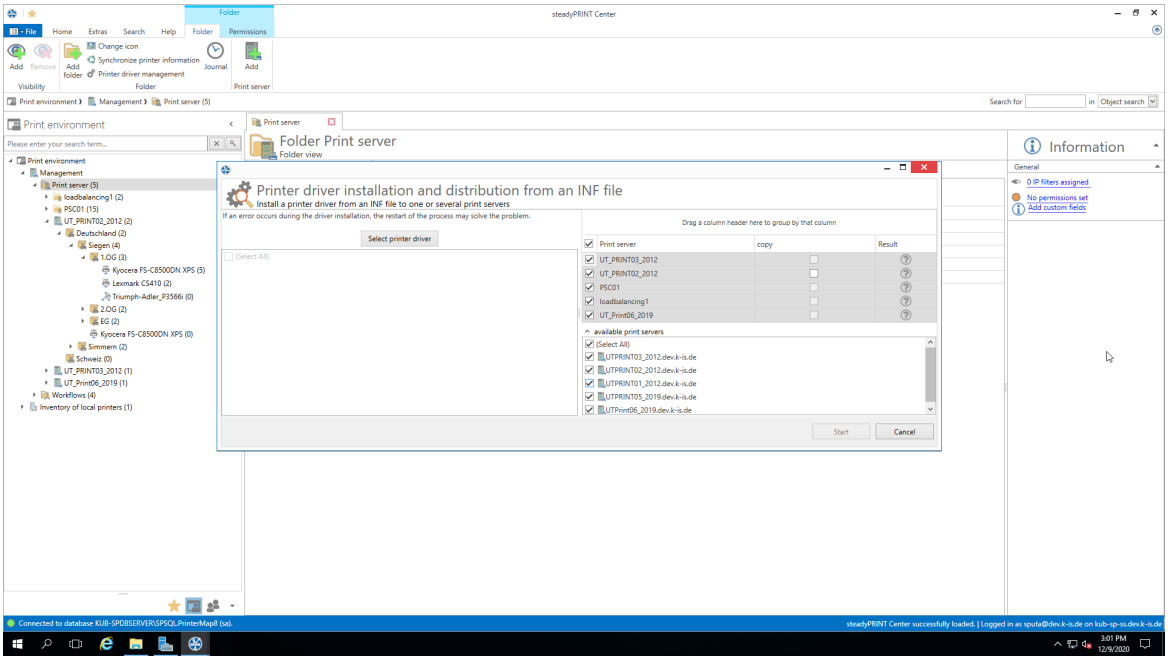

Figure 147: Selection of a printer driver and the print servers

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Note	*Printer Driver Selection*
	The printer driver must be available on a network path that can be accessed from the target print server. **steadyPRINT** converts network drives into UNC paths and are thus also possible.

Here, you now have the possibility to select an *.inf-file which is then copied to the selected target systems.
Furthermore, **steadyPRINT** directly offers the possibility to transfer the selected printer drivers to an appropriate and associated backup print server.

Note	*Listed Print Servers*
	In order to have a print server being listed in this view, several tests have to be passed successfully.: 1. The print server has to be displayed in the tree (See Authorizations in the steadyPRINT Center). 2. The print spooler of the print server has to be active (See Warming Up Time of the Print Spooler). 3. The user logged in to the **steadyPRINT** ***Center*** has to be registered on the print server as a local administrator.

Note	*Selection of the Target Print Servers*
	The printer driver is copied to all print servers selected in the upper table.

8.2.2 Distribution of Printer Drivers

The distribution of printer drivers in **steadyPRINT** can be accessed via an entry in the command bar (see figure Access via the access bar),

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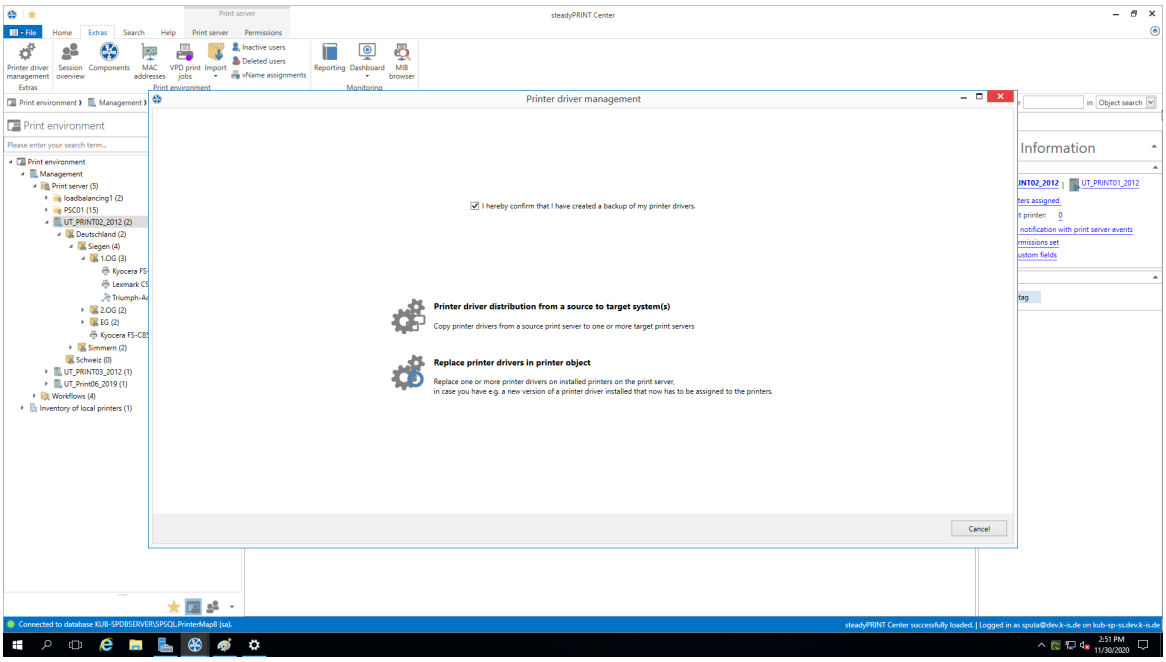

Figure 148: Access via the action bar

followed by a new window that enables you under item 1 to distribute printer drivers to other print servers.

Item 2 enables you to exchange printer drivers (see figure Selection of the operation to be run) in printers that already exist.

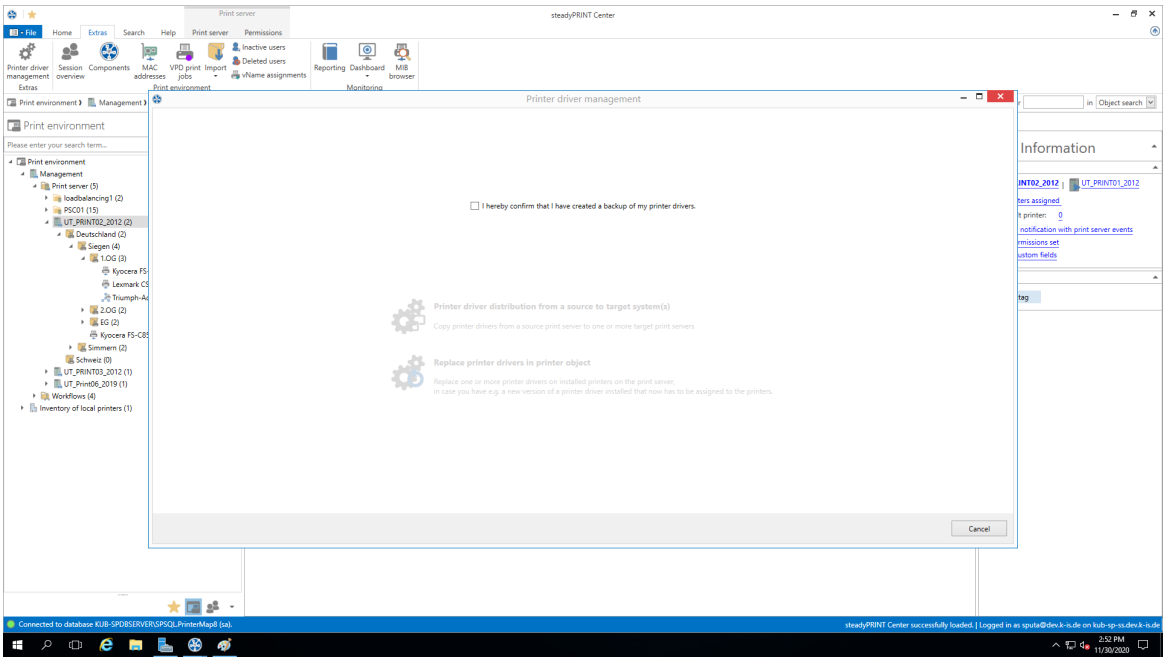

Figure 149: Selection of the operation to be run

Having confirmed that an efficient backup of the affected part of your printing environment has been

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created, you continue with the upper choice.

In the opening window (see figure Selection of the source print server), you select the print server that includes the printer driver to be distributed.

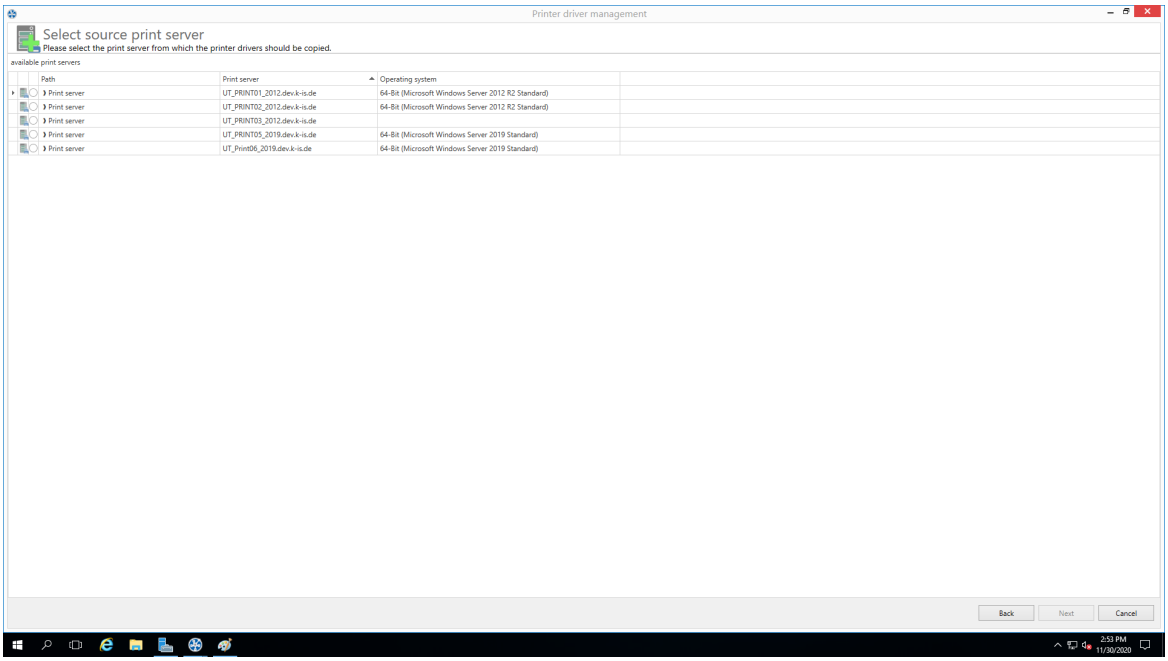

Figure 150: Selection of the source print server

Note	*Listed Print Servers*
	In order to have a print server listed in this view several tests have to be passed successfully. 1. The print server has to be displayed in the tree (See Authorizations in the steadyPRINT Center) 2. The print spooler of the print server has to be active (See Warming Up Time of Print Spooler) 3. The user logged in to the **steadyPRINT *Center*** has to be registered on the print server as a local administrator.

Then, **steadyPRINT** will ask for those print servers to which the printer driver is to be transferred (see figure Selection of the target print server).

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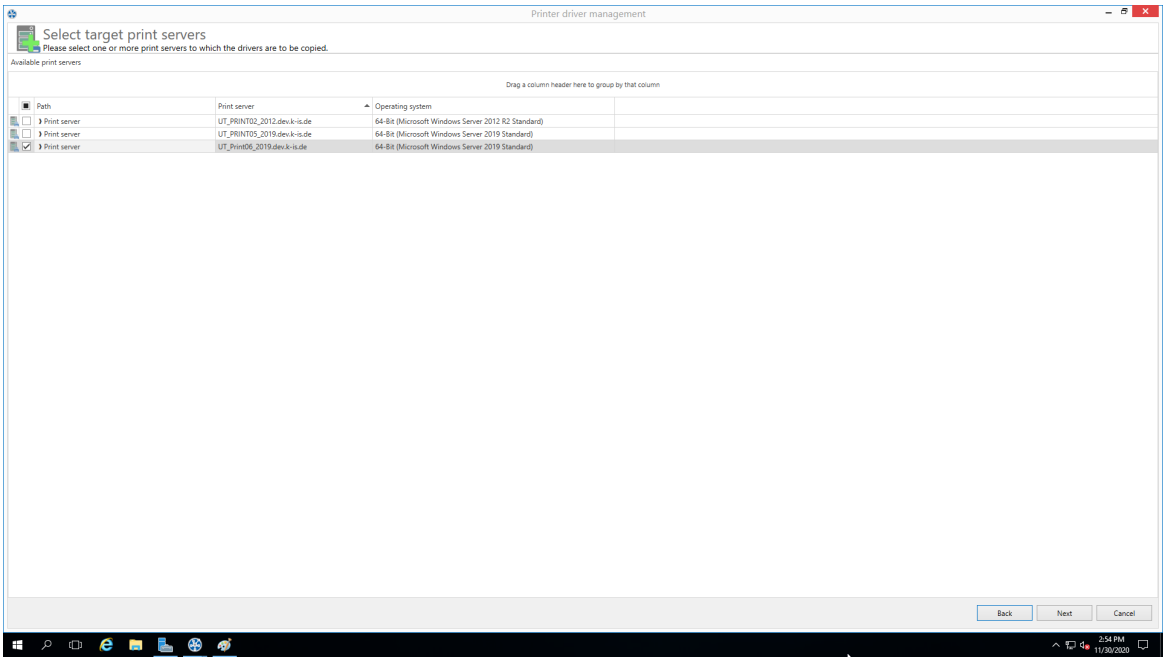

Figure 151: Selection of the target print server

8.2.3 Replacement of Printer Drivers

Printer drivers with already existing printers can be replaced via **steadyPRINT** by accessing an entry in the command bar (see figure Availability via the action bar).

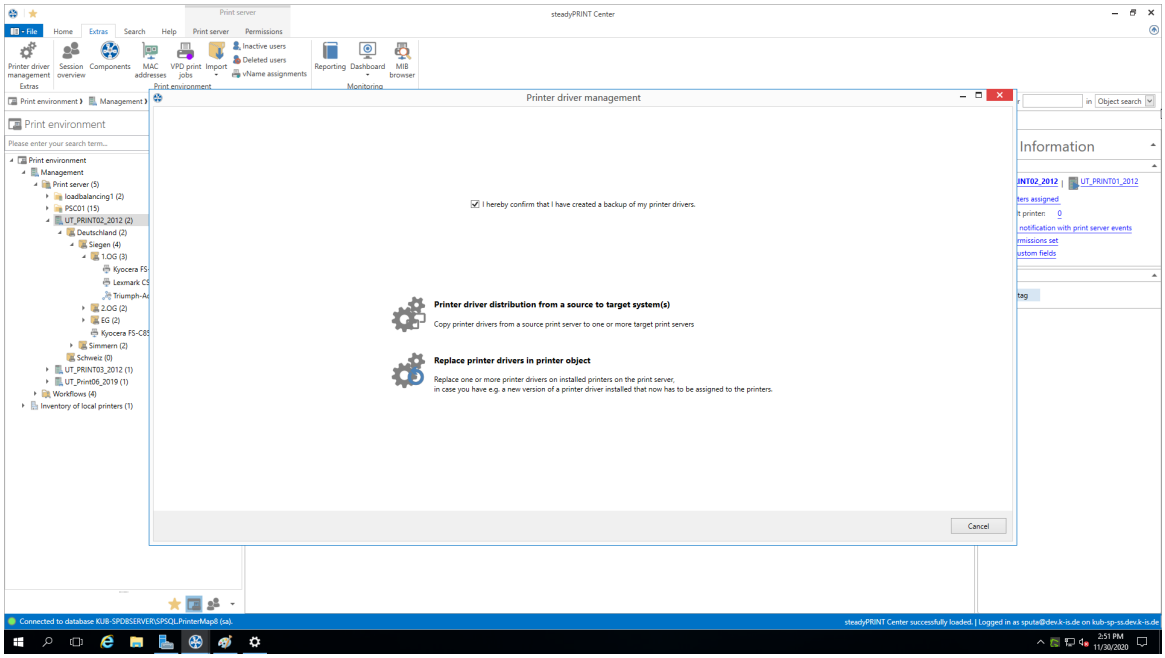

Figure 152: Availability via the action bar

A new window opens and enables you under item 1 to distribute the printer drivers to other print servers.

Item 1 enables you the distribution of printer drivers to already existing printers.

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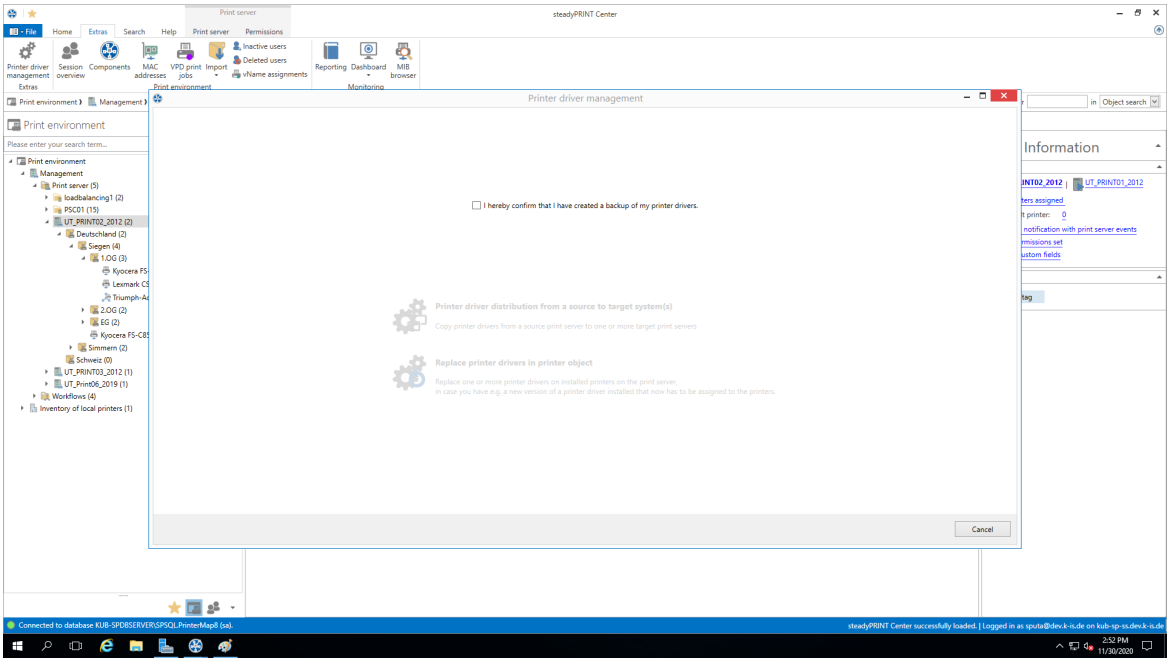

Figure 153: Selection of the operation to be performed

Having confirmed that an efficient backup of the affected part of your printing environment has been created (see figure Selection of the operation to be performed), you continue with the upper choice.

In the opening window, you select the print servers on which one or more printer drivers should be replaced (see figure Selection of the target print server).

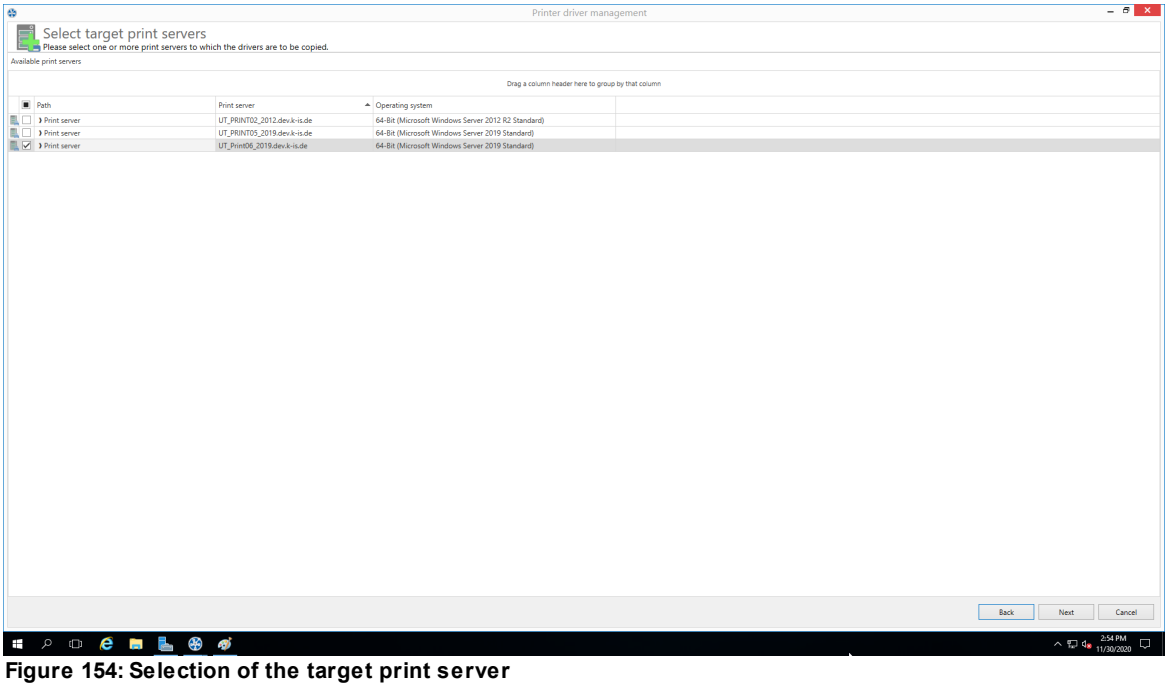

Figure 154: Selection of the target print server

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Note	*Listed Print Servers*
	In order to have a print server listed in this view several tests have to be passed successfully. 1. The print server has to be displayed in the tree (See Authorizations in the steadyPRINT Center) 2. The print spooler of the print server has to be active (See Warming Up Time of Print Spooler) 3. The user logged in to the **steadyPRINT *Center*** has to be registered on the print server as a local administrator.

On the following page (see figure Selection of the printer drivers to be replaced) you now specify which driver should be installed for the respective printers.

Note	*Which printers are processed?*
	All printers for which a printer driver was selected in the selection box are processed.

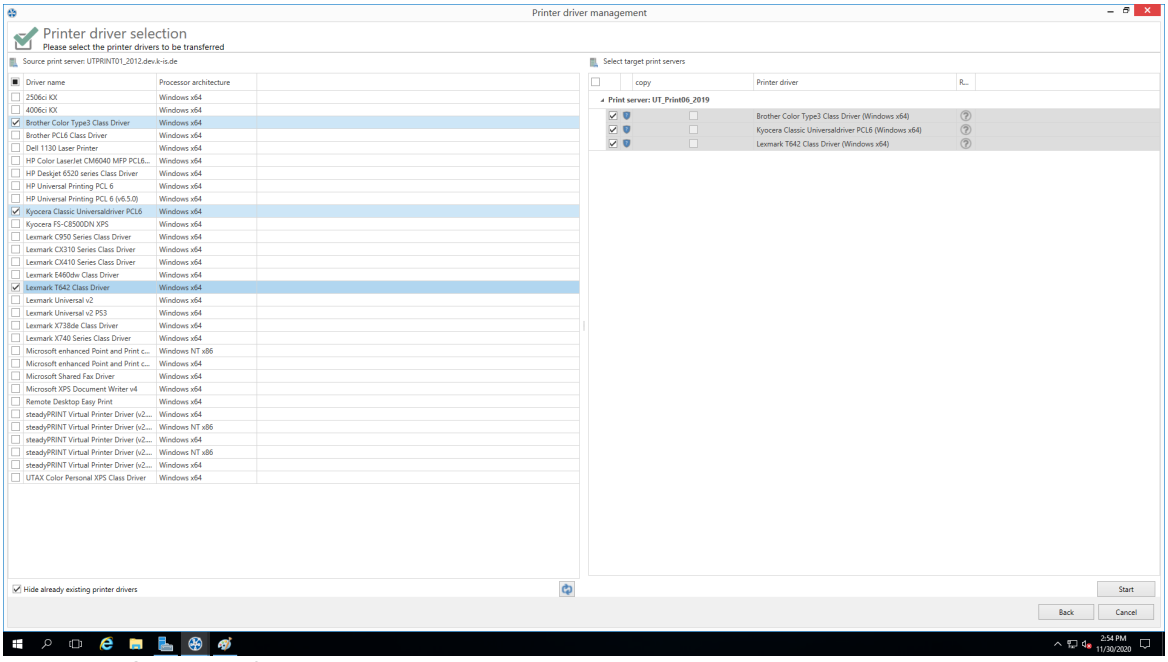

Figure 155: Selection of the printer drivers to be replaced

8.3 Carrying Out a Replication or Migration

To carry out a replication or a migration of a printer, please proceed as described below. It is important here to define the replication/migration configuration that will finally be used during the process.

Execution steps:

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0. Query of print servers and display of printers available on the source print server (automatically carried out when opening the Replication and Migration View). This process can also be carried out and repeated manually via Update View.
1. Carrying out an analysis for the migration (available in the Migration View only).
2. Selection of the printers to be replicated or migrated.
3. Selection of the printer drivers to be used. Select whether you wish to use the drivers from the source or from the target for this process.
4. If necessary, select an alternative printer driver for this process (available in the Migration View only). This stems from the target system and is used when installing the printer on the target print server.

Please note: To display and use the desired drivers, they will need to be added to the target print server beforehand.

5. If necessary, enter a different printer name (available in Extended Migration View only). The renamed printer will then be set up on the target print server.
6. Selection of transferred printer driver settings.
7. If necessary, enter a different port name (available in Extended Migration View only). The renamed port will then be set up on the target print server.
8. If necessary, enter a different FQDN or a different IP address for the port to be migrated. (available in Extended Migration View only).
9. If necessary, enter a different queue name for the port to be migrated (available in Extended Migration View only). This is only necessary when using the "LPR" protocol.
10. If necessary, enter a different protocol for the port to be migrated (available in Extended Migration View only). The default protocol for TCP/IP-based printers is "RAW". Use "LPR", to refer to a local print queue of a different computer from the print server . Make sure that the correct queue name for the port has been entered.
11. Start the replication or migration process.
12. Optional: Repeat the replication or migration process, if necessary. Under certain circumstances, the Windows print queue might take some time to update all information of the new printers which are now available but not yet displayed as expected. Tip: Restart the print queue on the target system or the print server. Usually an update of the view will be sufficient.
13.

Note	***Replication as of Windows Server 2012 with v4-Printer Drivers***
	It is partly not possible to perform the driver replication of delivered in-box v4 printer drivers. During the replication, the ***steadyPRINT Center*** installs the driver from the system-owned driver store as a fallback on the target system by using the printer driver name of the source print server. Therefore, please make sure that the target and source print servers have the same version and patch level.

Note	***Replication of print server cluster***
	For the replication of print server clusters it is important that you only work with one active node in the cluster (only applies to the target system). In this context, a replication equals a software update or the maintenance of a cluster node. On completion of the replication, the disabled node can be enabled again. For more information on the maintenance of a Windows Server Cluster, please refer to https://technet.microsoft.com/en-us/library/cc731291(v=ws.11).aspx

Important	***Use of the Extended Migration***

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	Use the extended migration only if the printer name, port name, FQDN/IP address, queue name and/or the protocol are to be modified during the printer migration! For a regular migration that only requires the adaptation of the printer driver, the normal migration view is sufficient and should thus be used.

Important	***Migrating from Windows Server 2003 to 2008***
	For most migrations from Windows Server 2003 to 2008, it is necessary that the print processor file localspl.dll lies in the shared folder \\[COMPUTER]\prnproc$\w32x86\ on the migrating print server. If an error occurs, the error message will look somewhat like this, for example: "Internal error. The attempt to add print processor WinPrint failed. The file "\\chd-w2k3-x86\prnproc$\w32x86\localspl.dll\" could not be found." You can simply copy the file localspl.dll from C:\WINDOWS\system32 to C:\WINDOWS\system32\spool\prtprocs to make it available in the shared folder.

Important	***Using Incompatible Printer Drivers***
	Please make sure that compatible drivers are available and used for migration. If an incompatible driver is used for the migration, the error message will look something like this, for example: "The attempt to add printer IBM 2380 Plus to computer chd-w2k3-x86 has failed - the printer IBM 2380 Plus could not be installed on print server BOREAS: The printer driver is unknown".

Important	***Using Incompatible Print Processors***
	Please make sure that compatible print processors are used for the migration. The attempt to migrate “old” and incompatible processors will lead to the following error message: „[…] The print processing is unknown […].“ To solve the problem, please select the print processor winprint on the source system for the affected printers. After that, the migration should run through. After successful process completion, a subsequent adjustment of the print processor on the target system is possible.

Note	***The Print Server's Operating System is not Shown in the Display***
	For the correct display of the operating system in the display of the respective views it must be ensured that WMI queries are allowed on the affected systems.

8.4 User Migration

User migration (see figure - steadyPRINT Center - Selection Print Server Replication and Migration) is possible at any time provided a backup print server has been installed. During this process, the master print server becomes the backup server and vice verse. Consequently, the migration of all printer

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connections for users, groups and computers also takes place. Please note that a migration of the assignments will only function for those present in the ***steadyPRINT Database***. After the migration has been executed in the ***steadyPRINT Center***, it will be necessary to restart the clients.

It is possible to have the ***steadyPRINT Agent*** take over all existing printer connections automatically before the migration. The following explains the procedure for all available connections which are not present in the database:

1. First import to the ***steadyPRINT Center*** the desired print servers with all available printers to add these to the ***steadyPRINT Database***. Please note that the ***steadyPRINT Agent*** only recognizes the connections to the respective printers that also exist in **steadyPRINT**
2. Then enable the "recognize printer connections added manually in Windows and automatically map to a user in steadyPRINT" option under Settings > Printer Connections in the ***steadyPRINT Center***.
3. Make sure to disable the "delete network printer connections not administered by steadyPRINT at Agent startup" option under Settings > Printer Connections in the ***steadyPRINT Center***. Otherwise **steadyPRINT** will get rid of these, making a subsequent acquisition no longer possible.
4. Configured in this way, the ***steadyPRINT Agent*** acquires all printer connections at start up and adds these to the database.

*Please note: Automatically generated printer connections for the respective printers are always found directly below the print server in the **steadyPRINT Center**.*

Important	***Printer Availability on Master and Backup Print Server***
	It is necessary to ensure the availability of all printers on both print servers beforehand in order to guarantee a smooth transition.

Important	***Printer Driver Integrity***
	Please note that after migration the printer drivers stem from another print server and may thus need to be reinstalled for printer connection generation. This circumstance can be corrected by activating the administrative printer driver installation function in the ***steadyPRINT Center***.

Note	***User Migration and Reliability***
	To ensure that reliability remains intact after user migration, the ***steadyPRINT Server*** service must be installed on the new backup print server (formerly master print server) before this system begins service. This is necessary for monitoring.

Note	***Availability of the steadyPRINT Agent on Clients for User Migration***
	The installation of the ***steadyPRINT Agent*** on the clients is absolutely necessary for the migration for users, groups and computers.

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8.5 Merging Print Servers

When merging print servers, it is possible to logically merge and consolidate the print servers added to **steadyPRINT**. Use this function to merge for example three print servers into one. All already existing printer assignments including the defined default printers will be transferred to the specified print server.

Procedure of Merging Print Servers

The individual steps necessary for merging two print servers are described below. If you want to merge three or more, repeat the process in the same way.

1. Indication of backup/migration print server

Indicate the backup/migration print server in the same way as described in chapter The Backup Print Server. By doing so, you choose the print server on which the printers (printer assignments) and default printer are to be transferred.

2. Ensure printer availability

Before merging the print servers, make sure that the printers from the master print server are completely available on the backup/migration print server, meaning that the replication or migration process has taken place. How to carry out a replication or migration is described in chapter Carrying Out a Replication or Migration.

3. Merging print servers

Start the process via the context menu of the print server [print server] > merging print servers. **steadyPRINT** then logically moves all printers, printer assignments and default printers from the master to the backup/migration print server. After the movement of all objects, the current backup print server will become the master print server. Upon successful process completion, **steadyPRINT** deletes the previous master print server. All printers (printer assignments) with an error, remain.

4. Deleting old printer connections

The printer connection is immediately transferred to the new print server. Old connections, however, remain unaffected. Using the setting steadyPRINT Center > Settings > Agent Profile > Inventory > Delete Printer Connections, old printer connections will be cleared up on the respective clients on the next start of the ***steadyPRINT Agent***.

Important	***Undo the Process***
	Once the print servers have been merged, they cannot be separated again! Therefore it is recommended to create a backup of the ***steadyPRINT database*** beforehand in order to be able to restore the status previous to the print server merging!

Important	***Moving Printers (Printer Assignments)***
	steadyPRINT only moves printers and printer assignments as well as default printers within the database. This process does not affect the installed printers of the print servers in question. Previous to this, use the integrated replication or

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	migration.

Note	*What Happens to Printers that Have Already been Imported for the Backup/Migration Print Server?*
	Printers that have already been imported for the backup/migration print server remain unchanged.

Note	*What Happens to Printer Assignments that Already Exist for the Backup/Migration Print Server?*
	In case an assignment for a printer already exists on the backup/migration print server for the respective AD object, it remains unchanged. The same applies to default printers which are transferred by **steadyPRINT** only if the assignment has to be newly created.

8.6 Import

This chapter describes the process of importing printers and printer connections to **steadyPRINT** from a CSV file.

8.6.1 Importing Print Servers from CSV File

Apart from the procedure described in chapter Print Server Administration, the ***steadyPRINT Center*** also offers the function of importing print servers via a CSV file. Specify the file to be imported via the ribbon in the flag "Extras".

Formatting the CSV file

The print server name and the domain of the respective server has to be defined in the first two columns. Subsequently, any number of printers can follow. It is important to ensure that there is a sufficient number of columns for printers.

Format

```
PrintServer;Domain;Printer1;...;Printer[n]
```

Description of the columns:

1. PrintServer: Name of print server or computer
2. Domain: Name of domain
3. Printer[n]: Indicates the printer on the print server (Information can also be given without complete UNC path)

Example for CSV file with complete UNC path

```
PrintServer;Domain;Printer1;Printer2;Printer3
perseus;k-is.de;\\perseus\Lexmark T642;\\perseus\Lexmark T725
pluto2;k-is.de;\\pluto2\Kyocera FS-600;\\pluto2\Kyocera FS-800;\\pluto2\Kyocera FS-900
```

Example for CSV file without complete UNC path

```
PrintServer;Domain;Printer1;Printer2;Printer3
perseus;k-is.de;Lexmark T642;Lexmark T725
```

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```
pluto2;k-is.de;Kyocera FS-600;Kyocera FS-800;Kyocera FS-900
```

Note	*Domain in CSV File is not Specified*
	If the domain of the print server to be imported is not specified, the first computer object found in the domain trust will be used.

Note	*Adjustment of the Print Server Role*
	By default, an imported print server is arranged and displayed as a local print server in the ***steadyPRINT Center***. By changing the print server role via settings in the print server view, you can convert it into a normal print server and have it displayed in the tree under print server.

8.6.2 Importing Printer Assignments from CSV File

Apart from the procedure described in chapter Printer Assignment, the ***steadyPRINT Center*** also offers the function of importing printer assignments via a CSV file. Specify the file to be imported via the ribbon in the flag "Extras"

Formatting the CSV file

The AD object as well as its domain and the structural object class have to be defined in the first three columns. Subsequently, the default printer and the printer assignments have to be specified. It is important to ensure that there is a sufficient number of columns for the printer assignments.

Format

```
ObjectName;Domain;StructuralObjectClass;DefaultPrinter;Mapping1;...;Mapping[n]
```

Description of the columns:

1. ObjectName: Name of AD object (user login, computer or group name)
2. Domain: Name of the domain
3. StructuralObjectClass: Object class of principal (computer, group or user)
4. DefaultPrinter: Specifies the printer which is defined as default printer (0 = No default printer defined, 1 = Printer1, 2 = Printer2 etc.)
5. Mapping[n]: Specifies the printer assigned to principal

Example of CSV file with complete UNC path

```
ObjectName;Domain;StructuralObjectClass;DefaultPrinter;Mapping1;...;Mapping[n]
PC001;steadyprint.com;computer;2;\\pluto2\Kyocera FS-600;\\pluto2\Kyocera FS-800
winkler;steadyprint.com;user;0;\\pluto2\Lexmark T642
Training;steadyprint.com;group;1;\\pluto2\Kyocera FS-900
```

Note	*Domain and/or StructuralObjectClass in CSV File is not Specified*
	If the domain or StructuralObjectClass of the AD object to be imported is not specified, the first object found in the domain trust will be used. Note: The combination of an empty domain and a defined StructuralObjectClass leads to a non-solvable AD object!

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Note	*Type of Assignment*
	Before importing the CSV file, the administrator is able to specify the type of assignment.

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Part

9 Settings

To adjust the **steadyPRINT** program settings, open the Settings window. You will find this in the ***steadyPRINT Center*** via file > settings or the shortcut F8.
Here, the management of settings of all **steadyPRINT** components are available.

Functions and settings that require a detailed explanation are described in the following sub-chapters.

9.1 Center Roles

See Authorizations in the steadyPRINT Center

9.2 Test Run Settings

In **steadyPRINT**, you can perform test runs of the environment. The test runs can be configured in the settings.

These settings can be accessed via the setup menu (see figure Accessibility of the settings) (or F8).

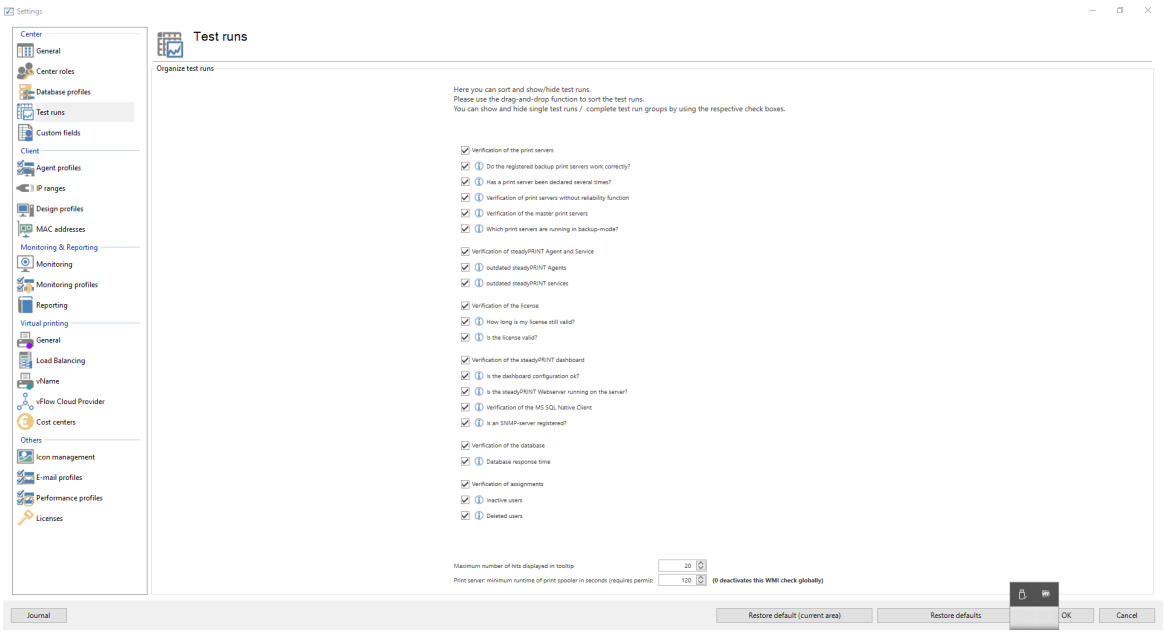

Figure 156: Accessibility of the settings

Dependent on your licensing, a certain number of test runs are available which can be freely sorted and shown/hidden.

In order to rearrange test runs or complete groups, please use the Drag & Drop function (see figures Move by drag & drop1 and Move by Drag & Drop2). Groups and test runs can be shown or hidden by means of the respective check boxes.

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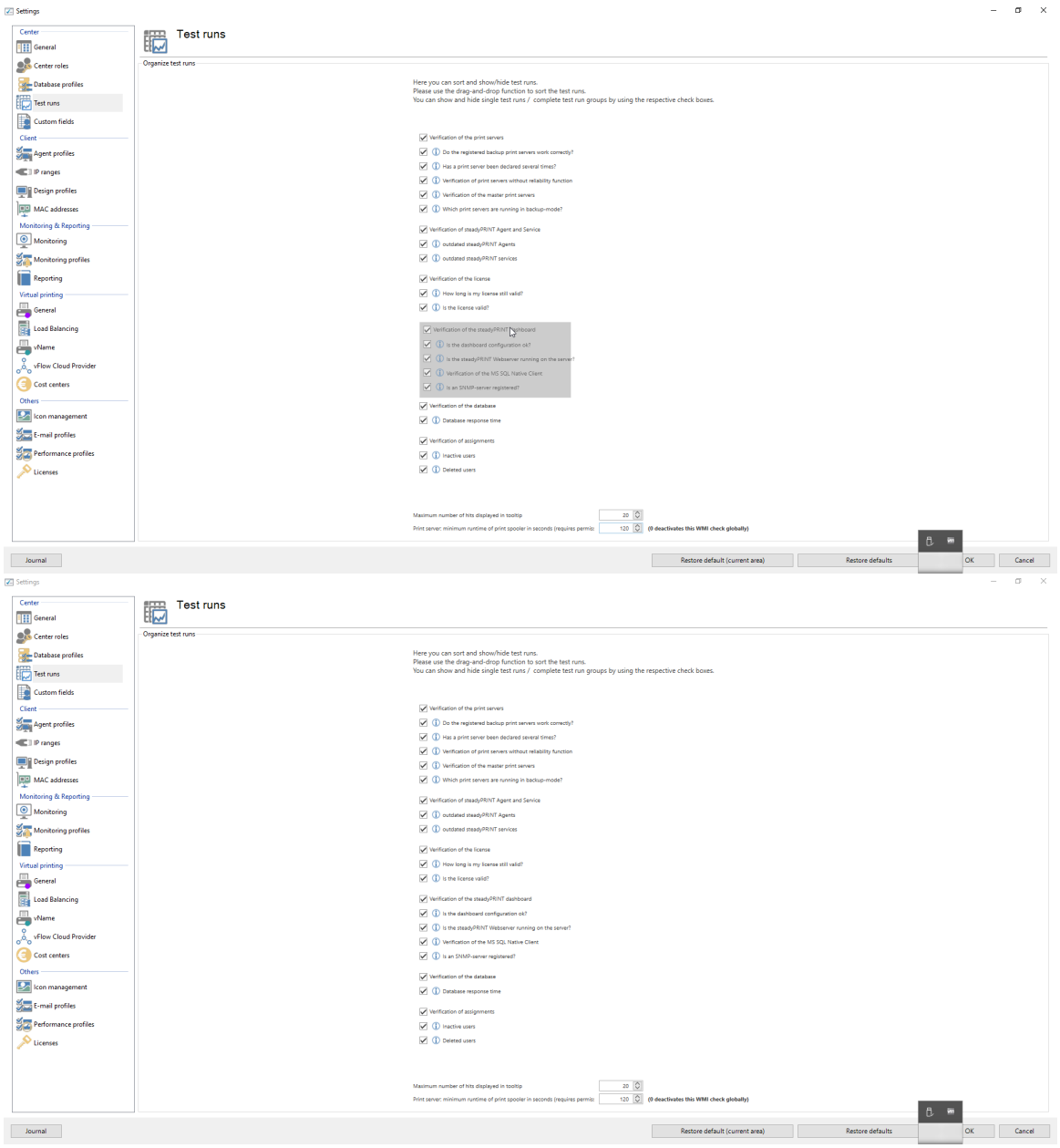

Figure 157: Move by drag & drop (1)

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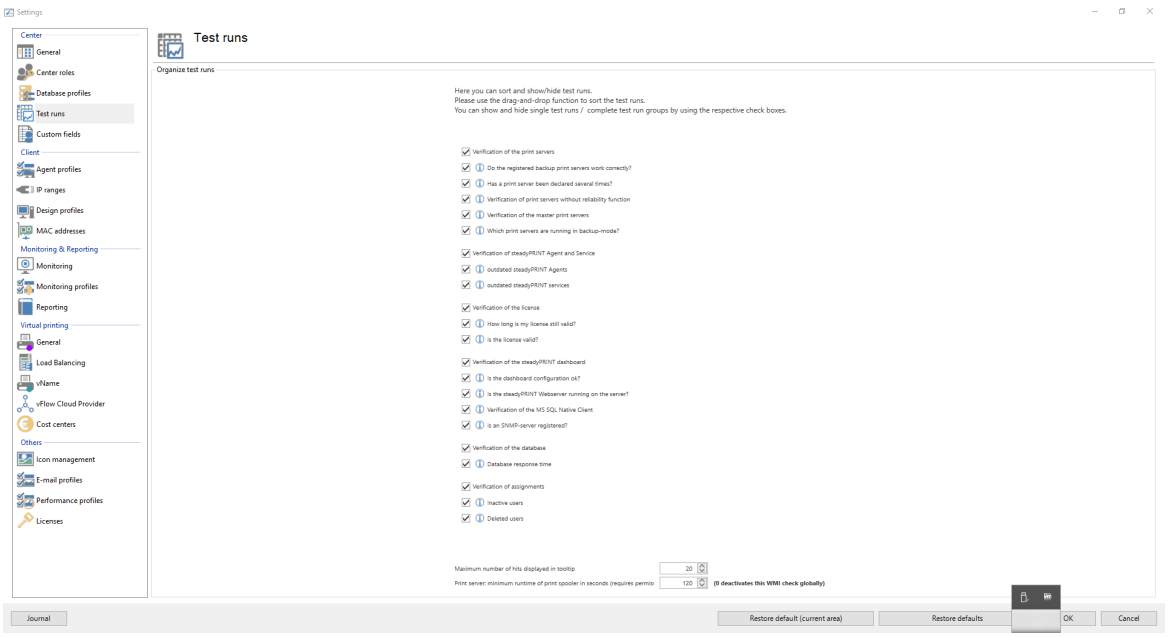

Figure 158: Move by Drag & Drop (2)

9.3 Custom Fields

See Custom Fields

9.4 Agent-Profiles

With the ***Agent Profiles*** it is possible to define user-, group- and computer-specific settings for the behavior of the ***steadyPRINT Agent***. Initially, there is a „Standard“ profile providing a basic configuration for the Agent which is adjustable, but cannot be deleted or disabled. To restrict the functions for specific users, you can, for example, define a new safety profile for one group.

All profiles presented in figure - steadyPRINT Center - Definition of Agent profiles are processed in the ***steadyPRINT Agent*** according to their prioritization, with *1* being of highest priority. The profile that matches the user, group or computer will be processed first. Any other profiles with a lower priority will be ignored for the user, group or computer.

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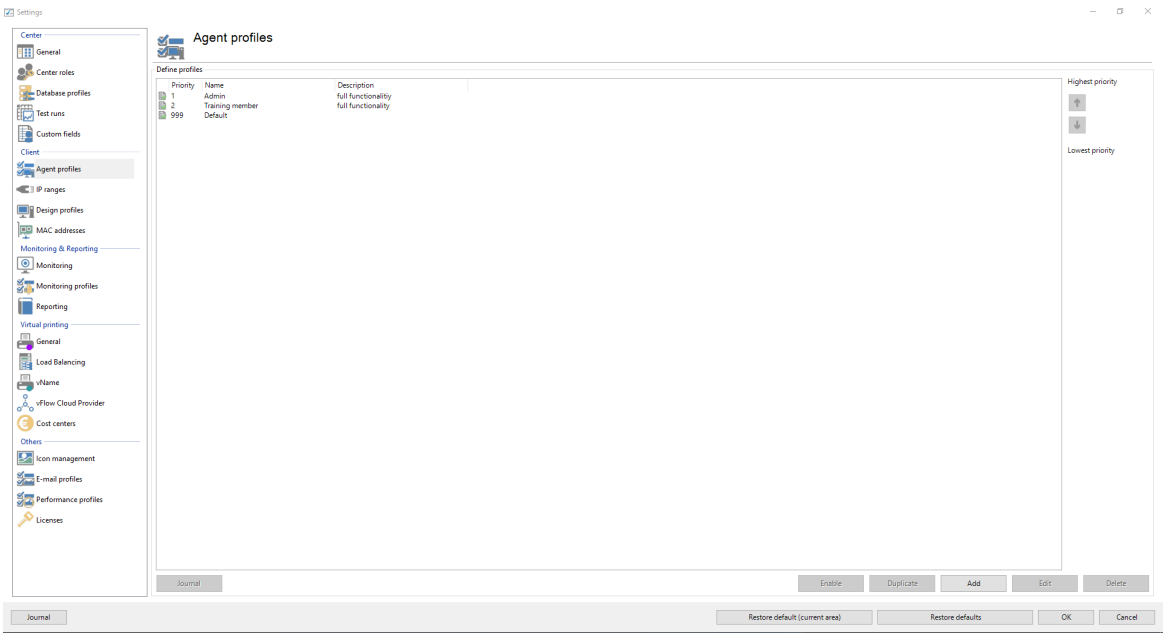

Figure 159: steadyPRINT Center - Definition of Agent profiles

The profiles defined in the ***steadyPRINT Center*** are loaded once at the start-up of the ***steadyPRINT Agent***. New or deleted profiles as well as adjusted users, groups and computers are only processed when the Agent is restarted. When exactly which profile settings are processed is shown in the respective functional description in the profile.

Note	*Analysis of nested groups*
	The analysis of nested groups is disabled by default. For more information, please refer to Nested Groups.

Default Printer

The configuration for the application order of the default printers can be set via the tab default printer. By means of the priority list you decide, which type of default printer should be active and preferable in case of a multiple occupancy. It is, for example, possible that in one session a default printer has been set for the user as well as for its computer.

9.5 Monitoring

In the Monitoring settings you enter the configuration for the Dashboard and the inventory of local printers in the ***steadyPRINT Center***.

Local Printers

In the settings for local printers you can determine how long the collected information shall be held available. Furthermore, it can be specified here which local printer you want to filter out of the tree view of the ***steadyPRINT Center***.

SNMP

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Here you enter the directory for the MIB files that you want to use. (see chapter MIB-Profiles).

9.6 Monitoring-Profile

A ***Monitoring Profile*** describes how **steadyPRINT** should react to a Monitoring event. Events are SNMP queries that have returned a value in whatever form having been interpreted as an error or warning. When and/or why an event is supposed to occur can be defined in chapter SNMP.

A ***Monitoring Profile*** can be linked to one or more events. The following figure - steadyPRINT Center - Overview of monitoring profiles shows an overview of existing profiles.

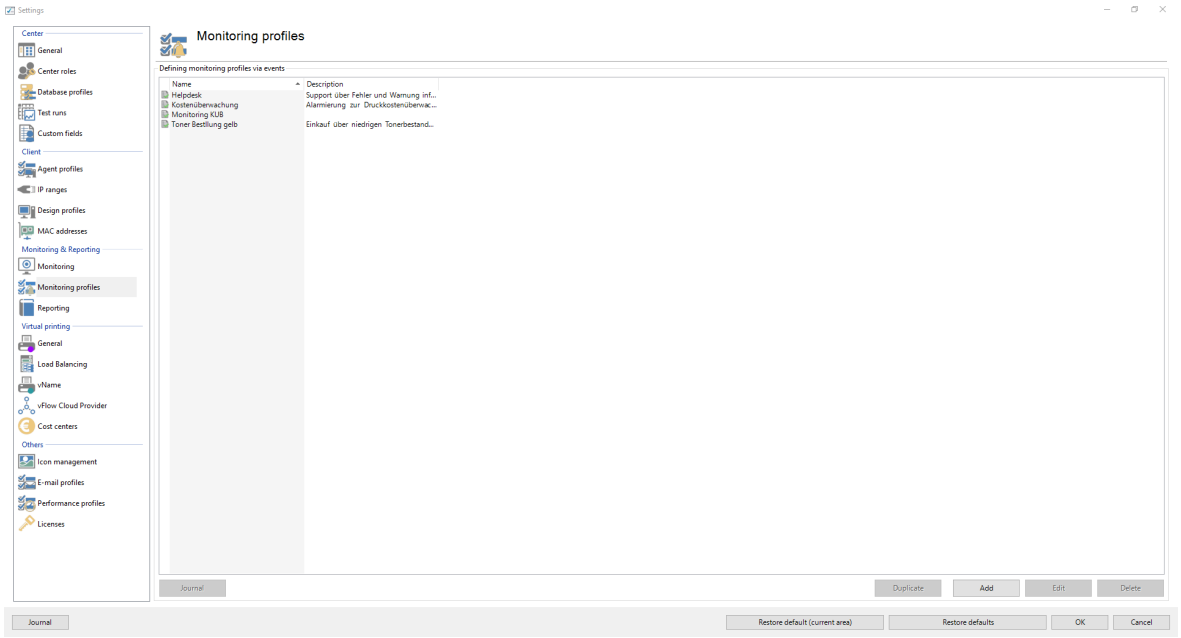

Figure 160: steadyPRINT Center - Overview of Monitoring profiles

The definition of a ***Monitoring profile*** is necessary to react to raised events. The following table and the figure - steadyPRINT Center - Monitoring profiles show the respective settings.

Setting	Description
Name	The name of the ***Monitoring profile.***
Description	An optional description of the ***Monitoring profile***.
Active	In the active state, the ***Monitoring profile*** runs the defined settings for alerting.
E-mail profile	For an e-mail notification of this event, link any e-mail profile with the current ***Monitoring profile***.
Save event to Database	If the saving function is enabled, **steadyPRINT** saves all occurring event to the database. *Note: Saving the events is necessary to have them displayed in the **steadyPRINT Dashboard**!*

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Alarm when situation returns to normal	If the check mark is set, **steadyRPINT** sends another e-mail - in case an e-mail profile has been stored - to give the all-clear as soon as the value returns to the normal range.
Repetition(s) until the first alarm is triggered (error tolerance)	The error tolerance indicates how often a measure value may leave the defined normal range without triggering an event and/or a notification.
Minute(s) until the alarm is triggered again	If an event occurs once, you can take this value to determine after how many minutes another e-mail should be sent.

Note	***Minute(s) until new alarm***
	In case the alarm shall occur only once, choose a large value (e.g. 9999999). If you would like to have an alarm re-sent after 24 hours, enter 1440 minutes respectively. If the normal state has returned in the meantime, no new alarm will take place except the optional message regarding the normal state.

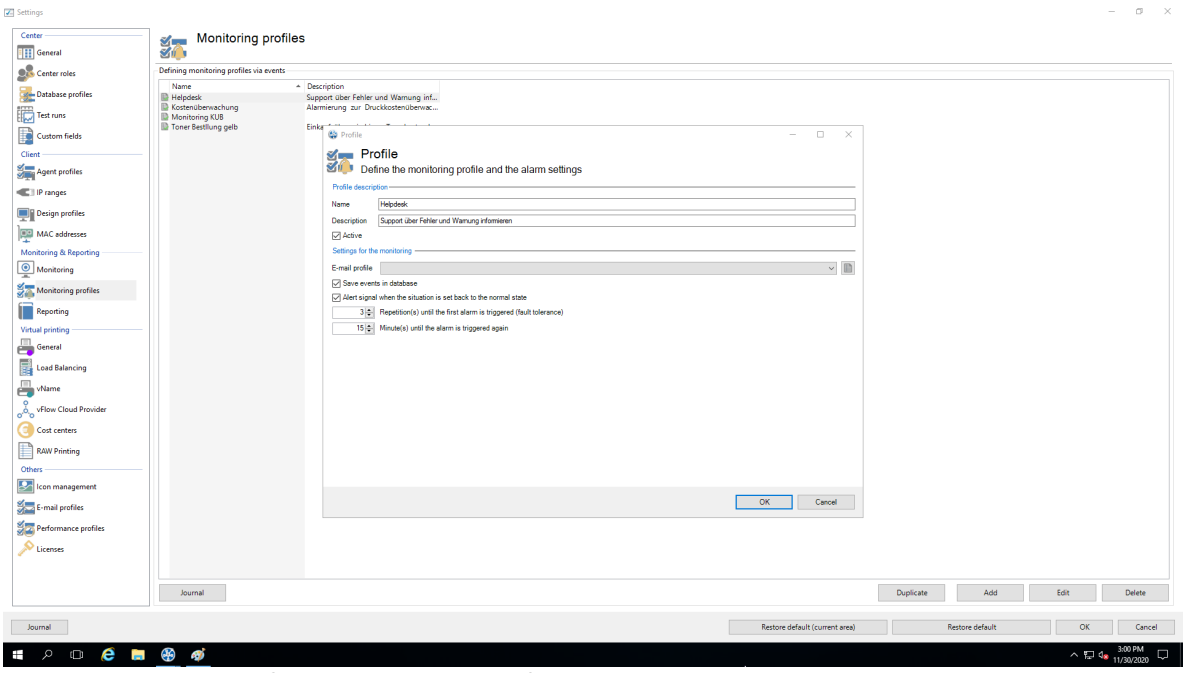

Figure 161: steadyPRINT Center - Monitoring profile

9.7 Reporting Profile

You will find your profiles for the automated sending and/or saving of reports under ***Report Profiles***. Here, you have the option to create different reports which will automatically be sent and/or saved at defined intervals.

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Several profiles can be created which are run on the configured ***steadyPRINT Servers.***

A new profile can be created via Add. An already existing profile can be copied by clicking Duplicate or adjusted via Edit. By clicking Delete, the profile is removed. (see figure Overview of reporting profiles).

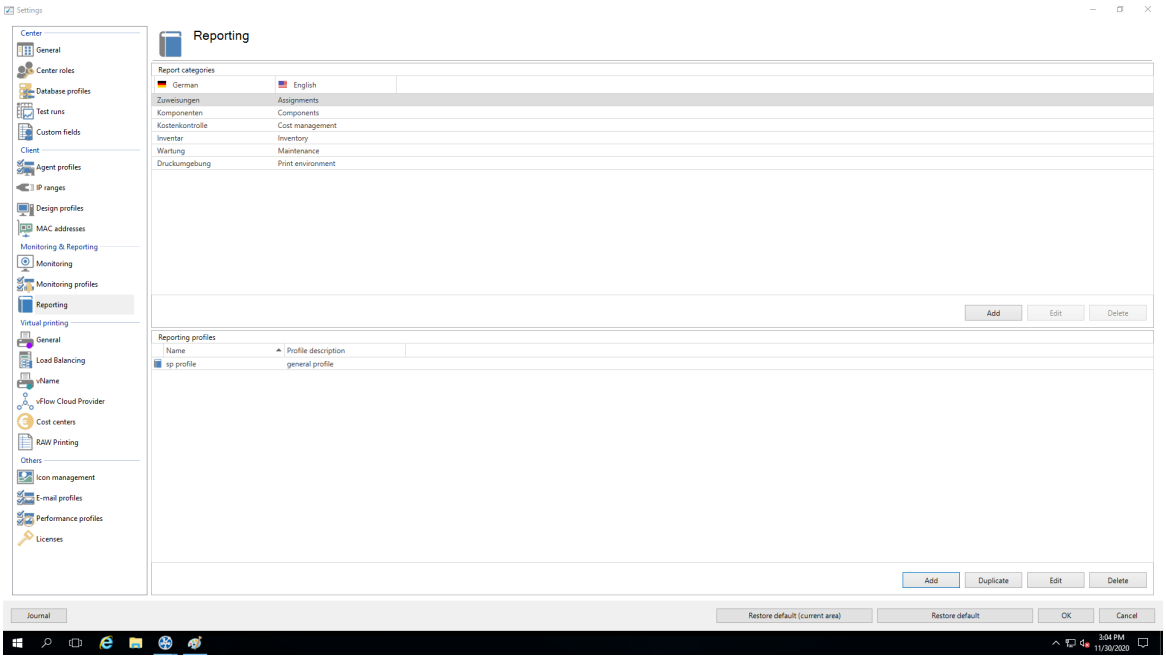

Figure 162: Overview of reporting profiles

Create a new Profile

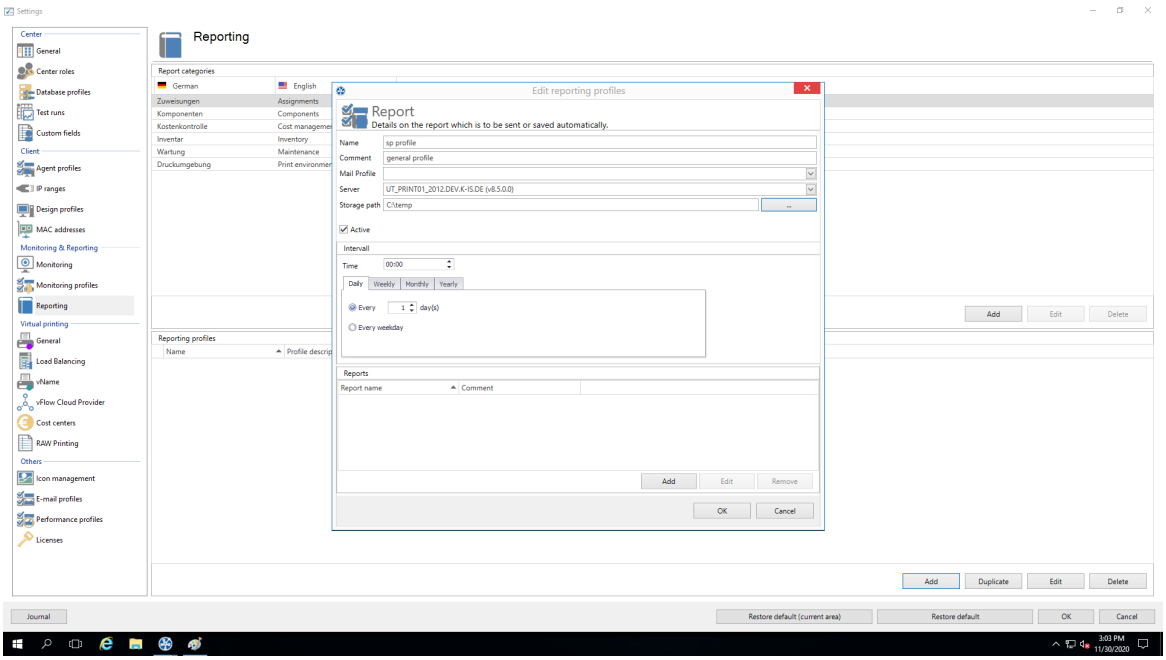

Figure 163: Create a reporting profile

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A ***Reporting Profile*** contains some mandatory fields that have to be filled. Those fields are marked with a *. (see figure Create a reporting profile).

Important	*Saving the Profile*
	By clicking OK, the adjustments are saved.

Profile description:

Use the mandatory field Name to give the reporting profile a name. This name does not have to be unique.

The field Description describes the reporting profile.

The check box Active enables or disables this profile.

The settings for sending/saving the reports:

The selection list ***E-Mail Profile*** specifies which e-mail profile shall be used for sending reports. If the reports are only to be saved, this field can be left blank.

Via the **Edit** button next to the selection list, the e-mail profiles can be edited or new ones can be added.

The selection list ***steadyPRINT Server*** is a mandatory field that specifies on which server the automatic reporting is to be created. This is especially interesting when the automatic reporting is installed at different locations with different authorizations, e.g. to the memory shares.

The field Storage Path indicates where the reports are to be stored. This can be a share or a local path on the server. If this field is left blank, the reports will not be stored but only sent.

Important	*Send or save*
	Either the e-mail profile or the storage path has to be indicated.

The mandatory field Date indicates at which time the automated reporting is to be created. First, a certain time has to be chosen.

Then you can select whether this time should be on a daily, weekly, monthly or annual basis. Each selection presents a further selection for a certain point in time or day. This selection is similar to the Outlook appointment series.

Reports which are to be sent/saved automatically: (see figure Adding a report to the reporting profile)

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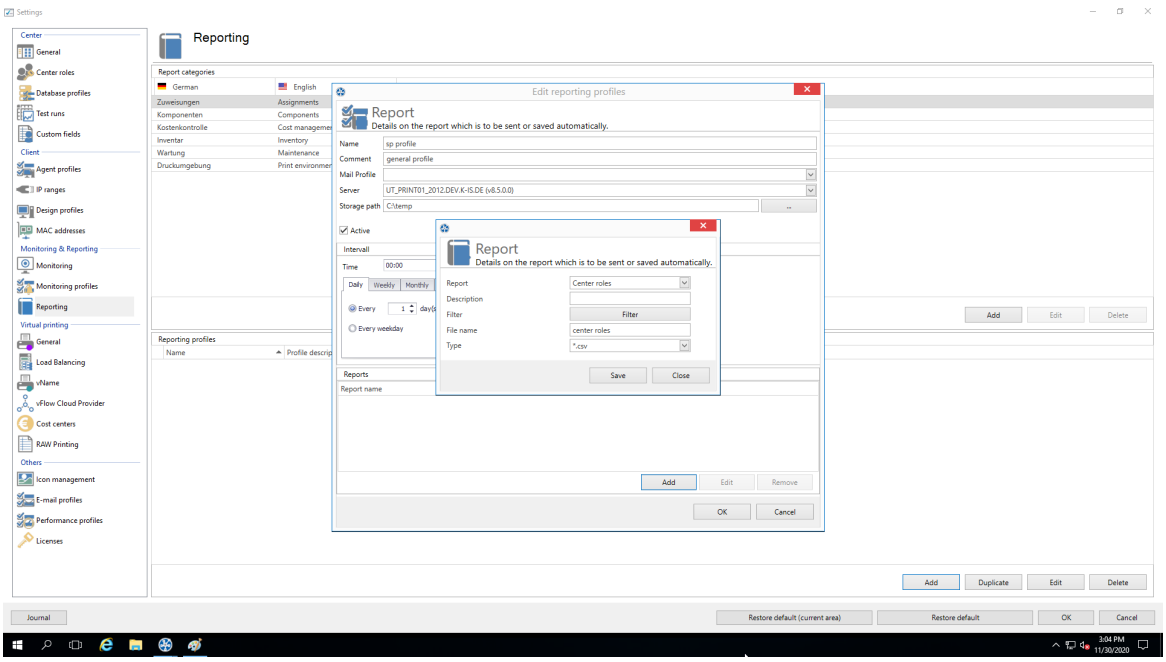

Figure 164: Adding a report to the reporting profile

With the mandatory field Report you select the report which is to be sent and/or saved.

The file Description contains a description text of the report.

The data can also be filtered, as in the ***steadyPRINT Reporting***. It is possible to filter the data by the data filter or a date range. Even the top-selection is possible.

The mandatory field File Name indicates the name of the file which is to be saved and/or attached to the e-mail.

The mandatory field File Format indicates the format of the file.

The button OK imports the setting for the report.

9.8 VPD in General

See Virtual Printer Driver (VPD) - Administration

9.9 VPD vName

As of version 6.5 you have the option to use our ***steadyPRINT VPD*** vName printer connections (see chapter Overview Assignment Types).

You create these printer in the setting of the ***steadyPRINT Center*** (see figure steadyPRINT Center - steadyPRINT VPD vName Settings).

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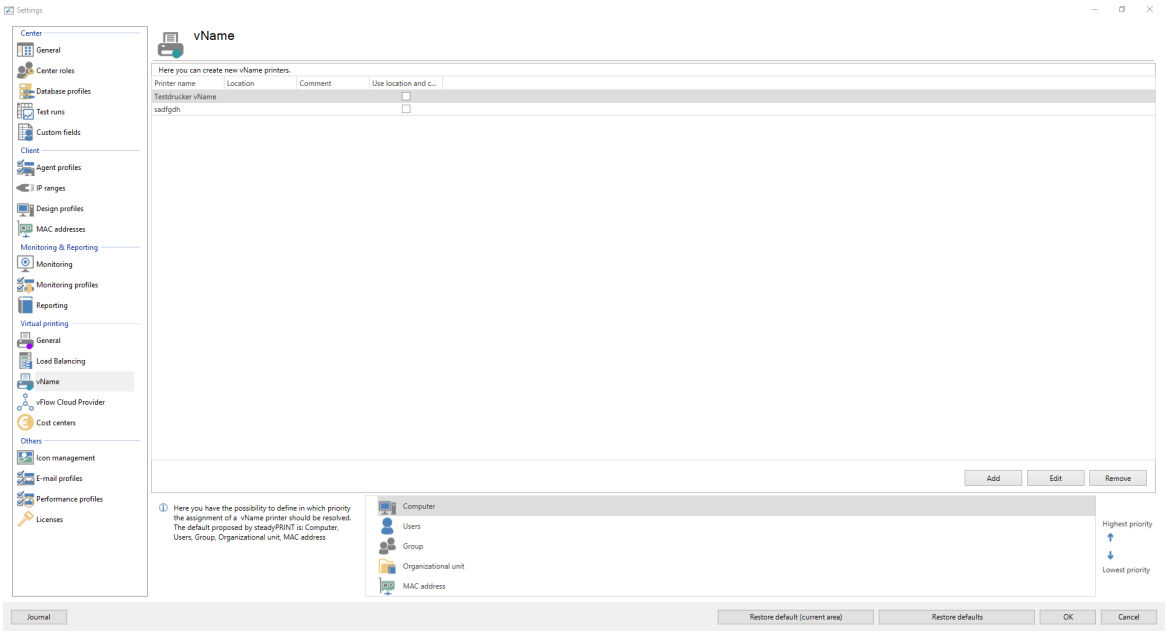

Figure 165: steadyPRINT Center - steadyPRINT VPD vName Settings

Adding a new steadyPRINT VPD vName Printer

You can enter a name for the ***steadyPRINT VPD*** vName printers and provide them with a comment (see figure steadyPRINT Center - Create steadyPRINT VPD vName Assignment). The actual assignment of a ***vName printer*** is finally done via the usual assignment function in the Center as well as the Agent. If a vName assignment exists for the log-in context of the user, the stored printer will be created as a local printer. Only when the actual printing process starts, the user, computer or group assignments are linked to the respective ***vName printer***.

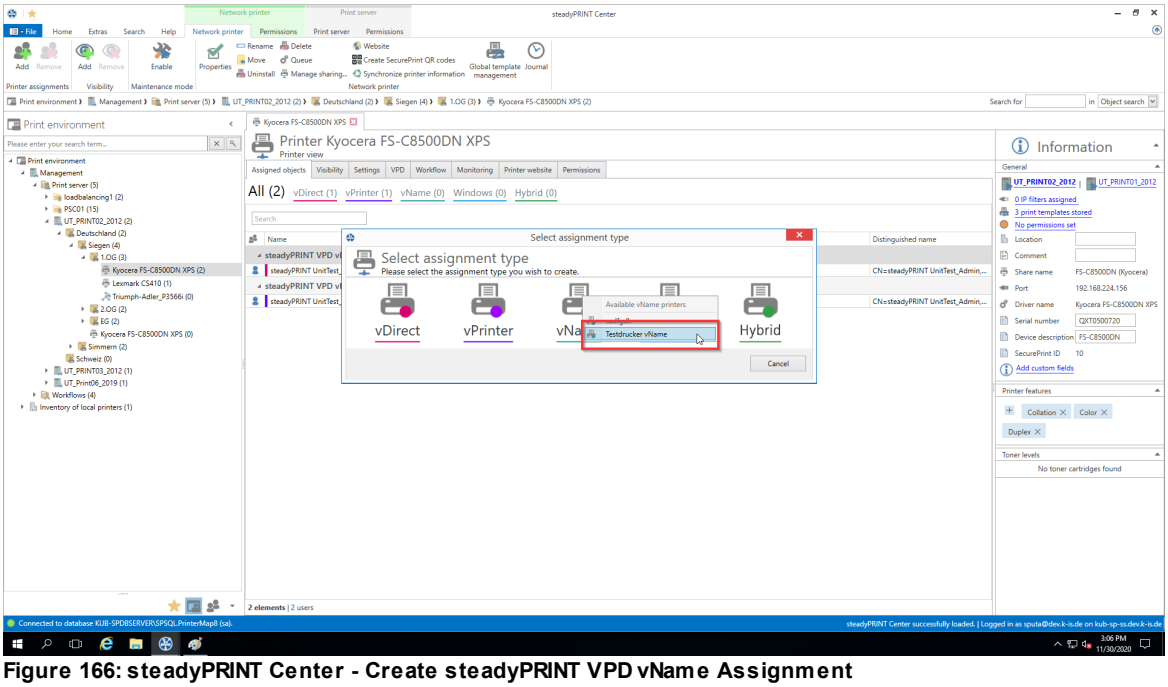

Figure 166: steadyPRINT Center - Create steadyPRINT VPD vName Assignment

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If only one conflict exists (several assignments for one user for one vName printer), the following priority list will take effect.

Priority list of steadyPRINT VPD vName Printer Connections

In addition, the priority of handling the assignments can be defined on the settings page.

Example: The priority list is defined by default (Prio A: computer, Prio B: user, Prio C: group). User k-is.de/jel and printer Brother MFC-660CN have been assigned to the ***vName printer*** "ERP printer". In addition to this user, there is a computer assignment for printer "Kyocera FS-C8500DN" to the vName printer "ERP printer".
If user k-is.de/jel logs in to computer NB-JEL-001, the printer "Kyocera FS-C8500DN" will be hiding behind the "ERP printer".

This handling of priorities can be changed via the arrows on the right next to the list or by Drag&Drop.

Automatically selected printer settings of the VPD vName

The physical printer stored in ***vName*** specifies which print settings are used for a print job. In doing so, the same rules as with the assignment type ***vDirect*** are applied.

9.10 E-Mail Profiles

An ***e-mail profile*** describes the settings for an SMTP server to send e-mails from **steadyPRINT**. It is for example needed for notifications of events related to a printer. The following figure - steadyPRINT Center - overview of e-mail profiles shows some examples of existing profiles.

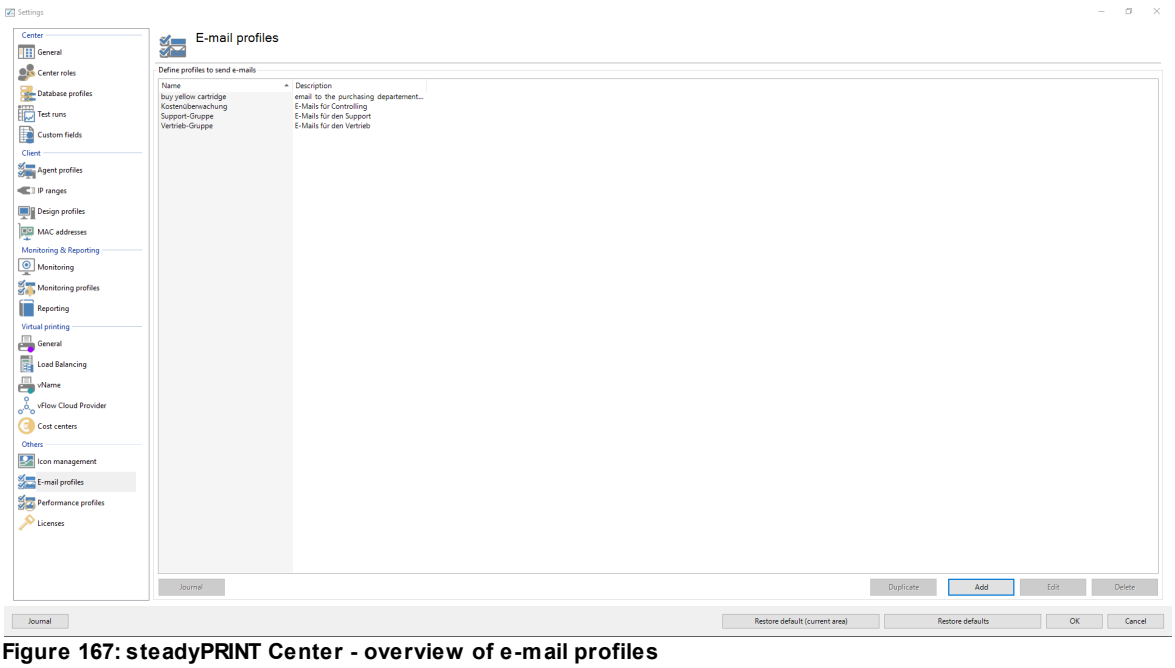

Figure 167: steadyPRINT Center - overview of e-mail profiles

For sending e-mails, **steadyPRINT** requires some specifications which are to be noted in a profile. The

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following figure - steadyPRINT Center - e-mail profiles shows an example in which the user wants to send an e-mail from the address noreply@steadyprint.com to the address support@steadyprint.com. The Server with the DNS name exchange.steadyprint.com shall be used as SMTP Server.

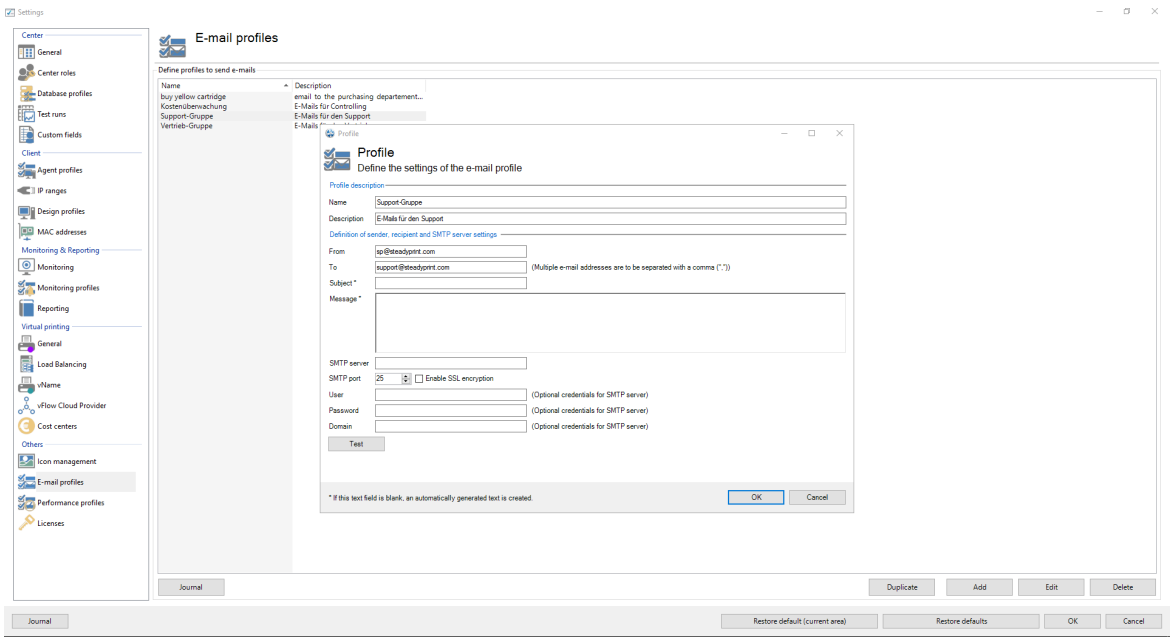

Figure 168: steadyPRINT Center - e-mail profiles

Tip	***Environment Variables in Message***
	Use Windows environment variables to understand the message with dynamic information. Example: A message from user %USERNAME% in domain %USERDOMAIN%.

9.11 Performance-Profile

The performance profiles enable the configuration of time-related components of the ***steadyPRINT Agent*** and the ***steadyPRINT Service***. Initially, there is a „default"-profile providing a basic configuration for the Agent and Service. It is adjustable, but it cannot be disabled or deleted. In order to restrict the respective configuration to special IP addresses, a new performance profile could be defined for a separate IP range.

All profiles from figure - steadyPRINT Center - definition of performance profiles are processed in the ***steadyPRINT Agent*** and the ***steadyPRINT Service*** according to their prioritization with *1* being of highest priority. In doing so, the profile which, due to the IP address of the computer, matches the defined IP address range will be processed first.

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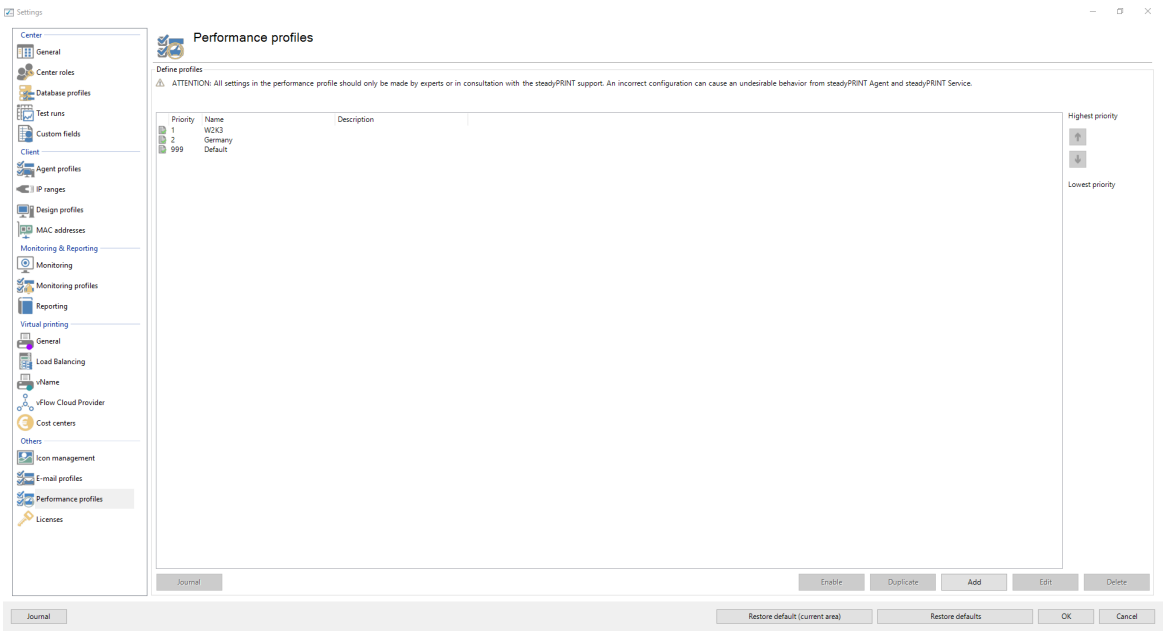

Figure 169: steadyPRINT Center - definition of performance profiles

All profiles defined in the ***steadyPRINT Center*** are loaded once at the start-up of the ***steadyPRINT Agent*** and the ***steadyPRINT Service***. New or deleted profiles as well as adjusted IP address ranges are only processed when the program is restarted. When exactly which profile settings are processed is shown in the respective description in the profile.

Note	***WAN-Connections and Performance-Profile***
	The performance profiles have especially been developed for the use of **steadyPRINT** in the WAN connection area. This feature allows you to determine how often the ***steadyPRINT Agent*** and the ***steadyPRINT Service*** look for new information in the ***steadyPRINT Database***. The longer the interval for the respective time-related components lasts, the smaller is the load on the WAN connections. However, please note that dependent on the defined profile values, any modified information might be available on the Client computer with a delay.

Warning	***Configuration Performance-Profile - Expert Knowledge Required***
	All settings in the performance profile should only be handled by experts or in consultation with the ***steadyPRINT Support***. An incorrect configuration can generate an undesired behavior of the ***steadyPRINT Agent*** and the ***steadyPRINT Service***.

Nested Groups

From version 5.1.0 on, **steadyPRINT** supports the resolution of nested groups and recursive organizational units which is applied when evaluating Agent profiles as well as assigning printers.

By default, the resolution of nested groups and recursive organizational units is disabled. The respective

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activation is done via the options

- Active Directory: Evaluation of nested distribution and safety groups,
- Active Directory: Evaluation of nested safety groups and
- Active Directory: Recursive evaluation of organizational units

in the respective performance profile.

9.12 License

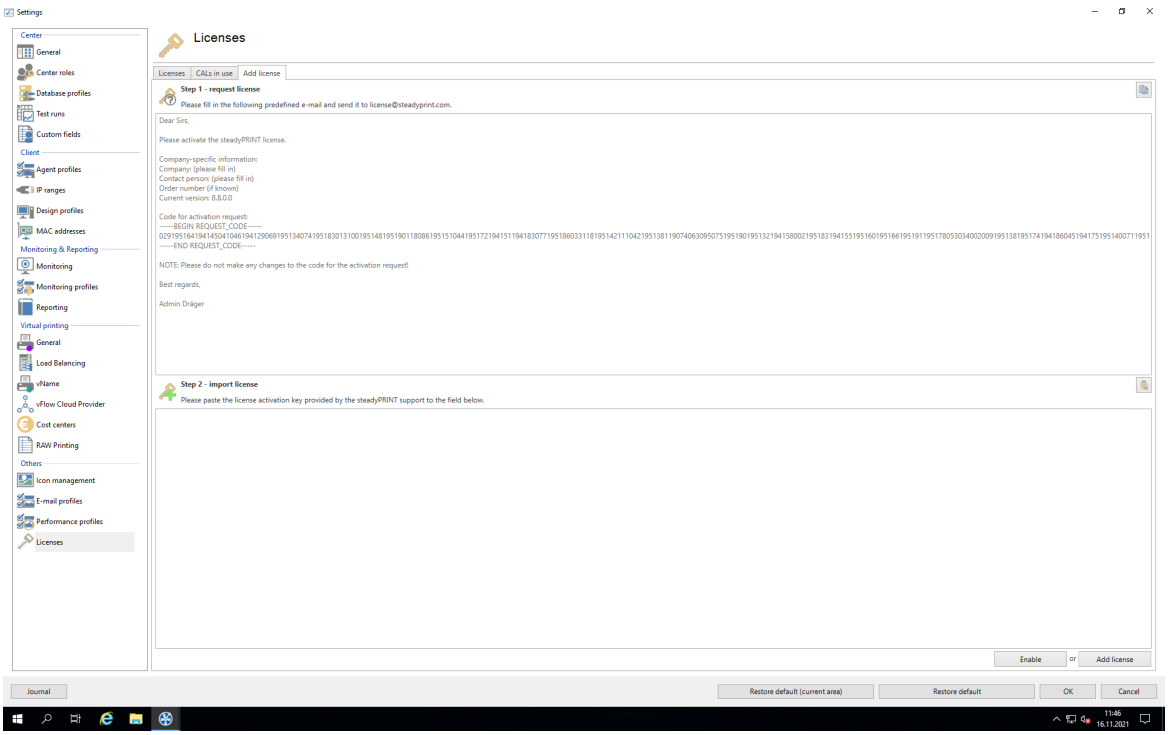
The category License which allows you to see, request, activate and import the ***steadyPRINT*** licenses can be accessed via Center > Start > Settings > Other.

Activate and Import License

For activating the license, the ***steadyPRINT team*** needs a key generated by the ***steadyPRINT Center***. Proceed as follows in order to activate the license you purchased.

Step 1 - Request license

Copy the complete content from the text field of Step 1 into an e-mail (see figure Request License) and send it to support@steadyprint.com. Furthermore, please fill in the pre-defined placeholders for a simple identification of your request. After receipt of the request, you will receive an answer from the ***steadyPRINT team*** including the necessary license activation code.



HMFIGURECOUNTER%>: steadyPRINT Center: License request

Step 2 - Import license

Copy the complete content from the return mail of the ***steadyPRINT team*** into the input field of Step 2 (see figure Import License). The activation code indicated in the e-mail is verified by the ***steadyPRINT Center*** and the purchased license is finally activated - for this purpose press **Activate**. In case the license file has been forwarded in xml-format, it can be imported via **Import License File**.

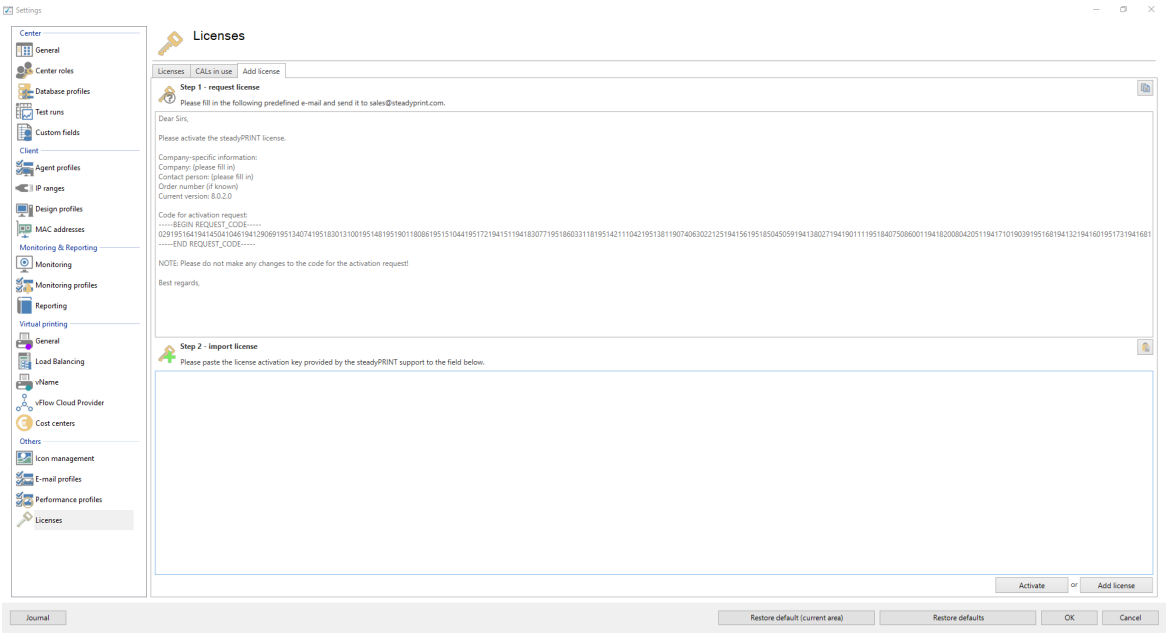


Figure 170: steadyPRINT Center: Import license

Then you receive a message on whether the license was identified as being valid. The shared features and print servers can be viewed in the license overview.

Note	*License Volume*
	Please note that the number of licensed objects must not exceed the license volume. Otherwise the license will be identified as invalid. For questions concerning licensing, please contact the ***steadyPRINT-Support*** (see Chapter Support).

Note	*Activate Demo*
	On the first start, the ***steadyPRINT Center*** asks whether you wish to activate the demo mode for 30 days or import a purchased license. To proceed, choose between those two options. For questions concerning licensing, please contact the ***steadyPRINT-Support*** (see Chapter Support).

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License Overview

The license view gives an overview of the installed licenses and indicates how many of those licenses are in use. Apart from the server licenses, also the required CAL licenses which are user access licenses (see CALs) are included.

CALs

The view CALs in use shows the currently occupied CAL licenses per user. Each user obtains a mandatory Windows CAL when starting the ***steadyPRINT Agent***. For all other assignments types the respective CAL license is booked out if an assignment exists. A maximum of one CAL for each type can be booked out per user.

License Warning

In case you are running out of licenses, you will have the option of being informed via e-mail. For this purpose, specify a license minimum for the respective CAL licenses via the view Licenses and assign an e-mail profile to which the warning is to be sent.

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Part

10 Printer Administration for Users

The **steadyPRINT** functions shown and described so far have been presented from a server-side, administrative perspective. We would like to show you the following additional client-side printer administration functions that **steadyPRINT** is able to offer.

The ***steadyPRINT Agent*** offers special functions for printer administration that can be carried out by the user. The following figure - steadyPRINT Agent - main window shows the main window intended for the user.

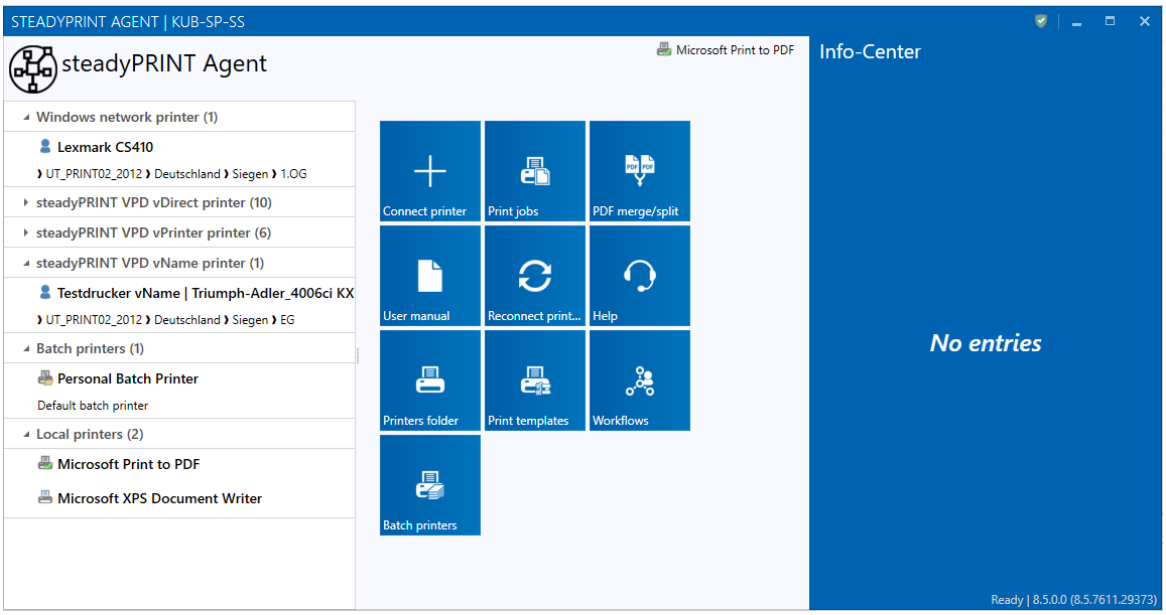

Figure 171: steadyPRINT Agent – main window

In the following table you will find all functions that are available to the user on the client side:

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Function	Description
Connect printers	Using the tile Conntect printer, the user can add network printers that are managed with **steadyPRINT**.
Print jobs	Using the tile Print jobs and the context menu Open print jobs, the user can open an overview of the print jobs.
User manual	Using the tile User Manual and the context menu Open manual of the tray icon, the user can open the quick installation guide.
Merge PDF	Merges PDF documents to one single PDF document.
Help	Enables remote support by the ***steadyPRINT*** Support.
Printer directory	Using the tile in the main window of the ***steadyPRINT Agent*** and the context menu of the tray icon, the user can open the Windows printer directory.
Manage batch printers	The user can manage his own batch printers to store his print jobs.
Reconnect printers	Using the tile Reconnect printers and the context menu of the try icon, the user can reconnect the printers manually.
Default printer	Using the button Default printer and the context menu of the respective printer, the user can specify it as default.
Open printer properties	Using the context menu of the respective printer, the user can open the printer properties.
Open integrated Agent	Using the context menu of the tray icon, the user can obtain a quick overview of the printers connected by **steadyPRINT**. In this overview, the default printer can be reset.
Open steadyPRINT Agent	Using the context menu Open of the tray icon, the user can open the ***steadyPRINT Agent***. As an alternative, double click the symbol of the Agent.
Disconnect printers	Using the button Disconnect printers of the respective printer, the user can disconnect it and remove it from the overview.
Support information	Opens the support window with useful information for the administrator on the current configuration of the ***steadyPRINT Agents***.
Terminate	Using the try icon in the task bar the ***steadyPRINT Agents*** can be terminated.

A short explanation of the functions and handling of the ***steadyPRINT Agent*** is available for users as a handout on the homepage www.steadyPRINT.com. You can download it for use as a PDF file.

Changes of the printer assignment by Administrator

At each start and in a defined interval (adjustable via performance profiles), the ***steadyPRINT Agent*** checks the changes to the printer connections. In addition, the ***steadyPRINT Center*** sends push notifications to the respective Clients when printer assignments are added or the detail window of the Active Directory is modified by the administrator.

Note	***Push Notifications***
	By default, the push notifications use 8009. This can be modified via the settings in the ***steadyPRINT Center***.

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	In case the integrated Windows authentication is used, please store the used service user in the settings of the ***steadyPRINT Center***.

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Part

11 Microsoft Office Outlook Add-In

Die neue Version von **steadyPRINT** bietet eine nahtlose Integration in Microsoft Outlook. Mit dem ***steadyPRINT Microsoft Outlook Add-In*** können zentrale Themen wie Workflows und erweitertes Drucken direkt aus Outlook heraus angestoßen werden und so die Produktivität steigern. Damit bietet **steadyPRINT** auch in diesem Bereich eine direkte Vernetzung im gewohnten Arbeitsumfeld des Benutzers.

Das Add-In integriert sich in das Menüband von Outlook und steht in den relevanten Kontextmenüs und Fenstern zur Verfügung. Im Menüband hinterlegen Sie einen Quick Print Printer, der unabhängig vom Windows-Standarddrucker arbeitet. Darüber stehen schließlich die folgenden Funktionen zur Verfügung:

- Direkter Ausdruck der E-Mail
- Direkter Ausdruck von ausgewählten Anlagen einer E-Mail
- Direkter Ausdruck von E-Mail mit ausgewählten Anlagen

Hinweis	***Workflows ausführen***
	Um einen Workflow direkt aus Outlook heraus zu starten, stellen Sie diesen als vDirect Drucker oder über den vPrinter Drucker zur Verfügung.

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Part

12 PDF/A

PDF/A is a file format for long-term archiving digital documents that has been standardized by the International Organization for Standardization (ISO) as a subset of the Portable Document Format (PDF). The standard specifies how the elements of the underlying PDF versions must be used with regard to long-term archiving. In this context, there are both mandatory and non-permitted components.

In **steadyPRINT** the following formats are available:

- PDF/A-1a
- PDF/A-1b
- PDF/A-2a
- PDF/A-3

Overview of PDF/A format:

- The format needs less storage space than usual PDF documents
- It is not possible to encrypt or lock the file
- The color profiles are exactly defined and stored
- It is not possible to process links or other external contents as they are subject to change
- Even audio and video files cannot be processed
- Digital signatures are stored
- It is not possible to insert transparent objects
- It is neither possible to use embedded data in this format

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Part XIII

13 PDF Merger

The PDF Merger (see figure PDF Merger View) serves to merge or split different documents. The user can open several documents in one view and then merge different pages from the opened documents to a new document.

As the ***PDF Merger*** is located in the ***Agent*** (see figure Agent - Open PDF Merger), it can be accessed by each user.

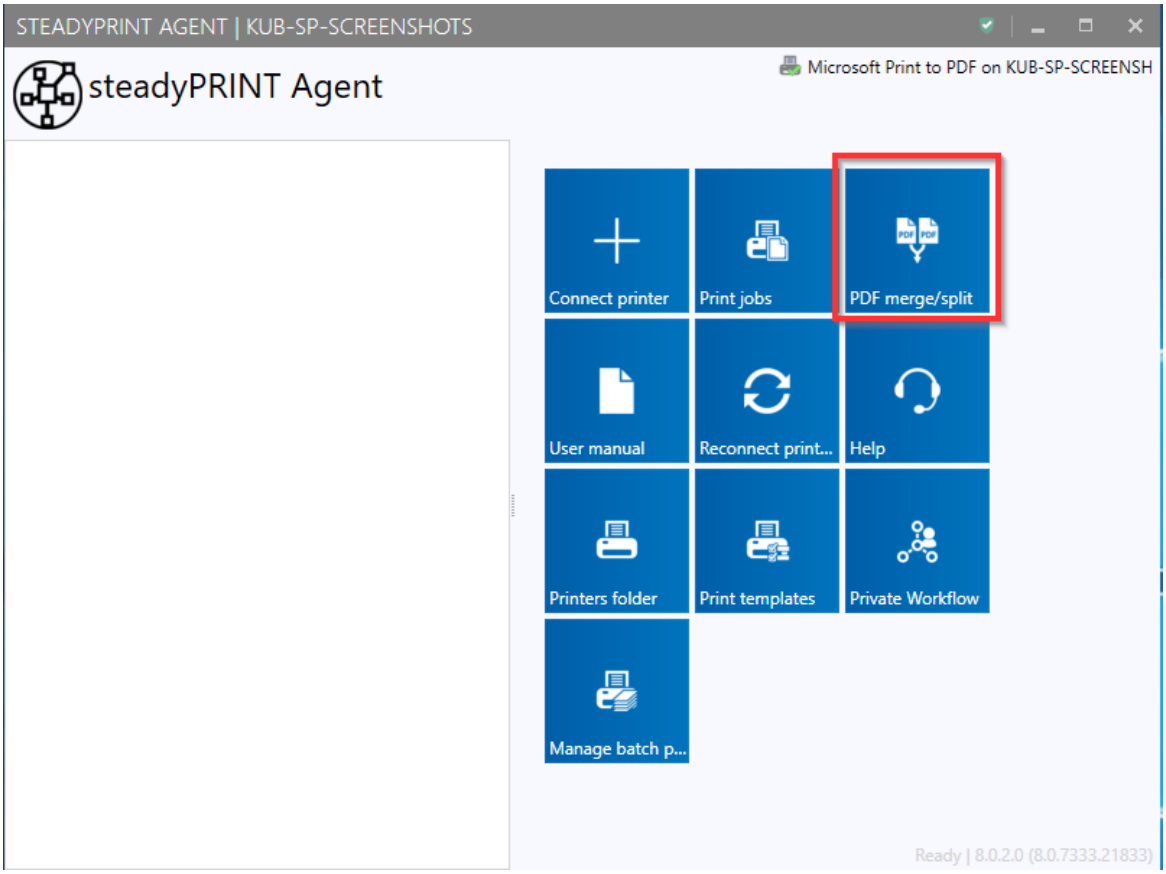

Figure 172: Agent - Open PDFMeger

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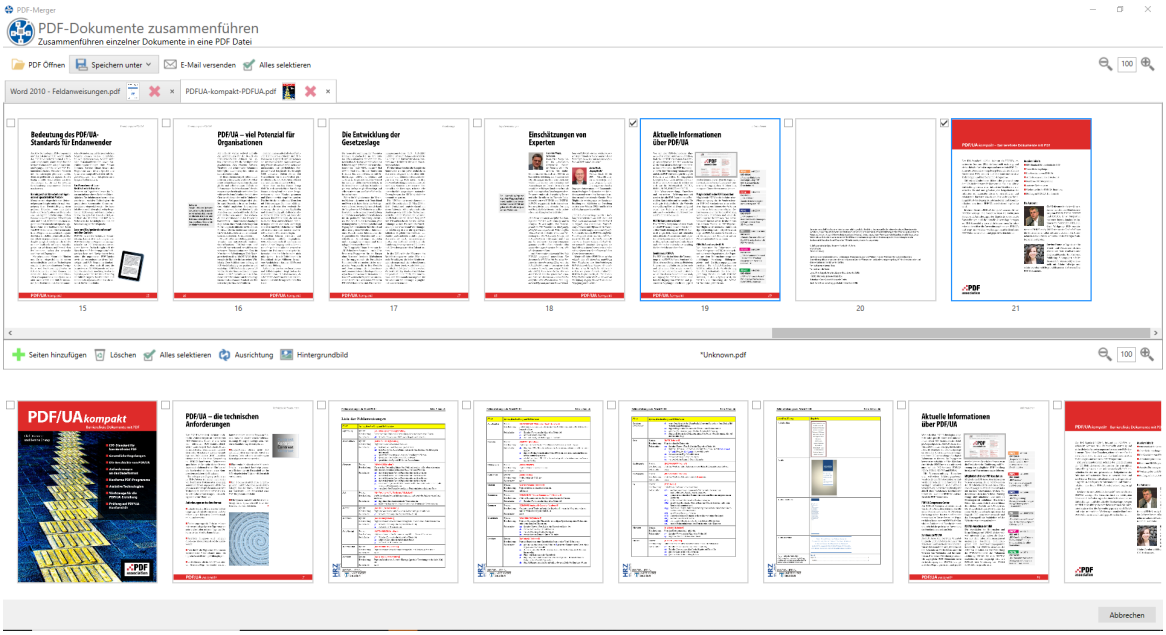

Figure 173: PDFMeger View

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Part

14 Support

Our customer service will gladly assist you with technical problems occurring during the installation or use of **steadyPRINT**.

This naturally also includes any possible errors with **steadyPRINT** when operating under various IT-system environments.

You can always reach our Support during business hours from Monday to Friday between 9:00 and 18:00 at:

Germany
+49 271 31370-30 (Siegen)
+49 6761 9321-55 (Simmern)

Switzerland
+41 55 536 10-20

Should you have concluded a special maintenance contract with us, please use the telephone number indicated in your contract.

Alternatively, you have the possibility of reaching us around the clock per email. Our service staff will contact you as soon as possible during our support hours. To reach us, please use the email address support@k-is.com.

For further information about the **steadyPRINT** product, visit our website at www.steadyPRINT.com.

FAQs and Technical Problem Solutions

A well-engineered architecture and easily applicable modules make it possible for you quickly and efficiently deploy **steadyPRINT** in your printer environment. Should you have problems with **steadyPRINT**, you will find technical help here.

Also use our Knowledge Base for frequently asked questions and technical solutions on the ***steadyPRINT website*** under www.steadyPRINT.com.

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Part

15 Contact

For more information on **steadyPRINT**, please contact our sales team. Click here for the right contact person.

All support-requests can be placed with our support-team. Click here for more details.

Please also visit our homepage under http://www.steadyPRINT.com for more detailed information on **steadyPRINT**.

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Part XVI

16 Annex

16.1 Data Base Cache

As of version 6.5 a completely revised database cache for database entries has been implemented.

As a result, various storage and performance problems have been solved.

This cache is maintained via the runtime of the ***steadyPRINT Center*** and repeatedly compared with the database during read processes.

The administrator also has the option to perform an update of the database cache and to force a restart of the environment tree via the button "Update tree view" in the ribbon.

Similar scenarios can occur when working with several instances in the ***steadyPRINT Center***.

Example:
Administrator A deletes a printer from the ***steadyPRINT Center***.
Shortly afterwards, administrator B creates an assignment to the same printer as the printer is still available in his user interface.
Administrator B will now receive a message informing him to update his interface or to restart the ***steadyPRINT Center*** as the database cache is obsolete.

16.2 Warming Up Time of Print Spooler

General

During the print spooler check, it is tried - with the help of a WMI query - to test the runtime of the print spooler, i.e. how long the print queue is already running.

Background

With regard to the reliability function (above all in large environments where terminal landscapes are used) it might be the case that the print spooler needs a longer time to load all printers. In the past, this lead to the fact that when switching back to the master print server the print spooler was not yet completely booted up although marked as active in the ***steadyPRINT Center***. Thus, the master print server, having been switched active by the user, immediately fell back to the error state due to the problems mentioned above.

This problem is absorbed by the new warming up time of the print spooler.

Restrictions in Authorization

In order to perform such a WMI query, the user has to be registered as administrator on the server to be checked.

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Functionality

The user is entitled to perform this WMI query on the print server.
The print spooler will be marked as active only after 2 minutes.

The user is **not** entitled to perform this WMI query on the print server.
The runtime of the print spooler is ignored during the test.

Settings Options

In case you require an adjustment to the minimum runtime of the print spooler, please contact the **steadyPRINT** support.

16.3 Quick Installation Guide

Welcome

This document is to help you perform a **steadyPRINT** installation and import your print environment. Just follow the steps described in this guide. For more detailed information please refer to the ***steadyPRINT manual*** under https://www.steadyprint.com/user-manual/installation.htm

System Requirements

Detailed information on the system requirements can be found here.

Content of this Chapter

- SQL Server
  - SQL Server Installation
  - SQL Server Configuration
- Database Installation
- Installation of the Program Components
  - Installation of the Management Component: steadyPRINT Center
  - Installation of the Client: steadyPRINT Agent
- Add Print Servers & Printers
- steadyPRINT VPD
  - Installation of steadyPRINT VPD (Virtual Printer Driver)
  - Configuration of steadyPRINT VPD (Virtual Printer Driver)
  - Activation of steadyPRINT VPD in the Performance Profiles

16.3.1 SQL Server

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16.3.1.1 SQL Server Installation

SQL Server-Installation

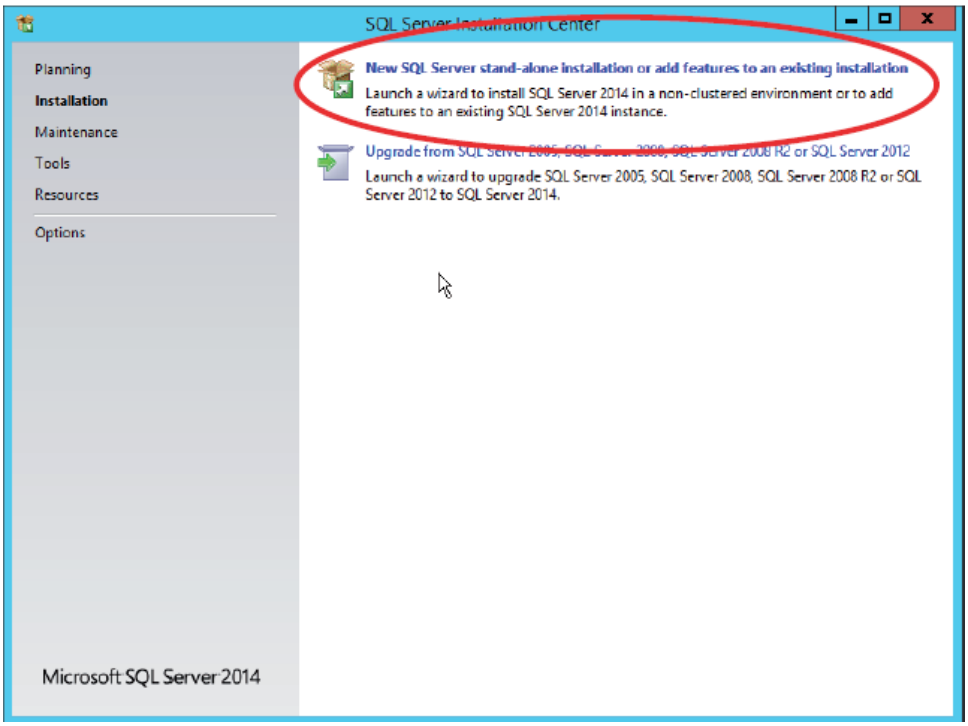

Figure 174: New SQL Server stand-alone installation

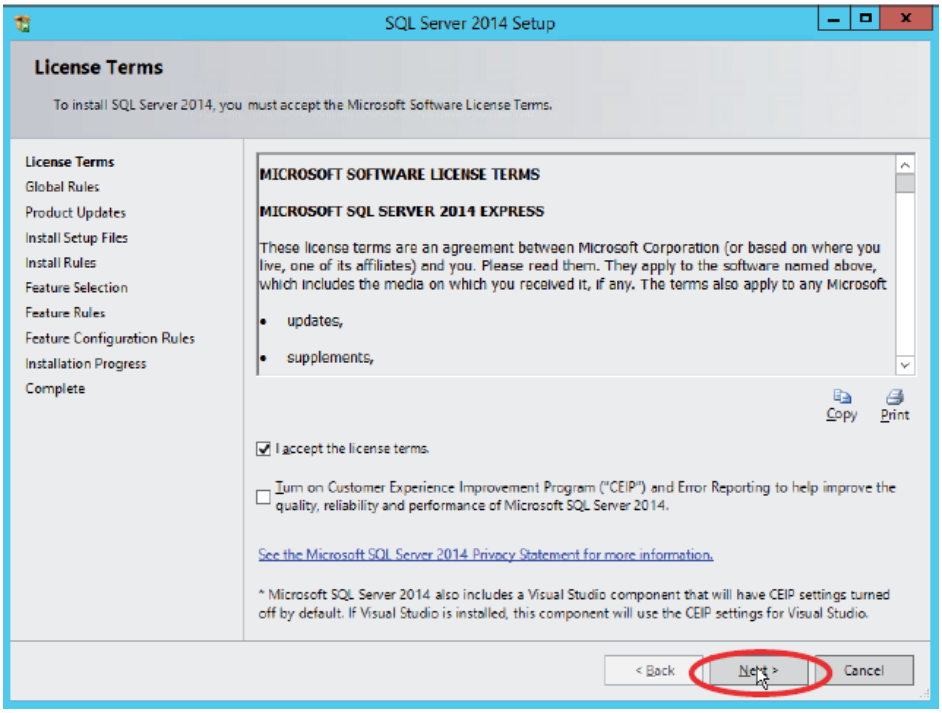

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Figure 175: Accpet license terms & next

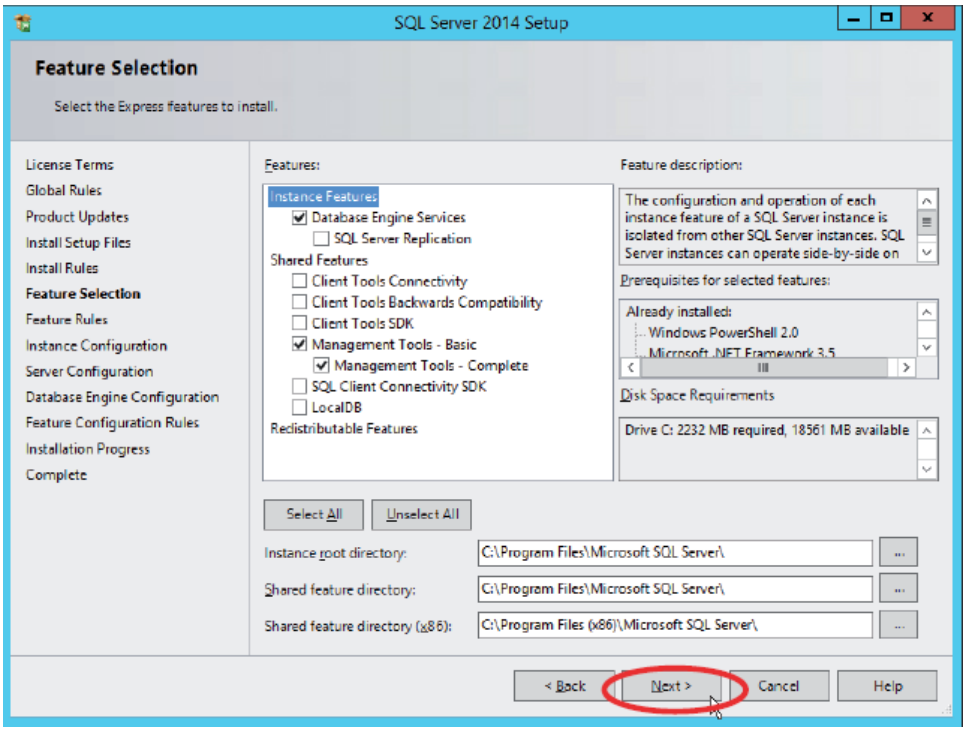

Figure 176: Next

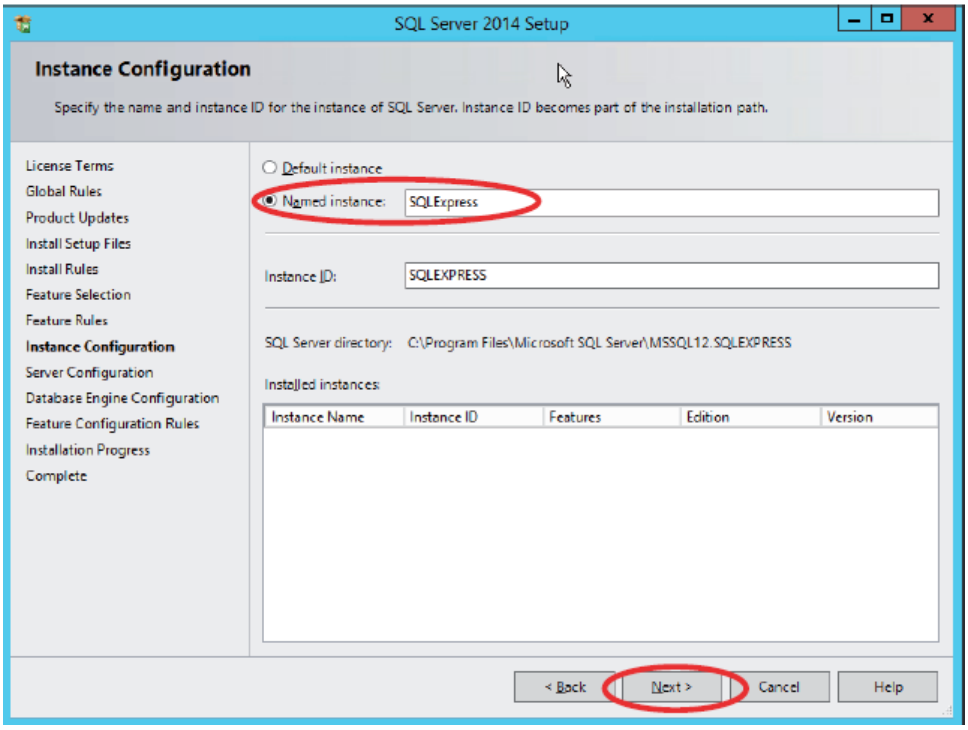

Figure 177: Select instance & next

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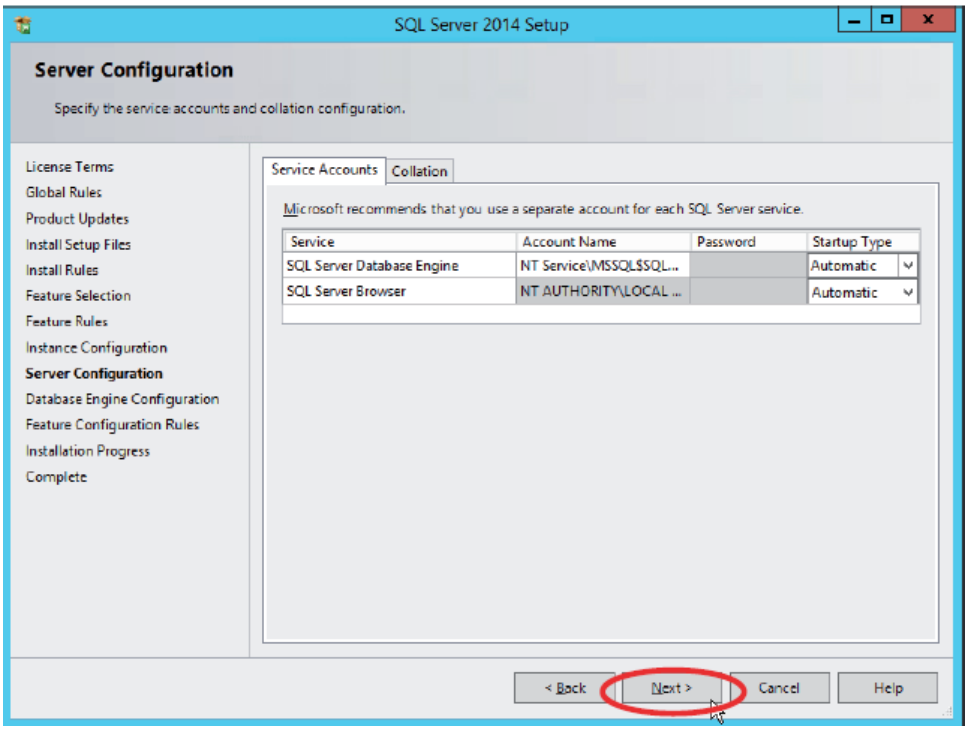

Figure 178: Next

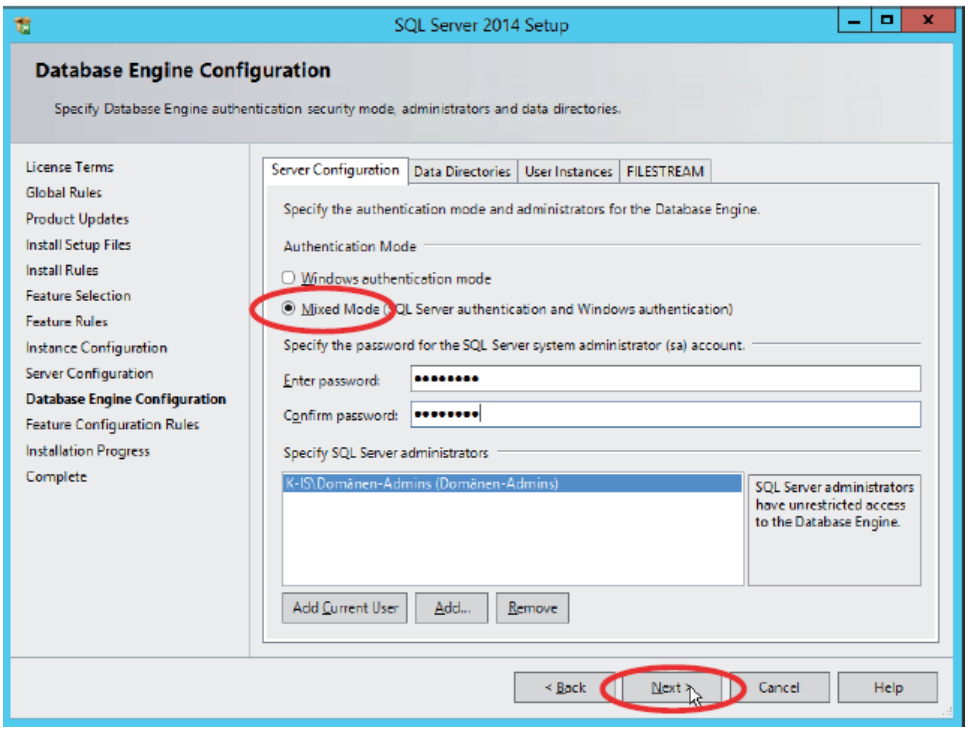

Figure 179: Select Mixed mode (SQL server authentication and Windows authentication) & next

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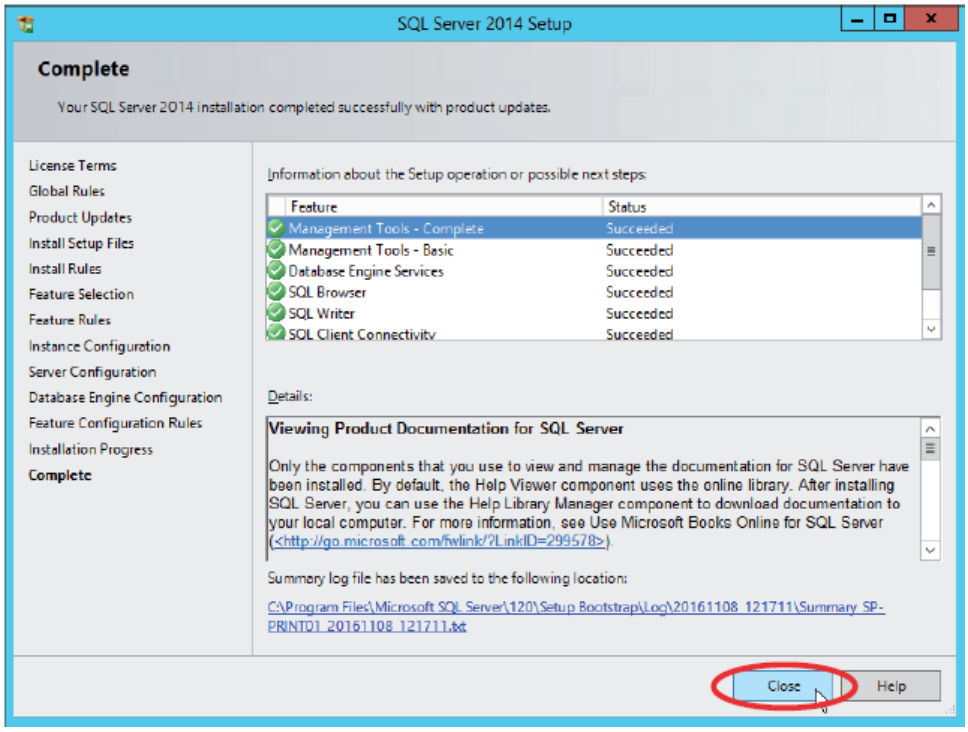

Figure 180: Close

16.3.1.2 SQL Server Configuration (optional)

The **steadyPRINT** web server communicates with the SQL server by using the connection data as described in this document. In some cases, however, the SQL server TCP settings have to be adjusted manually in order to guarantee a communication between the dashboard and the SQL server.

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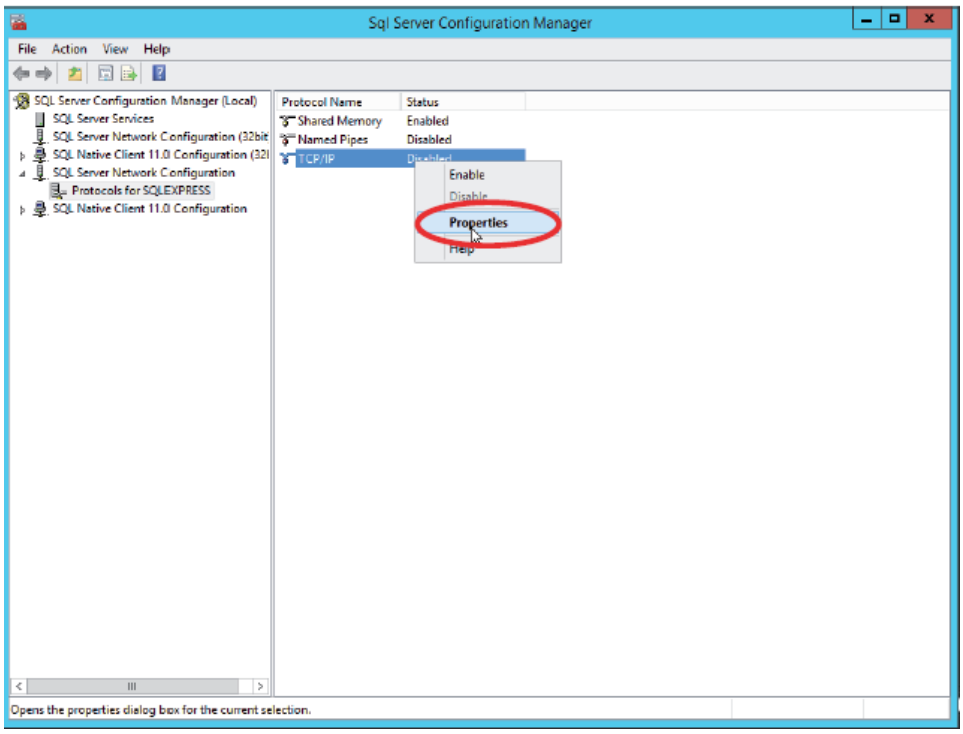

Figure 181: Open the properties of the "TCP/IP" protocol

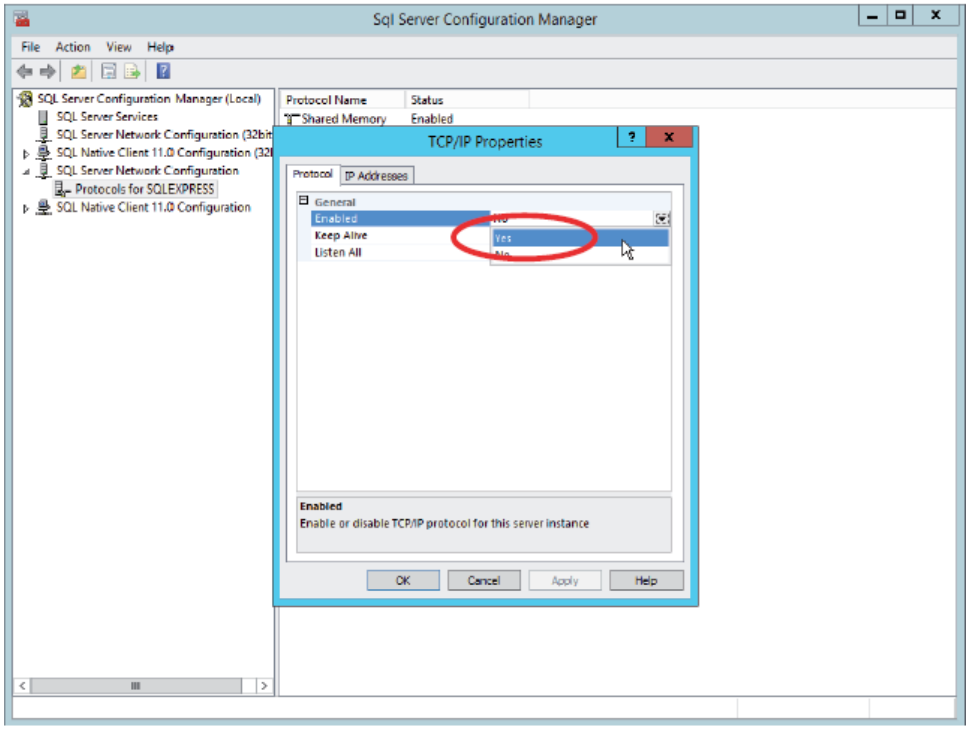

Figure 182: Set the status to "Enabled"

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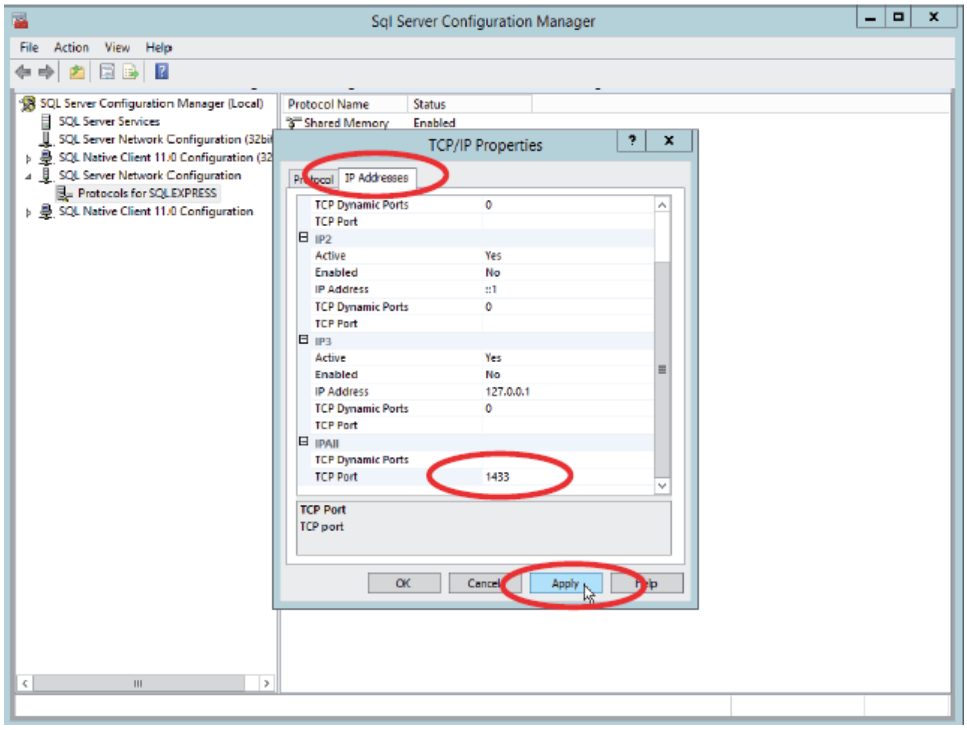

Figure 183: Open tab for IP addresses, enter port no. 1433 under "IPAll" and apply.

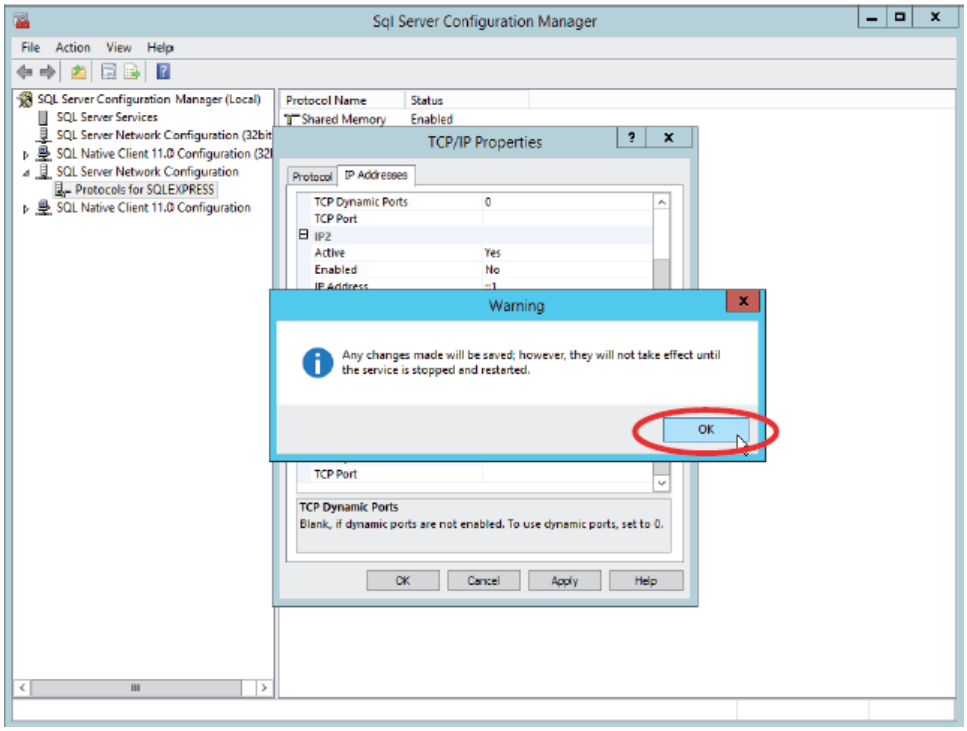

Figure 184: OK

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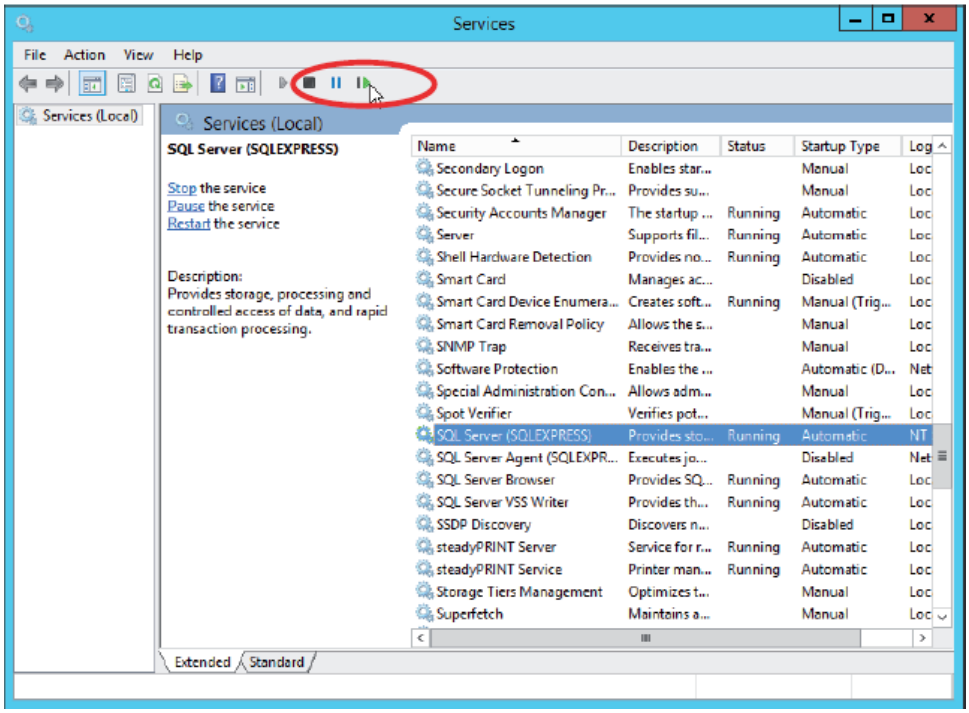
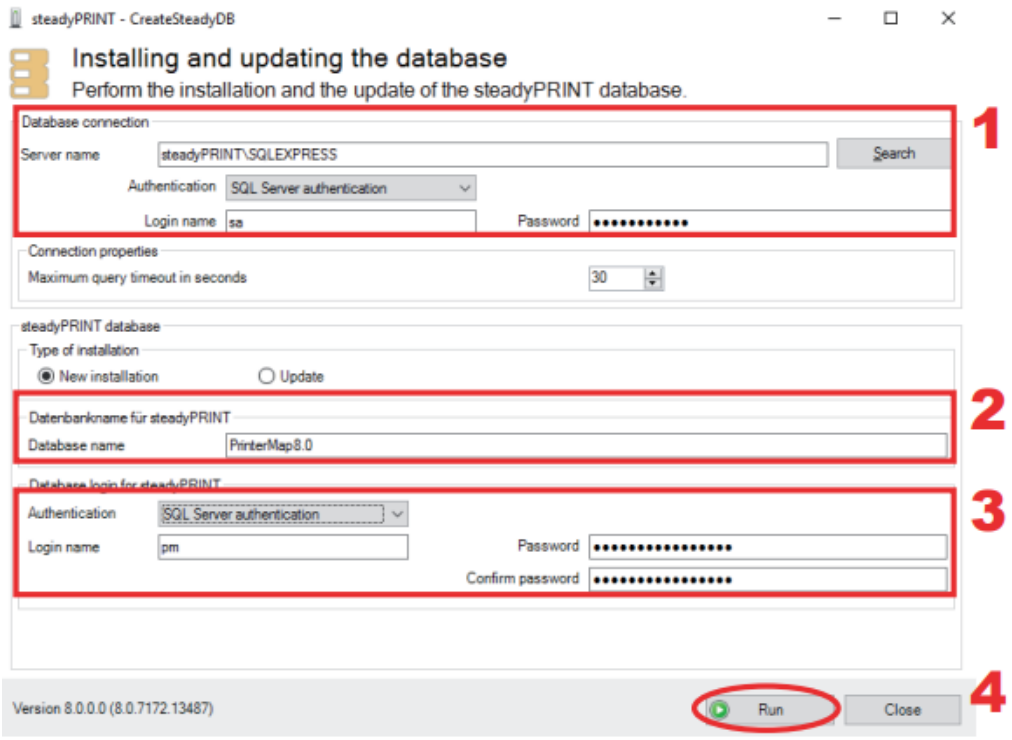


Figure 185: Restart service

16.3.2 Installation of the Database



For the use of **steadyPRINT**, it is necessary to install the ***steadyPRINT database***. For this purpose,

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please use the provided application CreateSteadyDB.

1. Enter the name of the database server or the database instance on which the database is to be installed. Then select the required authentication at the database server:

   Windows Authenticaton: uses the currently registered user for the connection to the server.
   SQL Authentication: enter a SQL user with administrative - user righhts (recommended).

2. Enter the name of the ***steadyPRINT database*** used to create the database on the database server. When updating the database, enter the recently used ***steadyPRINT database*** name

3. At this point, a separate database user for the ***steadyPRINT database*** has to be indicated.

   The user is automatically created using the specified login name and password and will later be required for the installation of the program components. When updating the database, please enter the recently used login name and password.

4. Run

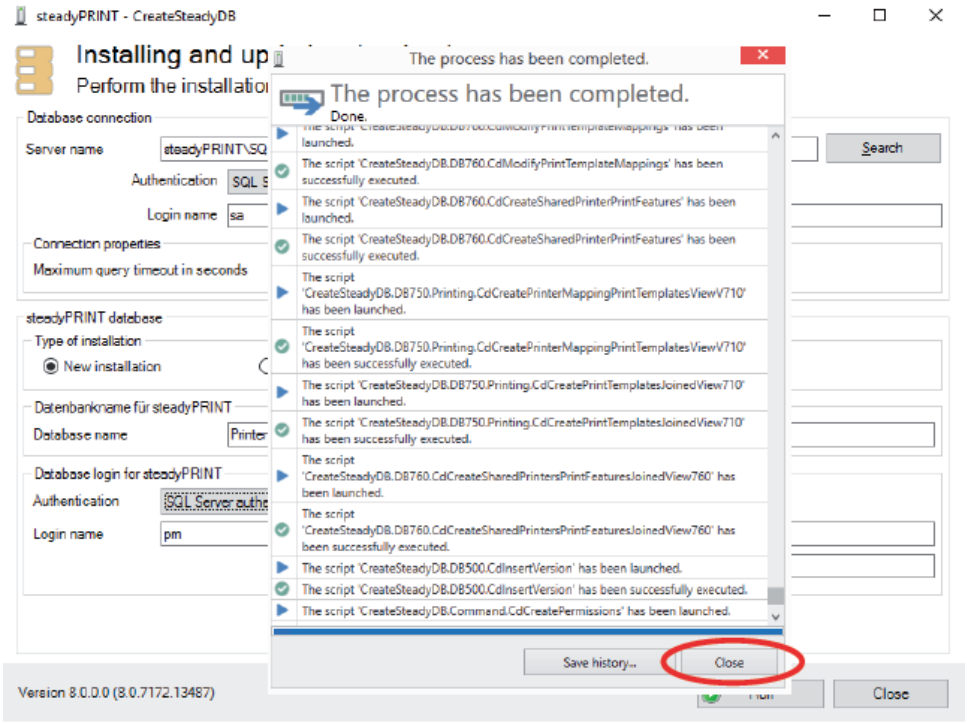

Figure 186: The database for steadyPRINT has been created. Close

16.3.3 Installation of the Program Components

Please run the provided installation package setup.exe to install the program components.

TIP	*Place of installation of the management console*

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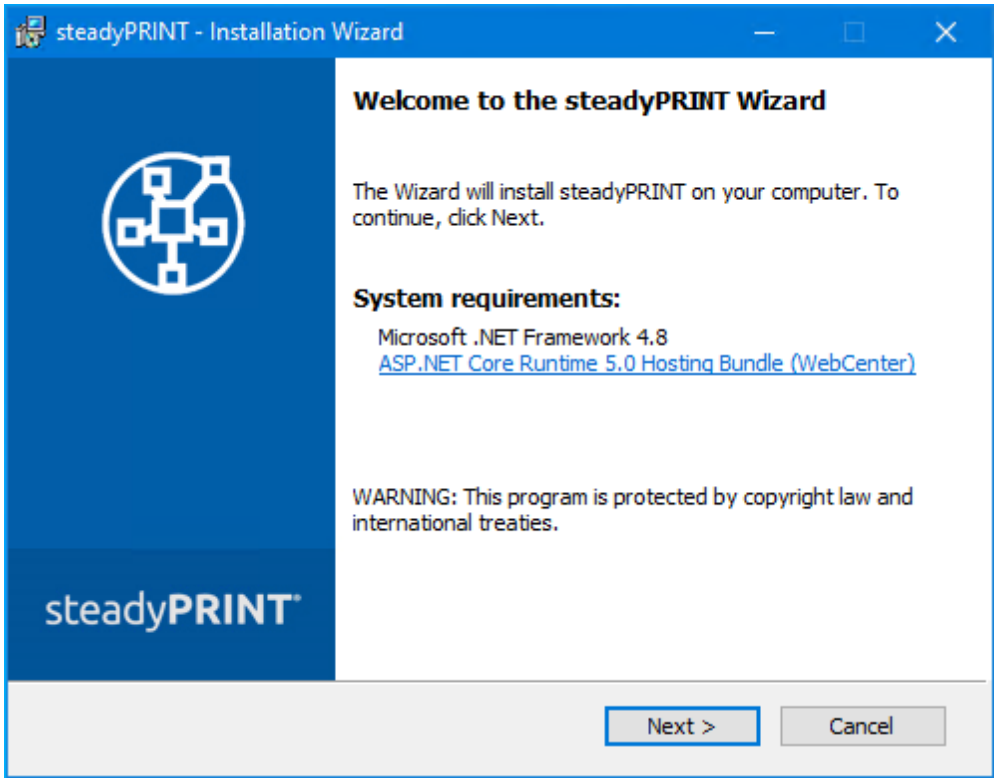
The steadyPRINT team recommends to install the management console directly on the corresponding print server.

16.3.3.1 Installation of the Management Component



Fogire 187: Next

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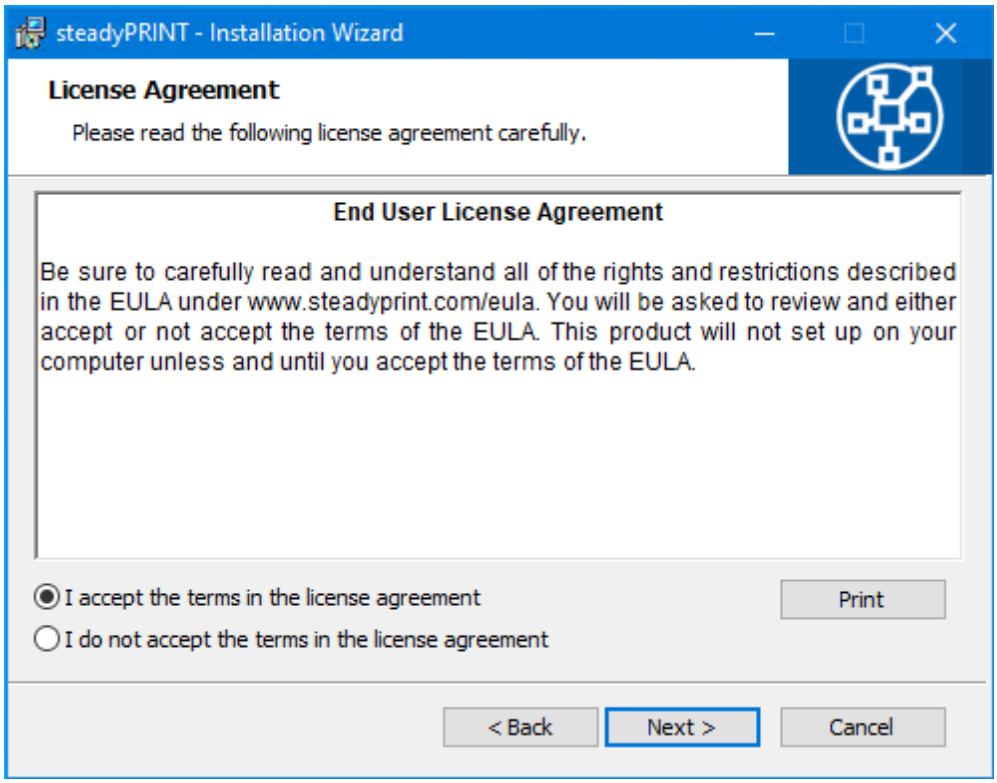

Figure 188: Accpet & Next

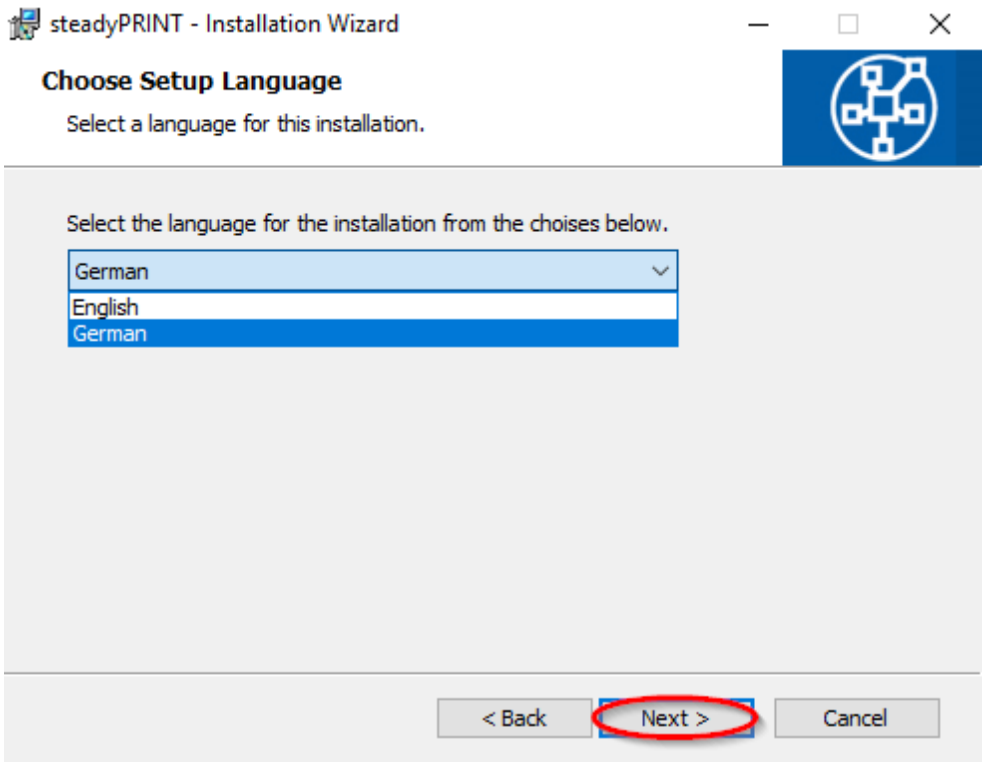

Figure 189: Select language & next

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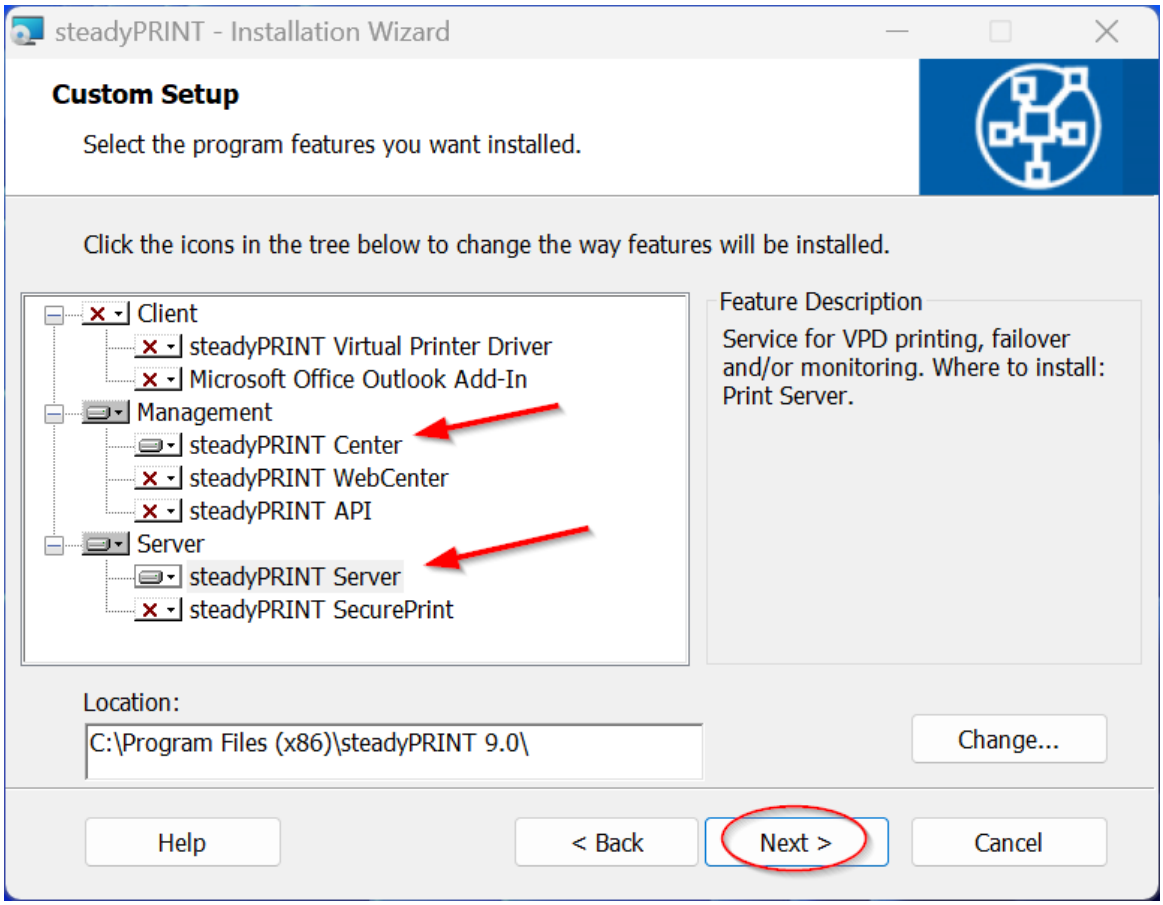

Figure 190: Select management component & next

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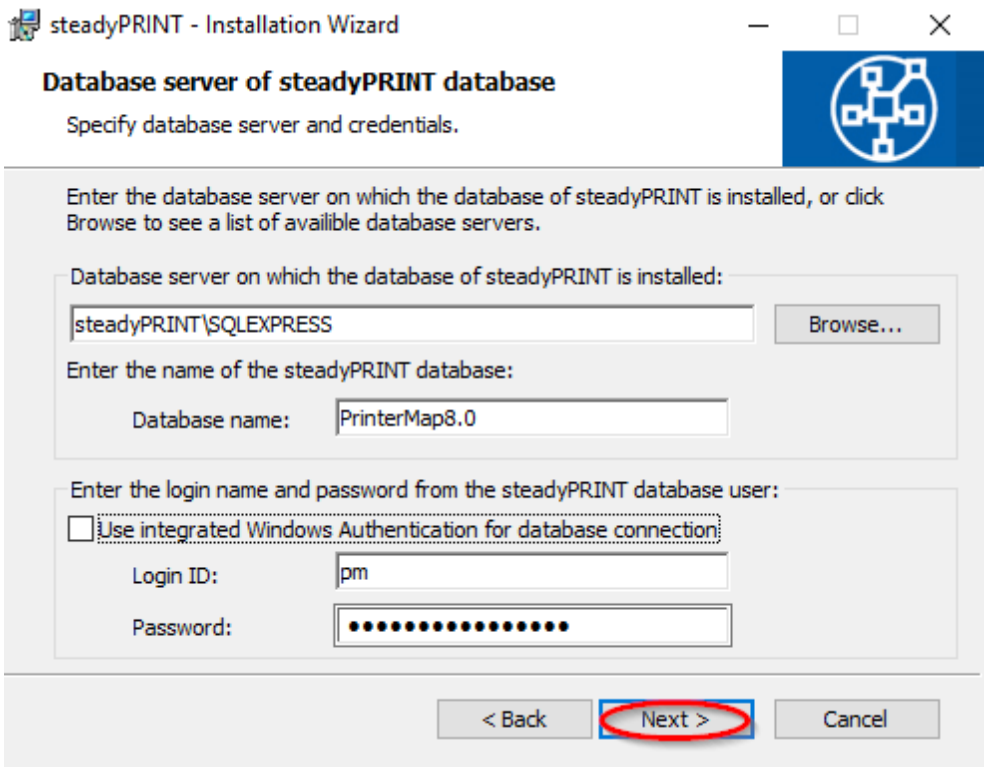

Enter the information for the database server, the ***steadyPRINT database*** and the separate database user for **steadyPRINT** as of the installation of the database that have been specified before when creating the
database within the application CreateSteadyDB. Then click **Next**.

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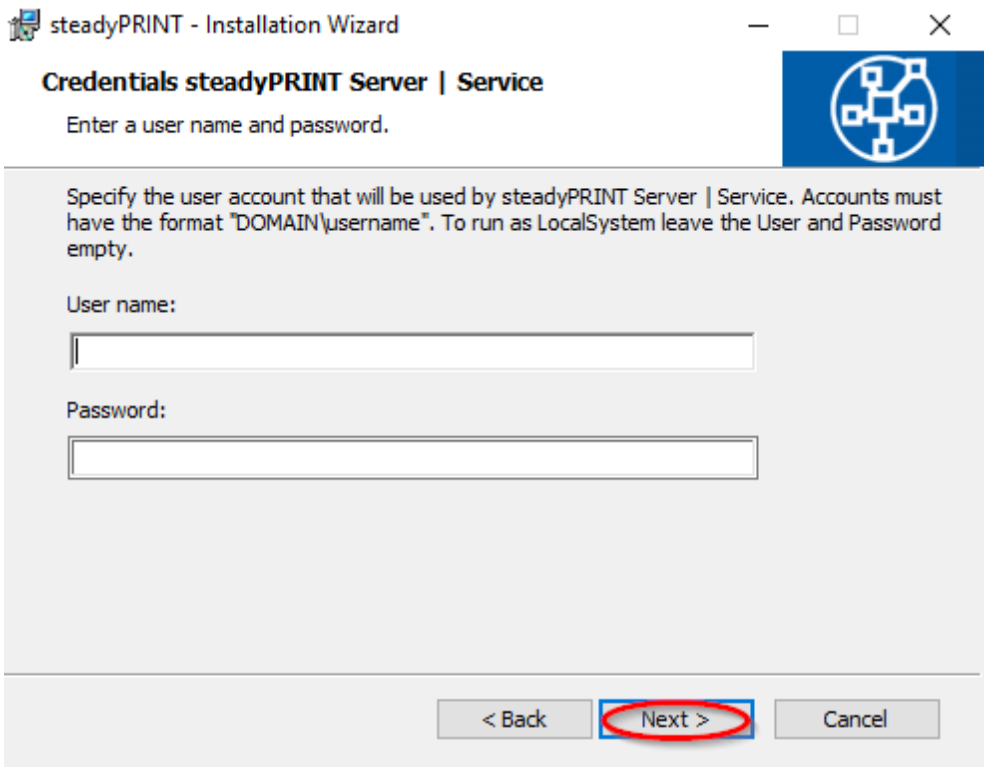

Figure 191: Next

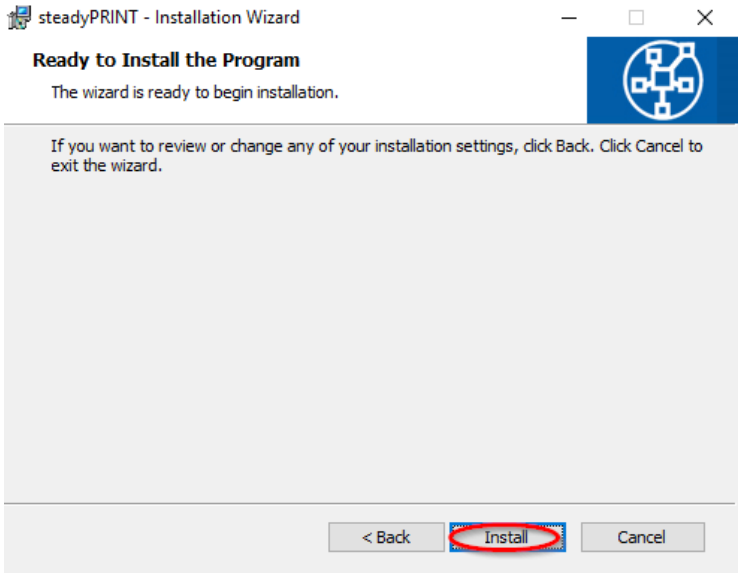

Figure 192: Install

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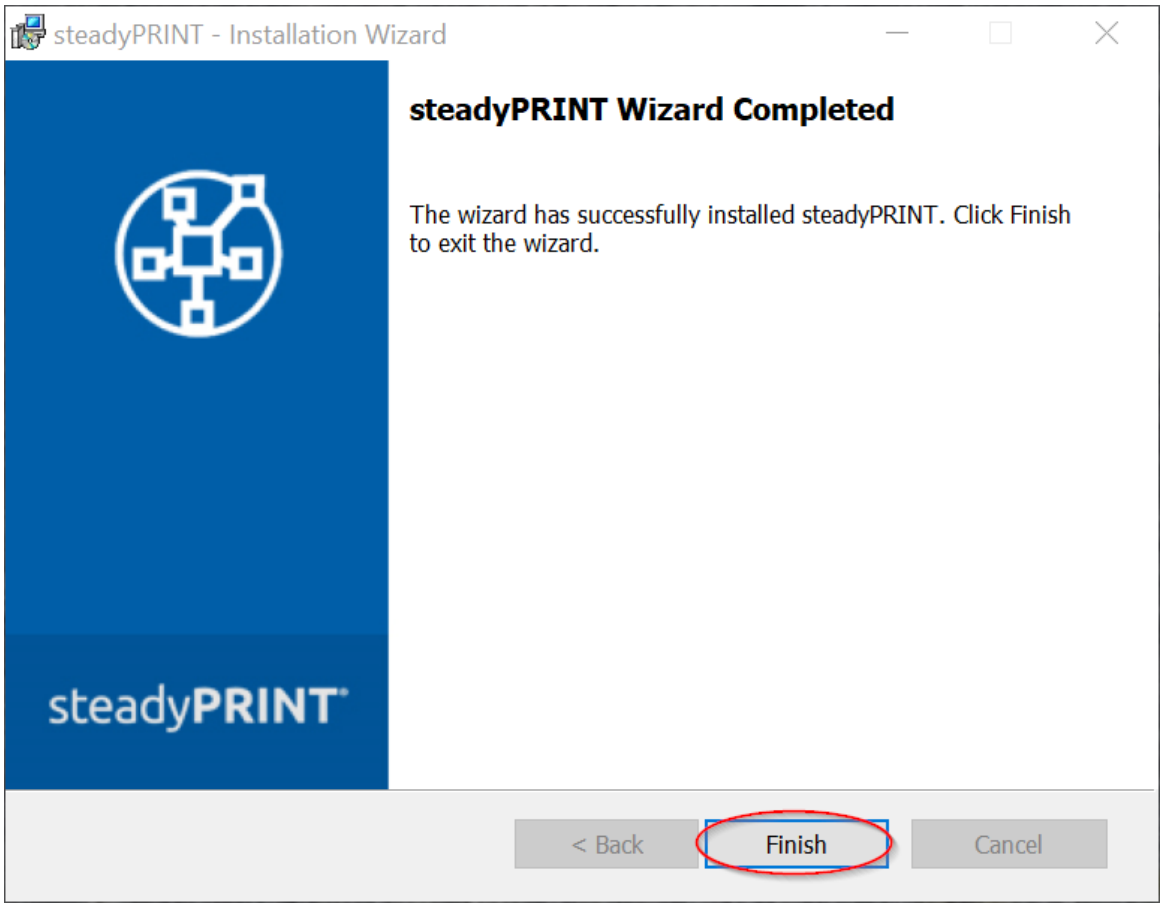

Die ***steadyPRINT management components*** have been completely installed. Click Finish to complete the installation.

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16.3.3.2 Installation of the Clients (steadyPRINT Agent)

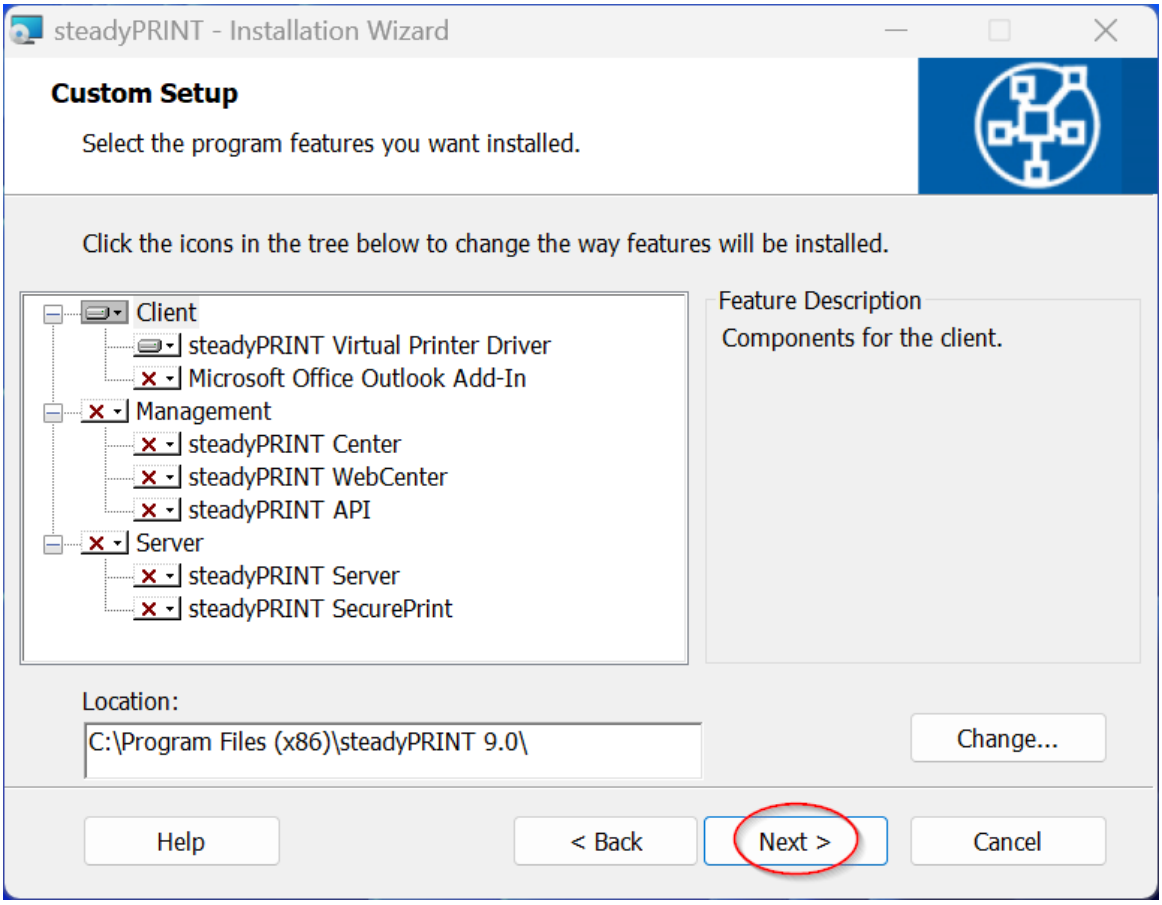

Figure 193: Select Client components & next

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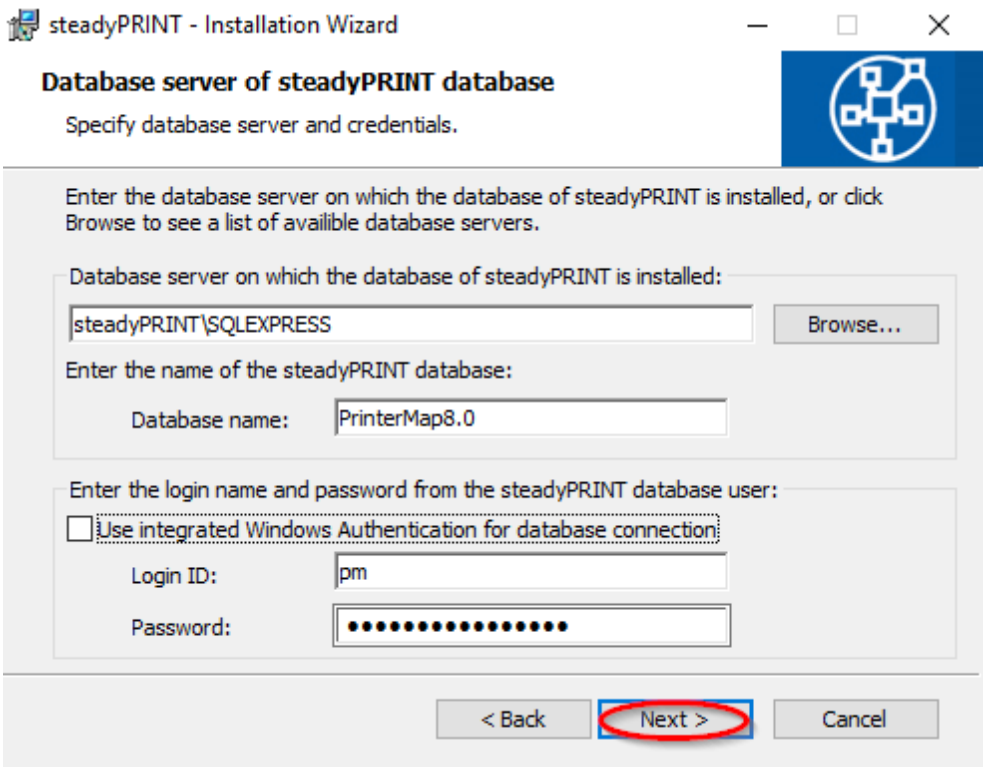

Figure 194: Next

Enter the information for the database server, the **steadyPRINT** database and the separate database user for **steadyPRINT** as of the installation of the database that have been specified before when creating
the database within the application CreateSteadyDB.

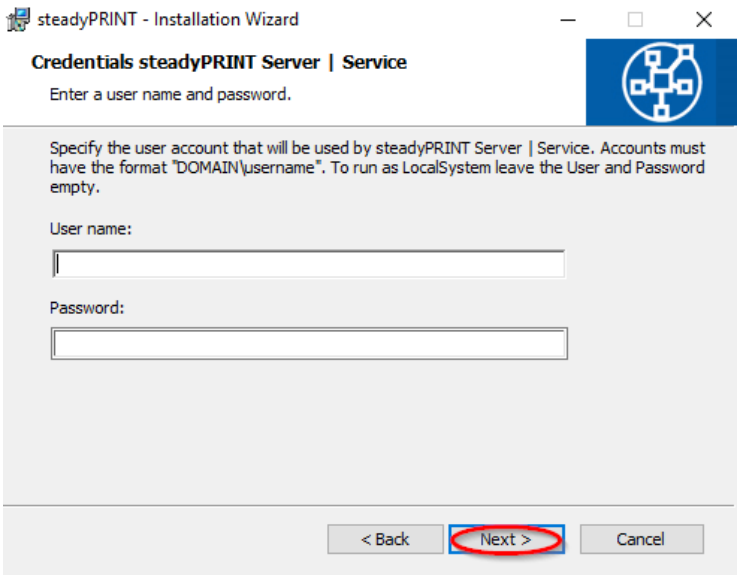

Figure 195: Next

For a usual client installation (***steadyPRINT Agent***), the pre-defined user localsystem can be kept.

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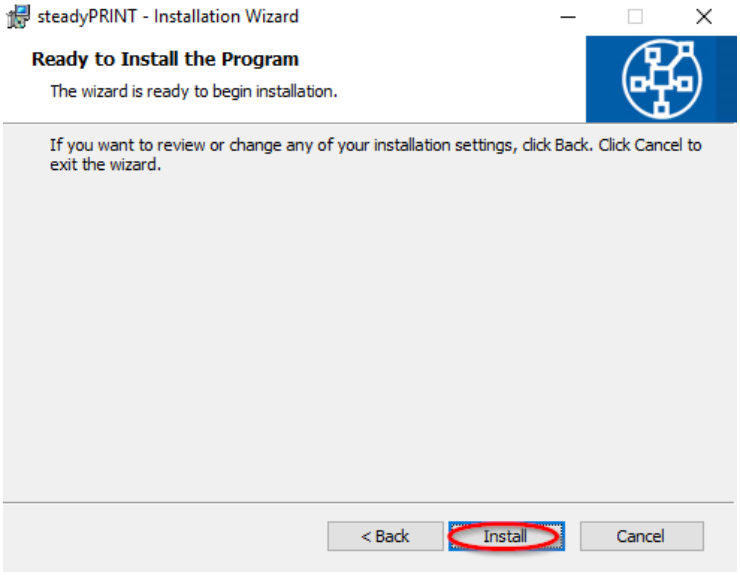

Figure 196: Install

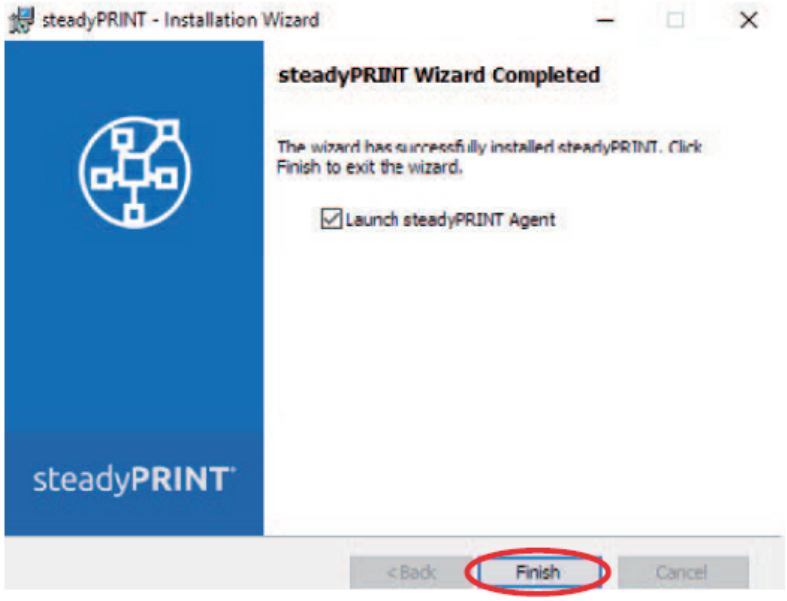

Figure 197: Complete the Installation

The ***steadyPRINT Client*** components have been completely installed.Click **Finish** to complete the installation

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16.3.4 Add Print Servers and Printers

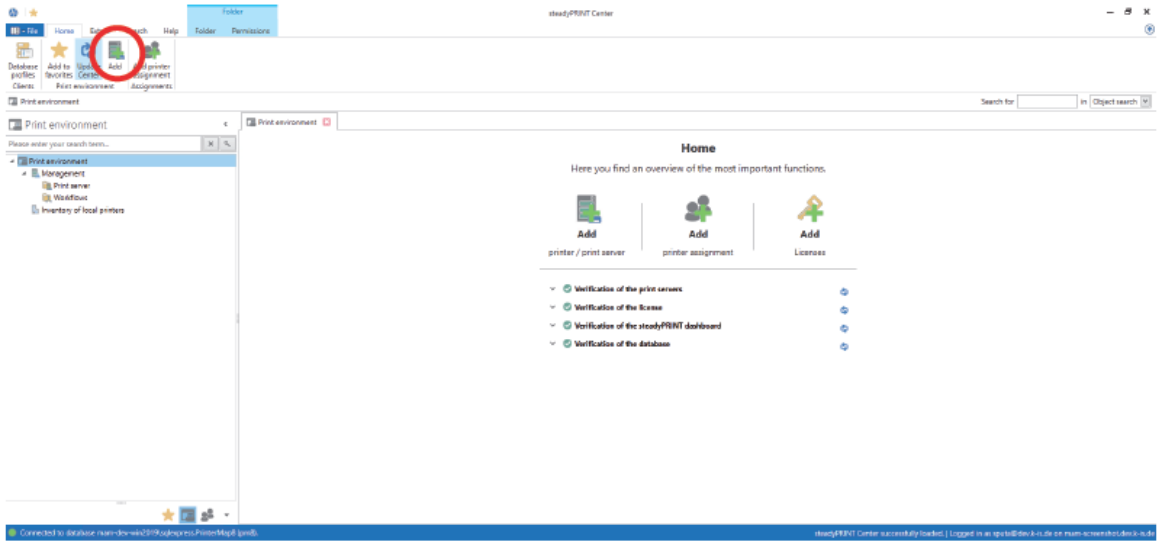

Figure 198: Open the steadyPRINT Center and click "Add"

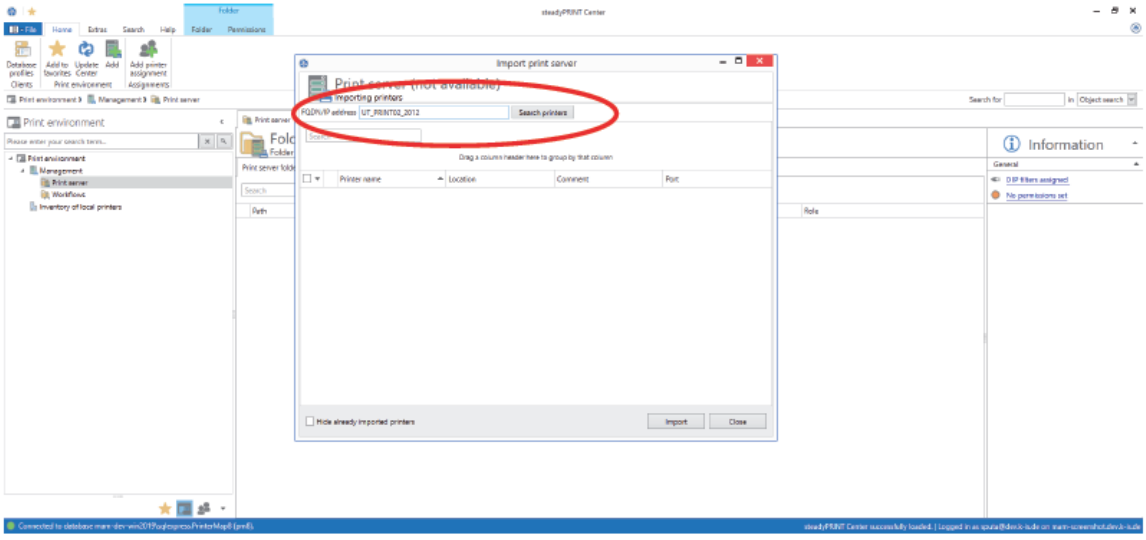

Figure 199: steadyPRINT Center

In order to import print servers and printers enter the name of the print server and click **Search printers**.

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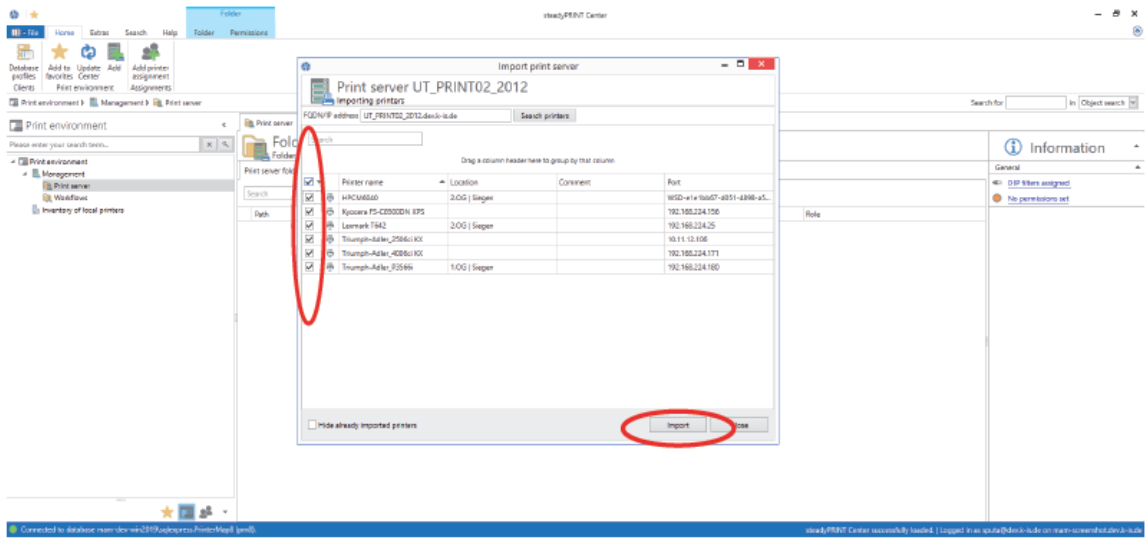

Figure 200: Select printers & import

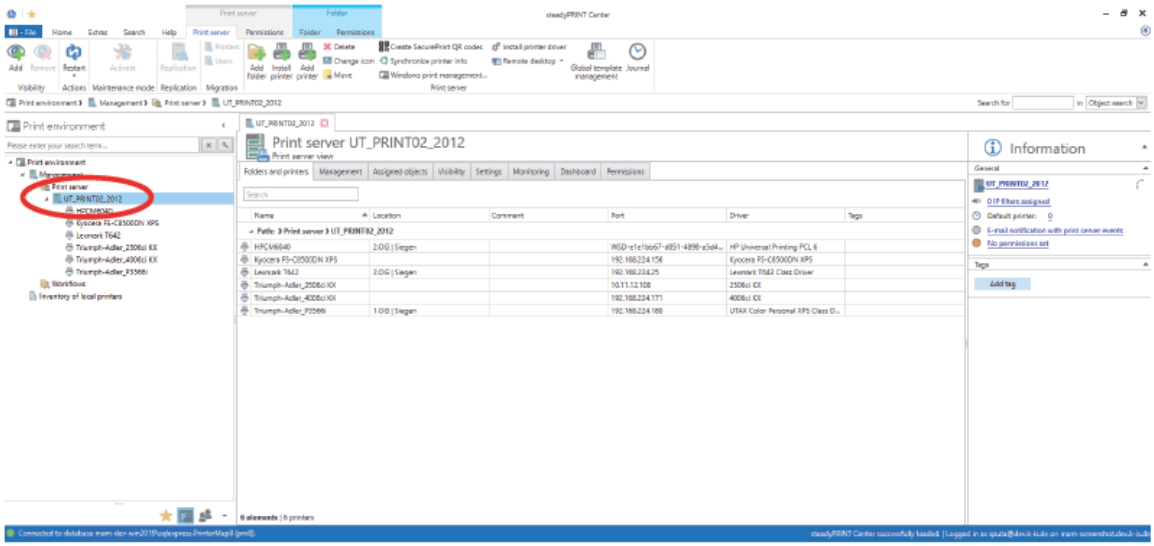

Figure 201: Printers & print servers in the steadyPRINT Center

The new print server and the selected printers are displayed in the ***steadyPRINT Center***.

16.3.5 steadyPRINT VPD

16.3.5.1 Installation of steadyPRINT VPD (Virtual Printer Driver)

The use of ***steadyPRINT VPD*** requires the ***steadyPRINT Server service*** being installed on each print server. Print servers without this service cannot be used in connection with the ***steadyPRINT VPD***. Furthermore, the ***steadyPRINT Virtual Printer Driver*** has to be installed on at least one of the participating print servers.

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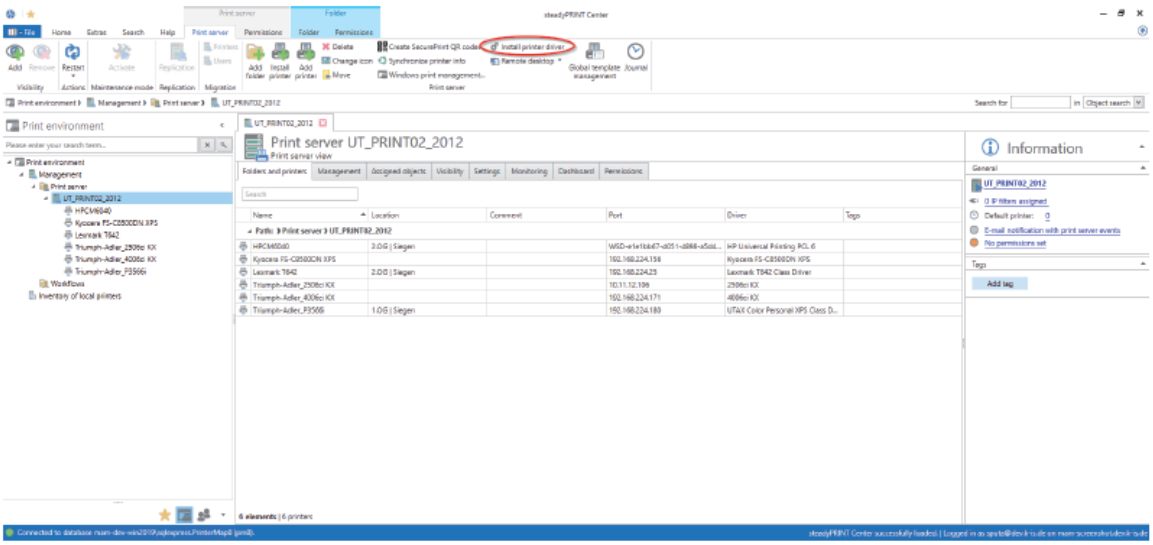

Figure 202: Select print server and run driver installation.

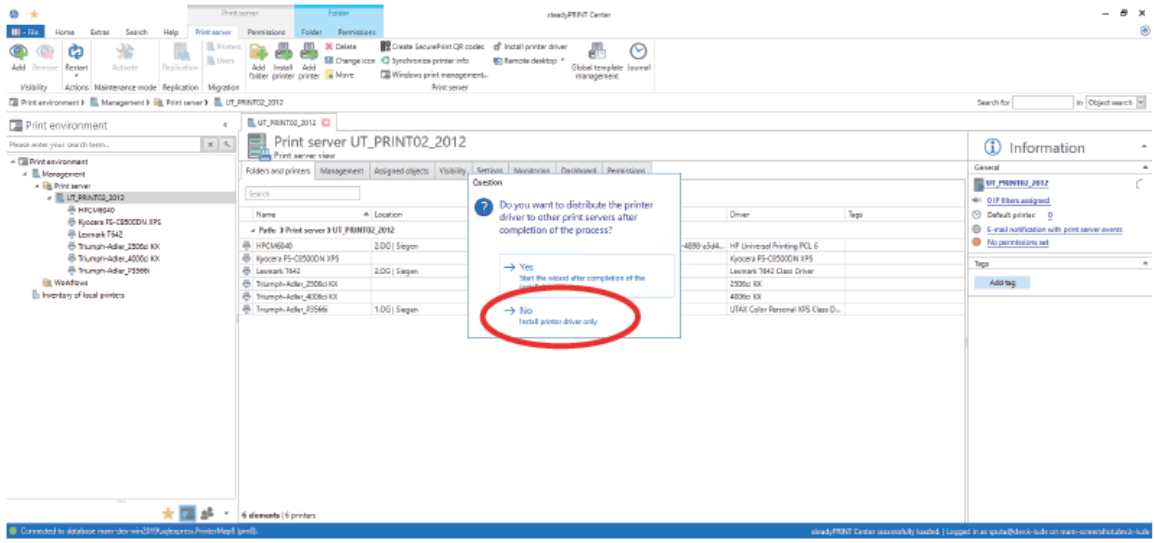

Figure 203: Install driver only

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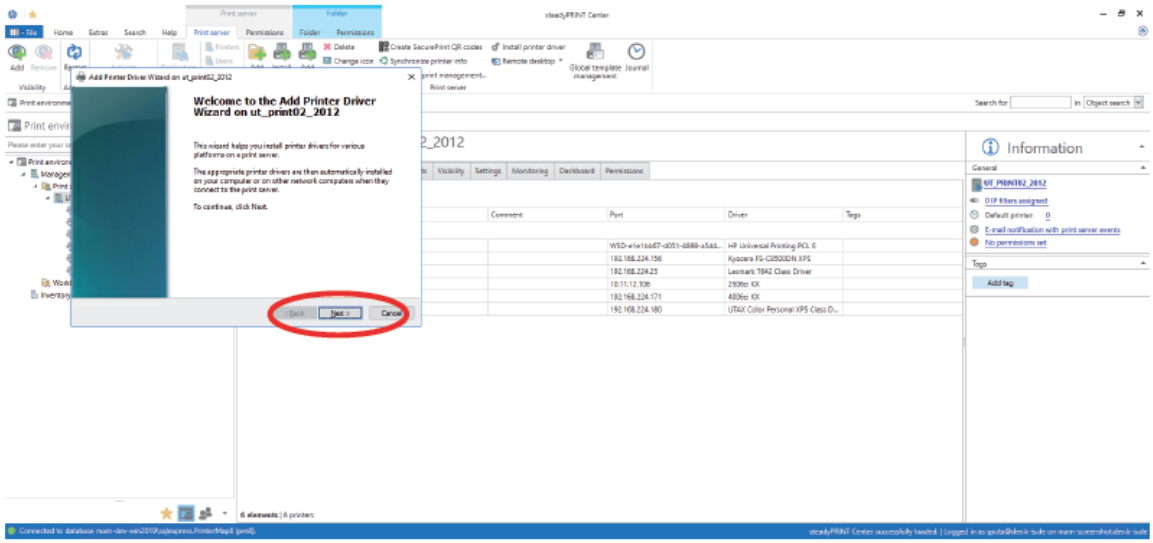

Figure 204: Next

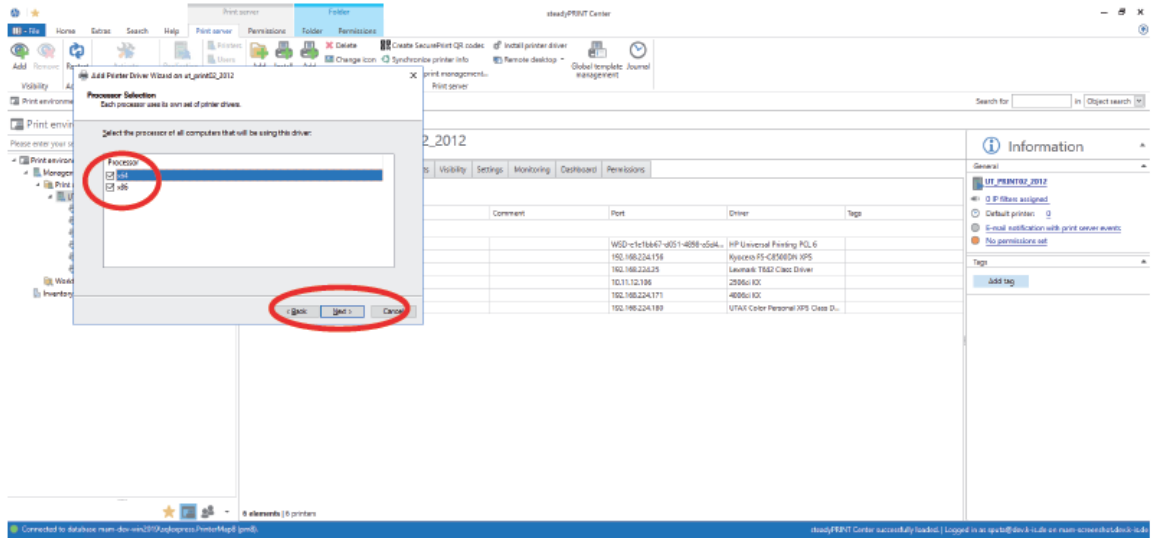

Figure 205: Select x64 and x86 & Next

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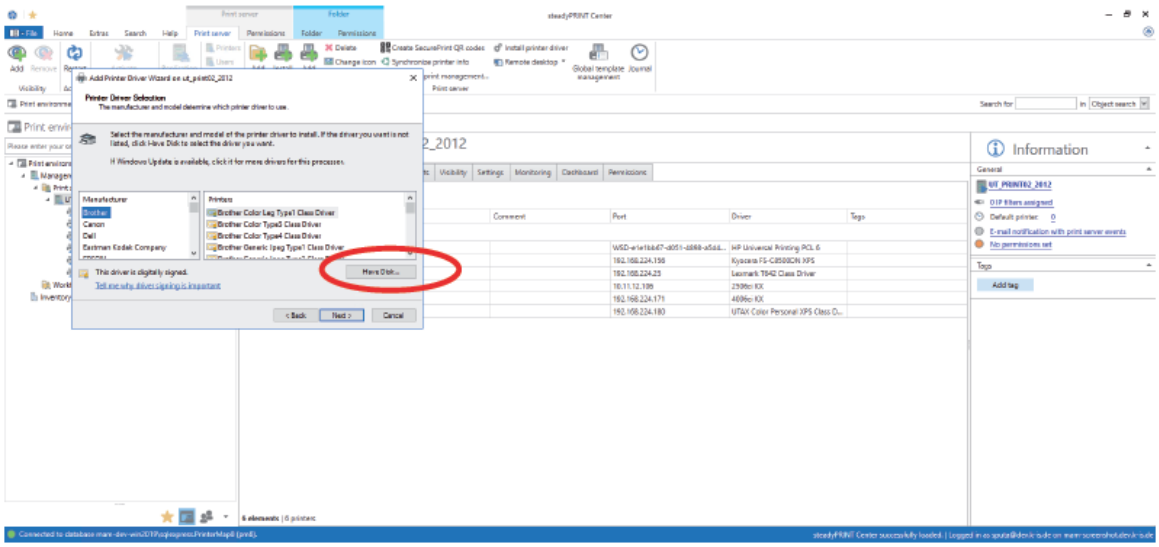

Figure 206: Select directory

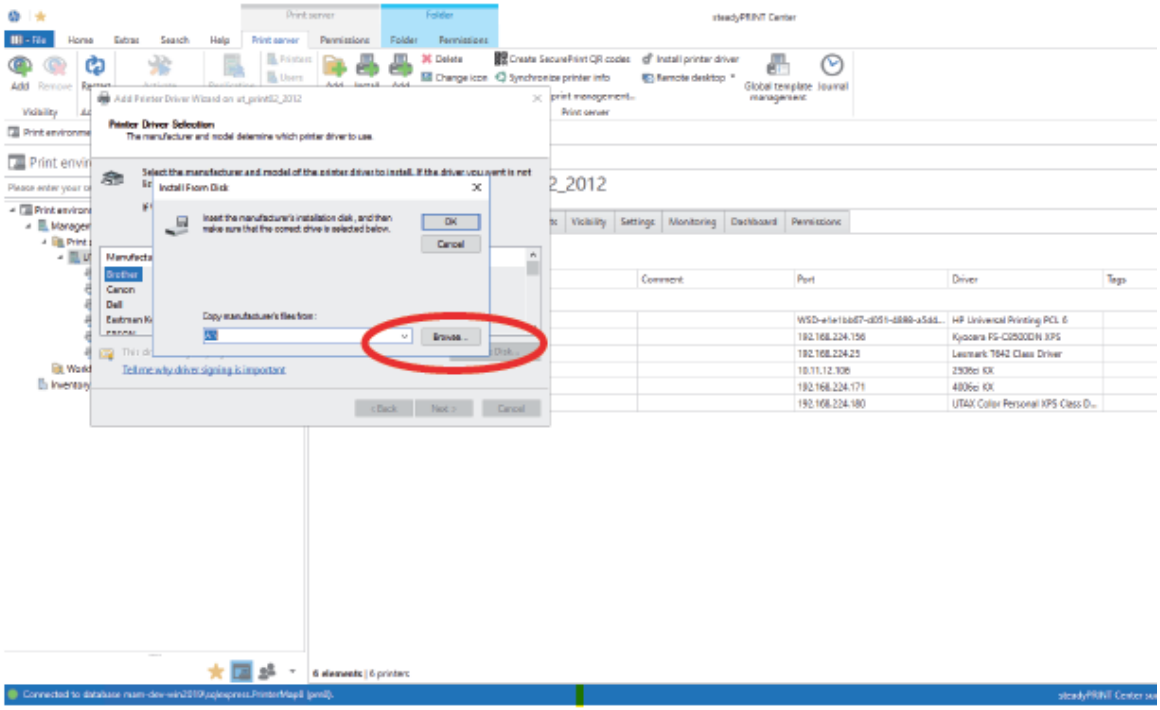

Figure 207: First, the x64 driver is installed. Browse

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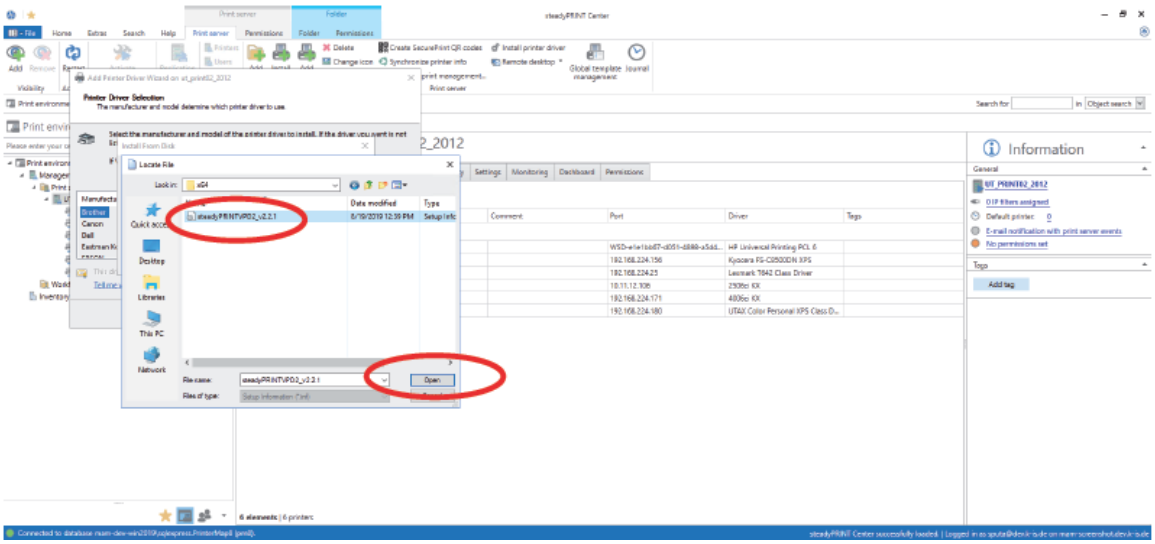

Figure 208: Choose the driver from the folder "Virtual Printer Driver“ in the steadyPRINT installation directory.

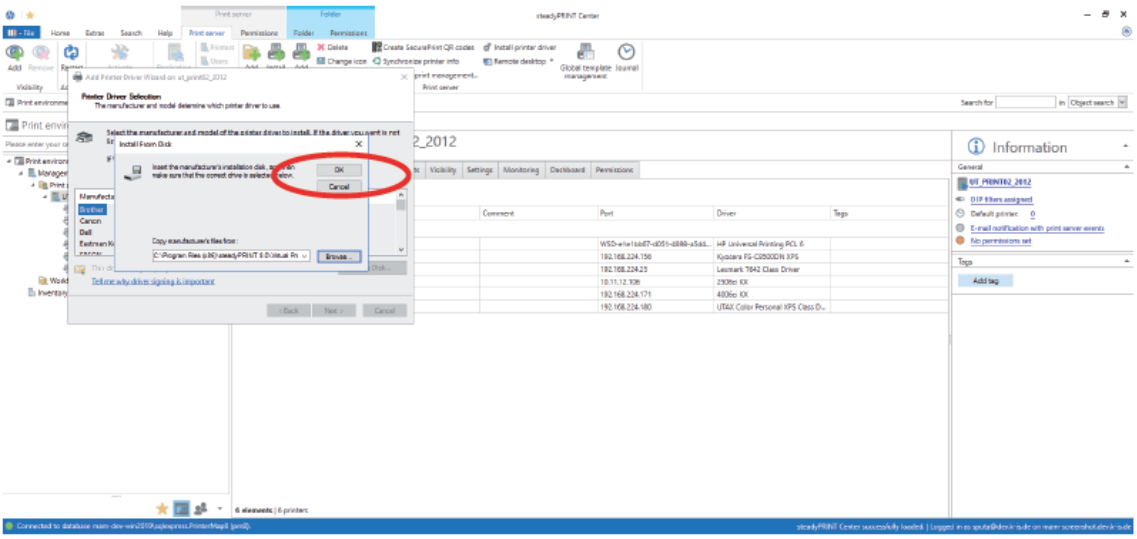

Figure 209: OK

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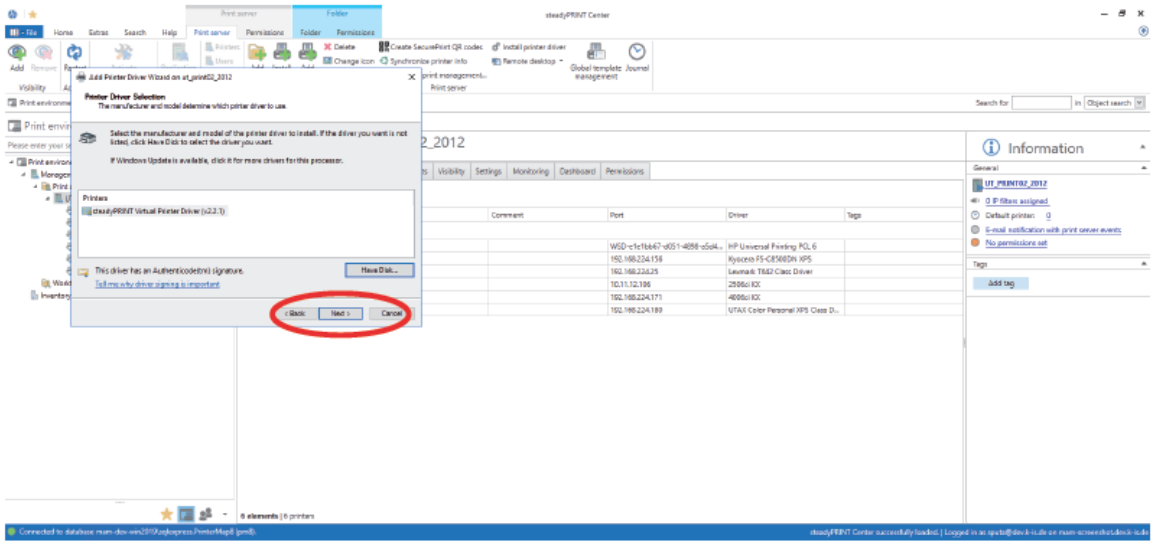

Figure 210: Next

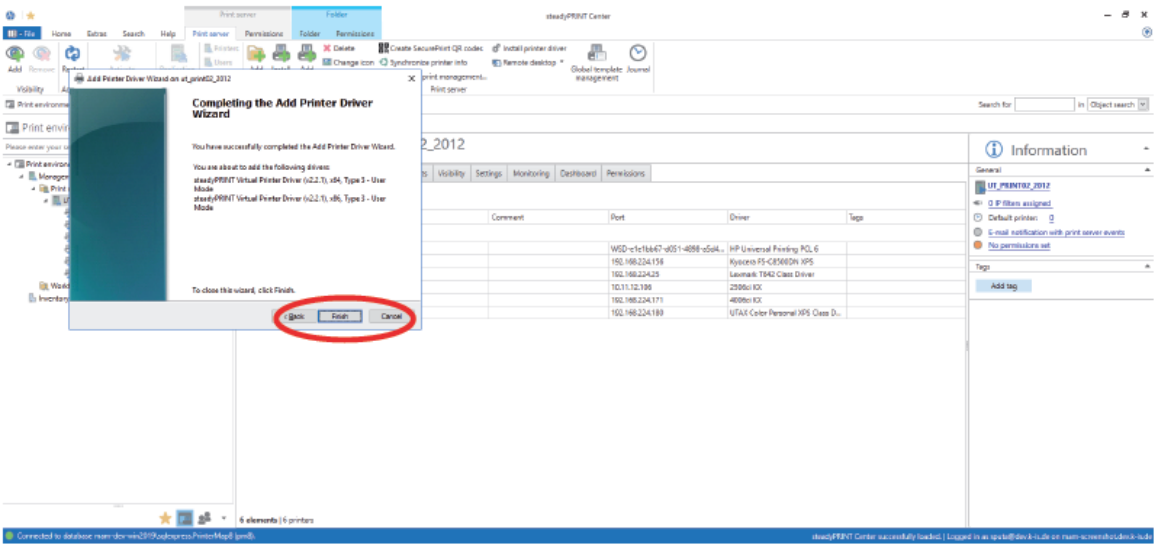

Figure 211: Finish

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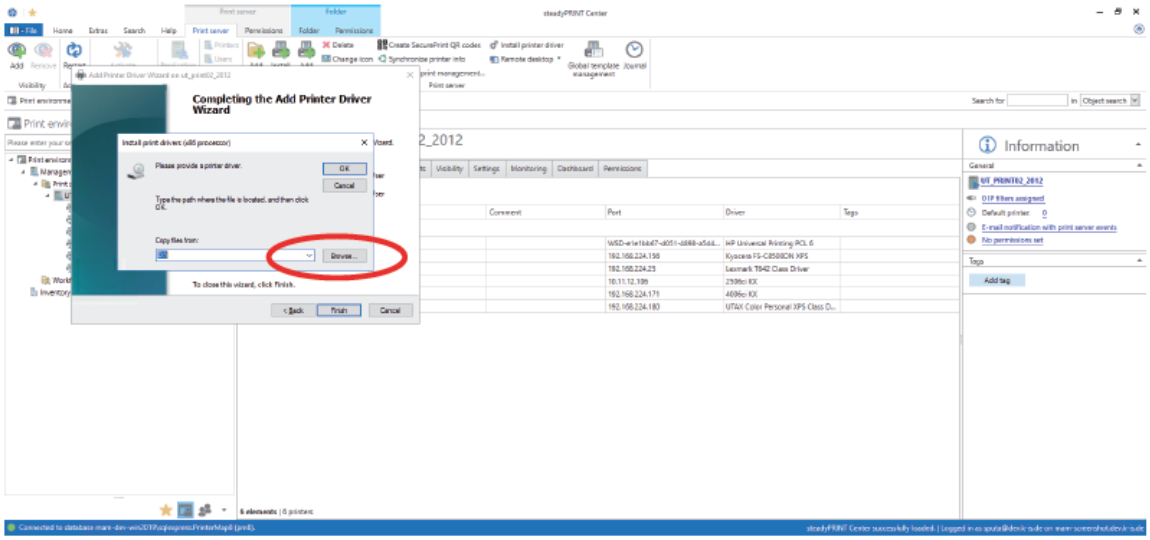

Figure 212: Now the appropriate x86 driver is being installed. Browse

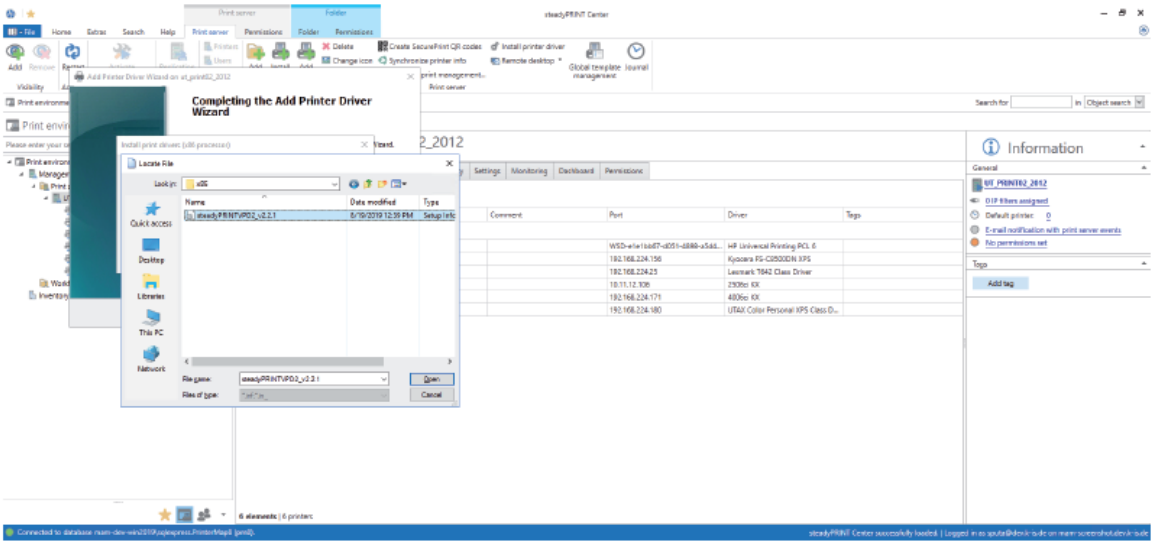

Figure 213: Choose the driver from the folder „Virtual Printer Driver“ in the steadyPRINT installation directory.

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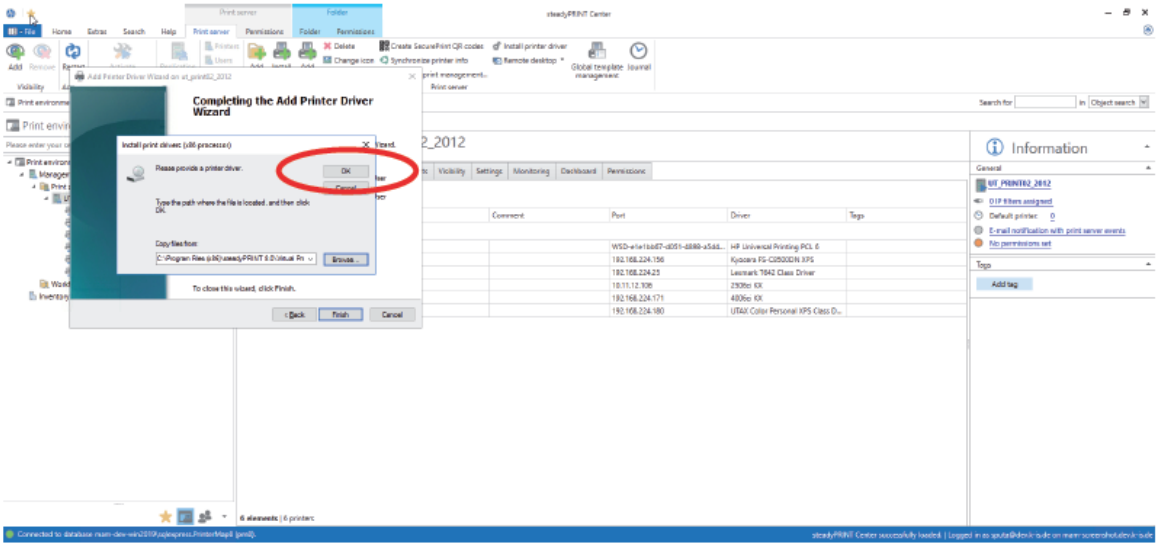

Figure 214: OK

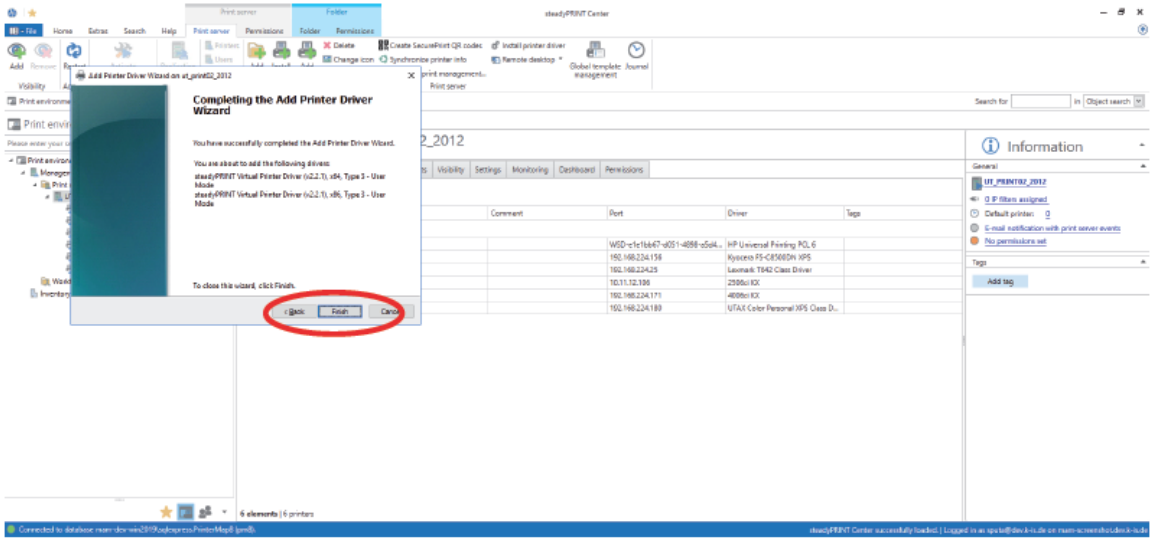

Figure 215: Finish. The driver installation has been completed.

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16.3.5.2 Configuration of steadyPRINT VPD

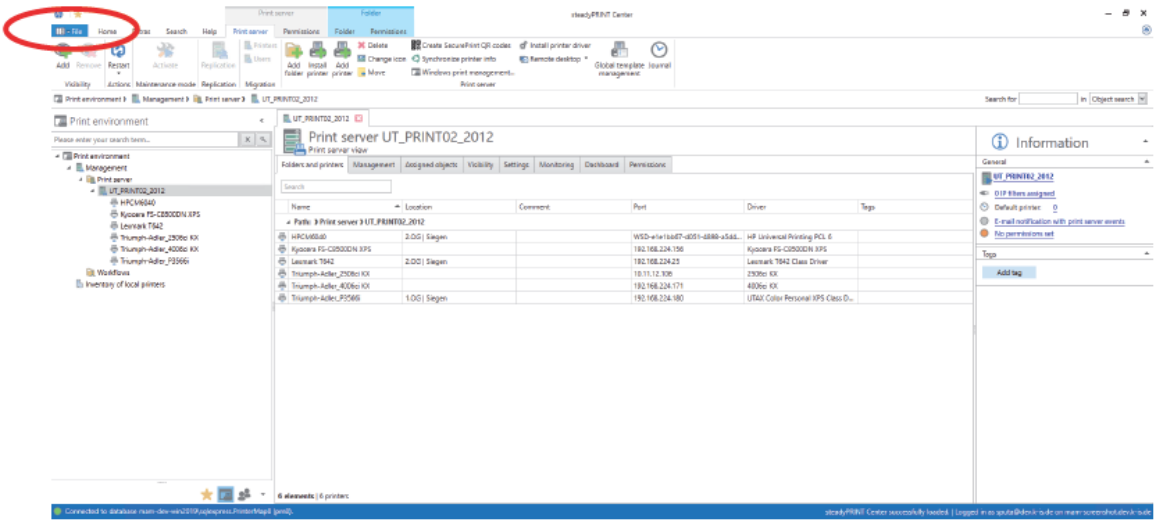

Figure 216: File

Figure 217: Settings

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16.3.5.3 Activation of steadyPRINT VPD in the Performance Profiles

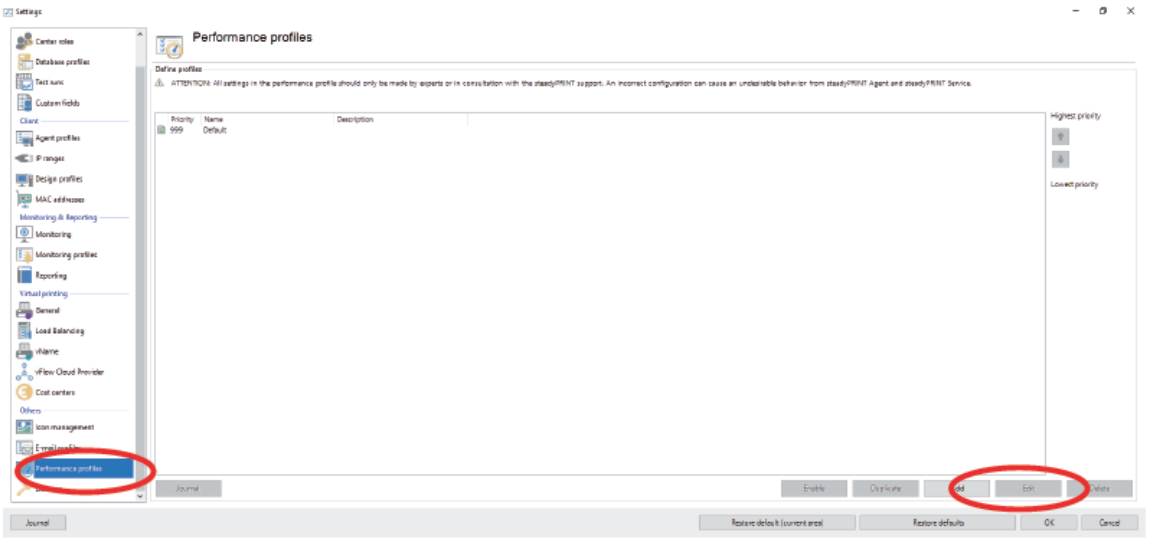

Figure 218: Open the performance profiles in the settings, select the desired profile and click "Edit".

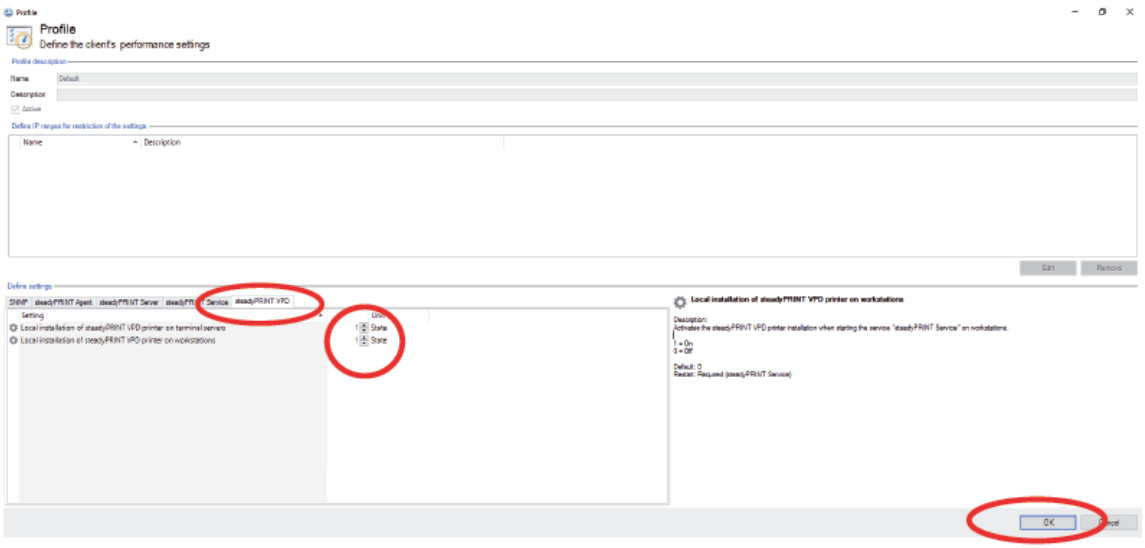

Figure 219: Go to the tab "steadyPRINT VPD", set both values to "1" and confirm with OK.

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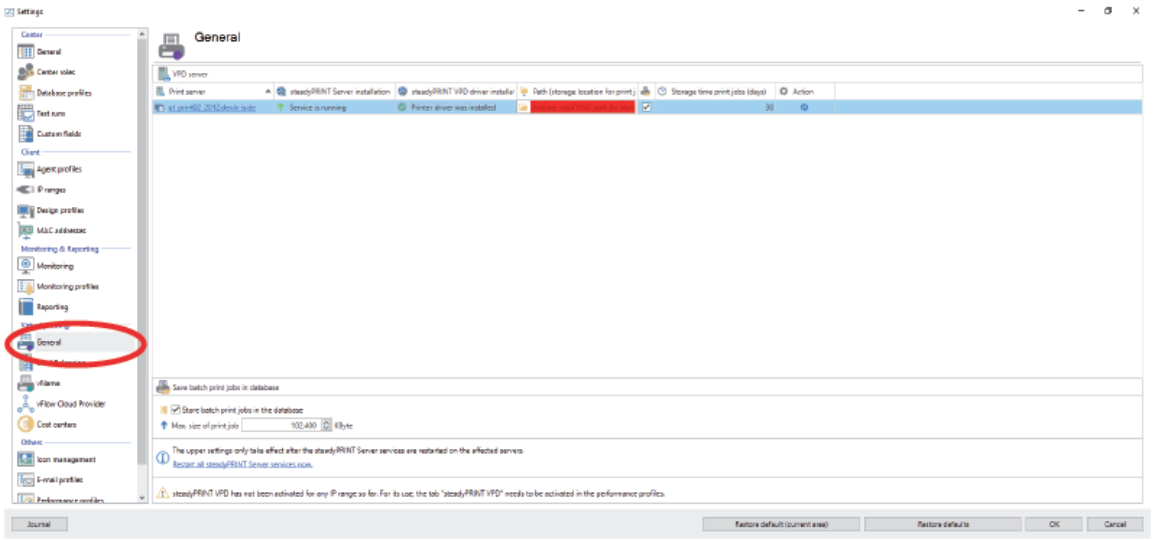

Figure 220: Open VPD settings (General)

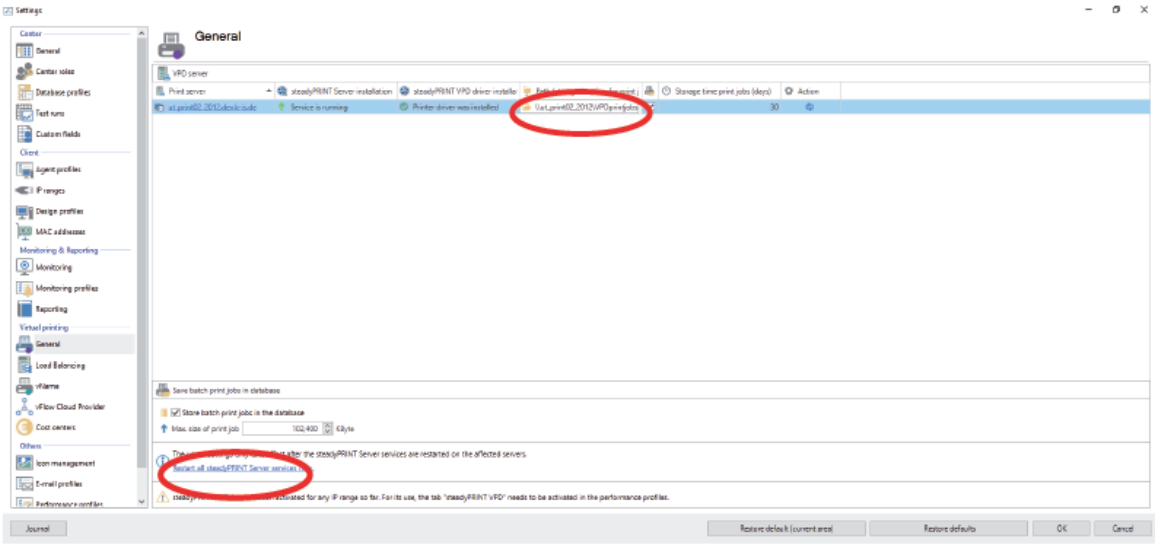

Figure 221: Enter print job directory and restart.

The print job directory must be a shared folder for which the authenticated users have change authorization.

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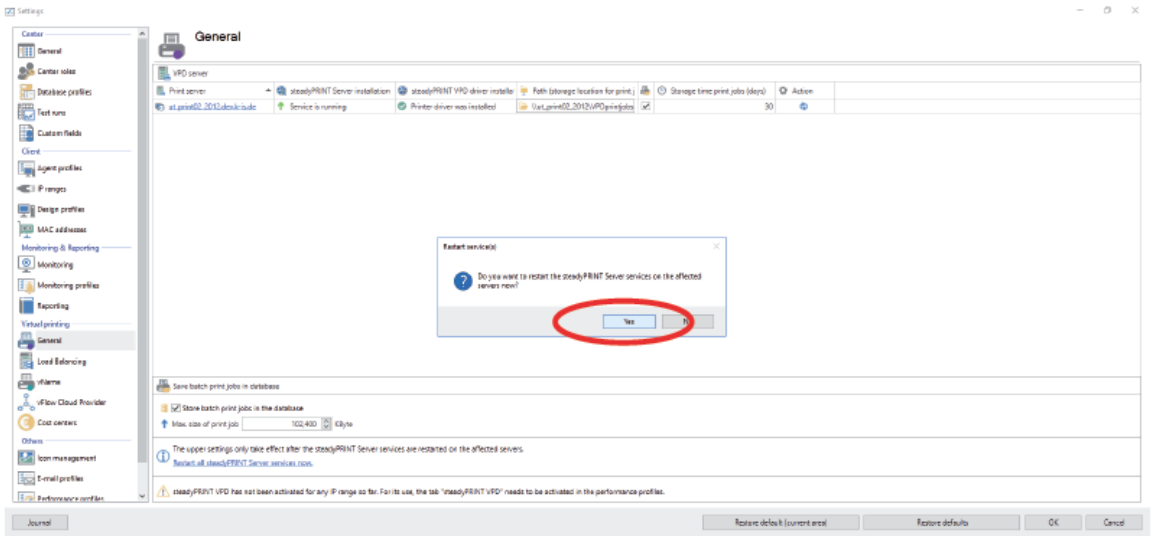

<%

Figure 222: Yes

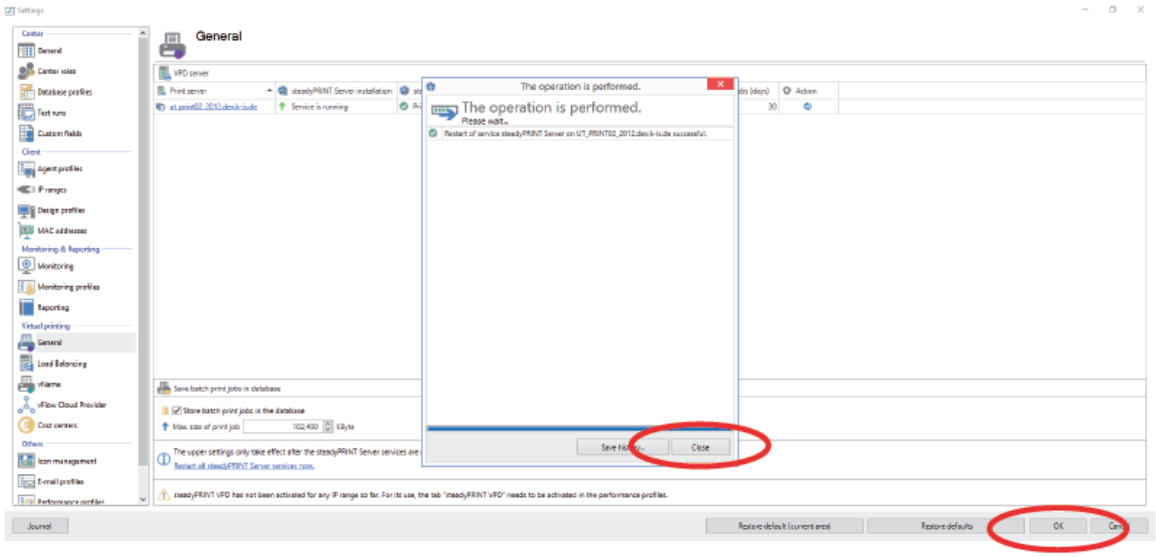

Figure 223: Close and confirm with OK

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