



Spider 6.4

Technical Reference (Installation,
Configuration, Troubleshooting)

Legal Information

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General

1.1 Typographical conventions

This manual uses various formats to highlight certain terms and actions. Specific notes and tips are shown with a different background color, according to their importance.

Format	Description
Bold font	Elements in the software or in the operating system, such as menu items, buttons or elements of a selection list
<i>Italic font</i>	Emphases (important details) and links to other chapters or documents
Triangle symbol ">"	Instruction step
Angle bracket ">"	Command menu sequences, e.g. File > Open
<i>System font</i>	Directories, code and script samples
CAPITAL LETTERS	Key names, e.g. SHIFT, CTRL, or ALT
KEY+KEY	Key combinations, i.e. the user has to hold one key and press another simultaneously, e.g. CTRL+P or ALT+F4.

Note Used for notes or tips which facilitate the work or for additional information which enhances understanding for the product.

Important Information which should be observed by the user, because otherwise problems or additional work may be caused in operation.

Attention Information which should be observed by the user in order to prevent malfunctions of the system (crashes, data loss, system failure).

1.2 Help

For additional information and support, we recommend the [Flexera Community](https://community.flexera.com/) (https://community.flexera.com/). Here you will find product documentation, download links and access to support.

Introduction

This document describes:

- System Requirements
- Installation
- Update
- Configuration of the products
 - Spider
 - Recognition

2.1 Chronological order for new installations

For a new installation, you have to observe the following installation order:

- Spider
- Software catalog
- Recognition

To read and transfer data from inventory systems, the Spider Data Collector (SDC) should be used.

Notes for the installation and setup are described in a separate document (Spider Data Collector - UserManual).

Spider

3.1 System requirements

3.1.1 Application server

Operating system

Recommended version: Windows Server 2019 Standard

Supported versions:

- 2022
- 2019
- 2016
- 2012 / 2012 R2

Supported editions:

- Standard
- Datacenter

Microsoft .NET Framework

Microsoft .NET Framework Version 4.7.2

Microsoft Internet Information Server (IIS)

- Internet Information Service (IIS) Manager
- Installed role service "IIS Management Scripts and Tools"

3.1.2 Database - Microsoft SQL Server

Recommended versions:	Microsoft SQL Server 2016 Standard (64 bit) or Microsoft SQL Server 2017 Standard (64 bit)
Supported versions:	<ul style="list-style-type: none"> • 2019 • 2017 • 2016 • 2014 • 2012
Supported editions:*	<ul style="list-style-type: none"> • Standard - for Spider environments with one mandator • Enterprise - for large multi-mandator-environments • Express* ** - for very small environments; some restrictions will apply
Required settings:	<p>The TCP/IP protocol and Named Pipes must be activated for the SQL server in the SQL Server Configuration Manager.</p> <p>During installation the SQL server has to be run with Mixed Mode Authentication (SQL And Windows Authentication). After the first Installation and changing database access to domain authentication, the SQL server can be changed to Windows Authentication only.</p>

Note: *The function Always On is not supported
 **The full text search requires an Express edition with Advanced Services.

For the editions Spider SAM, ITM or Enterprise, 8 databases are required:

- Core
- Core_TempDB
- Asset
- Licence
- Contract
- Recognition
- SessionDB
- Integration (optional)

For Spider Contract, 5 databases are required:

- Core
- Core_TempDB
- Contract
- SessionDB
- Integration (optional)

Pay attention to the following:

- The names can be chosen individually. The name may not start with a number nor exceed the length of 50 characters.
- All Spider databases have to have the same collation. It has to be a case-insensitive collation (CI-Collation), e.g. SQL_Latin1_General_CP1_CI_AS.

- The databases must be completely empty.
- The rule for the Spider Core temporary database has to be observed, it is the core database name with an attached suffix of „_TempDB“, e.g. SpiderCore_TempDB.
- The rule for the Spider Core SessionState database has to be observed, it is the core database name with an attached suffix of „_SessionState“, e.g. SpiderCore_SessionState.

3.1.3 Indexing - OneSearch

With the OneSearch function, the brainwaregroup Enterprise Services Infrastructure (ESI) is introduced as an additional component which will be more and more integrated in future versions.

The indexing infrastructure can be installed on a Spider Application server or on a separate server.

- approx. 750 MB installation files (incl. embedded Java)
- >= 3GB HDD space for index files, depending on the data volume
- 1 to 1.5 GB RAM

Further information is to be found in the document "Brainwaregroup ESI Release Notes".

3.1.4 Hardware requirements

Regarding the hardware requirements for the application and database server, we would like to recommend an individual server sizing for medium to large system sizes.

The following general orientation values will apply for production instances. Smaller configurations can be used for test instances.

Processor

Recommendation: Quad Core Processor system with 2 GHz or higher

Small system: 1+ Quad Core processor(s)

Medium system: 2+ Quad Core processors

Large system: 4+ Quad Core processors

RAM

Small system: 4 - 8 GB RAM

Medium system: 8 - 32 GB RAM

Large system: 32 GB RAM min.

Hard disk capacity

Application directory: 300 MB

Database: Database and transaction memory are depending on the managed data, documents and change histories.

Backup memory: Depending on the backup strategy and based on the data volume of databases and transactions, a factor of 1-2 memory capacity must be reserved for back-ups.

Small system:	5 - 20 GB
Medium system:	10 - 50 GB
Large system:	> 50 GB

3.1.5 Clients / Browser

Supported browsers

Internet Explorer	<ul style="list-style-type: none">• Version 11• Version 10• <i>Older versions and compatibility levels are not supported.</i>
Edge	
Firefox	ab Version 38 (ESR)
Chrome	ab Version 46

Note: Active Scripting (IE) or Java Script (Firefox) must be activated.

Recommended software

Microsoft Excel	Viewing and editing of Excel files
PDF Viewer	PDF Viewer, e.g. Acrobat Reader

3.1.6 Implementation system

The implementation system is a workplace system which can be used to run the Spider implementation.

The following software is required:

- Microsoft SQL Server Management Studio
- Microsoft Office (Word, Excel)
- PDF Viewer, e.g. Acrobat Reader
- Spider Administration Tool

The following access options must be enabled:

- Remote access to the application server
- Access to the Spider databases

3.1.7 Permission requirements

For the installation, configuration and realization of the application as well as the relevant interfaces, the following access rights and settings are required:

Type	Name	Description
Account	SQL account for installations	Installation user. DBO- permissions only for the Spider databases.
Account	SQL accounts "Spider" and "SpiderAdmin"	Standard account for Spider. Receive the rights to the Spider databases during the setup.
Account	Domain Login account for the application server	Account with administrator rights on application server
Account	Interfaces for domain users	Permanent service account without password change / expiry policy for the continuous interfaces.
Network policy	Communication between application and database server	The two servers must be able to communicate if they are running on two different server platforms. SQL Standard Port 1433
FW policy	Configuration of firewall	Checking of the firewall configuration to make sure that the defined accesses to the external systems (incl. interfaces for the InventoryScanner) are enabled.

Please refer to the table below for the required rights for execution of the setup

Task	Rights to	Right(s)
Creating logins	Server	ALTER ANY LOGIN
Creating databases	Server	CREATE DATABASE CREATE ANY DATABASE ALTER ANY DATABASE
Creating extended properties	Database	ALTER
Setting up the SessionState database	Database	msdb -> EXECUTE

Required SQL users

If the SQL installation user does not have the permission to create new logins on the database server, these logins must be created beforehand. 2 SQL users are required for the setup. The login data are requested during the installation. The setup will then grant the permissions to the Spider databases.

1. Spider Login

The Spider login is required as application login for Spider. The web application and the services are using this login for accessing the databases.

2. Spider Admin login

This user is intended for usage with the Admin tool.

3.1.8 Hardware-Scaling

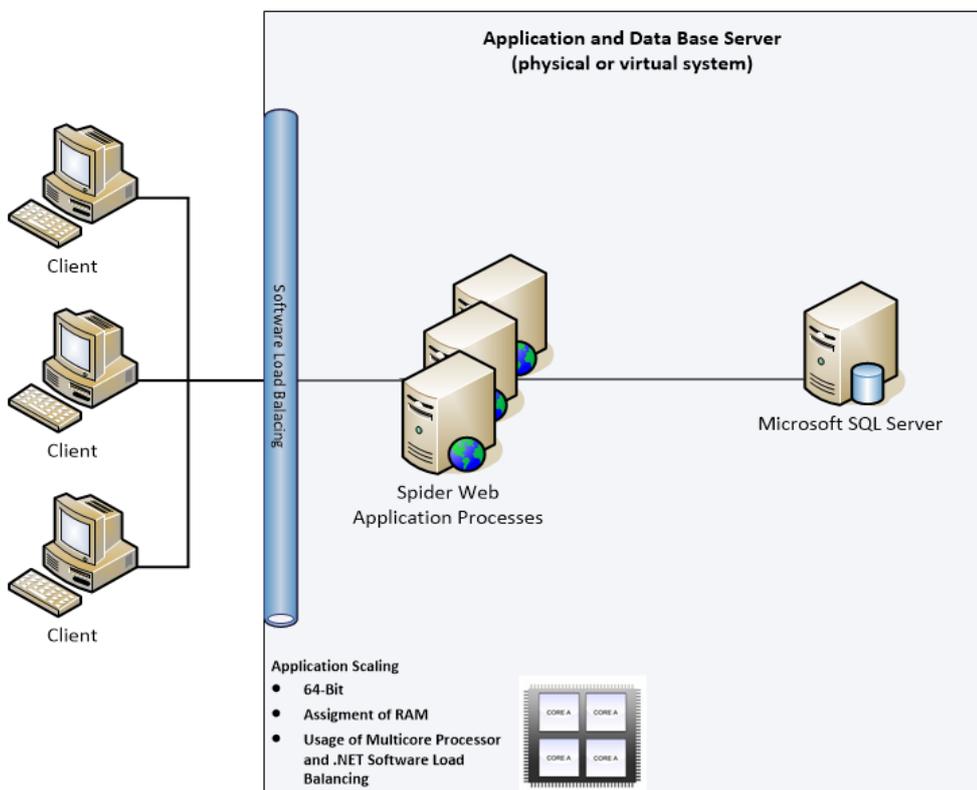
Please find below the description of the system sizes and four different scenarios. These recommendations are based on experience values from numerous customer environments. For large systems, we would like to recommend an individual server sizing.

System sizing

Size	Product	Figures	Scenario(s)
Small	Asset	< 5.000 Systems	1
	Contract	< 2.500 Contracts	
Medium	Asset	5.000 – 20.000 Systems	1 or 2
	Contract	2.500 – 10.000 Contracts	
Large	Asset	> 20.000 Systems	2, 3, or 4
	Contract	> 10.000 Contracts	

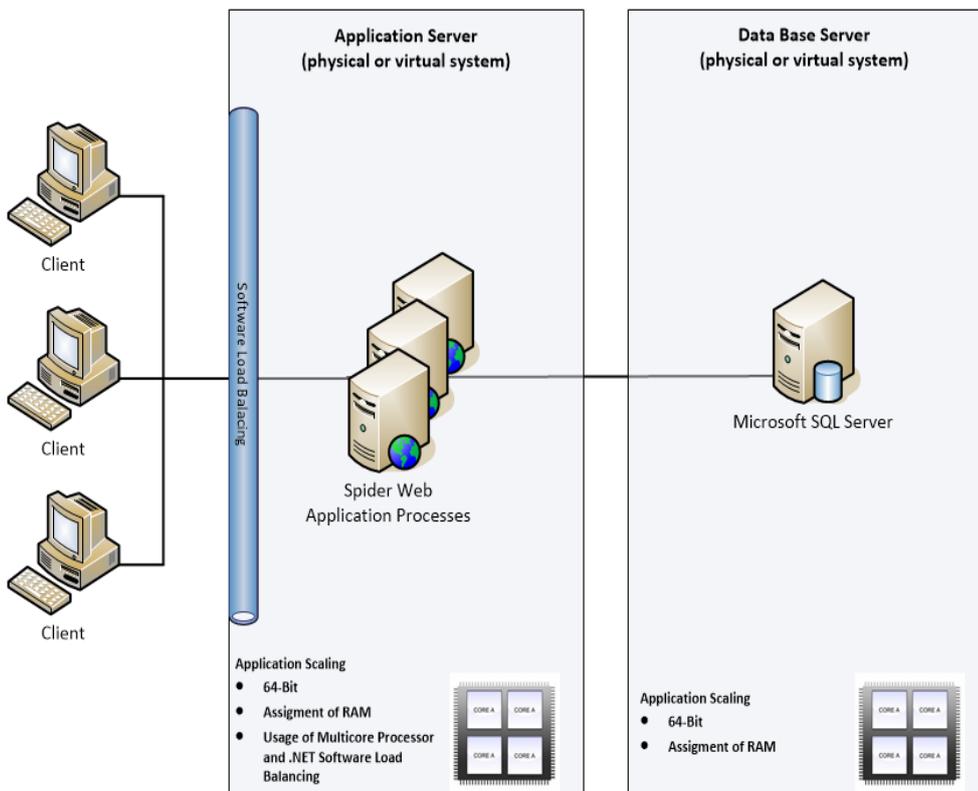
Scenario 1: Database and application server in one system

- Database and application server reside on one system
- 64-bit system for application server and database
- Possible scaling of processors / cores and RAM
- Software Load Balancing (SLB): Requests are distributed to deployed processes
- For a virtual machine a good I / O performance for the database must be ensured



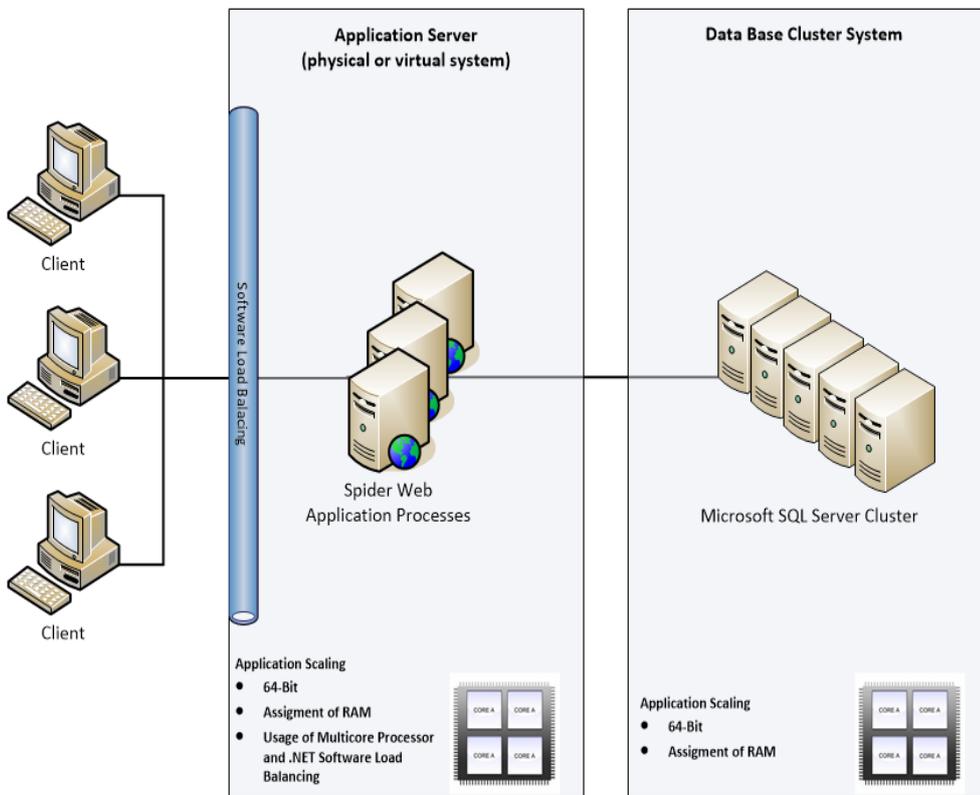
Scenario 2: Database and application servers on separate systems

- Database and application servers are located on separate systems.
- 64-bit systems for application server and database.
- Possible scaling via processors/cores and RAM per system.
- Software Load Balancing (SLB): Requests are distributed among the provided processes.
- For a virtual system, the database must have a good I/O performance.



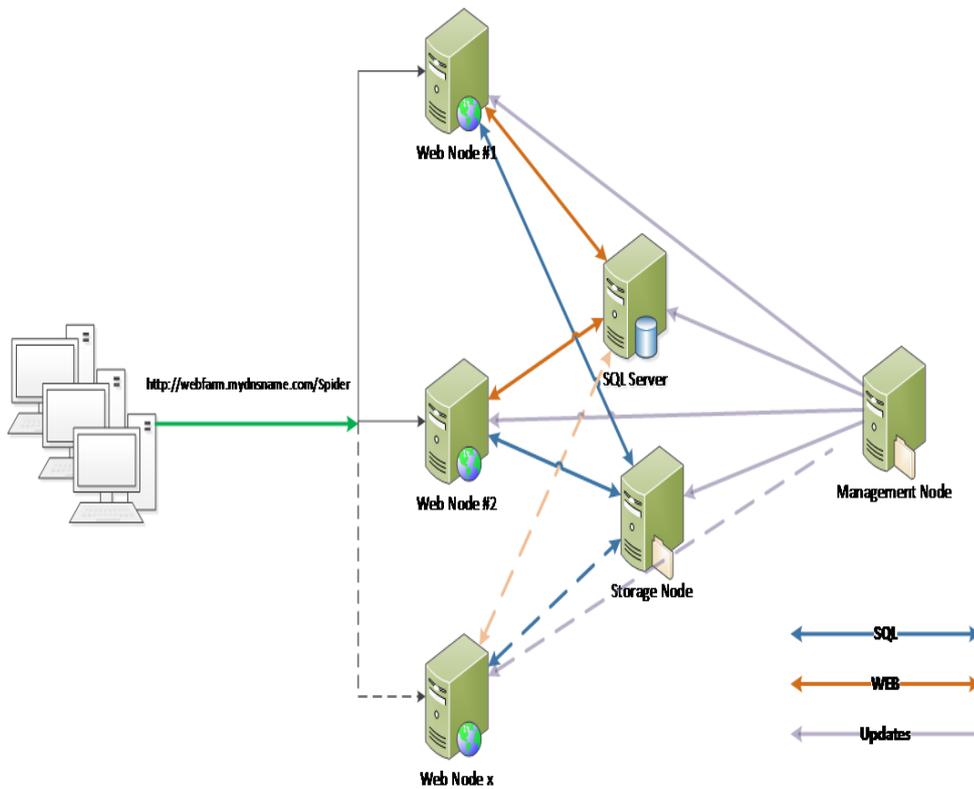
Scenario 3: Databases are installed in an SQL cluster

- Based on the 2nd scenario
- The databases are installed in an SQL server cluster.
- Possible scaling via processors/cores and RAM per system.
- Software Load Balancing (SLB): Requests are distributed among the provided processes.



Scenario 4: Using a web farm

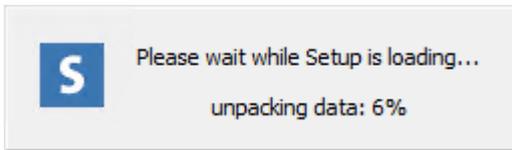
- Based on the 2nd and 3rd scenario
- A web farm is operated from multiple web nodes and one management node. The initial Spider web installation, License Service and Spider Services are located on the management node.
- Possible scaling of processors / cores and RAM per system
- A combination of Network Load Balancing of the web farm and Software Load Balancing of each web server on the web farm
- Software Load Balancing (SLB): Requests are distributed to deployed processes



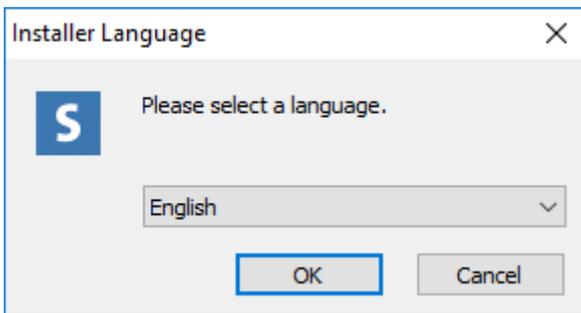
3.2 Installation

3.2.1 Start of the installation

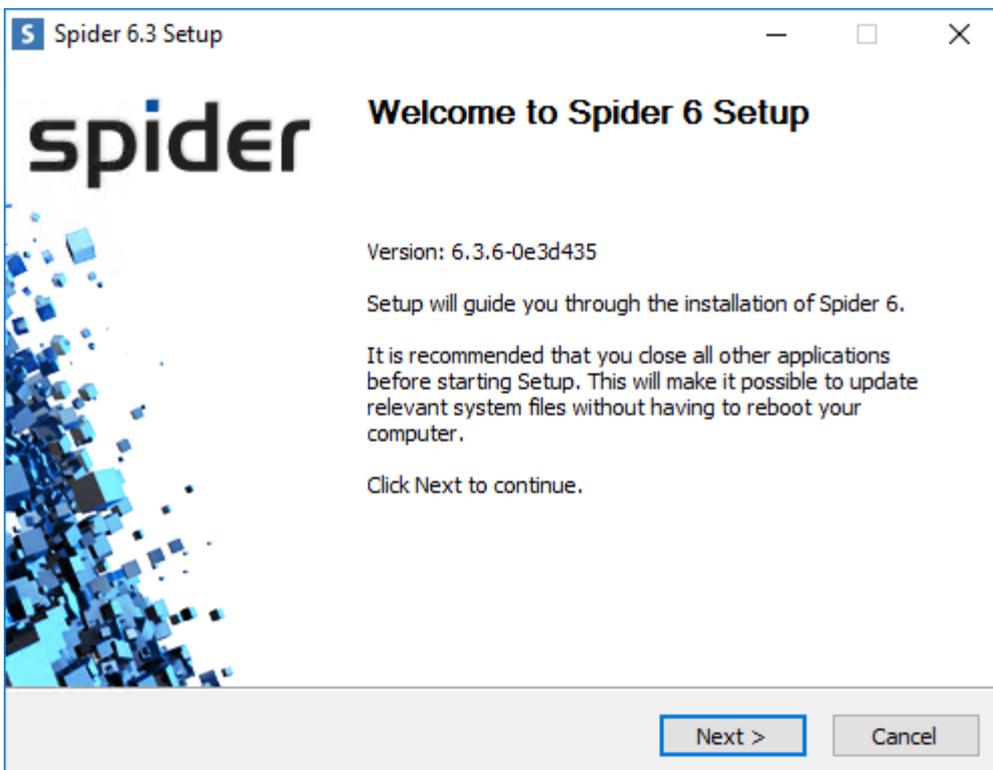
Start the installation by executing Spider 6.x Setup.exe.



At first, you are asked to select the language for the installation assistant. To do this, click on the desired language in the selection box and confirm your input with "OK".

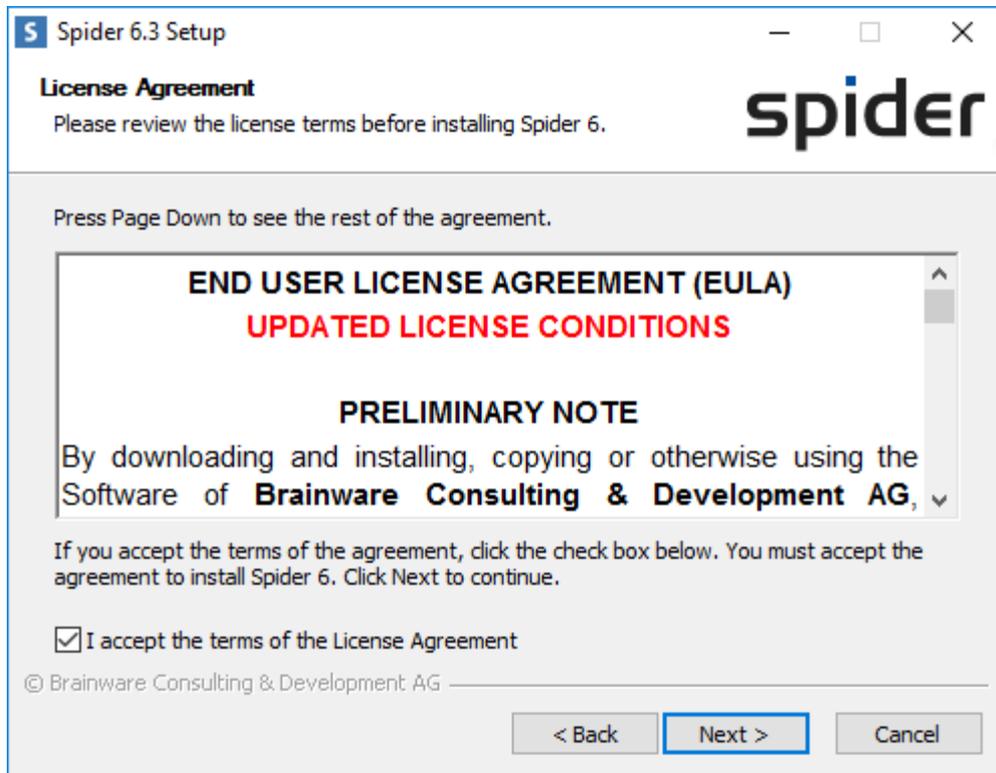


After that, the installation assistant for Spider will open. This assistant will guide you through the setup installation in the selected language. Click on "Next" to start the installation.



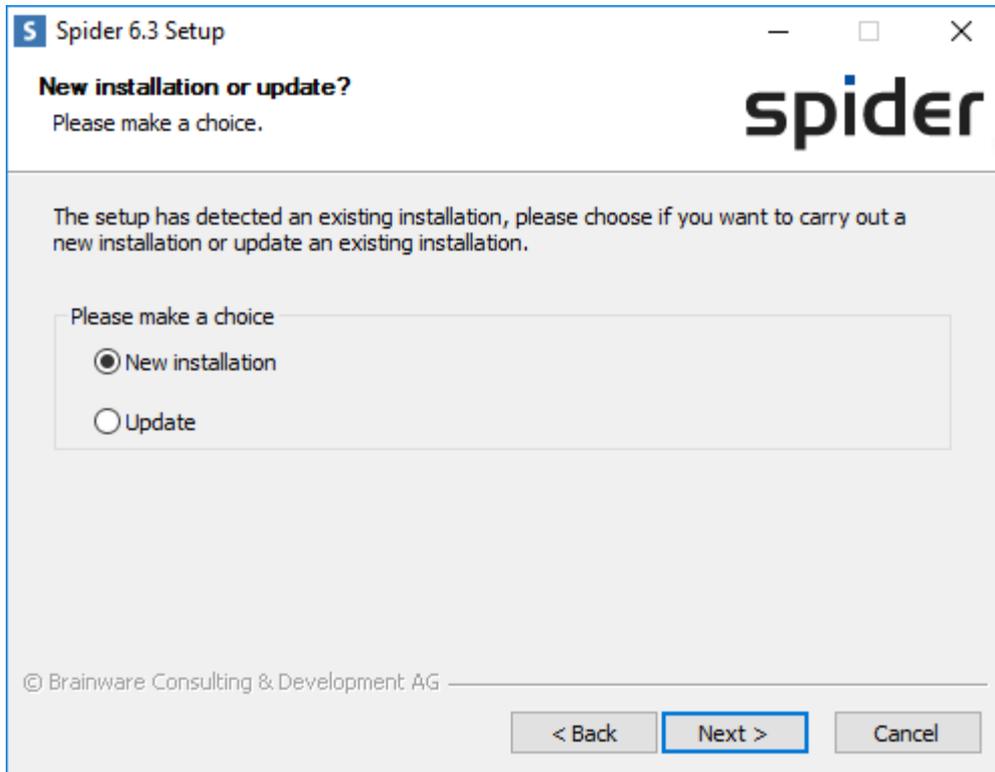
3.2.2 License agreement

In the next step, you are asked to read and accept the license agreement before starting the installation. The setup can only be continued after accepting the license agreement.



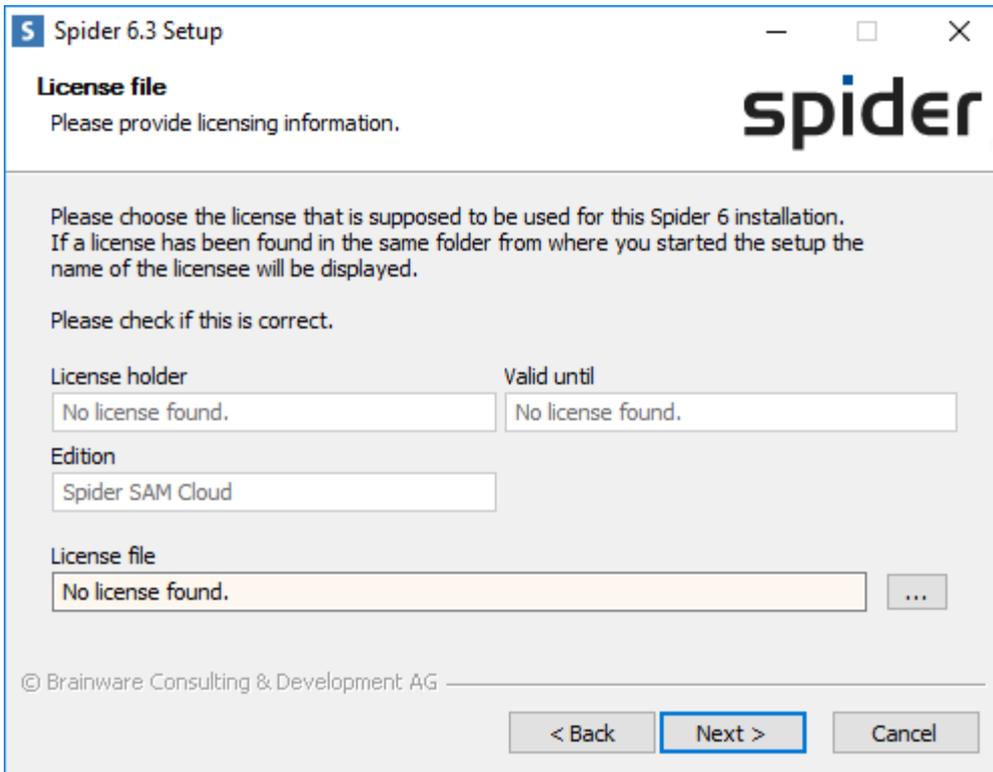
3.2.3 New installation or update

If an instance of Spider is already installed, you will be prompted to decide for one type of installation.

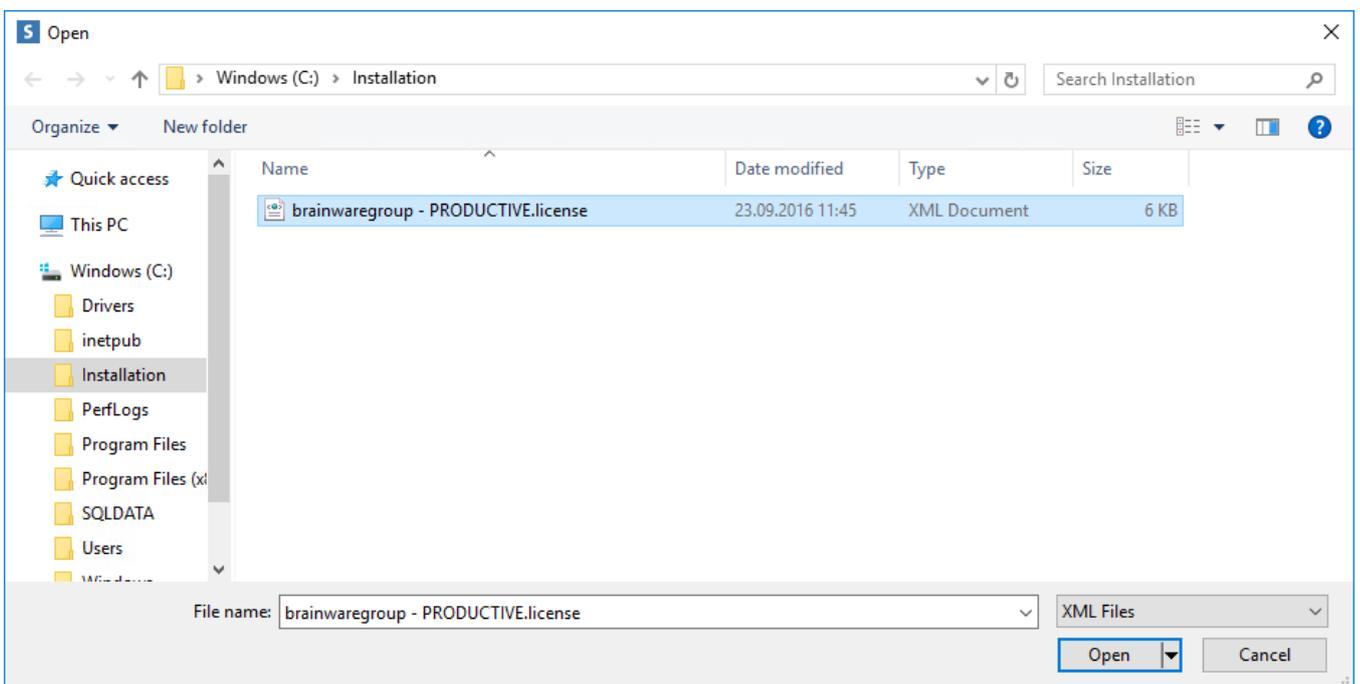


3.2.4 License file

Select the matching license file to continue the setup. The setup cannot be continued without the license file.

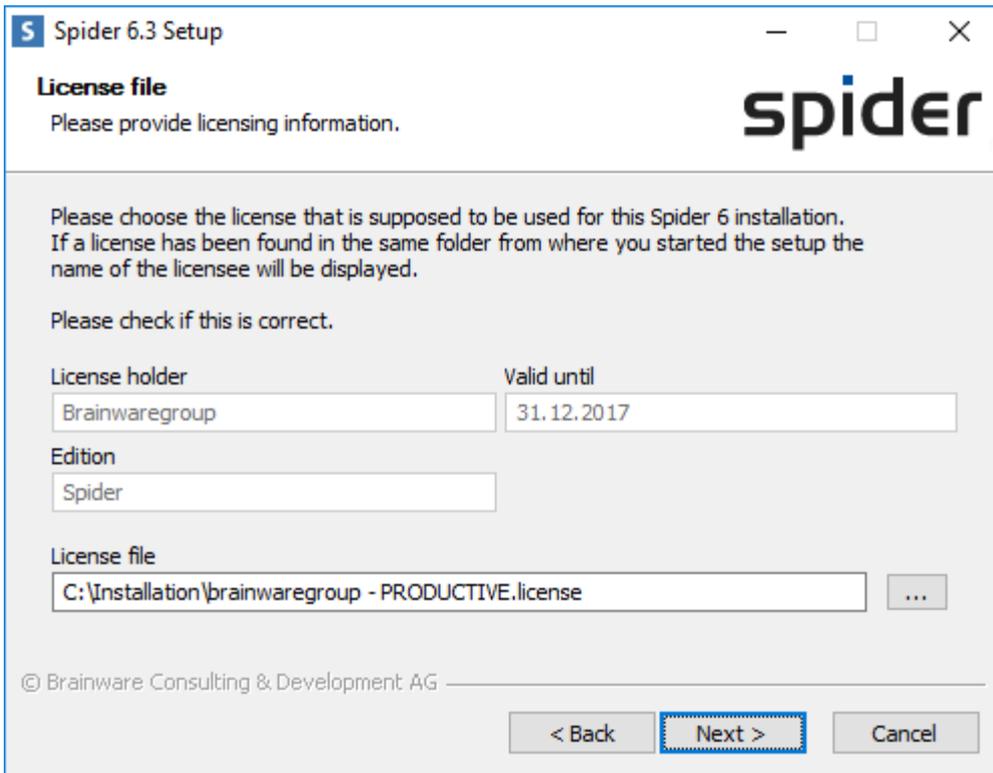


Click on "..." Button:



Select the license and then click "Open".

The selected license will be loaded and its details are shown.

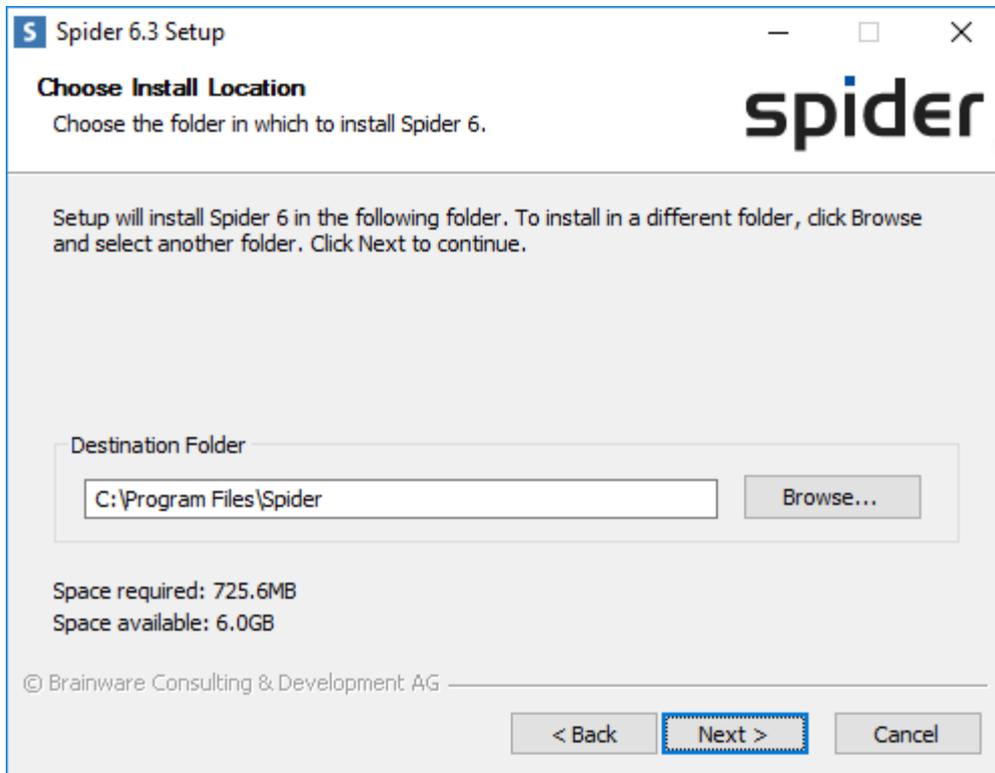


The screenshot shows a Windows-style dialog box titled "Spider 6.3 Setup". The window has standard minimize, maximize, and close buttons in the top right corner. The title bar also contains a small "S" icon. The main content area is divided into sections. At the top left, under the heading "License file", it says "Please provide licensing information." To the right of this text is the "spider" logo in a large, bold, lowercase font. Below this, there is a paragraph of instructions: "Please choose the license that is supposed to be used for this Spider 6 installation. If a license has been found in the same folder from where you started the setup the name of the licensee will be displayed." This is followed by another instruction: "Please check if this is correct." Below these instructions are four input fields: "License holder" with the value "Brainwaregroup", "Valid until" with the value "31.12.2017", "Edition" with the value "Spider", and "License file" with the value "C:\Installation\brainwaregroup - PRODUCTIVE.license". The "License file" field has a browse button (three dots) to its right. At the bottom left, there is a copyright notice: "© Brainware Consulting & Development AG". At the bottom right, there are three buttons: "< Back", "Next >" (which is highlighted with a blue dashed border), and "Cancel".

Note If a license is found in the same directory which has been used to start the setup, it will be loaded automatically into the dialog (if valid).

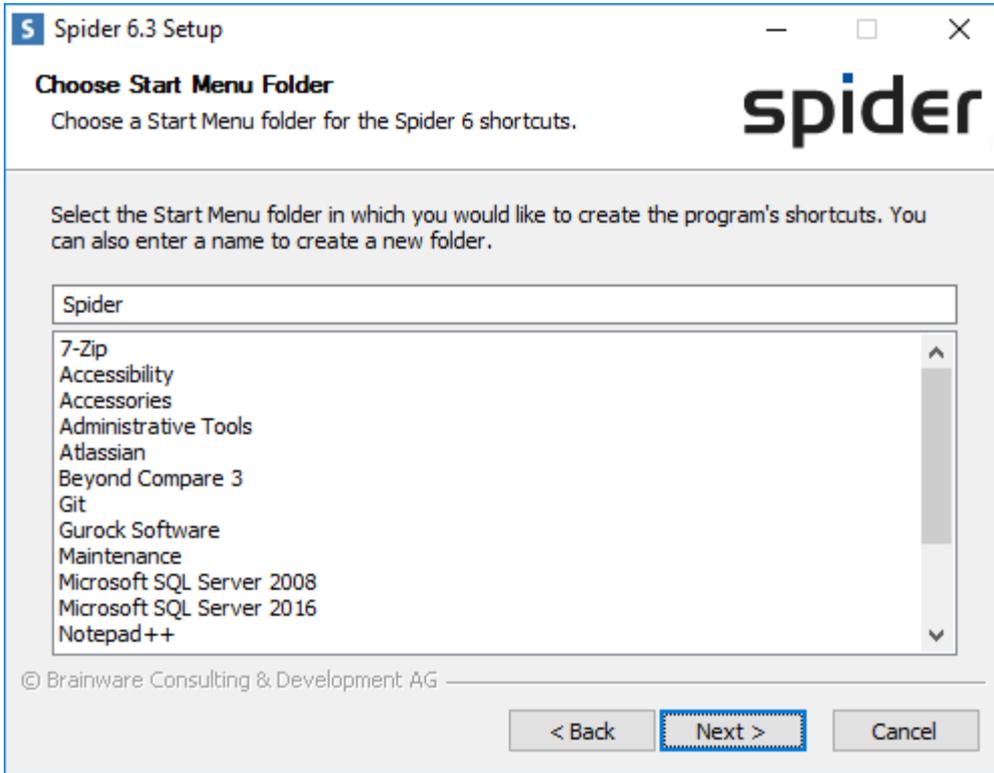
3.2.5 Installation directory

In the following step, you can select a target directory for the installation. You may change the proposed default path.



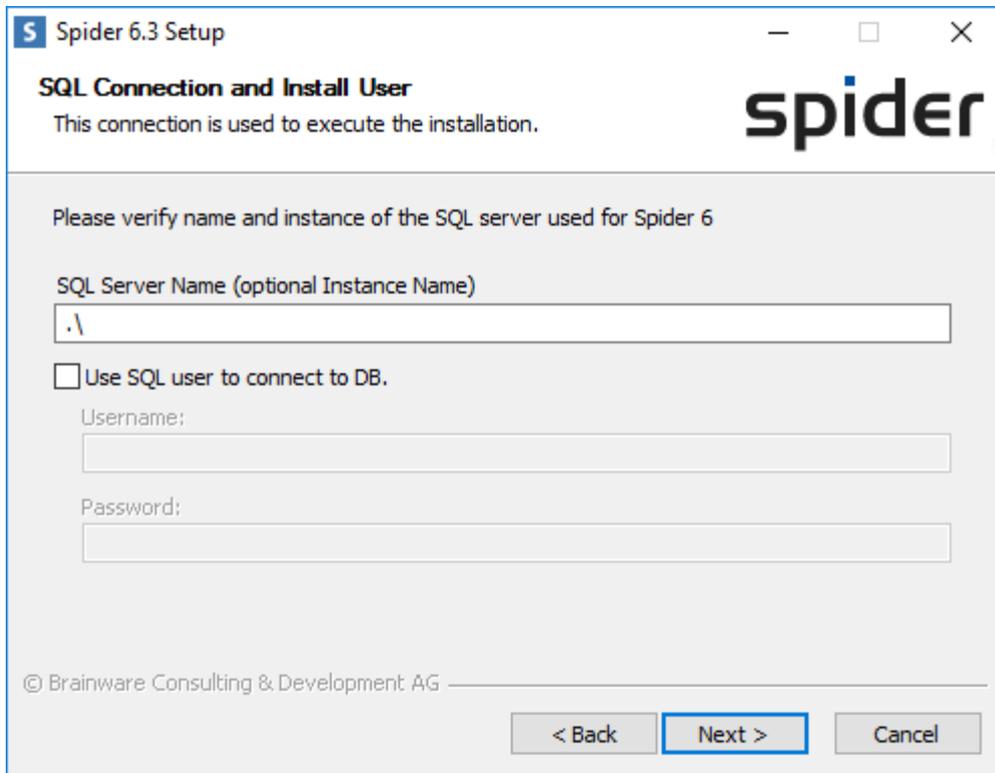
3.2.6 Start menu item

Here, you can determine the folder used by Spider for the start menu.



3.2.7 Database server

In the following step, the installation assistant will ask you to specify the name and the instance of a Microsoft SQL Server, on which the Spider databases are to be installed.



The screenshot shows a Windows-style dialog box titled "Spider 6.3 Setup". The main heading is "SQL Connection and Install User" with a sub-note: "This connection is used to execute the installation." The "spider" logo is in the top right. The instruction reads: "Please verify name and instance of the SQL server used for Spider 6". There is a text input field for "SQL Server Name (optional Instance Name)" containing ".\". Below it is a checkbox labeled "Use SQL user to connect to DB." which is unchecked. Underneath are fields for "Username:" and "Password:". At the bottom left is the copyright notice "© Brainware Consulting & Development AG". At the bottom right are three buttons: "< Back", "Next >" (highlighted with a blue border), and "Cancel".

The user, with which the connection is established, can either be the logged-in (Windows) user or an SQL user.

To be able to use an SQL user, you must tick the check box **Use SQL user for database connection** and fill in the fields **User name** and **Password** with the desired data.

S Spider 6.3 Setup

SQL Connection and Install User
This connection is used to execute the installation.

Please verify name and instance of the SQL server used for Spider 6

SQL Server Name (optional Instance Name)
.\

Use SQL user to connect to DB.

Username:
<SQL user>

Password:
●●●●

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< Back Next > Cancel

Note The users have to be set up beforehand on the database server with the corresponding rights. Depending on the rights of the user, the subsequent dialogs will show different options.

Field	Description
SQL server name	Name of the SQL server, including instance name and port if required e.g. SQLSERVER\SQLINSTANZ,1234
Using SQL users for database connection	Select whether to use the logged-in domain user or an SQL user.
User name	Name of SQL user.
Password	Password of the SQL user.

3.2.8 Index proxy server

Next, you can select whether the index proxy shall be configured during the setup.

The Index Proxy Server is part of the Enterprise Services Infrastructure (ESI).

S Spider 6.3 Setup

Index Proxy
Index Proxy configuration details

Use Index Proxy

Index Proxy Portal server name
servername.domain.suffix

Index Proxy Portal server port
7080

Username for Token Service account
<Client ID>

Password for the Token Service account

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< Back **Next >** Cancel

By ticking the check box, the dialog will be activated and the required data can be entered.

S Spider 6.3 Setup

Index Proxy
Index Proxy configuration details

Use Index Proxy

Index Proxy Portal server name
servername.domain.suffix

Index Proxy Portal server port
7080

Username for Token Service account
<Client ID>

Password for the Token Service account
.....

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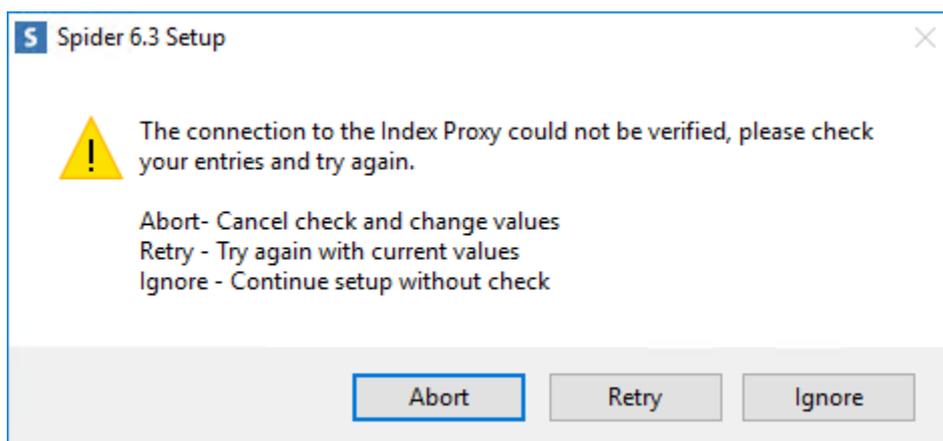
< Back **Next >** Cancel

Field	Description
Use the index proxy	Activation of the dialog and query of the details

Field	Description
Name of the index proxy portal server	Name (FQDN) of the server, on which the index proxy is installed,
Port of the index proxy portal servers	Port (default: 7080) on which the index proxy reacts to requests
User name of the token service account	The client ID of the user which shall be used for the connection to the index proxy; the client ID has been created during the installation of the index proxy. Observe capital and small letters for the client ID!
Password of the token service account	Password belonging to the client ID.

After entering all data and selecting the **Next >** button, the connection to the index proxy will be checked.

If an error should occur, the following message will be displayed.



Button	Description
Abort	The check may be aborted to correct the values. Then the values will be rechecked.
Retry	New try with the current values
Ignore	The dialog can be closed without a positive check result. The installation will be carried out with the values specified in the dialog.

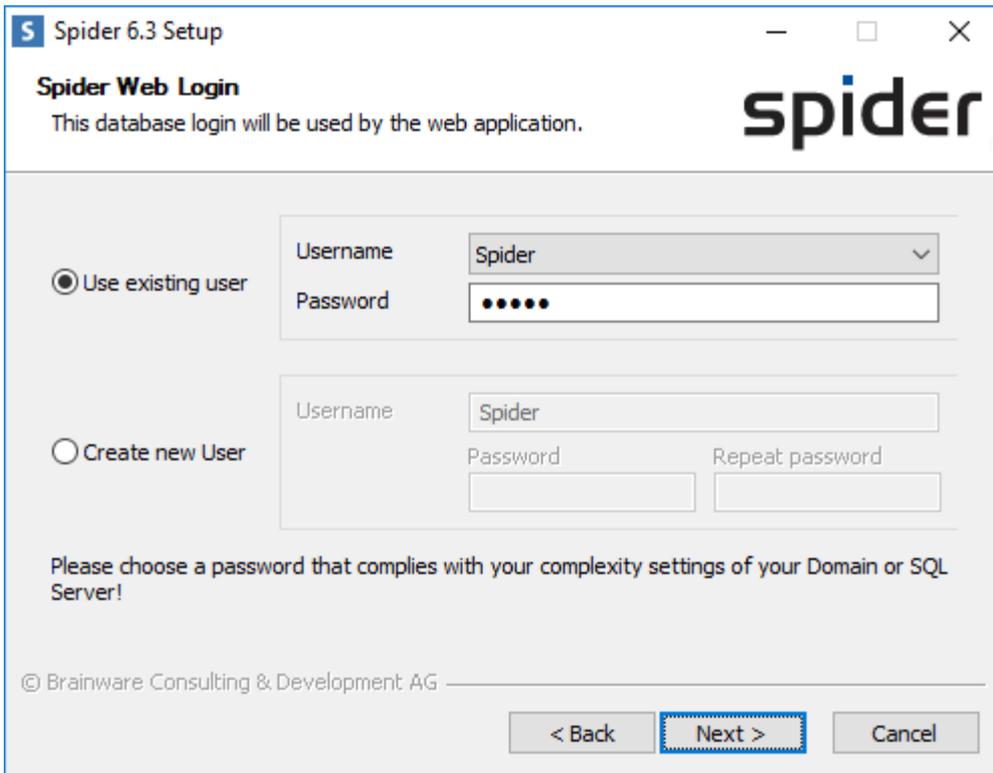
3.2.9 Web Logins

Spider

The Spider Web login is a database user, which is required by the product components for accessing the databases. It is used by Spider Web and the Spider services.

For the Web Login, you can either create new users or use existing users if the SQL installation user possesses the rights to create a new login on the database server.

Use an existing user



S Spider 6.3 Setup

Spider Web Login
This database login will be used by the web application.

spider

Use existing user

 Username: Spider

 Password: ●●●●●

Create new User

 Username: Spider

 Password:

 Repeat password:

Please choose a password that complies with your complexity settings of your Domain or SQL Server!

© Brainware Consulting & Development AG

< Back Next > Cancel

Field	Description
Use an existing user	Select the radio button to enter the data of an existing user
User name	The drop-down can be used to select the users found on the SQL server.
Password	Password of the selected user

Create new user

Field	Description
Create new user	Select the radio button to let the setup create a new user.
User name	Desired user name
Password	Password for the user to be created.

Note The option to create a user will only be provided if the corresponding rights have been granted. The users have to be set up beforehand on the database server with the corresponding rights.

Please select a password which corresponds to the complexity guidelines of your domain and/or your SQL server.

SpiderAdmin

The Spider admin login is used to access the Admin tool for administrating the database on the business layer.

As long as the SQL installation user possesses the rights for creating a new login on the database server, a new user may be created here. Otherwise, an existing user can be used.

Use an existing user

Field	Description
Use an existing user	Select the radio button to enter the data of an existing user
User name	The drop-down can be used to select the users found on the SQL server.
Password	Password of the selected user

Create new user

Field	Description
Create new user	Select the radio button to let the setup create a new user.
User name	Desired user name
Password	Password for the user to be created.

Note If it is only possible to create a user if the corresponding rights have been granted, i.e. users must be setup in advance on the database server with the appropriate rights.

Please select a password which corresponds to the complexity guidelines of your domain and/or your SQL server.

3.2.10 Database names

The databases can be either created in advance or by the setup.

Note The new databases are created using the default settings of the SQL server. If you need specific settings, the database must be provided in advance on the SQL server.

Spider supports database names with up to 50 characters.

Select database created in advance

The screenshot shows the 'Spider 6.3 Setup' window with the 'Databases' section. The title bar reads 'Spider 6.3 Setup'. Below the title, it says 'Databases' and 'Please choose your databases'. The main area contains the instruction 'Please choose an existing database or specify a new one to create.' followed by five rows of database selection: Core (SpiderCore), Asset (SpiderAsset), Contract (SpiderContract), Licence (SpiderLicence), and Integration (SpiderIntegration). Each row has a dropdown menu and a text input field. Below these are 'Prefix' and 'Suffix' text input fields. At the bottom, there is a copyright notice '© Brainware Consulting & Development AG' and three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

Select the databases detected on the SQL server from the corresponding drop-down for each product.

Note The Integration database is only available for specific license types.

The following databases are required for the installation:

- Core
- Core_TempDB
- Core_SesstionState
- Asset
- License
- Contract
- (Integration)

Attention The database names may be chosen freely; if the databases are created in advance, you have to observe that the TempDB and the SessionState databases must be created according to the template

<Name of the core database>_TempDB
 <Name of the Core database>_SessionState.
 The database names must not exceed a length of 50 characters.

Let databases be created by the setup.

S Spider 6.3 Setup

Databases
Please choose your databases

Please choose an existing database or specify a new one to create.

Core	<Create new database>	SpiderCore
Asset	<Create new database>	SpiderAsset
Contract	<Create new database>	SpiderContract
Licence	<Create new database>	SpiderLicence
Integration	<Create new database>	SpiderIntegration

Prefix: Spider Suffix:

New databases will be created using the standard Settings of the SQL server.

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< Back Next > Cancel

Field	Description
Core, Asset, Contract, License, Integration	Name of the databases which are available for selection.
Prefix	Prefix which is put in front of all(!) database names.
Suffix	Suffix which is put at the back of all(!) database names.

The names of the product databases are pre-defined as

- Core
- Asset
- Contract
- License
- Integration

Changes can be made via adaptation of the prefix or suffix.

Attention Theoretically, also a mix of newly created and existing databases may be possible. However, we do not recommend to use a mixed creation of databases.

3.2.11 Language and format settings

The language selected for Settings determines the basic language with which the Settings are installed. These settings cannot be changed later on.

The default culture for Spider, however, may also be changed later on.

S Spider 6.3 Setup

Localization
Please choose your settings.

spider

Standard Culture
en-GB

Settings language
English

Reference currency
GBP - (Pound Sterling, £)

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< Back Next > Cancel

3.2.12 SMTP settings

The SMTP server is used to send the different e-mail reminders from Spider. You will need a user for access to the SMTP server.

Field	Description
SMTP server	FQDN of the SMTP server
SMTP user	User ID used to authenticate oneself for the SMTP server
Password	Password of the above mentioned user
Sender	Sending address used to send the e-mails of Spider.
Use SSL	If selected, the communication with the SMTP server is tried with SSL (if supported by the SMTP server)

Note These data will be entered in each product and used by the Spider services to send e-mails. A later setup or change of the SMTP settings has to be made in each product.

3.2.13 Administration account

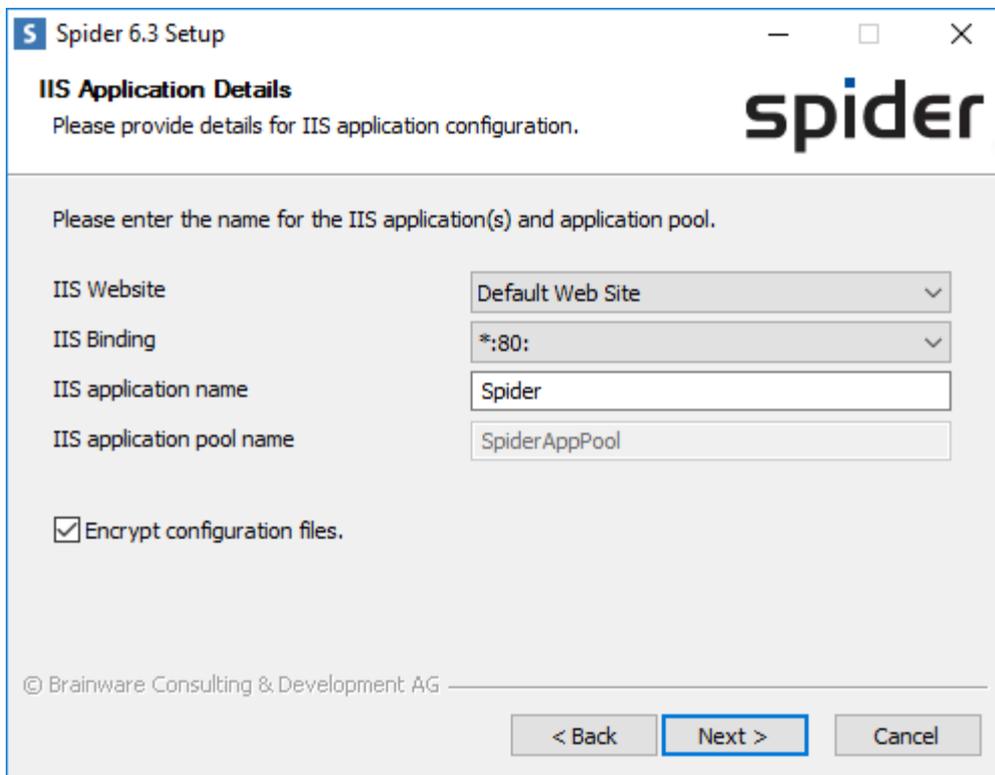
The Administrator account is the account for managing Spider. This account obtains administrative rights in parts of Spider and is available after installation for the access of the <Spider> Web.

Field	Description
Login	Login of the user with which a login to Spider-Web is possible.
User name	Name of the user
Password	Password used for creating the login.

3.2.14 IIS configuration

You can determine the IIS application name for the Spider Web, the default is "Spider". The Spider Web will then be available under `http://server name/Spider`.

All other settings result from the selected application name and cannot be altered. In this step, you can set the encryption of the configuration files only.



Field	Description
IIS application name	Name given to the IIS application in the course of the installation.
Encrypt configuration files.	By selecting the check box, the details, which are stored for the connection between <Spider> Web and database, will be encrypted.

Note Details for encryption and decryption of the IIS configuration can be found in chapter [Encryption of the configuration](#) (on page 88).

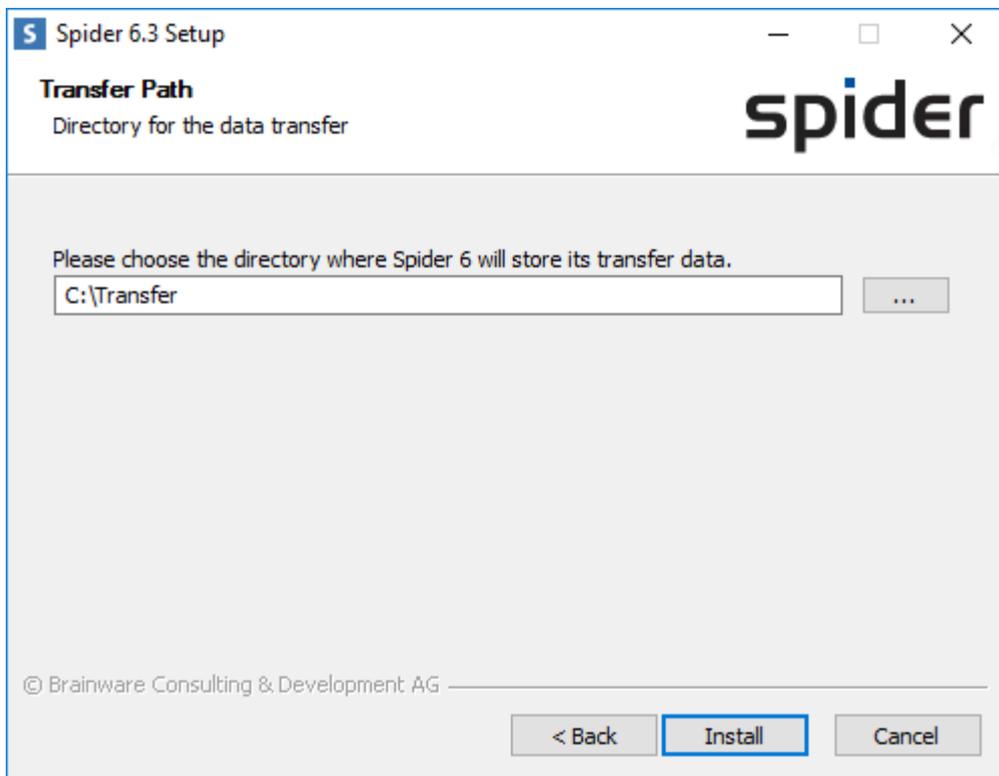
Larger environments or frequent connection timeouts may require to add the parameter **Max Pool Size=50000;Pooling=True**; to your web config file

3.2.15 Transfer directory

In the last step of the installation, you will be asked to specify a directory for the file transfer.

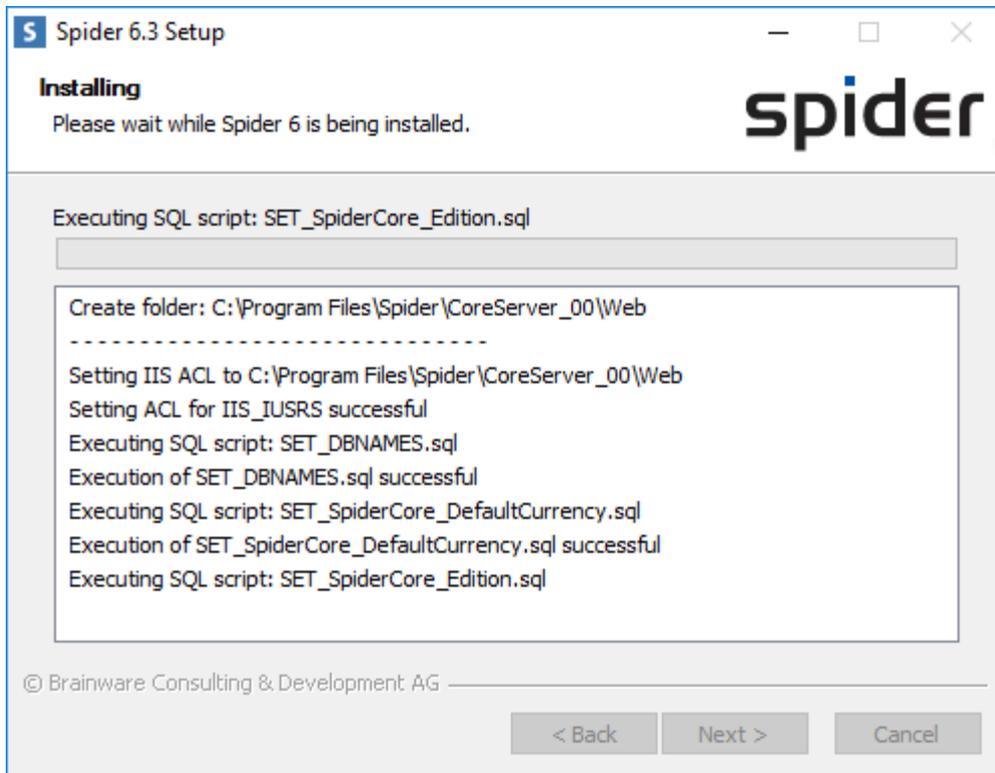
The transfer directory provides the working path for imports and exports of various services of Spider.

Then click on "Install" to start the installation.

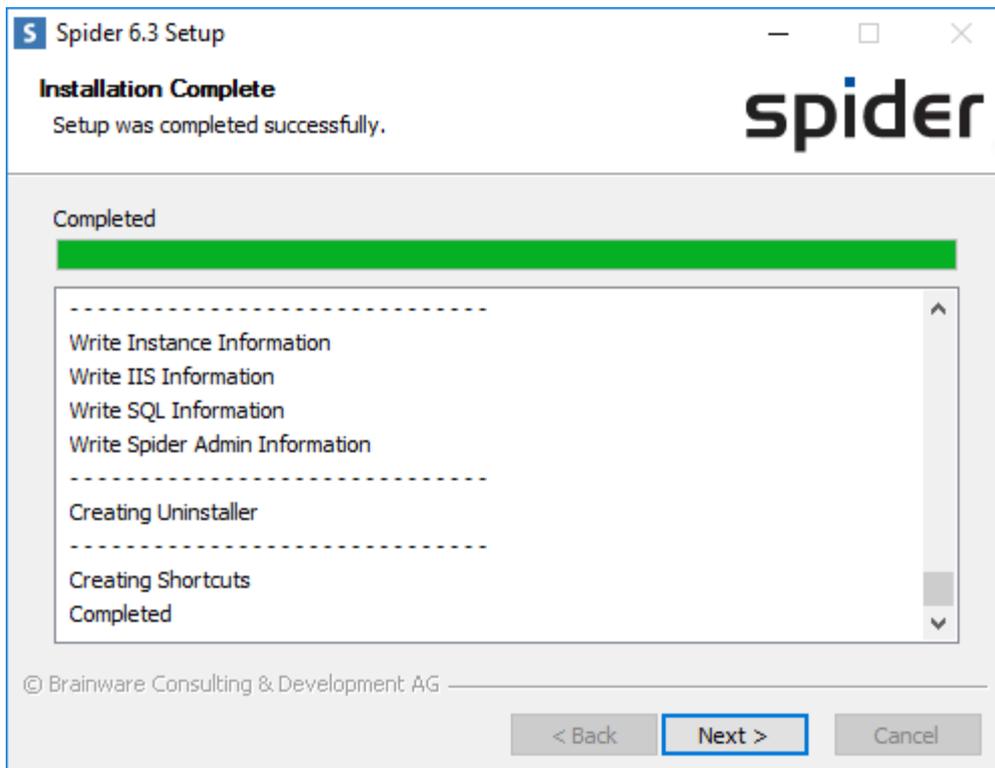


3.2.16 Installation

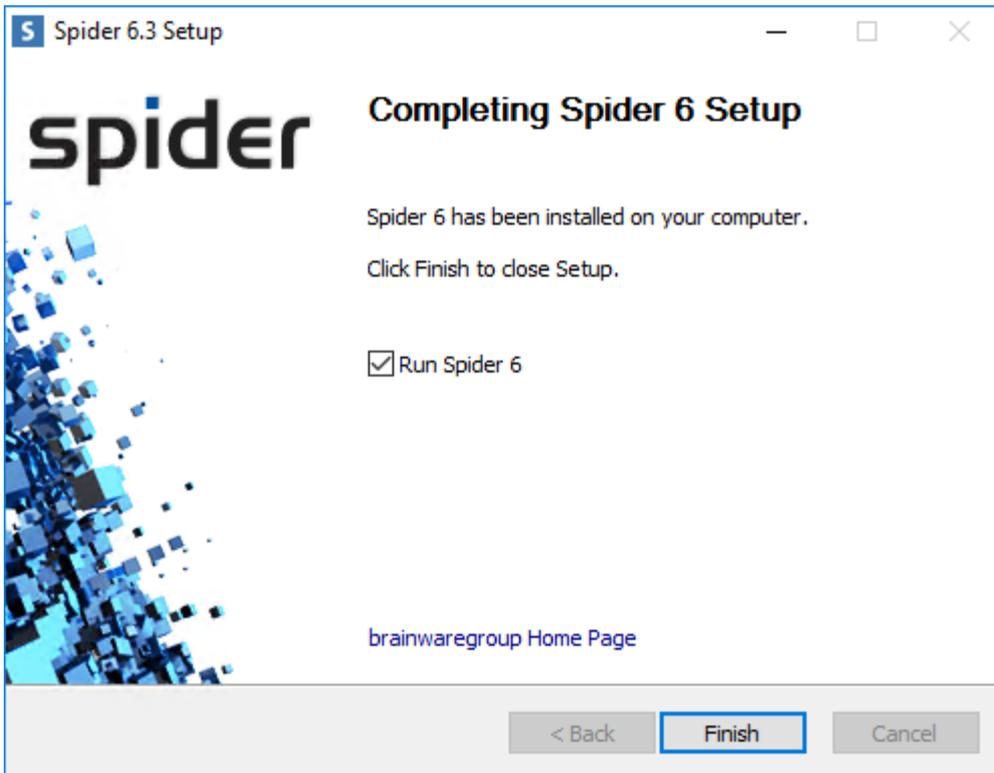
The installation assistant will now install Spider. This can take some time. Please wait, until the installation is completed.



The successful completion of the installation will be shown in the progress dialog.



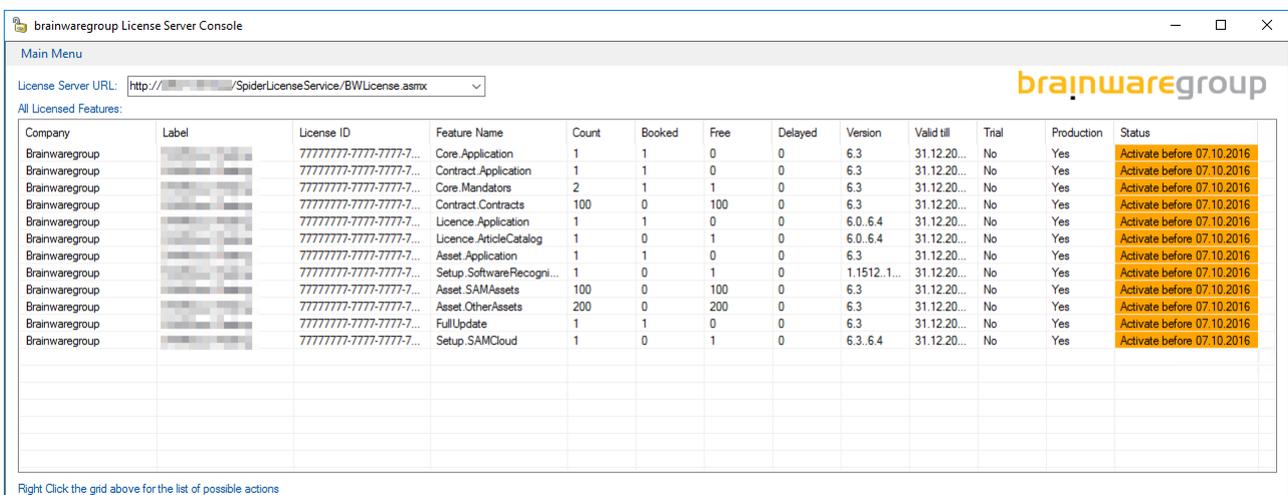
The setup has been completed successfully and can now be closed.



After completion of the installation, a log file will be written. For details to the log files, please refer to chapter [Log files](#) (on page 208).

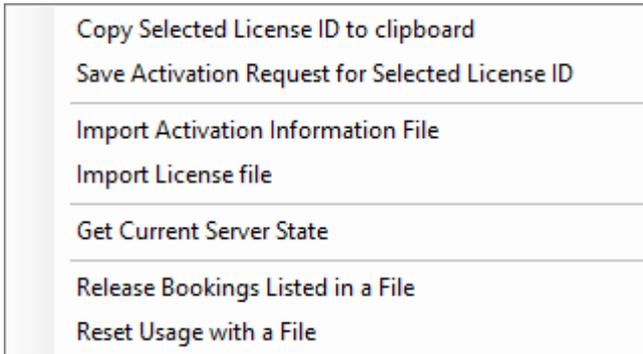
3.2.17 Activate the license

The installation of Spider requires a valid license. In order to be able to use Spider after the installation, this license must be activated. The license is activated via the license console (via Start menu -> Spider -> License Console).



Use the context menu to create a file for the license activation request. Select the item **Save Activation Information File**, save the created file and send it to Flexera

Flexera creates an activation file, which is imported via the item **Import Activation Information File** of the context menu.



brainwaregroup License Server Console

Main Menu

License Server URL:

All Licensed Features:

Company	Label	License ID	Feature Name	Count	Booked	Free	Delayed	Version	Valid till	Trial	Production	Status
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Core Application	1	1	0	0	6.3	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Contract Application	1	1	0	0	6.3	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Core Mandators	2	1	1	0	6.3	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Contract Contracts	100	0	100	0	6.3	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Licence Application	1	1	0	0	6.0.6.4	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Licence ArticleCatalog	1	0	1	0	6.0.6.4	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Asset Application	1	1	0	0	6.3	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Setup SoftwareRecogni...	1	0	1	0	1.1512.1...	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Asset SAMAssets	100	0	100	0	6.3	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Asset OtherAssets	200	0	200	0	6.3	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Full Update	1	1	0	0	6.3	31.12.20...	No	Yes	Ok
Brainwaregroup		TTTTTTTT-TTTT-TTTT-7...	Setup SAMCloud	1	0	1	0	6.3.6.4	31.12.20...	No	Yes	Ok

Right Click the grid above for the list of possible actions

Spider is now ready to use. The first login on a client can be made with the user data used in the setup.

3.3 Advanced configuration

In this chapter, advanced configurations for Spider are described.

3.3.1 Operation with domain account

Alternatively to the operation with SQL users, Spider can also be operated with a domain user.

Please find following steps below for a more detailed explanation

- Preparation of the SQL server
- Permission of the IIS
- Adaption of the IIS application pool
- Conversion of the service accounts
- Conversion of the connection strings

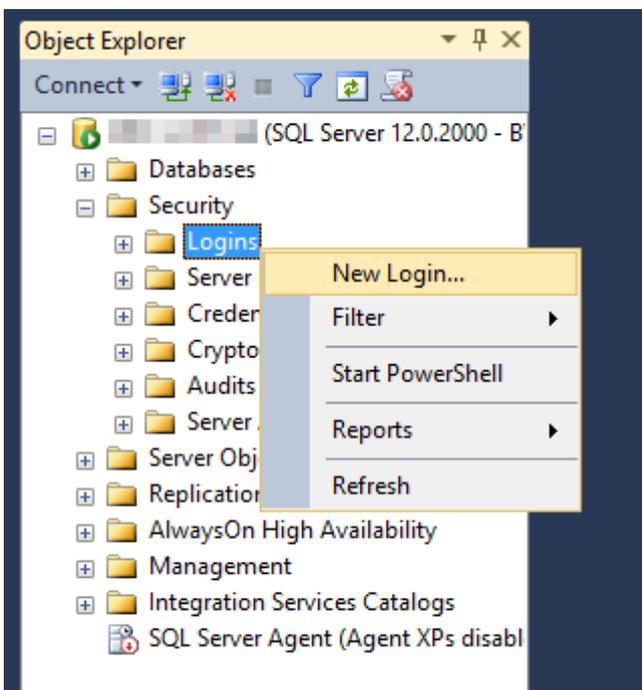
Precondition:

- A domain account with user rights in the domain

Prepare SQL server

The desired user account must obtain the usage rights in SQL server.

- **Start Microsoft SQL Server Management Studio** and connect to the desired database [\\Instance].
- **Right click on Security > Logins > New Login**



➤ Enter the **Login name:**

Login - New

Select a page: General, Server Roles, User Mapping, Securables, Status

Script Help

Login name: Search...

Windows authentication
 SQL Server authentication

Password:
 Confirm password:
 Specify old password
 Old password:

Enforce password policy
 Enforce password expiration
 User must change password at next login

Mapped to certificate
 Mapped to asymmetric key
 Map to Credential Add

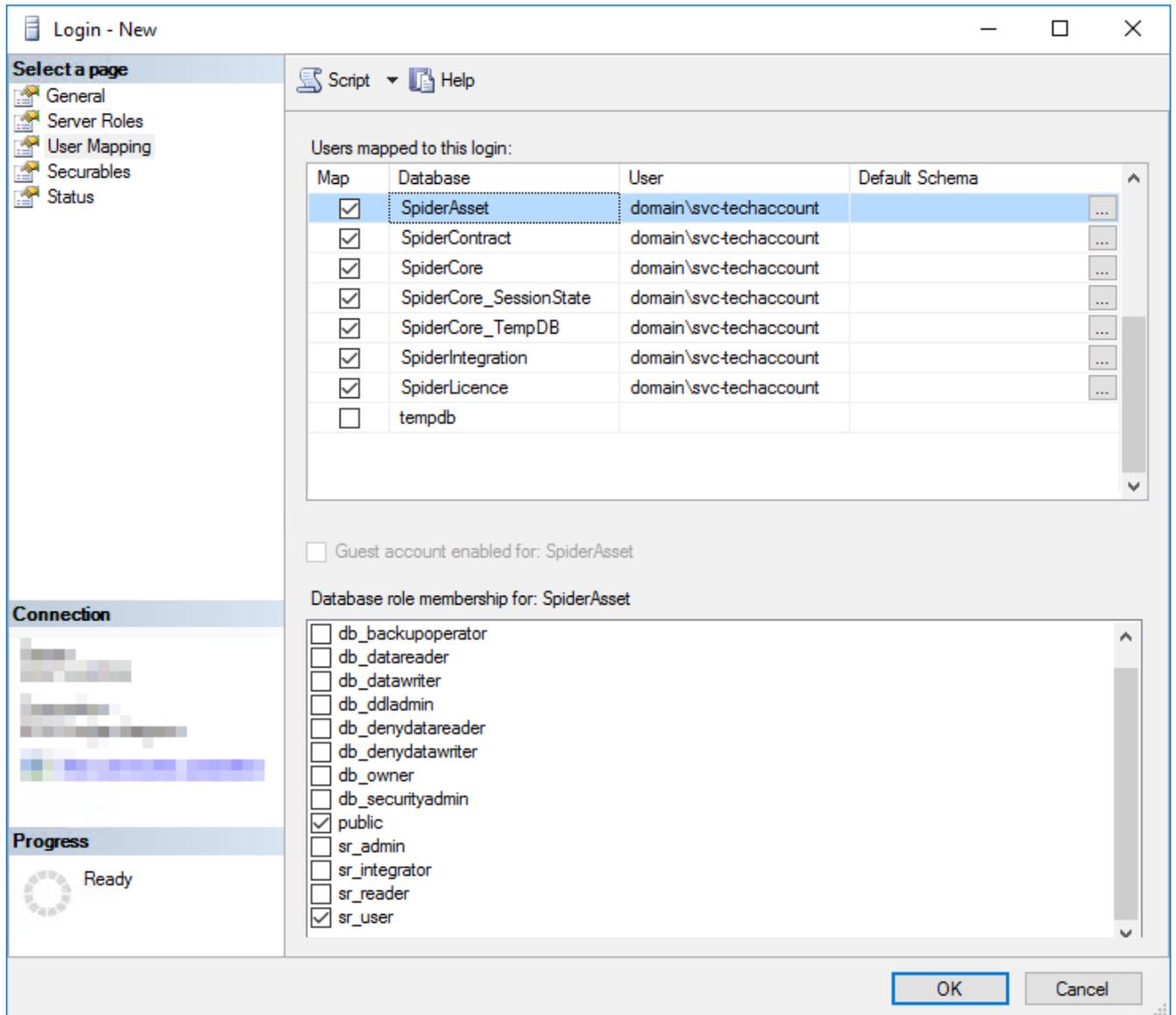
Mapped Credentials	
Credential	Provider

Remove

Default database:
 Default language:

OK Cancel

➤ Navigate to menu item **User Mapping**

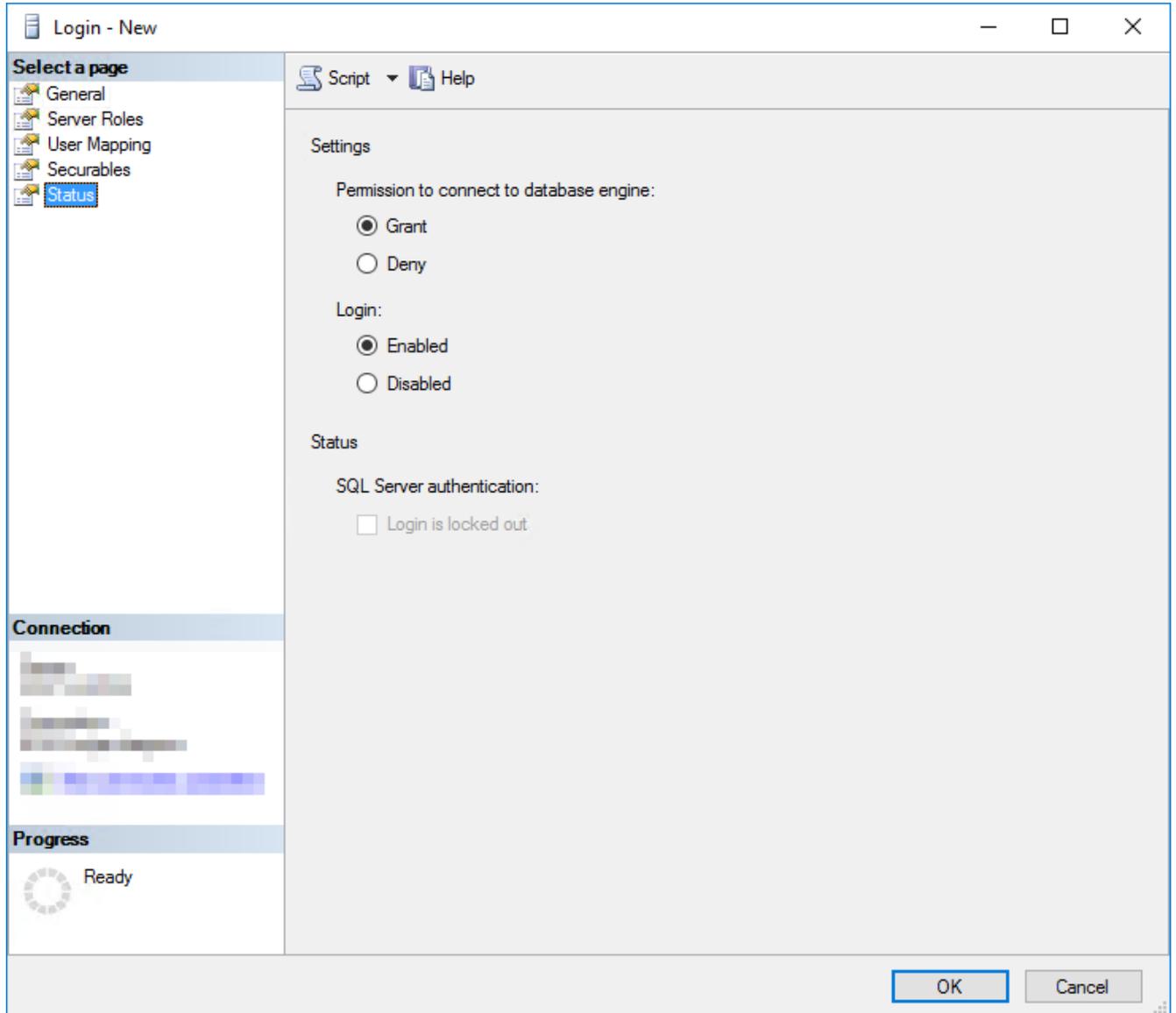


➤ Entering the **Roles memberships** for the Spider databases by setting the tick on **Map** and selecting the membership in the lower part of the dialog.

Database	Database role membership
Asset	public, sr_user
Contract	public, sr_user
Core	public, sr_user
Core_SessionState	public
Core_TempDB	public, sr_user
Integration	public, sr_user
License	public, sr_user

Note The Integration database is not included in all installations or can have another name.

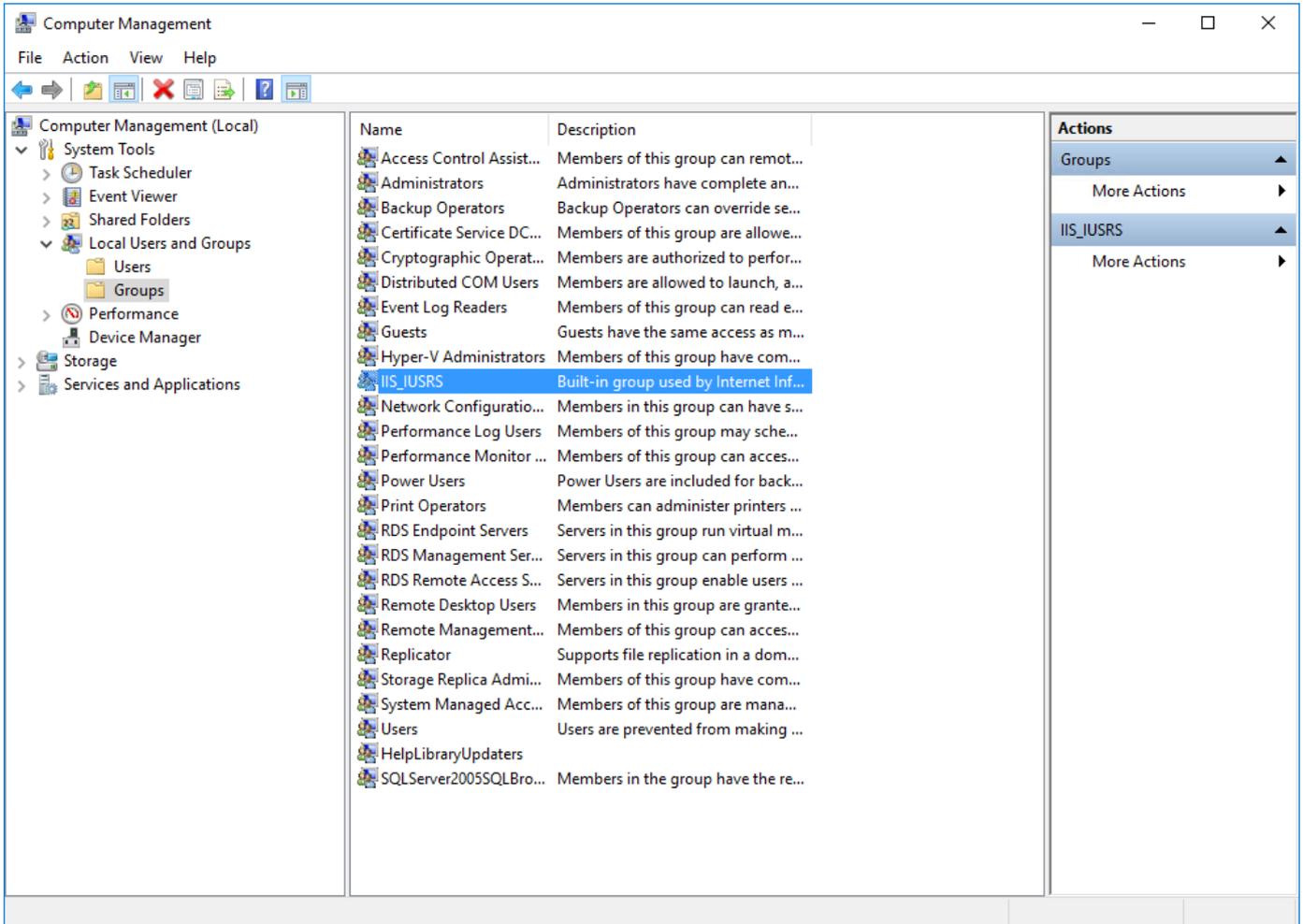
- Navigate to the menu item **Status** and check whether the connecting right has been granted and the login has been activate.



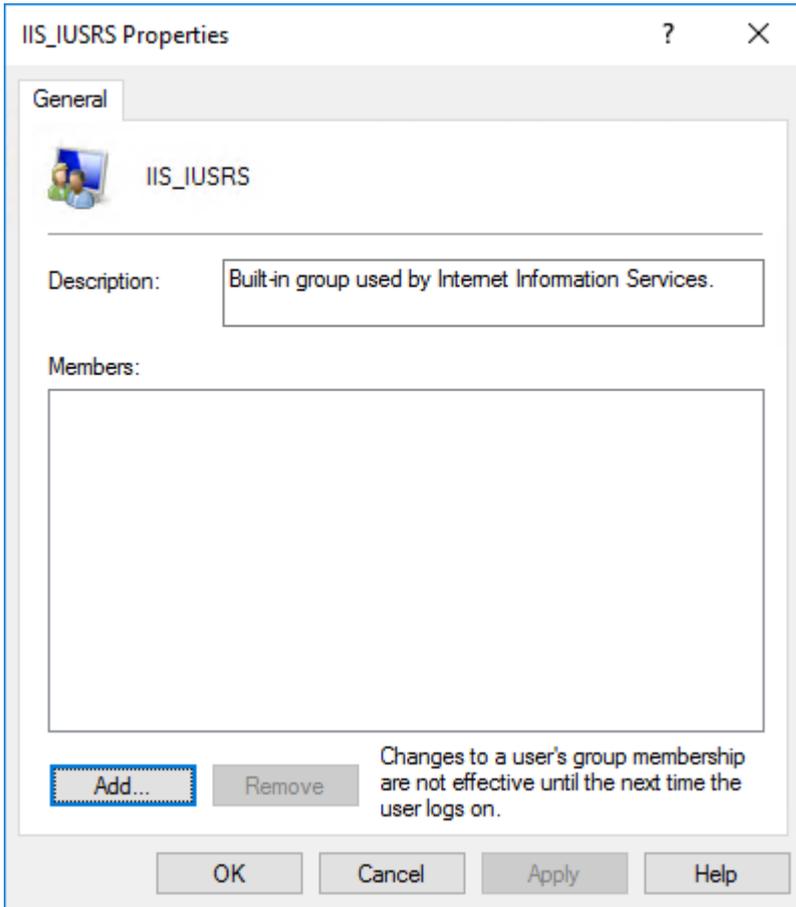
- Exit the dialog with **OK**.

Grant IIS rights to the domain account

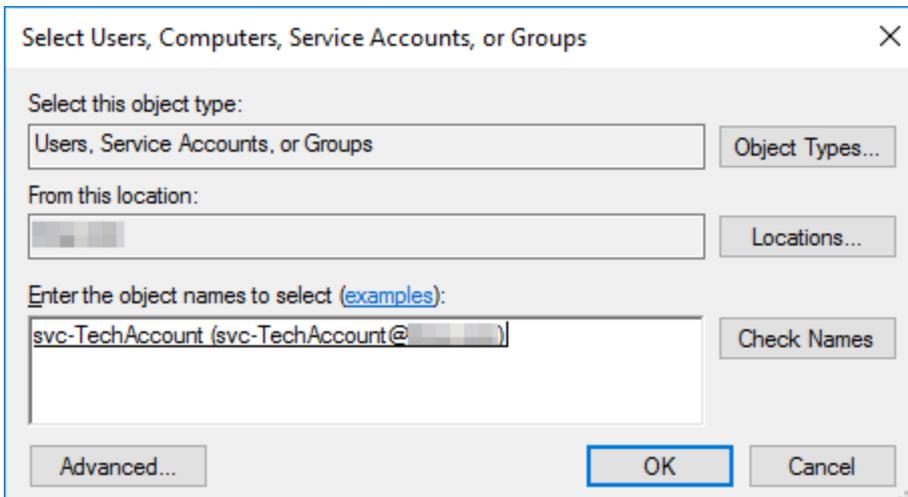
- Start the **Management Control Panel** of the computer
- **Computer Management (local) > System Tool > Local Users and Groups > Groups**



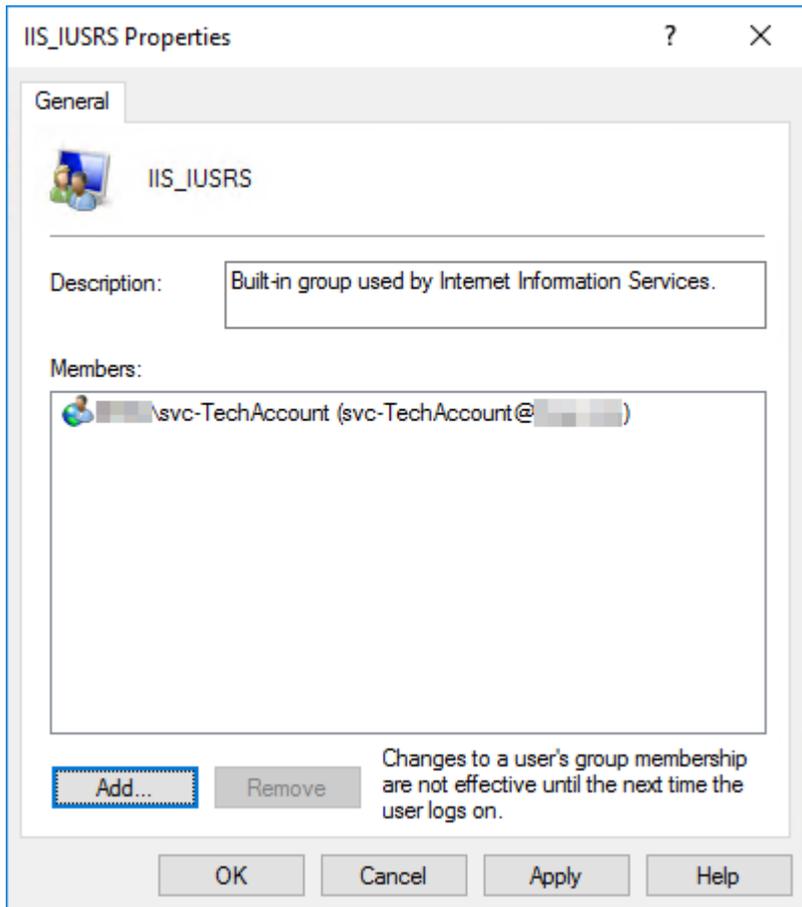
➤ Double click on the group **IIS_IUSRS**



- **Add...** Click on button



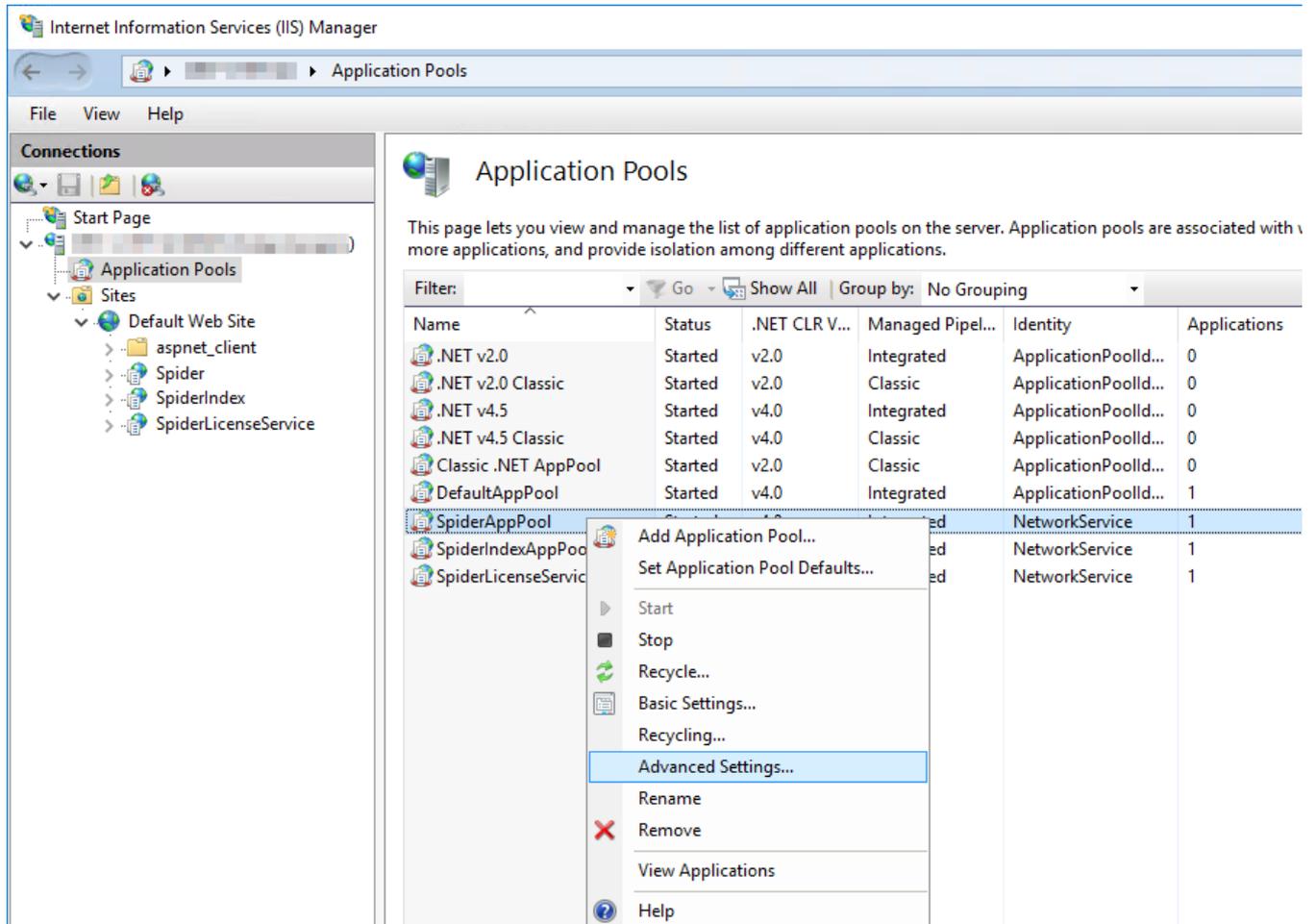
- Enter the domain user name and then exit the dialog with **Check Names > OK**



- Exit the dialog with **OK** and close the **Computer Management**

Adapt the identity of the application pools

- Start the **Internet Information Services (IIS) Manager**
- **Start Page > Application Pools**
- Select the application pool
- Right click on the application pool and select **Advanced Settings...** from the context menu (the name of the application pool has been defined during the installation under [IIS configuration](#) (on page 38))



The screenshot shows the Internet Information Services (IIS) Manager interface. The left pane shows the 'Connections' tree with 'Application Pools' selected under 'Start Page'. The main pane displays the 'Application Pools' page, which includes a table of application pools and a context menu for the selected 'SpiderAppPool'.

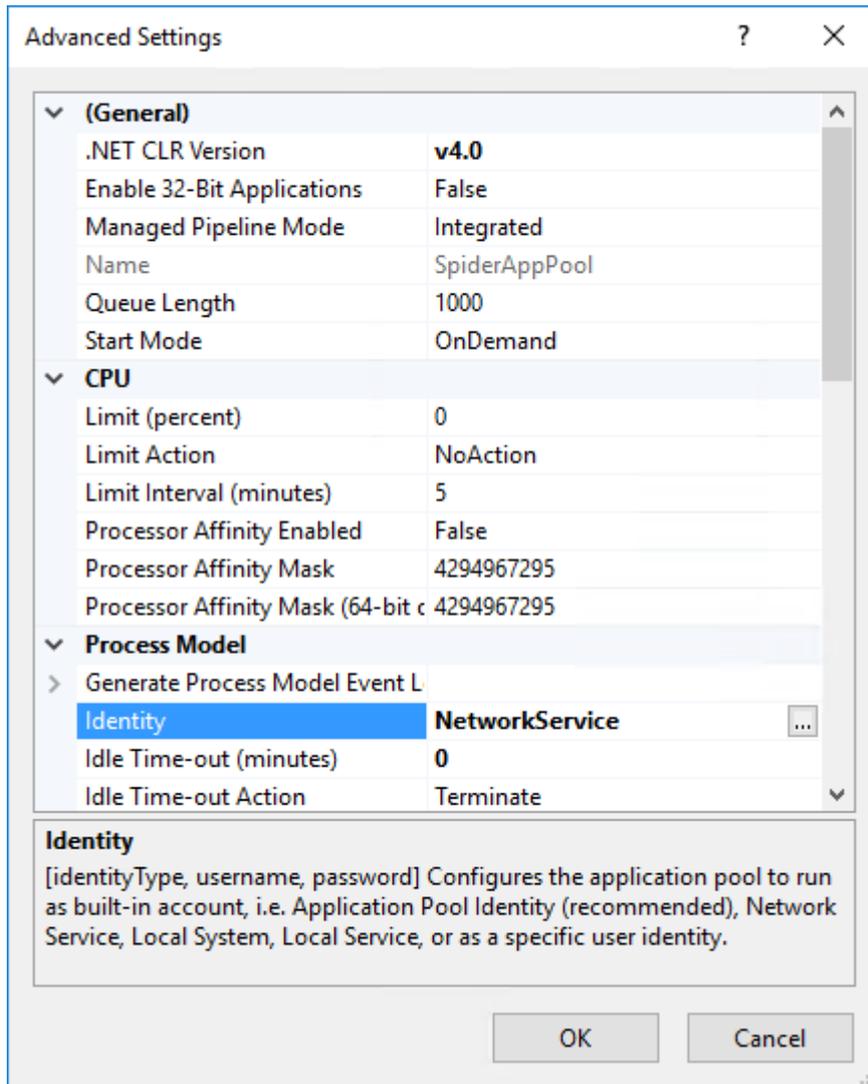
The table lists the following application pools:

Name	Status	.NET CLR V...	Managed Pipel...	Identity	Applications
.NET v2.0	Started	v2.0	Integrated	ApplicationPoolId...	0
.NET v2.0 Classic	Started	v2.0	Classic	ApplicationPoolId...	0
.NET v4.5	Started	v4.0	Integrated	ApplicationPoolId...	0
.NET v4.5 Classic	Started	v4.0	Classic	ApplicationPoolId...	0
Classic .NET AppPool	Started	v2.0	Classic	ApplicationPoolId...	0
DefaultAppPool	Started	v4.0	Integrated	ApplicationPoolId...	1
SpiderAppPool	Started	v4.0	Integrated	NetworkService	1
SpiderIndexAppPool	Started	v4.0	Integrated	NetworkService	1
SpiderLicenseService	Started	v4.0	Integrated	NetworkService	1

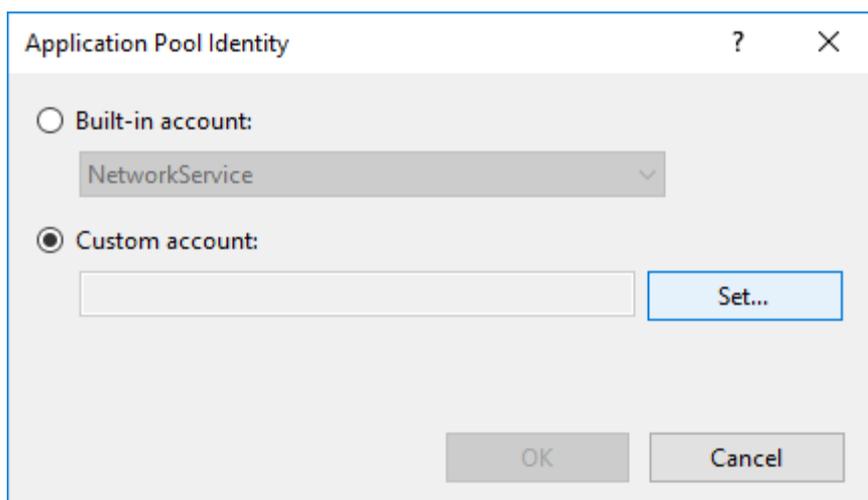
The context menu for 'SpiderAppPool' is open, showing the following options:

- Add Application Pool...
- Set Application Pool Defaults...
- Start
- Stop
- Recycle...
- Basic Settings...
- Recycling...
- Advanced Settings...** (highlighted)
- Rename
- Remove
- View Applications
- Help

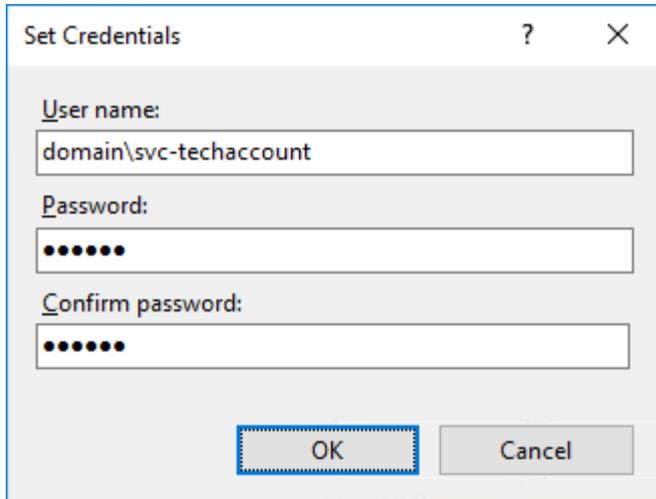
- Select under **Process Model > Identity** the ... button



- Select the radio button under **Custom Account:** and click on the **Set...** button.



- Enter the user name and password of the domain user and click on **OK**.



Set Credentials

User name:
domain\svc-techaccount

Password:
●●●●●●

Confirm password:
●●●●●●

OK Cancel

- Exit all dialogs with **OK**.
- Repeat all previous steps with the application pool with suffix IndexAppPool

SpiderAppPool	Started	v4.0	Integrated	domain\svc-techaccount	1
SpiderIndexAppPool	Started	v4.0	Integrated	domain\svc-techaccount	1

- To finish the process, restart the IIS with command **iisreset**.

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.10586]
(c) 2016 Microsoft Corporation. All rights reserved.
C:\Users\>iisreset

Attempting stop...
Internet services successfully stopped
Attempting start...
Internet services successfully restarted

C:\Users\>
```

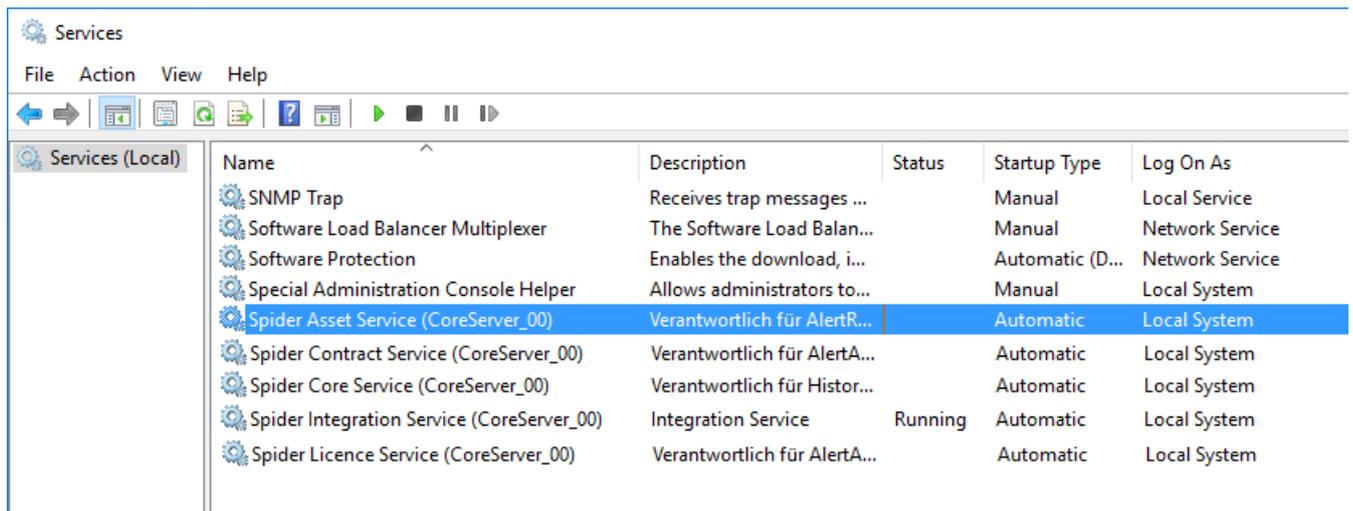
Conversion of the access data

In order to use the domain user also for the connection, the different components must be informed about this.

Adapt service accounts

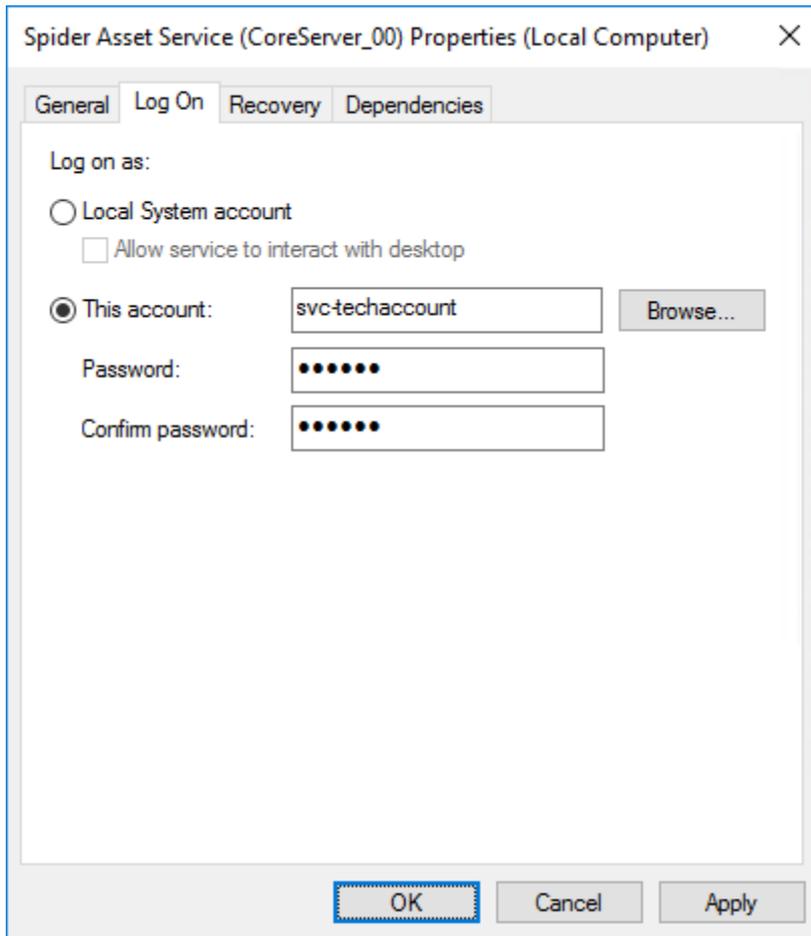
The Spider services must be adapted for the use with the domain user.

- Start the **Management Control Panel** of the computer



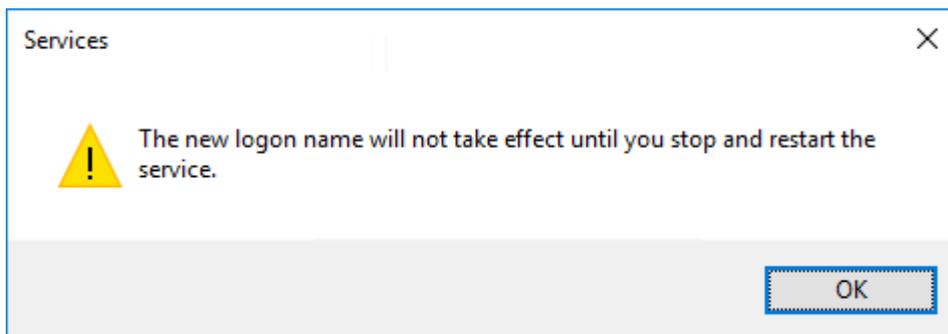
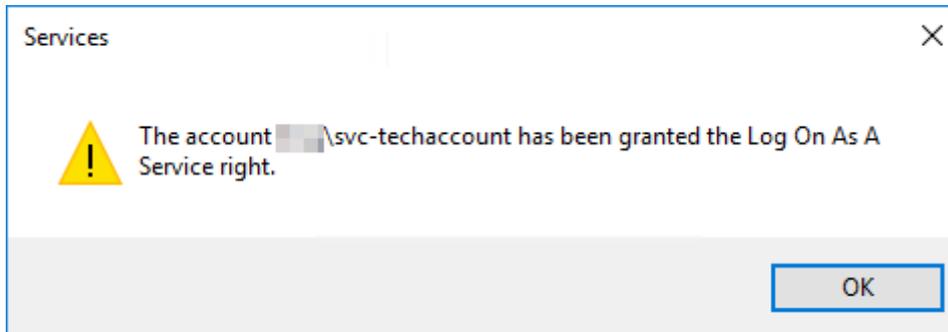
- Select Spider Service and open it with a double click

- Go to the **Log On** ribbon, select **This account** and adapt the data of the domain user.



- **OK** and exit the dialog.

Note In some cases, dialogs may be displayed which inform about the fact that the user has been granted the Log-on-as-a-service right resp. that the service has to be restarted, before the change becomes active.



➤ Repeat the procedure for all Spider services belonging to this instance(CoreServer_xx).

- Asset
- Contract
- Core
- License
- Integration (not always installed)

Attention The services do not have to be started now, but only after the Connection Strings have been adapted.

Adapt the connection strings

The file ConnectionStrings.config is used for the access of application and services. This file must be adapted for each different component.

Storage locations of the connection strings

Component	Storage location
Spider Web	C:\Program Files\Spider\CoreServer_XX\Web_Settings\connectionStrings.config
SessionState	C:\Program Files\Spider\CoreServer_XX\Web_Settings\SessionState.config
IndexProxyApi	C:\Program Files\Spider\CoreServer_XX\IndexProxy_Settings\connectionStrings.config
Services	C:\Program Files\Spider\CoreServer_00\Services\ <servicename>\Spider.<ServiceName>.Service.Exe.config</servicename>

The entries uid=... and pwd=... must be replaced by **Integrated Security=True**.

Spider **Web** and **IndexProxyApi** connectionStrings.config

```
<?xml version="1.0" encoding="utf-8"?>
<connectionStrings>
  <add name="CoreConnectionString" connectionString="server=.;
    database=SpiderCore;
    uid=Spider;
    pwd=abcde;
    application name=Spider;
    persist security info=True;
    packet size=4096"
    providerName="System.Data.SqlClient" />
</connectionStrings>
```

```
<?xml version="1.0" encoding="utf-8"?>
<connectionStrings>
  <add name="CoreConnectionString" connectionString="server=.;
    database=SpiderCore;
    Integrated Security=True;
    application name=Spider;
    persist security info=True;
    packet size=4096"
    providerName="System.Data.SqlClient" />
</connectionStrings>
```

Session State Database

```
<?xml version="1.0" encoding="utf-8"?>
<SessionState mode="SQLServer" sqlConnectionString="Data Source=.;
    Database=SpiderCore_SessionState;
```

```
User Id=Spider;
Password=abcde"
cookieless="UseCookies" timeout="30" allowCustomSqlDatabase="true" />
```

```
<?xml version="1.0" encoding="utf-8"?>
<SessionState mode="SqlServer" sqlConnectionString="Data Source=.;
    Database=SpiderCore_SessionState;
    Integrated Security=True"
cookieless="UseCookies" timeout="30" allowCustomSqlDatabase="true" />
```

Services

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <appSettings>
    <add key="ServiceName" value="Spider Asset Service (CoreServer_00)" />
    <add key="ConnectionString" value="data source=.;
        initial catalog=SpiderAsset;
        User Id=Spider;
        password=abcde;
        persist security info=True;
        Application name=SPAssetSvc_CoreServer_00;
        packet size=4096" />
    <add key="InitializeTimeoutSeconds" value="300" />
  </appSettings>
</configuration>
```

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <appSettings>
    <add key="ServiceName" value="Spider Asset Service (CoreServer_00)" />
    <add key="ConnectionString" value="data source=.;
        initial catalog=SpiderAsset;
        Integrated Security = True;
        persist security info=True;
        Application name=SPAssetSvc_CoreServer_00;
        packet size=4096" />
    <add key="InitializeTimeoutSeconds" value="300" />
  </appSettings>
</configuration>
```

Attention It could happen that the content of certain .config files is encrypted. The decryption process is described in chapter [Encryption of the access data](#) (see "" on page 88).

3.3.2 Subsequent setup of the index proxy

The subsequent setup of the index proxy installation can be carried out via a regular update. There, you will be prompted in each update to set up the [Index Proxy](#) (see "" on page 26) as long as this has not been done, yet.

If this is not working, execute the following steps:

Configuration entries

Entries in the [dbo].[config] table in the Core database

Area: Application.Indexing

Key	Value
Enabled	True
IndexProxyEndpoint	http://<ESIServer>:<Port>/indexproxy/api/2/ e.g. http://servername.domain:7080/indexproxy/api/2/
PortalClientId	User name given in the ESI setup
PortalClientSecret	Password for user name given above
PortalEndpoint	http://<ESIServer>:<Port>/portal/api/2/ e.g. http://servername.domain:7080/portal/api/2/

IIS application connectionStrings.config

The IIS application will be installed parallel to the instance of Spider (Path ..\CoreServer_XX\IndexProxy_Settings). In order to establish a connection between application and database, a so-called connectionStrings.config file must be created in the subfolder _Settings.

Note In case of a manual installation at a later time, the folder "_Settings" must be created first.

The required values can be taken from the connectionStrings.config file of the Spider IIS application (Path: Path ..\CoreServer_XX\Web_Settings).

Login with integrated security

```
<?xml version="1.0" encoding="utf-8"?>
<connectionStrings>
  <add name="CoreConnectionString"
        providerName="System.Data.SqlClient"
        connectionString="server=<SQL server>;
        database=<Core database>;
        Integrated Security=True;
        application name=SpiderIndex;
        persist security info=True;
```

```

        packet size=4096" />
</connectionStrings>

```

Login with SQL user

```

<?xml version="1.0" encoding="utf-8"?>
<connectionStrings>
  <add name="CoreConnectionString"
        providerName="System.Data.SqlClient"
        connectionString="server=<SQL server>;
        database=<Core database>;
        uid=<SQL User>;
        pwd=<SQL User Password>
        Integrated Security=True;
        application name=SpiderIndex;
        persist security info=True;
        packet size=4096" />
</connectionStrings>

```

Note If using SQL users, it might be desirable to locally encrypt the data. You can find the corresponding instructions in [Encryption of the configuration](#) (on page 88).

Settings in the registry

In order to prevent the setup form asking again for the details in the next update, some entries have to be made in the registry.

Key: HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\brainwaregroup\Spider\CoreServer_XX\IndexProxy

Name	Type	Data
IndexProxyClientID	REG_SZ	<User name for the connection with the ESI> The password is not stored on purpose.
IndexProxyServerName	REG_SZ	FQDN of the ESI server
IndexProxyServerPort	REG_SZ	Port of the ESI server (standard: 7080)
UseIndexProxy	REG_SZ	1

3.3.3 Conversion to SSL operation

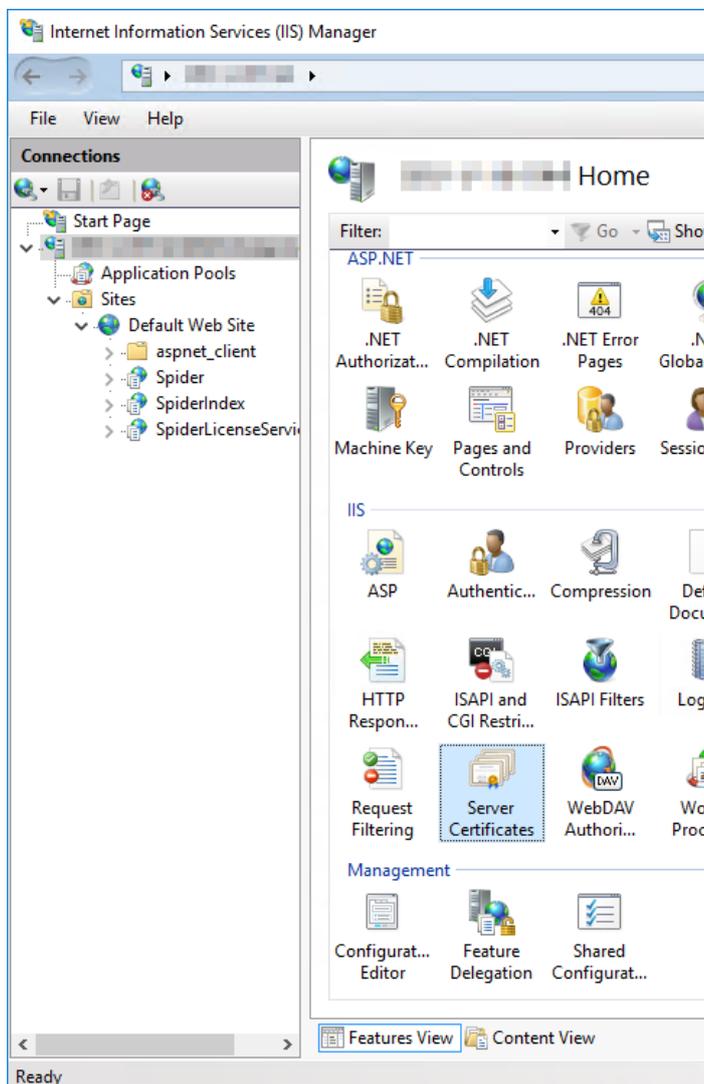
In order to protect the communication, accessing Spider via SSL can be enabled.

Attention The IIS application of the license service is not SSL-capable. Please find below information about how to configure this as an exception.

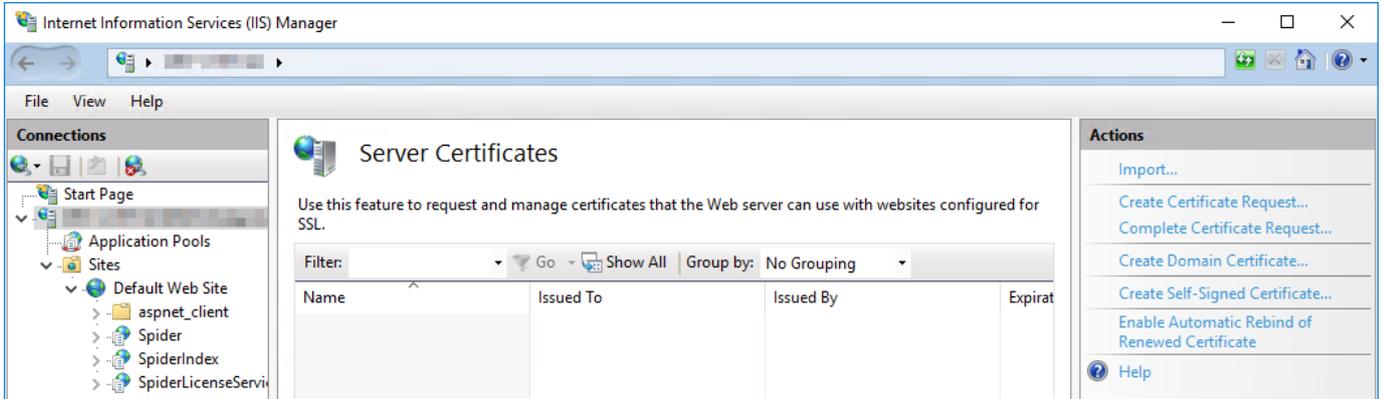
Important A prerequisite for the operation is a valid SSL certificate that is issued to the Spider application server

Configure IIS default web site

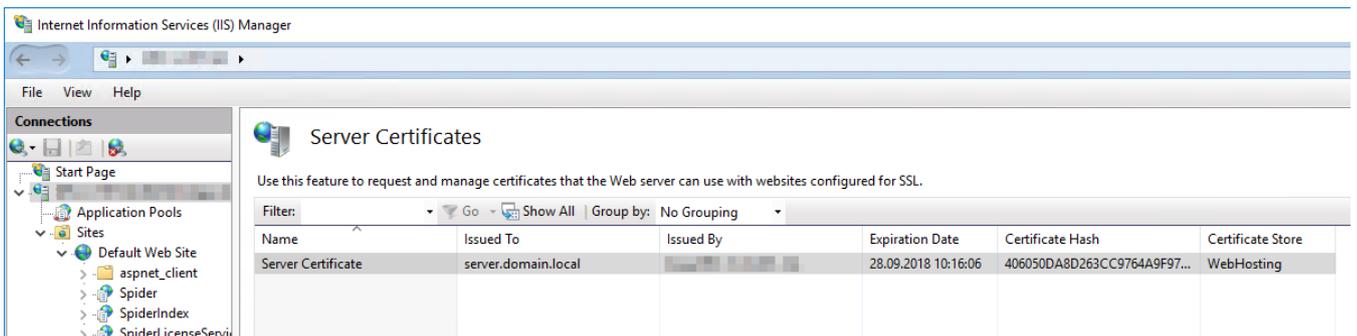
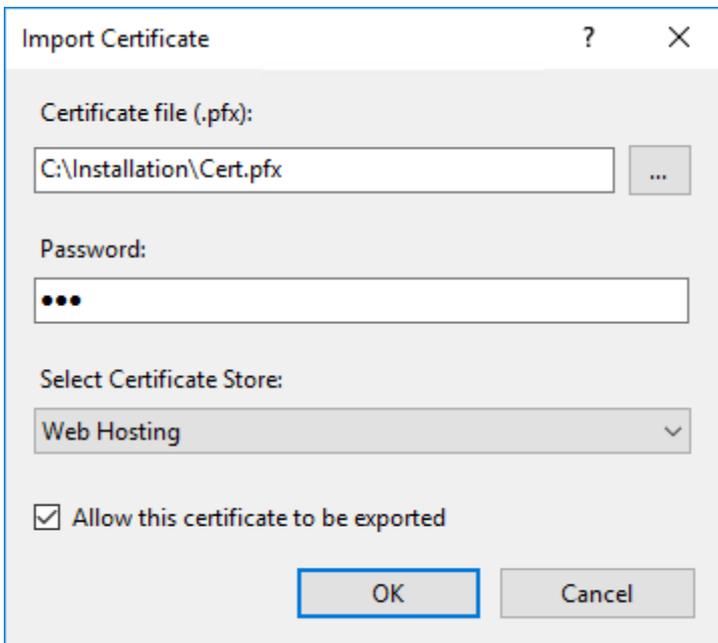
- Start the **Internet Information Services (IIS) Manager**
- Select **server > Server certificates**



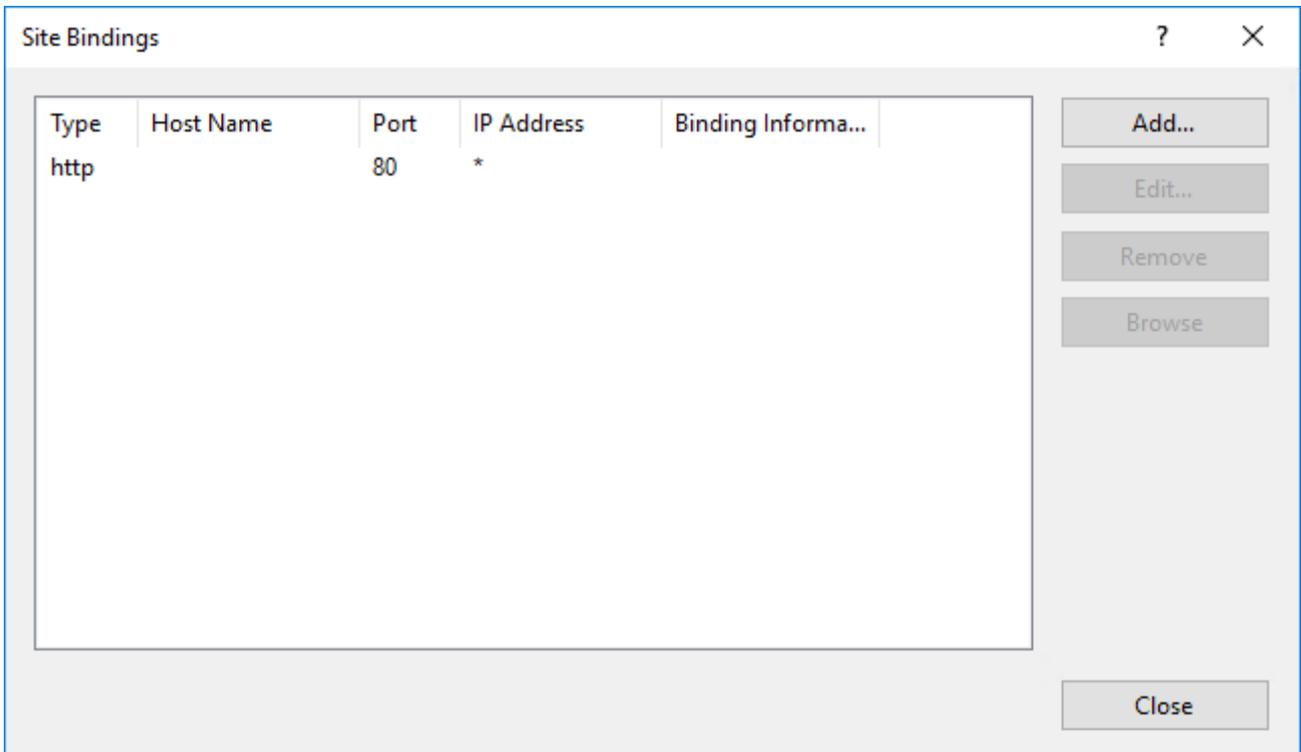
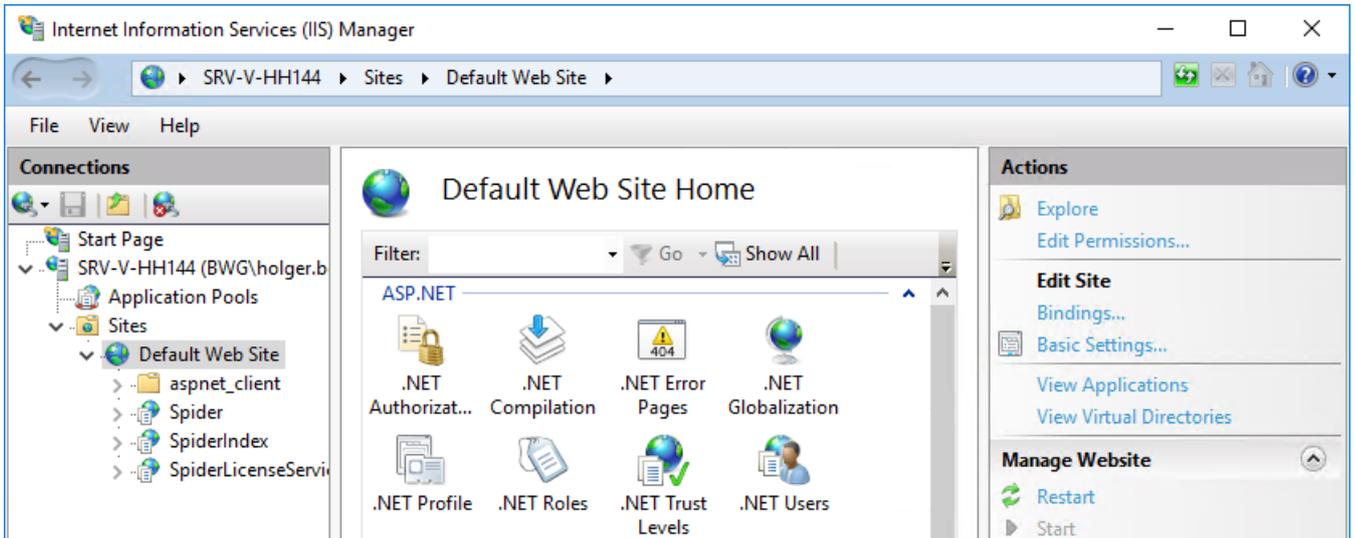
➤ **Actions > Import**



➤ Select the certificate > Enter password > Select certificate store: **Web Hosting > OK**



➤ **Default web site > Edit site > Bindings**



➤ **Add...**

Add Site Binding ? X

Type: **https** IP address: **All Unassigned** Port: **443**

Host name: **server.domain.local**

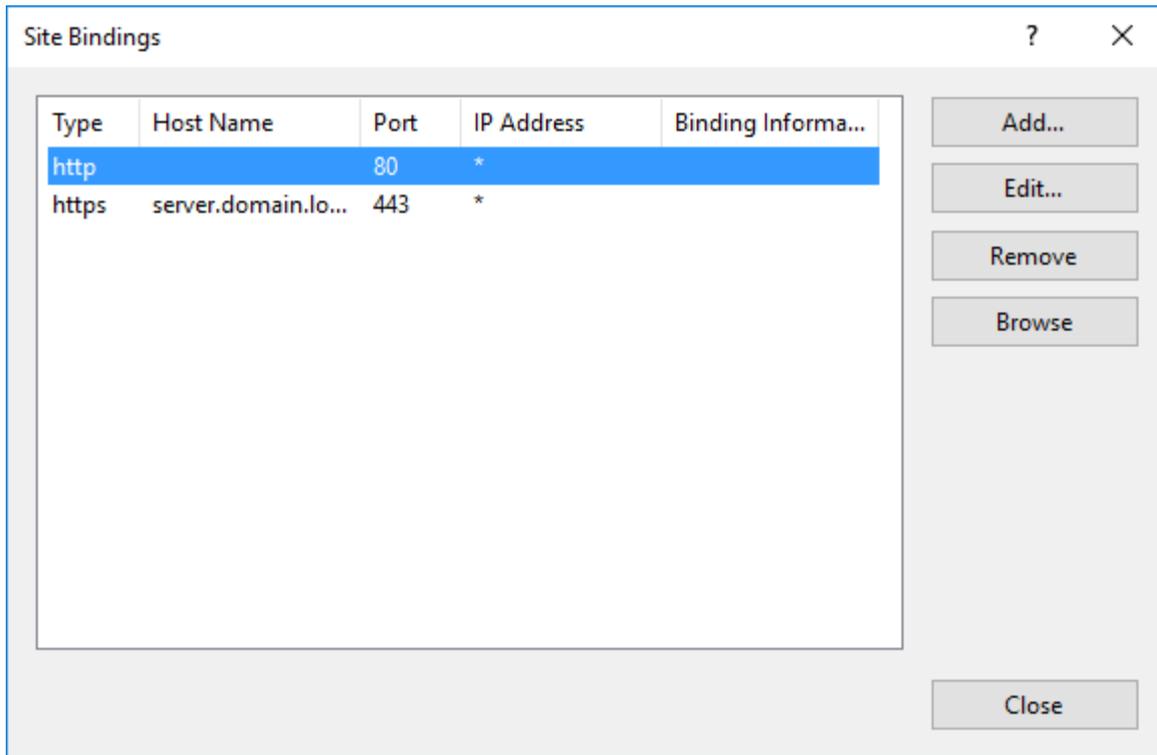
Require Server Name Indication

SSL certificate: **Server Certificate** Select... View...

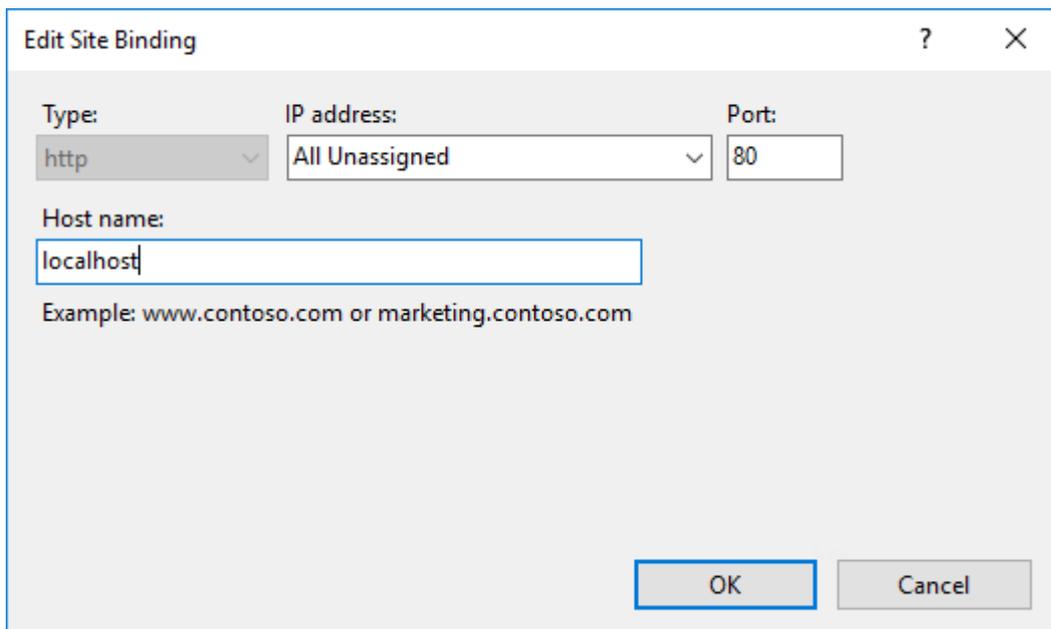
OK Cancel

Field	Contents
Type	https
IP address:	All Unassigned, or if the server shall receive requests only from one IP address (from several configured addresses).
Host name:	Host name stored in the certificate
SSL certificate	Select the corresponding certificate.

➤ **OK**

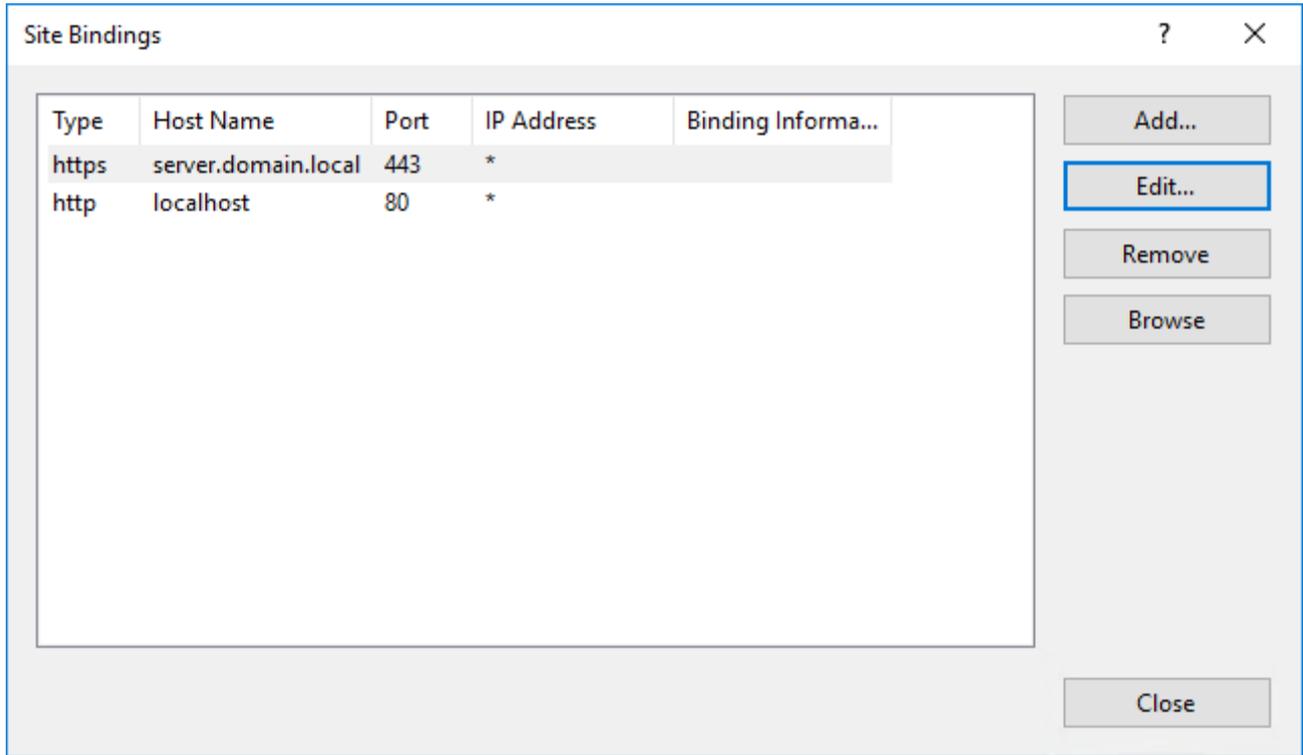


➤ Marking the **http** binding > **Edit...**

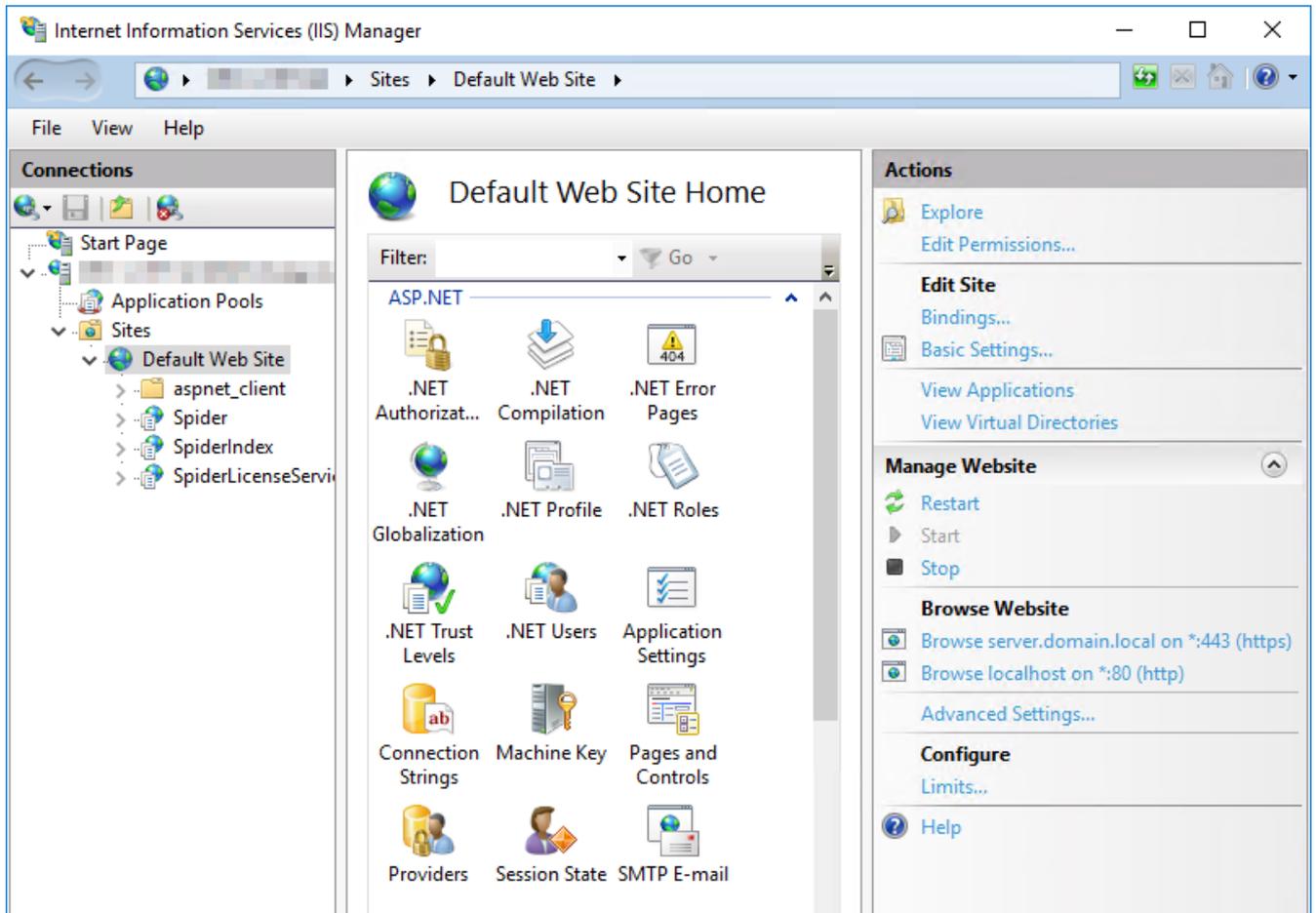


Enter localhost in "Host name:" to ensure that applications such as the license service or IndexProxyApi can continue to communicate with the local machine.

➤ **OK**



➤ **Close**



Now it is ensured that the server communicates externally via HTTPS, while HTTP is used for the local communication.

Attention The communication with the license server via HTTP is a precondition for the setup to be able to update the system.

Configuration entries

Entries in the [dbo].[config] table in the Core database

Area: Application

Key	Value
Server	httpS://server.domain.local
	server.domain.local must be replaced by the FQDN stated in the certificate.

Restart the IIS

To ensure that all changes are correctly accepted, the IIS must be restarted with the `iisreset` command.

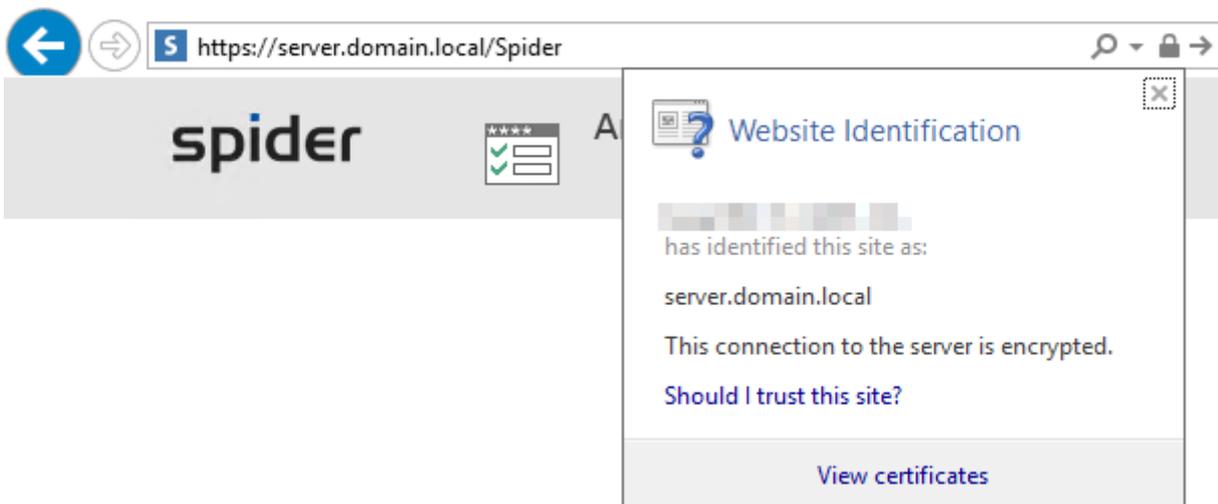
```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.10586]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\>iisreset

Attempting stop...
Internet services successfully stopped
Attempting start...
Internet services successfully restarted

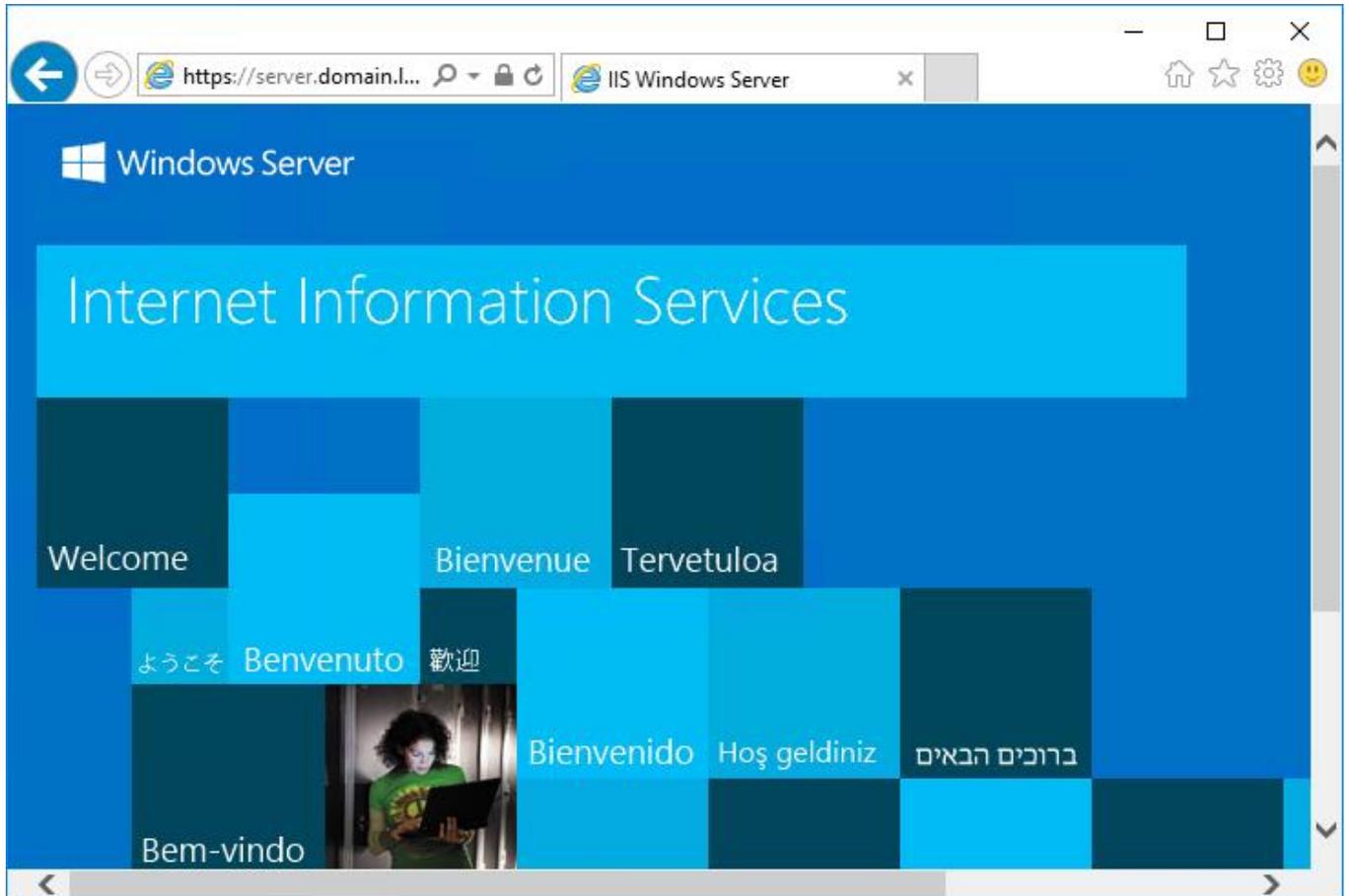
C:\Users\>
```

Now, the communication with the Spider application via SSL is possible.



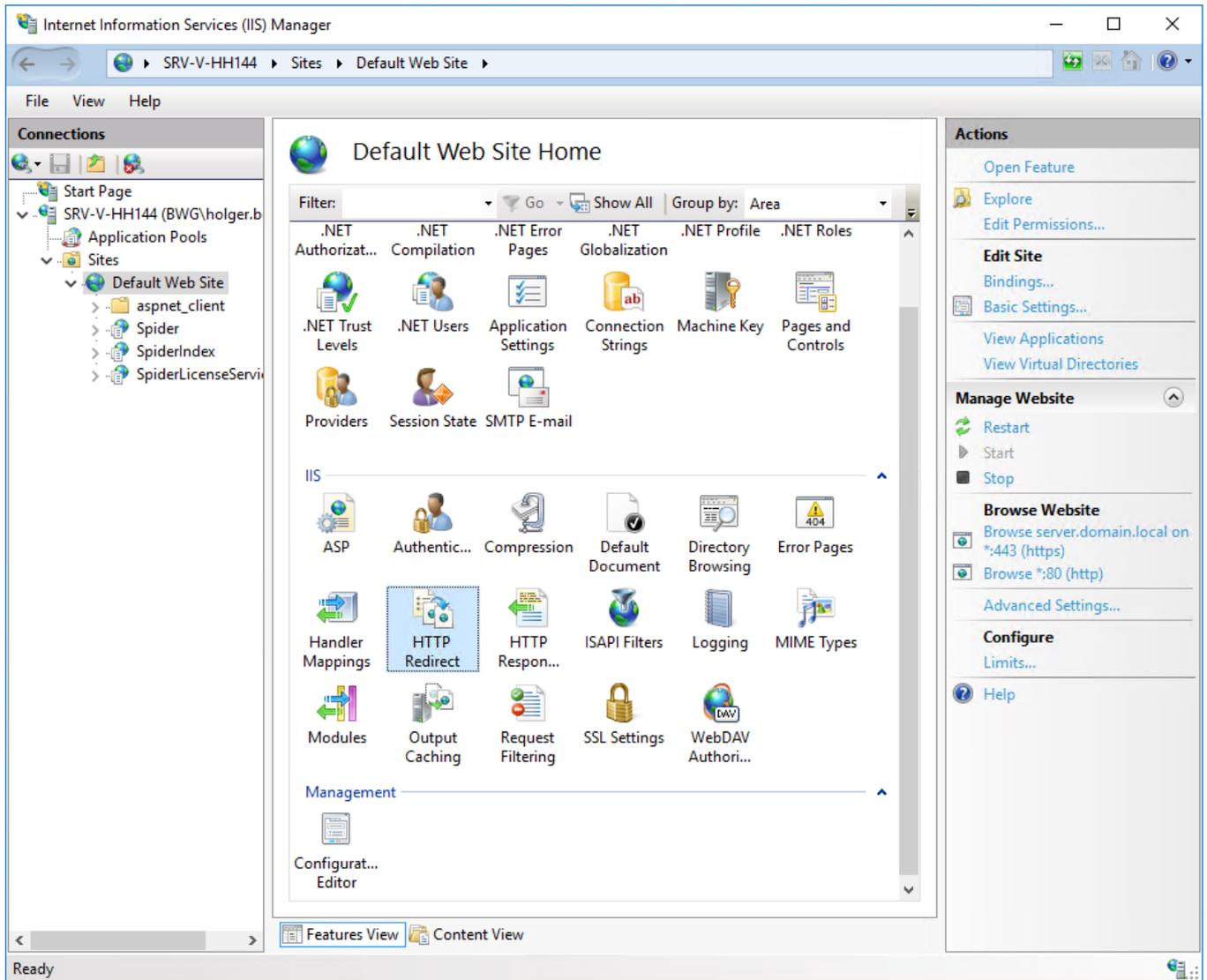
3.3.4 HTTP(S) Redirect

If the address of the IIS server is called up directly (Example `https://server.domain.local`), the IIS default web site will be displayed in general.

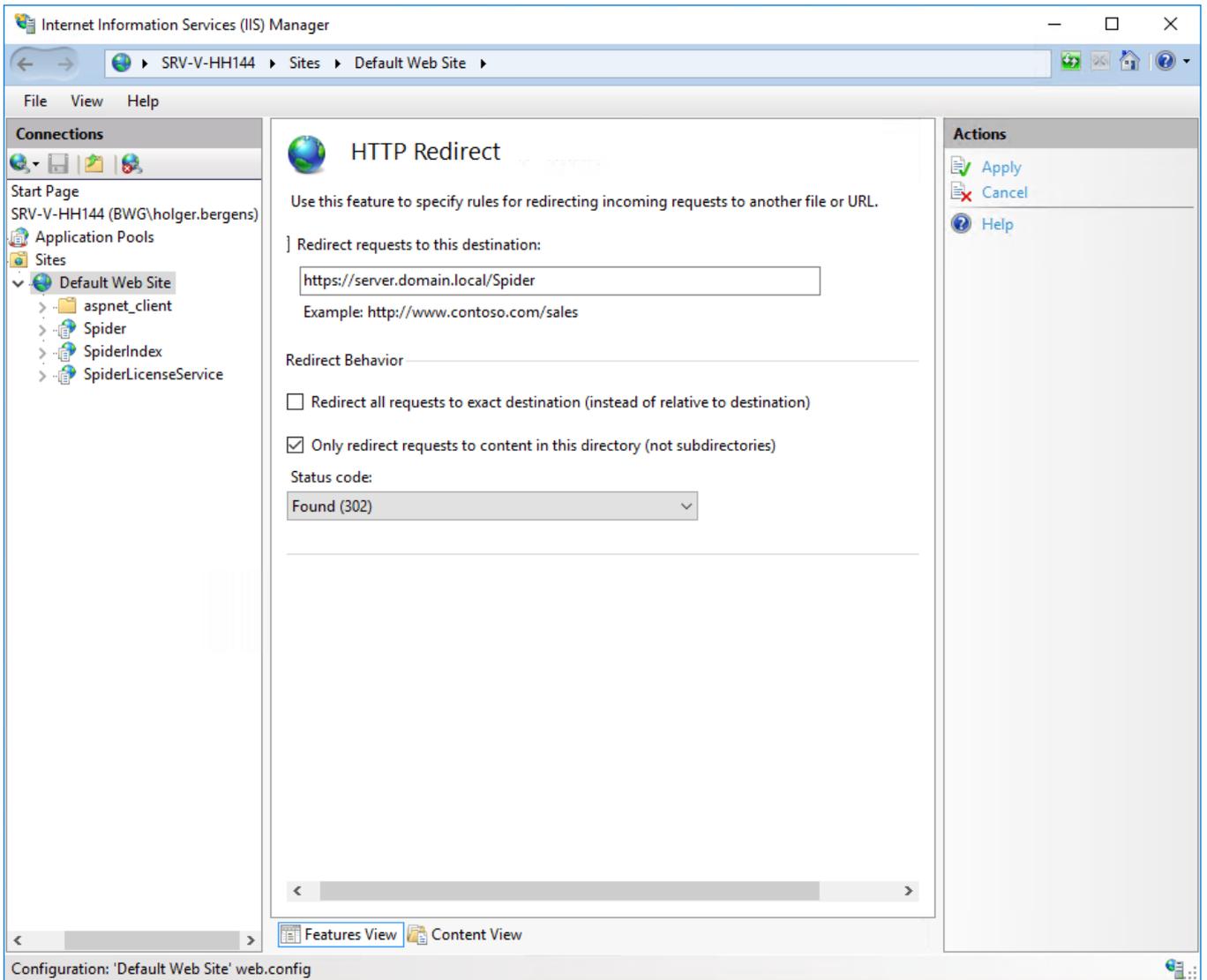


In order to ensure that the address of the IIS server will also show the Spider application, a redirection can be configured.

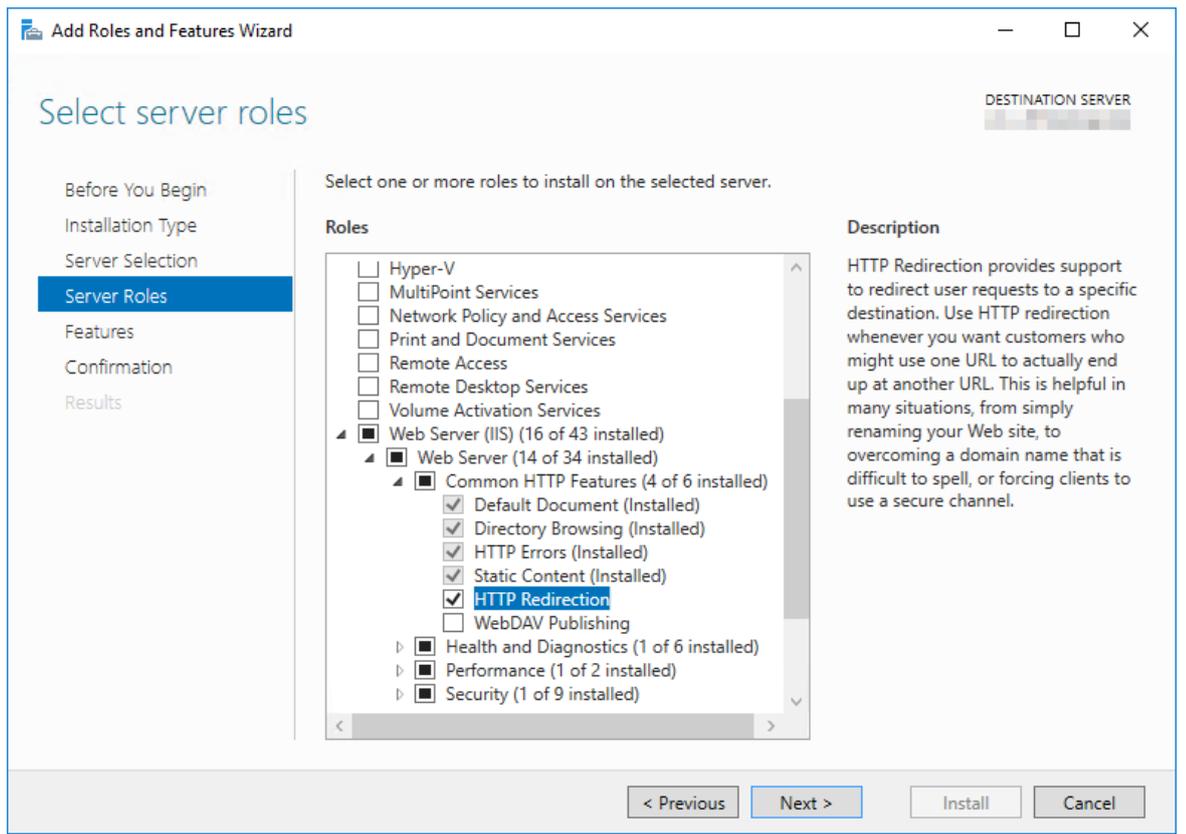
- Start the **Internet Information Services (IIS) Manager**
- **Default Web Site > IIS > HTTP Redirect**



- Enter the target web site (ensure correct HTTP/S) and click on **Apply**.



Note Should the menu item **HTTP Redirect** be missing, the Roles feature may have to be installed:



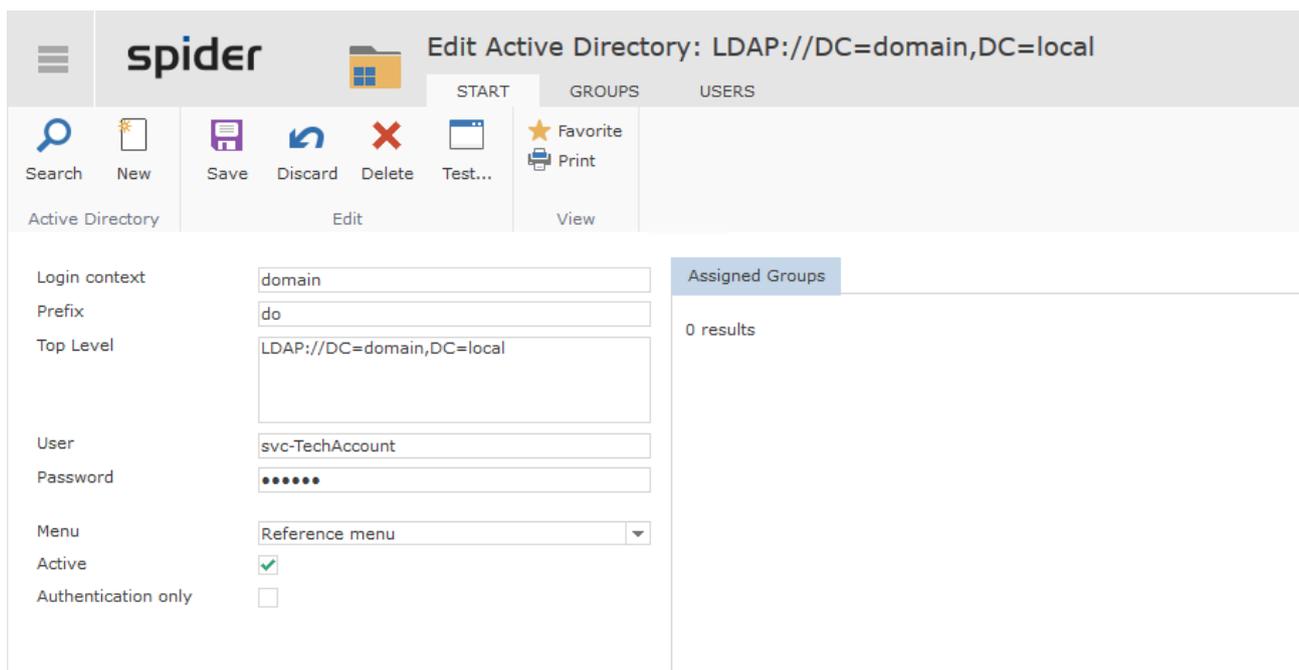
3.3.5 Setup of Active Directory login

In order to enable domain users to access the Spider system, the Active Directory may be used.

The setup will require groups in the Active Directory, which are assigned to one or more Spider roles.

Settings in Spider

- Call up the Spider web site (as administrator)
- **System > Active Directories > New**



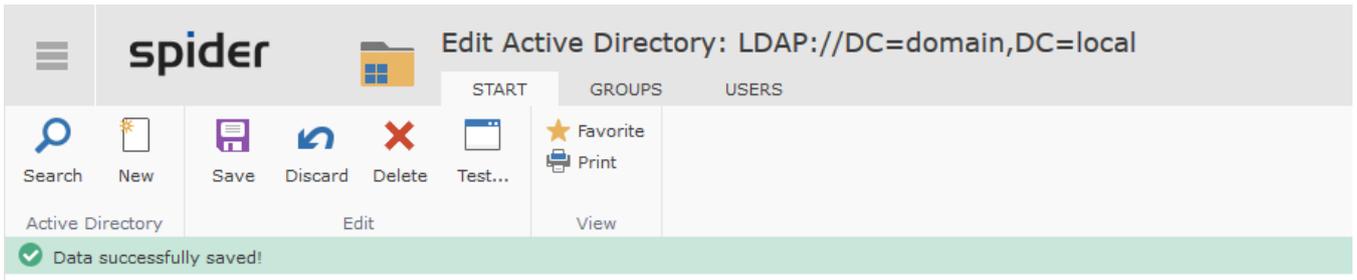
Field	Description
Login context	NetBios name of the domain
Prefix	Selected prefix for identification
Top level	LDAP entry of the top level of the domain to be connected.
User	AD user which is used to establish the connection to the AD.
Password	Password of the above mentioned AD user
Menu	Default menu for this AD
Active	The Active Directory entry is active and can be used.
Only authentication	The AD will only be used for the authentication of the users; rights and roles are managed in Spider as usual.

Note: By adding port information in the "top level" setting, a secure/signed LDAP-connection can be configured. In case of a standard configuration the string ":636" needs to be added.

➤ **Test...**



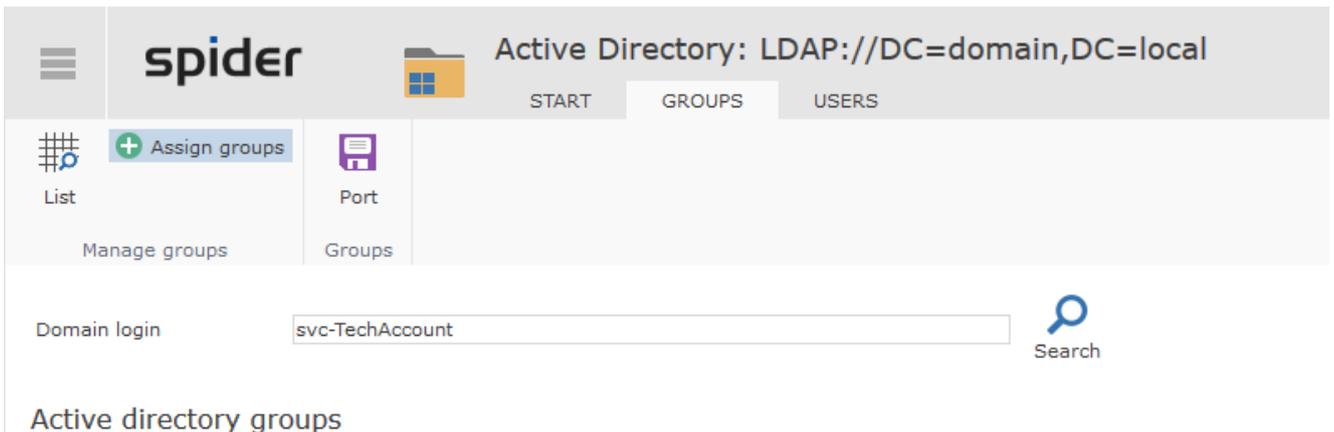
➤ **Save**



➤ **Ribbon Groups > Assign groups**

➤ **Enter domain user used for determination of the groups**

➤ **Search**



➤ Highlight desired groups > **Transfer**

spider Active Directory: LDAP://DC=domain,DC=local

START GROUPS USERS

Assign groups

List Manage groups

Port Groups

Domain login Search

Active directory groups

7 results

- ADGroup
- CN=Users,CN=Builtin,DC=bwg,DC=corp
- CN=Domain Users,CN=Users,DC=bwg,DC=corp
- CN=ADGroup-Admin,CN=Users,DC=bwg,DC=corp
- CN=ADGroup-Reader,CN=Users,DC=bwg,DC=corp
- CN=ADGroup-User,CN=Users,DC=bwg,DC=corp

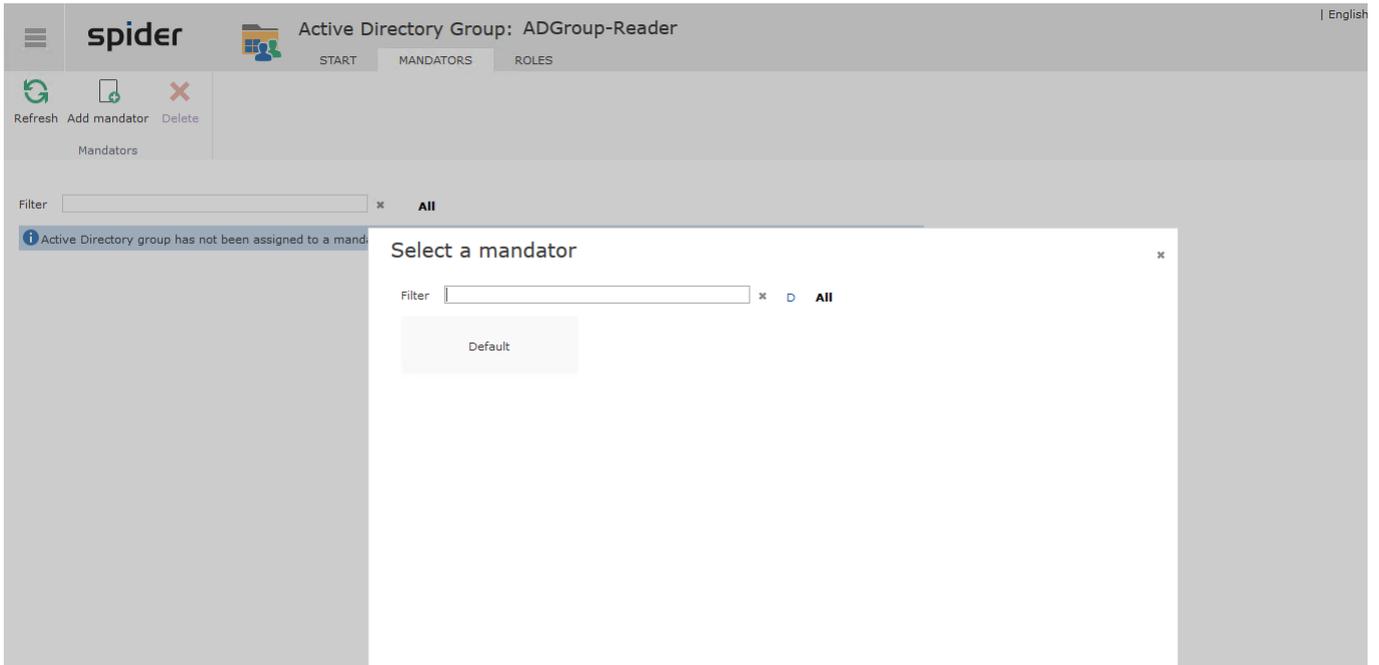
Manage groups Groups

✔ The selected groups have been ported.

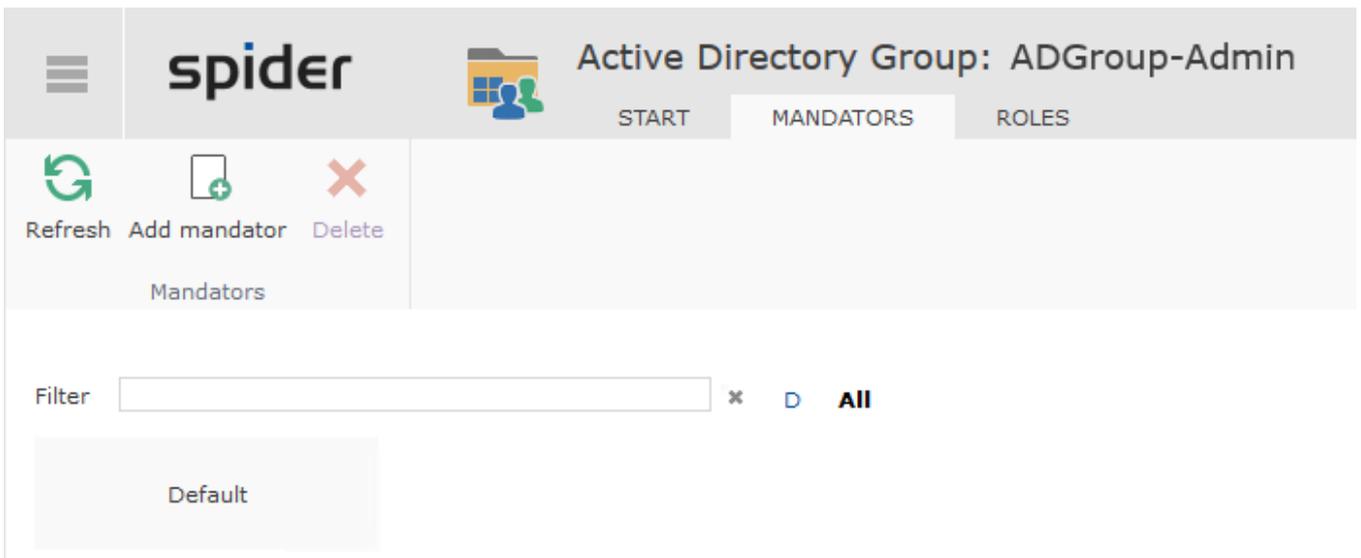
➤ **Start**

➤ **Selection of a group from Assigned groups**

➤ Ribbon **mandator**



➤ **Add mandator > Select mandator > Assign**



➤ Ribbon **Roles**

➤ Highlight desired roles > **Add roles**

The screenshot shows the Spider web interface for configuring an Active Directory Group. The breadcrumb path is "Active Directory Group: ADGroup-Admin" > "ROLES". The interface includes a navigation menu with "Overview" and "Manage" options, and a toolbar with "Assign roles", "Remove roles", "Save", and "Cancel" buttons. Below the toolbar, there are search filters for "Role" and "Application". The main content area displays "17 results" in a table:

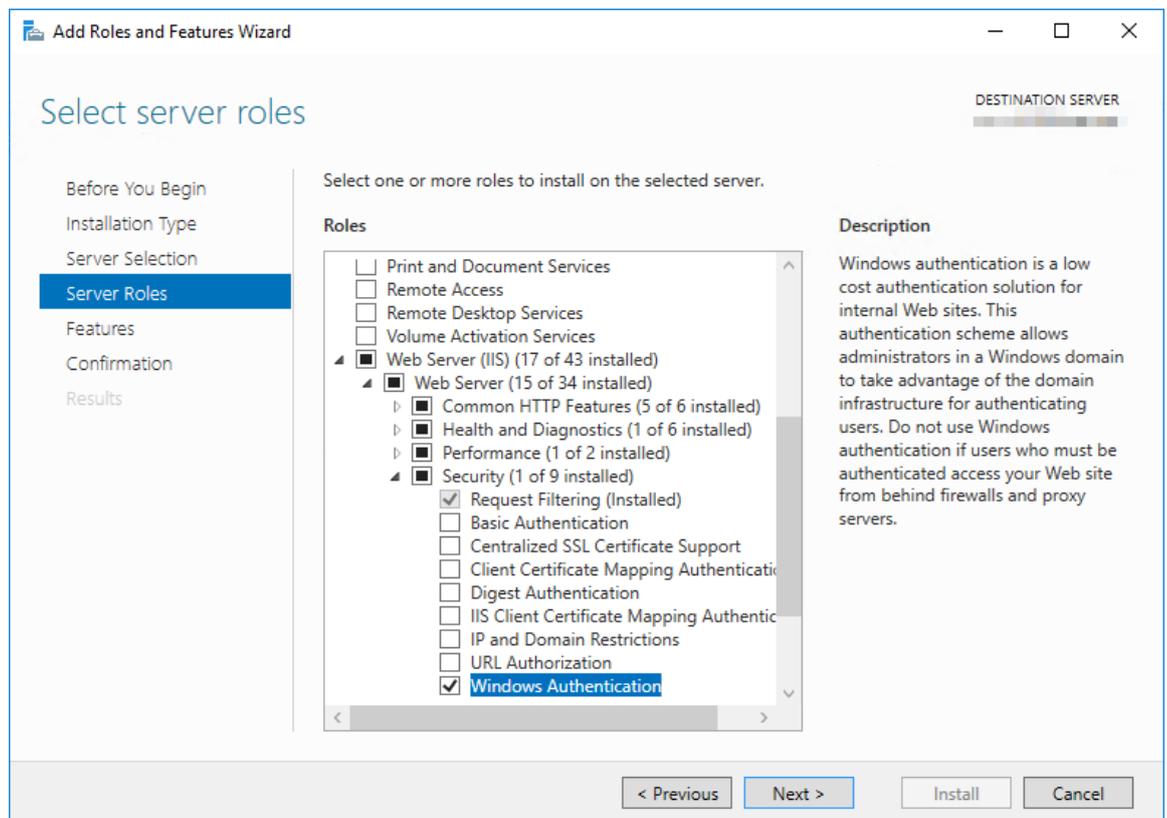
Application	Role	
<input type="checkbox"/>	Spider Asset	AssetAdmin
<input checked="" type="checkbox"/>	Spider Asset	AssetManager
<input checked="" type="checkbox"/>	Spider Asset	AssetMasterData
<input type="checkbox"/>	Spider Asset	AssetReader
<input checked="" type="checkbox"/>	Spider Contract	ContractAdmin
<input checked="" type="checkbox"/>	Spider Contract	ContractManager
<input checked="" type="checkbox"/>	Spider Contract	ContractReader
<input checked="" type="checkbox"/>	Spider Core	Admin
<input type="checkbox"/>	Spider Core	CoreBasic
<input type="checkbox"/>	Spider Core	CoreDashboard
<input type="checkbox"/>	Spider Core	CoreReader
<input checked="" type="checkbox"/>	Spider Core	MasterDataEditor
<input checked="" type="checkbox"/>	Spider Core	UserManager
<input checked="" type="checkbox"/>	Spider Licence	LicenceAdmin
<input checked="" type="checkbox"/>	Spider Licence	LicenceManager
<input checked="" type="checkbox"/>	Spider Licence	LicenceMasterData
<input checked="" type="checkbox"/>	Spider Licence	LicenceReader

This will complete the assignment of mandators and roles to an Active Directory group. If required, this must be repeated for other groups, mandators or roles.

Note When setting the boolean key "DebugInformation" in the configuration area "Application.Security.ActiveDirectory" of the Spider Core database to "true", additional AD information will be shown on the login page in case of an unsuccessful AD login attempt.

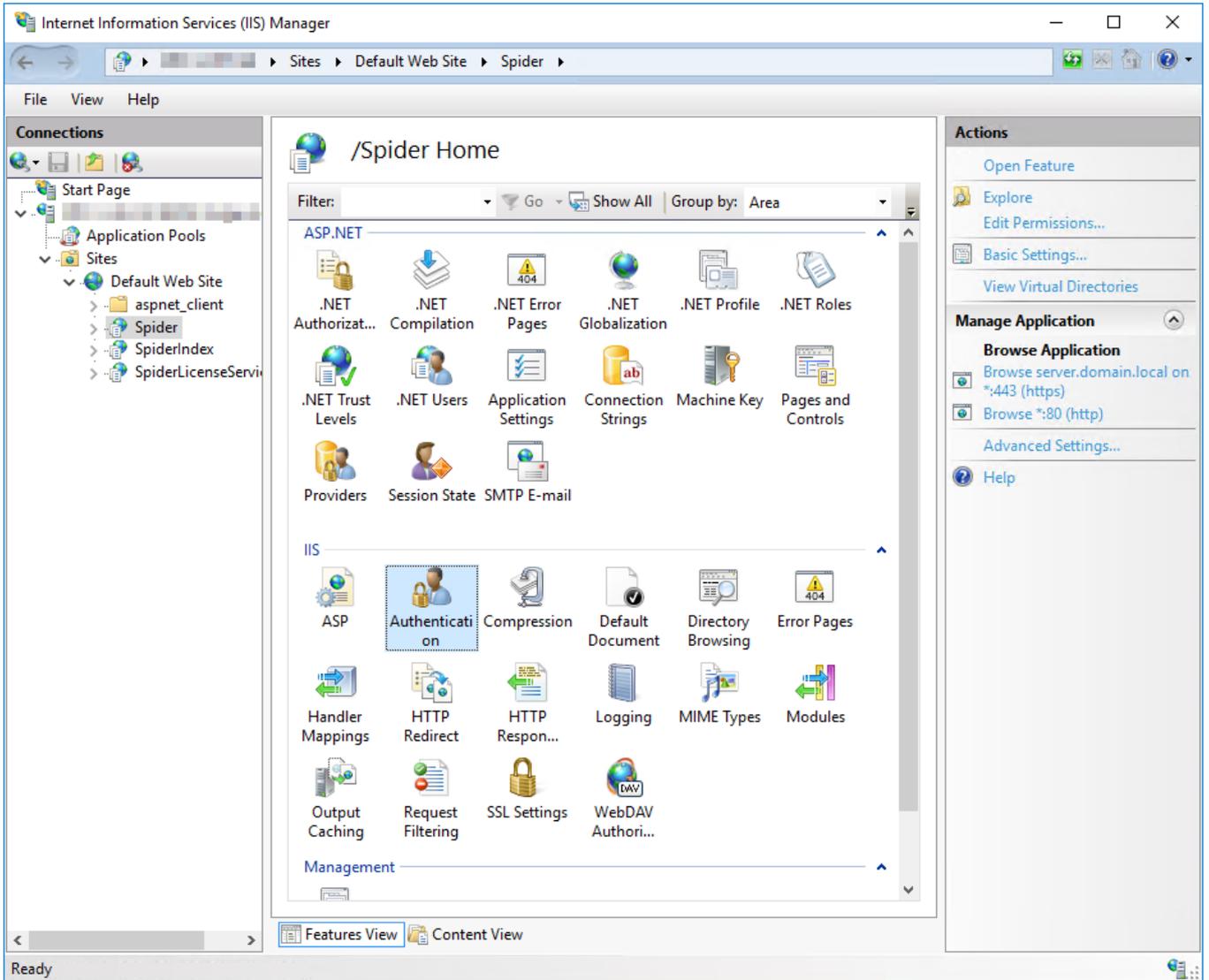
IIS settings - Authentication

Note If the setting of the Windows authentication is not available, the role feature must be installed if required:

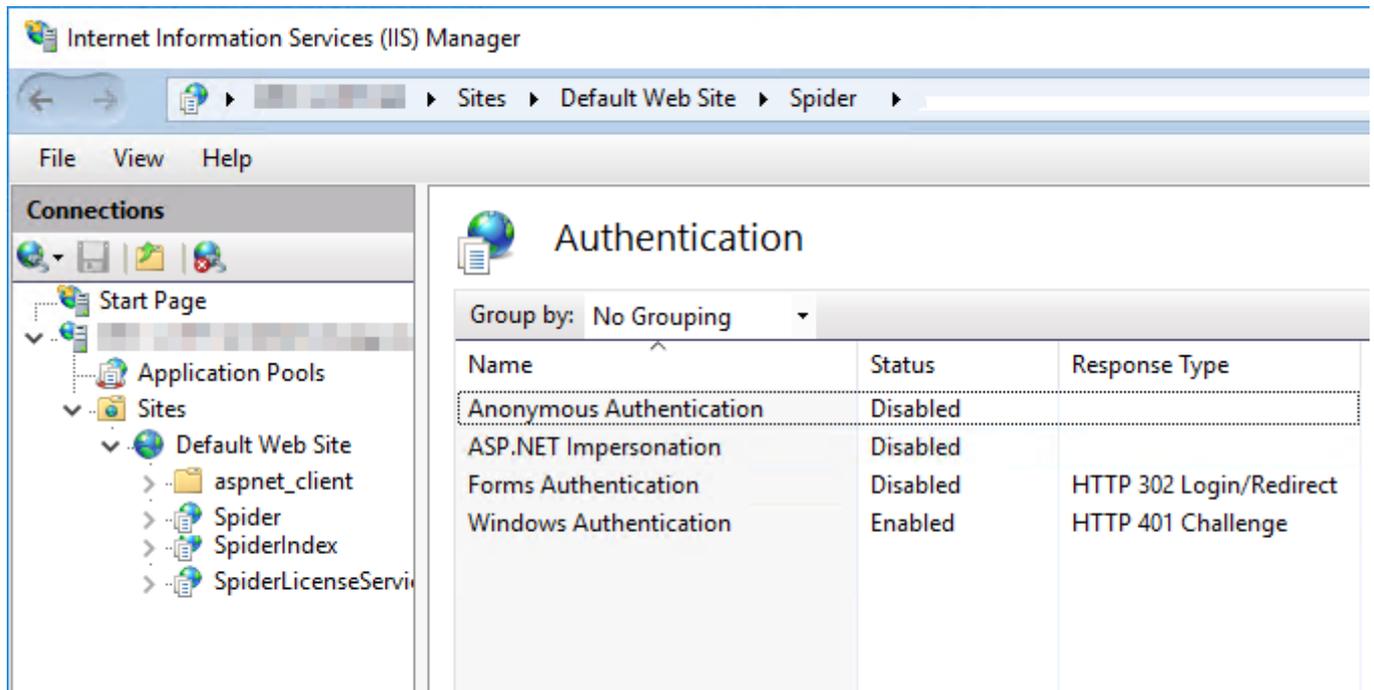


➤ Start the **Internet Information Services (IIS) Manager**

➤ **Select the server > Sites > Default web site > Spider Web site > Authentication**



- Set all authentication types except the **Windows authentication** to **Disabled**, and set **Windows Authentication** to **Enabled**.



To ensure that all changes are correctly accepted, the IIS must be restarted with the `iisreset` command.

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.10586]
(c) 2016 Microsoft Corporation. All rights reserved.

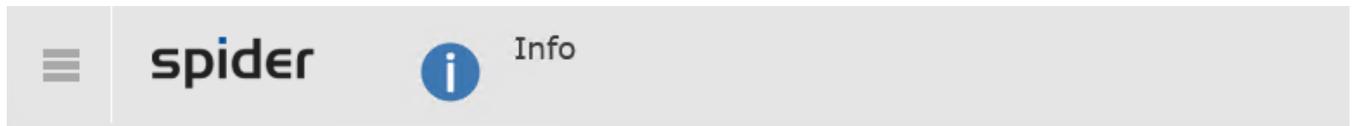
C:\Users\>iisreset

Attempting stop...
Internet services successfully stopped
Attempting start...
Internet services successfully restarted

C:\Users\>
```

3.3.6 Info page - support.config

In the delivery state, there is no information about the support on the Info page which can be reached by a click on the Info button in the menu or in the login screen.



Support

Before calling our support we suggest you to check with our comprehensive product documentation and consult our knowledgebase.

Could not find support information. Please contact your administrator.

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A Company of brainwaregroup. All rights reserved.

<http://www.brainwaregroup.com>

To store your own information there, the file **support.config** in the path **<InstallDir>\Spider\CoreServer_XX\Web_settings** must be edited.

This file contains an XML structure, which can be used to store language-specific information.

```
<Intro>
  <LanguageCode>DE</LanguageCode>
  <Text>Before contacting our helpdesk regarding your support request, please first refer to the product documentation and our
  knowledge base.</Text>
</Intro>
```

The intro allows to show a general text on the info page. In addition, there are the contact entries which can be used to configure one or more contact types.

```
<Contact>
  <LanguageCode>DE</LanguageCode>
  <Name>Knowledgebase</Name>
  <Icon>SupportKnowledgebase</Icon>
  <Text>Knowledgebase</Text>
  <Url></Url>
</Contact>
```

Field	Description
LanguageCode	The language abbreviation to be entered can be found in the column "639-1" on the page https://en.wikipedia.org/wiki/List_of_ISO_639-1_codes .

Field	Description
Name	Entry which defines the type of the resource to be shown. Page (a web site) Form (a form on a web site) E-mail (an e-mail address) Phone (a phone number)
Icon	The icon to be shown, see table below.
Text	The text to be displayed
URL	If an entry of the type Page, Form, or Email has been made in the Name field, the target URL may be entered here. Caution, for an e-mail address, a mailto: must be put in front!

Icon code	Icon
SupportKnowledgebase	
SupportPage	
SupportForm	
SupportEmail	
SupportPhone	

Important You can use only one "Name" per language code! The combination of LanguageCode and Name must be unique.

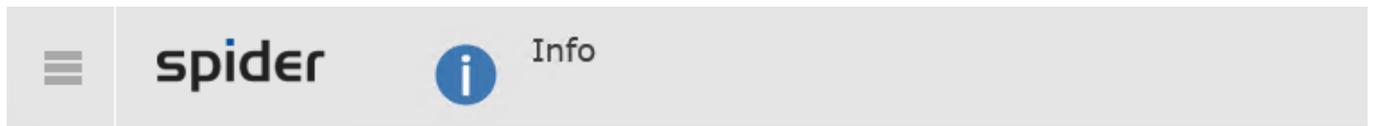
```

<Contact>
  <LanguageCode>DE</LanguageCode>
  <Name>Page</Name>
  <Icon>SupportPage</Icon>
  <Text>Support page</Text>
  <Url>https://support.brainwaregroup.com/</Url>
</Contact>
<Contact>
  <LanguageCode>DE</LanguageCode>
  <Name>Form</Name>
  <Icon>SupportForm</Icon>
  <Text>Support form</Text>
  <Url>http://support.brainwaregroup.com/form/</Url>
</Contact>
<Contact>
  <LanguageCode>DE</LanguageCode>
  <Name>Email</Name>
  <Icon>SupportEmail</Icon>
  <Text>E-mail</Text>
  <Url>mailto:support@brainwaregroup.com/</Url>
</Contact>

```

```
<Contact>
  <LanguageCode>DE</LanguageCode>
  <Name>Phone</Name>
  <Icon>SupportPhone</Icon>
  <Text>Phone: +41 41 748 22 11</Text>
  <Ur1 />
</Contact>
```

results in:



Support

Before calling our support we suggest you to check with our comprehensive product documentation and consult our knowledgebase.

 [Supportpage](#)

 [Support form](#)

 [E-Mail](#)

 [Phone: +41 41 748 22 11](#)

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<http://www.brainwaregroup.com>

3.3.7 Available languages - culture.config

The languages available in the web can be configured in the file culture.config (Path **<InstallDir>\Spider\CoreServer_XX\Web_settings**).

```
<?xml version="1.0" ?>
<culture>
  <availableCultures>
    <clear />
    <add cultureCode="en-GB" />
    <add cultureCode="en-US" />
    <add cultureCode="en-ZA" />
    <add cultureCode="de-DE" />
    <add cultureCode="de-CH" />
    <add cultureCode="de-AT" />
    <add cultureCode="yes-JP" />
  </availableCultures>
  <defaultCulture cultureCode="de-DE" />
</culture>
```

A list of available culture codes can be found in the table on <https://msdn.microsoft.com/library/ee825488.aspx>, in the column Language Culture Name.



The list can be edited by adding or deleting entries.

The entry `<defaultCulture cultureCode="" />` determines which language will be shown when a user opens the page.

Important Adding a new language in the file culture.config does not mean that there are any translations for this language. If there are no translations for the culture code, terms of the default culture will be shown automatically.

3.3.8 Settings in the Config table

Via the settings in the Config table, it is possible to adjust the behavior of Spider. Not all entries can be edited via the Spider admin or the web frontend.

Area	Key	Value	Description
Authentication	BrowserEnableAutocomplete	True False	<p>Via this item, the standard behavior for automatic filling of sensitive fields such as the password field on the login page can be set.</p> <p>Caution: Not every browser supports or reacts to this setting. The functionality of this setting can only be ensured with a browser which actually evaluates this setting.</p>

3.3.9 Display of advanced error messages

The exception handling implemented in Spider enables the display of error messages on a specific error page. Due to security reasons, the page will not show all information about an exception. To display detailed error messages of the IIS, Spider must be configured with the following settings.

Therefore, some files must be modified with an editor:

customErrors.config (..\Spider\CoreServer_XX\Web_Settings)

```
<?xml version="1.0" encoding="utf-8"?>
<!--
  For DEBUG switch customErrors mode to "Off" (with upper-case "O") and
  httpErrors errorMode to "Detailed" and then restart the ApplicationPool
  in IIS. Without a restart the changes will not be applied!

  (An ApplicationPool restart can also be achieved by saving the
  Web.config file without any changes. The IIS recognizes the file has
  been saved and then restarts the application pool.)

  If you encounter an HTTP 500 error message, ensure that httpErrors
  existingResponse is set to "Auto"!
-->

<customErrors
  mode="On"
  defaultRedirect="~/Info/Error.aspx">

  <!-- NEVER redirect a 401 error! This will cause various problems in the application! -->

  <error statusCode="403" redirect="~/Default.aspx" />
  <error statusCode="404" redirect="~/Default.aspx" />
  <error statusCode="405" redirect="~/Info/Error.aspx?Category=8" />
  <error statusCode="406" redirect="~/Info/Error.aspx?Category=8" />
  <error statusCode="412" redirect="~/Info/Error.aspx?Category=8" />
  <error statusCode="500" redirect="~/Info/Error.htm" />
  <error statusCode="501" redirect="~/Info/Error.htm" />
  <error statusCode="502" redirect="~/Info/Error.htm" />

</customErrors>
```

```
<?xml version="1.0" encoding="utf-8"?>
<!--
  For DEBUG switch customErrors mode to "Off" (with upper-case "O") and
  httpErrors errorMode to "Detailed" and then restart the ApplicationPool
  in IIS. Without a restart the changes will not be applied!

  (An ApplicationPool restart can also be achieved by saving the
  Web.config file without any changes. The IIS recognizes the file has
  been saved and then restarts the application pool.)
-->
```

```

    If you encounter an HTTP 500 error message, ensure that httpErrors
    existingResponse is set to "Auto"!
-->

<customErrors
  mode="Off"
  defaultRedirect="~/Info/Error.aspx">

  <!-- NEVER redirect a 401 error! This will cause various problems in the application! -->

  <error statusCode="403" redirect="~/Default.aspx" />
  <error statusCode="404" redirect="~/Default.aspx" />
  <error statusCode="405" redirect="~/Info/Error.aspx?Category=8" />
  <error statusCode="406" redirect="~/Info/Error.aspx?Category=8" />
  <error statusCode="412" redirect="~/Info/Error.aspx?Category=8" />
  <error statusCode="500" redirect="~/Info/Error.htm" />
  <error statusCode="501" redirect="~/Info/Error.htm" />
  <error statusCode="502" redirect="~/Info/Error.htm" />

</customErrors>.

```

httpErrors.config (..\Spider\CoreServer_XX\Web_Settings)

```

<?xml version="1.0" ?>
<!--
  For DEBUG switch customErrors mode to "Off" (with upper-case "O") and
  httpErrors errorMode to "Detailed" and then restart the ApplicationPool
  in IIS. Without a restart the changes will not be applied!

  (An ApplicationPool restart can also be achieved by saving the
  Web.config file without any changes. The IIS recognizes the file has
  been saved and then restarts the application pool.)

  If you encounter an HTTP 500 error message, ensure that httpErrors
  existingResponse is set to "Auto"!
-->
<httpErrors errorMode="Custom" defaultResponseMode="Redirect" existingResponse="Auto">
  <!-- NEVER redirect a 401 error! This will cause various problems in the application! -->
  <remove statusCode="403" subStatusCode="-1" />
  <remove statusCode="404" subStatusCode="-1" />
  <remove statusCode="405" subStatusCode="-1" />
  <remove statusCode="406" subStatusCode="-1" />
  <remove statusCode="412" subStatusCode="-1" />
  <remove statusCode="500" subStatusCode="-1" />
  <remove statusCode="501" subStatusCode="-1" />
  <remove statusCode="502" subStatusCode="-1" />
  <!-- Replace "/Spider/" in path attribute with the path of the application. "~" is not allowed here! -->
  <error statusCode="403" prefixLanguageFilePath="" path="/Spider/Default.aspx" responseMode="Redirect" />
  <error statusCode="404" prefixLanguageFilePath="" path="/Spider/Default.aspx" responseMode="Redirect" />
  <error statusCode="405" prefixLanguageFilePath="" path="/Spider/Info/Error.aspx?Category=8" responseMode="ExecuteURL" />
  <error statusCode="406" prefixLanguageFilePath="" path="/Spider/Info/Error.aspx?Category=8" responseMode="ExecuteURL" />

```

```
<error statusCode="412" prefixLanguageFilePath="" path="/Spider/Info/Error.aspx?Category=8" responseMode="ExecuteURL" />
<error statusCode="500" prefixLanguageFilePath="" path="/Spider/Info/Error.htm" responseMode="Redirect" />
<error statusCode="501" prefixLanguageFilePath="" path="/Spider/Info/Error.htm" responseMode="Redirect" />
<error statusCode="502" prefixLanguageFilePath="" path="/Spider/Info/Error.htm" responseMode="Redirect" />
</httpErrors>
```

```
<?xml version="1.0" ?>
<!--
  For DEBUG switch customErrors mode to "Off" (with upper-case "O") and
  httpErrors errorMode to "Detailed" and then restart the ApplicationPool
  in IIS. Without a restart the changes will not be applied!

  (An ApplicationPool restart can also be achieved by saving the
  Web.config file without any changes. The IIS recognizes the file has
  been saved and then restarts the application pool.)

  If you encounter an HTTP 500 error message, ensure that httpErrors
  existingResponse is set to "Auto"!
-->
<httpErrors errorMode="'Detailed' defaultResponseMode="Redirect" existingResponse="Auto">
  <!-- NEVER redirect a 401 error! This will cause various problems in the application! -->
  <remove statusCode="403" subStatusCode="-1" />
  <remove statusCode="404" subStatusCode="-1" />
  <remove statusCode="405" subStatusCode="-1" />
  <remove statusCode="406" subStatusCode="-1" />
  <remove statusCode="412" subStatusCode="-1" />
  <remove statusCode="500" subStatusCode="-1" />
  <remove statusCode="501" subStatusCode="-1" />
  <remove statusCode="502" subStatusCode="-1" />
  <!-- Replace "/Spider/" in path attribute with the path of the application. "~" is not allowed here! -->
  <error statusCode="403" prefixLanguageFilePath="" path="/Spider/Default.aspx" responseMode="Redirect" />
  <error statusCode="404" prefixLanguageFilePath="" path="/Spider/Default.aspx" responseMode="Redirect" />
  <error statusCode="405" prefixLanguageFilePath="" path="/Spider/Info/Error.aspx?Category=8" responseMode="ExecuteURL" />
  <error statusCode="406" prefixLanguageFilePath="" path="/Spider/Info/Error.aspx?Category=8" responseMode="ExecuteURL" />
  <error statusCode="412" prefixLanguageFilePath="" path="/Spider/Info/Error.aspx?Category=8" responseMode="ExecuteURL" />
  <error statusCode="500" prefixLanguageFilePath="" path="/Spider/Info/Error.htm" responseMode="Redirect" />
  <error statusCode="501" prefixLanguageFilePath="" path="/Spider/Info/Error.htm" responseMode="Redirect" />
  <error statusCode="502" prefixLanguageFilePath="" path="/Spider/Info/Error.htm" responseMode="Redirect" />
</httpErrors>
```

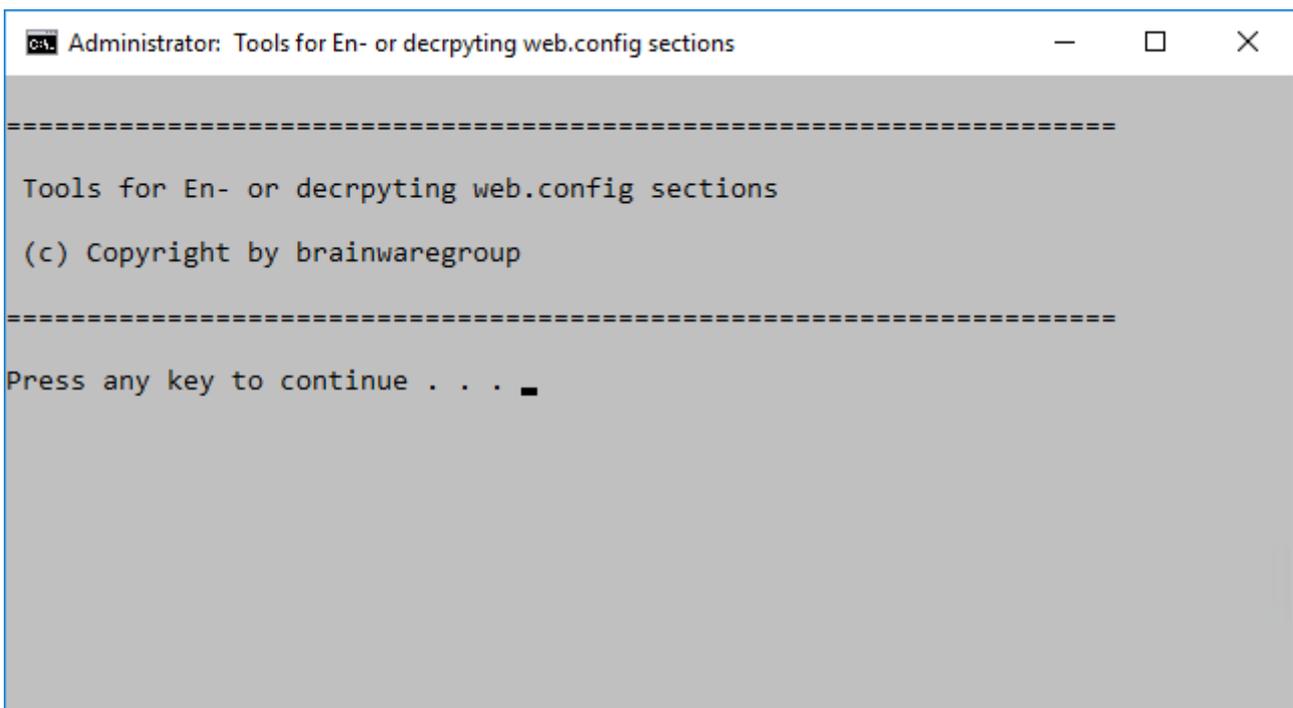
Attention Please observe capital and small letters when changing settings in the files!

3.3.10 Encryption of the configuration

If the plain text information of the SQL access are stored in the configuration, the connection strings can be encrypted. In the Utilities folder (..\Spider\CoreServer_00\Utilities\Spider web.config Crypter.cmd) of the Spider instance, you can find a batch file which can be used for encrypting and decrypting.

Encryption

- Execution of **Spider web.config Crypter.cmd**
- Press button to continue



```
Administrator: Tools for En- or decrypting web.config sections

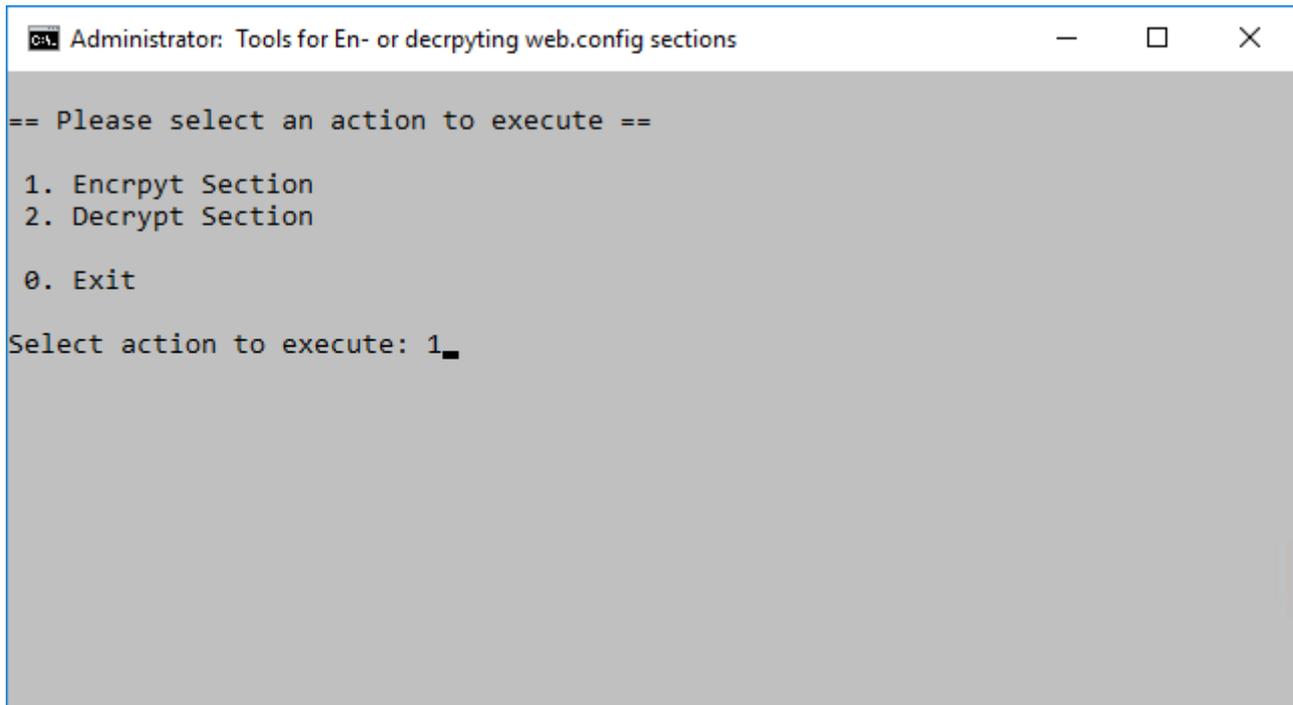
=====

Tools for En- or decrypting web.config sections
(c) Copyright by brainwaregroup

=====

Press any key to continue . . . _
```

- Select whether to decrypt or encrypt



```
Administrator: Tools for En- or decrypting web.config sections

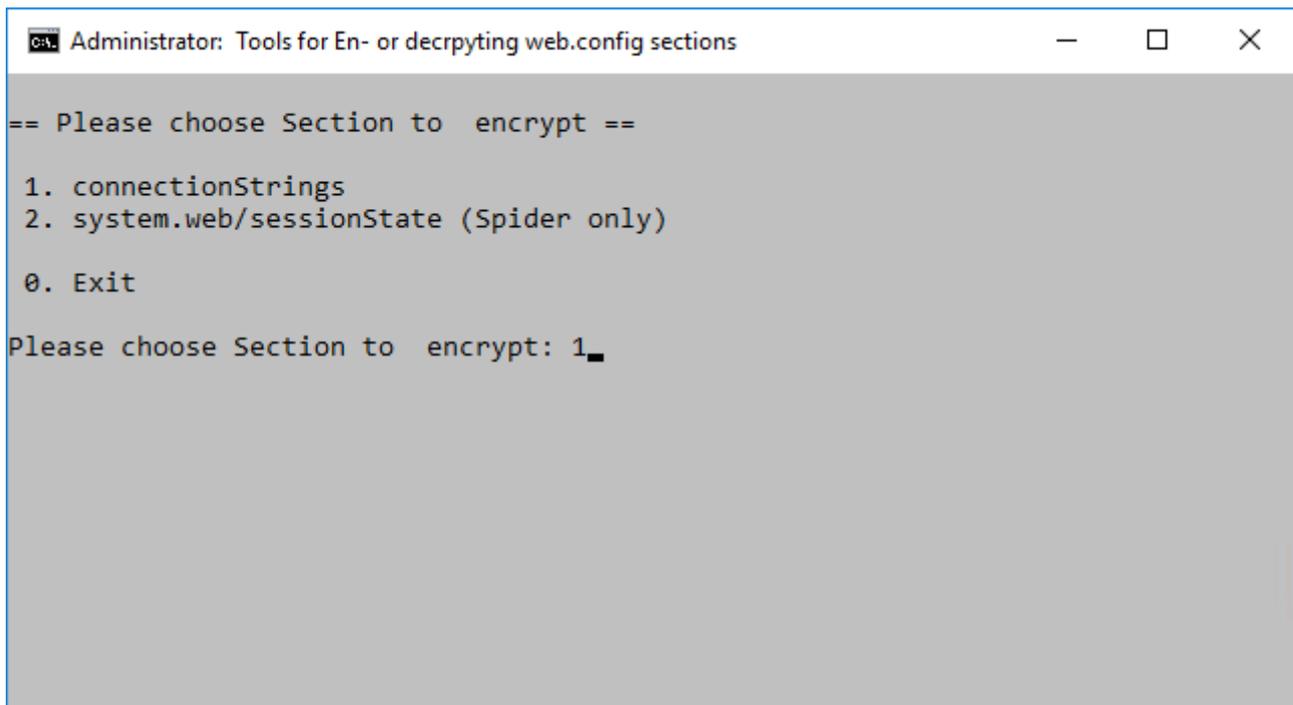
== Please select an action to execute ==

1. Encrypt Section
2. Decrypt Section

0. Exit

Select action to execute: 1_
```

- Select the section to be encrypted



```
Administrator: Tools for En- or decrypting web.config sections

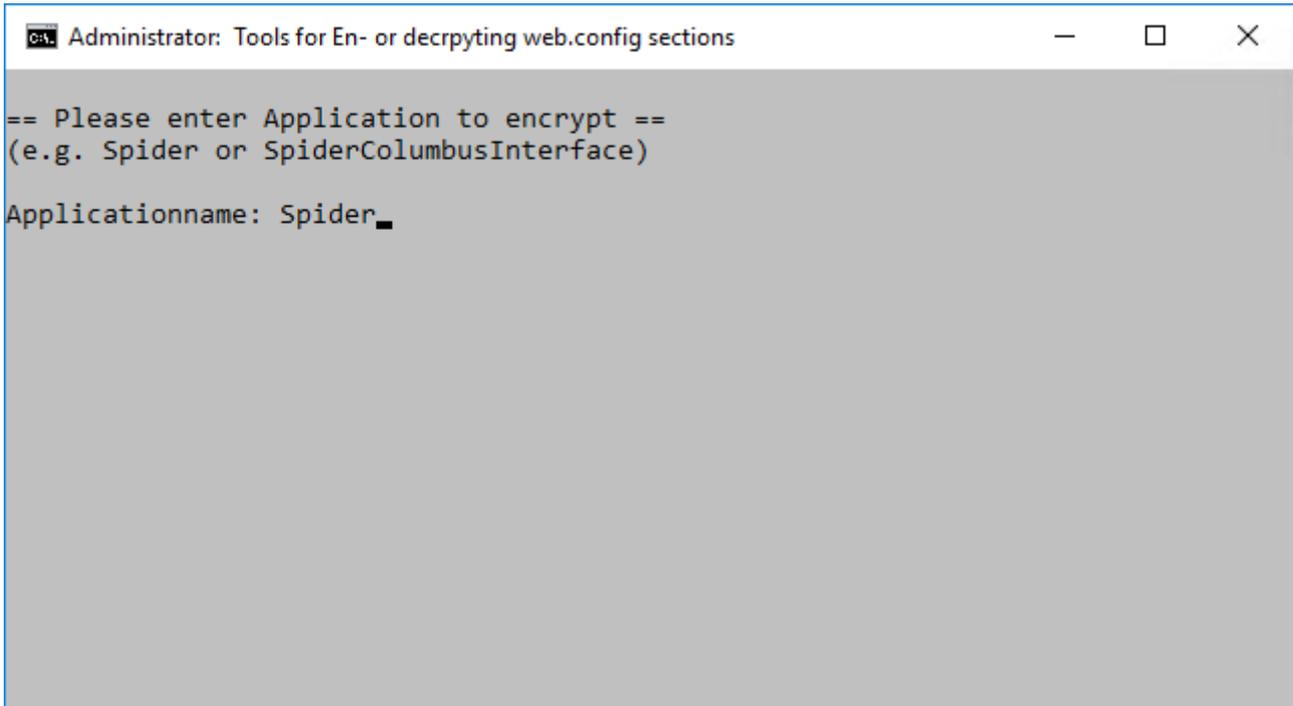
== Please choose Section to  encrypt ==

1. connectionStrings
2. system.web/sessionState (Spider only)

0. Exit

Please choose Section to  encrypt: 1_
```

- Enter the name of the IIS application



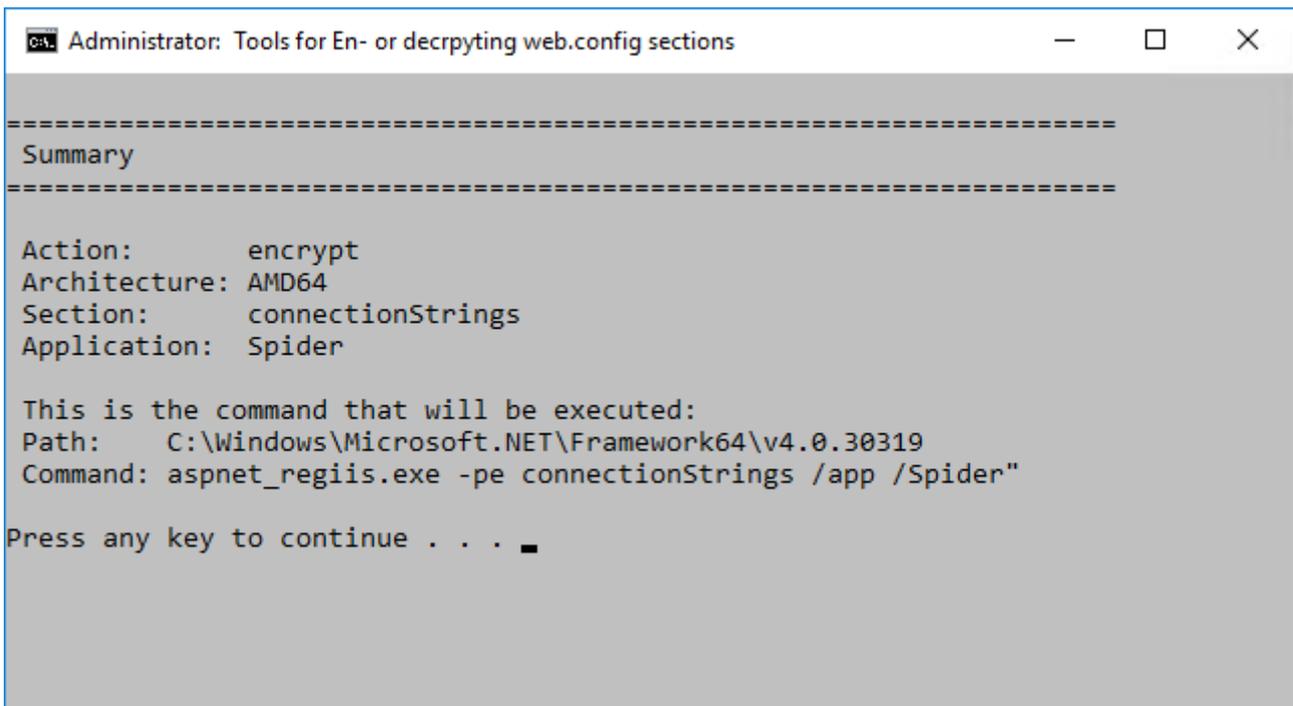
```
C:\> Administrator: Tools for En- or decrypting web.config sections

== Please enter Application to encrypt ==
(e.g. Spider or SpiderColumbusInterface)

Applicationname: Spider_
```

The connection strings of the Spider-Web application and/or the Spider IndexProxyApi can be processed.

- Confirm summary by pressing a button



```
C:\> Administrator: Tools for En- or decrypting web.config sections

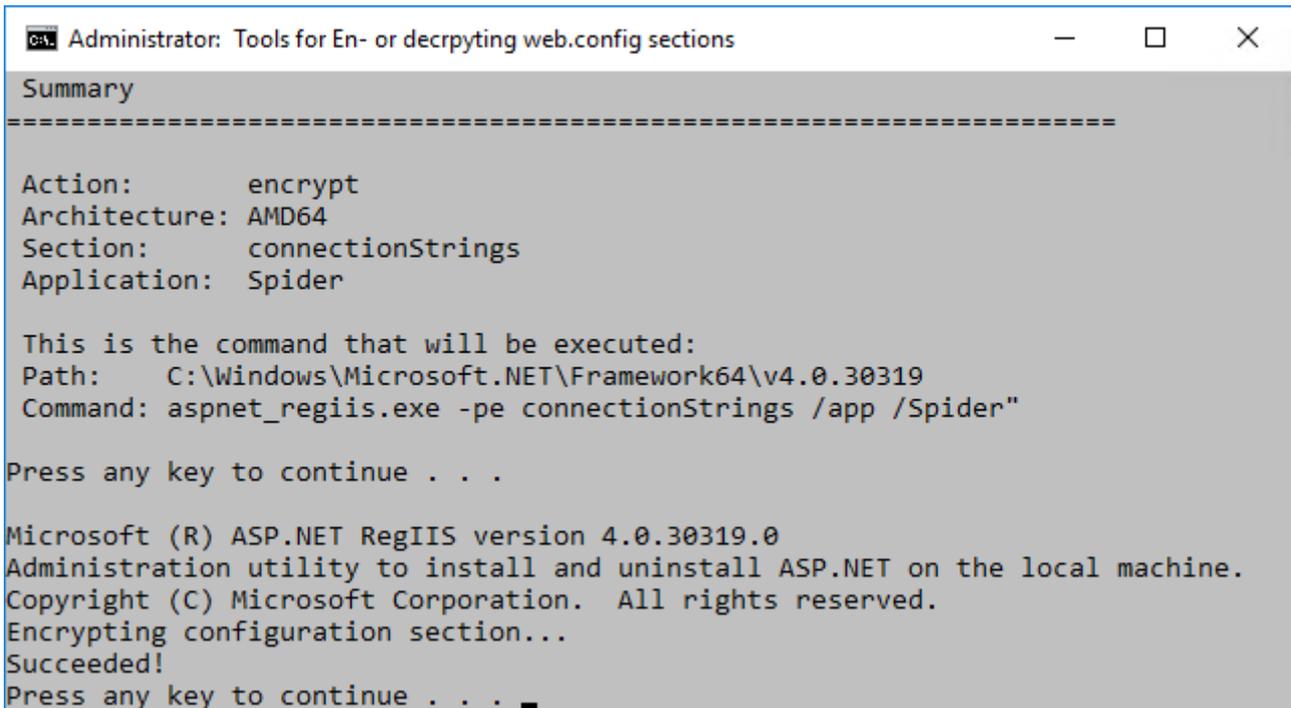
=====
Summary
=====

Action:      encrypt
Architecture: AMD64
Section:     connectionStrings
Application:  Spider

This is the command that will be executed:
Path:       C:\Windows\Microsoft.NET\Framework64\v4.0.30319
Command:    aspnet_regiis.exe -pe connectionStrings /app /Spider"

Press any key to continue . . . _
```

➤ Press button to continue



```

Administrator: Tools for En- or decrypting web.config sections
Summary
-----
Action:      encrypt
Architecture: AMD64
Section:     connectionStrings
Application: Spider

This is the command that will be executed:
Path:       C:\Windows\Microsoft.NET\Framework64\v4.0.30319
Command:    aspnet_regiis.exe -pe connectionStrings /app /Spider"

Press any key to continue . . .

Microsoft (R) ASP.NET RegIIS version 4.0.30319.0
Administration utility to install and uninstall ASP.NET on the local machine.
Copyright (C) Microsoft Corporation. All rights reserved.
Encrypting configuration section...
Succeeded!
Press any key to continue . . .

```

You can use the same procedure to decrypt the corresponding files.

Example for encryption without the batch file

```
%WINDIR%\Microsoft.NET\Framework64\v4.0.30319\aspnet_regiis.exe -pe connectionStrings /app /<IIS application name>
```

Example for decryption without the batch file

```
%WINDIR%\Microsoft.NET\Framework64\v4.0.30319\aspnet_regiis.exe -pd connectionStrings /app /<IIS application name>
```

Example for encryption of the SessionState configuration without the batch file

```
%WINDIR%\Microsoft.NET\Framework64\v4.0.30319\aspnet_regiis.exe -pe system.web/sessionState /app /<IIS application name>
```

Example for decryption of the SessionState configuration without the batch file

```
%WINDIR%\Microsoft.NET\Framework64\v4.0.30319\aspnet_regiis.exe -pd system.web/sessionState /app /<IIS application name>
```

Example for decrypted file

```

<?xml version="1.0" encoding="utf-8"?>
<connectionStrings>
  <add name="CoreConnectionString" connectionString="server=.;

```

```

        database=SpiderCore;
        Integrated Security=True;
        application name=Spider;
        persist security info=True;
        packet size=4096"
    providerName="System.Data.SqlClient" />
</connectionStrings>

```

Example for encrypted file

```

<?xml version="1.0" encoding="utf-8"?>
<connectionStrings configProtectionProvider="RsaProtectedConfigurationProvider">
  <EncryptedData Type="http://www.w3.org/2001/04/xmlenc#Element"
    xmlns="http://www.w3.org/2001/04/xmlenc#">
    <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#tripledes-cbc" />
    <KeyInfo xmlns="http://www.w3.org/2000/09/xmldsig#">
      <EncryptedKey xmlns="http://www.w3.org/2001/04/xmlenc#">
        <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#rsa-1_5" />
        <KeyInfo xmlns="http://www.w3.org/2000/09/xmldsig#">
          <KeyName>Rsa Key</KeyName>
        </KeyInfo>
      </EncryptedKey>
      <CipherData>
        <CipherValue>BwPqFNjS0A9dhKo0UxNK+me2pTQ/p4GixYvuGNJ6DRd3zTFJJQxJl4uZrW585u1Xt1Ix1oEs8MMUDCmoyuCs0hcv0+7pKtT0m4EODghL+Hfo72x
FGikQfkXFKh6enNaRwP32BsXuobAQ8gB8+uN10eJJTB18gaJDjQ306K4Q72gm1Kmw0F600K+r/ceyOyvabjvnx2rceFF4R0W0StXa3jCF3mcP5TJThIY3BmwI9
Pyoab+42o0P+R1K5R2j0Ln6Qj1Hhm2tHb+FCGF/b4cUrLUApkF9S3iMuwrVbPaw0pGJfgMqr1st5yihbsMb+FMav0Qmg7tGTqt9WICtKfQ==</CipherValue>
      </CipherData>
    </EncryptedKey>
  </KeyInfo>
  <CipherData>
    <CipherValue>90D12S80i6ouIZ/1KZRjxIx3HvRzEqWzS1TfvXpDZXDBuNxRMFzEG92RLme1+f6fvim9pZqzW2e126FIHNx/XYQQ5Uhi7x0khVLL+cXvxfQX5
lHr1cLHJ2GwNFUsPucWaAX2LXDxwA9XcAjQeOZqR2sw8TyfADsDzLJYib+Iv7F30H4hXv5D5+TuWck0q60T+oeFsLiVojJFyyB1hy0GwgPzkwahD06fkPN14UQRG
ik3bV3k+iSx3kBa1DL8130gtgJPLoEn9ZdpXwc9kRXdvXompUyNBOW6p617jRYaE6xdC5y7I39hqyy035EhBnkjT9p1TTonRPKe39Z4WJPCOGMAy23IhZ+YTW+J
vgcLd7zB4ZfnU+GTBHC2sFmbody1E155181qKBcHaE7m5BDGXTnnUH1A26R3UtKhWgmqlH9MnR1KJDEQ==</CipherValue>
    </CipherData>
  </EncryptedData>
</connectionStrings>

```

3.3.11 Error handling system

In general, the following will apply: Spider has a unified error handling system. However, due to the used technology (ASP.NET) it is only possible to handle certain error classes. Some exceptions are automatically handled by the web server (IIS) and it is not possible in our application to manipulate the view of these server responses. Microsoft gives the following information: "You cannot customize the following HTTP error messages: 400, 403.9, 411, 414, 500, 500.11, 500.14, 500.15, 501, 503, and 505."

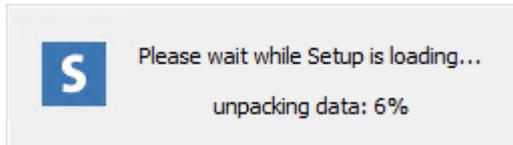
Details: [Configuring HTTP error responses in IIS 7](#)

3.4 Update

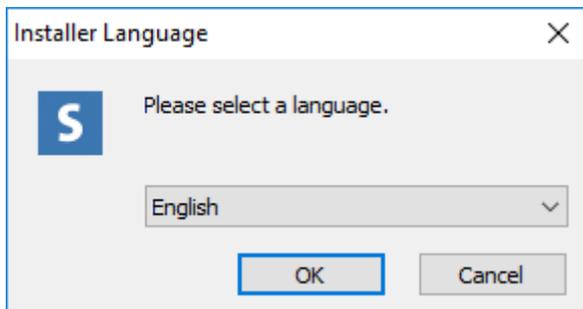
This chapter describes the update of a Spider installation.

3.4.1 Start of the update

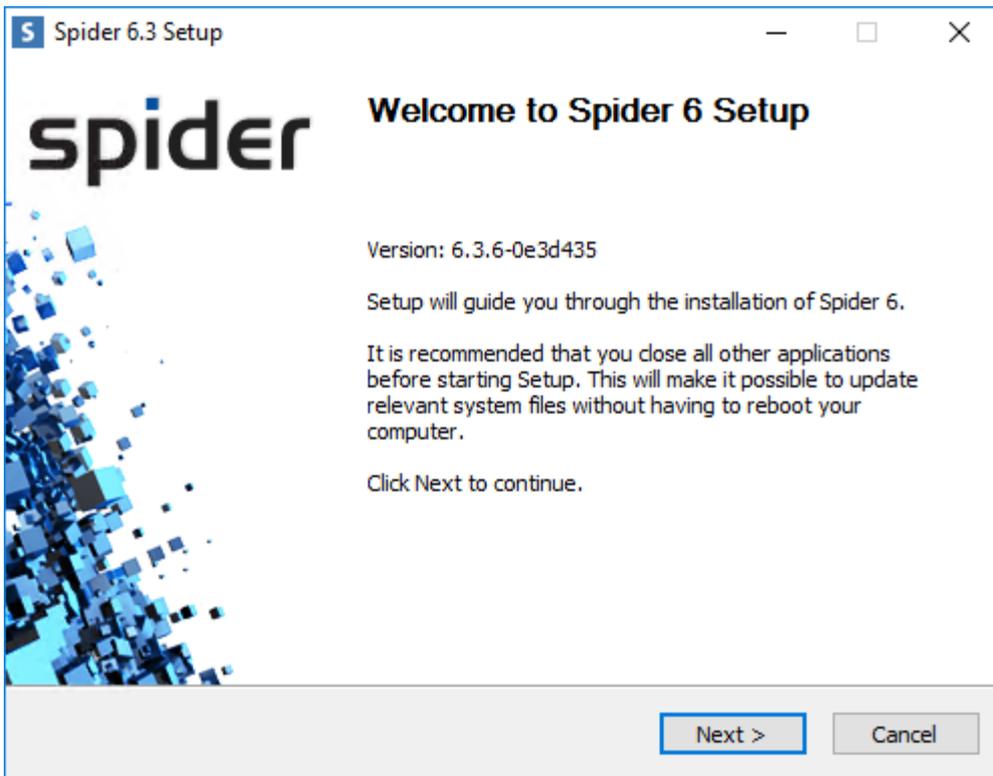
Start the installation by executing Spider 6.x Setup.exe.



At first, you are asked to select the language for the installation assistant. To do this, click on the desired language in the selection box and confirm your input with "OK".

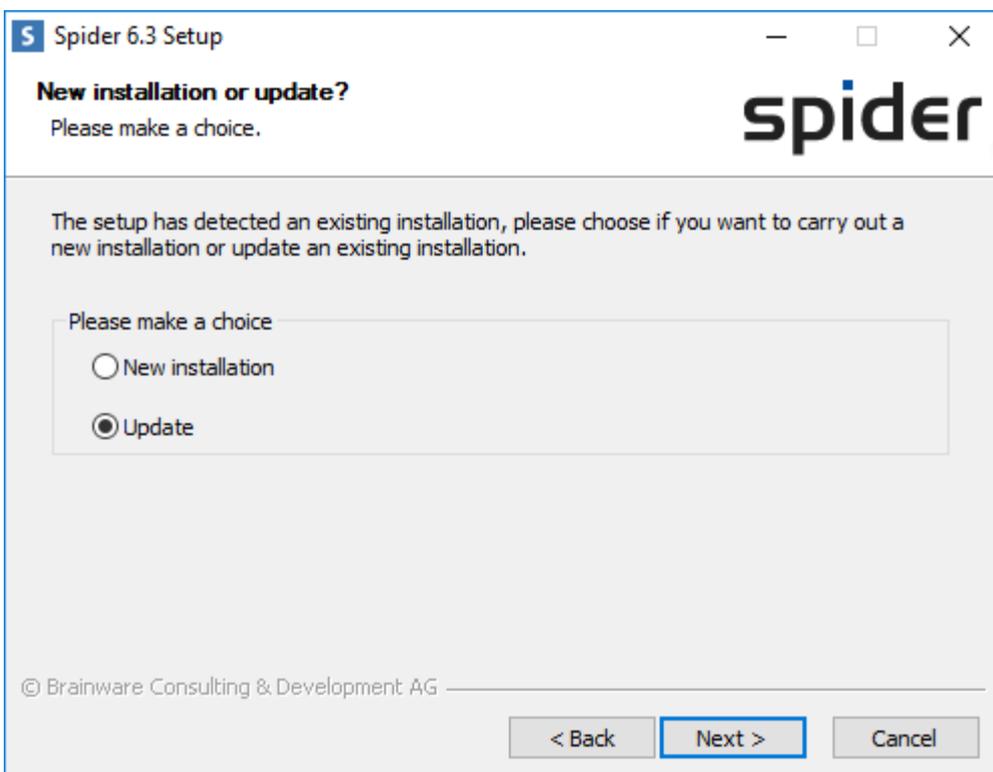


After that, the installation assistant for Spider will open. This assistant will guide you through the setup installation in the selected language. Click on "Next" to start the installation.



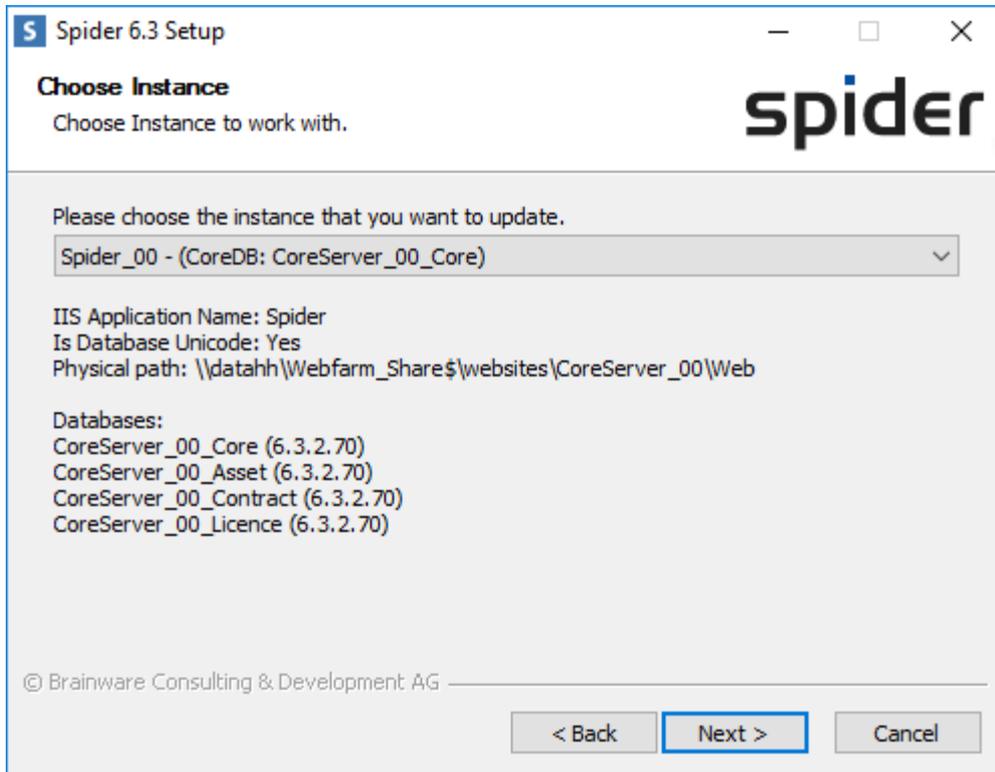
3.4.2 Update

If an instance of Spider is already installed, you will be prompted to decide for one type of installation.



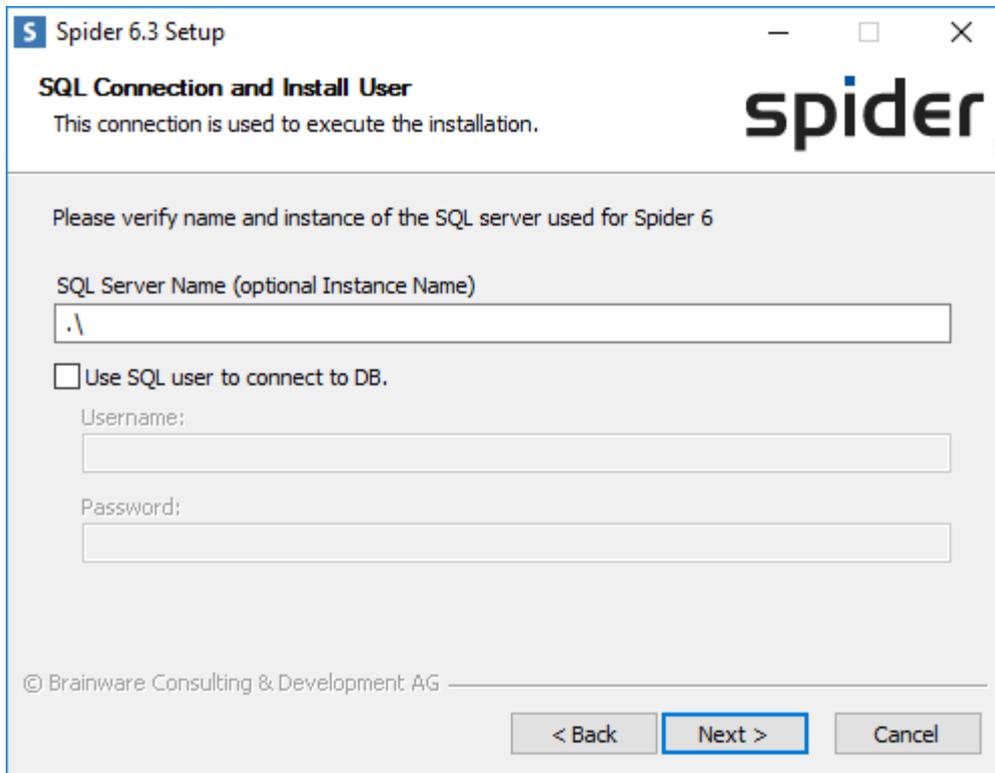
3.4.3 Selection of the Instance

Select the instance to be updated. If there is only one instance, it will be selected already in the selection field.



3.4.4 Database server

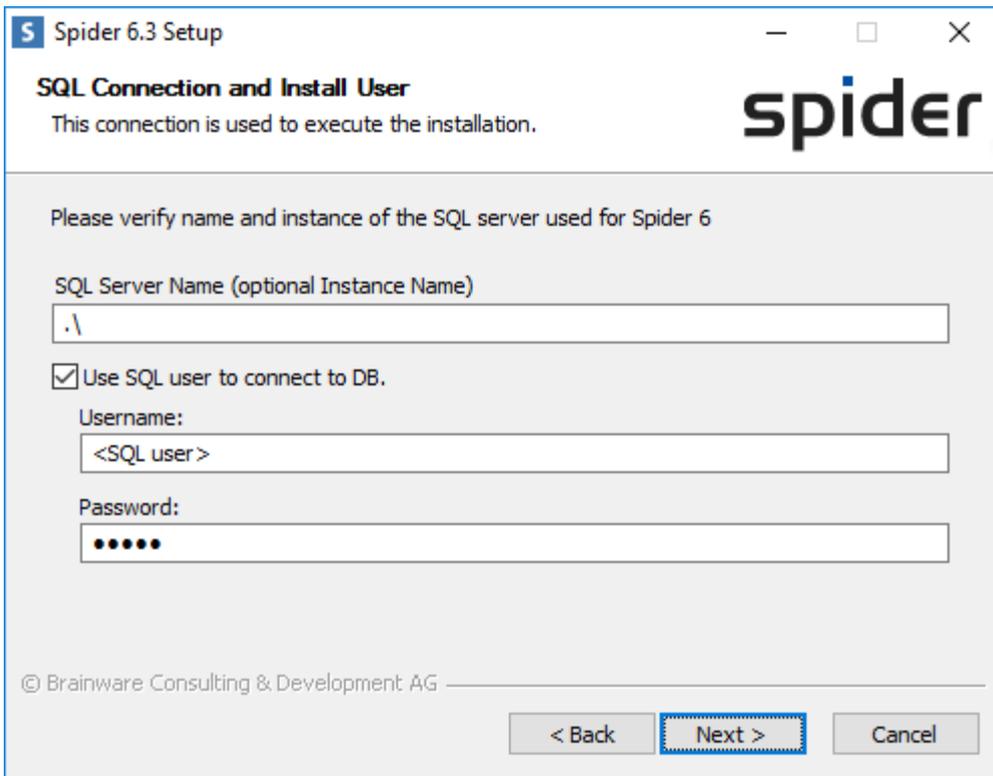
In the following step, the installation assistant will ask you to specify the name and the instance of a Microsoft SQL Server, on which the Spider databases are to be installed.



The screenshot shows a Windows-style dialog box titled "Spider 6.3 Setup". The main heading is "SQL Connection and Install User" with a sub-note: "This connection is used to execute the installation." The "spider" logo is in the top right. The instruction reads: "Please verify name and instance of the SQL server used for Spider 6". There is a text input field for "SQL Server Name (optional Instance Name)" containing ".\". Below it is a checkbox labeled "Use SQL user to connect to DB." which is unchecked. Underneath are fields for "Username:" and "Password:". At the bottom left is the copyright notice "© Brainware Consulting & Development AG". At the bottom right are three buttons: "< Back", "Next >" (highlighted with a blue border), and "Cancel".

The user, with which the connection is established, can either be the logged-in (Windows) user or an SQL user.

To be able to use an SQL user, you must tick the check box **Use SQL user for database connection** and fill in the fields **User name** and **Password** with the desired data.



S Spider 6.3 Setup

SQL Connection and Install User
This connection is used to execute the installation.

Please verify name and instance of the SQL server used for Spider 6

SQL Server Name (optional Instance Name)
.\

Use SQL user to connect to DB.

Username:
<SQL user >

Password:
.....

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< Back Next > Cancel

Note The users have to be set up beforehand on the database server with the corresponding rights. Depending on the rights of the user, the subsequent dialogs will show different options.

Field	Description
SQL server name	Name of the SQL server, including instance name and port if required e.g. SQLSERVER\SQLINSTANZ,1234
Using SQL users for database connection	Select whether to use the logged-in domain user or an SQL user.
User name	Name of SQL user.
Password	Password of the SQL user.

3.4.5 Index proxy server

If the index proxy server has not yet been configured so far, this can be made up for with each Spider update.

Next, you can select whether the index proxy shall be configured during the setup.

The Index Proxy Server is part of the Enterprise Services Infrastructure (ESI).

S Spider 6.3 Setup

Index Proxy
Index Proxy configuration details

Use Index Proxy

Index Proxy Portal server name
servername.domain.suffix

Index Proxy Portal server port
7080

Username for Token Service account
<Client ID>

Password for the Token Service account

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< Back **Next >** Cancel

By ticking the check box, the dialog will be activated and the required data can be entered.

S Spider 6.3 Setup

Index Proxy
Index Proxy configuration details

Use Index Proxy

Index Proxy Portal server name
servername.domain.suffix

Index Proxy Portal server port
7080

Username for Token Service account
<Client ID>

Password for the Token Service account
••••• •••••

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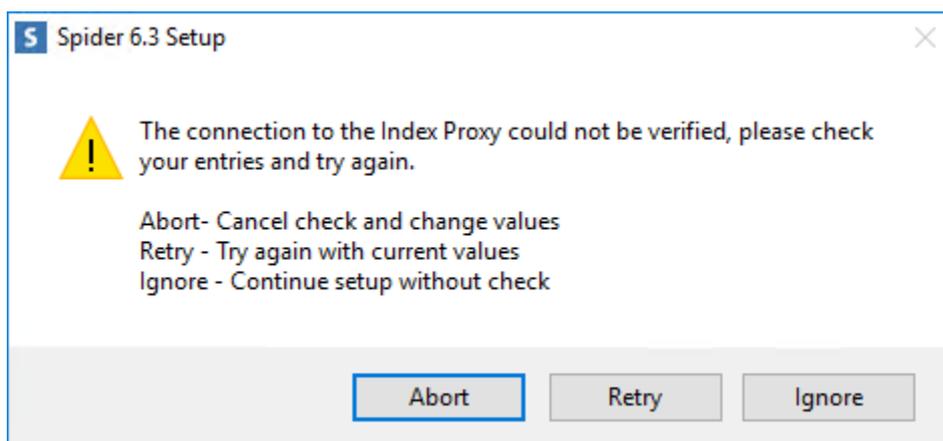
< Back **Next >** Cancel

Field	Description
Use the index proxy	Activation of the dialog and query of the details

Field	Description
Name of the index proxy portal server	Name (FQDN) of the server, on which the index proxy is installed,
Port of the index proxy portal servers	Port (default: 7080) on which the index proxy reacts to requests
User name of the token service account	The client ID of the user which shall be used for the connection to the index proxy; the client ID has been created during the installation of the index proxy. Observe capital and small letters for the client ID!
Password of the token service account	Password belonging to the client ID.

After entering all data and selecting the **Next >** button, the connection to the index proxy will be checked.

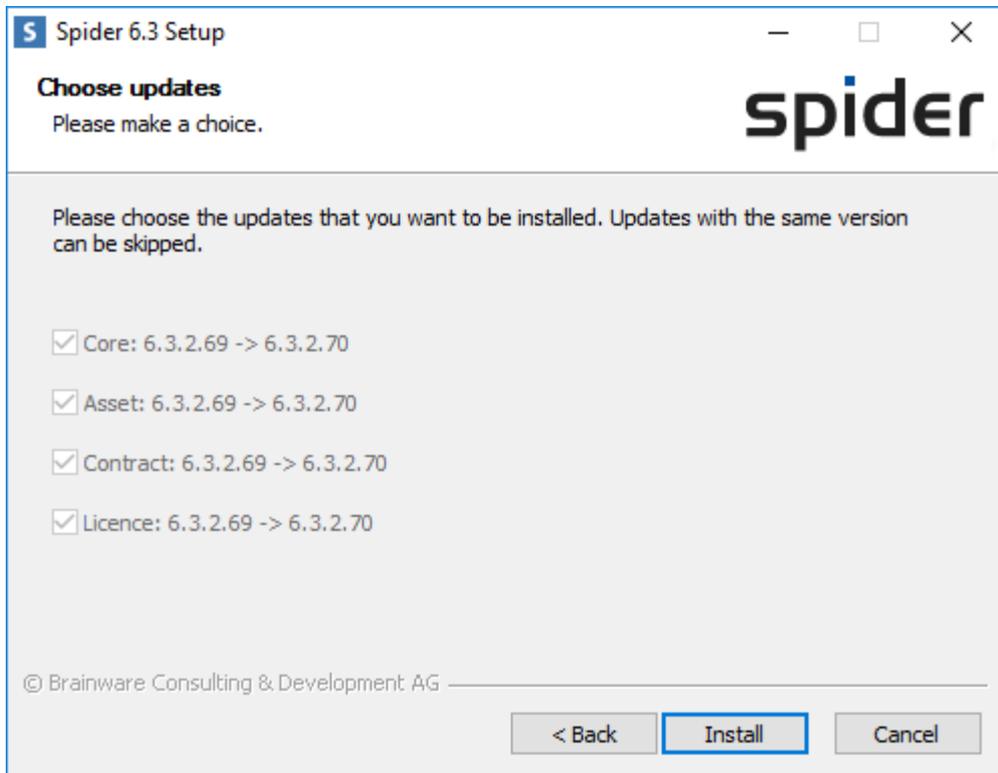
If an error should occur, the following message will be displayed.



Button	Description
Abort	The check may be aborted to correct the values. Then the values will be rechecked.
Retry	New try with the current values
Ignore	The dialog can be closed without a positive check result. The installation will be carried out with the values specified in the dialog.

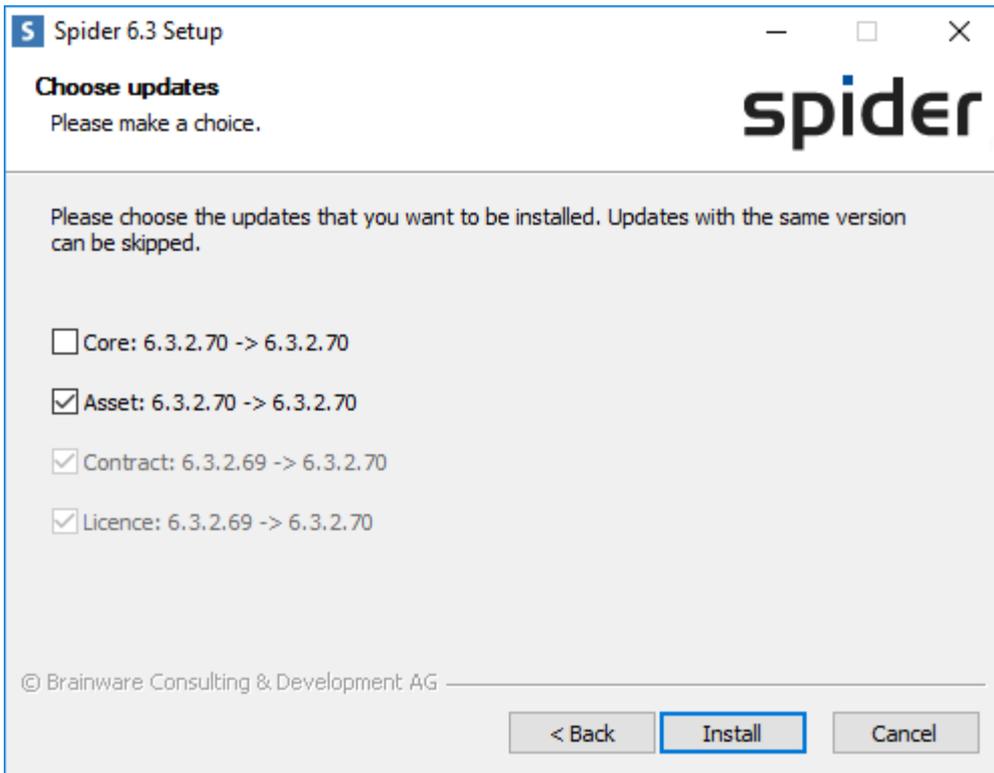
3.4.6 Select updates

If the update is carried out for the first time, all product must be selected for update. The dialog is filled in already and cannot be changed anymore.



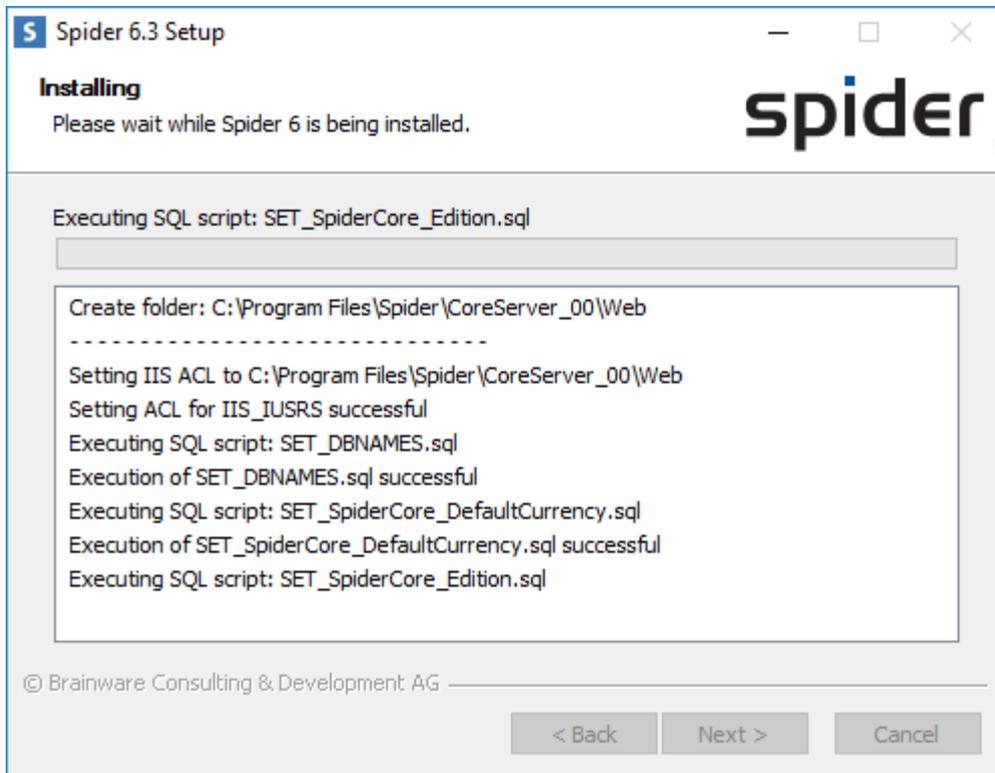
If one of the products has been updated earlier, it could happen that not all of the products are offered for updating.

If necessary, these products can nevertheless be selected for updating.

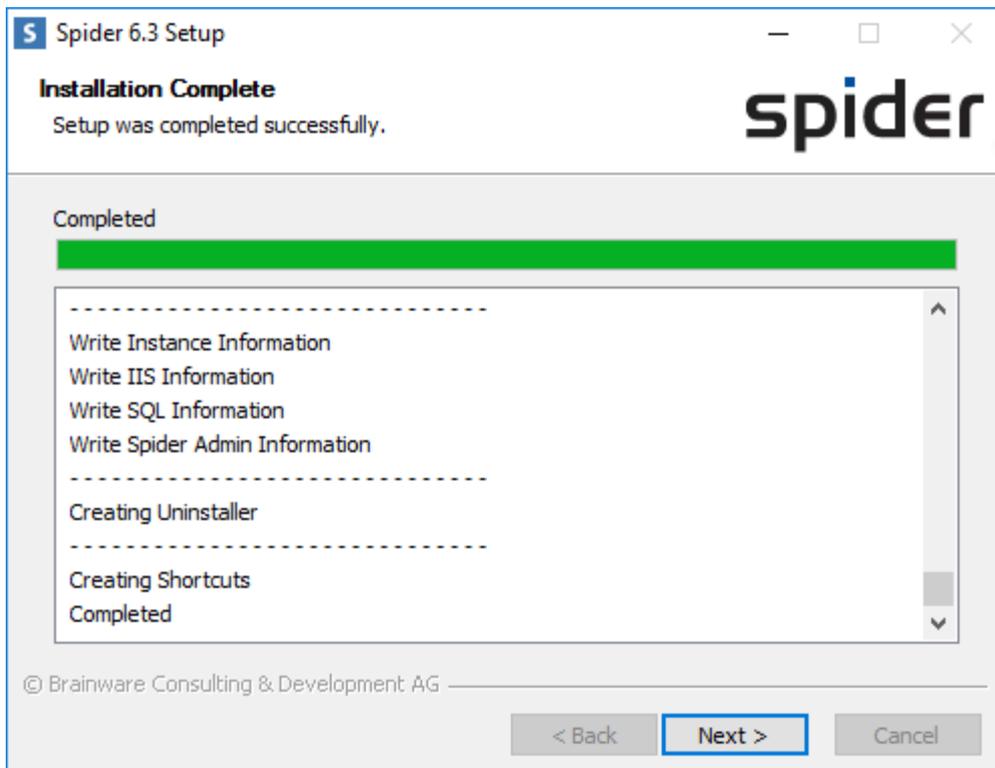


3.4.7 Installation

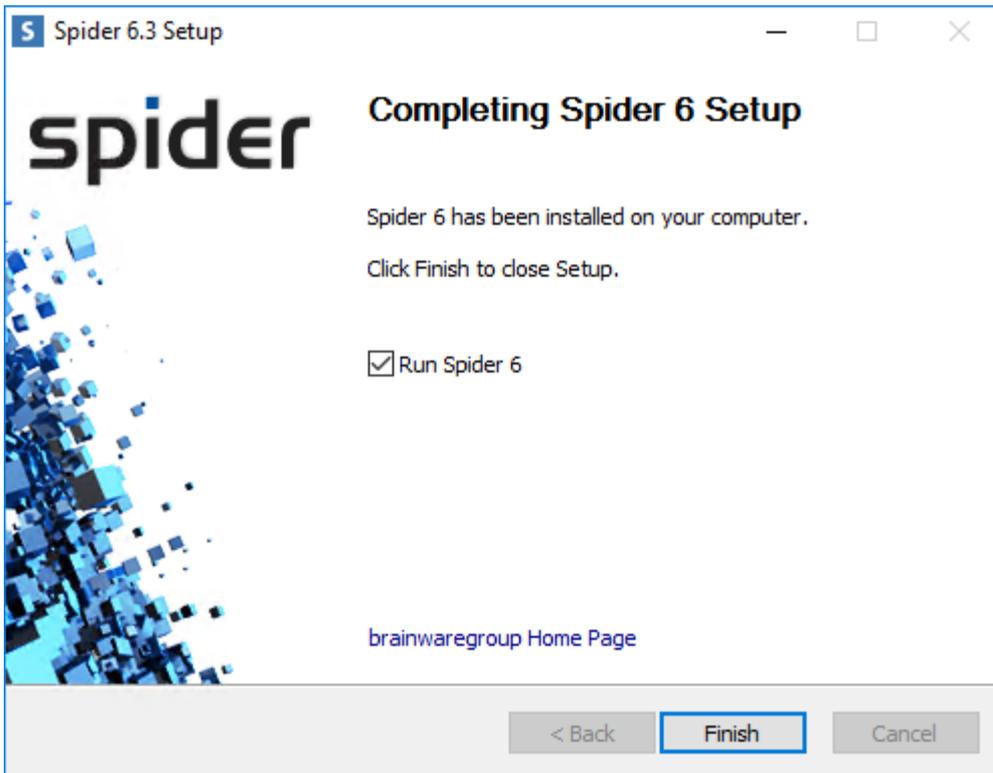
The installation assistant will now install Spider. This can take some time. Please wait, until the installation is completed.



The successful completion of the installation will be shown in the progress dialog.



The setup has been completed successfully and can now be closed.



After completion of the installation, a log file will be written. For details to the log files, please refer to chapter [Log files](#) (on page 208).

Spider Web API

As of Spider 6.4, a programming interface (Spider Web API) based on the REST standard will be provided. On the one hand, it is meant to improve the integration of the Spider and Columbus products with each other. On the other hand, however, it is mainly meant to improve the integration of Spider with the customer's existing systems and external systems. The Spider Web API allows for carrying out search queries and requesting reports as well as for creating, changing, assigning, disconnecting, and deleting objects. The Spider Web API is a regular feature of Spider 6.4 and available immediately after installation. The Spider Web API features its own documentation section with information on all functions, their parameters, and return values. The Spider Web API Explorer is provided for testing and development purposes. This makes it easier to get started with using the interface and is also intended to simplify the analysis possible errors. Swagger is provided for more substantial development tasks such as the construction of new interfaces.

4.1 Technical information

4.1.1 REST API

The Spider Web API is based on the principle of RESTful service. This means that each defined URL represents a resource on which one or multiple HTTP methods can be used. The HTTP methods GET, PUT, POST and DELETE are used

to obtain, edit, add, and erase resources. The communication can be carried out via HTTP or HTTPS, depending on the customer's configuration. The Spider Web API receives and sends data in JSON format. The data is encoded in UTF-8.

4.1.2 Version management

The functions of the Spider Web API are versioned. The version of the requested function is specified in the URL. If the version is omitted in the URL, the newest version of the function will be used.

Example

Asset search without version specification

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/search/asset
```

Asset search with version specification (V1)

```
http(s)://{ServerName}/{SpiderApiInstance}/v1/{Mandator}/search/asset
```

4.1.3 Tenant selection

Many functions of the Spider Web API require a tenant to perform. The designation or the ID of the tenant must then be included in the URL in the correct position.

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/search/asset
```

For the list of the tenants available for the user, refer to the chapter [Mandator](#) (on page 113).

4.1.4 Request

Parameters may be added to any request sent to the Spider Web API. The possible parameters differ depending on the resource. However, the CultureCode parameter, which controls the language of notes and error messages as well translatable results, may be added to any request.

In general, the parameters are transmitted as URL parameters. Only the data and parameters used when creating and editing entities must be included in the request body.

Example

Request with parameters in the URL for an asset search:

```
GET http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/search/asset?culturecode=de&orderby=assetno&distinct=true
```

Request with parameters in the request body for editing the asset with the ID5:

```
PUT http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/search/asset/5
```

with the body:

```
{
  "fields": {
    "AssetNo": "Test",
    "CPUCount": 1,
    "Status": 1
  }
}
```

4.1.5 Response

Each request sent to the Spider Web API results in a standardized response. This response includes a self-URL, the parameters of the request, the processing time of the request and, if available, notes and error messages which have been generated during execution of the request.

Example

An asset search returns the result

```
{
  "Count": 2204,
  "Result": [
    {
      "id": 2,
      "assetNo": "Access card-0002",
      "hostname": null,
      "assetType": "Access card",
      "status": "Active",
      "functionUnitID": null,
      "functionUnit": null
    }
  ],
  "IsResultTruncated": false,
  "Notifications": [],
  "Duration": 713,
  "SelfLink": "http://www.SpiderServer.com/SpiderWebApi/100/search/Asset?MaxRows=1&Firstrow=1&OrderBy=AssetNo",
  "Parameter": {
    "Conditions": [],
    "MaxRows": 1,
    "FirstRow": 1,
    "OrderBy": "AssetNo",
    "Distinct": false,
    "Fields": [],
    "AllFields": false,
    "CultureCode": null
  }
}
```

Authorized requests of the Spider Web API always return the HTTP status code 200. The only exception to this rule are successful requests for adding objects. These end with the HTTP status code 201.

Unauthorized requests return the HTTP status code 401.

4.2 Authentication

A token is used for the authentication of attempts to access the Spider Web API. This token is included with each request during its lifetime. Thanks to the token, it is not necessary to include the login data with each access.

4.2.1 Generation of tokens

The authentication token can be obtained via a GET request by means of basic authentication. The token is then returned in the header of the response.

For basic authentication, the username and the password can be included directly in the request URL.

```
http(s)://{UserName}:{Password}@{ServerName}/{SpiderApiInstance}/token
```

Alternatively, username and password can be transferred in the header of the request.

```
http(s)://{ServerName}/{SpiderApiInstance}/token
```

For this purpose, username and password are linked with a colon. The resulting text is converted to Base64 and transferred under Authorization.

Base64 converts **Username:Password** to **VXNlcm5hbWU6UGFzc3dvcnQ=** which must follow the keyword Basic under Authorization in the header.

```
Host: ServerName
User-Agent: WebAPI-Accessor
Authorization: Basic VXNlcm5hbWU6UGFzc3dvcnQ=
```

4.2.2 Use of tokens

The token must be included in the header of each subsequent request. The Spider Web API uses the token to identify the Spider user and the user's permissions.

Example

The token is transferred in the request header under Authorization.

```
Host: ServerName
User-Agent: WebAPI-Accessor
Authorization: Token ed901b25-2f7e-4461-86bd-604212f4e859
Content-Length: 220
Content-Type: application/json; charset=utf-8
```

4.2.3 Validity of tokens

For increased security, the token is only valid for a limited amount of time. The actual length in minutes can be set in the Spider Core Config. By default, it is set to 15 minutes.

After the token has expired, the token can no longer be used for authentication. The processing of requests which are already in progress will be continued. A new token can be generated via token generation.

4.2.4 Management of tokens

The tokens are centrally managed so that all Spider Web API instances can access the same tokens in a web farm scenario. This way, it is irrelevant to the user which instance processes the request.

Furthermore, multiple valid tokens may be assigned to one user since e.g. different services may access the Spider Web API with the same login at the same time.

4.3 Admin section

In the admin section of the Spider Web API, authorized users may list, read, link, and partially edit, add, or delete administrative Spider objects.

Restrictions

The admin section does not cover the same scope of functions as the Spider Web interface. Thus, there is no access to application forms, menu objects, role objects, Active Directory objects, password objects, and system message objects.

4.3.1 Mandator

Using the Spider Web API, tenants can be listed, read, edited, added, and deleted. Furthermore it is possible to assign a user to and disconnect a user from a tenant.

4.3.2 User

Using the Spider Web API, users can be listed, read, edited, added, and deleted. Furthermore it is possible to assign tenants, profiles, and business units to a user and disconnect these from a user accordingly.

4.3.3 Profile

Using the Spider Web API, profiles can be listed and read. Furthermore it is possible to assign users and business units to a profile and disconnect these from the a profile accordingly. Deleting and adding of profiles is not provided for.

4.4 Entity section

In the entity section of the Spider Web API, users may access different Spider entities. The permission of a user with regard to entities and their fields is defined by the roles assigned to said user.

Limitation

Only entities whose technical designation is unique across all Spider applications can be addressed via the Spider Web API. Furthermore, access to certain entities is explicitly excluded since these e.g. only serve as a link between two other entities or have an administrative function.

4.4.1 Entity access

Depending on the permissions available, a user may read, edit, add, or delete entities. Custom entities are also available in the Spider Web API as long as they do comply with the restrictions. Note, however, that only business logic from assigned custom rules and not from custom kernel objects is applied here.

The objects are referred to via their technical designation and their ID. Typed objects can be addressed by the designation of their parent object.

Example

A server with the asset ID 1 can be displayed directly via the type.

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/entity/server/1
```

Alternatively, the same result may be obtained via the parent object asset.

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/entity/asset/1
```

4.4.2 Entity history access

For many entities, Spider maintains a change history. This change history may be filtered and listed based on change period and changed fields.

4.4.3 Entity document access

Many entities may be assigned to Spider documents. This is done within a folder structure which may be navigated with the Spider Web API. The different versions of the documents may be accessed as well. Furthermore, documents may be created and new versions may be added.

4.4.4 Entity reminder access

Some entities may be assigned to Spider reminders. These are to be created, displayed, edited, and deleted in the context of the entity.

4.4.5 Entity relationship access

Many entities in Spider are linked to each other. These links may be realized via relationship tables or via direct reference using a field of the entity. The Spider Web API may be used to list the entities assigned to a specific entity, establish new assignments, and disconnect existing assignments.

Restrictions

There are two special cases in which access to the relationships between entities is not possible in the Spider Web API:

- when the relationship exists between two entities of the same type (e.g. link between two contractors via a legal succession) or
- when the relationship has been realized via a typed relationship entity (e.g. link of two function units via a function unit relationship).

Relationship definition

The possibility of customizing entities and their relationships requires the list of possible entity relationships to be defined in an extendable way. This information can be found in the Spider Core database within the `webapi.EntityRelationships` table.

An entity relationship, in this case, is an unambiguous relationship from one entity to another entity. The return path from the other entity to the first entity is a separate relationship.

A relationship definition always consists of

- a MainEntity,
- a RelatedEntity,
- a search view,
- the field name of the MainEntityID in the search view
- and the application on whose database the search view must be executed.

Based on this information, it is possible to list the assigned entities.

Also, if required, the following takes place via a separate entity when creating a link:

- the name of the entity,
- the fieldname of the ID field of the MainEntity,
- the fieldname of the ID field of the RelatedEntity,
- are transferred to an SQL script for translating the ID value of the MainEntity (e.g. for determining the FunctionUnitID in case of a relationship from asset to employee),
- are transferred to an SQL script for translation of the ID value of the RelatedEntity.

By specifying this information, assignments can be created and resolved.

4.5 Search section

In the search section of the Spider Web API, users may access the search functions for the different Spider entities. The search result and the search fields can be influenced by the permissions of the user and the roles assigned to the user.

Example

Result of an asset search

```
{
  "count": 201,
  "result": [
    {
      "id": 2,
      "assetNo": "LAPTOP-OBST003.domain.corp",
      "hostname": "LAPTOP-OBST003",
      "assetType": "Laptop",
      "status": "Active",
      "functionUnitID": 2,
      "functionUnit": "LAPTOP-OBST003.domain.corp"
    }
  ],
  "isResultTruncated": false,
  "notifications": [],
  "duration": 4409,
  "selfLink":
  "http://www.SpiderServer.com/SpiderWebApi/v1/0/search/asset?maxRows=1&firstRow=1&distinct=true&allFields=false",
  "parameter": {
    "conditions": [],
    "maxRows": 1,
    "firstRow": 1,
    "orderBy": "",
    "distinct": true,
    "fields": [],
    "allFields": false,
    "cultureCode": null
  }
}
```

Limitation

Only entities whose technical designation is unique across all Spider applications can be addressed in the search section via the Spider Web API. Furthermore, access to certain entities is explicitly excluded since these e.g. only serve as a link between two other entities or have an administrative function.

4.5.1 Parameterization

The parameters of the search are transferred in the URL.

Example

A list of the first 100 assets with all fields sorted by the asset number.

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/search/asset?allfields=true&firstrow=1&maxrows=100&orderby=assetno
```

Parameter	Description
AllFields	This URL parameter must contain a Boolean value which defines whether all fields are to be included in the search. The value is false by default.
Condition	<p>This URL parameter can be included in the URL multiple times. Each parameter includes a filter. A filter consists of</p> <ul style="list-style-type: none"> • a logical link, • an optional flag for negation, • a field name, • a comparison type • and a comparison value. <p>The individual components must be separated by a pipe character (" ").</p> <p>Example</p> <p>The list of non-active assets from the business unit "A":</p> <pre>http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/search/asset?condition=and not status = active&condition=and LegalEntityPath = A</pre>
CultureCode	This URL parameter must contain a text which represents a valid language code. This language setting is used for translatable results of the search. The default language is identical with the server language.
Distinct	The URL parameter must contain a Boolean value which defines whether lines with identical content can appear in the result multiple times. The value is false by default.

Parameter	Description
Fields	<p>This URL parameter should contain a list of field names from the search separated by commas. The standard fields differ based on the search entity.</p> <p>The Fields parameter is ignored if the parameter AllFields is set to true.</p> <p>Example</p> <p>The list of non-assets with the fields ID, AssetNo, AssetType, AssetStatusID, Status, LegalEntityID, and LegalEntityPath:</p> <pre>http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/search/asset?fields=id,assetno,assettype,assetstatusid,status,legalentityid,legalentitypath</pre>
FirstRow	This URL parameter must contain a numerical value which defines as of which line the result is to be transferred. The value is 1 by default.
MaxRows	This URL parameter must contain a numerical value which defines the maximum number of lines to be included in the result. The value is 500 by default.
OrderBy	This URL parameter must contain a field name which determines the sorting method. Optionally, the sorting direction can be defined by adding "ASC" for ascending order and "DESC" for descending order. By default, the sorting method is determined by the database.

4.6 Report section

In the report section of the Spider Web API, users may access the reports defined in Spider. A report may be accessed via its ID or its GUID.

Example

If the report "Assets with outdated Scandate" has the ID 1, it can be accessed as follows:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/report/1
```

Alternatively, the same report may be accessed via its GUID:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/report/3428E63A-082B-3C9D-D318-04AFA7DCCFBD
```

The report would deliver a similar result:

```
{
  "meta": {
    "displayCategory": "Inventory",
    "displayName": "Assets with outdated scan date",
    "displayDescription": "Assets with outdated scan date (older than 90 days)",
    "guid": "3428e63a-082b-3c9d-d318-04afa7dccfbd",
    "category": "Inventory",
    "name": "Assets with outdated scan date",
    "description": "Assets, which have a scan date that is at least 90 days old",
    "id": 5,
    "applicationName": "Spider Asset",
    "applicationGuid": "38f96e97-c314-44b8-b137-c966d35a3ba0"
  },
  "count": 27,
  "result": [
```

```

{
  "assetID": 222,
  "asset": "DP000001",
  "hostName": "heraetrdy",
  "assetStatus": "Active",
  "invLastScanDate": null,
  "swrUpdateDate": null
}
],
"isResultTruncated": false,
"notifications": [],
"duration": 553,
"selfLink": "http://www.SpiderServer.com/SpiderWebApi/v1/0/report/3428e63a-082b-3c9d-d318-04afa7dccfbd",
"parameter": {
  "conditions": [],
  "maxRows": 1,
  "firstRow": 1,
  "orderBy": "",
  "distinct": false,
  "fields": [],
  "allFields": false,
  "cultureCode": null
}
}

```

Limitation

The Spider Web API only allows access to query-based reports

4.6.1 Parameterization

The parameters of the report are transferred in the URL.

Parameter	Description
AllFields	This URL parameter must contain a Boolean value which defines whether all fields are to be included in the report. The value is false by default.
Condition	<p>This URL parameter can be included in the URL multiple times. Each parameter includes a filter. A filter consists of</p> <ul style="list-style-type: none"> • a logical link, • an flag for negation, • a field name, • a comparison type • and a comparison value. <p>Example</p> <p>Report results must contain the text "srv" in the asset no. condition=AND AssetNo LIKE %srv%</p> <p>Report results must not have an "Active" status. Condition=AND NOT Status = Active</p>

Parameter	Description
CultureCode	This URL parameter must contain a text which represents a valid language code. This language setting is used for translatable results of the report. The default language is identical with the server language.
Distinct	The URL parameter must contain a Boolean value which defines whether lines are allowed to appear in the result twice. The value is false by default.
Fields	This URL parameter must contain a list of field names from the search separated by commas. The standard fields differ based on the search entity. The Fields parameter is ignored if the parameter AllFields is set to true.
FirstRow	This URL parameter must contain a numerical value which defines as of which line the result is to be transferred. The value is 1 by default.
MaxRows	This URL parameter must contain a numerical value which defines the maximum number of lines to be included in the result. The value is 500 by default.
OrderBy	This URL parameter must contain a field name which determines the sorting method. Optionally, the sorting direction can be defined by adding "ASC" for ascending order and "DESC" for descending order. By default, the sorting method is determined by the database.

4.7 Meta section

In the meta section of the Spider Web API, users may access the meta data for the other sections.

In addition to the lists of available tenants, entities, searches, and reports, this meta data, depending on the function, also includes information on the fields in searches and reports as well as information for creating and editing entities.

4.7.1 Mandator

In the meta section, the user may call up a list of the tenants which have been assigned to them.

```
http(s)://{ServerName}/{SpiderApiInstance}/meta/mandator
```

4.7.2 Admin

In the meta section, the user may call up the meta data for creating and editing tenants as well as users.

Example

The meta information required for creating a tenants can be obtained under:

```
http(s)://{ServerName}/{SpiderApiInstance}/meta/admin/mandator
```

The meta information for editing the user with the ID 5 can be obtained under:

```
http(s)://{ServerName}/{SpiderApiInstance}/meta/admin/user/5
```

4.7.3 Entity

In the meta section, the user may call up the entities available in the Web API. Additionally, there are functions for calling up the meta data for creating and editing.

Example

The list of possible entities is available under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/entities
```

The meta information required for creating a manufacturer can be obtained under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/entity/manufacturer
```

The meta information for editing the contract with the ID 5 can be obtained under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/entity/contract/5
```

Furthermore, there is a list of available, related search field meta data and meta data for creating and editing relationships.

Example

The list of entities which can be linked to assets is available under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/entity/asset/relationship
```

The required meta information for search fields of the list of software which is assigned to an asset:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/entity/asset/relationship/software
```

Furthermore, there is a list of Spider EntityTypes which are non-entities and their possible values.

Example

The list of EntityTypes used in a contract is available under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/entity/contract/entityType
```

4.7.4 Search

In the meta section, the user may call up the entities available in the Web API as well as the related result fields.

Example

The list of possible search entities is available under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/search
```

The field information for a manufacturer search can be obtained under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/search/manufacturer
```

4.7.5 Report

In the meta section, the user may call up the reports available in the Web API as well as the related result fields.

Example

The list of possible reports is available under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/report
```

The field information for the report "Assets with outdated Scandate" can be obtained under:

```
http(s)://{ServerName}/{SpiderApiInstance}/{Mandator}/meta/search/3428E63A-082B-3C9D-D318-04AFA7DCCFBD
```

4.8 Version information

If a user required information on the Spider version used, there are 2 resources from which this information can be obtained.

4.8.1 Simple version information

The simple version information provides a 4-part Spider build number and can be obtained under the following URL.

```
http(s)://{ServerName}/{SpiderApiInstance}/version
```

Example

```
{
  "build": "6.4.0.301",
  "notifications": [],
  "duration": 0,
  "selfLink": "http://www.SpiderServer.com/SpiderWebApi/version",
  "parameter": null
}
```

4.8.2 Advanced version information

In addition to the build number, the advanced version information also provides the recognition version and the edition as well as information on whether the instance in question is a full update version. It can be obtained under the following URL.

```
http(s)://{ServerName}/{SpiderApiInstance}/versioninfo
```

Example

```
{
  "build": "6.4.0.301",
  "setup": "6.4.0-4154089",
  "edition": "Spider Enterprise",
  "recognition": "1.1805.2.2",
  "isFullUpdate": true,
  "settingsVersion": "6.4.0.301",
  "notifications": [],
  "duration": 267,
  "selfLink": "http://www.SpiderServer.com/SpiderWebApi/versioninfo",
  "parameter": null
}
```

4.9 Swagger

The Spider Web API uses Swagger as interactive API documentation. Swagger is the largest framework of API developer tools for the OpenAPI Specification (OAS) and allows for development during the entire API lifecycle - from design and documentation to testing and publishing.

Swagger can be accessed under the following URL:

```
http(s)://{ServerName}/{SpiderApiInstance}/swagger/ui/index
```

4.9.1 OpenAPI Document

The OpenAPI document is a document (or a group of documents) which defines or describes an API. It can be read by humans as well as machines. The document can be used by a developer to automatically generate an interface to the Spider Web API.

The document may be called up via a URL which can be found in the header of the Swagger interface. The URL usually features the following structure:

```
http(s)://{ServerName}/{SpiderApiInstance}/swagger/docs/v1
```

4.9.2 Swagger UI

Via the Swagger UI, the user may directly access the functions of the Spider Web API.

Note If you want to use Swagger in Internet Explorer, you must turn off the compatibility mode. Swagger is not compatible with Internet Explorer in compatibility mode.

Token authentication

A valid authentication is also required when accessing the functions from the Swagger UI. The user may generate a valid token under

```
http(s)://{ServerName}/{SpiderApiInstance}/swagger/ui/index#!/Token/Authenticate_Authenticate.
```

There, a valid basic authentication must be specified in the Authorization field. It has the format

```
"Basic {Base64 coding of \"{UserName}:{Password}\"}"
```

There are various tools and online resources available for encoding username and password to Base64 on the internet.

Example

GET /token The service returns an access token.

Implementation Notes

The service returns an access token to be used for authentication at other services. It takes the user credentials given by the basic authentication information in the header. If those are verified by the Spider application the access token will be generated and returned inside the response's header.

Response Class (Status 200)

OK

Model Example Value

```

{
  "notifications": [
    {
      "category": 0,
      "message": "string"
    }
  ],
  "duration": 0,
  "selfLink": "string",
  "parameter": {
    "cultureCode": "string"
  }
}

```

Response Content Type application/json ▼

Parameters

Parameter	Value	Description	Parameter Type	Data Type
parameter.cultureCode	<input style="width: 100%;" type="text"/>		query	string
Authorization	Basic VGVzdGVyOIBhc3N3b3J0	The basic authorization information, e.g. 'Basic TG9naW46UGFzc3dvcmQ='(The second part is the combination of 'userLogin:password' encoded in Base64)	header	string

Try it out!

After actuating the "Try it out!" button, the query is processed and the result is displayed. The generated access token is displayed in the response header section if processing was successful.

Try it out! [Hide Response](#)

Curl

```
curl -X GET --header 'Accept: application/json' --header 'Authorization: Basic VGVzdGVyO1Bhc3N3b3J0' 'http://srv-v-hh148/spider64a
```

Request URL

```
http://srv-v-hh148/spider64api/token
```

Response Body

```
{
  "Notifications": [],
  "Duration": 120,
  "SelfLink": "http://srv-v-hh148/spider64api/token",
  "Parameter": null
}
```

Response Code

```
200
```

Response Headers

```
{
  "pragma": "no-cache",
  "date": "Wed, 30 May 2018 09:54:28 GMT",
  "server": "Microsoft-IIS/10.0",
  "x-aspnet-version": "4.0.30319",
  "x-powered-by": "ASP.NET",
  "content-type": "application/json; charset=utf-8",
  "access-control-expose-headers": "Token,TokenExpiry",
  "cache-control": "no-cache",
  "tokenexpiry": "2018-05-30T10:09:28.8614554Z",
  "content-length": "102",
  "token": "5d37878d-42f2-d262-43e7-51e4819ed9ec"
  "expires": "-1"
}
```

In this example, the authorization text for other queries is "Token 5d37878d-42f2-d262-43e7-51e4819ed9ec" until the token expires.

GET /v1/{mandator}/meta/entities The service returns a collection of available entities.

Implementation Notes
The service returns a collection of available entities.

Response Class (Status 200)
OK

Model | Example Value

```

{
  "entities": [
    {
      "name": "string",
      "displayName": "string",
      "parentName": "string",
      "parentDisplayName": "string"
    }
  ],
  "notifications": [
    r

```

Response Content Type: application/json

Parameters

Parameter	Value	Description	Parameter Type	Data Type
mandator	<input type="text" value="0"/>	The mandator for which the available entities will be determined.	path	string
parameter.cultureCode	<input type="text"/>		query	string
Authorization	<input type="text" value="Token 5d37878d-42f2-d262-43e7-51e4819ed9ec"/>	The token authorization information, e.g. 'Token 01234567-89AB-CDEF-0123-456789ABCDEF'	header	string

4.10 Web API documentation

The Spider Web API features a non-interactive documentation. It contains websites with information on all functions, their parameters, and return values.

The documentation can be accessed under the following URL

```
http(s)://{ServerName}/{SpiderApiInstance}/help
```

Example 1: Main page

Spider Web API Help Page

Introduction

Spider WEB API - Custom your own Http Web API CRUD Requests.

AdminEntity

Mandator Web Interface

API	Description
POST v1/admin/{entityName}	The service creates a new admin entity.
POST admin/{entityName}	The service creates a new admin entity.
GET v1/admin/{entityName}/{entityID}?CultureCode={CultureCode}	The service returns the fields of an admin entity.
GET admin/{entityName}/{entityID}?CultureCode={CultureCode}	The service returns the fields of an admin entity.
PUT v1/admin/{entityName}/{entityID}	The service updates an admin entity.
PUT admin/{entityName}/{entityID}	The service updates an admin entity.
DELETE v1/admin/{entityName}/{entityID}?CultureCode={CultureCode}	The service deletes an admin entity.
DELETE admin/{entityName}/{entityID}?CultureCode={CultureCode}	The service deletes an admin entity.
GET v1/admin/{entityName}?MaxRows={MaxRows}&FirstRow={FirstRow}&OrderBy={OrderBy}&Distinct={Distinct}&AllFields={AllFields}&CultureCode={CultureCode}	The service returns the admin entities.
GET admin/{entityName}?MaxRows={MaxRows}&FirstRow={FirstRow}&OrderBy={OrderBy}&Distinct={Distinct}&AllFields={AllFields}&CultureCode={CultureCode}	The service returns the admin entities.

Example 2: Detail view

[Spider Help](#) [Page](#) [Home](#) [API](#)

POST v1/{mandator}/entity/{entityName}

The service generates a new entity.

Request Information

URI Parameters

Name	Description	Type	Additional information
mandator	The mandator for whom the entity should be created.	string	Required
entityName	The name of the entity to be created.	string	Required

Body Parameters

A parsed from the URL parameters.

[EntityFieldParameterModel](#)

Name	Description	Type	Additional information
Fields		Dictionary of string [key] and Object [value]	None.
CultureCode		string	None.

Request Formats

application/json, text/json

Sample:

```
{
  "fields": {},
  "cultureCode": "sample string 1"
}
```

Example 3: Return object

Response Formats

application/json, text/json

Sample:

```
{
  "entities": [],
  "notifications": [],
  "duration": 1,
  "selfLink": "http://webapihelppage2.com",
  "parameter": {
    "cultureCode": "sample string 1"
  }
}
```

4.11 Spider Web API Explorer

The Spider Web API Explorer is a web application which allows for an easier access to all relevant functions of the Spider Web API for testing and development purposes.

Spider Web API Explorer allow data operations such as creating, searching, changing, and deleting data (CRUD: Create, Read, Update, Delete). You may select whether the results are displayed in JSON or HTML.

4.11.1 Expected users

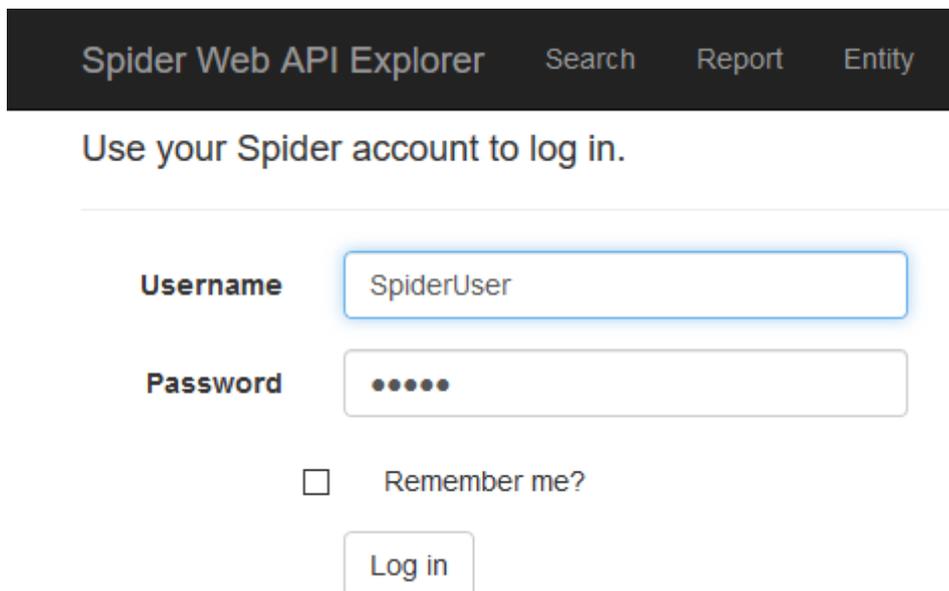
The expected users of the Spider Web API Explorer are testers, quality assurance officers, business analysts, administrators, or software engineers who want to test the functions of the Spider Web API. Basic knowledge of Spider is required.

4.11.2 Authentication

The authentication for access to the Web API Explorer is carried out via a Spider user account. In the Web API Explorer, users have the same permissions as in the Web API itself.

The API Explorer can be accessed under the following URL:

```
http(s)://{ServerName}/{SpiderApiExplorerInstance}
```



Spider Web API Explorer Search Report Entity

Use your Spider account to log in.

Username SpiderUser

Password ●●●●●

Remember me?

Log in

4.11.3 Session parameters (tenant, language, version)

After logging in, the session parameters are determined. Here, a tenant must be selected. At this time, it is also possible to select the language and the API version. By default, the latest version of the API is preselected. If no language is selected, English is used as the default API language.

The screenshot shows the 'Spider Web API Explorer' interface. At the top, there is a navigation bar with links for 'Search', 'Report', 'Entity', 'Change Session', and 'Help'. Below this, a prompt asks the user to 'Select a mandator, WEB API Version and the language for this session for the current user webtester'. There are three dropdown menus: 'Mandator' with 'Default (0)' selected, 'Language' with 'Language selection(Optional)' selected, and 'Version' with 'Latest' selected. A blue 'Select' button is located below the dropdowns.

The session parameters can be changed at any given time.

4.11.4 Communication with the Spider Web API

Communication with the Spider Web API via the HTTP / HTTPS protocol is protected by means of a token mechanism. The token is stored in the browser cache.

Response

The response page of the Spider API explorer consists of 2 tabs: HTML and JSON. Here, you may select whether the results are displayed in HTML or in JSON.

Response model

The following fields are returned:

Field	Description
Duration	Duration of the query in seconds.
Selflink	Returns a URL of the query.
Notification	Returns the error messages from the kernel (category and message).
CultureCode	Returns the language used in the query.

The other fields depend on the query.

HTTP status code: The Spider Web API Explorer always receives HTTP status code 200 as response from the Spider Web API. Error messages are always included in the return object. Unauthorized requests return the HTTP status code 401.

Example:

The response to an asset search

1. HTML format:

Response

Duration	207 :ms
SelfLink	http://srv-v-hh149/Spider-FLEXENTAPI/0/search/Asset?MaxRows=10&Firstrow=1&Orderby=AssetNo&C
Parameter	
OrderBy	AssetNo
MaxRows	10
FirstRow	1
AllFields	<input type="checkbox"/>
Distinct	<input type="checkbox"/>
Count	100
IsResultTruncated	<input checked="" type="checkbox"/>
Fields	
Conditions	

HTML

JSON

Result

id	assetNo	hostname	assetType	status	functionUnitID
65	CLIENT-SEKY002.domain.corp	CLIENT-SEKY002	Desktop	Active	65
86	CLIENT-TEKN002.domain.corp	CLIENT-TEKN002	Desktop	Active	86
11	ESXHOST003.domain.CORP	ESXHOST003	Server	Active	11
12	ESXHOST004.domain.CORP	ESXHOST004	Server	Active	12
10	ESXHOST005.domain.CORP	ESXHOST005	Server	Active	10
101	ESXHOST006.domain.corp	ESXHOST006	Server	Active	101
100	ESXHOST007	ESXHOST007	Server	Active	100
36	ESXHOSTC003.domain.CORP	ESXHOSTC003	Server	Active	36
35	ESXHOSTC004.domain.CORP	ESXHOSTC004	Server	Active	35
107	ESXHOSTZ002.domain.corp	ESXHOSTZ002	Server	Active	107

2. JSON format

[HTML](#)[JSON](#)

Response in formatted Json

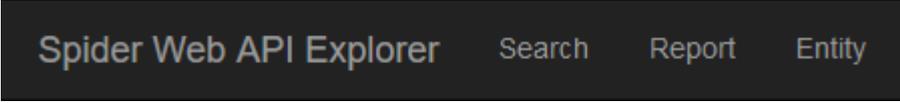
```
{
  "Count": 100,
  "Result": [
    {
      "id": 2,
      "assetNo": "LAPTOP-OBST003.domain.corp",
      "hostname": "LAPTOP-OBST003",
      "assetType": "Laptop",
      "status": "Active",
      "functionUnitID": 2,
      "functionUnit": "LAPTOP-OBST003.domain.corp",
      "serialNo": "13JPHY1"
    }
  ],
  "IsResultTruncated": true,
  "Notifications": [],
  "Duration": 76,
  "SelfLink": "http://srv-v-hh149/Spider-FLEXENTAPI/0/search/Asset?MaxRows=1&Firstrow=",
  "Parameter": {
    "Conditions": [],
    "MaxRows": 1,
    "FirstRow": 1,
    "OrderBy": "",
    "Distinct": false,
    "Fields": null,
    "AllFields": false,
    "CultureCode": "en-US"
  }
}
```

4.11.5 Web API Explorer sections

There are three sections:

- Search API
- Report API

- Entity API

A dark grey navigation bar with four items: "Spider Web API Explorer", "Search", "Report", and "Entity".

Spider Web API Explorer Search Report Entity

Search API

Spider entities can be searched in the "Search API" section. [Search section](#) (on page 109)

The search can be accessed under the following URL:

```
http(s)://{ServerName}/{SpiderApiExplorerInstance}/search
```

Search API

Enter your API Request

Entities	Asset
Fields	AccountingApproachID int Actual book value € money Actual book value money Archived bit
OrderBy	AssetNo nvarchar
MaxRows	1
FirstRow	1
Distinct	<input type="checkbox"/>
AllFields	<input type="checkbox"/>
Conditions	
Example	OR NOT assetno like %25

Send Request

Response

Duration	76 :ms
SelfLink	http://srv-v-hh149/Spider-FLEXENTAPI/0/search/Asset?MaxRows=1&Firstrow:
Parameter	
OrderBy	
MaxRows	1
FirstRow	1
AllFields	<input type="checkbox"/>
Distinct	<input type="checkbox"/>
Count	100
IsResultTruncated	<input checked="" type="checkbox"/>
Fields	
Conditions	

HTML

JSON

Response in formatted Json

```

{
  "Count": 100,
  "Result": [
    {
      "id": 2,
      "assetNo": "LAPTOP-OBST003.domain.corp",
      "hostname": "LAPTOP-OBST003",
      "assetType": "Laptop",
      "status": "Active",
      "functionUnitID": 2,
      "functionUnit": "LAPTOP-OBST003.domain.corp",
      "serialNo": "13JPYZ1"
    }
  ],
  "IsResultTruncated": true,
  "Notifications": [],
  "Duration": 76,
  "SelfLink": "http://srv-v-hh149/Spider-FLEXENTAPI/0/search/Asset?MaxRows=1&Firstrow=1&Firstrow=1",
  "Parameter": {
    "Conditions": [],
    "MaxRows": 1,
    "FirstRow": 1,
    "OrderBy": "",
    "Distinct": false,
    "Fields": null,
    "AllFields": false,
    "CultureCode": "en-US"
  }
}

```

Parameter

The parameters of the search are entered via the web front-end. For more detailed information, refer to chapter [Parameterization](#) (on page 110).

Report API

The "Report API" section allows searching for reports available for the selected tenant.

The Report API can be accessed under the following URL:

http(s)://{ServerName}/{SpiderApiExplorerInstance}/report

Spider Web API Explorer Search **Report** Entity Change Session Help

Report API

Enter your API Request

Report	Please select a Report
Fields	Autodesk - Assets with Autodesk Programs - 45 (Spider Asset) Autodesk - Qualified Autodesk Inventory - 46 (Spider Asset)
OrderBy	Clearing - Double translations - 106 (Spider Localization)
MaxRows	Compliance - Product overlicensing - 73 (Spider Licence)
FirstRow	Compliance - Product underlicensing - 74 (Spider Licence)
Distinct	Compliance - Productversion compliance - 72 (Spider Licence) Compliance - Productversion compliance per Legal Entity - 71 (Spider Licence) Compliance - Required Licenses per Device - 75 (Spider Licence)
AllFields	Contracts - Contract overview - 97 (Spider Contract) Contracts - Contracts according to contractual parties - 94 (Spider Contract)
Conditions	Contracts - Contracts with missing dates - 95 (Spider Contract)
Example	Contracts - Contracts with missing responsibilities - 96 (Spider Contract) Contracts - Master agreements - 98 (Spider Contract) Contracts - Overview of Contractuel Parties - 93 (Spider Contract) Contracts - Remaining time to maturity - 99 (Spider Contract)
Send Request	

Response

Duration 377 :ms
SelfLink http://srv-v-hh149/Spider-FLEXENTAPI/0/report/5?MaxRows=10&Firstrow=1&Orderby=Asset&CultureCox
Parameter
OrderBy Asset
MaxRows 10
FirstRow 1
AllFields
Distinct
Count 184
IsResultTruncated
Fields
Conditions

HTML

JSON

Meta

Name Assets with outdated scan date
ApplicationName Spider Asset
Description Assets with outdated scan date (older than 90 days)
Guid 3428e63a-082b-3c9d-d318-04afa7dcccfd
ID 5
Category Inventory

Result

assetID	asset	hostName	assetStatus	invLastScanDate
65	CLIENT-SEKY002.domain.corp	CLIENT-SEKY002	Active	29.05.2018 06:54:11
86	CLIENT-TEKN002.domain.corp	CLIENT-TEKN002	Active	29.05.2018 04:31:58
170	CLIENT-Test005.domain.corp	CLIENT-Test005	Active	29.05.2018 10:03:14
146	CLIENT-WITE05.domain.corp	CLIENT-WITE05	Active	15.03.2018 05:58:55
11	ESXHOST003.domain.CORP	ESXHOST003	Active	30.05.2018 01:04:27
12	ESXHOST004.domain.CORP	ESXHOST004	Active	30.05.2018 01:04:27
10	ESXHOST005.domain.CORP	ESXHOST005	Active	30.05.2018 01:04:27
101	ESXHOST006.domain.corp	ESXHOST006	Active	30.05.2018 01:05:56
100	ESXHOST007	ESXHOST007	Active	30.05.2018 01:05:56
121	ESXHOSTB001.domain.corp	ESXHOSTB001	Active	30.05.2018 01:06:53

Parameter

The parameters of the Report API are entered via the web front-end analogously to the Search API. For more detailed information, refer to chapter [Parameterization](#) (on page 112).

Entity API

The Entity section allows data operations (CRUD) such as creating, reading, changing, and deleting entities. For more detailed information, refer to chapter [Entity section](#) (on page 107).

The Entity API can be accessed under the following URL

```
http(s)://{ServerName}/{SpiderApiExplorerInstance}/entity
```

The Entity API consists of six sections:

Get Entity

This section can be used to query entities.

Parameters: name and ID of the entity.

Example: Querying an asset with ID=1 and having the result displayed in JSON.

The screenshot shows the Spider Web API Explorer interface. At the top, there is a navigation bar with the following items: "Spider Web API Explorer", "Search", "Report", "Entity" (highlighted with a red box), "Change Session", and "Help". Below the navigation bar, the main heading is "Entity API". Underneath, there is a section titled "Enter your API Request". This section contains a dropdown menu with "Entity" selected. Below the dropdown, there are several buttons: "Get" (highlighted with a red box), "Create", "Update", "Delete", "Types", and "TypeValues". Below these buttons, there are two input fields: "Entities" with a dropdown menu showing "Asset" and a downward arrow, and "EntityID" with a text input field containing the value "1". At the bottom of this section, there is a blue button labeled "Send Request".

Response

Duration 642 :ms

SelfLink <http://localhost/SpiderWebApi/100/entity/Asset/1>

HTML

JSON

Response in formatted Json

```
{
  "Fields": {
    "type": "Access card",
    "id": 1,
    "scObjectID": 29,
    "mandatorID": 100,
    "legalEntityID": 1,
    "assetNo": "Access card-0001",
    "uuid": null,
    "domain": null,
    "netBiosDomain": null,
    "hostName": null,
    "name": null,
    "assetStatusID": 1,
    "commentStatus": null,
    "serialNo": null,
    "modelName": null,
    "inventoryNo": null,
    "comment": "Test - SCObjectID 29 - Access card - 001",
    "assetStatus": "Active"
  }
}
```

Create Entity

This section can be used to create entities.

Parameters: Entity name, entity fields as JSON.

Example: Creating desktop entity:

1. Select desktop entity.
2. Enter usage data in JSON format:

```
{ "fields":  
  { "Mandator":0,  
    "AssetNo":"123456789",  
    "HostName":"MyHostname",  
    "AssetStatusID":1,  
    "CommentStatus":"Just want to try to create a desktop",  
    "SerialNo":"123649875547945789",  
  }  
}
```

- 3. Click <Send Request> button.

The screenshot shows the Spider Web API Explorer interface. At the top, there is a navigation bar with 'Spider Web API Explorer', 'Search', 'Report', and 'Entity' (highlighted with a red box). Below this is the 'Entity API' section. It features a text input field labeled 'Enter your API Request' containing the word 'Entity'. Below the input field are several action buttons: 'Get', 'Create' (highlighted with a red box), 'Update', 'Delete', 'Types', and 'TypeValues'. Under the 'Entities' section, a dropdown menu is open, showing 'Desktop' selected. Below the dropdown, a JSON request body is displayed in a text area, which is also highlighted with a blue border. The JSON body is:

```
{ "fields": { "Mandator": 1, "AssetNo": "123456", "HostName": "My HostName", "Name": "Desktop Created by Web API", "AssetStatusID": 1 } }
```

 At the bottom of the interface, there is a blue button labeled 'Send Request'.

Result

Entity created

Duration 4694 :ms
SelfLink http://localhost/SpiderWebApi/100/entity/Desktop
ID 2886

HTML

JSON

Fields

Key	Value
mandator	1
assetNo	123456
hostName	My HostName
name	Desktop Created by Web API
assetStatusID	1

Update Entity

This section can be used to change entities.

Parameter: Entity name, entity fields as JSON and ID of the entity.

Example: Changing the host name of a desktop entity with ID=1

1. Select asset.
2. Enter usage data in JSON format:

```
{"fields": {  
  "Hostname": "The hostname of My Test Desktop has changed"  
}}
```

3. Enter the ID of the entity.

4. Click <Send Request> button.

The screenshot shows the Spider Web API Explorer interface. At the top, there is a navigation bar with 'Spider Web API Explorer', 'Search', 'Report', and 'Entity' (highlighted with a red box). Below this is the 'Entity API' section. A form titled 'Enter your API Request' contains several fields: 'Entity' (with 'Desktop' selected), 'EntityID' (with '2886'), and 'JSON' (with a JSON object: `{"fields": {"Hostname": "The hostname of My Test Desktop has changed"}}`). The 'Update' button is highlighted with a red box. A 'Send Request' button is located at the bottom of the form.

Result

Duration 619 :ms
SelfLink <http://localhost/SpiderWebApi/100/entity/Desktop/2886>

HTML | JSON

Fields

Key	Value
hostname	The hostname of My Test Desktop has changed

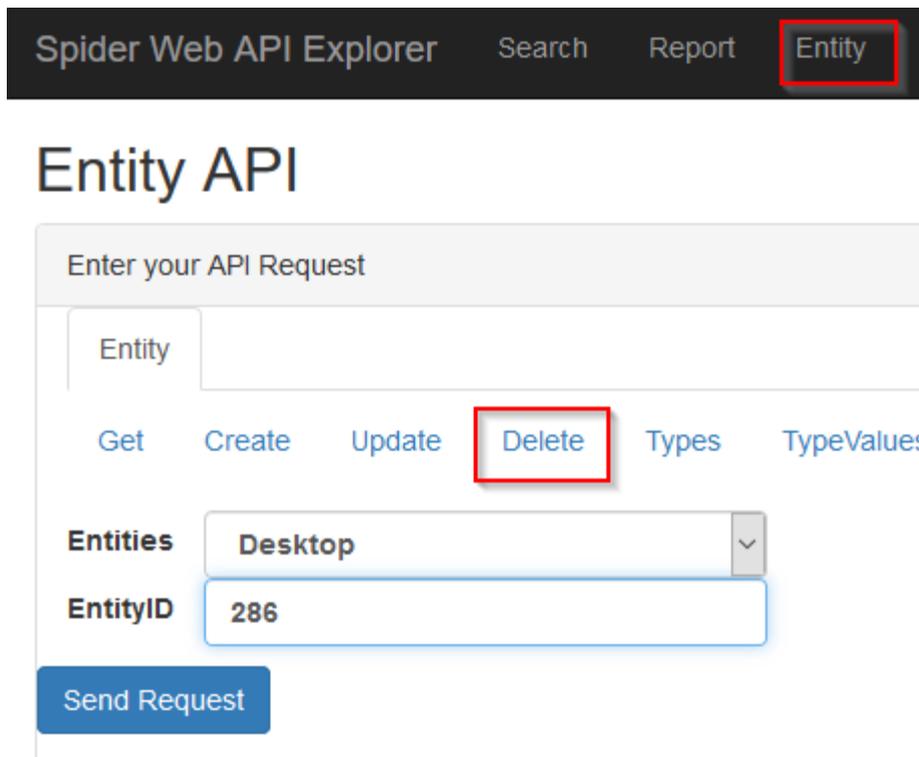
Delete Entity

This section can be used to delete entities.

Parameters: name and ID of the entity.

Example: Deleting a desktop entity with ID=1

1. Select asset.
2. Enter the ID of the entity.
3. Click <Send Request> button.



Spider Web API Explorer Search Report **Entity**

Entity API

Enter your API Request

Entity

Get Create Update **Delete** Types TypeValues

Entities Desktop

EntityID 286

Send Request

EntityTypes section

This section belongs to the entity meta data. See chapter [Entity section](#) (on page 107), EntityTypes describe predefined states and values which individual fields of entities may assume.

Parameters: entity name and EntityType.

Example: Displaying EntityTypes available for assets:

1. Select asset.

2. Click <Send Request> button.

Spider Web API Explorer Search Report **Entity**

Entity API

Enter your API Requeste

Entity

Get Create Update Delete **Types** TypeValues

Entities Asset

Types AssetStatusID - AssetStatusID + (t)

Send Request

Response

Duration 6 :ms
SelfLink http://localhost/SpiderWebApi/100/meta/entity/Asset/entityType

HTML JSON

EntityTypes	Name	ColumnName	KeyColumn	ValueColumn	MandatorFilter	SCObjectFilter	Translate
	AssetStatusID	AssetStatusID	ID	Name	False	False	True
	CurrencyCode	CurrencyCode	Code	EntityTypeValue	False	False	False
	MandatorID	MandatorID	ID	Name	False	False	False
	PVD_FinancingType	FinancingType	Value	Text	False	False	True
	PVD_ImportSource	ImportSourceID	Value	Text	False	False	False
	PVD_OsType	OsTypeID	Value	Text	False	False	True

EntityTypeValues section

EntityTypeValues are the defined states and values which individual fields of entities may assume.

Parameters: entity name and EntityType.

Example: Displaying available EntityValues for EntityType AssetStatusID:

1. Select asset.

2. Select EntityType AssetStatusID.
3. Click <Send Request> button.

Response

Duration 46 :ms
 SelfLink http://localhost/SpiderWebApi/100/meta/entity/Asset/entityType/AssetStatusID

HTML JSON

EntityTypes							
Name	ColumnName	KeyColumn	ValueColumn	MandatorFilter	SCObjectFilter	Translate	
AssetStatusID	AssetStatusID	ID	Name	False	False	True	

EntityValues							
id	name	initial	unknown	active	archive	defaultArchive	description
1	Active	True	False	True	False	False	1. Asset is in operation
2	Disposed	False	False	False	True	True	6. Asset was irretrievably sold
3	In repair	False	False	False	False	False	4. Asset is beeing repaired
4	In stock	False	False	True	False	False	3. Asset is in stock
5	Inactive	False	False	False	False	False	2. Asset is not in operation
6	Stolen	False	False	False	True	False	5. Asset was irretrievably stolen
7	ActiveDefined	False	False	True	False	False	7. Asset is in operation (manual handling)
8	NotReported	False	False	False	False	False	8. Asset is not active (set by inventory tool data)

4.12 Code examples

This chapter shows practical examples on how to use the different features of the Web API in coded projects. These examples are written in C# and use third party libraries like RestSharp as rest client.

The code examples can also be viewed via the following community article:

<https://community.flexera.com/t5/Spider-Knowledge-Base/Spider-Web-API-code-examples/ta-p/220723>

4.12.1 Authentication

A token is required for authentication to the Spider Web API, which must be included in every request.

The authentication token can be obtained via a GET request using basic authentication. The token is then returned in the server response header.

Example: GetToken

```
private string GetUserTokenExample() {
    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";
    // Spider Username
    var username = "YourSpiderUsername";
    //Spider Password
    var password = "YourSpiderPassword";
    // Create a BasicAuthenticator RestClient with your API Url, user and Password
    // The rest Client is an restsharp Client in the example

    RestClient client = new RestClient
    {
        BaseUrl = new Uri(yourApiUrl),
        Authenticator = new HttpBasicAuthenticator(username, password)
    };

    // Create a Rest request and pass the API resource Name 'token'

    RestRequest request = new RestRequest {Resource = "token"};

    // Optional, trust the security certificate
    ServicePointManager.ServerCertificateValidationCallback +=
        (sender, certificate, chain, sslPolicyErrors) => true;

    // Send request to the Web API

    IRestResponse response = client.Execute<HttpResponseMessage>(request);

    // Optional: Exception handling
    if (response.Exception != null){
        const string message = "Error retrieving response. Check inner details for more info.";
        var yourException = new ApplicationException(message, response.Exception);
        throw yourException;
    }
    // Get the token from the headers of the response

    string yourSpiderAPIToken = "";
}
```

```

if (response?.Headers == null) return "";
// The token is located in a http Header with name 'Token'

foreach (Parameter header in response.Headers.ToList())
    switch (header?.Name)
    {
        case "Token":
if (header.Value != null) yourSpiderAPIToken = header.Value.ToString();
            break;
            default: continue;
    }

//Return the Token
return yourSpiderAPIToken;

}

```

4.12.2 Entities

The entity scope enables data operations such as creating, reading, modifying and deleting entities (CRUD).

Example: read an Entity

```

private void GetEntityExample(string token)
{
    // The url of mandator you from the web api help page
    var url = "{mandatorid}/entity/asset/{entityid}";
    // example 0/entity/Asset/1

    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";

    // the token you have from the first Token example, and you will use this token in every request

    // Create a Rest Client

    RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

    // Initialize your Rest Request

    RestRequest request = new RestRequest
    {
        Resource = url,
        RequestFormat = DataFormat.Json
    };
    //Format Header
    request.AddHeader("Accept", "application/json, text/json");
    //Authentication add your token as an Authentication to your request object.
    request.AddHeader("Authorization", "Token " + token);

    //Optional, Trust the security certificate
    //ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;
}

```

```

//Send the Request
IRestResponse response = client.Execute(request);
// the Response should look like the following
//   "fields": {
//     "type": "Laptop",
//     "id": 1,
//     "scObjectID": 35,
//     "mandatorID": 0,
//     "legalEntityID": 0,
//     "assetNo": "LAPTOP-BRBR002.domain.corp",
//     "uuid": "4c4c4544-0037-5110-805a-b5c04f315131",
//     "domain": "domain.corp",
//     "netBiosDomain": "DOMAIN",
//     "hostName": "LAPTOP-BRBR002",
//     "name": null,
//     "assetStatusID": 5,
//     "commentStatus": null,
//     "serialNo": "57QZ1Q1",
//     "modelName": "Latitude E6320",
//     "inventoryNo": null,
//     "comment": "Geändert!",
//     "deliveryNoteID": null,
//     "functionUnitID": 1,
//     "accountingApproachID": null,
//     "serviceLevelID": null,
//     "locationID": null,
//     "purchaseDate": "2018-07-01T00:00:00",
//     "businessValue": 2000.0000,
//     "businessValueEUR": 2000.0000,
//     "costCentreID": null,
//     "commentCostCentre": null,
//     "contract": null,
//     "contractCommercial": null,
//     "contractService": null,
//     "purchaseCostCentreID": null,
//     "bookMainNumber": null,
//     "bookSecondNumber": null,
//     "actualBookValue": null,
//     "actualBookValueEUR": null,
//     "yearDepreciation": null,
//     "yearDepreciationEUR": null,
//     "currencyCode": "EUR",
//     "invLastScanDate": "2018-05-29T06:47:19",
//     "invMessage": null,
//     "invExists": true,
//     "swrDeviceID": 1,
//     "sysInsertUser": "Spider-System",
//     "sysUpdateUser": "tf",
//     "sysInsertDate": "2018-05-31T14:27:04.12",
//     "sysUpdateDate": "2018-06-21T13:34:35.387",
//     "sysTemplate": false,
//     "sysTemplateActive": false,
//     "sysTemplateID": null,
//     "sysArchived": false,
//     "sysTypeChangeId": null,

```

```

// "swrUpdateDate": "2018-05-31T14:58:39.307",
// "cpuLogicalCount": 4,
// "graphicMemoryMB": null,
// "cpuCount": 1,
// "cpuSpeedInMhz": 2601,
// "corePerCPU": 2,
// "responsibleEmployeeID": 116,
// "diskTotalInGb": 466,
// "importSourceID": null,
// "osTypeID": null,
// "ramInMb": 8073,
// "socketCount": null,
// "orderDate": "2018-06-01T00:00:00",
// "warrantyExpires": "2020-05-31T00:00:00",
// "invoiceDate": "2018-06-04T00:00:00",
// "installDate": null,
// "manufacturer": "Dell Inc.",
// "invScanSystem": "Generic - ColumbusInventoryAgent.exe 7.5.4.22",
// "cpuArchitecture": "x64",
// "graphicAdapter": null,
// "testksy": null,
// "supplier": null,
// "cpuType": "Intel(R) Core(TM) i5-2540M CPU @ 2.60GHz",
// "mlTestETField1": "1",
// "financingType": "Investment",
// "invoiceNumber": "abcde-1",
// "orderPosition": null,
// "orderNumber": null,
// "serviceTag": null,
// "qualifiedDesktop": false,
// "imei": null,
// "phoneNumber": null,
// "cusT_MLTest_NEU": null,
// "displaySize": null,
// "applicationGUID": "38f96e97-c314-44b8-b137-c966d35a3ba0"
// },
// "notifications": [],
// "duration": 790,
// "selfLink": "http://yourserver/SpiderAPI/0/entity/Asset/1",
// "parameter": {
//   "cultureCode": null
// }
//}

// Optional: Exception handling
if (response.ErrorException != null)
{
    const string message = "Error retrieving response. Check inner details for more info.";
    var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}
}

```

Example: create an Entity

```

private void CreateEntityExample(string token)
{
    // The url of mandator you from the web api help page
    var url = "{mandatorid}/entity/{entity}/";
    // example 0/entity/tablet
    // json to create the asset
    //{
    //  "fields":
    //  {
    //    "hostname":"Test Hostname",
    //    "Mandator":0,
    //    "assetNo": "Test no",
    //    "name": "Test Asset name",
    //    "assetStatusID": 1,
    //    "commentStatus": "comment test",
    //    "serialNo": "123456",
    //    "modelName": "Latitude E6320",
    //  }
    //}
    // Escape the " with \ in your create entity json

    var jsonToSend =
        "{\r\n\"fields\":\r\n {\r\n\"hostname\":\r\n\"Test Hostname\", \r\n\"Mandator\":0, \r\n\"assetNo\": \r\n\"Test\r\nno\", \r\n\"name\": \r\n\"Test Asset name\", \r\n\"assetStatusID\": 1, \r\n\"commentStatus\": \r\n\"comment test\", \r\n\"serialNo\":\r\n\"123456\", \r\n\"modelName\": \r\n\"Latitude E6320\", \r\n}\r\n}";
    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";

    // the token you have from the first Token example, and you will use this token in every request

    // Create a Rest Client

    RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

    // Initialize your Rest Request set the http post method

    RestRequest request = new RestRequest
    {
        Resource = url,
        RequestFormat = DataFormat.Json,
        Method = Method.POST
    };
    //Format Header
    request.AddHeader("Accept", "application/json, text/json");
    //Authentication add your token as an Authentication to your request object.
    request.AddHeader("Authorization", "Token " + token);

    //Optional, Trust the security certificate
    //ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

    //Set the body of the request
    if (!string.IsNullOrEmpty(jsonToSend))
    {
        request.AddParameter("application/json; charset=utf-8", jsonToSend, ParameterType.RequestBody);
    }
}

```

```

//Send the Request
IRestResponse response = client.Execute(request);

// the result should look like the following

//{{
//  "ID": 42154,
//  "Notifications": [
//    {
//      "Category": 2,
//      "Message": "Column 'Mandator' could not be found."
//    }
//  ],
//  "Duration": 1080,
//  "SelfLink": "http://yourWebServer/SpiderAPI/0/entity/Tablet",
//  "Parameter": {
//    "Fields": {
//      "hostname": "Test Hostname",
//      "mandator": 0,
//      "assetNo": "Test no",
//      "name": "Test asset name",
//      "assetStatusID": 1,
//      "commentStatus": "comment test",
//      "serialNo": "123456",
//      "modelName": "Latitude E6320"
//    },
//    "CultureCode": null
//  }
//}}

// Optional: Exception handling
if (response.ErrorException != null)
{
    const string message = "Error retrieving response. Check inner details for more info.";
    var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}
}

```

Example: update an Entity

```

private void UpdateEntityExample(string token)
{
    // The url of mandator you from the Web API help page
    var url = "{mandatorid}/entity/{entity}";
    // example 0/entity/tablet

    // Escape the " with \ in your update entity json

    var jsonToSend = "{ \"fields\": { \"hostname\": \" New Hostname\" } }";

    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";
}

```

```

// the token you have from the first Token example, and you will use this token in every request

// Create a Rest Client

RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

// Initialize your Rest Request set the http post method

RestRequest request = new RestRequest
{
    Resource = url,
    RequestFormat = DataFormat.Json,
    Method = Method.PUT
};
//Format Header
request.AddHeader("Accept", "application/json, text/json");
//Authentication add your token as an Authentication to your request object.
request.AddHeader("Authorization", "Token " + token);

//Optional, Trust the security certificate
//ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

//Set the body of the request
if (!string.IsNullOrEmpty(jsonToSend))
{
    request.AddParameter("application/json; charset=utf-8", jsonToSend, ParameterType.RequestBody);
}

//Send the Request
IRestResponse response = client.Execute(request);

// the result should look like the following

// Optional: Exception handling
if (response.ErrorException != null)
{
    const string message = "Error retrieving response. Check inner details for more info.";
    var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}
}

```

Example: delete an Entity

```

private void DeleteEntityExample(string token)
{
    // The url of mandator you from the web api help page
    var url = "{mandatorid}/entity/asset/{entityid}";
    // example 0/entity/Asset/1

    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";

    // Create a Rest Client

```

```

RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

// Initialize your Rest Request

RestRequest request = new RestRequest
{
    Resource = url,
    RequestFormat = DataFormat.Json,
    Method = Method.DELETE
};
//Format Header
request.AddHeader("Accept", "application/json, text/json");
//Authentication add your token as an Authentication to your request object.
request.AddHeader("Authorization", "Token " + token);

//Optional, Trust the security certificate
//ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

//Send the Request
IRestResponse response = client.Execute(request);

// Optional: Exception handling
if (response.ErrorException != null)
{
    const string message = "Error retrieving response. Check inner details for more info.";
    var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}
}

```

4.12.3 Object Search

The object search functions are used to search, filter and find spider entities.

Example: Search

```

private void SearchExample(string token)
{
    // The url of mandator you from the web api help page
    var url = "{mandatorid}/search/Asset?Orderby=AssetNo&MaxRows=10&Firstrow=1";
    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";

    // Create a Rest Client

    RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

    // Initialize your Rest Request

    RestRequest request = new RestRequest
    {
        Resource = url,
        RequestFormat = DataFormat.Json
    }
}

```

```

};
//Format Header
request.AddHeader("Accept", "application/json, text/json");

//Authentication add your token as an Authentication to your request object.
request.AddHeader("Authorization", "Token " + token);

//Optional, Trust the security certificate
//ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

//Send the Request
IRestResponse response = client.Execute(request);

// Optional: Exception handling
if (response.ErrorException != null)
{
    const string message = "Error retrieving response. Check inner details for more info.";
    var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}
}
}

// the response content should look like the following
// "Result": [
// {
//     "id": 11,
//     "assetNo": "ESXHOST003.domain.CORP",
//     "hostname": "ESXHOST003",
//     "assetType": "Server",
//     "status": "Aktiv",
//     "functionUnitID": 11,
//     "functionUnit": "ESXHOST003.domain.CORP",
//     "serialNo": null
// },
// {
//     "id": 12,
//     "assetNo": "ESXHOST004.domain.CORP",
//     "hostname": "ESXHOST004",
//     "assetType": "Server",
//     "status": "Aktiv",
//     "functionUnitID": 12,
//     "functionUnit": "ESXHOST004.domain.CORP",
//     "serialNo": null
// },
// {
//     "id": 10,
//     "assetNo": "ESXHOST005.domain.CORP",
//     "hostname": "ESXHOST005",
//     "assetType": "Server",
//     "status": "Aktiv",
//     "functionUnitID": 10,
//     "functionUnit": "ESXHOST005.domain.CORP",
//     "serialNo": null
// },

```

```
// }
// ],
// "IsResultTruncated": true,
// "Notifications": [],
// "Duration": 720,
// "SelfLink": "http://yourserver/SpiderAPI/0/search/Asset?MaxRows=10&Firstrow=1&Orderby=AssetNo",
// "Parameter": {
//   "Conditions": [],
//   "MaxRows": 10,
//   "FirstRow": 1,
//   "OrderBy": "AssetNo",
//   "Distinct": false,
//   "Fields": null,
//   "AllFields": false,
//   "CultureCode": null
// }
// }
// }
```

4.12.4 Reports

The report area enables the generation, filtering and retrieval of reports stored in Spider.

Example: Querying a Report

```
private void GetReportsExample(string token)
{
    // The url of mandator you from the web api help page
    var url = "{mandatorid}/report/{reportid}";
    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";

    // the token you have from the first Token example, and you will use this token in every request

    // Create a Rest Client

    RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

    // Initialize your Rest Request

    RestRequest request = new RestRequest
    {
        Resource = url,
        RequestFormat = DataFormat.Json
    };
    //Format Header
    request.AddHeader("Accept", "application/json, text/json");
    //Authentication add your token as an Authentication to your request object.
    request.AddHeader("Authorization", "Token " + token);

    //Optional, Trust the security certificate
    //ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

    //Send the Request
```

```

IRestResponse response = client.Execute(request);
// the Response should look like the following
//{{
//  "Meta": {
//    "DisplayCategory": "Compliance",
//    "DisplayName": "Productversion compliance per Legal Entity",
//    "DisplayDescription": "Shows Compliance overview per Productversion and Legal Entity",
//    "Guid": "b35ab679-55a5-4219-a9fe-230e7934f68d",
//    "Category": "Compliance",
//    "Name": "Productversion compliance per Legal Entity",
//    "Description": "Shows Compliance overview per Legal Entity",
//    "ID": 52,
//    "ApplicationName": "Spider Licence",
//    "ApplicationGuid": "135ea316-a932-44c9-bffb-fbd128754884"
//  },
//  "Count": 92,
//  "Result": [
//  {
//    "manufacturer": "Microsoft",
//    "productVersionID": 19,
//    "productVersion": "Access 2016 (Device, Win)",
//    "legalEntity": null,
//    "complianceICON": "PROBLEM",
//    "licencePosition": -1,
//    "licenceRequirement": 1,
//    "licenceEntitlement": 0,
//    "downgradeAllocation": 0,
//    "poolingAllocation": 0,
//    "consumed": 0,
//    "remainingLicencesShort": 0
//  },
//  {
//    "manufacturer": "Microsoft",
//    "productVersionID": 10445,
//    "productVersion": "Access 2019 (Device, Win)",
//    "legalEntity": "Zentrale/Software Entwicklung/Administration 3A",
//    "complianceICON": "OK",
//    "licencePosition": 0,
//    "licenceRequirement": 0,
//    "licenceEntitlement": 5,
//    "downgradeAllocation": -5,
//    "poolingAllocation": 0,
//    "consumed": 0,
//    "remainingLicencesShort": 0
//  },
//  ],
//  "IsResultTruncated": false,
//  "Notifications": [],
//  "Duration": 527,
//  "SelfLink": "http://yourserver/Spiderapi/mandatorid/report/52?MaxRows=10&Firstrow=1&Orderby=Consumed",
//  "Parameter": {
//    "Conditions": [],
//    "MaxRows": 10,
//    "FirstRow": 1,

```

```

//      "OrderBy": "Consumed",
//      "Distinct": false,
//      "Fields": null,
//      "AllFields": false,
//      "CultureCode": null
//    }
//  }
//}

// Optional: Exception handling
if (response.ErrorException != null)
{
    const string message = "Error retrieving response. Check inner details for more info.";
    var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}
}
}

```

4.12.5 Meta area

The Spider Web API meta area provides information about the fields in search results and reports, as well as information about creating and editing entities.

In addition to the lists of available tenants, entities, searches, and reports, metadata contain additional information depending on the used function.

Example: retrieving tenant (Mandator) information

```

private MandatorObject GetMandatorsExample(string token)
{
    // The url of mandator you from the Web API Help
    var url = "meta/mandator";

    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";

    // The token you have from the first token example, and you will use this token in each request

    // Create a Rest Client

    RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

    // Initialize Rest Request
    RestRequest request = new RestRequest
    {
        Resource = url,
        RequestFormat = DataFormat.Json
    };

    //Format the header
    request.AddHeader("Accept", "application/json, text/json");

    //Authentication: Add your token as an Authentication header to your request object.
    request.AddHeader("Authorization", "Token " + token);
}

```

```

//Optional, trust the security certificate
//ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

//Send the Request
IRestResponse response = client.Execute(request);

// Optional: Exception handling

if (response.ErrorException != null {
const string message = "Error retrieving response. Check inner details for more info.";
var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}

//you can finally deserialize the result in your own object
// As an example the see below the MandatorObject definition
MandatorObject result = new MandatorObject();
if (response.StatusCode == HttpStatusCode.OK)
    {
        result = JsonConvert.DeserializeObject<MandatorObject>(response?.Content);

        return result;
    }

public class MandatorObject
    {
        public System.Data.DataTable Result { get; set; }
        public string CultureCode { get; set; }
    }

```

Example: Asset search information

```

private void GetMetaSearchAssetExample(string token)
    {
        // The url of mandator you from the web api help page
        var url = "{mandatorid}/meta/search/asset";
        // The Url of the Spider Web API
        var yourApiUrl = "http://yourWebServer/SpiderWebApi";

        // Create a Rest Client

        RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

        // Initialize your Rest Request

        RestRequest request = new RestRequest
        {
            Resource = url,
            RequestFormat = DataFormat.Json
        };
        //Format the header
        request.AddHeader("Accept", "application/json, text/json");
        //Authentication: Add your token as an Authentication header to your request object.

```

```

request.AddHeader("Authorization", "Token " + token);

//Optional, Trust the security certificate
//ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

//Send the Request
IRestResponse response = client.Execute(request);
//the content should look like the following

//{{
//  "fields": [
//    {
//      "inResult": false,
//      "fieldName": "ID",
//      "displayName": "ID",
//      "dataType": "int"
//    },
//    {
//      "inResult": true,
//      "fieldName": "AssetNo",
//      "displayName": "AssetNo",
//      "dataType": "nvarchar"
//    },
//  ],
//  "notifications": [],
//  "duration": 55,
//  "selfLink": "http://yourServer/SpiderWebApi/0/meta/search/Asset",
//  "parameter": {
//    "cultureCode": null
//  }
//}}

// Optional: Exception handling
if (response.ErrorException != null)
{
    const string message = "Error retrieving response. Check inner details for more info.";
    var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}
}

```

Example: Report information

```

private void GetMetaReportExample(string token)
{
    // The url of mandator you from the web api help page
    var url = "{mandatorid}/meta/report/{reporid}";

    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";

    // the token you have from the first Token example, and you will use this token in every request

    // Create a Rest client

```

```

RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

// Initialize your Rest Request

RestRequest request = new RestRequest
{
    Resource = url,
    RequestFormat = DataFormat.Json
};
//Format the header
request.AddHeader("Accept", "application/json, text/json");

//Authentication. add your token as an Authentication header to your request
request.AddHeader("Authorization", "Token " + token);

//Optional, Trust the security certificate
//ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

//Send the Request
IRestResponse response = client.Execute(request);
// the Response should look like the following
//      {
//          "meta": {
//              "displayCategory": "Compliance",
//              "displayName": "Productversion compliance per Legal Entity",
//              "displayDescription": "Shows Compliance overview per Productversion and Legal Entity",
//              "guid": "b35ab679-55a5-4219-a9fe-230e7934f68d",
//              "category": "Compliance",
//              "name": "Productversion compliance per Legal Entity",
//              "description": "Shows Compliance overview per Legal Entity",
//              "id": 52,
//              "applicationName": "Spider Licence",
//              "applicationGuid": "135ea316-a932-44c9-bffb-fbd128754884"
//          },
//          "fields": [
//              {
//                  "inResult": false,
//                  "fieldName": "ManufacturerID",
//                  "displayName": "Manufacturer",
//                  "dataType": "int"
//              },
//              {
//                  "inResult": true,
//                  "fieldName": "Manufacturer",
//                  "displayName": "Manufacturer",
//                  "dataType": "nvarchar"
//              },
//              {
//                  "inResult": false,
//                  "fieldName": "ProductVersionID",
//                  "displayName": "ProductVersionID",
//                  "dataType": "int"
//              },
//              {

```

```
// "inResult": true,
// "fieldName": "ProductVersion",
// "displayName": "Product version",
// "dataType": "nvarchar"
// },
// {
// "inResult": false,
// "fieldName": "LegalEntityID",
// "displayName": "Legal Entity",
// "dataType": "int"
// },
// {
// "inResult": true,
// "fieldName": "LegalEntity",
// "displayName": "Legal Entity",
// "dataType": "nvarchar"
// },
// {
// "inResult": true,
// "fieldName": "ComplianceICON",
// "displayName": "ComplianceICON",
// "dataType": "nvarchar"
// },
// {
// "inResult": true,
// "fieldName": "LicencePosition",
// "displayName": "LicencePosition",
// "dataType": "int"
// },
// {
// "inResult": true,
// "fieldName": "LicenceRequirement",
// "displayName": "License Requirement",
// "dataType": "int"
// },
// {
// "inResult": true,
// "fieldName": "LicenceEntitlement",
// "displayName": "LicenceEntitlement",
// "dataType": "int"
// },
// {
// "inResult": true,
// "fieldName": "DowngradeAllocation",
// "displayName": "DowngradeAllocation",
// "dataType": "int"
// },
// {
// "inResult": true,
// "fieldName": "PoolingAllocation",
// "displayName": "PoolingAllocation",
// "dataType": "int"
// },
// {
// "inResult": true,
```

```

//      "fieldName": "Consumed",
//      "displayName": "Consumed",
//      "dataType": "int"
//    },
//    {
//      "inResult": true,
//      "fieldName": "RemainingLicencesShort",
//      "displayName": "RemainingLicencesShort",
//      "dataType": "int"
//    }
//  ],
//  "notifications": [],
//  "duration": 479,
//  "selfLink": "http://yourWebServer/SpiderAPI/0/meta/report/52",
//  "parameter": {
//    "cultureCode": null
//  }
//}

// Optional: Exception handling
if (response.ErrorException != null)
{
    const string message = "Error retrieving response. Check inner details for more info.";
    var yourException = new ApplicationException(message, response.ErrorException);
    throw yourException;
}
}

```

Example: Entity information

```

private void GetMetaEntitiesExample(string token)
{
    // The url of mandator you from the web api help page
    var url = "{mandatorid}/meta/entities";
    // The Url of the Spider Web API
    var yourApiUrl = "http://yourWebServer/SpiderWebApi";

    // Create a Rest Client

    RestClient client = new RestClient {BaseUrl = new Uri(yourApiUrl)};

    // Initialize your Rest Request

    RestRequest request = new RestRequest
    {
        Resource = url,
        RequestFormat = DataFormat.Json
    };
    //Format the Header

    request.AddHeader("Accept", "application/json, text/json");

    //Authentication add your token to your request object.
    request.AddHeader("Authorization", "Token " + token);
}

```

```

//Optional, Trust the security certificate
//ServicePointManager.ServerCertificateValidationCallback += (sender, certificate, chain, sslPolicyErrors) => true;

//Send the Request
IRestResponse response = client.Execute(request);

//the response content should look like the following
//{{
//  "entities": [

//  {
//    "name": "Article",
//    "displayName": "Article",
//    "parentName": "",
//    "parentDisplayName": ""
//  },
//  {
//    "name": "LicenceAllocation",
//    "displayName": "LicenceAllocation",
//    "parentName": "",
//    "parentDisplayName": ""
//  },
//  {
//    "name": "LicenceKey",
//    "displayName": "License key",
//    "parentName": "",
//    "parentDisplayName": ""
//  },
//  {
//    "name": "Product Licence",
//    "displayName": "Product Licence",
//    "parentName": "Licence",
//    "parentDisplayName": "License"
//  },
//  {
//    "name": "Product Change Licence",
//    "displayName": "Product Change Licence",
//    "parentName": "Licence",
//    "parentDisplayName": "License"
//  },
//  {
//    "name": "OEM Licence",
//    "displayName": "OEM Licence",
//    "parentName": "Licence",
//    "parentDisplayName": "License"
//  },

//  ],
//  "notifications": [],
//  "duration": 7,
//  "selfLink": "http://yourServer/SpiderWebApi/0/meta/entities",
//  "parameter": {
//    "cultureCode": null
//  }

```

```
//}  
  
// Optional: Exception handling  
  
if (response.ErrorException != null)  
{  
    const string message = "Error retrieving response. Check inner details for more info.";  
    var yourException = new ApplicationException(message, response.ErrorException);  
    throw yourException;  
}  
}
```

Software Services (Catalogs and Recognition)

5.1 System requirements

5.1.1 Application server

The installation of the Recognition can either be done on the system where Spider has been installed or on a separate system.

Additional services for the functionality of the Recognition are installed.

- EDC monitor
- Spider Data Receiver
- Software Recognition Center upload (optional)

The databases must be stored on the same server (and Instance), which is also used for storing the databases for Spider.

During the setup, the connection to the database server is prompted.

The following conditions must be observed:

- The setup has to be executed with administrative rights.
- Recognition (RC) and Spider Data Collector have to run on separate systems. These may also be separated virtual environments.
- On the Spider application server, the RC or the Spider Data Collector may be installed.
- Port for the communication of software recognition with Spider Data Collector(s) to be connected; the port can be selected freely. By default, port **1685** is used.
- In case of productive systems, the address and port for the upload to the software recognition center must be reachable from the server
 - Address: **edcsrv1.brainwaregroup.com**
 - Port: **1337**

Note Test systems without upload to the software recognition center.

Here, you can install software recognition and Spider Data Collector parallel.

5.1.2 Database server

A Microsoft SQL server, Version 2008 or later, is required as database server. For a successful setup, the following preconditions must be met on the database server.

The database server must be the same server on which the Spider databases are installed.

- You must activate the TCP/IP protocol in the "SQL Server Configuration" of the SQL server configuration manager.
- A database login for the SQL installation user is required.
- If the SQL installation user does not possess the right to create databases, it must be provided before starting the installation.

If the SQL installation user does not possess the rights to create other SQL logins on the database server, the required SQL login must be set up beforehand and made available for the setup. It is recommended to use the same user which has been used for the Spider installation, since the Spider services must also have access to the software recognition database.

- The SQL installation user will at least need the right to execute the SQL scripts for creating and changing the database objects as well as the database properties (Extended Properties) in the Spider databases.

Required database

To create databases during the installation, the SQL installation user will need the corresponding rights. If these cannot be granted, the product databases have to be created before execution of the setup. The setup supports the usage of empty databases which have been created beforehand. Especially if the databases shall not be created with default properties, the required databases can be provided using the desired settings.

The following databases are required for the installation:

- Spider Recognition

Important It is recommended to use the suffix (later in the example: "CoreServer_00_") used for the installation of Spider, also for the recognition database. This makes the identification on the SQL server easier.

Please note the following:

- The name can be chosen freely. The database name must not start with a number.
- All Spider databases must have the same Database collation. A case insensitive collation (CI collation) must be selected, e.g. SQL_Latin1_General_CP1_CI_AS.
- The databases must be completely empty before installation.

Required SQL user

If the SQL installation user does not have the permission to create new logins on the database server, this login must be created beforehand. An SQL user is required for the setup. The login data are requested during the installation. The user must be the same as the one used for the Spider installation, since the services of Spider must have access to the software recognition database.

Overview of required rights

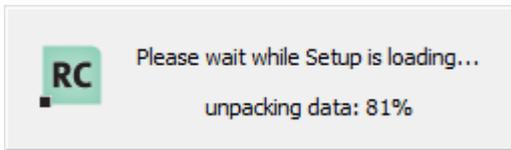
Please refer to the table below for the rights required to execute the setup:

Task	Rights to	Right(s)
Creating logins	Server	ALERT ANY LOGIN
Creating databases	Server	CREATE DATABASE CREATE ANY DATABASE ALTER ANY DATABASE
Creating extended properties	Database	ALTER

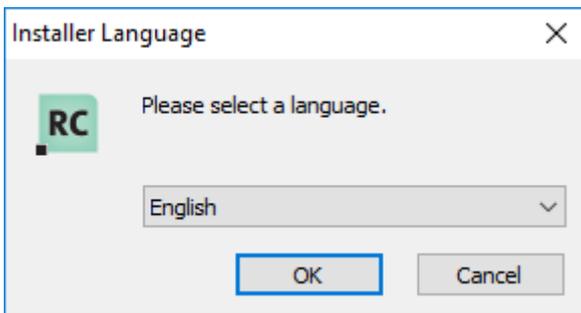
5.2 Installation

5.2.1 Start of the installation

Start the installation by executing Recognition Setup.exe



At first, you are asked to select the language for the installation assistant. To do this, click on the desired language in the selection box and confirm your input with "OK".

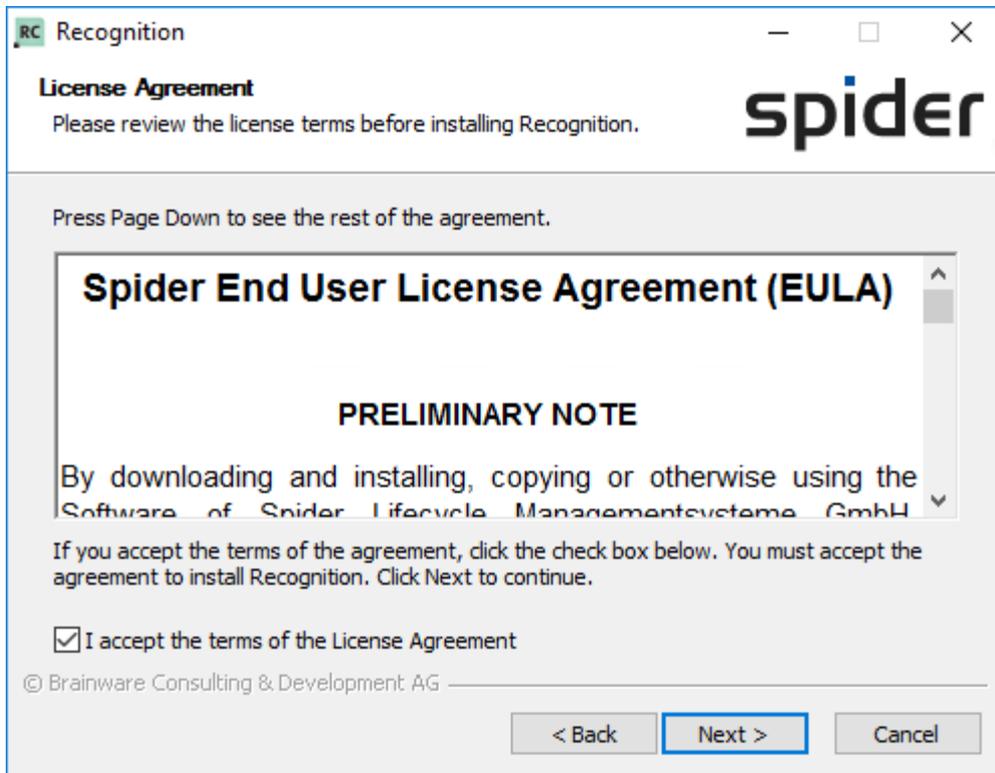


After that, the installation assistant for Spider will open. This assistant will guide you through the setup installation in the selected language. Click on "Next" to start the installation.



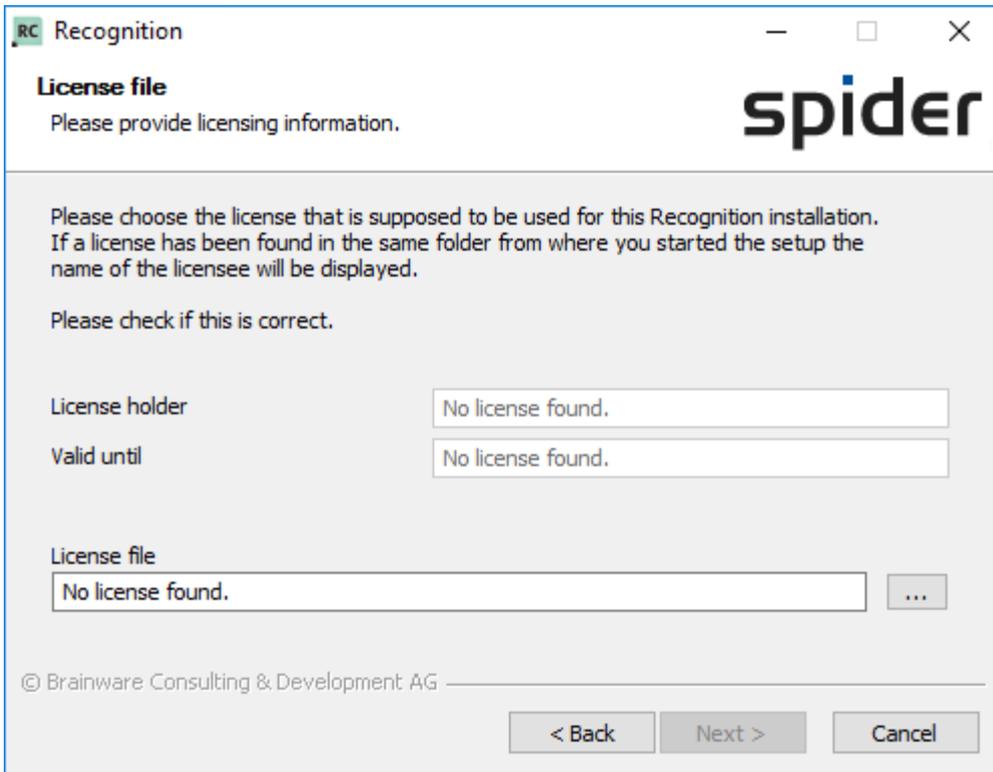
5.2.2 License agreement

In the next step, you are asked to read and accept the license agreement before starting the installation. The setup can only be continued after accepting the license agreement.

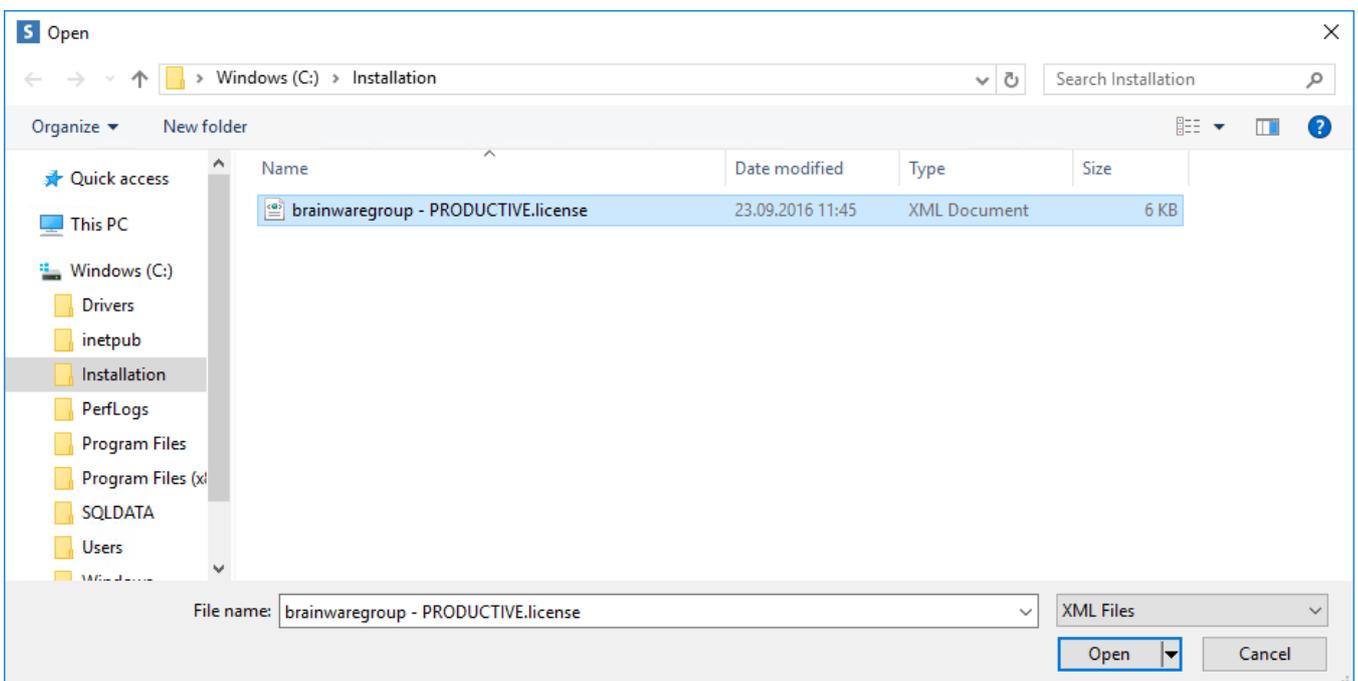


5.2.3 License file

Select the matching license file to continue the setup. The setup cannot be continued without the license file

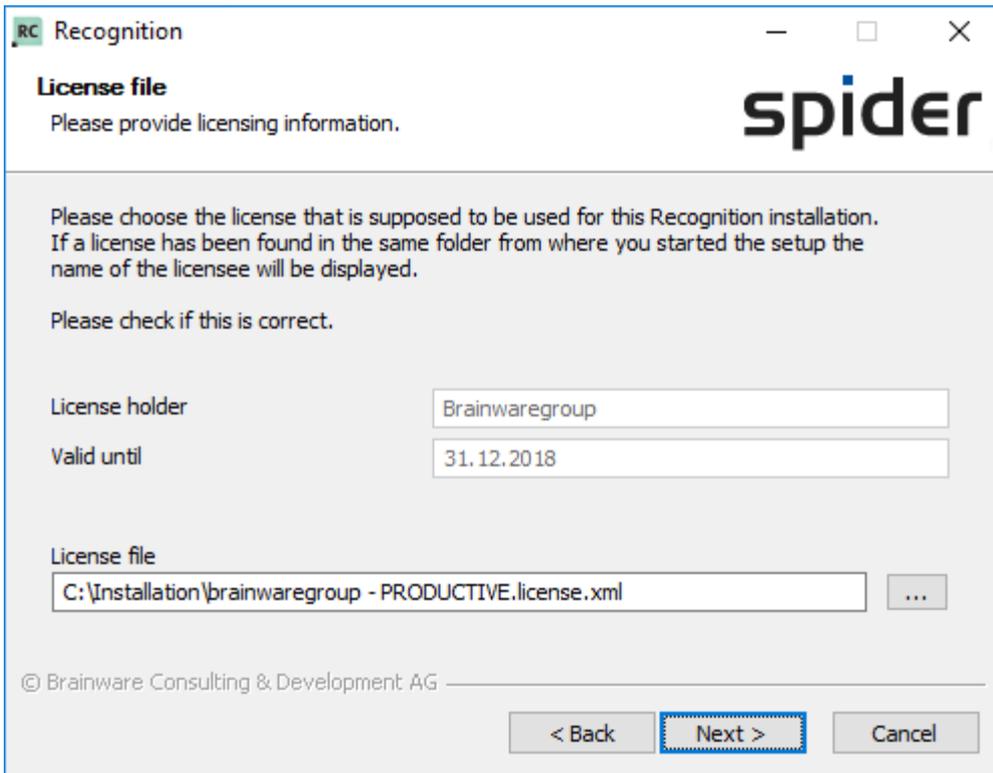


Click on "..." Button:



Select the license and then click "Open".

The selected license will be loaded and its details are shown.



RC Recognition

License file
Please provide licensing information.

Please choose the license that is supposed to be used for this Recognition installation.
If a license has been found in the same folder from where you started the setup the name of the licensee will be displayed.

Please check if this is correct.

License holder: Brainwaregroup

Valid until: 31.12.2018

License file: C:\Installation\brainwaregroup - PRODUCTIVE.license.xml

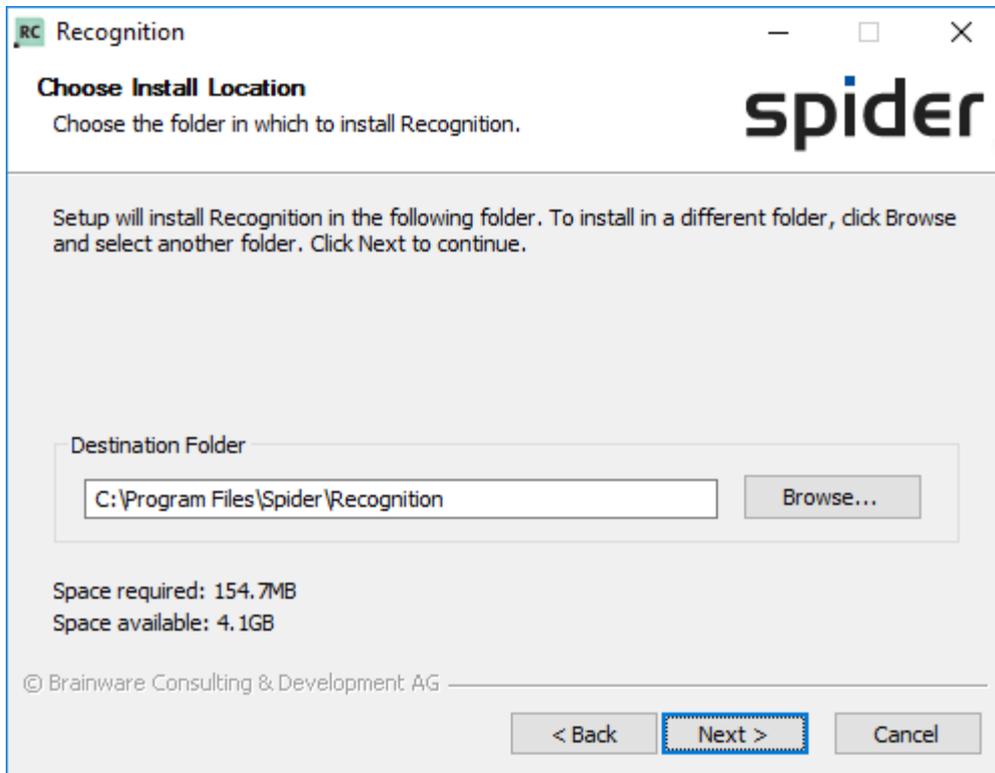
© Brainware Consulting & Development AG

< Back **Next >** Cancel

Note If a license is found in the same directory which has been used to start the setup, it will be loaded automatically into the dialog (if valid).

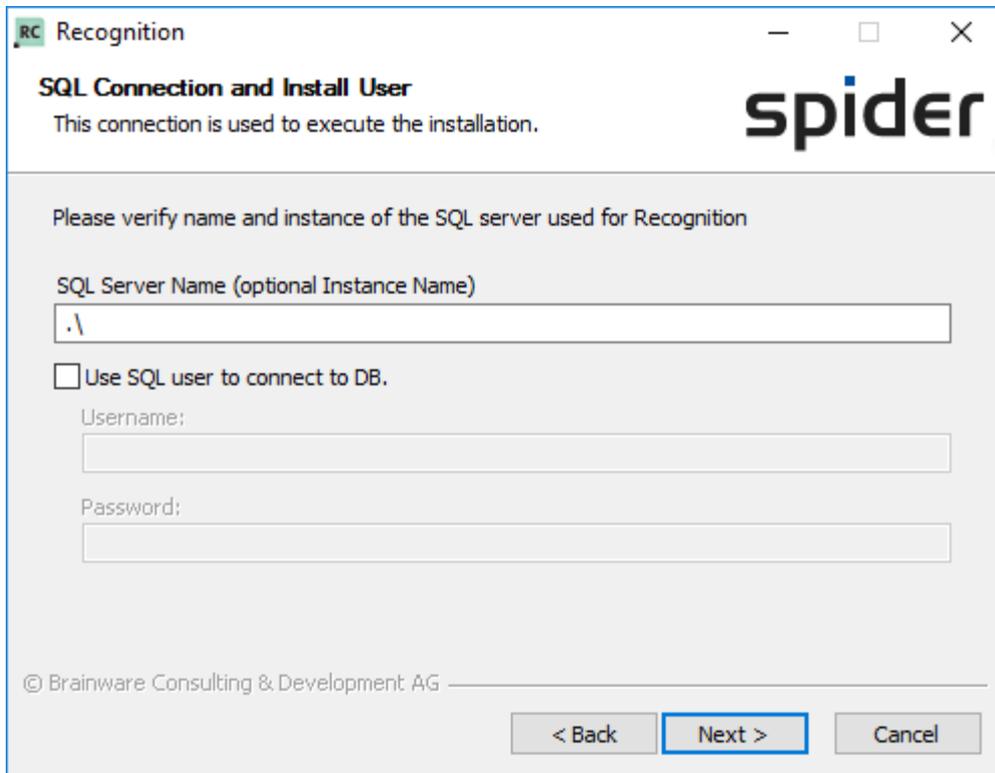
5.2.4 Installation directory

In the following step, you can select a target directory for the installation. You may change the proposed default path.



5.2.5 Database server

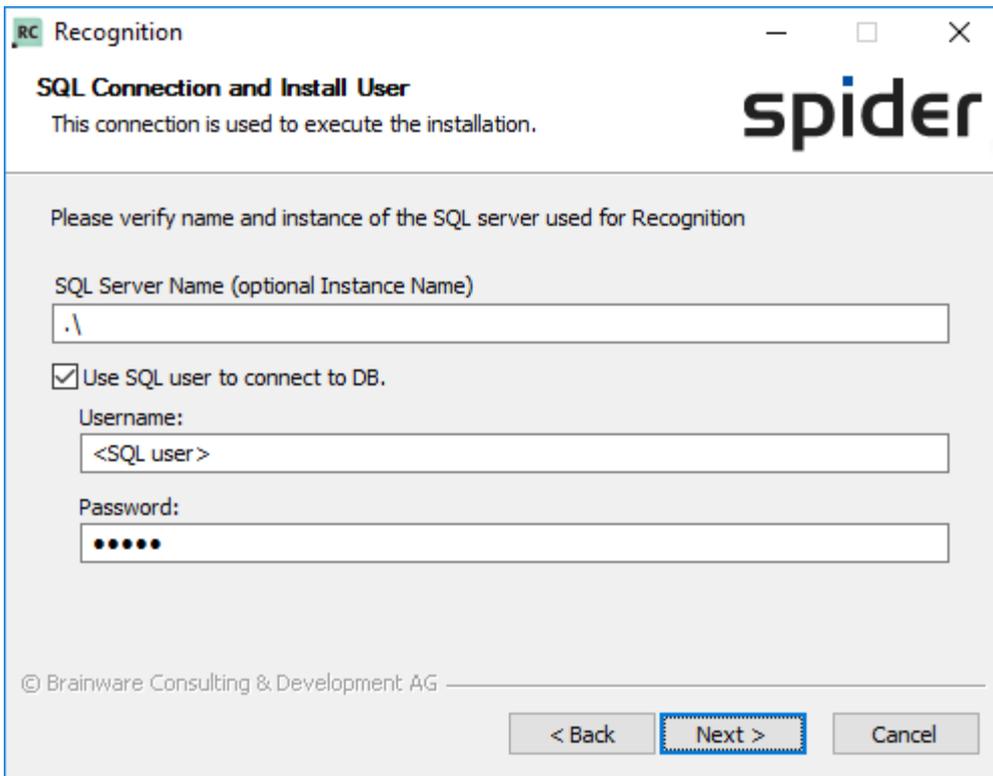
In the following step, the installation assistant will ask you to specify the name and the instance of a Microsoft SQL Server, on which the recognition databases are to be installed.



The screenshot shows a Windows-style dialog box titled "Recognition" with a sub-header "SQL Connection and Install User". Below the sub-header, it states "This connection is used to execute the installation." and features the "spider" logo. The main content area prompts the user to "Please verify name and instance of the SQL server used for Recognition". It includes a text input field for "SQL Server Name (optional Instance Name)" containing ".\", a checkbox for "Use SQL user to connect to DB.", and fields for "Username:" and "Password:". At the bottom, there are three buttons: "< Back", "Next >" (highlighted with a blue border), and "Cancel". The footer contains the copyright notice "© Brainware Consulting & Development AG".

The user, with which the connection is established, can either be the logged-in (Windows) user or an SQL user.

To use an SQL user, you must tick the check box **Use SQL user for database connection** and fill in the fields **User name** and **Password** with the desired data.



RC Recognition

SQL Connection and Install User
This connection is used to execute the installation.

Please verify name and instance of the SQL server used for Recognition

SQL Server Name (optional Instance Name)
.\

Use SQL user to connect to DB.

Username:
<SQL user>

Password:
●●●●

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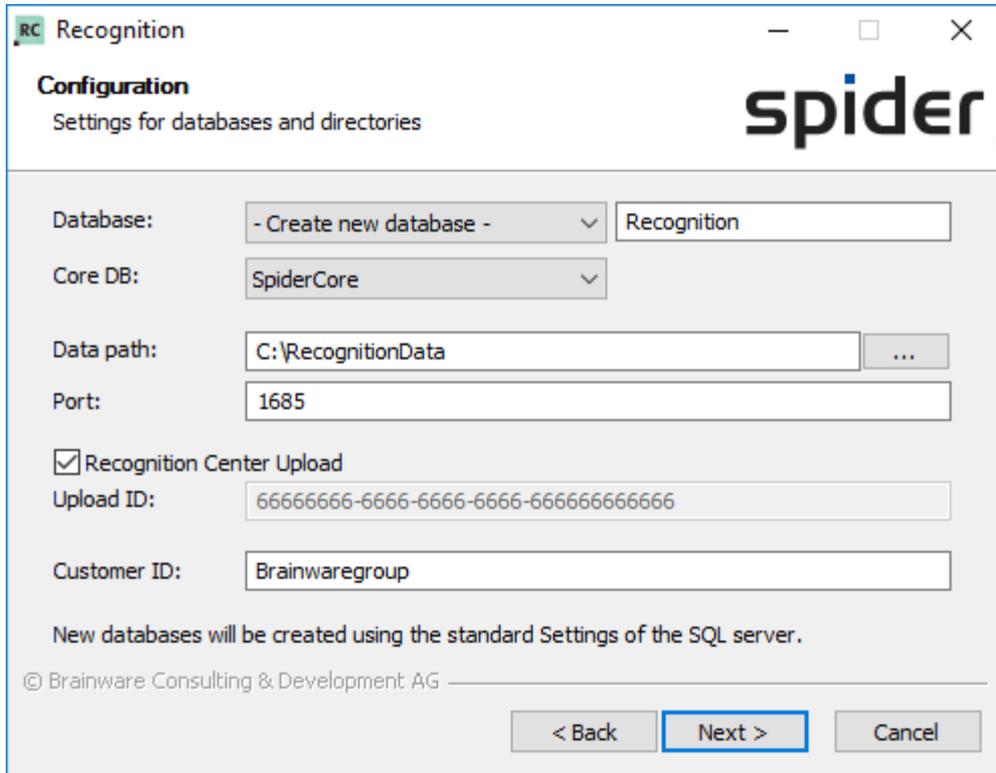
< Back Next > Cancel

Note The users have to be set up beforehand on the database server with the corresponding rights. Depending on the rights of the user, the subsequent dialogs will show different options.

Field	Description
SQL server name	Name of the SQL server, including instance name and port if required e.g. SQLSERVER\SQLINSTANZ,1234
Using SQL users for database connection	Select whether to use the logged-in domain user or an SQL user.
User name	Name of SQL user.
Password	Password of the SQL user.

5.2.6 Database & Data Receiver

In this dialog, you can enter the data for the recognition database, the Core database of the Spider installation to be connected, the data directory, the recognition upload and the customer ID.



Field	Description
Database	Select in the drop-down, whether a new database should be created, or select an existing (empty!) database
Core DB	Select the name of the Core database of the Spider installation to be linked
Data directory	The work directory in which the received data of the Data Collector(s) are stored and processed.
Port	Port used by the Data Receiver to receive the data of the connected Data Collectors (Default port: 1685)
Recognition Center Upload	Check box to determine whether unrecognized software shall be transferred to Flexera for recognition.
Upload ID	ID (from the license file) used for identification prior to the upload to Flexera.
Customer ID	Customer ID which will be transferred to the Data Collector(s) to ensure the identification at this installation of the recognition.

5.2.7 SQL login, service user

This user is used for access to the software recognition database.

The Spider services access also the recognition databases by using the Core server user databases!

The default system user «spider» or the user which has been used for the installation of Spider must be entered.

RC Recognition

SQL Login
Please specify a logon user.

Use existing user

Username: Spider
Password: ●●●●●

Create new user

Username: Recognition
Password:
Repeat Password:

Please choose a password that complies with your complexity settings of your Domain or SQL Server! Please ensure that the given user credentials correspond with the credentials provided for the Spider services and Spider web application.

© Brainware Consulting & Development AG

< Back **Next >** Cancel

Attention When creating a new user, please make sure to grant the rights for Spider! To make sure that the Spider services can also access the recognition database, also the user used by the services must have the corresponding rights for using the recognition database.

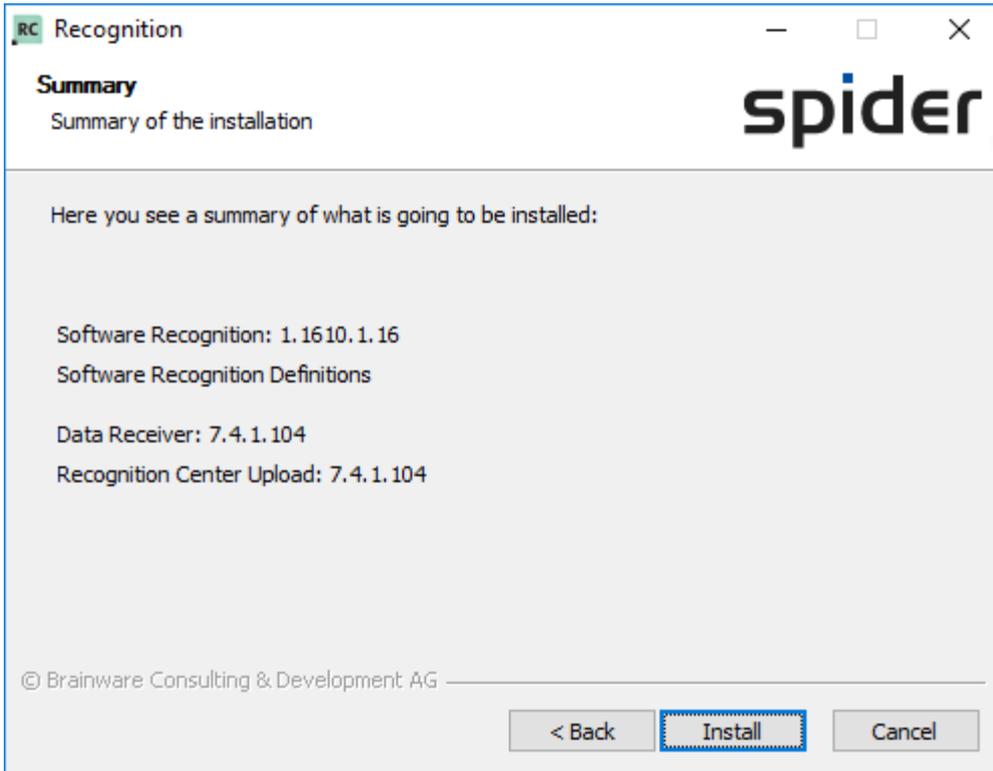
The screenshot shows a dialog box titled "RC Recognition" with a subtitle "SQL Login". The main instruction is "Please specify a logon user." The "spider" logo is in the top right corner. There are two radio button options: "Use existing user" (unselected) and "Create new user" (selected). Under "Use existing user", there is a "Username" dropdown menu with "Spider" selected and an empty "Password" field. Under "Create new user", there is a "Username" text field with "Recognition", a "Password" field with five dots, and a "Repeat Password" field with five dots. A red warning message is displayed: "Please choose a password that complies with your complexity settings of your Domain or SQL Server! Please ensure that the given user credentials correspond with the credentials provided for the Spider services and Spider web application." At the bottom, there is a copyright notice "© Brainware Consulting & Development AG" and three buttons: "< Back", "Next >" (highlighted with a blue dashed border), and "Cancel".

5.2.8 Summary

The summary shows that:

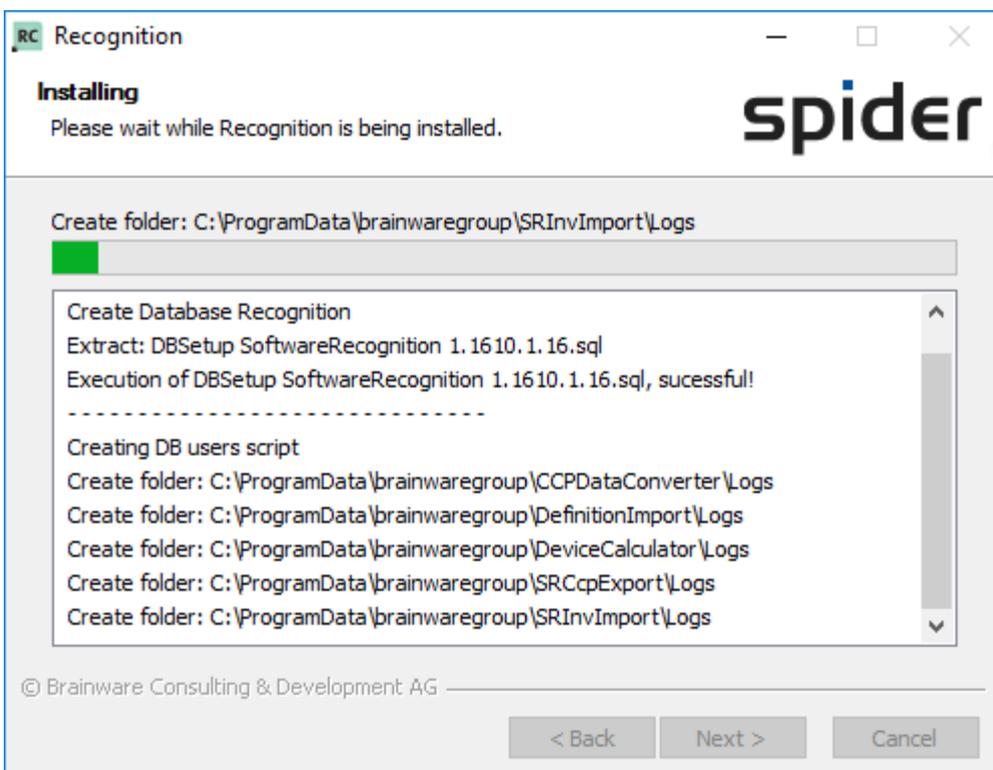
- the version of software recognition
- the software recognition definitions
- the Data Receiver components and version
- the upload to the Spider Recognition Center with version

are installed.

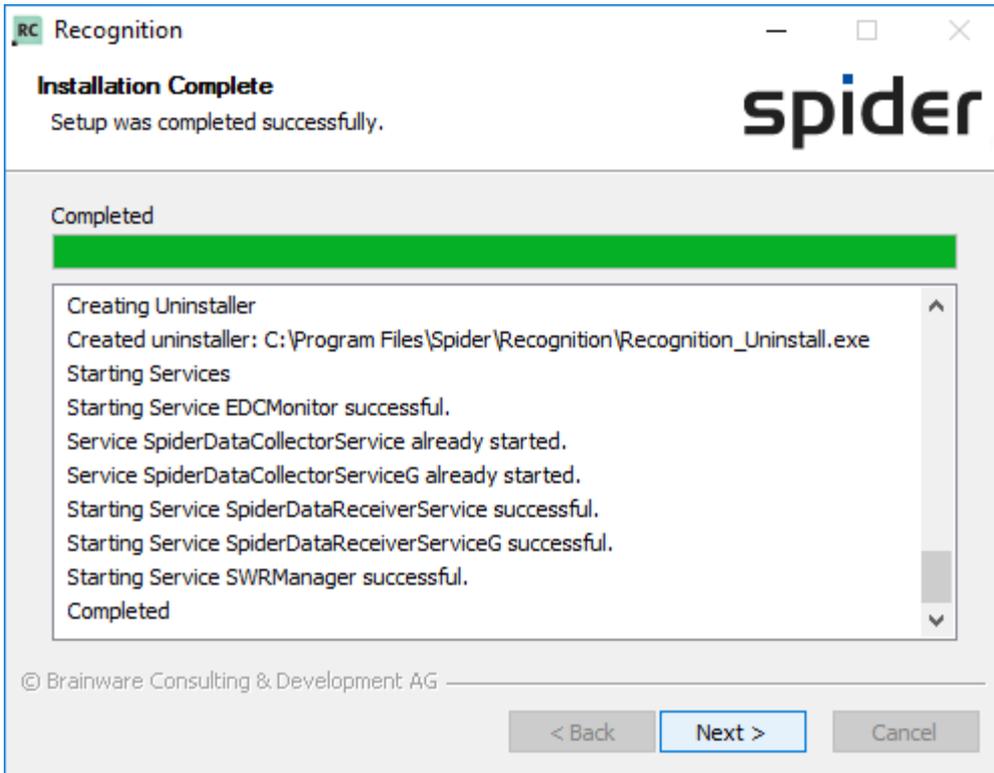


5.2.9 Installation

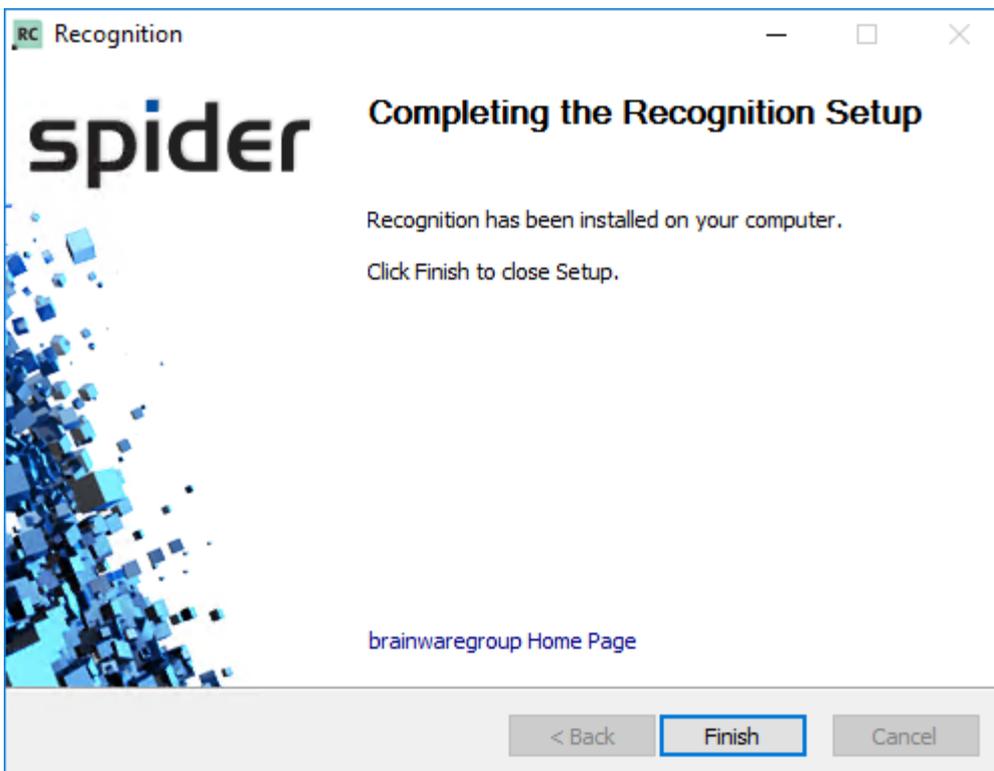
The installation assistant will now install Recognition. This can take some time. Please wait, until the installation is completed.



The successful completion of the installation will be shown in the progress dialog.



The setup has been completed successfully and can now be closed



After completion of the installation, a log file will be written. For details to the log files, please refer to chapter [Log files](#) (on page 208).

5.3 Advanced configuration

5.3.1 Data Receiver

The Data Receiver is the component which receives the deliveries of the Data Collector(s).

The port and the storage location of the received files can be changed.

The configuration is done in the file <Installation directory>\Recognition\DataReceiver\SpiderDataReceiver.cfg

```

; OTB Connection Settings:
; -----
; OTBPort - default setting is "80"

[Connection]
OTBPort=1685

; General settings:
; -----
; DataDirectory - is the data directory to save files in that should be uploaded - default if not set is the folder where the
EDCSRV.exe is installed (environment variables are resolved)

[General]
DataDirectory=C:\RecognitionData\DataReceiver

```

Section	Variable	Description
Connection	OTBPort	Port used by the Data Receiver to listen to the connections of the Data Collector(s)
General	DataDirectory	Path used to store the received files.

Attention If variable DataDirectory is adapted, the Service "Spider Data Receiver" must be restarted. Only then, the change will become active.

In addition, the configuration of the [EDC monitor](#) (on page 177) has to be adapted to make sure that it can find the files to be processed.

SSL Secured Transmission

Communication with the Spider Data Collector can be secured by SSL (RSA 2048Bit).

The superior Data Receiver provides the SSL mechanism for the subordinate Data Collectors.

Upon installation of the Data Receiver the necessary files are generated and placed in: %ProgramData%\Columbus

SSL usage can be enabled by setting the following registry keys.

```

Key: HKEY_LOCAL_MACHINE\SOFTWARE\<Wow6432Node>\BrainWare\Columbus\7\
"OTBEncryptionUseSSL"="1"

```

```
"OTBEncryptionForceUseSSL"="0"
```

5.3.2 EDC Monitor

The EDC monitor is responsible for the import of the files received by the Data Receiver into the recognition database.

The configuration of the EDC monitor is stored in the file <installation path>\Recognition\EDCMonitor\EDCMonitor.exe.config.

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <connectionStrings>
    <!-- Connection string to the software recognition database -->
    <add name="SoftwareRecognitionConnectionString" connectionString="server=server.domain.local; database=Recognition; uid=Spider; pwd=abcde; application name=SpiderEDCMonitor;Persist Security Info=True" />
  </connectionStrings>
  <appSettings>
    <!-- Working directory of the EDC monitor
    Has to be the path where EDCMonitor.exe is located -->
    <add key="EDCMonitorWorkingDirectory" value="C:\Program Files\Spider\Recognition\EDCMonitor" />
    <!-- Working directory of Data Receiver.
    Following files are expected in the directory:
    * SpiderDataReceiver.cfg
    * SpiderDataReceiverRegister.csv
    * SpiderDataReceiverConnection.csv -->
    <add key="DataReceiverWorkingDirectory" value="C:\Program Files\Spider\Recognition\DataReceiver" />
    <!-- Location, where files are committed to software recognition.
    The data directory of the EDC server and this directory should be located on the same HDD. -->
    <add key="SoftwareRecognitionImportDirectory" value="C:\RecognitionData\EDC monitor" />
    <!-- Delay between monitoring processes (in minutes). -->
    <add key="Interval" value="1" />
    <!-- Directory where log files will be written
    Standard: %ProgramData%\brainwaregroup\EDCMonitor\Logs
    -->
    <add key="FeedbackDirectory" value="C:\ProgramData\brainwaregroup\EDCMonitor\Logs" />
  </appSettings>
</configuration>
```

Setting	Description
connectionsStrings. SoftwareRecognitionConnectionString	Data for the connection to the recognition database; if Integrated Security is used, uid=...;pwd=...; must be replaced by "IntegratedSecurity = True.
appSettings. EDCMonitorWorkingDirectory	Path used to store the file EDCMonitor.exe.
appSettings. DataReceiverWorkingDirectory	Path used to store the file SpiderDataReceiver.exe and its configuration file.
appSettings. SoftwareRecognitionImportDirectory	Path used by the EDC monitor to store its files.
appSettings. Interval	Interval in which the EDC monitor is activated, detects new files and imports them if required.

Setting	Description
appSettings. FeedbackDirectory	Path used to store the log files.

5.3.3 Operation with domain account

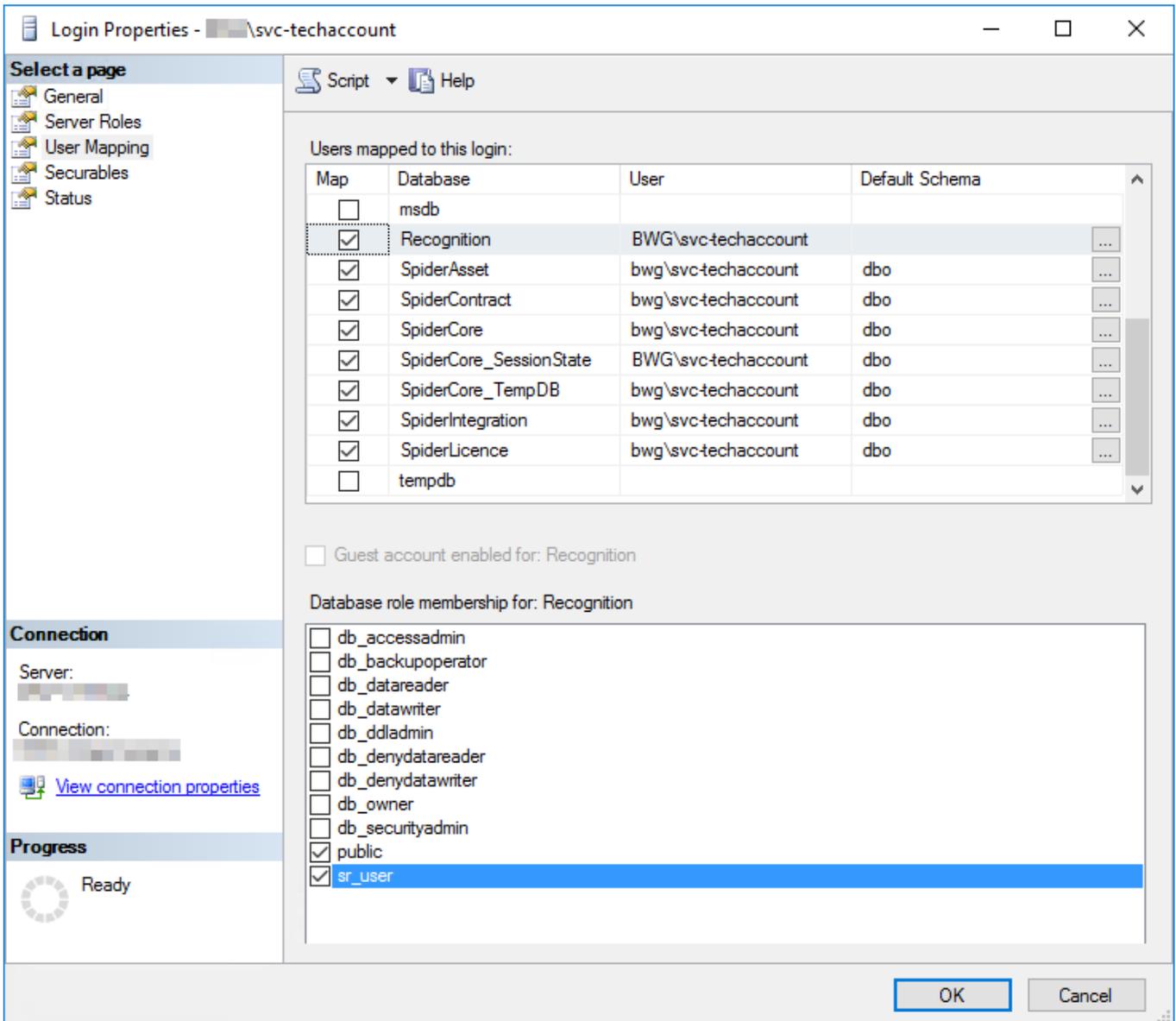
Prepare SQL server

The setup is carried out according to the description for setting up Spider [Prepare SQL server](#) (on page 43).

In addition, the user must be given new or additional rights for the recognition database.

- Entering the **Roles memberships** for the recognition database by setting the tick on **Map** and selecting the membership in the lower part of the dialog.

Database	Database role membership
Recognition	public, sr_user



Folder permissions

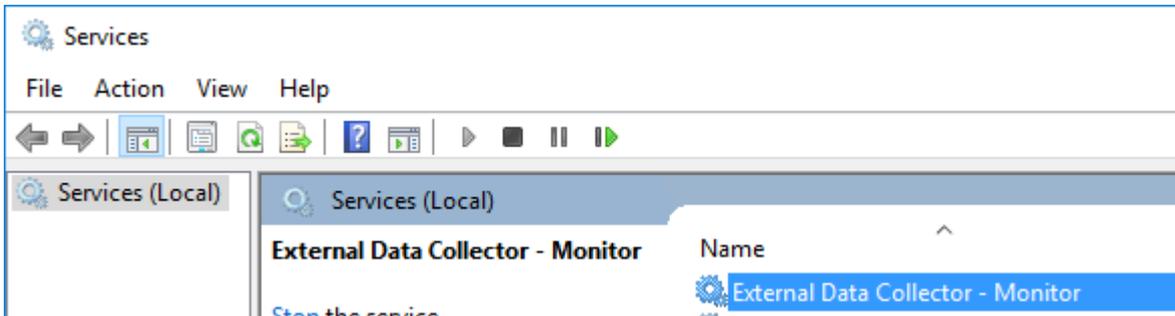
In order to enable the access to the stored files, the user can either be given administrative rights on the computer on which the EDC monitor is installed, or you can give the folder access rights to the EDC monitor directly or via its group membership.

Folder	Permission
Installation directory of the EDC monitor C:\Program Files\Spider\Recognition\EDCMonitor	Modify
Installation directory of the data receiver C:\Program Files\Spider\Recognition\DataReceiver	Modify
Data directory Database & Data Receiver (on page 171)	Modify data directory and all subfolders

Adapt the service account

The setup is done according to the setup of Spider [Adapt the service account](#) (see "" on page 53).

The service to be adapted is the **External Data Collector - Monitor**



Adapt the connection string

The file ConnectionStrings.config is used for the access of the service.

Storage location of the connection string

Component	Storage location
EDC monitor	C:\Program Files\Spider\Recognition\EDCMonitor\EDCMonitor.exe.config

The entries uid=... and pwd=... must be replaced by **Integrated Security=True**.

ConnectionStrings.config

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <connectionStrings>
    <!-- Connection string to the software recognition database -->
    <add name="SoftwareRecognitionConnectionString" connectionString="server=<SQLServer>;
      database=Recognition;
      uid=Spider;
      pwd=abcde;
      application name=SpiderEDCMonitor;
      Persist Security Info=True" />
  </connectionStrings>
  ...
</configuration>
```

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <connectionStrings>
    <!-- Connection string to the software recognition database -->
```

```
<add name="SoftwareRecognitionConnectionString" connectionString="server=<SQLServer>;
    database=Recognition;
    Integrated Security=True;
    application name=SpiderEDCMonitor;
    Persist Security Info=True" />

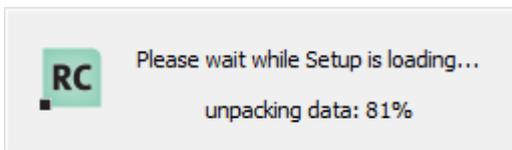
</connectionStrings>
...
</configuration>
```

Note After all adaptations have been done, the service must be restarted to activate the changes.

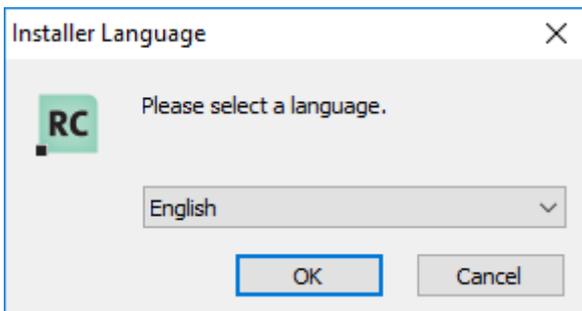
5.4 Update

5.4.1 Start of the update

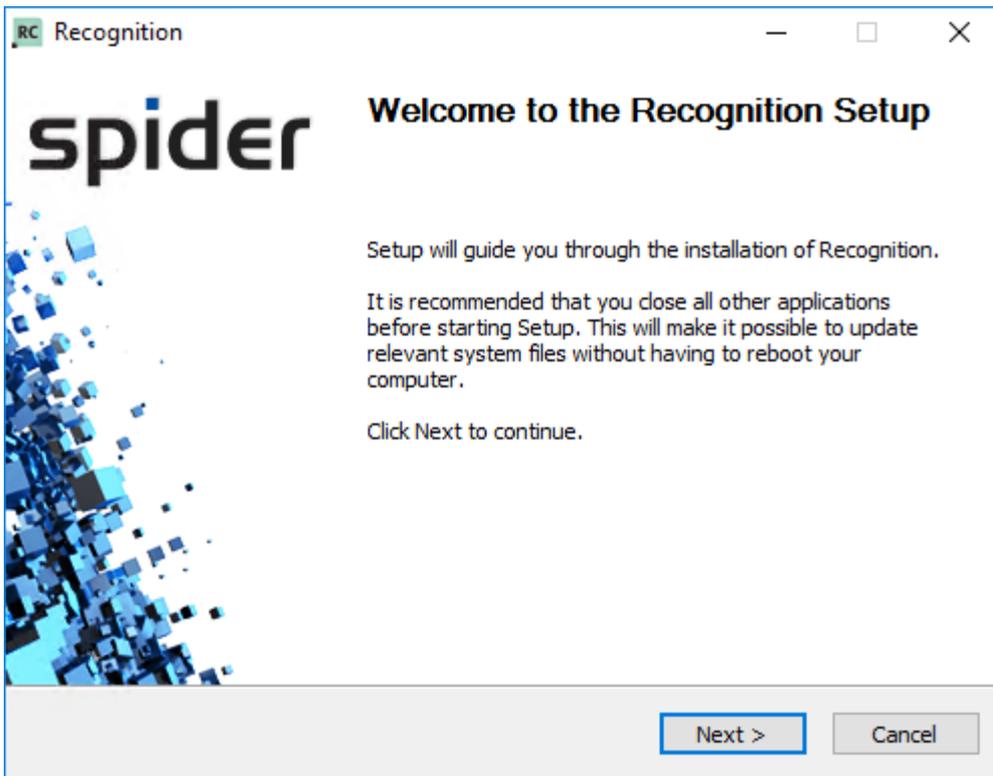
Start the installation by executing Recognition Setup.exe



At first, you are asked to select the language for the installation assistant. To do this, click on the desired language in the selection box and confirm your input with "OK".

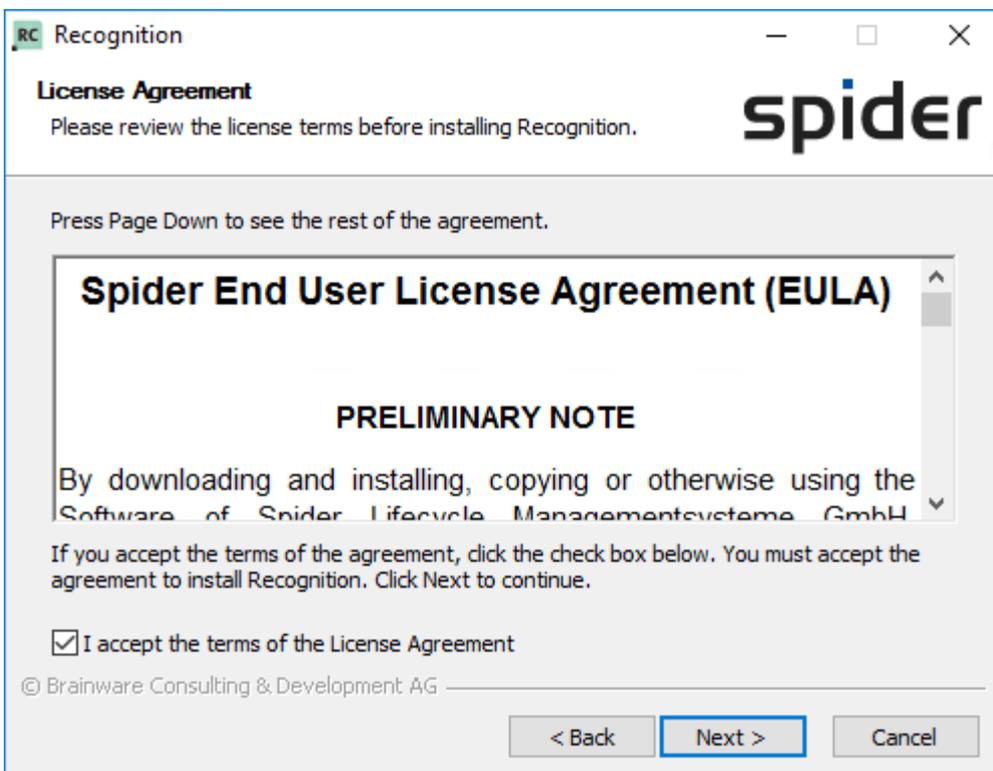


After that, the installation assistant for Spider will open. This assistant will guide you through the setup installation in the selected language. Click on "Next" to start the installation.



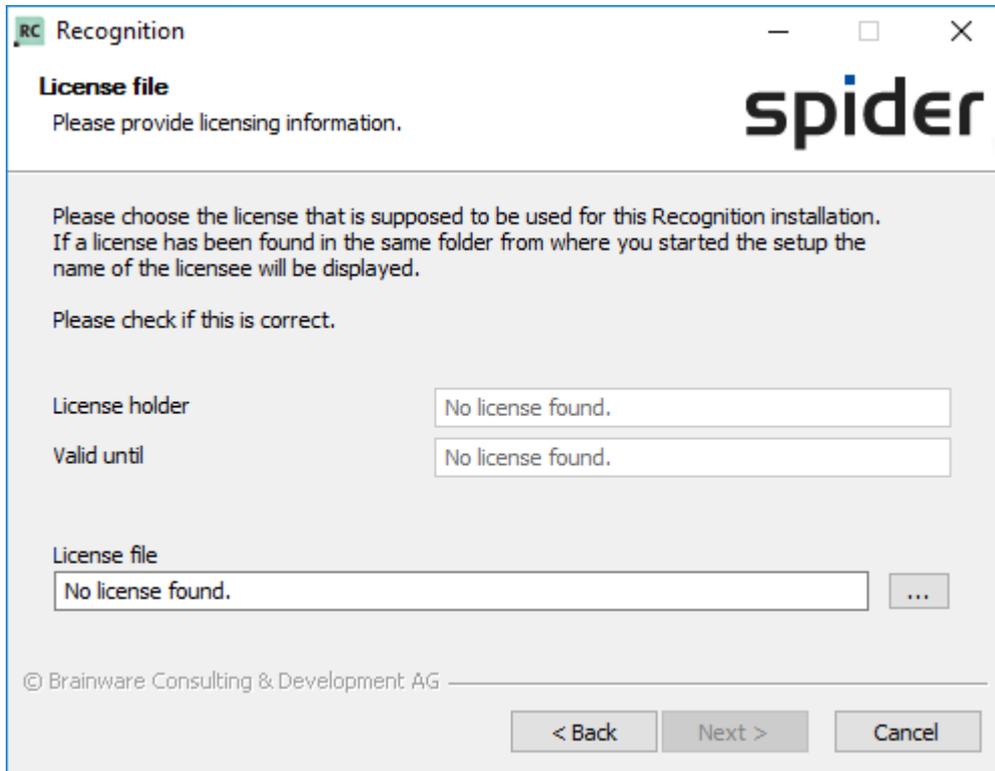
5.4.2 License agreement

In the next step, you are asked to read and accept the license agreement before starting the installation. The setup can only be continued after accepting the license agreement.

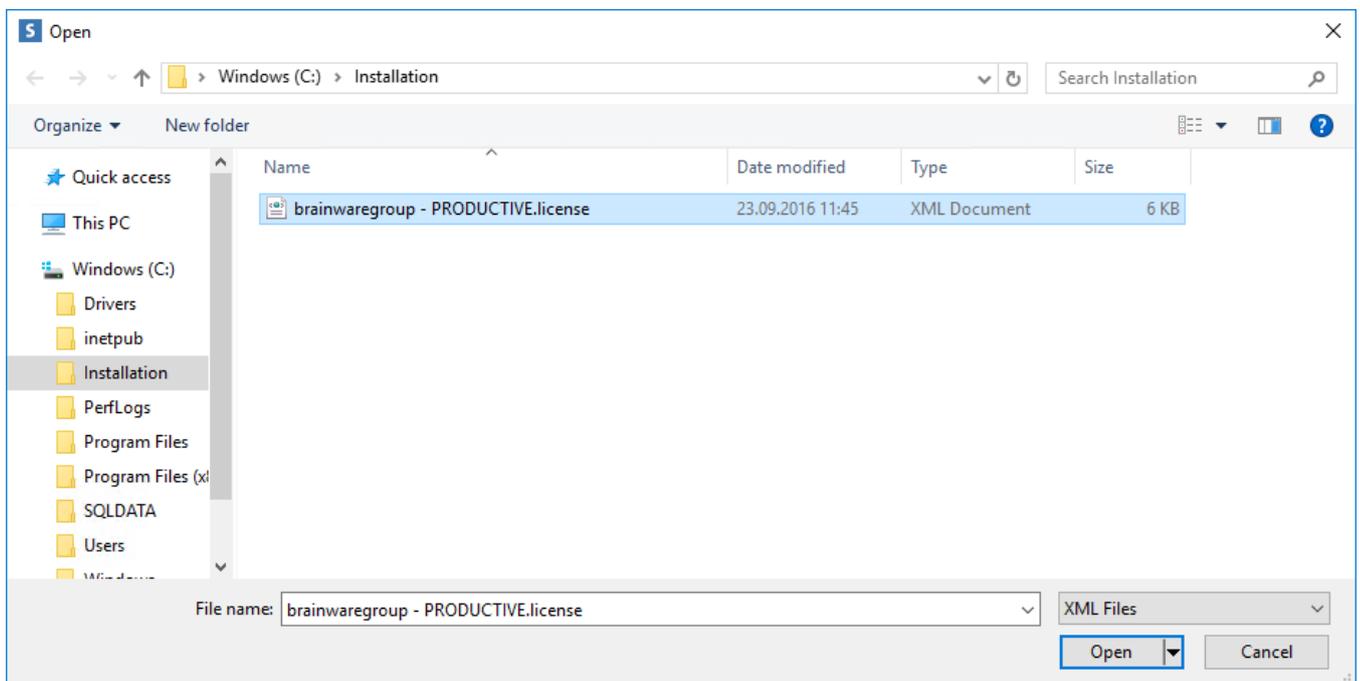


5.4.3 License file

Select the matching license file to continue the setup. The setup cannot be continued without the license file

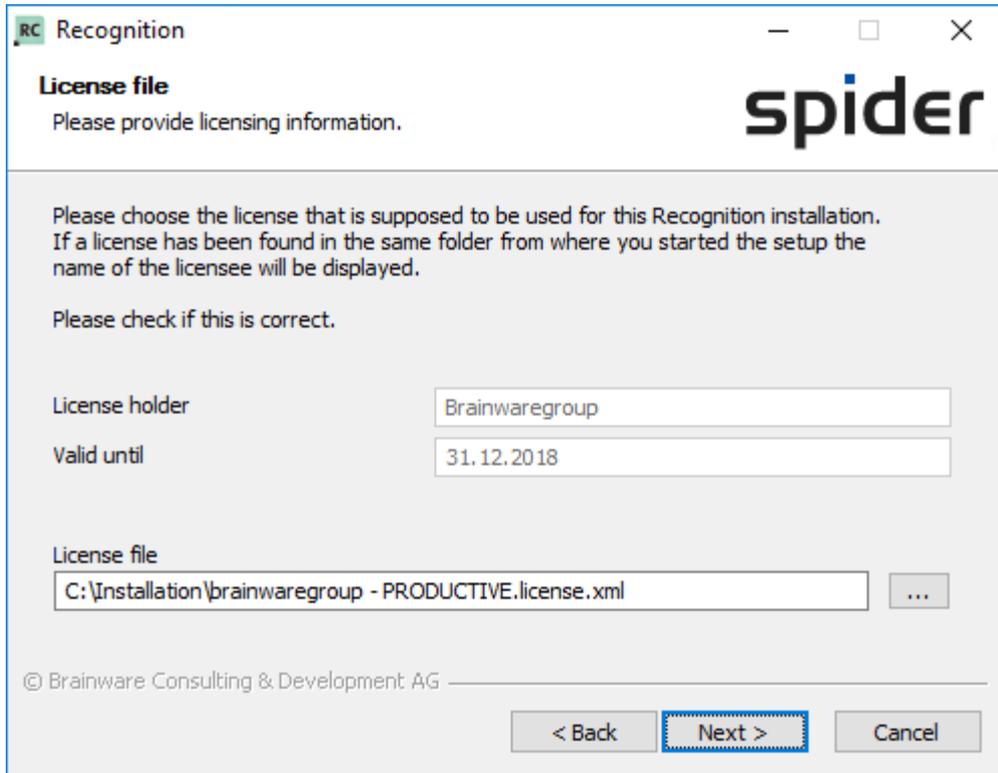


Click on "..." Button:



Select the license and then click "Open".

The selected license will be loaded and its details are shown.



RC Recognition

License file
Please provide licensing information.

spider

Please choose the license that is supposed to be used for this Recognition installation.
If a license has been found in the same folder from where you started the setup the name of the licensee will be displayed.

Please check if this is correct.

License holder: Brainwaregroup

Valid until: 31.12.2018

License file: C:\Installation\brainwaregroup - PRODUCTIVE.license.xml

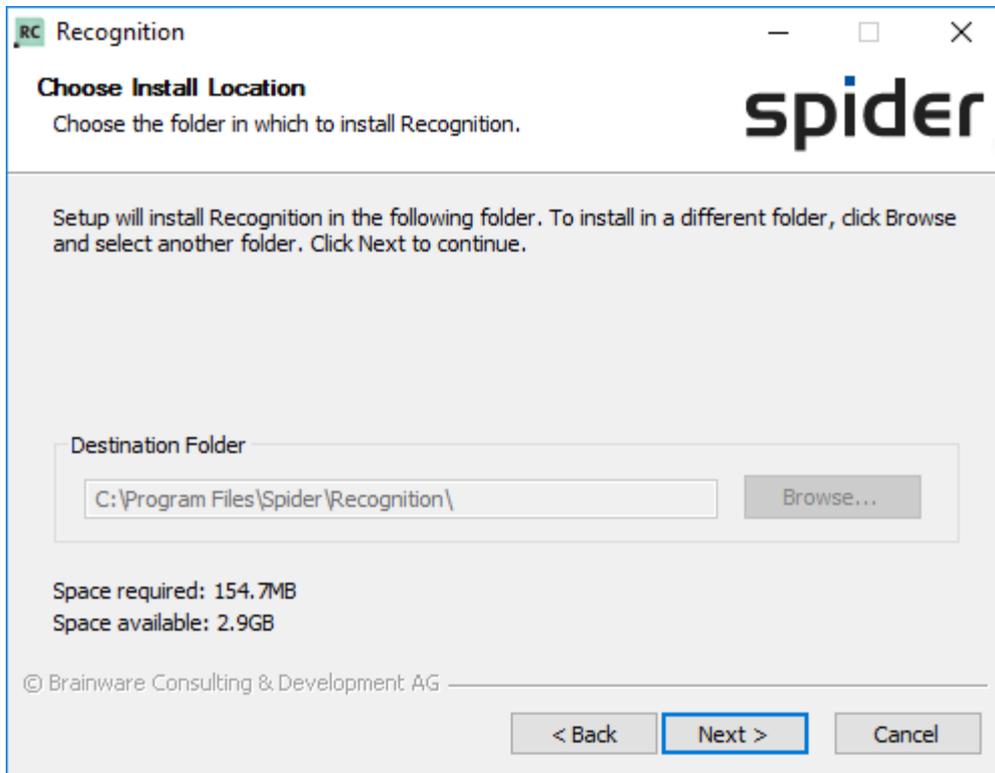
© Brainware Consulting & Development AG

< Back **Next >** Cancel

Note If a license is found in the same directory which has been used to start the setup, it will be loaded automatically into the dialog (if valid).

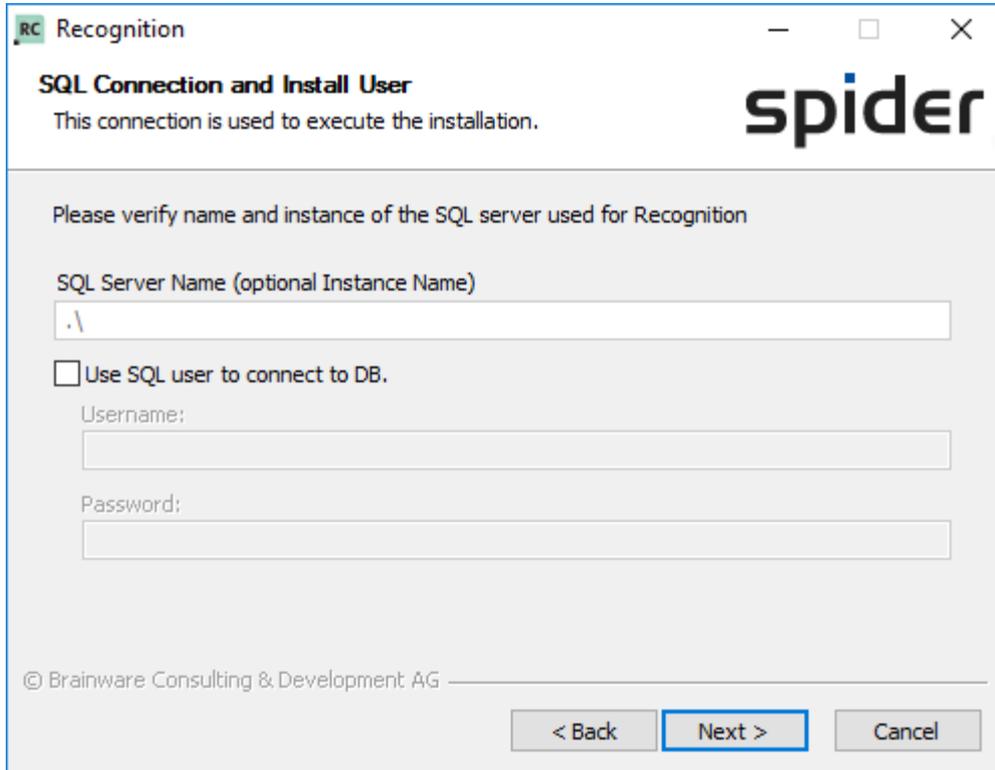
5.4.4 Installation directory

During the update, the selection of the installation directory is prevented. An update is only possible in the existing path.



5.4.5 Database server

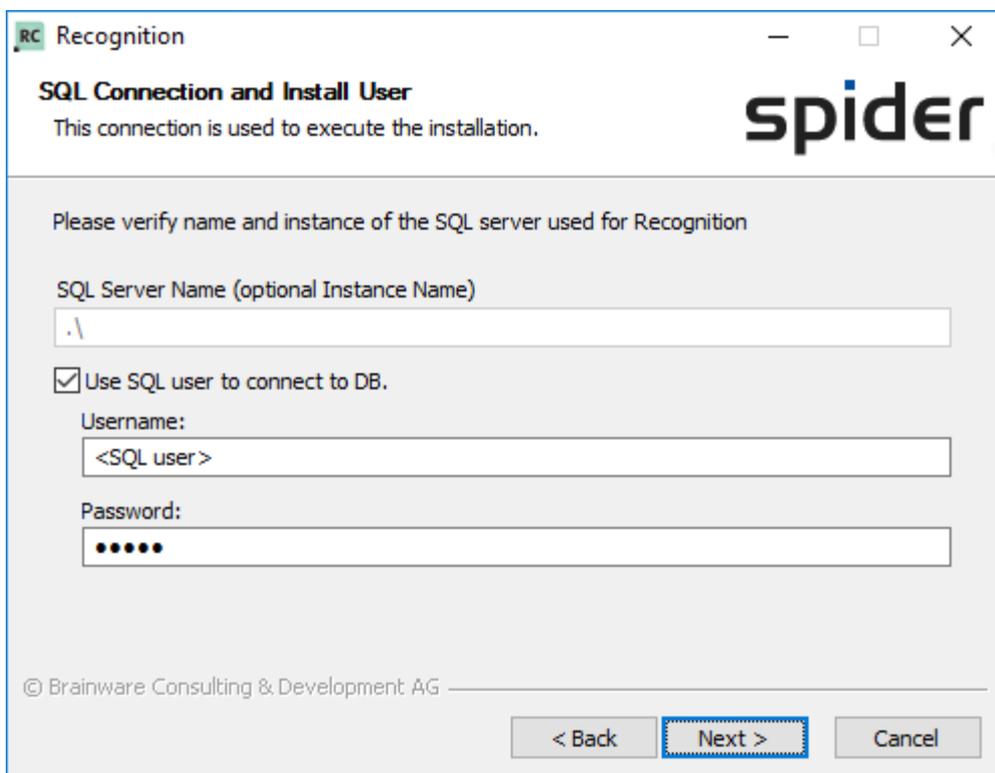
During an update, it is not possible to change the previously used SQL server.



The screenshot shows a dialog box titled "Recognition" with the subtitle "SQL Connection and Install User". The text inside says "This connection is used to execute the installation." and features the "spider" logo. Below this, it asks the user to "Please verify name and instance of the SQL server used for Recognition". There is a text input field for "SQL Server Name (optional Instance Name)" containing ".\". A checkbox labeled "Use SQL user to connect to DB." is currently unchecked. Below the checkbox are two more input fields: "Username:" and "Password:". At the bottom, there is a copyright notice "© Brainware Consulting & Development AG" and three buttons: "< Back", "Next >" (which is highlighted with a blue border), and "Cancel".

The user, with which the connection is established, can either be the logged-in (Windows) user or an SQL user.

To use an SQL user, you must tick the check box **Use SQL user for database connection** and fill in the fields **User name** and **Password** with the desired data.

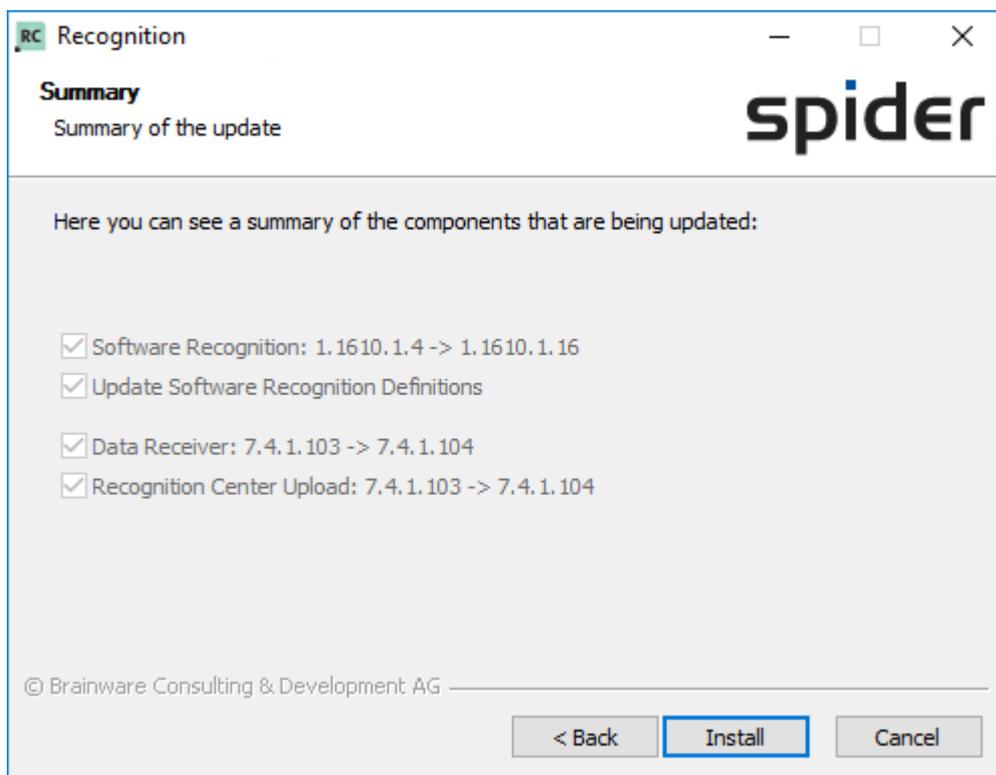


This screenshot is identical to the one above, but the checkbox "Use SQL user to connect to DB." is now checked. The "Username:" field contains the placeholder text "<SQL user>" and the "Password:" field contains five black dots, indicating a masked password. The "Next >" button remains highlighted.

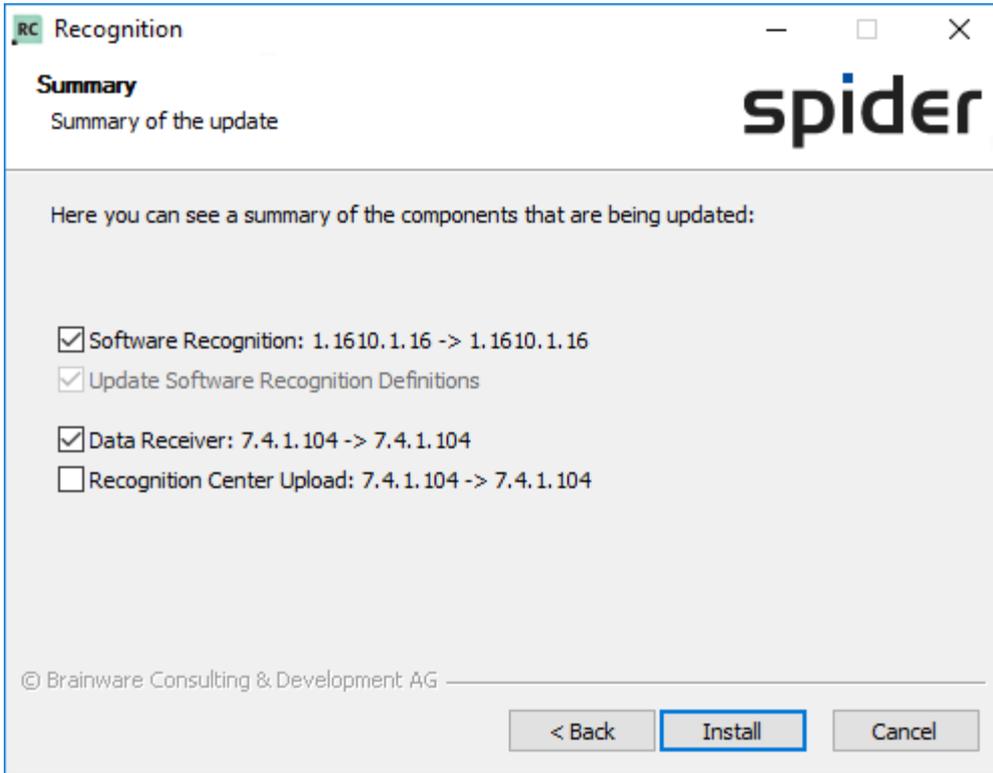
Field	Description
SQL server name	Name of the SQL server, not to be changed!
Using SQL users for database connection	Select whether to use the logged-in domain user or an SQL user.
User name	Name of SQL user.
Password	Password of the SQL user.

5.4.6 Summary

If the update is carried out for the first time, all product must be selected for update. The dialog is filled in already and cannot be changed anymore.

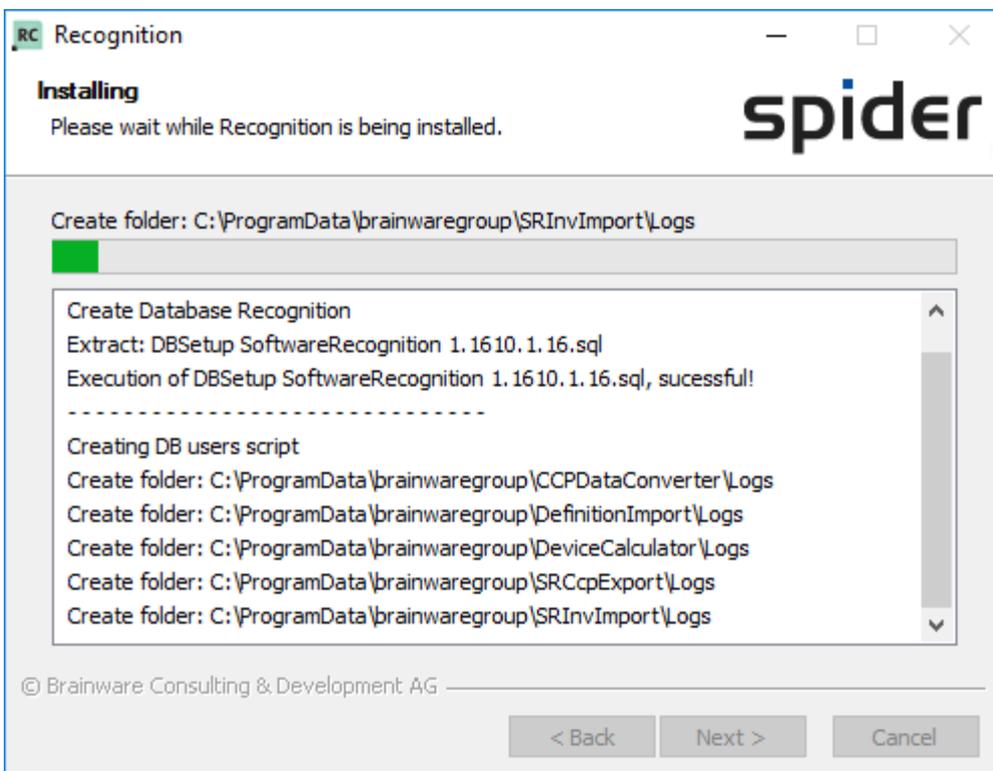


If one of the products has been updated earlier, it could happen that not all of the products are offered for updating. These products can nevertheless be selected for updating.

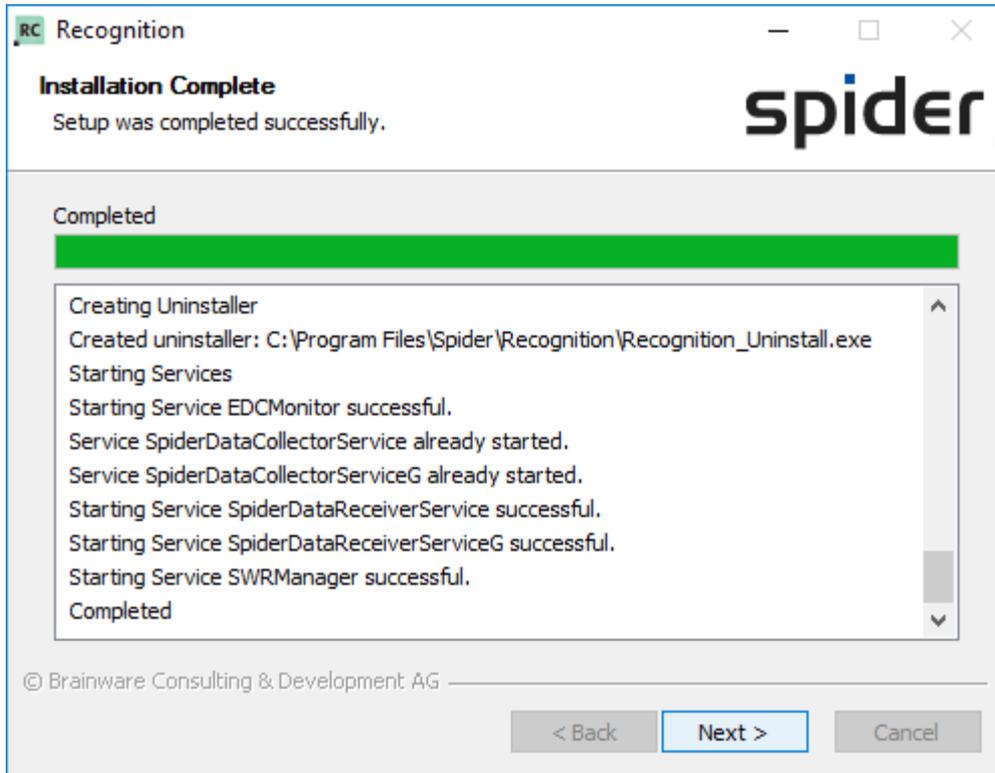


5.4.7 Installation

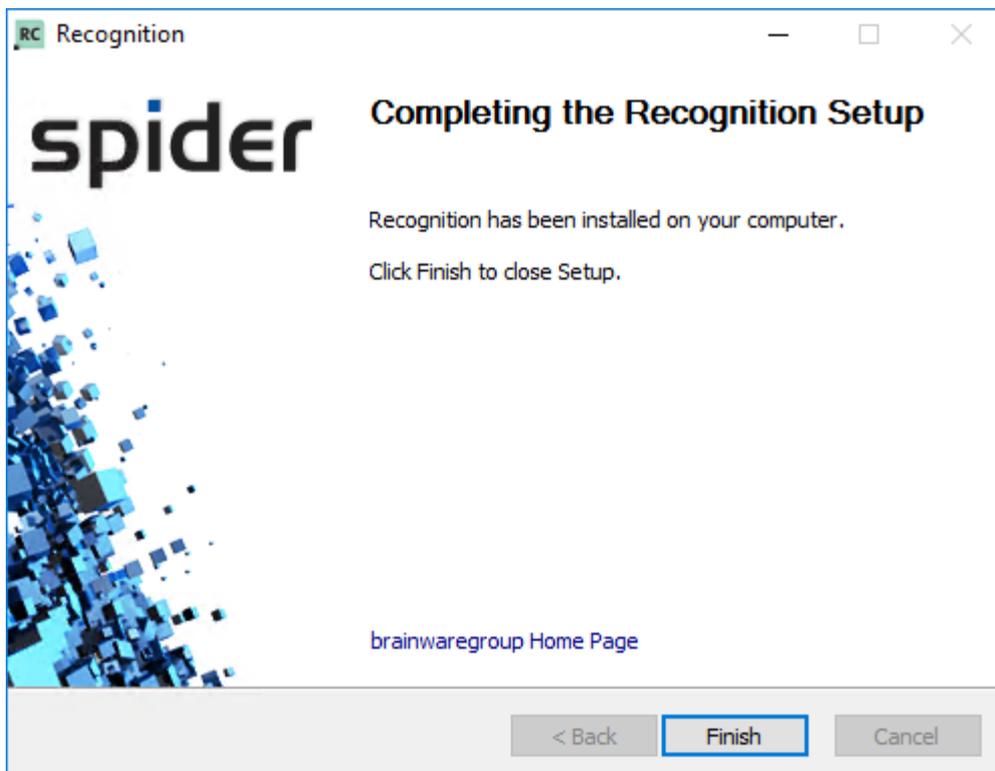
The installation assistant will now install Recognition. This can take some time. Please wait, until the installation is completed.



The successful completion of the installation will be shown in the progress dialog.



The setup has been completed successfully and can now be closed



After completion of the installation, a log file will be written. For details to the log files, please refer to chapter [Log files](#) (on page 208).

Data Center Module (nova ratio appliance)

6.1 Sizing of the virtual machine

The sizing of the virtual machine depends on many parameters. The following data, which distinguish among four application scenarios, could serve as a guideline:

- **TEST:**
Usage of the Datacenter appliance as a temporary test system
- **SMALL:**
Usage of the Datacenter appliance in an environment with up to 1,000 systems
- **MEDIUM:**
Usage of the Datacenter appliance in an environment with 1,000 to 5,000 systems
- **LARGE:**
Usage of the Datacenter appliance in an environment with 5,000 to 10,000 systems

In case of environments with more than 10,000 systems, it is not possible to give any generalized specifications.

The following specifications are given for each of these scenarios:

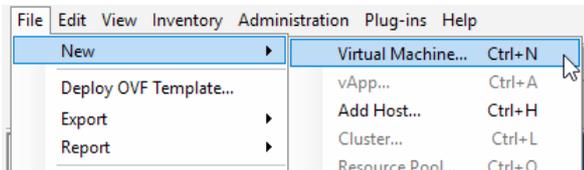
- **# CPU threads:** Number of CPU threads for the appliance
- **Memory RAM:** Main memory for the appliance
- **Disc space:** File system size of the appliance
- **Network:** Number of network interfaces

Sizing	TEST	SMALL	MEDIUM	LARGE
Number of systems		up to 1.000	1.000 to 5.000	5.000 to 10.000
# CPU threads	2	4	12	16
Memory RAM in GB	4	10	20	32
File system size in GB	150	250	500	750
# of gigabit network interfaces	1	2	2	2

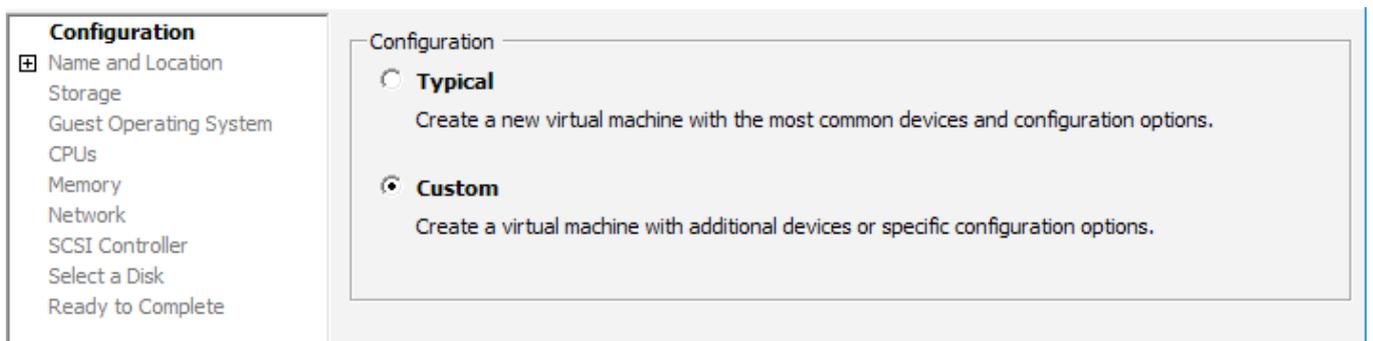
6.2 Launching of the appliance

6.2.1 Import of the VM

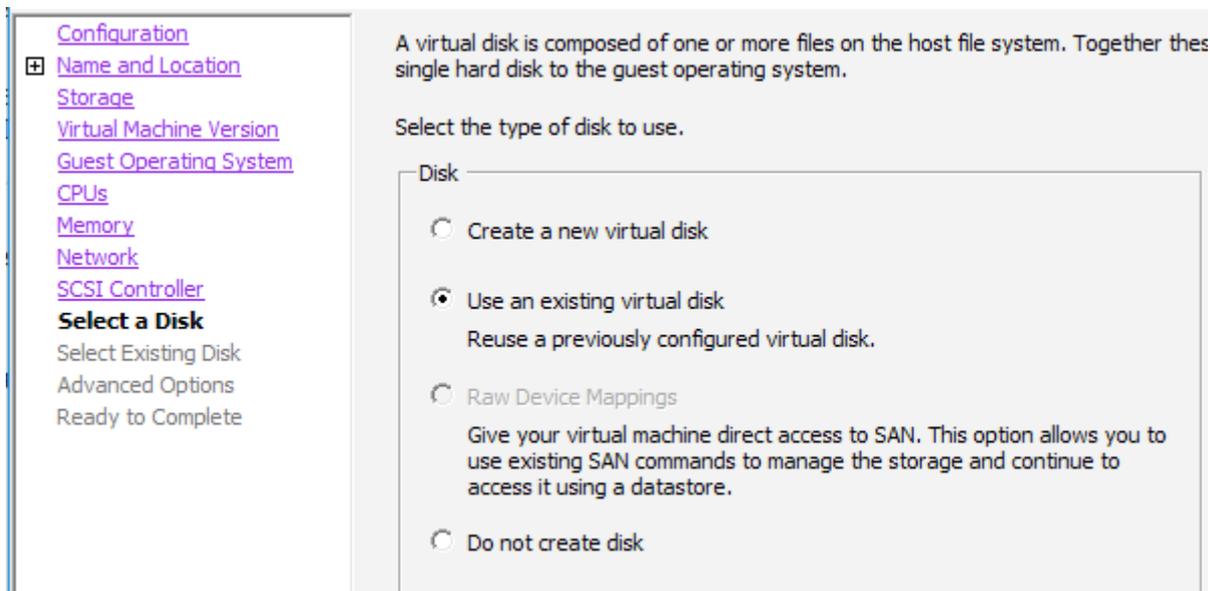
The virtual machine is available as an appliance for VMware. Please find below a short description of how to integrate the virtual machine into an existing vCenter environment by means of the vSphere client. Select "Virtual Machine..." under File -> New



Then select "User-defined" as configuration.



The following settings are self-explanatory. Please make sure to select the item "Existing virtual hard disc" under "Select hard disc"



Now you can select the VM, which has previously been stored on the configured Datastore, by clicking on "Next". For using the import by web client, VMware offers its own KB article with video guide under the following address :

https://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2032904

6.2.2 Operating system users

For the operation of the appliance AND the Application, users have been created on the operating system level:

User	Password
erunbook	erunbook
root	nova123

By default, the appliance is provided with the host name "vm-spider-inv". The network settings are configured so that an IP address is assigned to the server via DHCP. A short illustration on how these settings can be adjusted to custom-specific environments is given below.

6.2.3 Adaptation of the host name

The host name may be changed by using the command "hostname". The call is executed under the root user and works immediately, however, only until the next restart of the appliance:

```
root@vm-spider-inv:~# hostname <new hostname>
```

In order to make the change of the host name permanent, the file /etc/hostname has to be adapted with a text editor under the root user. This can be carried out with e.g. the vi editor:

```
root@vm-spider-inv:~# vi /etc/hostname
<new hostname>
:x
root@vm-spider-inv:~# _
```

6.2.4 Adaptation of the IP address

By default, the IP address of the appliance is set to use DHCP. To use a static IP address, the following adaptations in the file /etc/network/interface must be made under the root user:

```
root@vm-spider-inv:~# vi /etc/network/interface
```

In the delivery state of the appliance, the section "The primary Network interface" appears as follows:

```
# The primary network interface
auto eth0
iface eth0 inet dhcp
#iface eth0 inet static
#address 172.19.120.99
#netmask 255.255.255.0
#gateway 172.19.120.1
#dns-nameservers 172.19.120.1
```

To use a static IP address, the DHCP line has to be commented out. The lines "iface", "address", "netmask", "gateway" and "dns-nameservers" must be activated and filled with the desired values.

In the following example, the appliance shall use the IP address 172.19.120.99. The routing is done via gateway 172.19.120.1, the subnet mask is set to 255.255.255.0 and the system with IP address 172.19.120.1 will be used as DNS server:

```
# The primary network interface
auto eth0
#iface eth0 inet dhcp
iface eth0 inet static
address 172.19.120.99
netmask 255.255.255.0
```

```
gateway 172.19.120.1
dns-nameservers 172.19.120.1
```

After changing these files, the network services of the appliance have to be restarted:

```
root@vm-spider-inv:~# systemctl restart ifup@eth0
```

After this command, please use the `ifconfig` command to make sure that all settings have been applied correctly

```
root@vm-spider-inv:~# ifconfig
...
```

6.2.5 Creating a certificate

The tool for creating or updating an eRunbook certificate is already installed on the eRunbook server. On the eRunbook server, go to the directory `/opt/erunbook/product/tools` and run the script `erunbook_gen_ssl_certificate.sh` as user `erunbook`.

To create the certificate, some information is requested. Please note that the FQDN of the eRunbook server is expected in the query of the "common name" (in bold in the illustration).

```
erunbook@vm-dev-mj:~ > cd /opt/erunbook/product/tools
erunbook@vm-dev-mj:~/product/tools ./erunbook_gen_ssl_certificate.sh

writing RSA key
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:DE
State or Province Name (full name) [Some-State]:Germany
Locality Name (eg, city) []:Koblenz
Organization Name (eg, company) [Internet Widgits Pty Ltd]:nova ratio AG
Organizational Unit Name (eg, section) []:eRunbook Dev
Common Name (eg, YOUR name) []:vm-dev-mj.novaratio
Email Address []:.

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:.
An optional company name []:.

Signature ok

subject=/C=DE/ST=Germany/L=Koblenz/O=nova ratio AG/OU=eRunbook Dev/CN=vm-dev-mj.novaratio
Getting Private key

Please restart Webserver now
erunbook@vm-dev-mj:~/product/tools >
```

Finally, the web browser has to be restarted. A script is available to start the Apache web server. This script is located in the directory `/opt/erunbook/product/admin/` and will be called with the parameter "restart":

```
erunbook@vm-dev-mj:~/product/admin > cd /opt/erunbook/product/admin/
erunbook@vm-dev-mj:~/product/admin > ./erunbook_apache restart
erunbook@vm-dev-mj:~/product/admin >
```

The new erunbook certificate is created with the name "httpd.server.crt" and can be found in the directory `/opt/erunbook/software/additional/etc`

The certificate created in this way is a "self-signed SSL certificate". This means that web browsers will usually ask for a confirmation before granting access to the pages of this web server.

6.3 Setting up the data center module

6.3.1 General information

For the following configuration steps, in some cases, direct actions may be carried out on the data center module via an API. The creation or deletion of a tenant from spider results in multiple actions in the data module. Depending on the equipment used and the workload of the data center module, a single task executed in the background may take several minutes to complete.

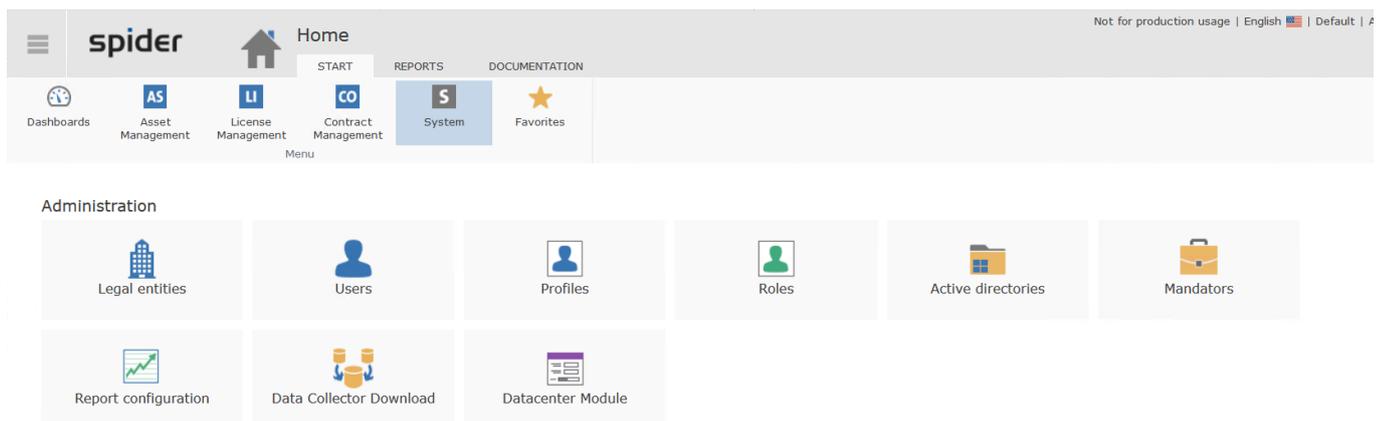
Multi-platform inventory management may be carried out via the Columbus Datacenter Inventory. You may select whether the delivery of the inventory data is carried out to a Spider Data Collector (SDC) end point or a Columbus infrastructure server. From here, the inventory management files are delivered to the recognition module as Columbus Datacenter Container (cdc) file.

After the data center module has been set up, the *.cdc files may be processed with the next data delivery. This is usually done once per day and may take some time, depending on the size of the covered system landscape.

6.3.2 Registration

In order to enable processing of the inbound raw files in *.cdc format, the access to a data center module (nova ratio appliance) must be configured. This is done via the technical connection parameters of an API.

For this purpose, a data center module menu item is provided in the main menu of the system section.



Clicking this menu item will provide access to a connection page via which the data center module may be set up. Technically, only one data center module is set up. In case of multitenancy systems, it may be necessary to set up multiple data center modules for load distribution reasons.

A data center module may be set up via the "Create" ribbon button. In addition to a name for internal reference, the URL to the API as well as the access data of the technical user must be entered.

The screenshot shows the 'Datacenter Module' page in the Spider application. The 'Create' ribbon button is active. The 'Datacenter module details' section contains the following fields:

Name	<input type="text"/>
API URL	<input type="text"/>
API system user	<input type="text"/>
API system user password	<input type="password"/>

After registration, the data center module details page is displayed. In the left section, configured data center modules are displayed. The details for the first existing data center module are automatically loaded when accessing the page. For the currently selected data center module, you may use the "Test" button to immediately test the connectivity.

The screenshot shows the 'Datacenter Module' page in the Spider application. The 'Test' ribbon button is active. The 'Datacenter module list' on the left shows 'Test 5' selected. The 'Datacenter module details: "Test 5"' section contains the following fields:

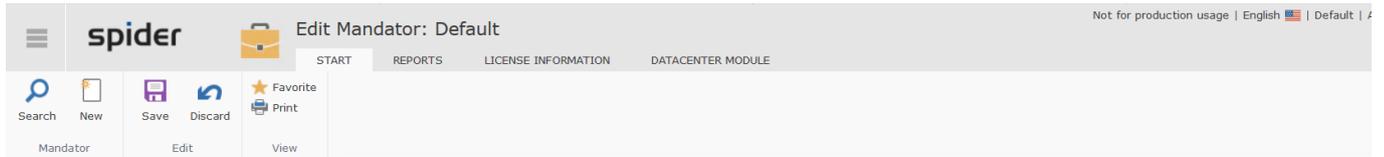
ID (internal)	2
Name	Test 5
API URL	https://novaapphh.bwg.corp:9443/eRunbook/API/eAdmin
API system user	eRunAdmin
API system user password	<input type="password"/>
Insert user	uh
Inserted	6/8/2018
Update user	webtester
Updated	9/20/2018
Assigned mandators	Mandator
	DCTest

6.3.3 Tenant assignment

A data center module is able to process the data of multiple tenants. Conversely, a tenant is always assigned to one data center module.

Therefore, the assignment of a data center module takes place in the context of the affected tenant.

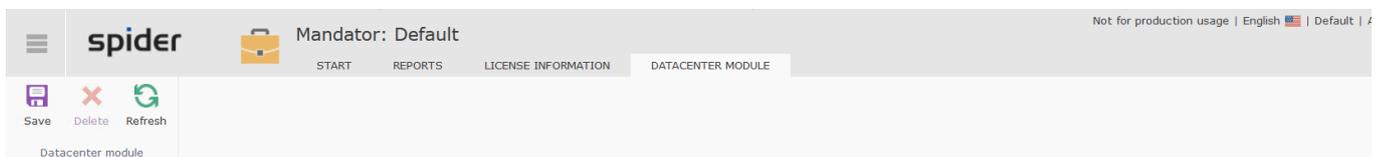
The setup page is accessed via the data center module tab.



ID: 0
 Name: Default
 Description: Brainwaregroup

Active:
 Start date: 5/31/2018
 End date:

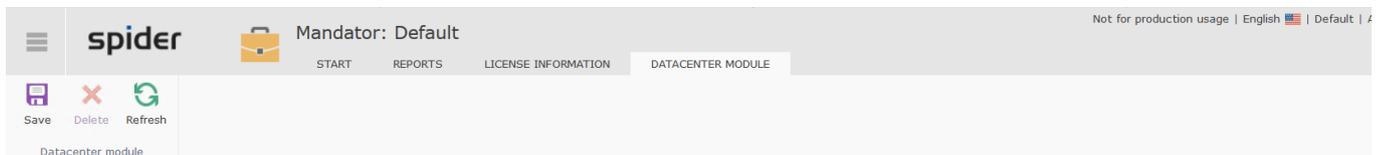
Software Recognition enabled:
 Upload data to the Recognition Center:
 Customer identifier: TestSpider64FLEXENT



Datacenter Module Assignment

Select datacenter module: No assignment

Any previously configured access to a data center module will be available via a selection field. The selection must be confirmed by clicking "Save". This will start the setup of the tenant in the data center module in the background.



Datacenter Module Assignment

Select datacenter module: Test 5

This completes the tenant setup. If inventory data related to the tenant is delivered for the data center module, this data is automatically transferred to the data center module for processing. In Spider, the results will be displayed after a processing run.

- Systems
- Software from the data center software detection
- Oracle data

GDPR requirements in Spider

7.1 Personal data

The European General Data Protection Regulation, Article 4, No. 1 GDPR provides the following definition:

... "**personal data** means any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person."

With regard to the Spider products, this means that a variety of modules, processes, and reports are affected by the establishment of a GDPR conformity. However, data to which the GDPR does not apply or which is subject to other legal foundations is not subject to any changes. This, for example, includes data of juristic persons.

7.1.1 Which data categories are processed in Spider products?

Within the spider products, the following data categories are processed by default:

- personal information (e.g. name, surname),
- contact information (e.g. email addresses, phone numbers),
- domain information (e.g. domain login, active directory identities, user logged in last, main user or IP addresses)
- and partial company service information (e.g. date of joining/leaving the company or personnel numbers).

The actually available data fields for personal data must be checked and documented **on the customer side in case of individual adjustments**. This is true in particular for possible additional data categories.

7.1.2 Special categories of personal data (Article 9, Section 1 GDPR)

In addition to the abovementioned data, the GDPR (Article 9, Section 1) specifies special categories of personal data which must not be processed on principle.

By default, Spider products do not contain any such special data categories.

Individual customer expansions must be checked!

In case of **customer-specific adjustments** there is a possibility that personal data belonging to special categories has been incorporated into Spider products. This may e.g. be the case in case of additional fields or the integration of third-party systems with personal data belonging to special categories. In this case, **a customer-specific evaluation, documentation, and definition of necessary measures** is required e.g. when processing personal data of minors or additional information such as date of birth or religion. This applies in particular to customers who use our products to collect, store or process specific genetic, biometric, or other health-related data or features.

7.1.3 Processing of personal data (Article 4, No. 2 GDPR)

With regard to risk and compliance checks, it may be required to provide information on the processing of personal data in Spider products. When asked whether a corresponding processing takes place, this must be affirmed. The definition in Article 4, No. 2 GDPR clearly states:

"Processing means any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organization, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction."

In Spider products, personal data belonging to defined data categories are being processed. Without processing of such data, Spider products would be non-functional or their functions would be significantly limited.

7.2 Personal data fields related to selected Spider data objects

The following chapters show the specific fields of the data objects in which personal data is being stored. Since the Spider data model can be individually supplemented via parameter definition, this will only cover the standard version which cannot be changed in case of full update editions only. In case of flex editions, inspection and documentation must always be carried out in a customer-specific manner.

7.2.1 Personal data related to employees

Employee master data is usually imported into Spider from third-party systems. The system most frequently used for this purpose is Microsoft Active Directory.

The following data categories are stored in the employee data object:

- personal information (e.g. name, surname)
- contact information (e.g. email address, phone number)
- domain information (e.g. domain login, active directory identities, main user)
- partial company service information (e.g. date of joining/leaving the company)

The following fields are used for an employee. The scope has been reduced to the extend absolutely necessary. The main purpose here is to display the name of an employee as well as their identification in case of an import or the identification and the connection with the technical inventory of systems by means of domain identifiers. Since data from Microsoft Active Directory is being linked frequently and the interface as well as the data integration are included in the standard version of the product, the field names of Microsoft Active Directory are indicated as well. The columns to be exported can be set via the Active Directory Connector. By default, only the following fields are enabled:

- LastName (Active Directory: GivenName)
- Firstname (Active Directory: Surname)
- DomainLogin (Active Directory: SAMAccountName)
- Fullname
- EmailAddress (Active Directory: EmailAddress)
- EmploymentTypeID – categorization such as internal/external
- UserPrincipalName (Active Directory: UserPrincipalName)
- swrADUserObjectID – internal ID in recognition DB
- ExternalReference – identification in a third-party system

The following fields are no longer part of the standard configuration and will be removed when updating full update editions to Spider 6.4. The fields remain in the data table. Any permissions as well as visibility have been removed. In case of a customer-specific use which justifies the processing of such data, the fields can be enabled in the flex edition:

- Title
- StaffNo (Active Directory: StaffNo)
- PhoneNo (Active Directory: PhoneNo)
- MobilePhoneNo (Active Directory: MobilePhoneNo)
- DateOfEntry
- DateOfEmission
- FaxNo
- PrivatePhoneNo
- Department
- Location
- Country
- CountryCode
- State
- StreetAddress
- PostalCode

An index-based search is mapped via OneSearch. Employee data is indexed. OneSearch is available for all Spider users – it is not possible to restrict permissions to fields or data sets. Thus, only the following fields will be indexed for search and display via OneSearch in the future:

- LastName (Active Directory: GivenName)
- Firstname (Active Directory: Surname)
- DomainLogin (Active Directory: SAMAccountName)

Furthermore, the following field will be indexed. This is done for cross-module integration.

- EmailAddress (Active Directory: EmailAddress)

7.2.2 Personal data related to assets

Asset data processed in Spider is usually imported from and kept up to date based on inventory systems. Certain fields may directly contain personal data (e.g. LastLoggedOnUser). Other fields may contain technical identifiers which may be used to obtain information on the natural person.

The following data categories are stored in the asset data object:

- domain information (e.g. LastLoggedOnUser, host name, IP addresses, UUID)

The following fields are technical identifiers or identification fields which are required for processing and identification. These are essential and cannot be disabled.

- Hostname
- AssetNo
- International Mobile Station Equipment Identity (IMEI)
- PhoneNo

- UUID
- URN
- ID

The following fields contain personal domain information from user accounts.

- LastLoggedOnUser
- PrimaryUser (detected main user)

LastLoggedOnUser may be used to obtain information on a Microsoft Active user account which is linked to a natural person. This is resolved in Spider. These fields are required for several reasons. Important in particular are the requirements for mapping of user-based license metrics and the necessity for determination of main users on a device. These are essential and cannot be disabled in Spider. However, if no LastLoggedOnUser data is provided by a supplying system, user-based license mapping cannot be carried out.

The following fields contain additional technical information which does not have any specific use in the standard version. These fields are no longer part of the standard configuration and will be removed when updating full update editions to Spider 6.4. The fields remain in the data table. Any permissions as well as visibility have been removed. In case of a customer-specific use which justifies the processing of such data, the fields can be enabled in the flex edition:

- IPAddressV4
- IPAddressV6
- MacAddress 1-4

An index-based search is mapped via OneSearch. Asset data is indexed. OneSearch is available for all Spider users – it is not possible to restrict permissions to fields or data sets. The following fields are indexed for search and display via OneSearch:

- Hostname
- AssetNo
- UUID

7.2.3 Personal data related to Spider users

A Spider user account is required in order to access data in Spider. The user accounts can be granted rights to functions and data in Spider by means of a permission concept.

The following data categories are stored in the employee data object:

- personal information (e.g. name)
- contact information (e.g. email address)
- domain information (e.g. login)

The following data fields are provided for the user object and required for identification, display, and use in Spider.

- Login
- RealName

Furthermore, it is recommended to register an email address. The email address is absolutely necessary for using the 'password forgotten' function for Spider-internal user accounts.

- EmailAddress

It is possible to either create Spider-internal user accounts or link a Microsoft Active Directory via which user accounts which belong to AD groups intended for this purpose are transferred automatically. When using user accounts from Microsoft Active Directory, the SAMAccountName is used as LoginName. In case of Spider-internal user accounts, it is recommended to use automatically generated login identifiers in order to make it more difficult to obtain information on a natural person (pseudonym).

In Spider, the login is recorded in the following situations/locations:

- The login is stored for each data object which has been created or changed by a user.
- The login is stored in the change histories of any changes which have been initiated by the user.

Furthermore, an employee master data set can be linked to a Spider user account. In case of an Active Directory account, the master data set can be linked automatically.

7.2.4 Personal data related to contact persons

In contract management, so-called contact persons can be manually registered in relation to contractors. These contact persons are natural persons. The data processing of such data is subject to the requirements of the GDPR. Such data must only be stored with consent of the data subject or on a contractual basis. Compliance with the requirements must be ensured on the customer side or in the accompanying processes. If this cannot be ensured, this area should be disabled entirely.

The following data categories are stored in relation to a contact person:

- personal information (e.g. name, surname)
- contact information (e.g. email address, phone number)
- organization information (e.g. function)

The intended use is to facilitate contact with the responsible contact partner of a contractor.

Since any desired fields, which may contain personal data, can be added via the Spider meta data model, this document will only cover those fields which are included in the standard version. In case of full update systems, where the entire configuration is updated and no additional fields can be added, the version corresponds to the standard scope. For all other systems, the specific parameterization must be documented in a customer-specific manner.

The following fields are provided in case of the standard configuration:

- LastName
- FirstName
- Title
- Phone
- Fax
- Email
- MobilePhoneNo

An index-based search is mapped via OneSearch. Data of contact persons is not indexed.

7.3 Principles relating to processing of personal data (Article 5 GDPR)

The Spider products are used for different business processes. Compliance with the requirements of the GDPR depends on multiple factors. The following, frequently occurring factors shall be mentioned as examples:

- Type and characteristic of the accompanying or underlying business processes
- Scope of the customer-specific expansions or characteristics in the use of the Spider products
- Extent of the inclusion of personal data from external systems and the design of the interfaces

An evaluation which only relates to the product standard is insufficient. A general statement on the compliance with the different GDPR requirements of the Spider product in a customer environment must **always be checked in a customer-specific manner** due to the options for flexible adjustment. The assessments in this document refer to the basic standard functions of the Spider products.

The spider products will technically support the different GDPR requirements in accordance with Article 5. In addition to mere compliance with the requirements, we are also aiming for simplification as well as additional advantages which are achieved with the implementation of our products. Any requirements and improvements identified based on experiences made with our customers will be taken into account and implemented in future product versions.

7.3.1 Adequacy and relevance of personal data as well as limitation of their processing to the extend absolutely necessary (Article 5, No. 1, lit. c GDPR)

In the products, only such personal data which is required for the underlying business processes and functions shall be processed.

In case of customer-specific adjustments or extensions of the Spider products and when linking Spider products with third-party systems (e.g. Microsoft Active Directory) which provide personal data, these principles must be checked and it must be ensured that these are observed individually.

The standard configuration has been reworked with regard to the limitation to the extend absolutely necessary. For the employee data object in particular, several fields have been removed from the standard version.

7.3.2 Adequate storage of personal data as well as their possible anonymization (Article 5, No. 1, lit. e GDPR)

Erasure functions are provided for managed personal data which do not depend on supplying systems and which are no longer considered necessary for the underlying business process (e.g. an employee leaving the company). Functions for anonymization, for example, for statistical purposes are not provided. Thus, the data must be physically erased. The erasure of the data must be ensured in a customer-specific manner.

7.3.3 Rights of the data subject

Right of access by the data subject (Article 15 GDPR)

Data subjects have a general right to obtain confirmation as to whether their personal data is being processed. The right to obtain information can be complied with on principle using the current product versions.

Information page for employees

The personal data of data subjects (e.g. employment data) can be viewed and printed out via the information page. For this purpose, a new page (EmployeeEditGDPRInfo) for which access rights can be granted individually has been added with Spider 6.4. This page shows all fields of the employee object as well as any assets of the employee.

External contact persons

Registered data of a contract person can be viewed via the details form. It must be ensured that the user who compiles the fields for an information request has the access rights for all fields which contain personal data.

Information page for Spider users

Spider users are able to view their own personal data via the user settings.

Rectification or erasure of personal data (Article 5, No. 1, lit. d GDPR)

In Spider, personal data can be managed, changed, and also erased on principle.

For data which is provided by supplying systems, changes can usually not be carried out in Spider since such data is overwritten on a regular basis. A change of such data must be carried out in the respective source systems.

In case of Spider products, the erasure of personal data which is provided by external systems cannot be solved in a uniform manner. One reason for this are possible legal storage periods. Automatic erasure of data must always be determined and set by the customer.

The right to rectification and the right to erasure are covered separately in the following sections.

Right to rectification (Article 16 GDPR)

In Spider products, options for rectification of personal data are provided on principle. These may be reserved to permission groups defined via the permission concept.

When personal data is provided via third-party systems, the permissions must be defined in the third-party system. Changes to personal data will only apply from their date of entry or application. Thus, change histories will not be affected.

Right to erasure (Article 17 GDPR)

In Spider products, options for erasure of personal data are provided on principle. These may be reserved to permission groups defined via the permission concept.

The erasure is carried out in two steps: When erasing a data object, the data object is erased from the data table and moved to a recycle bin. The recycle bin is also available in the databases in the form of a table. While the data set is no longer present in the data tables, it is still physically stored in the database. The cleansing of the recycle bin – physical erasure from the database – is carried out by the product. **The storage time in days can be set.**

When the recycle bin is cleansed, any change histories will be cleansed as well. Data sets with personal data are only considered physically deleted after the recycle bin has been cleansed.

Backup strategies and storage times for the backups must be taken into account in a customer-specific manner.

Peculiarity of personal data from linked third-party systems

When personal data is provided by third-party systems, the erasure must be carried out in the third-party system. In case of Spider products, the erasure of personal data which is provided by external systems cannot be solved in a uni-

form manner and can thus not be included in the standard product. For erasure of personal data, factors such as legal storage periods must be taken into account. Thus, erasure must be realized based on the linked third-party systems and the business process type.

Right to restriction of processing (Article 18 GDPR)

Since the legitimacy of processing in accordance with Article 6, No. 1 lit. f GDPR, among others, is assumed and, thus, legitimate reasons may outweigh the right to restriction, no dedicated technical measures need to be taken.

Notification obligation (Article 19 GDPR)

The notification obligation in case of any change of personal data must be taken into account in the accompanying processing processes (e.g. account management) on the customer side. This is a clear recommendation. It would probably be irritating for the affected persons (employees) in an organization and ultimately cause disproportional effort for the organization if any system would automatically inform the persons affected on changes regarding the personal data, in particular in case of indirect use of these data from a source system.

If automatic notification by the Spider system is desired, this must be realized by means of a customer-specific expansion and a corresponding setup. The product-integrated Alert&Reporting system, which dynamically sends daily emails based on prepared database views, can be used for this purpose. This way, the email recipients may be set dynamically depending on the data set. As a data basis for the evaluation of changes, the Spider change histories may be used.

Right to data portability (Article 20 GDPR)

A data portability of personal data is not relevant since Spider products are used for internal company processes and systems only. If any data shall be transmitted, the data can be accessed via a REST API.

Right to object (Article 21 GDPR)

Since the legitimacy of processing in accordance with Article 6, No. 1 lit. f GDPR, among others, is assumed and, thus, legitimate reasons may outweigh the right to object, no technical measures are taken.

Suitable methods for demonstrating compliance with the requirements in accountability cases (Article 5, No. 2 GDPR)

Changes to personal data can be viewed via the change histories for which separate permissions may be given.

7.4 Lawfulness of processing (Article 6 GDPR)

The lawfulness of the processing of personal data in Spider products is given by the legal foundations provided in the following articles:

Article 6, No. 1, lit. c GDPR

"Processing is necessary for compliance with a legal obligation to which the controller is subject."

Article 6, No. 1, lit. f GDPR

"Processing is necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data, in particular where the data subject is a child."

In this case, both passages implicitly mainly refer to the obligations from the German Civil Code (BGB), the German Commercial Code (HGB), the Law Against Unfair Competition, and the German Copyright Act (UrhG).

7.5 Data protection by design and by default (Article 25 GDPR)

Spider products and infrastructure products used (e.g. Microsoft SQL Server) include different technical functions for supporting technical and organizational measures. The specific technical and organizational measures must be determined in a customer-specific manner.

7.5.1 Confidentiality (Art. 32, Section 1, lit. b GDPR)

- **Access control:** e.g. no unauthorized access to the data processing systems (to be ensured by the customer)
- **Access control:** no unauthorized system use by means of passwords (to be ensured by the customer)
 - The data is processed in Microsoft SQL Server databases.
 - Certain data is also stored in the index (ESI).
- **Access control:** no unauthorized reading, copying, changing, or removal within the system
 - Access for writing/changing of data is controlled via a role-based Spider permission concept.
 - Thus, direct access of users to the SQL server should be prevented by all means since it is not protected by Spider permission checks.
- **Separation control:** separate processing of data which has been obtained for different purposes; e.g. multitenancy
 - In case of multitenancy systems, a tenant ID is registered for each data set. Segregation of tenants is carried out when accessing the data via the Spider business logic. Users can only access data from a current session for which they have access.
 - Within a tenant, objects and their data can be assigned to business units. Users can only access the data of objects from business units for which they have permission.

7.5.2 Integrity (Art. 32, Section 1, lit. b GDPR)

- **Transfer control:** No unauthorized reading, copying, changing, or removal during electronic transfer or transmission; e.g. encryption, connection encryption (HTTPS) (to be ensured by the customer)
 - We strongly recommend using https for accessing the Spider Web User Interface (Web UI) and the Web API.
 - When sending data exports from the Spider system, the customer must ensure transfer control by means of suitable, technical, organizational measures.

7.5.3 Availability and resilience (Art. 32, Section 1, lit. b GDPR)

- **Availability control:** Protection against random or purposeful destruction or loss; e.g. backup strategy, uninterruptible power supply (UPS), virus protection, firewall, reporting channels, and emergency plans (to be implemented by the customer)

7.6 Conditions for consent (Article 7 GDPR)

If personal data of the data subject is collected directly via software, technical means for giving consent as well as for recording and explaining this action must be provided. Also, the data subject must be able to withdraw their consent under the described conditions.

7.6.1 Self-service functions

Self-service functions by means of which a user (data subject in the sense of the GDPR) directly registers their personal data must comply with the conditions for consent. In the standard Spider product, there is no direct registration of data by the data subject. Most of personal data is taken from external systems and processed in Spider. If self-service functions are possible due to **customer-specific extensions**, appropriate measures for fulfilling the requirements must be taken by the customer.

When processing employment data (e.g. Microsoft Active Directory), consent may be mapped via the accompanying processing processes or upstream information processes on the customer side.

7.6.2 Consent for personal data from external systems or for collection of additional data

When personal data from third-party systems (e.g. Microsoft Active Directory) is provided, consent must be obtained from the responsible authority.

For additional personal data which is entered into and processed in Spider, consent by the data subject is required. This must be ensured in the accompanying processing processes on the customer side.

7.7 Information obligation (Article 13 and 14 GDPR)

When personal data is collected directly or indirectly, the controller is obliged to inform the data subject about this action.

In case of the current product versions, the active information obligation can only be complied with by means of customer-specific settings and extensions. Email-based information procedures are often used to inform the data subjects. On principle, it is questionable whether it makes sense to actively notify the data subjects using Spider since the products are usually used for dedicated subtasks and indirectly use personal data relevant to the task from external systems.

7.7.1 Processing of employment data

For the quite common processing of employment data (e.g. from Microsoft Active Directory), we recommend ensuring compliance with the information obligation in the accompanying processing processes or the upstream information processes on the customer side.

7.7.2 Direct notification of the data subject

Should a direct notification of the data subject from the Spider system still be necessary, the specific information processes must be mapped in a customer-specific manner.

7.8 Records of processing activities (Article 30 GDPR)

In order to comply with the documentation obligations in accordance with Article 30 GDPR, it is necessary to, among other things, maintain a record of all processing tasks which use personal data. The record must be made available to the supervisory authority upon request (Article 30, Section 4 GDPR and Suitable Recital 82). Companies which are subject to German regulatory supervision must maintain the processing record in German (§23, Section 1 and 2 of the

German Administrative Procedure Act (VwVfG)). An exception in accordance with Article 30, Section 5 GDPR is to be excluded even if the quantitative factor of less than 250 employees is given. This is a result of the required IT protocols which are essential for the proper functioning of the Spider products.

The processing record must be created in a customer-specific manner.

Log files

Log files are written for the installation and the update of all setups as well as the services. Please refer to the table to see where to find these.

Product	Path to the log file
Spider Installation / Update Recognition Installation / Update Software catalog	%ProgramData%\brainwaregroup\Logs
Spider Services	%ProgramData%\brainwaregroup\CoreServer_xx\<Service name>
Spider Data Receiver Spider Data Collector	%Windir%\
EDC monitor	%ProgramData%\brainwaregroup\EDCMonitor\Logs

8.1 Brainware.log

The log file Brainware.log will be rewritten periodically. Older revisions will be renamed with Brainware_0.log, Brainware_1.log, Brainware_2.log, etc.

This file is a plain text file which may be edited with any text editor.

8.2 Smart-Inspect log files (*.sil)

The *.sil files have the SmartInspect format. These files cannot be read immediately. You will need a (free-of-charge) tool of the company Gurock Software GmbH.

The SmartInspect redistributable console can be downloaded under [SmartInspect Redistributable Console](#).