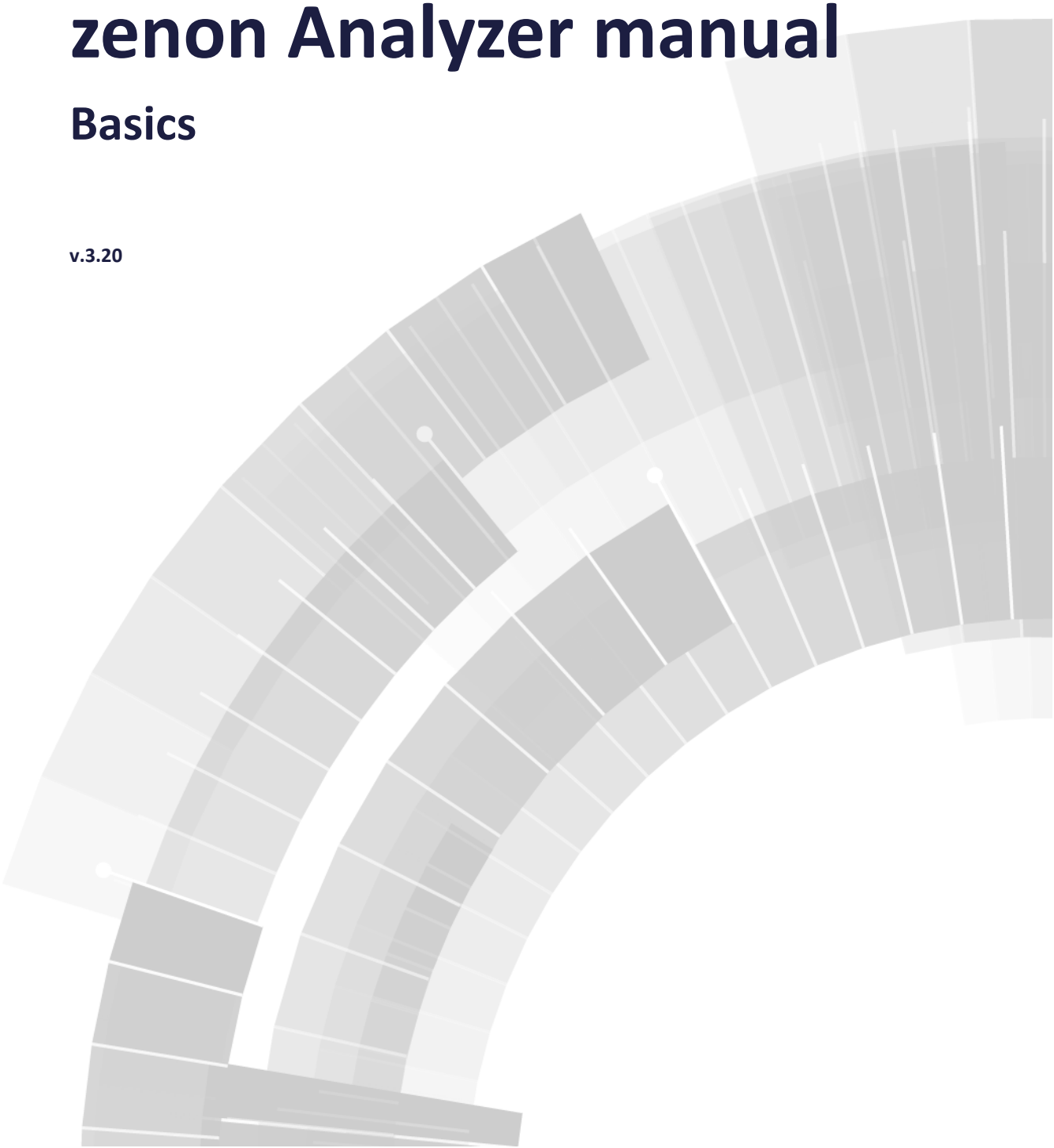
COPA-DATA
do it your way

zenon Analyzer manual

Basics

v.3.20



Contents

1. Welcome to zenon Analyzer help

PROJECT SUPPORT

You can receive support for any real project you may have from our Support Team, who you can contact via email at support@copadata.com.

LICENSES AND MODULES

If you find that you need other modules or licenses, our staff will be happy to help you. Email sales@copadata.com.

2. Upgrade information

Note when switching to a version prior to version 3.20:

3. New in version 3.20

In version 3.20, the following new features, among others, have been implemented:

LICENSING

The licensing (on page 118) has been updated. It is now carried out using the external **COPA-DATA License Administration** application.

CALCULATED FIELDS

The columns of the main data sets can be configured individually. In doing so, calculated fields can be added to the fields that are already present.

Possible use of calculated fields:

- Operations on different variables in a pivoted data set, in order to put the variables in relation to one another.
  Example: `=Fields!TEMPERATURE1.Value - Fields!TEMPERATURE2.Value`
- Pivoted tables to generate grouped columns for report templates of the themes **archive analysis**, **Extended Historian analysis** and **Custom formula analysis**.
- Operations on the values of variables in different time periods when comparing time periods.
- Changing variable names.
  Example: Remove **Project/Archive** variable prefix
  For example `=Fields!VARIABLE_NAME.Value.Split("-"c)(1).Trim()` removes the text before the first minus.
- Special display or formulation of values or date values.
- Value conversions.
- Combination of information, i.e. displaying the content of several columns in one column.

UPDATE STRUCTURE DURING DEPLOYMENT

Amended structures can be updated for prepared reports without having to intervene into the layout. All report elements, as well as headers and footers, are retained as in the report saved on the server. To replace only the structures, during deployment, click on the **Update structure** or **Update structure for all** symbol in the **Report** ribbon.

In doing so, the report is downloaded from the server. Data source, datasets and report code are replaced by the current values. The references are checked after the replacement. The RDL is uploaded to the server again afterwards. If a reference cannot be resolved, a warning is written to the output window and the respective element is removed from the report design.

DEFAULT LAYOUT

The default layout in ZAMS resets the configuration of the ZAMS user interface to the default status. Only the main user interface has been reset up to now. Other elements are also reset now.

The following are reset:

- Dialogs, the size of which can be changed and/or can be moved
- The window size
- Column widths too, depending on the dialog
- Settings for separators

- Expanded states

DO - UNDO

Actions can now be undone and restored when configuring reports.

To do this, there are the **Undo** and **Restore** buttons available in the **Design** ribbon and in the **quick-access** bar. Only steps in the report configuration can be undone or restored. Actions in dialogs are not recorded.

Both buttons contain drop-down lists with the number of steps. The steps are not named, but are grouped into powers of 10. So steps of 1 - 10, 20 - 100, 200 - 1000 etc.

COMMENTS

Comments can be added to report templates and reports.

- in ZAMS
- in Report Launcher

The project configuration for this is carried out using the report name properties in ZAMS.

LIST OF THE REPORT DEFINITIONS IN ZAMS

The list of the last-saved report definitions is shown on the start page. This list can be edited.
It is possible:

- To remove individual entries from the list:
- To delete the complete list

PATH FOR DEPLOYMENT

The folder and the report name for deployment can now be pre-defined in the settings in the Deployment tab. There are three possibilities available:

- **Report Launcher root folder**:
  Reports are saved in the root folder of the Report Launcher.
- **Read from first added report template**:
  The folder is determined by the first selected report template.
  The report name is taken from the selection of the report template.
  These settings are applicable for each language.
- **User-defined path**:
  A name given by the user is used for the folder. It is automatically created on the server if it is

not present.
The report name is entered into the report template.

Note: The report name cannot consist of more than 126 characters. Report name and report path have a maximum of 252 characters.

PREDICTIVE ANALYTICS

zenon Analyzer now has a module for Predictive Analytics.

Prediction models can be created, edited, trained and used in reports.

REPORTS

You can find information on reports in the **Reports and report elements** (on page 11) section.

REPORT LAYOUT

For each report, size, edges, templates and styles for printing and browser can now be configured individually:

- Settings for templates and styles have an effect on the display in print-out and in the browser.
- The size can also be set differently for print-out and browser.
- Side edges only have an effect on print-outs.

REPORT STYLES

The previous color scheme has been replaced with report styles.

Report styles give you the possibility to configure graphical elements individually and to assign reports. Report styles are constructed in a modular fashion and are defined centrally. They allow the central configuration of fonts, lines, frames, colors, color gradients and markers.

zenon Analyzer is supplied with the **Analyzer Initial** report style as standard. This is pre-defined and initially assigned to all reports. A many individual styles as desired can also be created and assigned. The assignment of report styles can generally be carried out for all reports or specifically for individual reports. Report styles can be exported and imported via XML.

When updating to version 3.20, ZAMS color schemes that have already been defined are automatically transferred to the new structure. Color schemes can also be integrated into version 3.20 by means of XML import.

ADD SCADA PROJECT

With the Metadata Editor, SCADA projects can now be added to zenon Analyzer independently of zenon. These can, for example, be used for the use of third-party databases.

LANGUAGE TABLE ENHANCED

The language table has been enhanced:

- It is now possible:
  - To hide and show languages
  - To add languages
  - To delete languages (with the exception of system languages)
  - To export all entries into an XML file (previously only amended entries)
- The filters of the language table have been updated.

4. Reports and report elements

zenon Analyzer 3.20 now has new report templates with:

- Theme Alarm and Event Analysis
  - Top N Alarms grouped: Gets all alarms in the time period, groups them according to the set criteria (alarm class, for example) and displays the N groupings with the most alarms or the longest sum of duration pending.
  - Top N Events grouped: Gets all events in the time period, groups them according to the set criteria (event class, for example) and displays the N groupings with the most events.
- Extended Historian Analysis theme:
  - **Historian Trend with Limits with Variable Selection**: Evaluates trends with limit values and limit value violations for trends.
  - **Historian Aggregated Trend with Limits with Variable Selection**: Evaluates aggregated trends with limit values and limit value violations for aggregated trends.
- Statistical Analysis theme:
  - **Process Capability**: Calculates the process capability index (**Cp**) and the critical process capability index (**Cpk**) from the archived average values and standard deviations.
  - **Process Capability based on raw data**: Calculates the process capability index (**Cp**) and the critical process capability index (**Cpk**) from the archived measured values.

- **Process Capability Trend**: Calculates the process capability (**Cp**) and the critical process capability index (**Cpk**) from the archived average values and standard deviations and displays the results as a trend. The calculation of the trend display for **Cp** and **Cpk** can be either over a time interval of a random spot-check sample.
- **Process Capability Trend based on raw data**: Calculates the process capability (**Cp**) and the critical process capability index (**Cpk**) from the archived measured and displays **Cp**- and **Cpk** results as a trend. The calculation of the trend display for **Cp** and **Cpk** can be either over a time interval of a random spot-check sample.
- **Control Chart**: Displays a control chart, based on the archived average values and standard deviations of a measured size.
- **Control Chart based on raw data**: Displays a control chart based on an archived measured size.
- **Boxplot**: Evaluates archived values statistically. The variables can be addressed by means of either archives or equipment groups.
- **XY Trend Variable Based**: Displays an XY trend with selection of the variables for **X** and **Y**.
- **XY Trend based on meanings**: Displays an XY trend for several equipment groups. The variables for **X** and **Y** are searched for on the basis of meanings.
- **Histogram**: Creates histograms for archived variables.

PARETO DIAGRAM

The Pareto diagram has been enhanced for the **Alarm and event analysis** theme.

This Pareto diagram provides the following information for this theme, depending on the columns available in the Stored Procedure:

- Left Y-axis: from 0 up to the maximum of the absolute value sums
- Right Y-axis: from 0% up to the maximum of the relative values sums
- 10 stages on both Y-axes
- Bars with absolute values of the groups are marked and bound to the left Y-axis
- Line with relative value sums of the groups are marked (with markings for the individual points) and bound to the right Y-axis

The following columns must be present in the SP for this:

- Absolute value of a group
- Relative value of a group
- Sum of the absolute value of this group and all previous groups
- Sum of the relative value of this group and all previous groups

The display for **Machine-based production analysis** and **line-based production analysis** is unchanged.

5. Compatibility

In version 3.20, report templates (`zams_rep` files) that have been created with the versions 2.00 to 3.10 can be created. These are converted and saved as version 3.20 files.

REPORT STYLES

Report styles replace the previous color scheme. In doing so, the properties are also replaced and enhanced. When converting from version 3.10 to version 3.20, new properties have no defined value. They assume the values of the removed property.

6. Technical basics

The zenon Analyzer:

1. acquires data
2. compresses data
3. manages meta data such as equipment structure
4. manages templates
5. manages access rights and authorizations
6. calculates evaluations
7. distributes evaluations to Clients

> **Attention**
>
> Variable names must not contain two or more consecutive spaces. If several consecutive spaces are included, this can lead to a Javascript error when called up in the Report Launcher (**Error 500**).

GENERAL REQUIREMENTS

zenon Analyzer needs for:

- the creation and management of reports:
  - An SQL Server 2016 database and
  - the SQL Server 2016 reporting services
- the display of reports: Browser

A good knowledge of SQL and MS Report Builder 3.0 is required in order for you to create your own reports.

For details about the technical requirements see chapter Technology (on page 16).

HARDWARE AND SOFTWARE REQUIREMENTS

HARDWARE

Analyzer Server:

Parameter	Recommended	Minimum
CPU	Quad-Core Server CPU (maximum 24 cores/4 sockets)	Quad-core
RAM	Up to 128 GB	12 GB
Free memory	200 GB	10 GB

Engineering computer:

Parameter	Recommended	Minimum
CPU	Dual Core	Pentium IV
RAM	4 GB	1 GB
Free memory	200GB	2 GB
Monitor (pixels)	1920 x 1080	1024 x 768

SOFTWARE

Analyzer Server:

A 64-bit operating system is required for the database server. The following are supported:

- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2016
- Windows 8.1 64-Bit
- Windows 8.1 Pro 64-Bit
- Windows 8.1 Enterprise 64-Bit
- Windows 8 64-Bit
- Windows 8 Pro 64-Bit
- Windows 8 Enterprise 64-Bit

- Windows 10 Home 64-Bit
- Windows 10 Professional 64-Bit
- Windows 10 Enterprise 64-Bit

Note: An installed IIS service (on page 33) is required for the installation of the server.

Engineering computer:

The following are supported for ZAMS, the manual data editor, metadata editor and migration tool:

- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2016
- Windows 8.1 32-Bit and 64-Bit
- Windows 8.1 Enterprise 32-Bit and 64-Bit
- Windows 8 32-Bit and 64-Bit
- Windows 8 Pro 32-Bit and 64-Bit
- Windows 8 Enterprise 32-Bit and 64-Bit
- Windows 10 Home 32-Bit and 64-Bit
- Windows 10 Professional 32-Bit and 64-Bit
- Windows 10 Enterprise 32-Bit and 64-Bit

Web browser:

- Internet Explorer 11 (normal view only)
- Internet Explorer 10 (normal view only)
- Chrome
- Firefox

  Note: Zoom in the report is only possible with Chrome.

Recommended HMI/SCADA system:

- zenon 7.60.

.NET Framework 4.6.2:

- .NET Framework 4.6.2 has to be already run capable on the target computer in order to end the installation successfully.

DATA PREPARATION

The data preparation (on page 170) is done in several levels. With this data from different sources and formats can be evaluated universally and maintained easily.

DATA STRUCTURES

The data origin either from static project data or from dynamic user data. For details see chapter Data structure.

DATA COLLECTION

The zenon Analyzer accesses data non-invasively via connectors. Source systems need not be reconfigured. The existing infrastructure is embedded in the reporting of the zenon Analyzer independent of the manufacturers. For systems other than zenon 6.x, only a connector container is installed. This installation does not interfere in the Runtime system and does not interrupt the process.

7. Technology

In this section you learn about the technically needed requirements for

- Server
- Client
- Data Sources
- Development station

and the supported standards for

- Interfaces

SERVER

SQL SERVER 2016 DATABASE

In the database there are the meta data and possibly also user data saved in SQL. For the query, stored procedures (Level 2 (on page 172)) are executed. They again revert to **user defined functions** for data acquisition and data abstraction. If needed, they load the connector stub which requests the user data from the target system online. In addition there are the **user defined functions** which provide auxiliary functions for the evaluation.

SQL SERVER 2016 REPORTING SERVICES

The reporting services run as web application and as web server provide the Clients with all reports for displaying in the web browser. In addition, the parameters for the data source, reports, etc. are set using the **Report Launcher** web front end.

The path to **Report Launcher** is: **http://[computer name]/Reports_za3.**

REPORTING LICENSE SERVICE (ZRSLICSRV)

The reporting license service checks the CodeMeter dongle and the license (on page 118) available at the Server and forwards the licensing information to all involved components. It also has the list of all Client leases.

DATA SOURCE

CONNECTOR CONTAINER

On all computers which can server as data source, the connector container together with its different connectors must be installed and started. The TCP port of the connector container must be reachable from outside.

DEVELOPMENT STATION

ANALYZER EXPORT WIZARD

The Analyzer Export Wizard is integrated in the zenon Editor and is used to import the metadata to the SQL Server 2016 database. The wizard offers full support for zenon 7.xx. Older versions of the zenon Editor are not supported.

INTERFACES

zenon Analyzer supports the following interfaces:

- zenon Runtime 5.50, 6.x, 7.x
- SQL

7.1 Client

There must be a web browser on the client to display and configure reports.

Information

zenon Analyzer was designed and tested for the following browsers:

- Microsoft Internet Explorer from version 10
- Chrome
- Firefox

Note:

- Compatibility view must be deactivated for Internet Explorer.
- Zoom is only available for the Chrome browser.

DOUBLE CLICK IN THE TREE STRUCTURE FOR EQUIPMENT MODEL DEPENDENT ON BROWSER

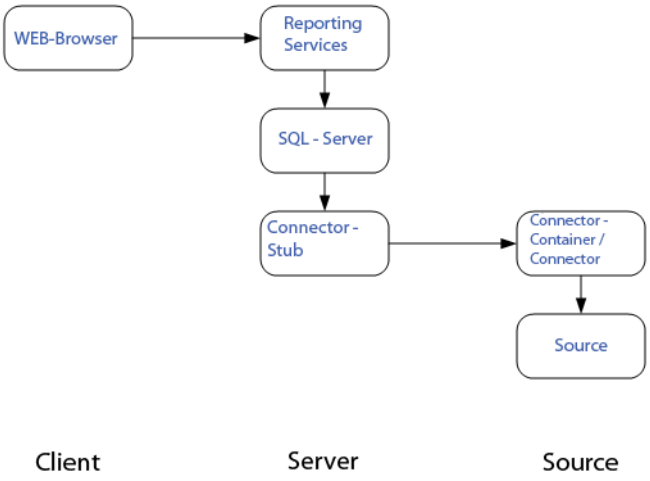
Different browsers react differently to a double click on a node in the tree structure:

- Internet Explorer:
  The opposite of the currently visible stats of the node that has been clicked on is passed on to the lower objects and transferred to the nodes.
  For example: The checkbox of the node is not ticked. Double clicking ticks the checkboxes of the node and all its sub-items.
- Chrome and Firefox:
  The current status does not change and is passed on to the lower objects.
  For example: The checkbox of the node is not ticked. Double clicking does not tick the checkboxes of the node and all its sub-items.

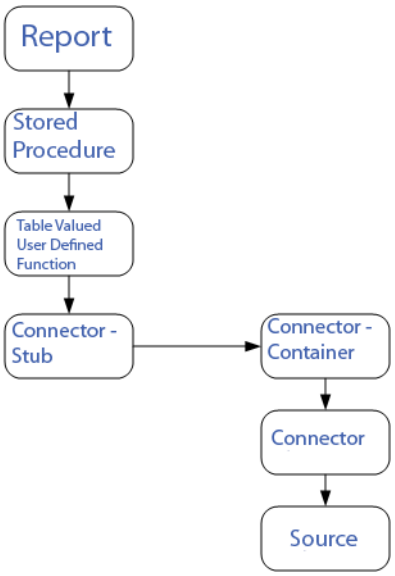
8. Architecture

The zenon Analyzer links data from different, heterogeneous sources to valid reports in real time. The reports react dynamically to data base changes.

COMMUNICATION FROM PROCESS POINT OF VIEW



COMMUNICATION FROM DATA POINT OF VIEW



STRUCTURE OF ZENON ANALYZER

The zenon Analyzer consists of:

- Data Sources

- Connectors to the data sources
- Container for connectors and data harmonization
- Data filing
- Report Builder with filter and calculations
- zenon Analyzer Management Studio for creating and administering reports
- Web Server
- User interface at the Client for calling up and managing reports at the Client

PROCEDURE

Reports are configured and published by administrators or users.

Reports can also be created by administrators with Microsoft Report Builder 3.0. Prerequisite is a wide knowledge in SQL. For information about MS Report Builder refer to the corresponding help of the Microsoft Report Builder. End-users call up reports via the interface of their Client.

Data required for the report is collected via connectors and harmonized before use. With this, reports are also meaningful for different sources, time zones, etc.

9. Time formats

Three time formats are used:

- Local time: is used in reports
- UTC: is used in abstracted historical and current values and in database tables
- Unix time: is used in SQL tables

LOCAL TIME

Queries in the report and the display of results is done in local time.

UTC

Abstracted historical and current values are stated in UTC. For the display in the reports it is converted to local time.

UTC means Coordinated Universal Time. The time unit is second. UTC is the uniform basis for the international time determination and is made available to the public via time senders and other time services. Dependent on the time zone certain time periods must be added or subtracted to or from

UTC. This time period can vary one hour because of the day light saving time.
Examples:

Country	Local time
Alaska	UTC -9
Australia, Queensland	UTC +10
Bulgaria	UTC +2
United Kingdom	UTC
Korea	UTC +9
Central Europe (CET)	UTC +1
Central Europe (CET) Daylight Saving Time	UTC +2
Saudi Arabia	UTC +3
USA East coast	UTC -5
United Arabic Emirates	UTC +4

CONSEQUENCES TO THE CONFIGURATION

Engineered date and time mean different date and time depending on the execution location of the Runtime.

For example: In the Editor you engineer in the PFS for the execution of a function in time zone **UTC +1** the local time `14:00 o' clock`. After transferring the files to a Runtime in tiem zone **UTC +10**, the function is carried out at `23:00 o' clock`.Unix time

In the SQL databases Unix time is used, e.g..:

- evacuated archives
- exported archives
- exported alarms
- exported CEL

PROCEDURE

- Query in reports are dispalyed in local time.
- The hand over from report to the table valued user defined functions is done in UTC.
- Query to SQL are converted to Unix time.
- Results are converted to UTC and displayed in the report as local time.

CHANGE STANDARD TIME/DAY LIGHT SAVING TIME

The switch from standard time to daylight saving time and vice versa can lead to anomalies with intervals at the time of switching. These arise as a result of the functions provided by the **.NET Framework** , **DateTime.ToLocalTime** and **DateTime.ToUniversalTime**.

INTERVALS

Compression	DSTstart	DSTend
Minutes	▸ Interval in local time: **DSTstart** – 1 minute, **DSTstart** + 1 hour) ▸ Interval in **UTC**: 1 minute	▸ Interval in local time: **DSTend** −1 minute, **DSTend** ▸ Interval in **UTC**: 1 hour and 1 minute
Hour	Interval (**DSTstart**, **DSTstart+1**) is not present.	▸ Interval in local time: **DSTend** –2, **DSTend** −1 ▸ Interval in **UTC**: 2 hours

Key:

- **DSTstart**: Time of the switch from standard time to daylight-saving time in local time. This means: The clocks are moved forward by 1 hour at the time of **DSTstart**.
- **DSTEnd**: Time of the switch from standard time to daylight-saving time in local time. This means: The hours are put back by 1 hour at the time of **DSTend**.

The **zrsGetCompressionIntervalIsCarpetPlot** UDF is used for the calculations.

10. Prerequisites

The following prerequisites are applicable for work with the zenon Analyzer:

ANALYZER SERVER HARDWARE AND SOFTWARE

HARDWARE

Analyzer Server:

Parameter	Recommended	Minimum
CPU	Quad-Core Server CPU (maximum 24 cores/4 sockets)	Quad-core
RAM	Up to 128 GB	12 GB
Free memory	200 GB	10 GB

Engineering computer:

Parameter	Recommended	Minimum
CPU	Dual Core	Pentium IV
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Note: An installed IIS service (on page 33) is required for the installation of the server.

Engineering computer:

The following are supported for ZAMS, the manual data editor, metadata editor and migration tool:

- Windows Server 2012 R2
- Windows Server 2012

- Windows Server 2016
- Windows 8.1 32-Bit and 64-Bit
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Web browser:

- Internet Explorer 11 (normal view only)
- Internet Explorer 10 (normal view only)
- Chrome
- Firefox

  Note: Zoom in the report is only possible with Chrome.

Recommended HMI/SCADA system:

- zenon 7.60.

.NET Framework 4.6.2:

- .NET Framework 4.6.2 has to be already run capable on the target computer in order to end the installation successfully.

CONNECTORS

The following is applicable for the SCADA Runtime connector:

- Timeout: is independent of the report timeout.
  Default: 5 minutes (can be configured)
- Variables: Only variables that are listed in metadata are requested
- String variable: maximum of 4000 characters

The performance of a connector depends on the:

- Performance of the Analyzer server
- Performance of the Runtime server
- Load of the Runtime servers (connector runs with low priority)

- Network performance and network load

PROJECTS AND FILTERS

Reports can generally be created throughout several projects.

> **Attention**
>
> *Only archive data with variables from its own project can be evaluated.*
>
> *This means: For example, in an integration project, if a variable from a subproject is archived in an archive, then zenon Analyzer cannot access this variable.*

SCHEDULES

- **Calendar days in months** are limited to `1 - 28` (corresponds to February in non-leap years)
- The "`Month end`" event is not available

ANALYZER EXPORT WIZARD

The Analyzer Export Wizard works, depending on the version, with different zenon Analyzer versions and different zenon versions. For details, read the **Analyzer wizard compatibility** chapter.

> **Information**
>
> *Do not use zenon color palettes for dynamic limit values for zenon projects whose data is to be exported for zenon Analyzer. Limit values cannot be dynamically amended in zenon Analyzer. Information from color palettes can therefore not be evaluated. This can lead to illegible graphics.*

11. Installation and updates

The installation of zenon Analyzer consists of several components:

- Analyzer Server:
  Central SQL server.
- zenon Analyzer Management Studio:
  Tool for the administration of zenon Analyzer and to create reports. It must be installed on the engineering computer:

You can find the hardware and software requirements in the Prerequisites (on page 22) chapter.

> **Attention**
>
> *The computer name can no longer be changed after installing zenon Analyzer!*
>
> *zenon Analyzer can no longer be used if the computer name is changed.*
>
> *To change the computer name, the operating system must be reinstalled with a new computer name and zenon Analyzer.*

NOTE:

Note the following before installation:

- **User authorization**

  Windows administrator rights are required for installation of the zenon Analyzer.
  Ensure that, after installation, there is at least one user who can log onto zenon Analyzer.

  Attention: Every user who carries out an installation is automatically created as the first user for zenon Analyzer. After installation, only this user can log on to zenon Analyzer and add further users.

  For example: **User 1** is the local administrator and carries out the installation. zenon Analyzer is used by User 2 however. **User 1** must create **User 2** in ZAMS after installation.

- **Server**
  Analyzer Server and the **Domain Controller** must not be installed on the same computer.

- **IIS**
  Before installation, the IIS service (on page 33) must be installed on the operating system.

- **.NET Framework 4.6.2**
  `.NET Framework 4.6.2` has to be already run capable on the target computer in order to end the installation successfully. Otherwise, an error notification from the zenon Analyzer setup will show up and the installation process will be canceled.

- **Remote installation**
  The installation medium must be on the local computer. Network drives may not be available punctually for a reboot during installation. For remote installations and virtual installations, copy the content of the installation medium to a temporary folder on the computer and start the setup.

- **SQL Server Management Studio**
  If the SQL Server Management Studio (SSMS) is to be available, it must be installed manually. You can find the setup on the installation medium in the following path: `\AdditionalSoftware\SSMS\SSMS-Setup-ENU.exe`.

- **Licensing**
  The licensing is carried out using the **COPA-DATA License Administration**. This can be started from ZAMS directly or from the operating system (on page 49).

> **Attention**
>
> *Ensure that you have the appropriate licenses (on page 118).*

NOTE FOR WIZARDS

Several wizards are available for zenon Analyzer. This works with different zenon Analyzer versions and zenon versions. For details, read the **Analyzer wizard compatibility** chapter.

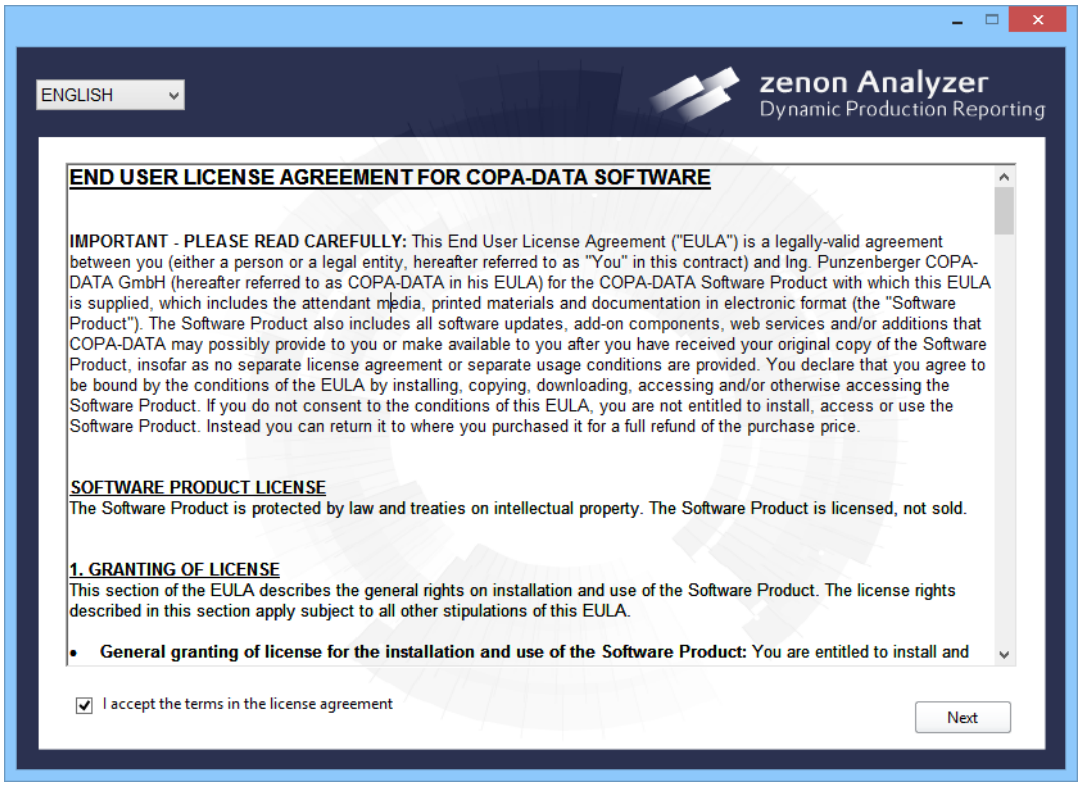
CARRYING OUT THE INSTALLATION

To install zenon Analyzer components:

1. Ensure that the components required for installation are already installed on the system.
   - General: .NET Framework 4.6.2
   - Server: IIS service (on page 33)
2. Connect the installation medium to the computer or copy its contents to a local folder.
   If Autorun does not automatically start the setup, use the file named `start.exe`.
3. Select the desired language from the drop-down list
4. Accept the license agreements
5. Click on the **Next** button.
6. Select the desired components
7. Click on the **Next** button.

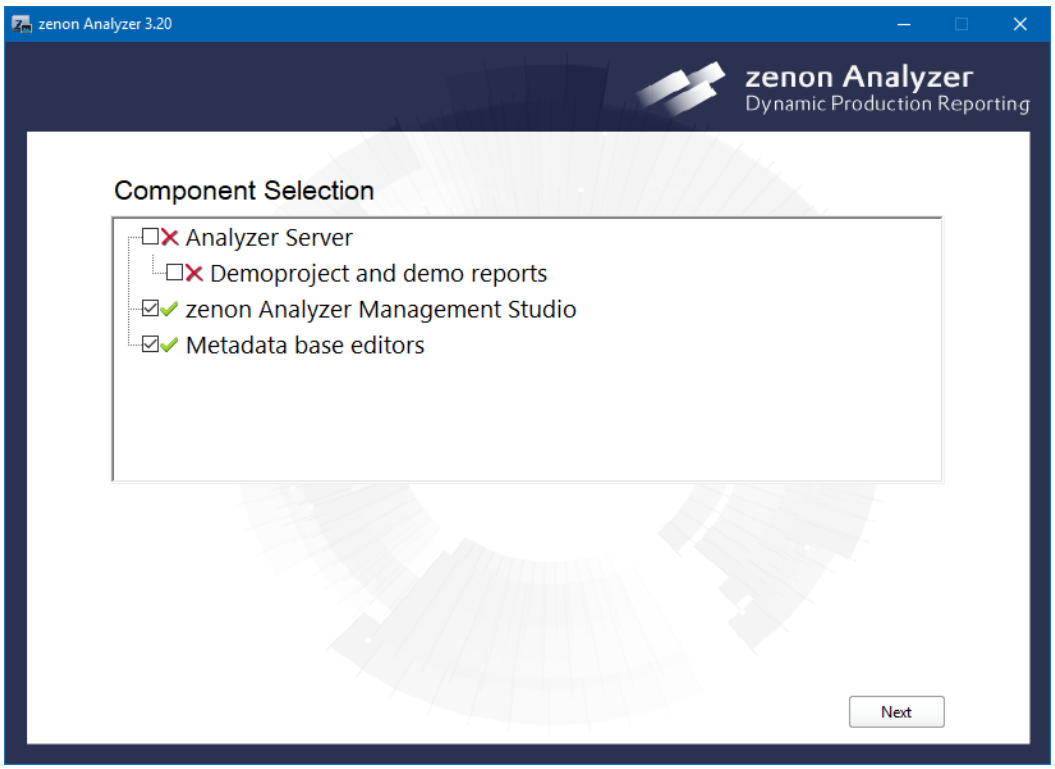
   The installation or the update will start.
8. Follow the instructions given to you by the installation wizard.

START WINDOW



Parameter	Description
Drop-down list "Language"	Selection of the language for the installation. The following are available: ▸ German ▸ English ▸ French ▸ Italian ▸ Spanish
License agreements	License agreement with conditions of use for zenon Analyzer. For installation, the requirements must be accepted by clicking on the **I accept the conditions of the license agreement** checkbox.
Next	Switches to the next step of the installation. Only active if the **license agreements** have been accepted.

COMPONENT SELECTION

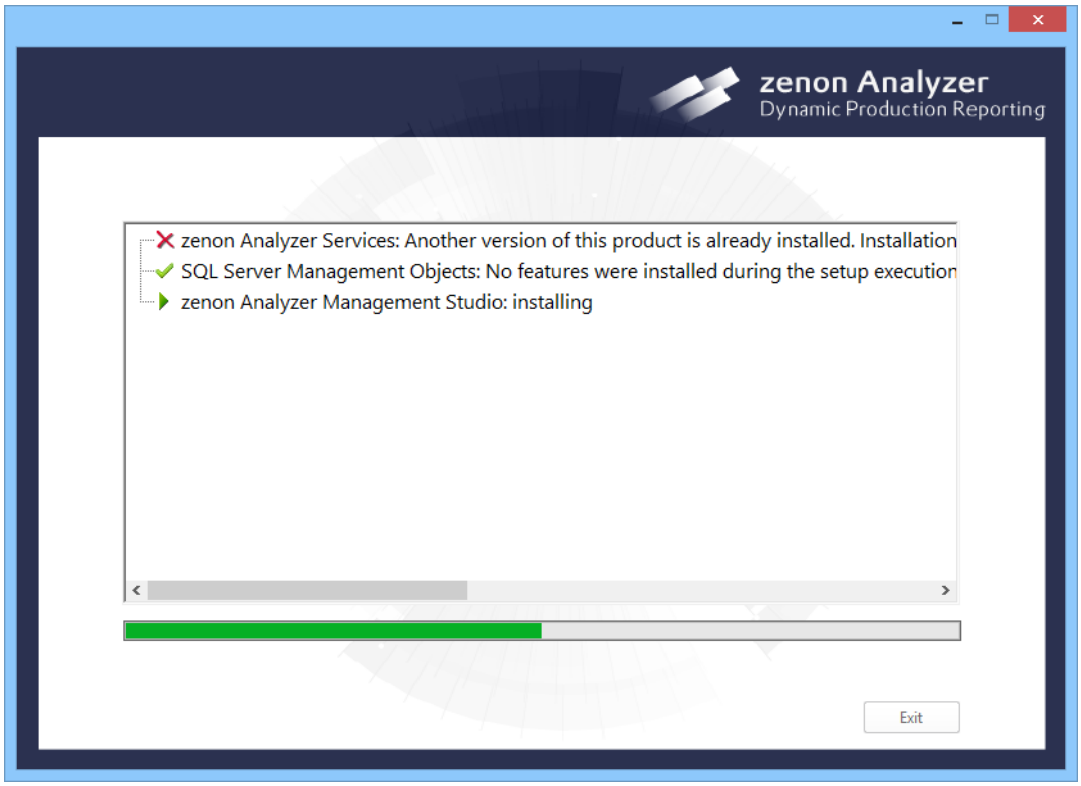


Parameter	Description
Component selection	Selection of the components to be installed by activating the corresponding checkbox. ▸ **Analyzer Server**: Central SQL server. Requirement: 64-bit operating system and installed IIS service. ▸ Demo project and demo reports: Example database Requirement: 64-bit operating system and zenon 7.50. ▸ zenon Analyzer **Management Studio**: Tool to create and administer sever connections and reports. Pre-requisite: 32-bit or 64-bit operating system. ▸ Metadata database editors
Next	Starts the installation. Only active if components are selected for installation.

SYMBOLS MODULE SELECTION

Symbol	Meaning
✔	Installation can be carried out.
✘	Installation not possible.

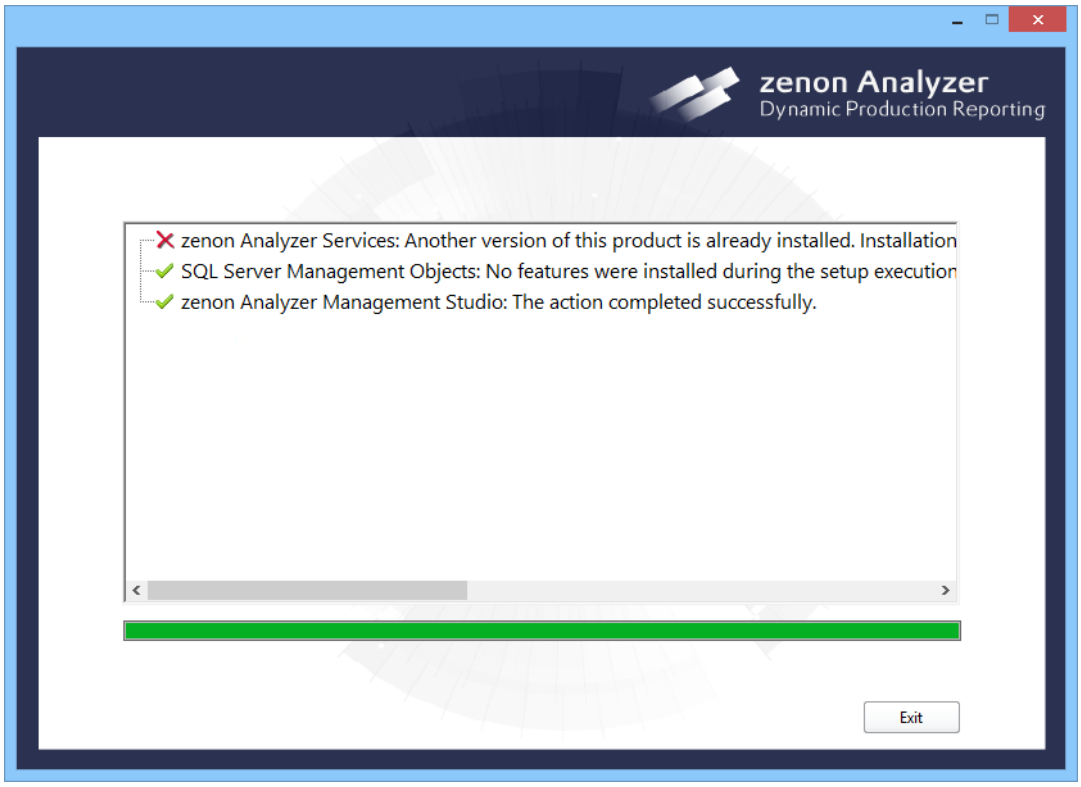
INSTALLATION PROGRESS



The course of installation is shown in its own window with symbols:

Symbol	Meaning
	Not yet installed
	Is currently being installed
	Installation OK
	Installation failed

After successful installation of all desired components, end the installation wizard by clicking on the **Exit** button.



INSTALLATION ON THE CLIENT

Only a current browser is needed on the client. The language that is set in the browser determines the language for the Report Launcher. The language for zenon Analyzer Management Studio is specified in the ZAMS options.

12. IIS Publishing service for Windows and Windows Server 2012

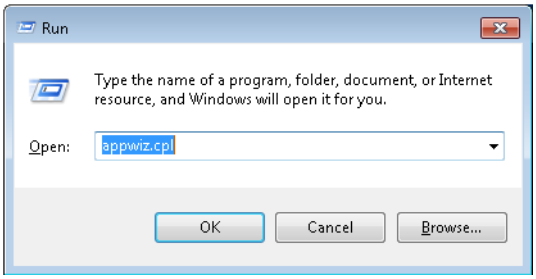
The IIS publishing service must be installed before the installation of zenon Analyzer on the system. The details of the process are different for different operating systems.

WINDOWS 8 AND 8.1

To activate the IIS publishing service:

1. Press the `Windows key + R` keyboard shortcut.

   The dialog to enter a command for the command processing is opened.

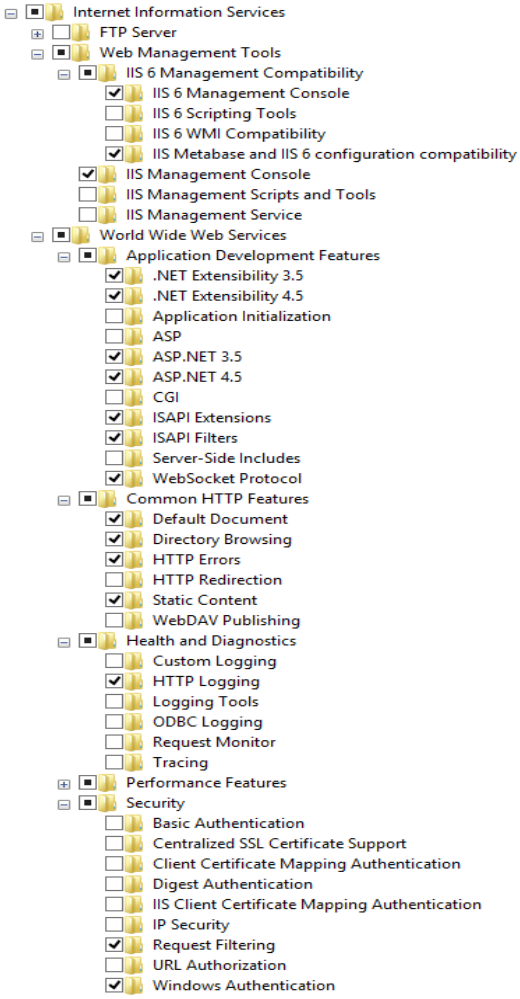


2. Enter `appwiz.cpl` in the input field.

   Click on **OK**.
   A new control panel window to configure programs and **Windows features** is opened.

3. In this window, click on **Turn Windows features on or off**.

The window to select features of the operating system is opened.



4. Expand the **Internet information services** in this node.
5. Activate all **World Wide Web Services** there.
6. Expand the **General HTTP features** node.
7. Activate **Static content**. Expand the **Application features** node.
8. Activate **ASP.NET 4.5**
9. Expand the **Web administration tools** node.
10. There, activate the **IIS administration console**.
11. Expand the **Security** node.
12. Activate **Windows authentication**.
13. Click on **OK**.

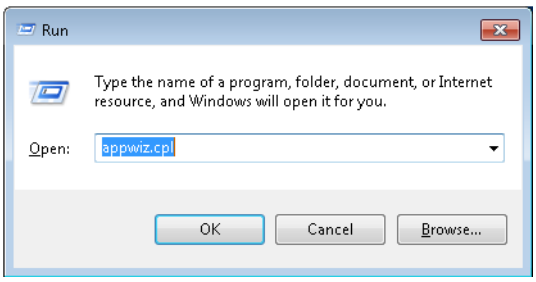
Note: The **WebSocket** protocol must also be activated.

WINDOWS 10

To activate the IIS publishing service:

1. Press the `Windows key + R` keyboard shortcut.

   The dialog to enter a command for the command processing is opened.

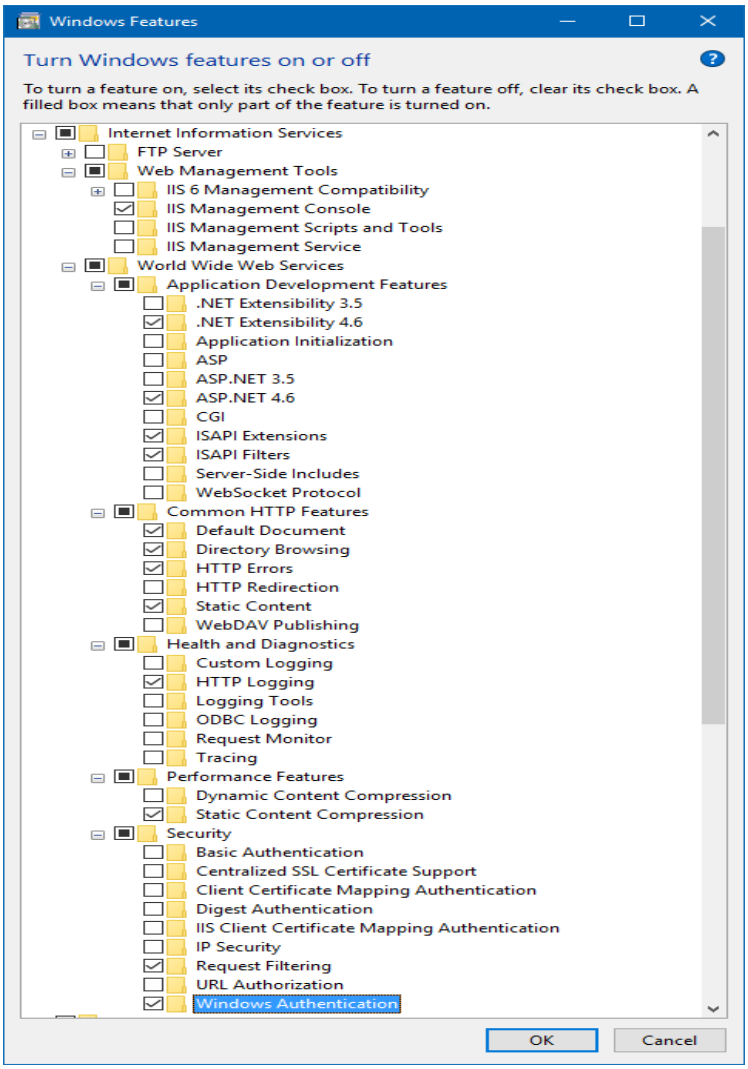


2. Enter `appwiz.cpl` in the input field.

   Click on **OK**.
   A new control panel window to configure programs and **Windows features** is opened.

3. In this window, click on **Turn Windows features on or off**.

The window to select features of the operating system is opened.



4. Expand the **Internet information services** in this node.
5. Activate all **World Wide Web Services** there.
6. Expand the **General HTTP features** node.
7. Activate the **static content**.
8. Expand the **Application development features** node.
9. Activate **ASP.NET 4.6**
10. Expand the **Web administration tools** node.
11. There, activate the **IIS administration console**.
12. Expand the **Security** node.
13. Activate **Windows authentication**.

14. Click on **OK**.

Note: The `WebSocket` protocol must also be activated.

WINDOWS SERVER 2012 (R2)

Follow the instructions from Microsoft: https://technet.microsoft.com/en-us/library/hh831475.aspx (https://technet.microsoft.com/en-us/library/hh831475.aspx)

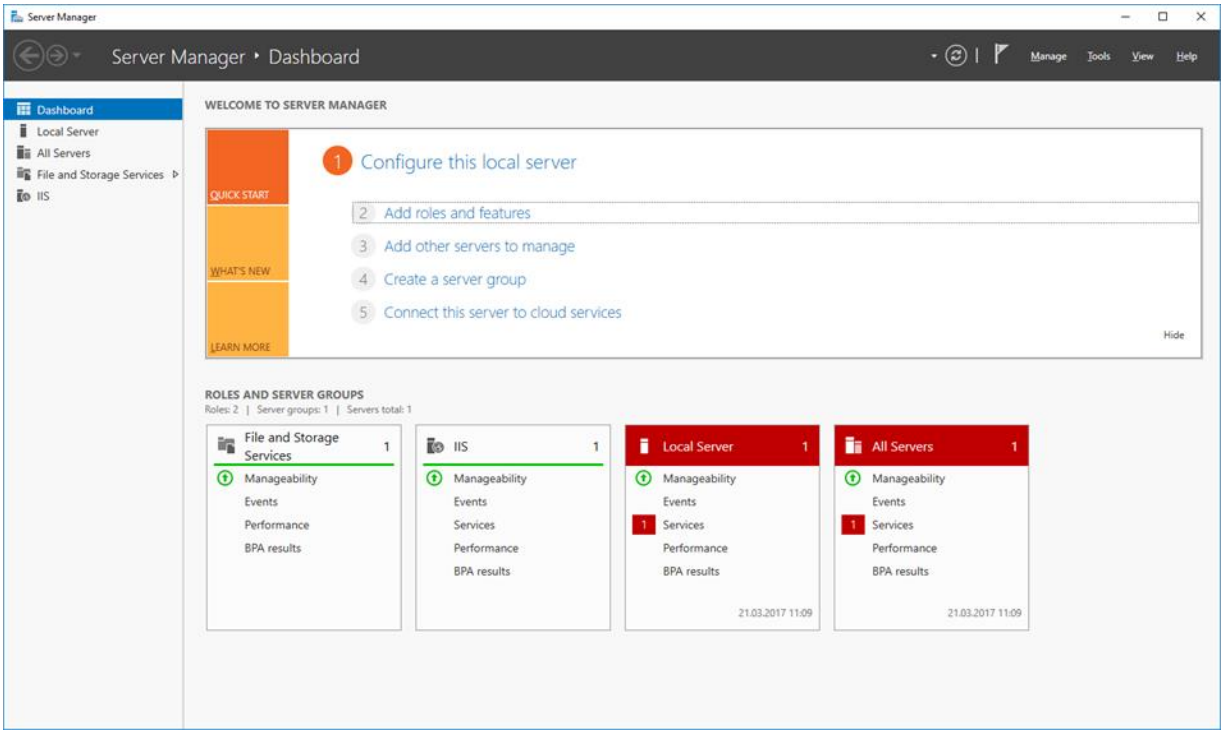
1. Open the **Assistant to add roles and features** wizard.
2. Go to the **server roles**.
3. Activate the **Webserver (IIS)**.
4. Expand the **General HTTP features** node.
5. Activate the **static content**.
6. Expand the **Security** node.
7. Activate **Windows authentication**.
8. Expand the **Application development** node.
9. Activate:
    - **.NET expandability 4.5**
    - **ASP.NET 4.5**
    - **ISAPI extension**
    - **ISAPI filter**
    - **WebSocket protocol**

12.1 IIS 10 for Windows Server 2016

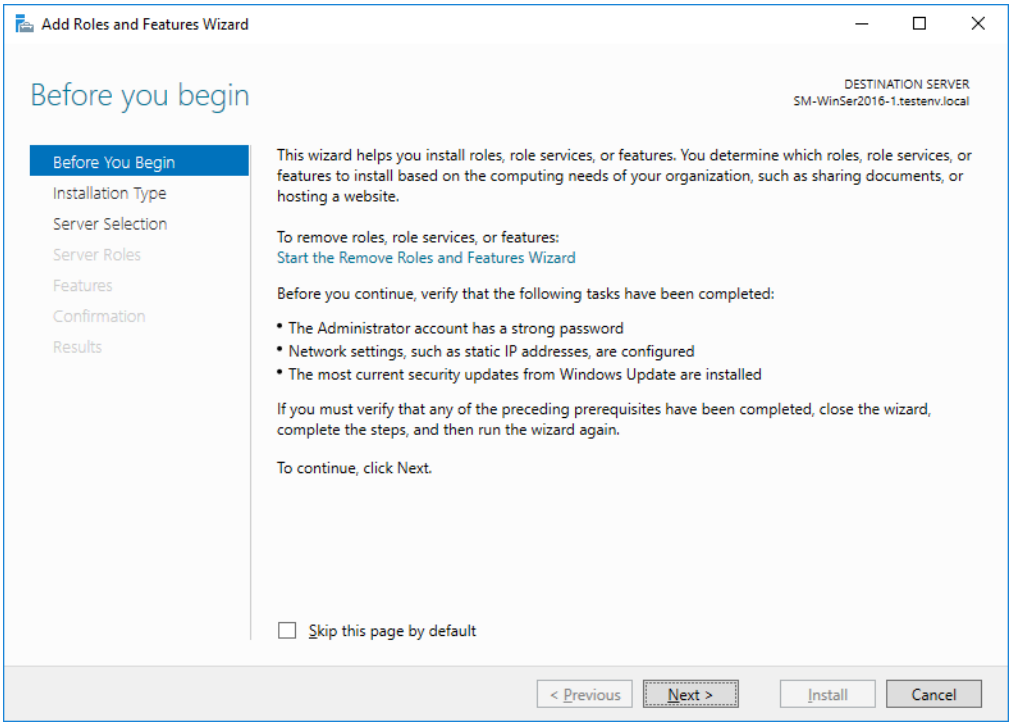
For the basic installation of features for Windows Server 2016, please use the corresponding Microsoft documentation. This description only only contains the settings required for zenon Analyzer.

To use zenon Analyzer with **IIS 10.0** on **Windows Server 2016**:

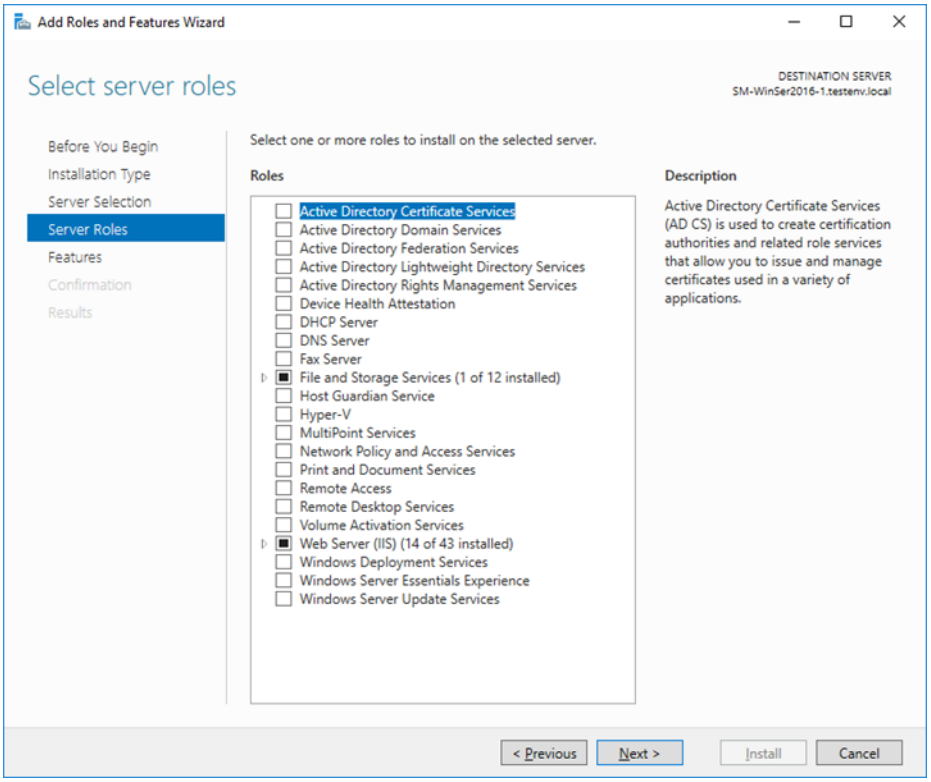
1. Open the **Server Manager**:



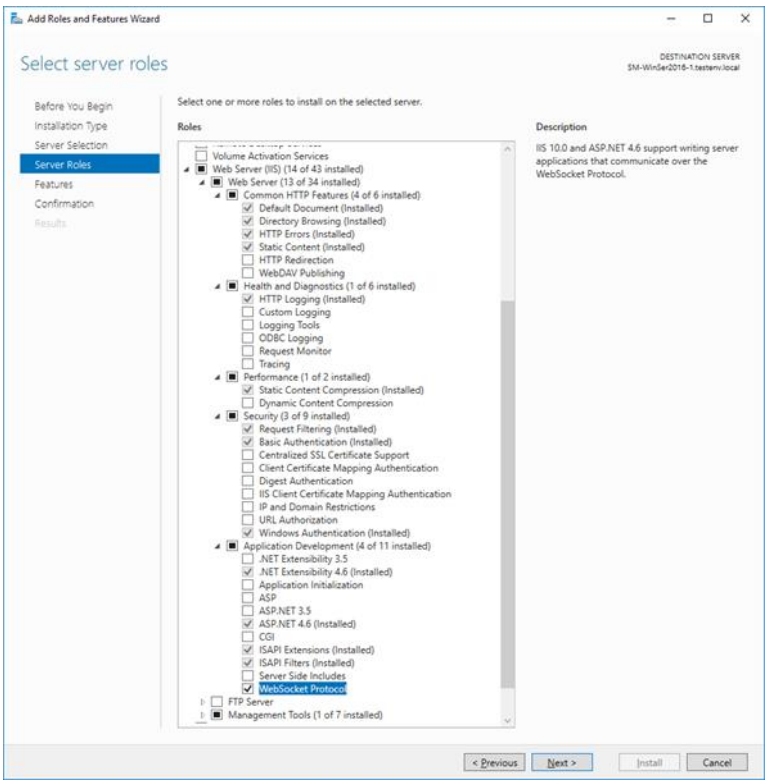
2. Open the wizard to add roles and features.



3. Go to **Server Roles**.



4. Activate **Web Server (IIS)** and ensure that the following properties have been configured correctly:



5. Expand the **Common HTTP-Features** node.
6. Activate the **Static Content** option:
7. Expand the **Security** node.
8. Activate the **Windows-Authentication** option:
9. Expand the **Application Development** node.
10. Activate:
    - **.NET Extensibility 4.6**
    - **ASP.NET 4.6**
    - **ISAPI Extensions**
    - **ISAPI Filters**
    - **WebSocket Protocol**
11. Finish your configuration.

> **Attention**
>
> *The following settings prevent zenon Analyzer working correctly:*
>
> - A ban on unknown file suffixes:
>   File suffixes for zenon Analyzer, ZAMS and Report Launcher must be approved. (setting via IIS Management Console.)
>   The following are needed: **.gif**; **.axd**; **.aspx**; **.css**.
> - **Level of trust**:
>   `Medium` or fewer.
>   With too few rights, the Report Launcher cannot be started.
>   (setting via command line **appcmd**.)

13. Licensing

In order to be able to use COPA-DATA products, they must be licensed. A product runs in demo mode (on page 110) until it has been licensed.

The license is checked when the program is started. The product is started with the licensed modules. If no valid license is found when the program is started, a dialog notifies you of this. It is possible to choose whether the start is canceled or demo mode is started. The product cannot be started for the demo mode if there is also no license for this. In addition, the **COPA-DATA License Administration** can also be opened to assign the product a valid license.

> **Information**
>
> *The mechanism for licensing described in this document is used for different products. Screenshots are not created for each individual product in the process. It can therefore be possible that the display of a screenshot is different from the description for your product.*

VALIDITY

The information on licensing is applicable for:

- zenon products: from version 8.00 on
- zenon Analyzer: from version 3.20

Products from previous versions are licensed using a different method. You can find information on this in the documentation of these products.

14. Licensing products - overview

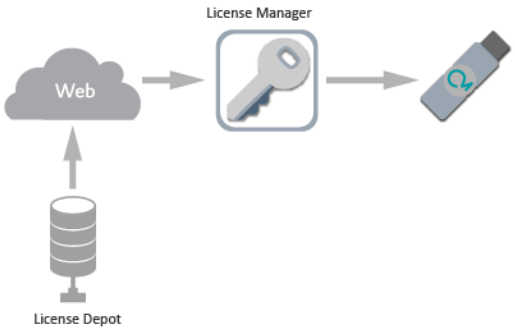
In order to be able to use zenon products, they must be licensed. The license is issued in the form of a license certificate and tamper-proof digital information.

If a licenses is issued at COPA-DATA, it is stored in the "license depot". This is a database in which the license waits to be collected. The license must be saved on your system in order you to be able to use the license as a user. A dongle (on page 44) is used as a save location. This dongle is also called a license container. This is transferred from the license depot to the dongle when a license is activated.

Use the **COPA-DATA License Administration** to activate the license. You can thus activate, deactivate, administer and assign products. Alternatively, you can also activate licenses automatically (`silent`) using the command line tool (on page 98).

ONLINE ACTIVATION

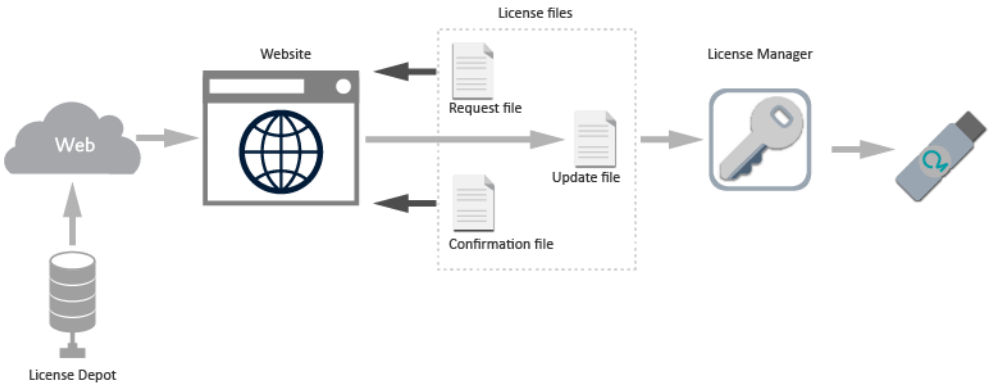
During online activation, licenses are activated directly without further applications or data carriers. There must be an online connection to the Internet available to do this.



For details, see the **Online activation** (on page 52) chapter.

OFFLINE ACTIVATION

With offline activation, the substitution of digital license information must be manual. In doing so, three files are transferred between the license depot and the dongle. Here too, some form of access to the Internet is necessary.



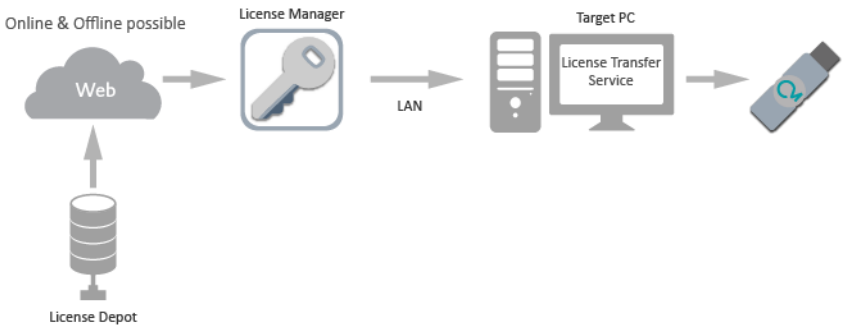
For details, see the **Offline activation** (on page 74) chapter.

ASSIGN LICENSES TO PRODUCTS

In order for a license to be able to be used, it is not sufficient for it to be saved in the dongle. It must also be assigned to the products from which they are used. There are often several licenses on a computer, including demo licenses too.For details, see the **Assign licenses to products** (on page 59) chapter.

REMOTE LICENSING

With remote licensing, all processes that support license administration are not carried out on the local computer but on another computer in the local network (LAN). This is primarily useful if the computer to be licensed does not have an Internet connection. The computer can then be used with the **COPA-DATA License Administration** as a proxy computer (intermediary computer).



For details see the **Remote Licensing** (on page 94) chapter.

TRANSFER/RELOCATE LICENSES

Licenses can be transfered to other computers or dongles. Even if a virtual machine is transferred from one host system to another, the license must also be transferred so that it does not become invalid. Transfer or relocate means: The first step is that the license is returned to the license depot of the issuer. In the second stage, it is picked up and activated by the new system. For details, see the **Transfer/relocate licenses** (on page 88).

15. Dongle types

For licensing, only **CodeMeter** dongles from **Wibu Systems** are used. Dongles are the save location for licenses. They are therefore also called a license container. There are two basic types of dongles available: Hardware dongles and software dongles. All licenses issued by COPA-DATA can be saved as both dongle types, and also transferred (on page 88) from one type to another.

Dongle types:

- Hardware dongles:
  The license information is incorporated into special hardware - a security chip.

  Advantages:

  - The license can be easily transferred from one computer to another by reinserting the dongle.
  - Different embodiments are available.

  Disadvantages:

  - When using a virtual machine, the license must be transferred from a host system into the Virtual Machine using the network (on page 151).
  - Dongles can be stolen or lost.
- Software dongles - computer-based license protection:
  In doing so, a software dongle is created on the computer directly. The software dongle is based on the computer hardware. If the hardware changes too much, the license becomes invalid (on page 135).

  Advantage:

  - The dongle cannot be lost or stolen.

  Disadvantages:

  - The license can become invalid if the hardware configuration is changed.
  - The license must be returned before it can be transferred to another computer.

Both dongle types act the same in practice. All mechanisms can be used for both types. There are only limitations for software dongles in a virtual machine (on page 46).

16. Licensing in a few steps

In order for you to be able to operate zenon licensed, in most cases only a few steps are necessary. There are two possibilities for getting a license sent to you:

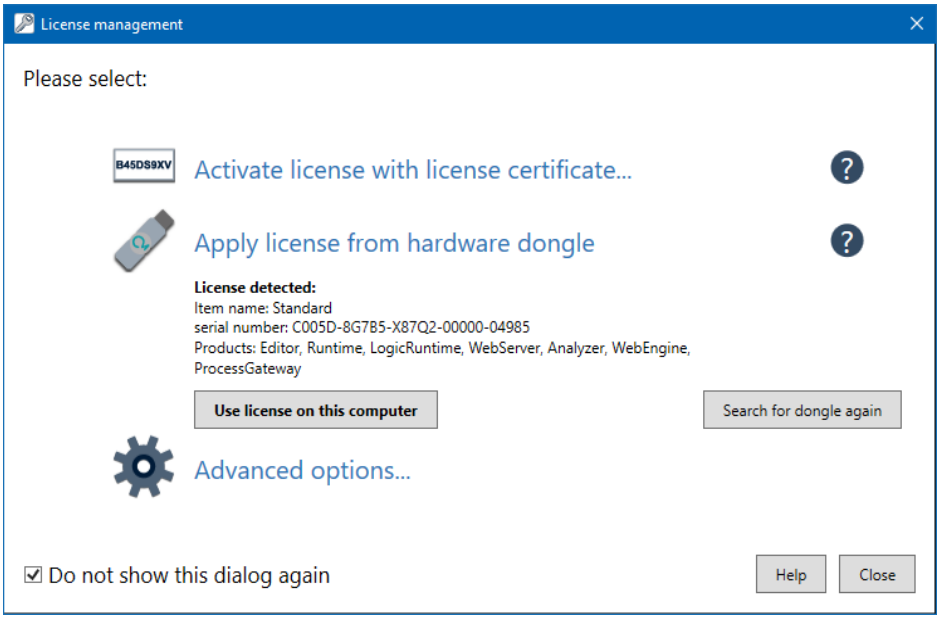
1. You receive a pre-programmed hardware dongle.
2. You get a license certificate for a computer-based software dongle or a license certificate and and empty hardware dongle.

With both variants, you can very easily get a licensed product.

PRE-PROGRAMMED HARDWARE DONGLE

To use a pre-programmed hardware dongle:

1. Insert the hardware dongle into the computer and wait until Windows has detected the dongle.
2. Start the **COPA-DATA License Administration** via **Windows -> License Manager**.
3. In the start dialog of the **COPA-DATA License Administration**, select the **Apply license from hardware dongle** option.
   The license detected is shown in the dialog.



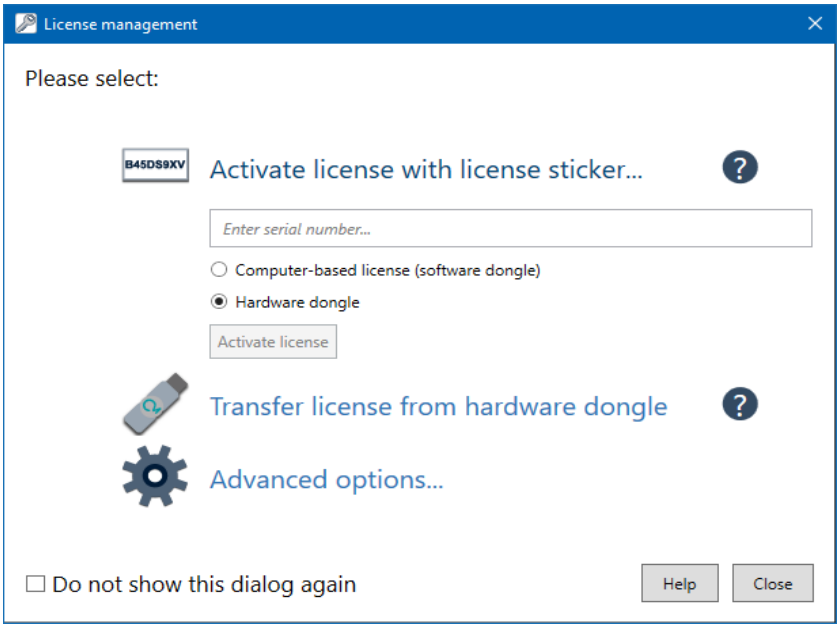
4. Click on the **Use License on this Computer** button.
5. End the **COPA-DATA License Administration.**

You can now start the licensed products.
You can find more detailed information on the procedure and limitations in the **Licensing** (on page 41) manual in the **Apply license from hardware dongle** (on page 54) chapter.

LICENSE CERTIFICATE AND EMPTY HARDWARE DONGLE OR COMPUTER-BASED LICENSE

To use an empty dongle or a computer-based license:

1. Insert the hardware dongle into the computer and wait until Windows has detected the dongle. This step is not necessary for a computer-based software license.
2. Start the **COPA-DATA License Administration** via **Windows -> License Manager**.
3. In the start dialog of the **COPA-DATA License Administration**, select the **Activate license with license certificate** option.



4. Enter the serial number into the input field for the serial number.
5. Select between **computer-based license (software dongle)** and **hardware dongle**.
6. Click on the **Activate license** button.

   The license is transferred online via the Internet into the dongle you have selected.
7. Close the **COPA-DATA License Administration**.

You can now start the licensed products.

You can find detailed information on the procedure, limitations and alternative procedures in the **Licensing** (on page 41) manual in the **Activate license** (on page 69) chapter and the following chapters.

17. Virtual machines

The licensing of a virtual machine is subject to special requirements and properties:

- Hardware dongles cannot be connected directly. The license must be transferred to the virtual environment.
  The following procedures can be used for this:
  - The dongle is connected to a physical computer and activated there as a network (on page 151). In the virtual environment, the network dongle is entered into the server search list (on page 152) and is thus available.
  - The dongle is transferred to the virtual environment via a **USB to Ethernet box** (dongle server). In doing so, a local USB port is emulated in the virtual environment. The `CodeMeter Runtime` considers the dongle to be directly connected. Such boxes are commercially available.
    Recommendation: SEH dongle server
    (https://www.seh-technology.com/products/usb-dongle-servers.html).
  - The dongle is routed to the virtual environment via the virtualization software. VM-ware and Virtual Box support such mechanisms. In doing so, a local USB port is emulated in the virtual environment. The `CodeMeter Runtime` considers the dongle to be directly connected.
    Note: This procedure is not recommended by `Wibu Systems .`
- With software dongles, there are some limitations for use in virtual environments:
  - Licenses are not unlocked by default for virtual environments. However, you can apply for unlocking from the license issuer.
    Caution: Licenses that have already been activated cannot be converted. These must first be returned to the license issuer (on page 89). Only then can the license issuer convert the license. You can then activate the license in a virtual environment.
  - Demo licenses only have a very limited running time in virtual environments.
  - The license will be invalidated (on page 135) when moving a virtual machine to another host system.
    You should therefore return the license to the license issuer (on page 89) before relocating the license. The virtual machine can only be moved after this. You can then activate (on page 69) the license again. When being used in a data center, a virtual machine can also automatically be assigned to different hosts. In this case, you need a **Software-Dongle VM DataCenter**.

DIFFERENT TYPES OF SOFTWARE DONGLE

Depending on the type of operating system, different software dongle types are installed by the **COPA-DATA License Administration**:

- **Software-Dongle Standard**: For use on physical computers.
- **Software-Dongle Virtual Machine**: For use with a virtual machine.
  Can be used on a physical computer; not vice versa.

- **Software-Dongle VM DataCenter**: For use with a virtual machine in a public data center such as Microsoft Azure or Amazon Web Services (AWS), as well as in private data centers
  Can also be used on a physical computer, but not vice versa.

Note: If a virtual machine is converted into a physical computer, you then have both dongles on one system. Both are equivalent and both can be used.

> ⚠
>
> *If a physical computer is converted to a virtual machine, the **Software-Dongle Standard** dongle type can no longer be used. All licenses contained therein are thus no longer available. You must return the licenses beforehand. See the following chapter: Transfer/relocate license (on page 88)*

CONVERSION TO VIRTUAL MACHINE

If you use software dongles and want to convert a physical computer into a virtual machine, then:

1. Return all activated licenses (on page 89).
2. Apply to COPA-DATA for a conversion of the license to a license for a virtual machine.
   If you operate the virtual machine in a data center such as Microsoft Azure or Amazon Web Services (AWS), or in a private data center, apply for a license for VM DataCenter
   Caution: Standard licenses cannot be activated on a virtual machine. You can see whether a license is suitable for a virtual machine from the license certificate.
3. Convert the operating system into a virtual machine.
4. Activate (on page 69) the license again

CONVERSION OF A VIRTUAL MACHINE INTO A PHYSICAL COMPUTER

If you use software dongles and want to convert a virtual machine into a physical computer, then:

1. Return all activated licenses (on page 89).
2. Convert the operating system into a physical computer.
3. Activate (on page 69) the license again

RELOCATION OF VIRTUAL MACHINES TO ANOTHER HOST SYSTEM

Licenses for software dongles become invalid if the hardware changes. Therefore return (on page 89) all licenses that are saved in software licenses before relocation.

18. COPA-DATA License Administration

Licenses are administered in their own application, the **COPA-DATA License Administration**.
You start these using:

- *Windows Start menu -> COPA-DATA -> License Manager*.
- **Startup Tool**: Click on the **Tools** button, select the **License Manager** entry in the **Available applications** area and click on **Start**.
- Via the **Open License Management** button in most **About** dialogs in zenon products.
- Also in ZAMS directly for zenon Analyzer.

FUNCTIONALITY

You can license the following in the **COPA-DATA License Administration**:

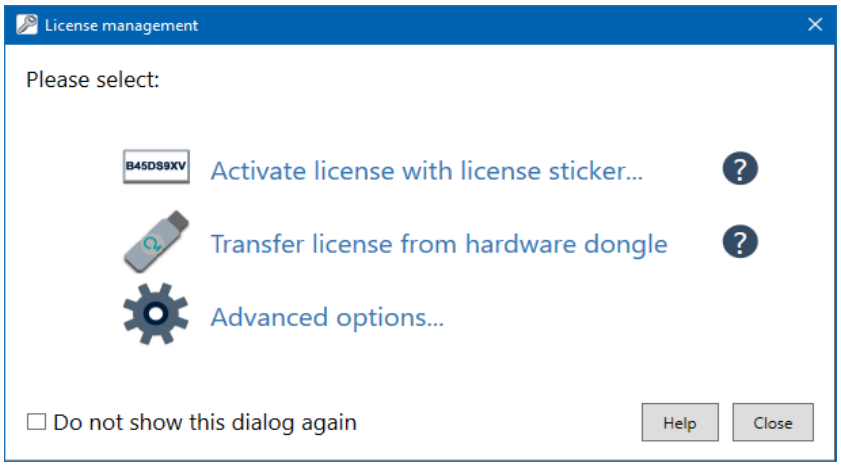
- Activate (on page 69) locally or remotely (on page 95):
  Activate licenses for a local computer or a remote computer and assign them to certain COPA-DATA products.
- Activate online (on page 72) and offline (on page 74):
  You can activate licenses directly only or offline using a license request file.
- Assign products (on page 59) locally or remotely:
  Determine which products are to use which licenses and in which order.
- Carry out mass activation:
  Use a collective file to activate many licenses.
- Loan (from version 8.10):
  You can loan licenses to other users for up to 90 days. Service technicians can, for example, take licenses for use at customers' premises. This functionality is available to you from zenon 8.10 and zenon Analyzer 3.30.
- Return (on page 89)/relocate:
  You can return licenses and activate it again on another computer. This is how you transfer licenses to other computers or prevent license invalidation in the event of changes to hardware for software licenses or host systems for a virtual machine.

Note:

- You can also activate, update and distribute licenses `silent`ly using the command line (on page 98).
- All changes in the **COPA-DATA License Administration** are immediately applied and executed.

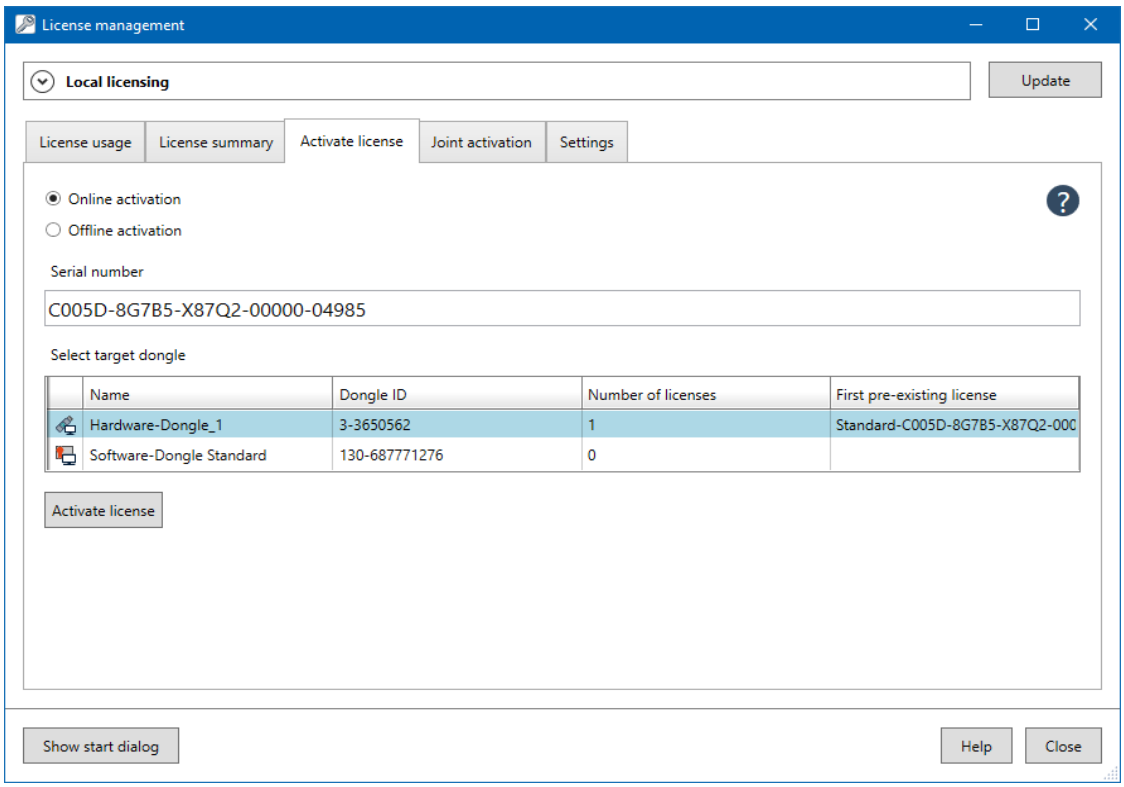
START DIALOG

The **COPA-DATA License Administration** starts with a start dialog (on page 51) by default. This provides simple, interactive configuration possibilities. The **question mark** symbol shows brief help for the respective entry.



LICENSE MANAGEMENT DIALOG

There is a comprehensive application (on page 58) with several tabs available for individual settings.

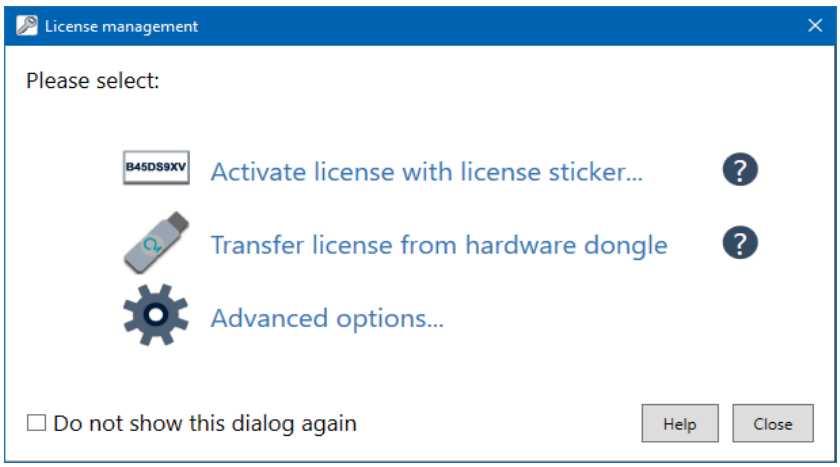


18.1 Start dialog

The **COPA-DATA License Administration** starts with a start dialog. This can be deactivated using the **Do not show this dialog again** option. General reactivation is carried out using the **Settings** (on page 84) tab.

The two most important actions are available in the start view:

- Activation of a license (on page 52)
- Transfer of a license (on page 54) from a hardware dongle



Option	Description
Activate license with license certificate	Allows the online activation of a license (on page 52) with the serial number from the license certificate.
Apply license from hardware dongle	Allows the transfer of a license (on page 54) for all products of the license from a hardware dongle.
Advanced options	Opens further options for the administration (on page 57) of licenses.
Do not show this dialog again	▸ Active: The next time the **COPA-DATA License Administration** is opened, the dialog is hidden and the view is opened with all tabs.

CLOSE DIALOG

Option	Description
Help	Opens online help.
Close	Clicking on the button closes the dialog.

18.1.1 Activate the license in the start dialog

Use this preferred option if you want to activate a license on a local dongle online.

You can choose whether the license is transferred to a software dongle or - if present - hardware dongle. You can read details on available dongles in the dongle types (on page 44) chapter.
During online activation, licenses are activated directly without further applications or data carriers. There must be an online connection to the Internet available to do this.

> **Hint**
>
> *Use the Remote Licensing (on page 94) if you have a direct Internet connection*
>
> *If you use a proxy server for your Internet connection, ensure you have the correct proxy settings (on page 87).*

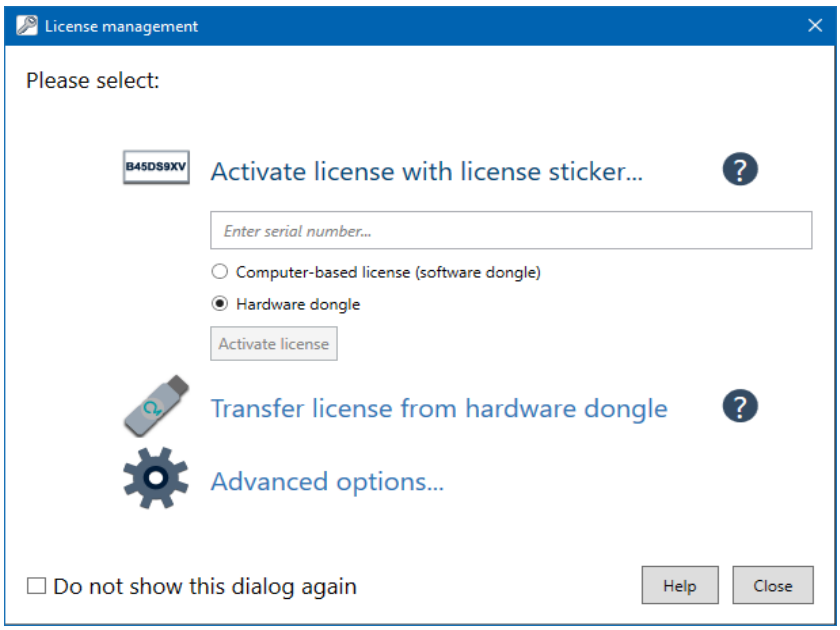
To activate a license with a license certificate:

1. Start the **COPA-DATA License Administration**.
   If the start dialog is not displayed, click on the **Show start dialog** button.
2. Click on **Activate license with license certificate**.
3. Enter the serial number from your license certificate into the field.
4. Select the desired dongle (on page 44).
   - Computer-based license (software dongle)
   - Hardware dongle. If you have not yet plugged your hardware dongle in yet, insert it now and click on the **Refresh** button**.**

   Note: The license cannot be activated automatically if there are several hardware or software dongles. The **COPA-DATA License Administration** automatically forwards you to the **Activate Licenses (on page 70)** tab.
5. Click on **Activate Licenses**.

   The license is transferred to the dongle and saved in a tamper-proof form there. If you have set the **Apply activated licenses immediately** in the **Settings (on page 84)** tab, the license is entered for all products at the first place in the **License.ini** file. This INI file contains information on the sequence in which the licenses are used. You can amend the order in the **License Application** (on page 59) tab.

ACTIVATE LICENSE WITH LICENSE CERTIFICATE DIALOG



Option	Description
Activate license with license certificate	Clicking opens the further input options.
Serial number	Input field for the serial number that is to be activated.
Computer-based license (software dongle)	Selection of a software dongles for a computer-based license.
Hardware dongle	Selection of a **CodeMeter** hardware dongle. The dongle must be inserted
Activate license	Clicking on the button activates the license online. Only available if a valid serial number has been entered and a valid dongle has been selected.

CLOSE DIALOG

Option	Description
Help	Opens online help.
Close	Clicking on the button closes the dialog.

18.1.2 Apply license from hardware dongle

In order for a license to be able to be used, it is not sufficient for it to be saved in the dongle. It must also be assigned to the products from which they are used. There are often several licenses on a computer, including demo licenses too.

With this option, you enter a hardware dongle license for all products that are included in the license, at the first place in the **License.ini** file:

1. Insert the dongle into the computer.
2. Click on **Apply license from hardware dongle** in the start dialog.

   The license detected is displayed.
3. Click on the **Use License on this Computer** button.

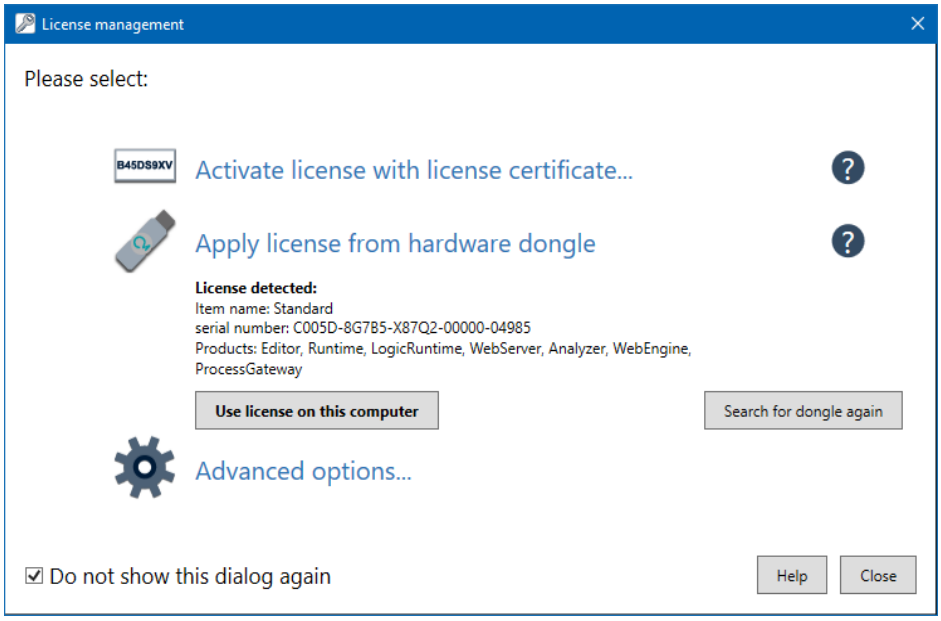
   The license is applied.

If several licenses are saved on a dongle, a corresponding message is shown in the start dialog.
In this case:

- Insert a dongle with just one license and click on **Refresh**.
  Or
- Click on **License Management**. The License usage (on page 59) tab is opened. There, with several licenses on a hardware dongle, you can also specify which product uses a license, and in which sequence.

> **Hint**
>
> *You can set the license order (on page 59) at any time in the License usage tab*

APPLY LICENSE FROM HARDWARE DONGLE DIALOG

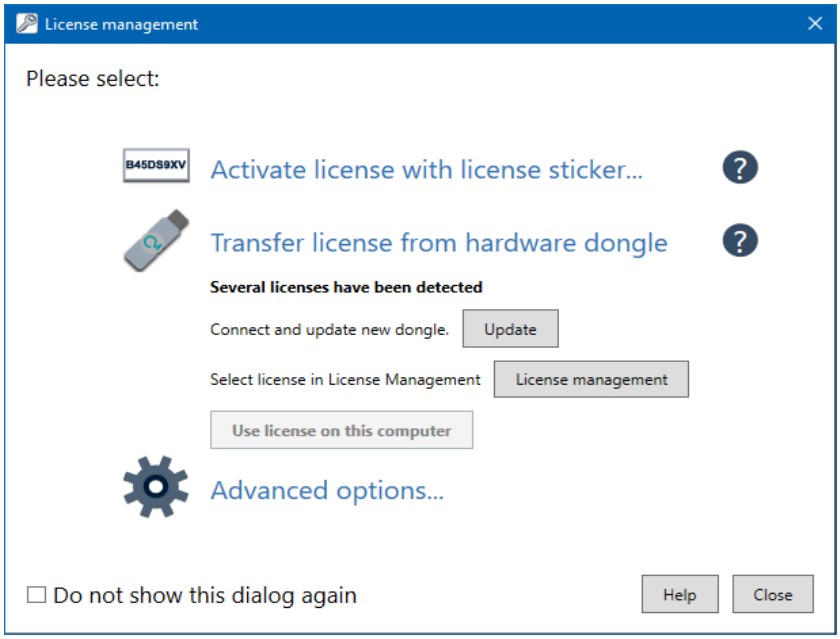


Option	Description
Apply license from hardware dongle	Clicking opens the further input options and shows the license found. If no license is found, you can start an update by clicking on **Search for dongle again** again.
Use license on this computer	Clicking on the button accepts the license for the computer.
Search for dongle again	Searches for dongle and updates the information displayed.

CLOSE DIALOG

Option	Description
Help	Opens online help.
Close	Clicking on the button closes the dialog.

DIALOG FOR SEVERAL LICENSES ON A DONGLE



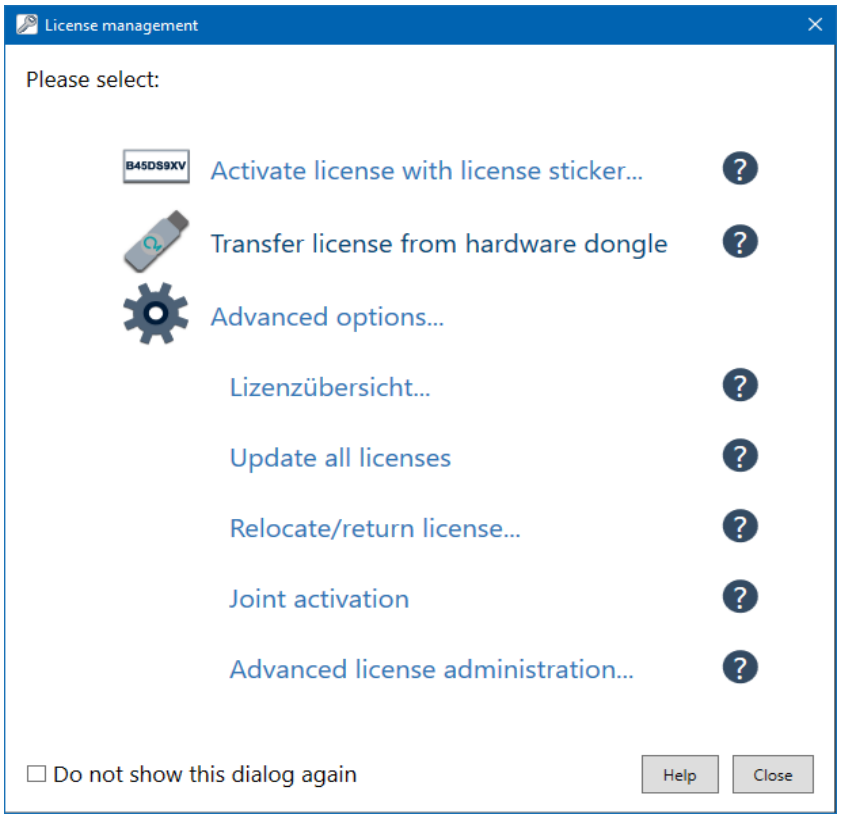
Option	Description
Apply license from hardware dongle	Clicking opens the further input options and shows the license found.
Several licenses have been detected	Several licenses were found. Select the desired procedure: ▸ Connect new dongle and refresh: Insert a new dongle with only one license and click on **Refresh**. ▸ Select license in License Management: Click on **License Manager** and select the desired license there.
Refresh	Reads the dongle again.
License management	Opens the License usage (on page 59) tab.
Use license on this computer	Clicking on the button accepts the license for the computer.

CLOSE DIALOG

Option	Description
Help	Opens online help.
Close	Clicking on the button closes the dialog.

18.1.3 Enhanced view

The enhanced view offers you additional actions for licensing.



Option	Description
Activate license with license certificate	Allows the activation of a license (on page 52) with the serial number from the license certificate.
Apply license from hardware dongle	Allows the transfer of a license (on page 54) for all products of the license from a hardware dongle.
Advanced options	Opens further options for the administration (on page 57) of licenses.
License overview	Opens the dialog with the **License Overview** (on page 66) tab. All activated licenses are displayed here. These can also be updated or returned here.
Update all licenses	Starts the update for all licenses. If errors occur, they are displayed in this dialog.
Relocate/return license	Starts the online return (on page 89) for a license. A request for confirmation is made before it is returned. If there are several licenses to return, there is an automatic switch in the dialog to the **License Overview** (on page 66) tab. A license must be returned if they are to be used on a different computer or if the computer's hardware will be changed significantly. For details, see the **Transfer/relocate license** (on page 88) chapter.
Mass activation	Opens the dialog with the **Mass Activation** tab. Licenses from a list can be activated here.
Advanced license administration	Opens the dialog with the **License Use** (on page 59) tab.
Do not show this dialog again	Active: The next time the **COPA-DATA License Administration** is opened, the dialog is hidden and the view is opened with all tabs.

CLOSE DIALOG

Option	Description
Help	Opens online help.
Close	Clicking on the button closes the dialog.

18.2 Main application

Licensing tasks are administered using the tabs:

- **License usage** (on page 59): Display and assignment of licenses to products and order for use.

- **License** summary (on page 66): Display of all activated licenses and actions for updating and returning licenses.
- **Activate license** (on page 70): Options for online and offline activation of licenses.
- **Mass activation** (on page 79): Possibility to activate licenses from a list.
  Must be activated via the **Settings** tab.
  Default: `Hidden`
- **Settings** (on page 84): Configuration of the settings.

18.2.1 License usage

In order for a license to be able to be used, it is not sufficient for it to be saved in the dongle. It must also be assigned to the products from which they are used. There are often several licenses on a computer, including demo licenses too.

You assign your licenses to the individual products in this tab. Furthermore, with several licenses, you can specify the sequence in which they are used. If a connection to a license is lost, an attempt is made to use another valid license. The sequence of the licenses defines the sequence of the license search. You can find details in relation to this in the **Redundant License Protection** (on page 131) chapter.

> **Attention**
>
> *The display always relates to the computer that is set in the header for **Local licensing** / **remote licensing**. It can therefore be a local view or a remote view.*
>
> *With remote view, all licenses that the remote computer sees are displayed. With network licenses in particular, this can be a completely different view because the network licenses are found with CodeMeter mechanisms. See in relation to this the **Set up server search lists for network dongles** (on page 152) chapter.*

Note: If the **Apply activated licenses immediately** option has been activated in the **Advanced** tab, the licenses are automatically assigned in first place for all applicable products the first time they are activated.

> **Hint**
>
> *To assign a license to all products at the first place, click on the button with the two arrows and the horizontal line: **Enter selected license for all products at the first location**.*

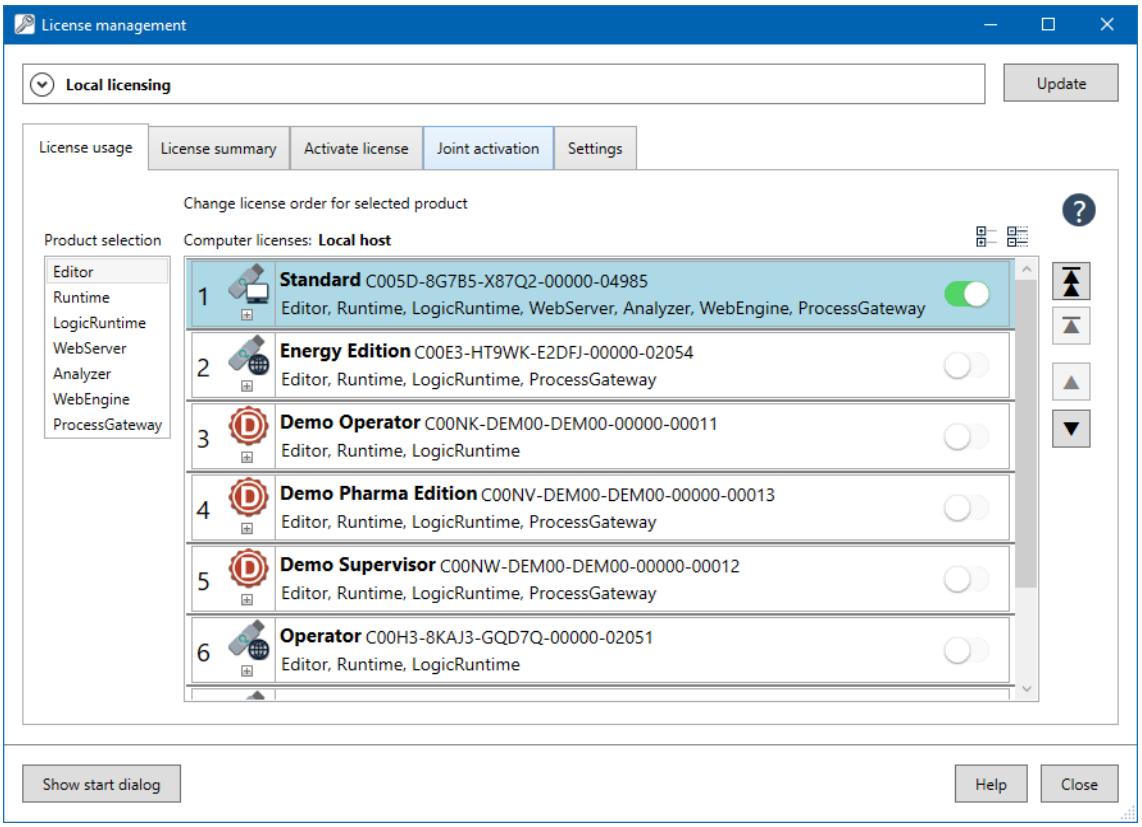
ASSIGN LICENSES

To enter licenses manually for a product or to change the order:

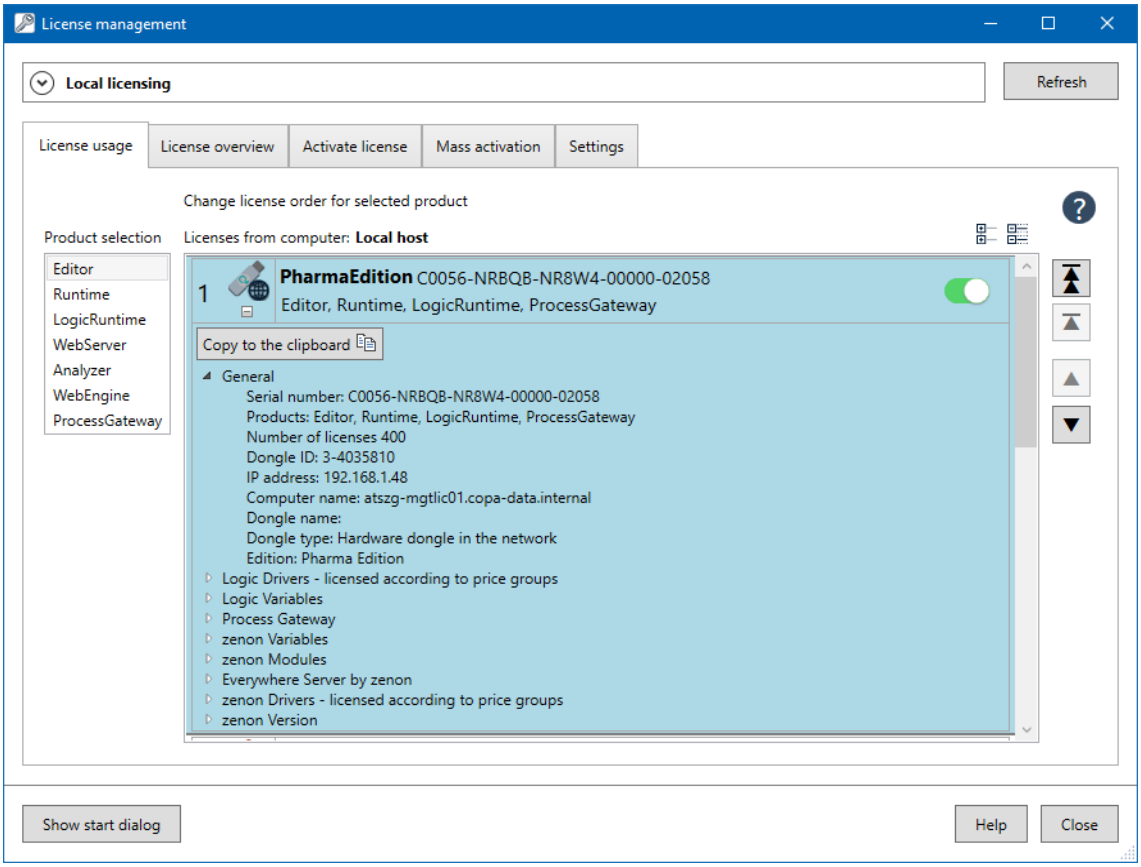
1. Start the **COPA-DATA License Administration**.

2. If the start dialog is shown, then click on the **Advanced Options** button and then on **Advanced License Administration**.

3. Switch to to the **License Use** tab.
   All products for which there is a license are shown.

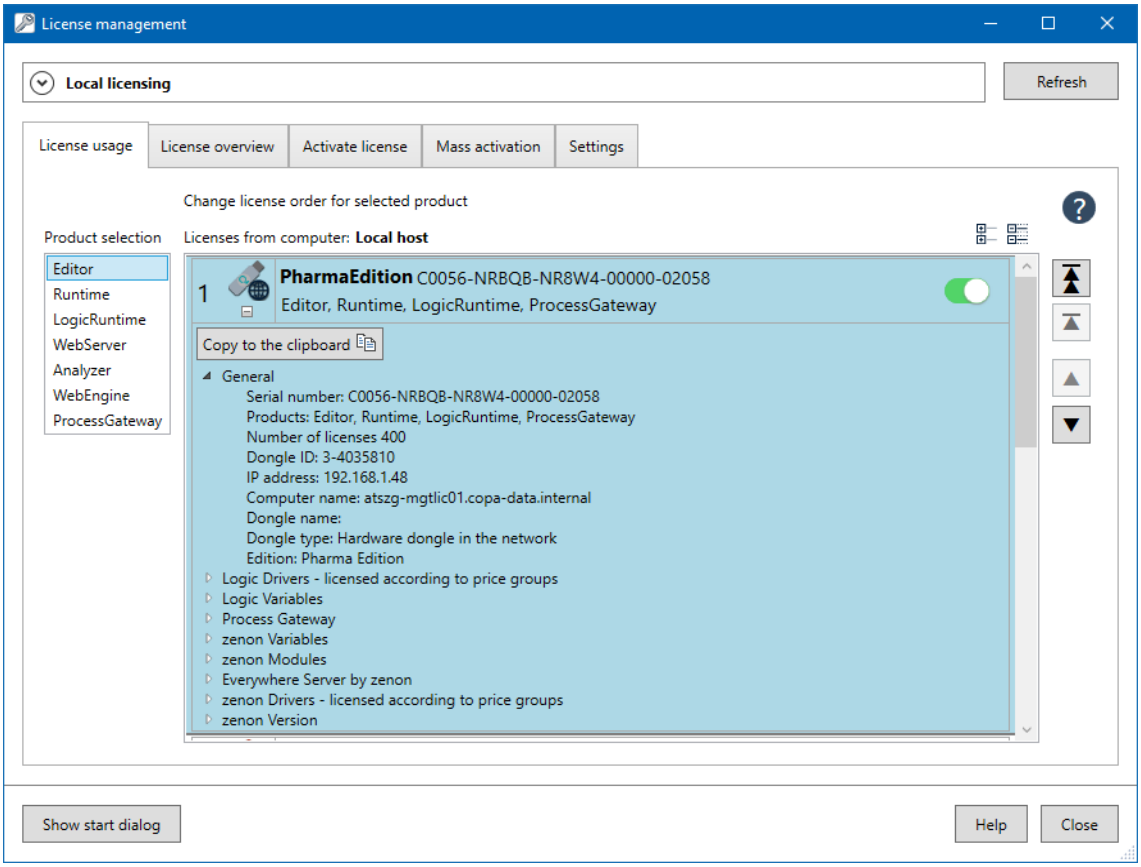


4. Select the product to which a license is to be assigned.

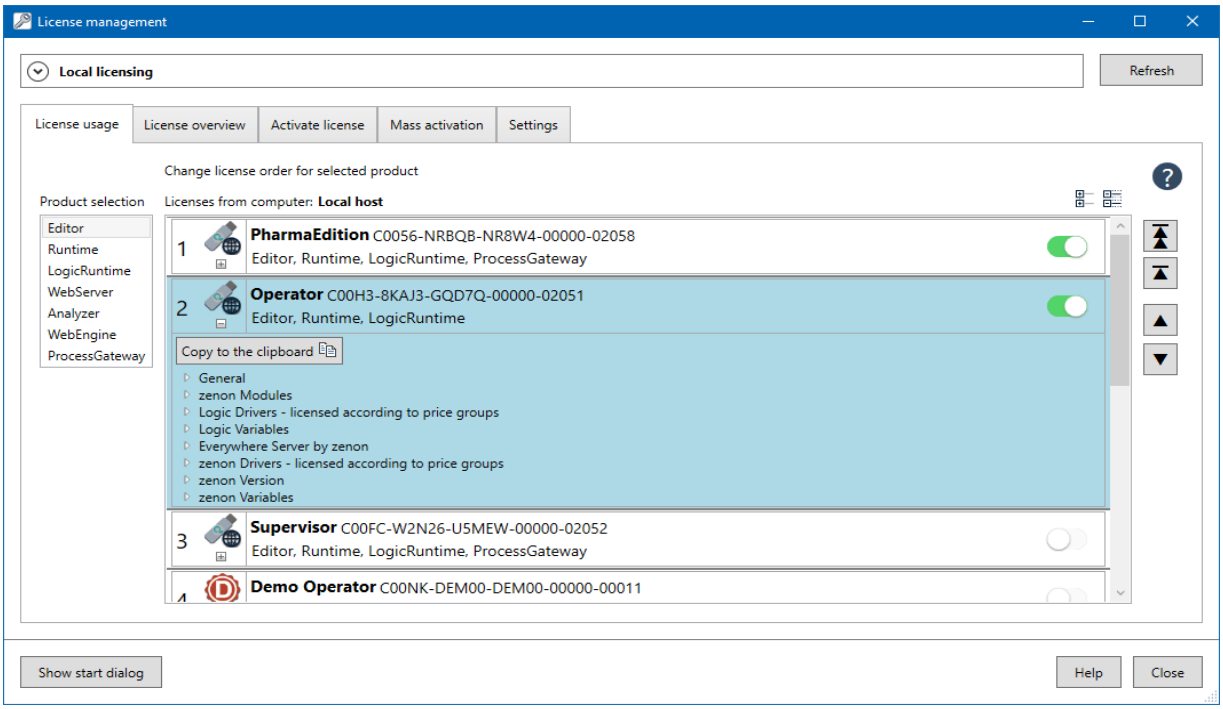


5. Click on the button at the far right in the list for the desired license. The button is colored green.

The license is assigned to the product and entered into **License.ini**.



6. If several licenses are assigned to a product, they can be sorted. Click on the up or down arrow keys to set the order of the licenses. The sorting can also be carried out by dragging & dropping. The sorting is applied immediately in **License.ini**.

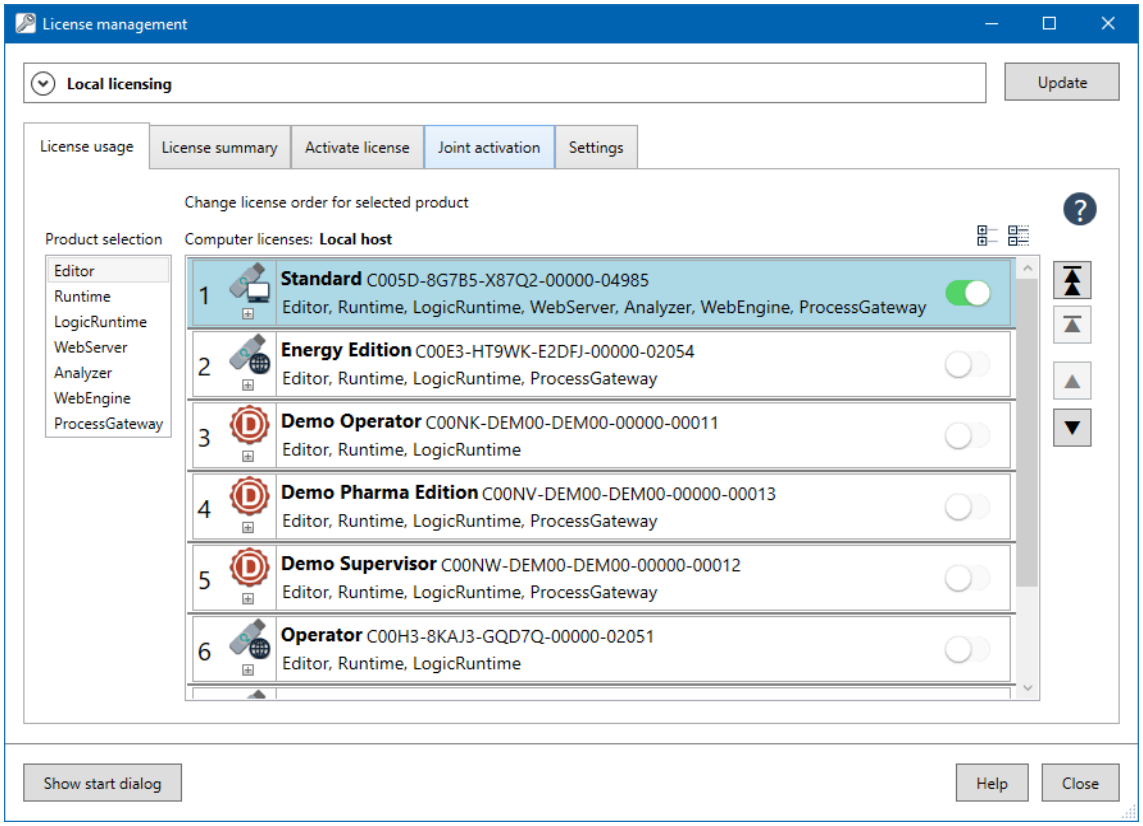


Attention

*Licenses are sometimes administered by the system in the **License.ini** file. Manual changes to this file can lead to the licenses becoming unusable and thus being lost. Only carry out any necessary changes for your licenses using the **COPA-DATA License Administration**.*

*Errors in **License.ini** are shown by corresponding error messages.*

TAB OPTIONS


License management
Local licensing
Update
License usage
License summary
Activate license
Joint activation
Settings
Change license order for selected product
Product selection
Computer licenses: Local host
Editor
Runtime
LogicRuntime
WebServer
Analyzer
WebEngine
ProcessGateway
1 Standard C005D-8G7B5-X87Q2-00000-04985
Editor, Runtime, LogicRuntime, WebServer, Analyzer, WebEngine, ProcessGateway
2 Energy Edition C00E3-HT9WK-E2DFJ-00000-02054
Editor, Runtime, LogicRuntime, ProcessGateway
3 Demo Operator C00NK-DEM00-DEM00-00000-00011
Editor, Runtime, LogicRuntime
4 Demo Pharma Edition C00NV-DEM00-DEM00-00000-00013
Editor, Runtime, LogicRuntime, ProcessGateway
5 Demo Supervisor C00NW-DEM00-DEM00-00000-00012
Editor, Runtime, LogicRuntime, ProcessGateway
6 Operator C00H3-8KAJ3-GQD7Q-00000-02051
Editor, Runtime, LogicRuntime
Show start dialog
Help
Close

Option	Description
Product selection	List of available licensed products. Clicking on a product shows the available licenses for the product in the **Licenses** list.
Licenses	List of licenses that are available for the selected product on the selected computer. Clicking on the plus sign shows detailed information for the respective license. Clicking on the **Copy to Clipboard** button copies all information about the selected licenses to the clipboard. The status of a licenses is displayed and amended by means of a switch: ▸ Green symbol: This license is in the **License.ini** and and was also found on the dongle. Clicking removed the license from **License.ini**. ▸ White symbol: This license was found on a dongle but has not been entered into **License.ini**. Clicking enters the license into **License.ini**. ▸ Red exclamation mark plus green symbol: This license is in **License.ini** but was not found on the dongle. This can have several causes, how the dongle was removed, dongle cannot be found in the network etc. Changes are entered into **License.ini** immediately.
Symbols to display details	Two symbols above the list make it possible to show and hide detailed information for all licenses. The left symbol shows details; the right symbol hides details.
Arrow symbols	Arrow symbols next to the list sort the licenses. ▸ Horizontal line + double arrow pointing upwards: The license is sorted up to the top and entered at the first place for all products in **License.ini**. ▸ Horizontal line + arrow pointing upwards: The license is sorted up to the top and entered at the first place for the selected product in **License.ini**. ▸ Arrow upwards: The license is moved one step up. ▸ Arrow downwards: The license is moved one step down. The order can also be amended with the mouse by means of dragging & dropping.

DIALOG OPTIONS

Option	Description
Local licensing / remote licensing	Clicking on the arrow in the header opens the options to establish a connection (on page 95) to a remote computer or select the local computer.
Show start dialog	Opens the start dialog for standard licensing tasks.
Help	Opens online help.
Close	Clicking on the button closes the dialog.

Test licenses

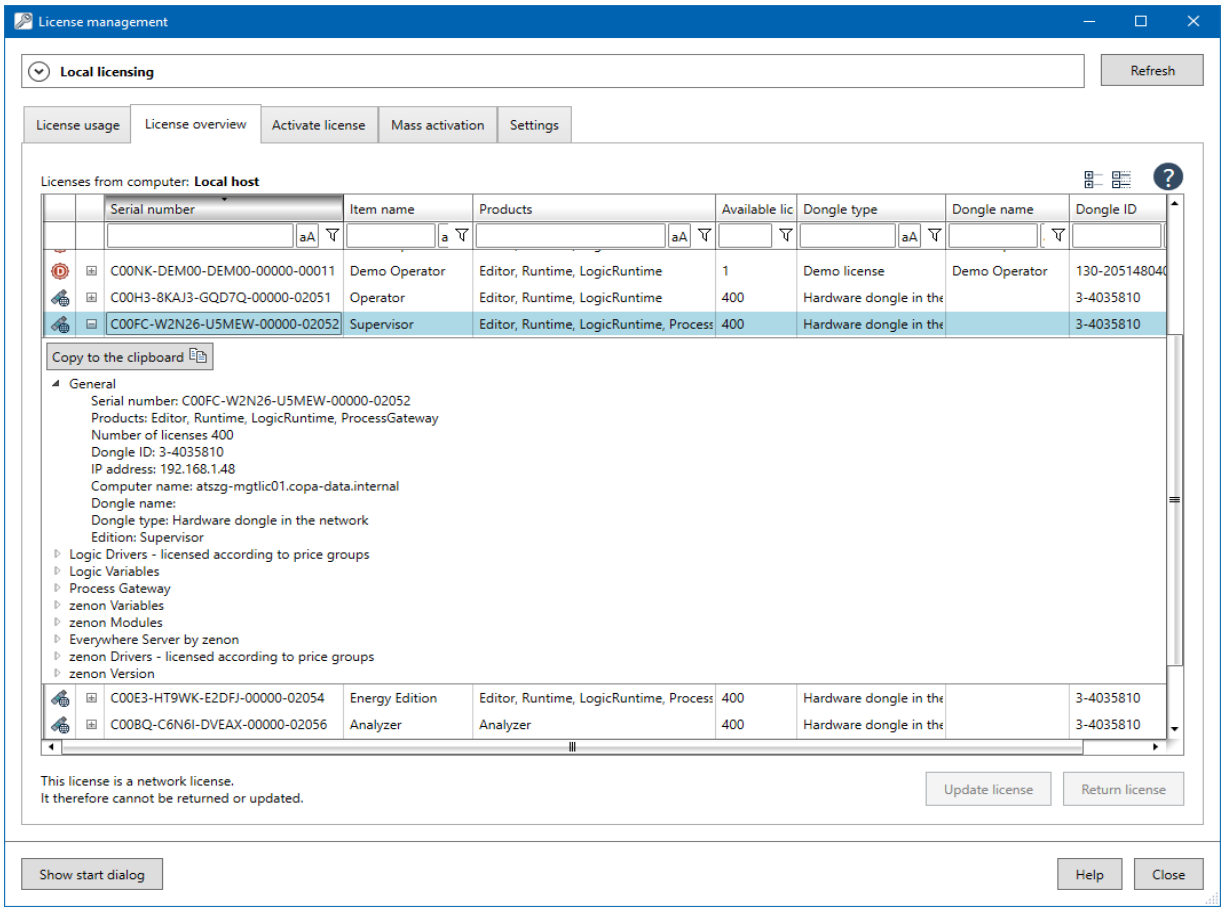
Because the first appropriate license is always used for the license query, you can use demo licenses purposefully for testing. To do this, create the desired demo license to be used as the first license to be used in the **COPA-DATA License Administration** in the **License Manager** (on page 59) tab. The duration of a demo license is always shown in the license manager under **Details** of the license. Once this duration has expired, this license starts in demo mode with a 10 minute duration.

18.2.2 License overview

You can do the following in this tab:

- Show details of all licenses that can be accessed from your computer.
  This is both local licenses as well as licenses that have been saved on a network dongle (on page 151).
  If you need the current version to order the license expansion, you can find all information here.
- Update licenses (on page 92).
- Return licenses (on page 89).

> **Attention**
>
> *The display always relates to the computer that is set in the header for **Local licensing / remote licensing**. It can therefore be a local view or a remote view.*
>
> *With remote view, all licenses that the remote computer sees are displayed. With network licenses in particular, this can be a completely different view because the network licenses are found with CodeMeter mechanisms. See in relation to this the **Set up server search lists for network dongles** (on page 152) chapter.*


License management
Local licensing
Refresh
License usage
License overview
Activate license
Mass activation
Settings
Licenses from computer: Local host
Serial number
Item name
Products
Available lic
Dongle type
Dongle name
Dongle ID
C00NK-DEM00-DEM00-00000-00011
Demo Operator
Editor, Runtime, LogicRuntime
1
Demo license
Demo Operator
130-205148040
C00H3-8KAJ3-GQD7Q-00000-02051
Operator
Editor, Runtime, LogicRuntime
400
Hardware dongle in the
3-4035810
C00FC-W2N26-U5MEW-00000-02052
Supervisor
Editor, Runtime, LogicRuntime, Process
400
Hardware dongle in the
3-4035810
Copy to the clipboard
General
Serial number: C00FC-W2N26-U5MEW-00000-02052
Products: Editor, Runtime, LogicRuntime, ProcessGateway
Number of licenses 400
Dongle ID: 3-4035810
IP address: 192.168.1.48
Computer name: atszg-mgtlic01.copa-data.internal
Dongle name:
Dongle type: Hardware dongle in the network
Edition: Supervisor
Logic Drivers - licensed according to price groups
Logic Variables
Process Gateway
zenon Variables
zenon Modules
Everywhere Server by zenon
zenon Drivers - licensed according to price groups
zenon Version
C00E3-HT9WK-E2DFJ-00000-02054
Energy Edition
Editor, Runtime, LogicRuntime, Process
400
Hardware dongle in the
3-4035810
C00BQ-C6N6I-DVEAX-00000-02056
Analyzer
Analyzer
400
Hardware dongle in the
3-4035810
This license is a network license.
It therefore cannot be returned or updated.
Update license
Return license
Show start dialog
Help
Close

Option	Description
License list	Lists all available licenses. The following information is available for each license: ▸ Symbol: Shows which type of dongle* it is. ▸ Serial number ▸ Item name (bundle description) ▸ licensed products ▸ Available licenses: Shows how many licenses are present and not loaned. The information does not state how many licenses are currently occupied by a product or are free. This information can only be obtained via **CodeMeter WebAdmin** (on page 149). ▸ Dongle type* ▸ Dongle ID ▸ Dongle name The name can be amended using the CodeMeter Control Center (on page 146). ▸ Computer name The following additional columns are available for licenses that it concerns: ▸ Loaned licenses (available from version 8.10) ▸ End of validity ▸ End of usage period The list can be sorted and filtered.
Details	Click on the + to open the display of the details. ▸ General information on the dongle and addresses, as well as edition ▸ Modules ▸ Number of variables ▸ Version Symbols: ▸ **+** button: expands all details of all licenses ▸ **-** button: collapses all details of all licenses
Update license	Clicking on the button establishes a connection to the license depot online, searches for an update and applies this if present. Not available for demo licenses and licenses in the network.
Return license	Returns selected license online (on page 89).

***Dongle types:**

- Local hardware dongle

- Local software dongle
- Network hardware dongle
- Network software dongle
- Demo licenses (always software dongle)

Color code:

- Licenses are colored red if:
  - The end of validity has been exceeded
  - The usage period has been exceeded
  - The loan duration has been exceeded
- Demo licenses are colored in orange if they have exceeded the maximum usage duration or the maximum number of starts has been exceeded for one of the products contained.

DIALOG OPTIONS

Option	Description
Local licensing / remote licensing	Clicking on the arrow in the header opens the options to establish a connection (on page 95) to a remote computer or select the local computer.
Show start dialog	Opens the start dialog for standard licensing tasks.
Help	Opens online help.
Close	Clicking on the button closes the dialog.

18.2.3 Activate license

If a licenses is issued at COPA-DATA, it is stored in the "license depot". This is a database in which the license waits to be collected. The license must be saved on your system in order you to be able to use the license as a user. A dongle (on page 44) is used as a save location. This dongle is also called a license container. This is transferred from the license depot to the dongle when a license is activated.
There are the following possibilities for this transfer:

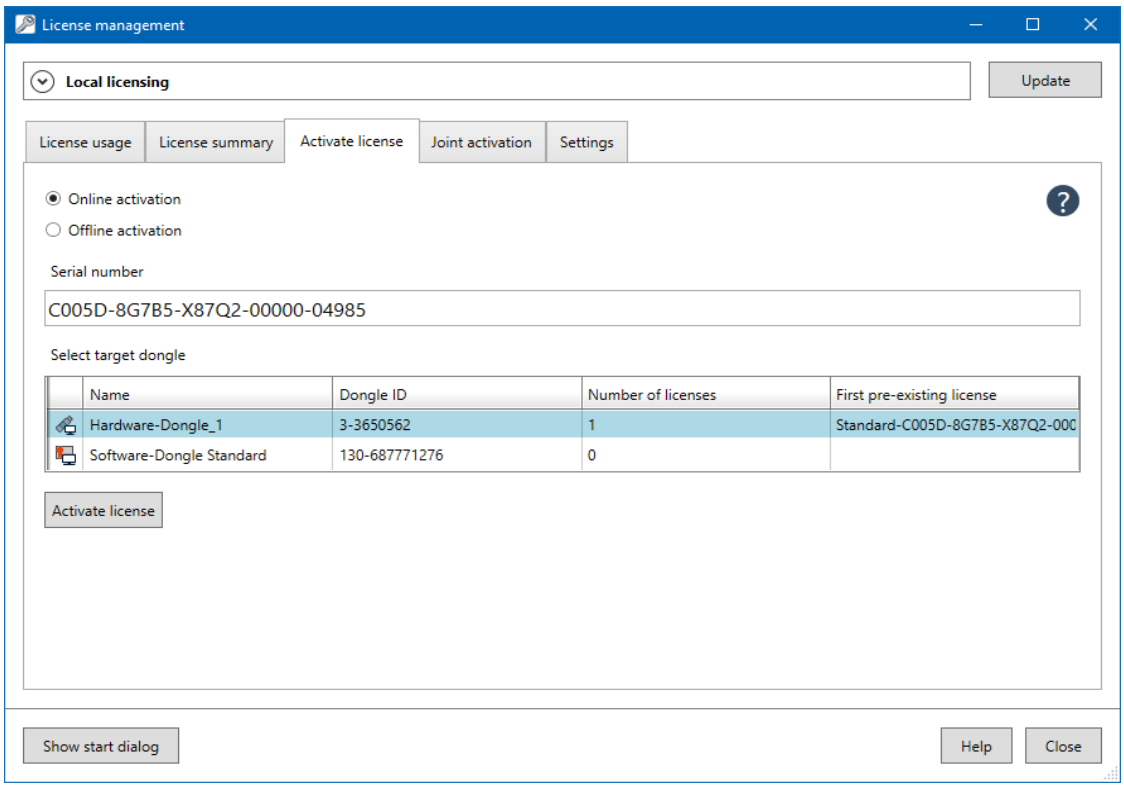
- Online activation via start dialog (on page 52):
  Preferred method. In doing so, a connection from your computer to the license depot is established via the Internet and the license is transferred to the dongle.
- Online activation via **Activate License** tab **(on page 72):**
  This online method must be used if you have connected several software or hardware dongles.
  Note: You can also use this method if the computer to be licensed is not connected to the Internet directly. Remote licensing (on page 94) is available to you for this.

- Online mass activation (on page 79):
  Use this method if you want to activate several computers at once.
- Activation via command line tool (on page 98):
  Use this possibility if you want to activate licenses online in an automated manner via third-party applications. The command line tool allows both individual activation as well as joint activation and supports local and remote activation.
- Offline activation (on page 74):
  Manual method. This method is used if there is a direct Internet connection. In doing so, the complete handling of the transfer must be carried out with the help of a web browser.

If you receive a pre-programmed dongle, the license was already transfered to the dongle and activated. You only need to assign this license to the respective products for use. For details, read the **Apply license from the hardware dongle** (on page 54) chapter.

Activate licenses via License tab

Activate a license in this tab.
You can find the detailed procedure of how a license is activated from the Online activation (on page 72) and Offline activation (on page 74) chapters.



Option	Description
Local licensing	Selection of whether licensing is local or on a remote computer.
Online activation (on page 72)	Select `online` activation type. The license is activated online. You need an Internet connection for this.
Offline activation (on page 74)	Select `offline` activation type. Activation is carried out by means of file exchange.
Serial number	Enter the serial number that is to be activated.
Select target dongle	List of available dongles. Clicking on a dongle selects it as a target for the license. The list shows: ▸ **Name**: Dongle name. ▸ **Identification**: Number of the dongle. ▸ **Number of licenses**: Number of the licenses that have already been activated on this dongle. ▸ **First existing license**: Serial number of the license that has been activated first on the dongle. The list can be sorted. To sort, click on the head of the desired column. Another click inverts the sorting. Note: Only locally-available dongles are displayed.
Activate license	Clicking on the button activates the license. Only available for **online activation** and only if a valid serial number has been entered and a dongle has been selected.
Create license request file	Clicking on the button creates a file with which the activation of the license can be requested. Only available for **offline activation** and only if a valid serial number has been entered and a dongle has been selected.
Import license update file	Clicking on the button opens the dialog to select a file for the offline activation of a license. Only available for **offline activation**.
Create license confirmation file	Clicking on the button creates a file with which the activation of the license can be confirmed. Only available for **offline activation** and only if a valid serial number has been entered and a dongle has been selected.

DIALOG OPTIONS

Option	Description
Local licensing / remote licensing	Clicking on the arrow in the header opens the options to establish a connection (on page 95) to a remote computer or select the local computer.
Show start dialog	Opens the start dialog for standard licensing tasks.
Help	Opens online help.
Close	Clicking on the button closes the dialog.

Online activation

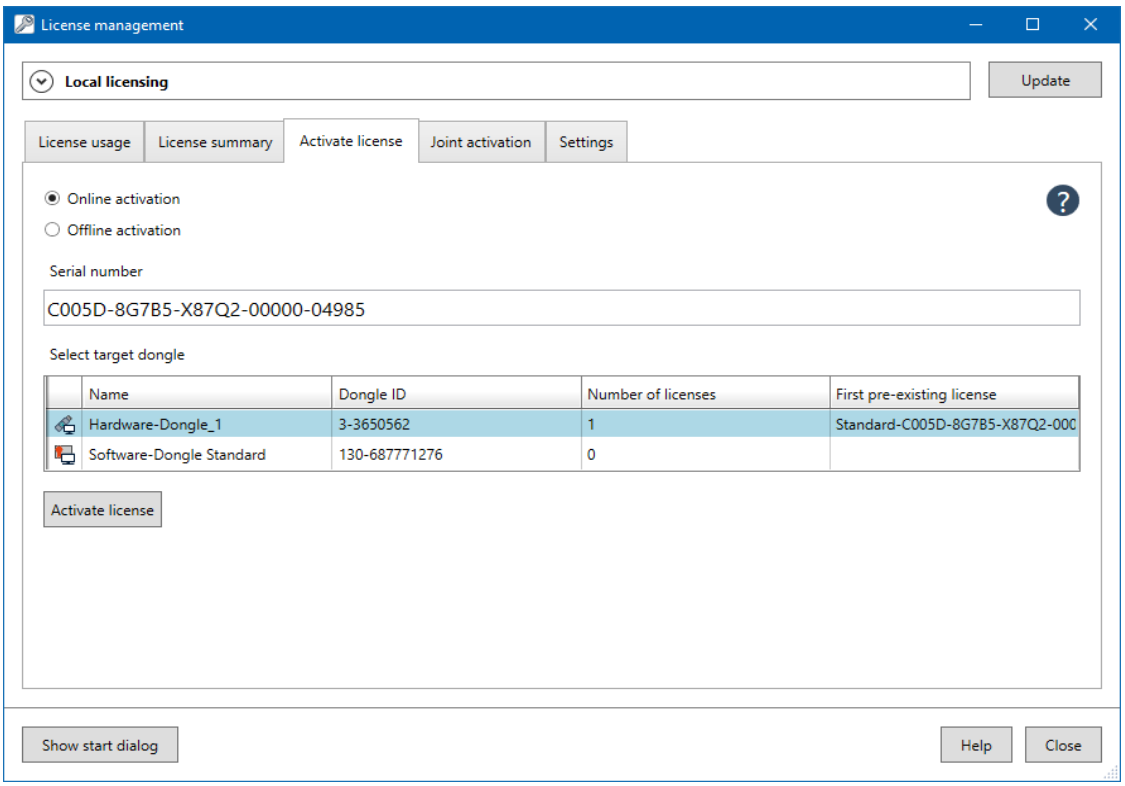
You can choose whether the license is transferred to a software dongle or - if present - hardware dongle. You can read details on available dongles in the dongle types (on page 44) chapter.
During online activation, licenses are activated directly without further applications or data carriers. There must be an online connection to the Internet available to do this.

> **Hint**
>
> *Use the Remote Licensing (on page 94) if you have a direct Internet connection*
>
> *If you use a proxy server for your Internet connection, ensure you have the correct proxy settings (on page 87).*

To activate a license online:

1. Start the **COPA-DATA License Administration**.
2. If the start dialog is shown, then click on the **Advanced Options** button and then on **Advanced License Administration**.

3. Switch to the **Activate License** tab.



4. Decide whether licensing is local or on a remote computer.
   - `Local`: Leave the setting as `Local Licensing`.
   - `Remote`: Establish a connection (on page 95) to the remote computer on which the license is to be used. For details see the **Remote Licensing** (on page 94) chapter.
5. Activate the **Online activation** radio button.
6. Enter the serial number that is to be activated into the **Serial number** option. You can find the serial number on the license certificate.
7. Select the dongle on which the license is to be stored in the **Select target dongle** option. If you have not yet connected your hardware dongle, insert it now and click on the **Refresh** button on the top right corner**.**
8. Click on the **Activate license** button.

   The license is transferred to the dongle and saved in a tamper-proof form there. If you have set the **Apply activated licenses immediately** in the **Settings (on page 84)** tab, the license is entered for all products at the first place in the **License.ini** file. This INI file contains information on the sequence in which the licenses are used. You can amend the order in the **License Application** (on page 59) tab.

Offline activation

With offline activation, the license must be transferred from the COPA-DATA license depot to the dongle manually. This method is only recommended as the last option if online (on page 52) or remote licensing (on page 94) cannot be carried out. With hardware dongles, it is easier under certain circumstances to connect the hardware dongle to a computer with an Internet connection and to activate it online there.

An Internet connection is also necessary for offline licensing. The access computer can be freely defined however.

Offline activation requires a multi-step procedure:

1. Create license request file
2. Transfer license request file on a computer with Internet access.
   This can be carried out with the help of any desired storage medium such as USB sticks, removable media or similar.
3. Upload license request file to the licensing web site and get the license update file from there.
4. Transfer the license update file to the computer to be licensed.
5. Import the license update file by double-clicking on the file and create a license confirmation file.
6. Transfer the license confirmation file to a computer with Internet access.
7. Upload the license confirmation file to the licensing web site.

   The process is thus concluded.

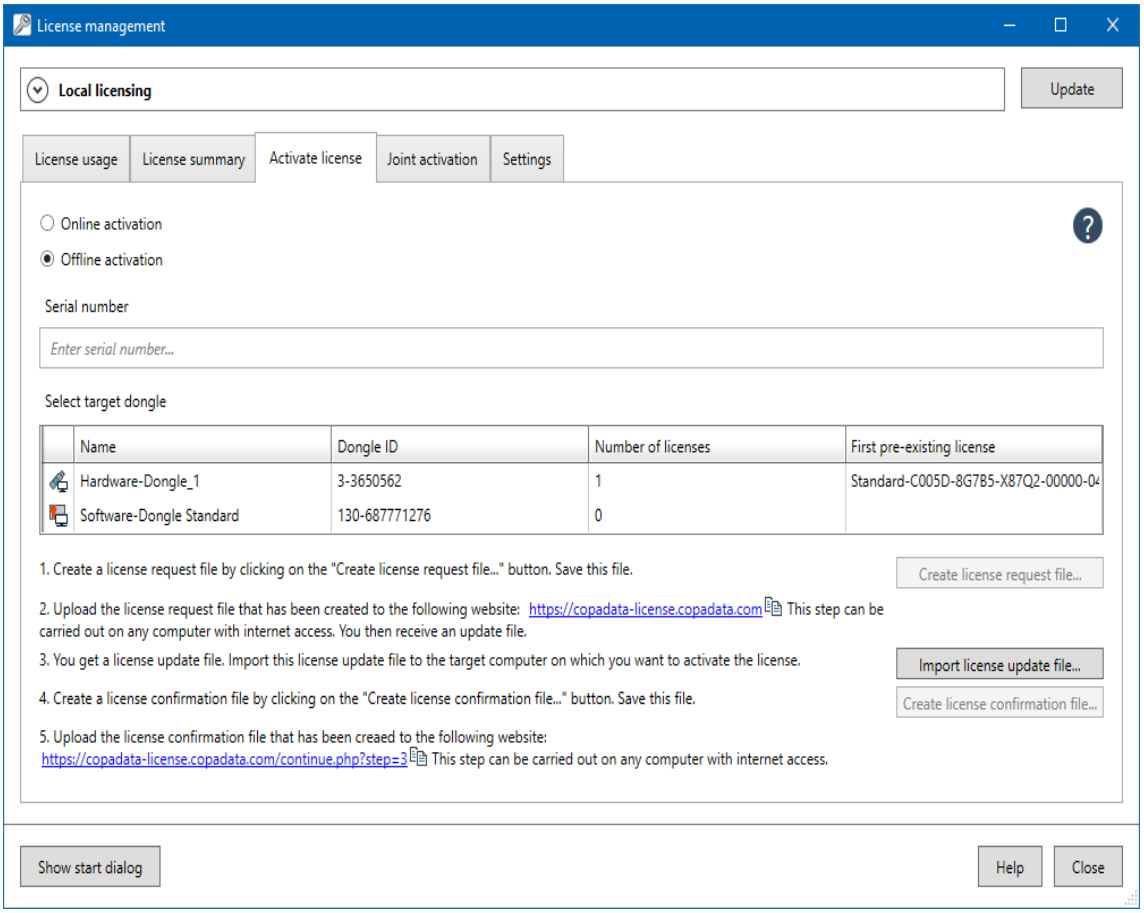
You can choose whether the license is transferred to a software dongle or - if present - hardware dongle. You can read details on available dongles in the dongle types (on page 44) chapter.

THE PROCESS IN DETAIL

To activate a license online:

1. Start the **COPA-DATA License Administration**.
2. If the start dialog is shown, then click on the **Advanced Options** button and then on **Advanced License Administration**.

3. Go to the **Activate License** tab



4. Decide whether licensing is local or on a remote computer.
   - `Local`: Leave the setting as `Local Licensing`.
   - `Remote`: Establish a connection (on page 95) to the remote computer on which the license is to be used. For details see the **Remote Licensing** (on page 94) chapter.
5. Activate the **Offline activation** radio button.
6. Enter the serial number that is to be activated into the **Serial number** option. You can find the serial number on the license certificate.
7. Select the dongle on which the license is to be stored in the **Select target dongle** option. If you have not yet connected your hardware dongle, insert it now and click on the **Refresh** button on the top right corner**.**
8. Click on the **Create license request file** button.
   The button is only active if the serial number is valid and a target dongle has been selected.

   The dialog to save the file is opened.
9. Save the file.
   - Default name: (the serial number)

- Default file suffix: **LicReq**.

If the dongle is removed between selecting the dongle and saving the file, or it is no longer found, the saving is canceled with an error message. The user must then provide the dongle again or select a new dongle before the file can be saved.

10. Transfer the license request file, by means of a USB stick or another offline transport media, to a computer with Internet access.
11. Start a web browser on it.
12. Open the website https://copadata-license.copadata.com/ (https://copadata-license.copadata.com/).
13. Click on the **Search** button and select the license request file.
14. Click on the **Upload Request File** button.
    If the request can be successfully processed, the web site switches to the second page, **Download Update**.
15. Click on the **Download Update** button. You get a license update file. Depending on the browser and browser setting, the file is saved as a download folder:
    - Default name: (the serial number)
    - Default file suffix: **LicUpd**.
16. Transfer the license update file back to the initial computer by means of a USB stick or another offline means of transport.
17. Ensure that the dongle to be licensed is connected.
18. Double-click on the license update file.

    The **COPA-DATA License Administration** is opened automatically. The license is transferred to the dongle and saved in a tamper-proof form there. If you have set the **Apply activated licenses immediately** in the **Settings (on page 84)** tab, the license is entered for all products at the first place in the **License.ini** file. This INI file contains information on the sequence in which the licenses are used. You can amend the order in the **License Application** (on page 59) tab.
    With remote licensing, a connection to the remote system is also established after double-clicking on the license update file.
    Requirement: The **user data collection** option in the **Settings** tab is not deactivated.
    Alternative procedure:

    a) Open the **COPA-DATA License Administration** and select the **Activate license** tab.

    b) If necessary, establish a connection to the remote system on which the dongle to be licenses is located.

    c) Activate the **Offline activation** radio button.

    d) Click on the **Import License Activation File** button.

    e) Select the license update file and click on **Open**.

    The license is transferred to the dongle and saved in a tamper-proof form there. If you have set the **Apply activated licenses immediately** in the **Settings (on page 84)** tab, the license is

entered for all products at the first place in the **License.ini** file. This INI file contains information on the sequence in which the licenses are used. You can amend the order in the **License Application** (on page 59) tab.

In order for the license depot to know that the license has been successfully transferred to the dongle, a license confirmation file must be created and sent to COPA-DATA. The file is created automatically as soon as online activation has been carried out successfully. The dialog to save the file opens automatically.

19. Save the license confirmation file:
    - Default name: (the serial number)
    - Default file suffix: **LicConf**.

    If you want to carry out confirmation later, you can create the license confirmation file at any desired subsequent point in time. For details, see the **Create license confirmation file** (on page 77) chapter.
20. Transfer the license confirmation file by means of a USB stick or another offline transport media to a computer with Internet access.
21. Start a web browser on it.
22. Open the website https://copadata-license.copadata.com/continue.php?step=3 (https://copadata-license.copadata.com/continue.php?step=3).
23. Click on the **Search** button and select the license confirmation file.
24. Click on the **Upload Confirmation File** button.

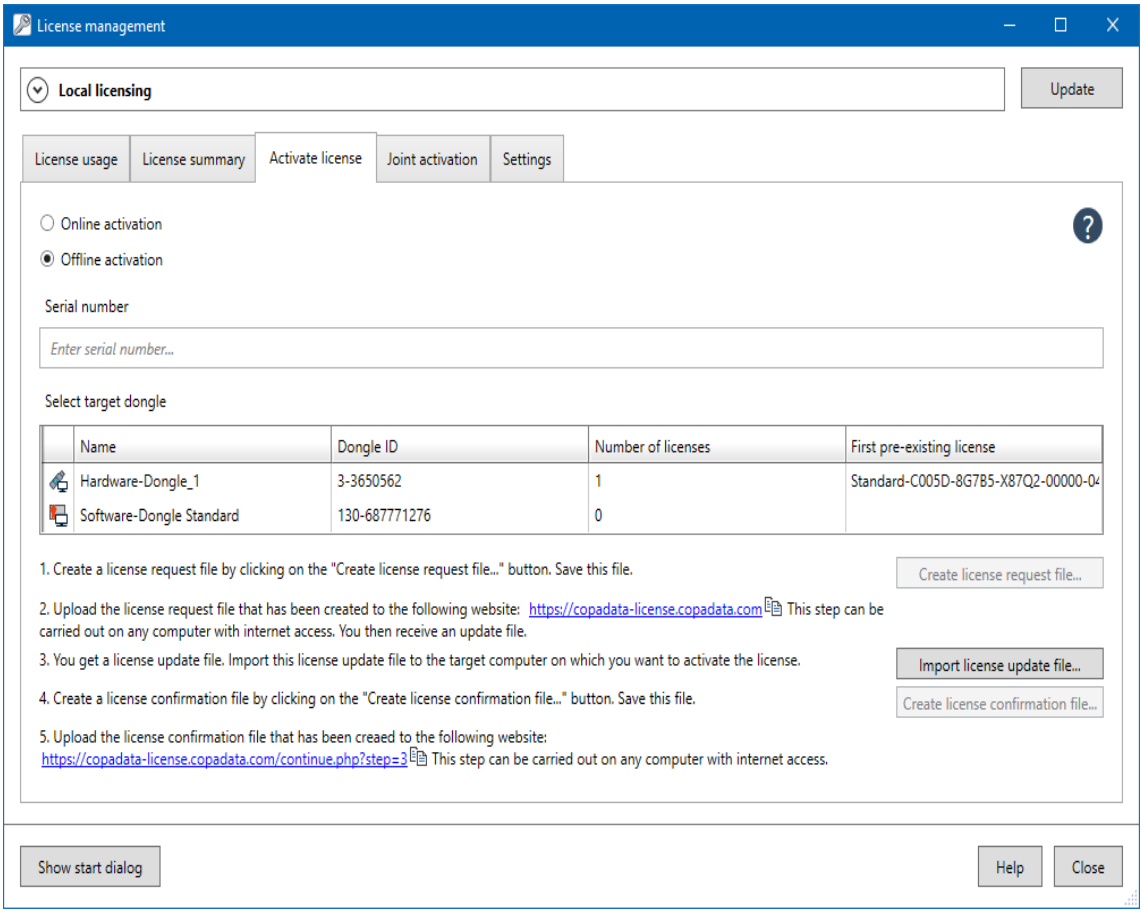
The file is uploaded to the web site and the offline activation mechanism is thus concluded.

Create license confirmation file

In order for the license depot to know that the license has been successfully transferred to the dongle, a license confirmation file must be created and sent to COPA-DATA.
To create a file at any desired point in time:

1. Start the **COPA-DATA License Administration**.
2. If the start dialog is shown, then click on the **Advanced Options** button and then on **Advanced License Administration**.

3. Go to the **Activate License** tab



4. Decide whether licensing is local or on a remote computer.
   - `Local`: Leave the setting as `Local Licensing`.
   - `Remote`: Establish a connection (on page 95) to the remote computer on which the license is to be used. For details see the **Remote Licensing** (on page 94) chapter.
5. Activate the **Offline activation** radio button.
6. Enter the serial number for which you want to create a license confirmation file.
7. Select the dongle on which this license is saved.
8. Click on the **Create License Confirmation File** button.

   The dialog to save the file is opened.
9. Save the license confirmation file:
   - Default name: (the serial number)
   - Default file suffix: **LicConf**.
10. Transfer the license confirmation file by means of a USB stick or another offline transport media to a computer with Internet access.

11. Start a web browser on it.
12. Open the website https://copadata-license.copadata.com/continue.php?step=3 (https://copadata-license.copadata.com/continue.php?step=3).
13. Click on the **Search** button and select the license confirmation file.
14. Click on the **Upload Confirmation File** button.

The file is uploaded to the web site and the offline activation mechanism is thus concluded.

18.2.4 Mass activation

If you order several licenses from COPA-DATA, you also get a collective file (***.LicSN**) in addition to the license certificate. You can use this file to administer the licenses centrally and to activate them from a central point. Remote licensing (on page 94) is available for this.

You can activate the licenses from collective file either with **COPA-DATA License Administration** in the Mass Activation tab or use the **LicenseManagerAutomation.exe**command line tool (on page 98) in an automated manner. Mixed use is also possible.

The collective file is a CSV file that can be edited with any desired text editor or a table calculation.

- Column separator: Semicolon (**;**) or tab (**\t**)

Column structure:

Column	Identification	Description
1	**Serial number**	The unique serial number of each license.
2	**Item name**	Contains the article names of the license. Is for information only and has no functional effect.
3	**Target computer**	Indication of the target computer: ▸ If not yet licensed: Computer name onto which the license is to be transferred. The following can be used: IPv4 address, IPv6 address or computer name. ▸ If already licensed: Computer name onto which the license has been transferred.
4	**User name**	Windows user name from which the license has been activated. Only used for information.
5	**Activated**	Display of the status of the activation. ▸ `True`: activated ▸ `False` or `empty`: not activated With `True`, this license is no longer taken into account when processing using the command line.
6	**Error text**	If an error occurred during activation, the error is logged here.

The original file is only filled with the first two columns.

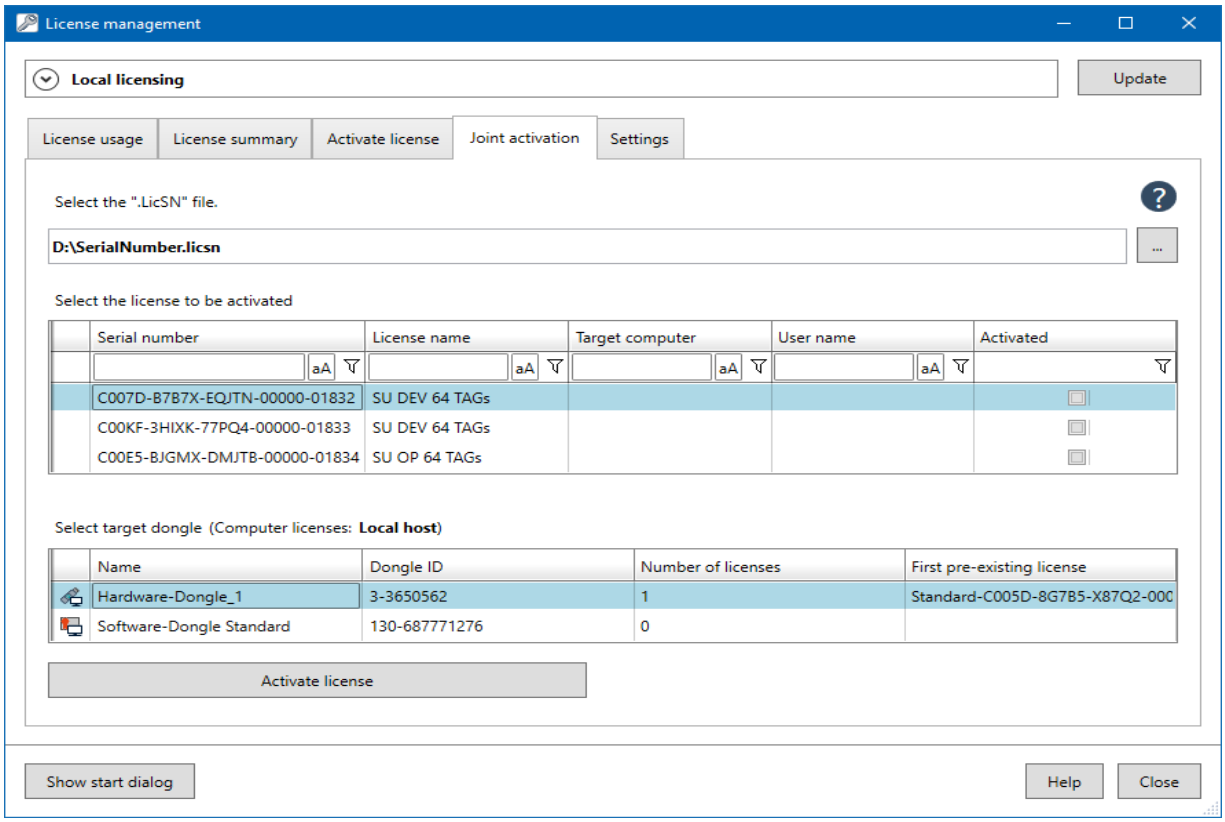
To use a file for the mass activation using the **COPA-DATA License Administration** or the command line:

- Enter the target computer into column `3` for each license.

  Example:

  - Original line of the collective file: `C005L-XQP49-Z42Q8-00000-02985;zenon SU RT 64 TAGs;`
  - Add this line:`C005L-XQP49-Z42Q8-00000-02985;zenon SU RT 64 TAGs;MyPCtoLicense`

MASS ACTIVATION IN THE COPA-DATA LICENSE ADMINISTRATION



Note: This tab is hidden by default. To display it, activate the **Show tab for additional licensing options** property in the **Settings** tab.

TO ACTIVATE A LICENSE

To activate a license:

1. Save the collective file with the ***.LicSN** suffix on your computer.
2. Enter the target computer into the file.
3. Open the **COPA-DATA License Administration**.
4. If the start dialog is shown, then click on the **Advanced Options** button and then on **Advanced License Administration**.
5. Switch to the **Mass Activation** (on page 79) tab

   If this is not shown:

   a) Switch to to the **Settings** tab.

   b) Activate the **Show tab for additional licensing options** checkbox.
6. Select the collective file with the licenses in the **Select the .LicSN file.** option.
   To do this, click on the **...** button. The file has the file extension ***.LicSN**.

All available licenses available in the file are shown in the **Select the license to be updated** list.
You can filter (on page 97) and sort the licenses contained in the file according to serial number, license name, target computer, user name and activation status.
Incorrect serial numbers are highlighted by a symbol.

7. Select the desired license.
   If a target computer has been entered, a connection to this target computer is established.
   If an already-activated license has been selected, the **Activate license** button is changed to **Update license**.
8. In the **Select target dongle** option, select the dongle on the remote computer on which the license is to be transferred.
9. Click on **Activate license** or **Update license**.

The license is activated on the selected target dongle and the text file is filled with the licensing data.

MASS ACTIVATION TAB

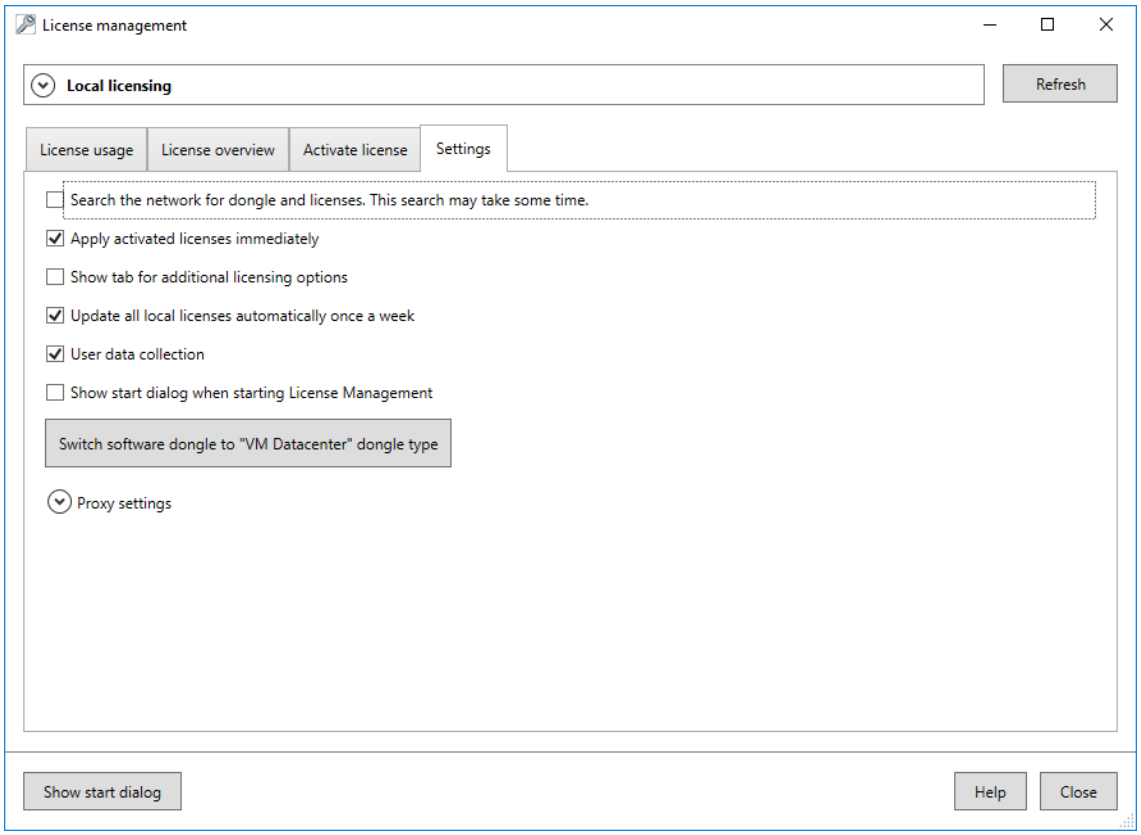
Option	Description
Select the .LicSN file.	Selection of the file with the license numbers. The file has the file extension **.LicSN**. The licenses contained in the file are shown in the **Select the license to be updated** option.
Select the license to be updated	Display and selection of existing licenses. The display can be filtered and sorted. ▸ Filter: Enter the filter term into the filter line. ▸ Sort: Click on the column title. The entries are shown in sorted order. Another click inverts the display. Selection by clicking on a license.
Select target dongle	Selection of the dongle with which the license is to be linked.
Activate license **Update license**	Activates the selected license on the selected dongle, or updates the license if it has already been activated.

DIALOG OPTIONS

Option	Description
Local licensing / remote licensing	Clicking on the arrow in the header opens the options to establish a connection (on page 95) to a remote computer or select the local computer.
Show start dialog	Opens the start dialog for standard licensing tasks.
Help	Opens online help.
Close	Clicking on the button closes the dialog.

18.2.5 Settings

Settings for license management are configured in this tab.



Option	Description
User data collection	Settings to record user data: ▸ `Active`: User data is collected. The following, among others, is collected: Operating system, user name, computer name, IP addresses and domains. For details, see the **User data** (on page 87) chapter. ▸ `Inactive`: No user data is recorded. Default: `active` Attention: If this option is deactivated, lost licenses can no longer be restored or replaced.
Search the network for dongles and licenses.	Settings for the search for licenses: ▸ `Active`: Dongles and licenses are also searched for in the network. This search can take a long time. ▸ `Inactive`: A search is only carried out on the local network. Default: `Inactive` Setting is applied immediately. To show new dongles and licenses, the respective list must be updated. Note: This setting only has an effect on the **COPA-DATA License Administration**. zenon applications always resort to the network if it cannot find the license locally.
Apply activated licenses immediately	Setting if the activated license is written to **License.ini**: ▸ `Active`: The license is immediately written at the first place in **License.ini** and assigned to all licensed products by clicking on **Activate license**. ▸ `Inactive`: The license is only written by means of assignment to the **License usage** (on page 59) tab in **License.ini**. Default: `active`
Show tab for additional licensing options	Controls the display of the **Mass Activation** (on page 79) tab: ▸ `Active`: Tab is displayed. ▸ `Inactive`: Tab is hidden. Default: `Inactive`
Automatically update all licenses used	Update licenses automatically. ▸ `Active`: All licenses are automatically checked for updates at regular intervals. ▸ `Inactive`: Licenses are not checked. The check must be carried out manually. Default: `active` Default cycle time: 7 days.

	The cycle can be changed in the **Settings [SETTINGS]** of **License.ini**. Additional information: See **Apply amended licenses** (on page 92) chapter.
Show start dialog when starting License Management	Activation of the wizard for licensing tasks: ▸ `Active`: Before opening, the start dialog that leads you through the typical licenses processes is shown. ▸ `Inactive`: The application is opened directly. Default: `active`
Switch software dongle to "VM DataCenter" dongle type.	Changes the type (on page 138) of the software dongle used from **Virtual Machine** to **VM DataCenter**. Only available if **COPA-DATA License Administration** is running in a virtual machine.
Switch software dongle to "Virtual Machine" dongle type	Changes the type (on page 138) of the software dongle used from **VM DataCenter** to **Virtual Machine**. Only available if the **COPA-DATA License Administration** is running in a virtual machine.
Proxy settings	Opens or closes the area to configure a proxy computer. For details see chapter: Configure proxy (on page 87)
Detect proxy configuration automatically	▸ `Active`: The proxy is automatically detected using the system settings.
Manual proxy configuration	▸ `Active`: The proxy is configured manually. The following must be entered for the configuration: ▸ Proxy: URL of the proxy. ▸ Port: Port to be used. Minimum: `1` Maximum: `65535` Default: `80` ▸ User: User name for proxy access. Is not validated. ▸ Password: Password for proxy access. Is saved in encrypted form and not validated.
Save proxy configuration	Saves the manual proxy configuration.

DIALOG OPTIONS

Option	Description
Local licensing / remote licensing	Clicking on the arrow in the header opens the options to establish a connection (on page 95) to a remote computer or select the local computer.

Show start dialog	Opens the start dialog for standard licensing tasks.
Help	Opens online help.
Close	Clicking on the button closes the dialog.

User data

USE OF USER DATA

When licensing via the **COPA-DATA License Administration** by means of dialog or command line, user data is also recorded and saved. This data is to restore lost or damaged licenses. The data is saved locally at COPA-DATA's premises in Austria.

The following is collected:

- Operating system: Type and version.
- Net address: All network addresses available on the computer.
- Full Qualified Host Name
- User name and domain

This data is recorded for the computer on which licensing is executed. If the licensing is executed remotely, this data is also collected for the target computer.

DEACTIVATION

The collection of this data can be deactivated in **COPA-DATA License Administration**. Licenses can continue to be obtained and administered. Support and technical support for licensing is however not possible due to missing data.

If the recording is deactivated, COPA-DATA can no longer offer the following services:

- Automatic application of licenses to remote computers.
- Tracing of the computer on which the license was activated and by whom.
  No support can thus be offered when searching for the license in the event of a loss of a license.
  Lost licenses can also not be replaced as part of customer care.

Data that has been collected up to the point of deactivation remains saved.

Configure proxy

Access to the Internet is required for online activation, license return and license updating. No direct access is thus possible in some corporate networks. The connection must be established via a proxy

server. If your system administrator has stored the data for the proxy server correctly in the operating system, no further settings are required. Otherwise the proxy server must be configured manually:

1. Open the **Settings** tab in the **COPA-DATA License Administration**.
2. Click on **Proxy Settings**
3. Activate the radio button for **Manual Proxy Configuration**.
4. Enter the URL for the proxy.
5. Enter the port number.
6. Enter the user name.
   Attention: It is not validated.
7. Enter the password.
   It is entered in encrypted form.
   Caution: The password is not validated.
8. Click on **Save Proxy**.

With a manual configuration, the **COPA-DATA License Administration** also saves the proxy setting set by the system. These are used as a fallback if no connection can be established with the proxy settings configured manually. This is relevant, for example, if the **COPA-DATA License Administration** is used for the user in this context but a proxy is configured, but this setting is not available in the system context.

ONLINE ACTIVATION

If the configured proxy can no longer be reached by online activation, the dialog for configuration is shown. Error messages are also shown. Changes to the settings are automatically saved the next time the connection is established.

18.2.6 Transfer/relocate license

Transferring a license is necessary, for example, if:

- The license is to be used on another computer or in another virtual machine
- The hardware of a computer with a software dongle changes
- The operating system of a computer with a software dongle is replaced
- The hard drive of a computer designated as the **C** drive is to be replaced with a software dongle
- The host computer for a virtual machine switches or its hardware is changed
- You want to combine several licenses on a hardware dongle
- You want to convert a physical computer into a virtual machine

Whether a license can continue to be used when a computer is physically rebuilt depends on which components and how many components are changed. A change of the computer name or a replacement of a hard drive (except drive **C**) generally does not constitute a problem.

The transfer of licenses works the same for hardware dongles and software dongles.
To transfer a license from one computer (dongle) to another computer (dongle):

1. Return (on page 89) the license from the previous dongle.
2. Activate (on page 69) the license again on the new dongle.

> **Information**
>
> *Licenses cannot be transferred directly between a physical computer and a virtual machine. The license must be amended to the respective condition. In this case, contact your COPA-DATA sales partner. Also see the* ***Virtual Machines*** *(on page 46) chapter.*

Return license

Licenses can be returned. This is necessary, for example, even if a license is to be used on another computer. See also the **Transfer/relocate license** (on page 88) chapter.

Notes on returning licenses:

- Only local licenses can be returned.
- Licenses with a defined usage period and demo licenses cannot be returned.
- Loaned licenses or licenses that have been loaned out in full or in part cannot be returned. You must first end the loan. (loan available from version 8.10.)

Licenses can be returned in two ways:

- Return license online (on page 89) (preferred method)
- Return license offline (on page 90)

Return license online

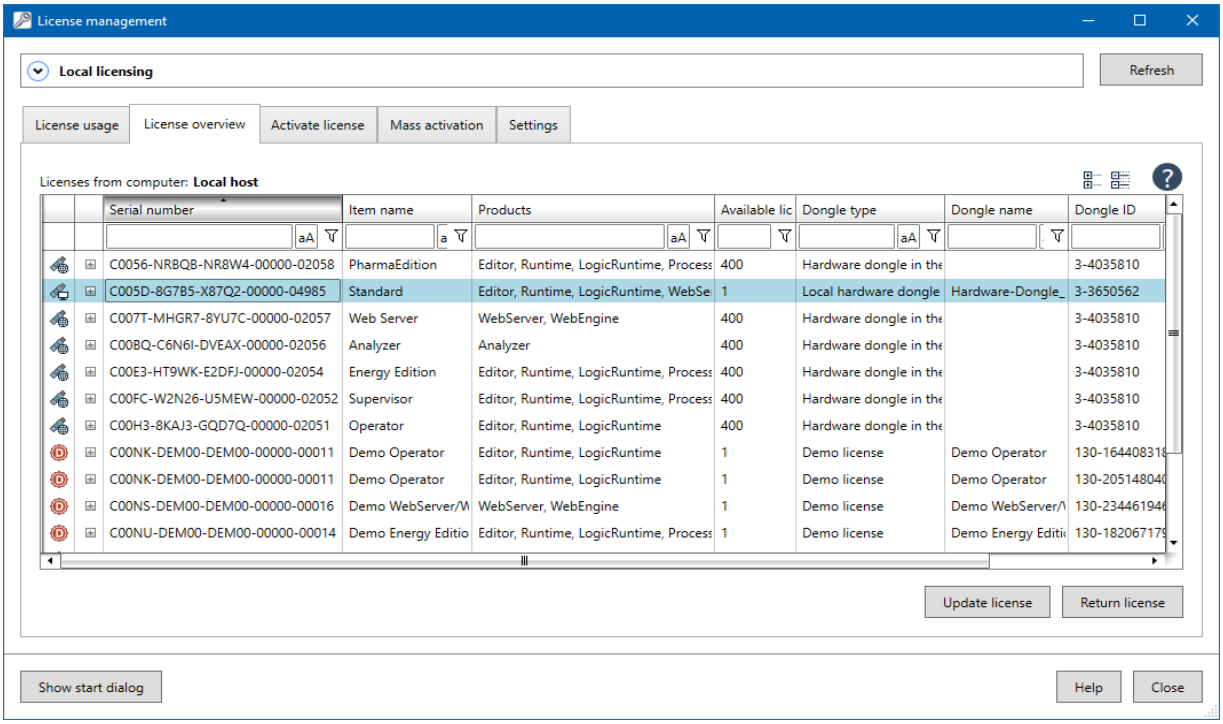
To return a license online:

1. Start the **COPA-DATA License Administration**
2. In the start dialog, click on the **Advanced Options** button and then on the **Relocate/Return License** button.
   - If there is only one returnable license locally on your computer, it is returned online. Confirm the corresponding request to do this.

- If there are several returnable licenses locally on your computer, you are automatically forwarded to the **License Overview** tab.
  Continue with the **process for several licenses**, step 3.

Process for several licenses:

1. Start the **COPA-DATA License Administration**
2. If the start dialog is shown, then click on the **Advanced Options** button and then on **Advanced License Administration**.
3. Switch to the **License Overview** tab.
4. Select the desired license from the list.



5. Click on **Return License**.

   The license is returned online.

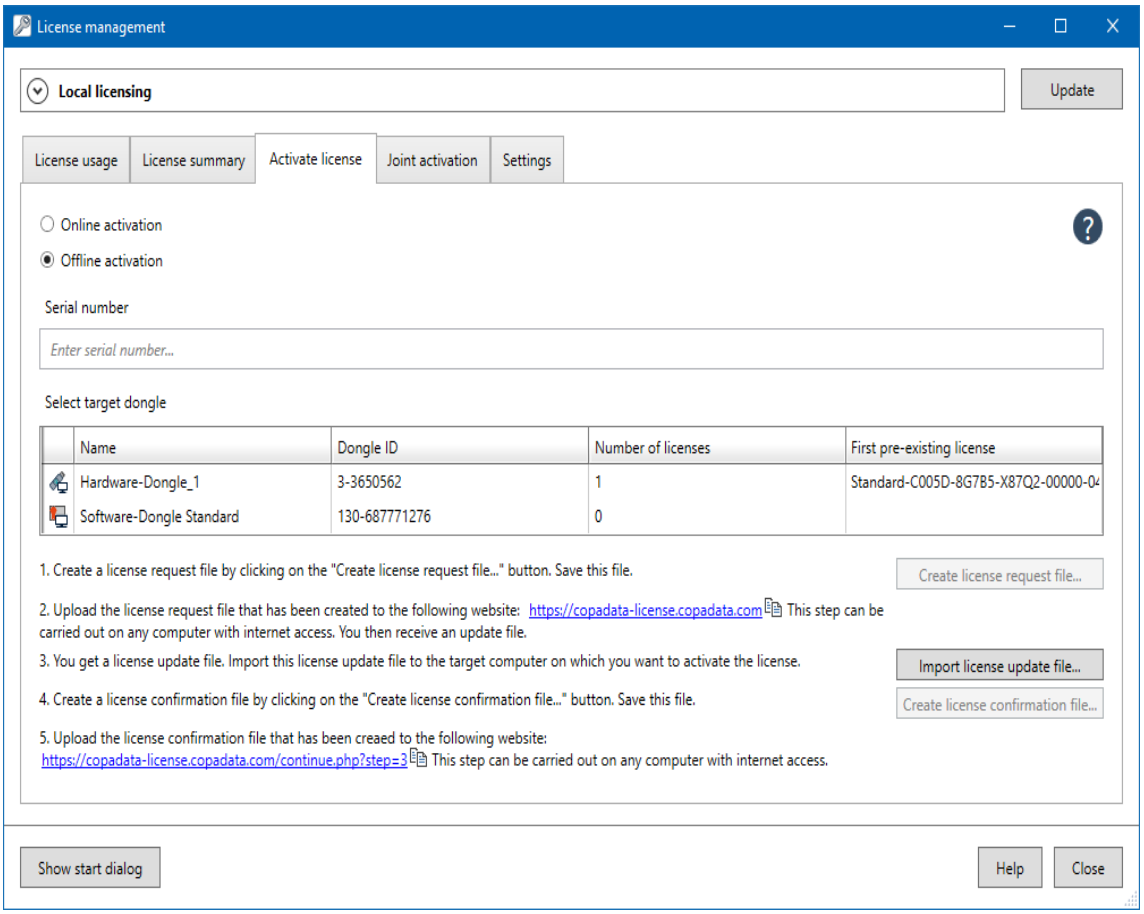
Return license offline

Offline return has not yet been integrated into the **COPA-DATA License Administration**. However it works in the same way as offline activation. Difference: Another return link must be entered into the web browser!

Procedure:

1. Start the **COPA-DATA License Administration**

2. Switch to the **Activate license** tab.
   If the start dialog is shown, click on **Advanced Options** and then on **Advanced License Administration**. Then switch to the **Activate License** tab.



3. Select the **Offline activation** option.
4. Enter the serial number of the license that you want to return.
5. Select the dongle on which the license is saved.
6. Create a license request file. To do this, click on the **Create license request file** button.

   A file with the suffix ***.LicReq** is created.
7. Attention: Use the link that is prescribed in the **COPA-DATA License Administration**!
   Instead, open this link in a web browser:
   https://copadata-license.copadata.com/return.php
   (https://copadata-license.copadata.com/return.php)
8. Upload the renamed license request file ***.LicReq** to the website.

   You get a license update file with the file ending ***.LicUpd** as a response.
9. In the **COPA-DATA License Administration**, click on the **Import license update file** button and apply the file generated by the website.

Important: In order for the license to actually be accepted as returned by the license depot, you must create the confirmation file and transfer it to the website.
To do this:

a) Click on the **Create license confirmation file** button.
A file with the suffix ***.LicConf** is created.

10. Open this link in a web browser:
https://copadata-license.copadata.com/continue.php?step=3
(https://copadata-license.copadata.com/continue.php?step=3)
11. Upload the license confirmation file ***.LicConf** to the website:

The process is thus concluded.

18.2.7 Apply/update amended license

All license information is saved in the dongle. If you order an update or an upgrade, the license in the dongle must be updated.
Changes to the license can be required by:

- Product upgrade or amended module extension
- Expiry date or period of usage amended
- New version or change to the service agreement
- Quantity of licenses amended

The following is applicable for updates and upgrades:

- These are always booked to an existing serial number.
You receive a license certificate with the serial number concerned.
- The change to a license is stored and must be transferred to the dongle. If several license updates are stored in the license depot, they are always transferred in one process.
- If you have never activated the license, the update is applied the first time it is activated.
You do not need to carry out any more steps.
- If the license has already been activated, you must apply the update.
There are two possibilities:
  - Update license online (on page 92) - the preferred method
  - Update license offline (on page 94)

Update licenses online

Licenses can be updated manually or automatically. Except for demo licenses and licenses in the network.

AUTOMATIC UPDATE

All licenses are checked for updates in a 7-day cycle by default. The cycle time can be changed in the **Settings [SETTINGS]** of **License.ini**. The automatic update can be deactivated in the **COPA-DATA License Administration** in the **Settings** tab using the **Automatically update all licenses used** option.

Automatic updates are carried out using the license transfer service. No automatic updates are carried out if the Windows service has not been started.

UPDATE LICENSE MANUALLY

There are three ways you can update a license manually

- Update all licenses using the **start dialog** (on page 51).
- Update a license using the **License Overview** (on page 66) tab.
- Update all licenses using the **LicenseManagerAutomation.exe** (on page 98) command line application.

UPDATE VIA THE START DIALOG

1. Start the **COPA-DATA License Administration**.
   The **Show start dialog when starting License Management** option must be activated. The start dialog then opens when the application is started. Otherwise click on the **Show start dialog** button.

   The licensing assistant is shown.
2. Click on **Advanced options**.
3. Click on **Update all licenses**.
4. The process of updating is started.
   If a license cannot be updated or there is no update available, a corresponding message is given.

UPDATE VIA THE LICENSE OVERVIEW TAB

1. Open the **License Overview** (on page 66) tab in the **COPA-DATA License Administration**.
2. Select the license that is to be updated.
   If a license cannot be updated by the user, the **Update license** button is not unlocked.
3. Click on the **Update license** button.

   The license is updated online.
   If there is no update available, a corresponding message is shown.

UPDATE VIA COMMAND LINE

To update licenses automatically via a third-party application, use the **LicenseManagerAutomation.exe** (on page 98) command line program.
Command: **LicenseManagerAutomation.exe -a UpdateAll**

Update licenses offline

To apply offline updates for licenses, use offline activation (on page 74) as with the initial activation. There is no functional difference between activation and update.

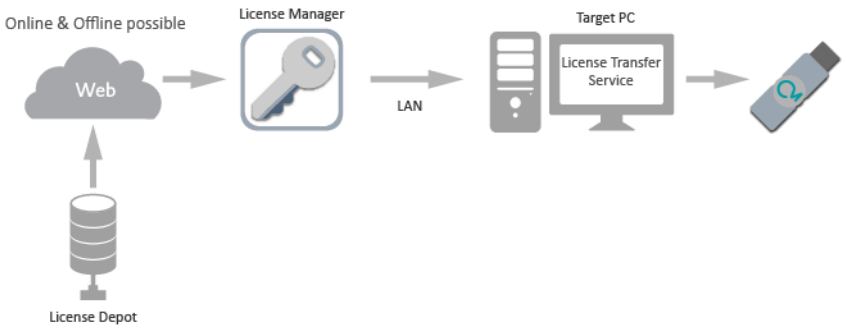
> **Attention**
>
> The update can only be applied to the same dongle on which the original license has been activated. You must therefore ensure that you select the correct dongle.

18.2.8 Remote licensing

With remote licensing, all processes that support license administration are not carried out on the local computer but on another computer in the local network (LAN).

There are two applications for remote licenses:

- The computer to be licensed is not on site directly.
- The computer to be licensed is not directly connected to the Internet. In this case, you can use a second computer as a proxy computer (intermediate computer). In order for you to nevertheless use the benefits of online activation, return and update, the steps do not need to be executed manually.



Remote licensing works both in the **COPA-DATA License Administration** as well as in the command line tool. The **zenLicTransfer** (on page 97) service always works as a counterpoint. This service always accesses the data available locally on the remote computer.

Attention! Remote licensing has nothing to do with the **CodeMeter** network licensing. The **CodeMeter** mechanisms are based on **CodeMeter Runtime** and serve to assign or unlock the license from a product. zenon remote licensing serves to activate, deactivate and administer licenses remotely.

Because both systems must fulfill different tasks and use different transport layers, it is quite possible that a dongle is detected by one of the two system about not the other.

Remote functions offered:

- Activate licenses (online and offline)
- Activate licenses with mass activation
- Assign licenses to products
- Return licenses
- Borrow /lend licenses (from zenon version 8.10/zenon Analyzer version 3.30)

Licensing local or remote

You can activate licenses locally or remotely - on remote computers - and assign products. Licensing is local by default.

Requirements for remote activation:

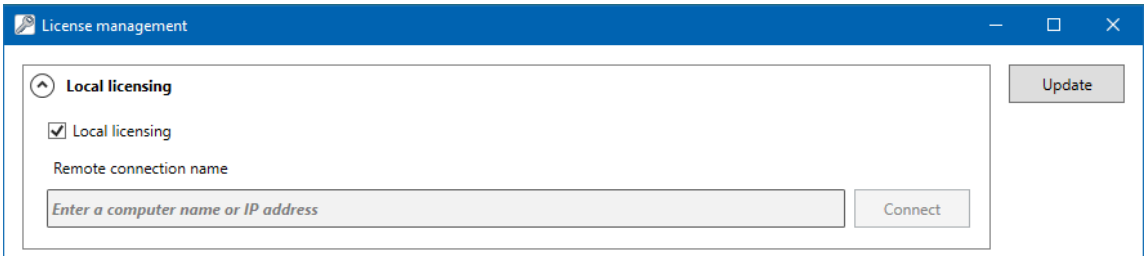
- The remote computer can be contacted in the network.
- The **zenLicTransfer** (on page 97) license service is active and contactable on the remote computer.

REMOTE LICENSING

To switch the licensing to remote:

1. Click, in the header of the **COPA-DATA License Administration**, on the arrow next to **Local Licensing**.

   The area for this option is opened.



2. Deactivate the **Local Licensing** checkbox.

   The area is renamed to **Remote Licensing**.

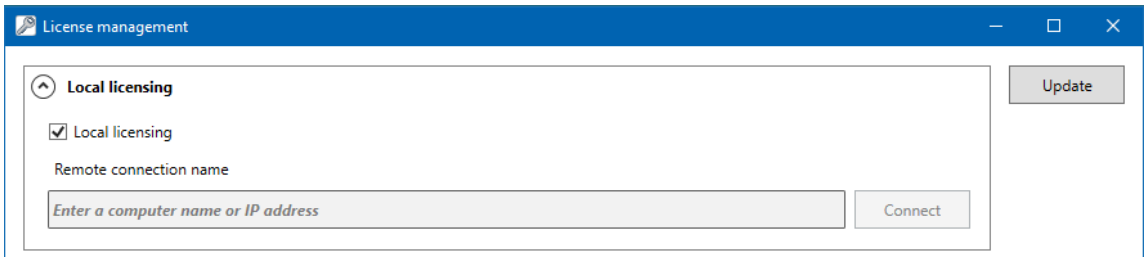
The area to enter a connection name is unlocked.

3. Enter the name or the IP address of the remote computer.
4. Click on **Connect**.

   The connection is created. All further actions in the **COPA-DATA License Administration** are executed on the remote computer.

> **Hint**
>
> *You can also use remote licensing to activate licenses online on computers that do not have an Internet connection. In doing so, the **COPA-DATA License Administration** takes on the function of a proxy (intermediary computers).*

DIALOG SETTINGS



Option	Description
Local licensing/remote licensing [computer] (on page 95)	Selection of whether licensing is carried out locally or on a remote computer. Displays which type of licensing has been selected. With remote licensing, the computer name or the IP address of the remote computer is displayed. License and dongle data is reloaded during switching.
Local licensing	Activates and deactivates local licensing: ▸ `Active`: Licensing is local. ▸ `Inactive`: Licensing is carried out remotely on the computer stipulated for remote connections. Default: `Active`
Remote connection name	Entry of the connection data for the remote computer: Computer name or IP address. IPv4 or IPv6 addresses can be entered. Only available if **Local licensing** is inactive.
Connect	Establishes a connection to the remote computer.

Refresh	Reloads license and doingle data from the local or remote computer.

zenLicTransfer Service

For the transfer of license information to a remote computer, the **COPA-DATA License Administration** uses the **License Transfer Service** service (**zenLicTransfer**). This is automatically started with the operating system. The service opens a TCP server port and accepts connections from the **COPA-DATA License Administration**. Communication is encrypted with AES and limited to a simultaneous connection.

The service communicates via the `50784` port by default. This port can be amended via the **Startup Tool** in the **Listening ports** tab. Changes to the port must be carried out locally and remotely.

This service also carries out automatic updating (on page 92) of licenses.

18.2.9 Filter and sort lists

Lists can be shown filtered and sorted.

FILTER LISTS

Options for filters.

Option	Description
Input field	Entry of the character sequence that is to be filtered for.
aA	Switches between: ▸ `Capitalization is not taken into account` ▸ `Capitalization is taken into account` Default: `Capitalization is not taken into account`
Symbol filter	Clicking on the filter symbol opens a list to select a filter criterion. Default: `Contains`

FILTER CRITERIA

The following are available as criteria for filter expressions:

Criterion	Description
Remove filter	Removes all filter criteria. All lines are displayed again.
Contains	All entries that contain this character sequence are displayed. (Default setting.)
Does not contain	All entries that do not contain this character sequence are displayed.
is empty	All empty cells are displayed.
is not empty	All entries that contain at least one character are displayed. Spaces are also considered characters.

SORT LISTS

To sort a list:

1. Click in the header of the column according to which sorting is to take place.
2. Click again to change the sorting.

   Three sorting processes are gone through in sequence:

   - Ascending: The list is sorted from 0 – 9 and from a – z.
     Display with arrow pointing upwards.
   - Descending: The list is sorted from 9 – 0 and from z – a
     Display by the arrow upwards.
   - Unsorted: The list is displayed in the original status, i.e. as it was created.

19. Licensing via command line - automation

The **LicenseManagerAutomation.exe** command line tool allows licenses to not just be activated by means of a user interface, but also in an automated manner for large amounts. Mass activations are thus also possible in the network.

The following functions are available:

- Activate single license (on page 103)
- Mass activation using a collective file (on page 104)
- Update all licenses of a computer (on page 107)
- Enter license at the first position in License.ini (on page 107)

All functions are available both locally as well as remotely

CALL

- Call: **LicenseManagerAutomation.exe**
- Path: **%ProgramFiles(x86)%\Common Files\COPA-DATA\STARTUP**
- Syntax: **LicenseManagerAutomation.exe [Aktion] [Seriennumer] [Dongle-Typ] [Option]**
- Prefix for arguments:
  - Argument short form: **-** (**-a)**
  - Argument long form: **-- (--action)**
- Arguments:
  - Upper/lower case is ignored.
  - Sequence is as desired.
- Values: Upper-case/lower case is taken into account, if not otherwise stated.
- Example of long form: **LicenseManagerAutomation.exe --action ActivateOnline --SerialNumber C00WU-Z5SVK-UCGC2-00000-01633 --DongleType Hard –WriteInIni**
- Example of long form: **LicenseManagerAutomation.exe -a ActivateOnline -sn C00WU-Z5SVK-UCGC2-00000-01633 -dt Hard –wi**

ERROR MESSAGE

When an argument is entered incorrectly, a corresponding error is issued and a LOG entry is written. In addition, help to enter the arguments is called up.

Color coding of the display:

- `Red`: Error
- `Green`: Success message
- `White`: Help

Return values:

- `0`: Success.
  The license has been successfully activated.
- `-1`: Invalid arguments.
  Incorrect arguments have been given.
- `-2`: Error:
  for example: No connection to the license depot, or target computer cannot be contacted.

ARGUMENTS

Argument for short description / Argument for long form	Values
-a **--action**	Command for the application. Is supplemented with one of these values: ▸ **ActivateOnline**: Carry out online activation. ▸ **ActivateOnlineFile**: Online activation for licenses from one file. Needs **-f** with the file path specified. ▸ **WriteIniTop**: Enters the serial number for each product in the first place in **License.ini**. ▸ **UpdateAll**: Carries out an update for all licenses. Example: **-a ActivateOnline** Note: Entry of the argument without a value shows help for arguments and values.
-sn **--SerialNumber**	Transfer of the serial number. Is required for the **ActivateOnline** and **WriteIniTop** actions.
-dt **--DongleType**	Type of dongle: ▸ `Hard`: Hardware dongle ▸ `SoftStd`: Computer-based **Software-Dongle Standard** ▸ `SoftVM`: Computer-based **Software-Dongle VirtualMachine** ▸ `SoftVMDataCenter`: Computer-based **Software-Dongle VM DataCenter** ▸ `Soft`: The dongle - standard or virtual machine - is selected dynamically. The **Software-Dongle VirtualMachine** is selected on a virtual machine; the **Software-Dongle Standard** is selected on a physical machine. If `DATA_CENTER_LICENSE` is set for the dongle, the **Software-Dongle VM DataCenter** dongle type is selected for a virtual machine. Required for the **ActivateOnline** and **ActivateOnlineFile** actions. Note: Only **-dt** or **-di** can be used.

-di **--DongleIdentification**	ID of the dongle. Each dongle has a unique ID. E.g.: 3-4035811 for a hardware dongle or 130-636662578 for a software dongle. Required for the **ActivateOnline** and **ActivateOnlineFile** actions. Note: Only **-dt** or **-di** can be used.
-wi **--WriteIni**	Optional argument for the **ActivateOnline** and **ActivateOnlineFile** actions. Activated license is written to **License.ini**. Note: This argument must always be stated too.
-r **--Remote**	Optional argument for the **ActivateOnline**, **ActivateOnlineFile** and **WriteIniTop** actions. Host name or IP address of the remote system. If not stated: `Localhost`
-f **--File**	Is needed for the **ActivateOnlineFile** action. File path of **liqSN-** file. The complete path must be entered.

EXAMPLES

Examples of calls:

- Activate license online for the first hardware dongle found:
  - **LicenseManagerAutomation.exe --action ActivateOnline --SerialNumber C00WU-Z5SVK-UCGC2-00000-01633 --DongleType Hard**
  - **LicenseManagerAutomation.exe -a ActivateOnline -sn C00WU-Z5SVK-UCGC2-00000-01633 -dt Hard**
- Activate license for the dongle with the ID 3-4035811:
  - **LicenseManagerAutomation.exe -a ActivateOnline -sn C00WU-Z5SVK-UCGC2-00000-01633 -di 3-4035811**
- Activate license for the dongle with the ID 3-4035811 and write in the first position of **License.ini**:
  - **LicenseManagerAutomation.exe --action ActivateOnline --SerialNumber C00WU-Z5SVK-UCGC2-00000-01633 --DongleIdentification 3-4035811 –-WriteIniIni**
- Write license C00WU-Z5SVK-UCGC2-00000-01633 at the first position of **License.ini**:
  - **LicenseManagerAutomation.exe -a WriteIniTop -sn C00WU-Z5SVK-UCGC2-00000-01633**
- Update all licenses listed in **License.ini**:
  - **LicenseManagerAutomation.exe --action UpdateAll**

- Activate license online for the first hardware dongle found on the remote system 129.0.0.1:
  - **LicenseManagerAutomation.exe -a ActivateOnline -sn C00WU-Z5SVK-UCGC2-00000-01633 -dt Hard -r 129.0.0.1**
- Activate all licenses from a license file for the first dongle found on a remote system that is stated in the file:
  - **LicenseManagerAutomation.exe --action ActivateOnlineFile --File C:\Users\Public\Desktop\SerialNumber.LicSN --DongleType Hard**

You can get further examples after calling **LicenseManagerAutomation.exe** without further values or arguments.

USE OF USER DATA

When licensing via the **COPA-DATA License Administration** by means of dialog or command line, user data is also recorded and saved. This data is to restore lost or damaged licenses. The data is saved locally at COPA-DATA's premises in Austria.

The following is collected:

- Operating system: Type and version.
- Net address: All network addresses available on the computer.
- Full Qualified Host Name
- User name and domain

This data is recorded for the computer on which licensing is executed. If the licensing is executed remotely, this data is also collected for the target computer.

DEACTIVATION

The collection of this data can be deactivated in **COPA-DATA License Administration**. Licenses can continue to be obtained and administered. Support and technical support for licensing is however not possible due to missing data.

If the recording is deactivated, COPA-DATA can no longer offer the following services:

- Automatic application of licenses to remote computers.
- Tracing of the computer on which the license was activated and by whom.
  No support can thus be offered when searching for the license in the event of a loss of a license.
  Lost licenses can also not be replaced as part of customer care.

Data that has been collected up to the point of deactivation remains saved.

19.1 Activate single license

The **ActivateOnline** value activates a license online, either locally or remotely.

The following can be stated as a target dongle:

- Fixed dongle using dongle ID
- Hardware dongle
- Software dongle for:
  - Real existing computer
  - Virtual Machine

> **Attention**
>
> *Always state the `--WriteInIni` or `-wi` argument so that the license is also entered into the first position in the **License.ini** file.*

This functionality has many possibilities for combination. See list with all arguments in the overview (on page 98). The most important examples are stated here. You can find further examples if you call up **LicenseManagerAutomation.exe** without further arguments.

CALL

Local call for hardware dongle:

- Short form: **LicenseManagerAutomation.exe -a ActivateOnline -sn C00WU-Z5SVK-UCGC2-00000-01633 -dt Hard -wi**
- Long form: **LicenseManagerAutomation.exe --action ActivateOnline --SerialNumber C00WU-Z5SVK-UCGC2-00000-01633 --DongleType Hard --WriteInIni**

Remote call for hardware dongle:

- Short form: **LicenseManagerAutomation.exe -a ActivateOnline -sn C00WU-Z5SVK-UCGC2-00000-01633 -dt Hard -r 127.0.0.1 -wi**
- Long form: **LicenseManagerAutomation.exe --action ActivateOnline --SerialNumber C00WU-Z5SVK-UCGC2-00000-01633 --DongleType Hard --Remote 127.0.0.1 --WriteInIni**

Note: Instead of the IPv4 address, you can also state an IPv6 address or the computer name of the target computer.

Local call for software dongle:

- Short form: **LicenseManagerAutomation.exe -a ActivateOnline -sn C00WU-Z5SVK-UCGC2-00000-01633 -dt Soft-wi**
- Long form: **LicenseManagerAutomation.exe --action ActivateOnline --SerialNumber C00WU-Z5SVK-UCGC2-00000-01633 --DongleType Soft--WriteInIni**

Remote call for software dongle:

- Short form: **LicenseManagerAutomation.exe -a ActivateOnline -sn C00WU-Z5SVK-UCGC2-00000-01633 -dt Soft-r 127.0.0.1 -wi**
- Long form: **LicenseManagerAutomation.exe --action ActivateOnline --SerialNumber C00WU-Z5SVK-UCGC2-00000-01633 --DongleType Hard --Remote 127.0.0.1 --WriteIniIni**

Note: Instead of the IPv4 address, you can also state an IPv6 address or the computer name of the target computer.

MESSAGES

Return values:

- `0`: Success.
  The license has been successfully activated.
- `-1`: Invalid arguments.
  Incorrect arguments have been given.
- `-2`: Error:
  for example: No connection to the license depot, or target computer cannot be contacted.

19.2 Mass activation using a collective file

The **ActivateOnlineFile** value activates all licenses that are stated in the collective file online.

The following can be stated as a target dongle:

- fixed dongle using dongle ID
- Hardware dongle
- Software dongle for:
  - Real existing computer
  - Virtual Machine

If you order several licenses from COPA-DATA, you also get a collective file (***.LicSN**) in addition to the license certificate. You can use this file to administer the licenses centrally and to activate them from a central point.

The collective file is a CSV file that can be edited with any desired text editor or a table calculation.

- Column separator: Semicolon (**;**) or tab (**\t**)

Column structure:

Column	Identification	Description
1	**Serial number**	The unique serial number of each license.
2	**Item name**	Contains the article names of the license. Is for information only and has no functional effect.
3	**Target computer**	Indication of the target computer: ▸ If not yet licensed: Computer name onto which the license is to be transferred. The following can be used: IPv4 address, IPv6 address or computer name. ▸ If already licensed: Computer name onto which the license has been transferred.
4	**User name**	Windows user name from which the license has been activated. Only used for information.
5	**Activated**	Display of the status of the activation. ▸ `True`: activated ▸ `False` or `empty`: not activated With `True`, this license is no longer taken into account when processing using the command line.
6	**Error text**	If an error occurred during activation, the error is logged here.

The original file is only filled with the first two columns.

To use a file for the mass activation using the **COPA-DATA License Administration** or the command line:

- ▸ Enter the target computer into column `3` for each license.

  Example:

  - Original line of the collective file: `C005L-XQP49-Z42Q8-00000-02985;zenon SU RT 64 TAGs;`
  - Add this line:`C005L-XQP49-Z42Q8-00000-02985;zenon SU RT 64 TAGs;MyPCtoLicense`

  > **Attention**
  >
  > *Ensure that you have entered a target computer in the 3rd column in each line of the collective file.*

PROCEDURE

Process for licensing:

- ▸ Entries from the file are read in line by line and activated consecutively online.
- ▸ The serial number and the computer name or the IP address are read from the file.

- The target dongle type is taken from the argument of the command line.
- If a license has been activated successfully, the **LicSN** file is updated.
- If an error occurred, the reason for the error is written in the `6` column of the file.
- In the event of problems connecting to the licensing server, the complete process is canceled. With all other errors, an attempt is made to activate the next license.

Message after each serial number:

- `Red`: Error
- `Green`: Success message

> **Attention**
>
> *Always state the `--WriteInIni` or `-wi` argument so that the license is also entered into the first position in the **License.ini** file.*

Note: With this type of activation, the **-r** (**--Remote**) parameter does not need to be stated. The remote computer must be entered into the third column of the collective file.

CALL

Call for hardware dongle:

- Short form: **LicenseManagerAutomation.exe -a ActivateOnlineFile -f C:\Users\Public\Desktop\SerialNumber.LicSN -dt Hard -wi**
- Long form: **LicenseManagerAutomation.exe --action ActivateOnlineFile --File C:\Users\Public\Desktop\SerialNumber.LicSN --DongleType Hard --WriteInIni**

Call for software dongle:

- Short form: **LicenseManagerAutomation.exe -a ActivateOnlineFile -f C:\Users\Public\Desktop\SerialNumber.LicSN -dt Soft-wi**
- Long form: **LicenseManagerAutomation.exe --action ActivateOnlineFile --File C:\Users\Public\Desktop\SerialNumber.LicSN --DongleType Soft--WriteInIni**

MESSAGES

Return values:

- `0`: Success message.
  - `0`: No license has been activated.
  - `1-n`: `n` Licenses have been successfully activated.
- `-1`: Invalid arguments.
  Incorrect arguments have been given.

- -2: Error:
  for example: No connection to the license depot, or target computer cannot be contacted.

19.3 Update all licenses of a computer

The **UpdateAll** value updates all local licenses that are entered in the **License.ini** file. Network licenses and demo licenses are not taken into account.

This function cannot be executed remotely.

CALL

Short form:

LicenseManagerAutomation.exe -a UpdateAll

Long form:

LicenseManagerAutomation.exe --action UpdateAll

MESSAGES

Return values:

- 0: Success. No license has been updated.
- 1-n: success: n licenses updated.
- -1: Error:
  for example: No connection to the license depot, or target computer cannot be contacted.

19.4 Enter license at the first position in License.ini

The **WriteIniTop** argument carries the given serial number for all products that are included with the license, at the first position in the **License.ini** file at the first position for the respective product.

Example: The **Editor**, **Runtime** and **Process Gateway** products are included with the license. The licenses are entered at the first position for all three products with the command.

CALL

Example for call:

- Short form: **LicenseManagerAutomation.exe -a WriteIniTop -sn C00WU-Z5SVK-UCGC2-00000-01633**
- Long form: **LicenseManagerAutomation.exe --action WriteIniTop --SerialNumber C00WU-Z5SVK-UCGC2-00000-01633**

PROCEDURE

The following is applicable for licensing via the command line:

- The serial number is validated in the first step.
- The license is then searched for locally and in the network.
  Note: If a demo license number is entered, only a local search is carried out.

Only if the license is found is it entered into the **License.ini** file.

MESSAGES

Return values:

- `0`: Success.
  License has been successfully entered.
- `-1`: Invalid arguments.
  Incorrect arguments have been given.
- `-2`: Error:
  for example: No connection to the license depot, or target computer cannot be contacted.

20. LicenseTypes

There are licenses for different uses and pre-configured bundles available for COPA-DATA products. Each product is also supplied with a demo license. You can find details on products, editions and bundles in the COPA-DATA price list valid for your version.

Licenses can be used with a:

- `Hardware dongle`: Freely transferable license on a hardware USB dongle.
- `Software dongle Standard`: Computer-based license on a software dongle.
  This is a file in the computer.
- `Software dongle Virtual Machine`: Computer-based license for use in virtual machines.
  This is a file in a virtual machine.

Licenses can be:

- Available locally or in the network.

- Given a fixed date of expiry.
- Configured for a certain period of usage.
- Configured for a certain time quota.
- Returned and thus transferred to a different system.

Attention: Licenses with a specific period of usage cannot be returned.

20.1 Bundles and number of licenses/network licenses

COPA-DATA licensing takes bundles, license quantities and network licenses into account.

BUNDLE

A bundle refers to a license that is summarized in several products. For example, an editor and a runtime are included in the **development environment** bundle. In the price list, a bundle is listed as an item with a specific item number.

Each product is administered individually by the licensing. The license version (modules, number of TAGs etc.) is the same for all products in a bundle. This information is saved for the bundle and not for the product.
Example: If the bundle has over 2000 TAGs, 2000 TAGs can be used both in the Editor as well as in Runtime.

The products of a bundle do not need to be used on the same computer. They can also be divided. For example, if the editor runs on Computer A, runtime runs on Computer B.

NUMBER OF LICENSES / NETWORK LICENSES

A number of licenses is also stated for each license.
Default: 1

With a number of licenses greater than 1, the products can be used more than once accordingly.

The number of licenses is a setting for the bundle. If the bundle has 3 licenses, then 3 Editors and 3 Runtimes can be started. Because only one editor and/or one runtime can run, the **CodeMeter** runtime must be set up as a network server (on page 151) with a number of licenses greater than **1** .

HTML WEB ENGINE

With the HTML web engine, the number of instances is licensed, such as 5 instances for example. If such a license is in a bundle with a number of licenses greater than 1, then the instances multiply accordingly.
Example: 3 licenses, each with 5 instances results in 15 HTML web engine instances that can be started.

20.2 End of validity and usage period

END OF VALIDITY

For licenses, a fixed end of validity (=date of expiry) can be saved as a date + time.

The end of validity is programmed into the dongle and can only be validated by means of a license update. The end of validity is a property of the bundle and thus influences all of the products in the bundle.

TIME PERIOD FOR USE

A usage time period can be saved for licenses.

The usage time period defines how long the licenses can be used from the first time it is started, for example 30 days from the first time it is started. The usage period is a property of the bundle and thus influences all of the products in the bundle. The first product that is started starts the duration of the time period. This date is saved in the dongle and can only be validated by means of a license update.

Exception: The usage time period for demo licenses is saved for each product. Each product thus has its own usage time period.

20.3 Time quota

If a time quota has been issued for a license, the duration is calculated in minutes. The remaining time is saved in the dongle in a forgery-proof manner.

For this, the following applies:

- Each minute started is deducted from the time quota.
- The usage time also continues after a dongle is removed and is updated later.
- Reconnect (on page 131): If, during an automatic switch between licenses, a valid license without time quota is used as a substitute license, the counting of the time is paused until a dongle with a time quota is active again.

20.4 Demo mode and demo licenses

Each installation contains:

- Demo licenses: Allows you to test a product for a certain time period.

- Demo mode: Allows you to start a product and to use it for up to 10 minutes. It is closed again afterwards.

Each installation contains at least one demo license. This has a pre-defined duration or number of permitted starts. If these are used up, the product can continue to be used in demo mode, but it is ended after running for 10 minutes however. You can find out the usage period that is available in the **COPA-DATA License Administration** in the **License usage** tab in the details of the license.

COPA-DATA products are:

- zenon Editor with zenon Logic Workbench as module
- zenon Runtime
- zenon Web Server and Web Client
- HTML Web Engine
- Process Gateway and OPC DA Server
- zenon Logic Workbench and Runtime

Demo licenses have their own software dongles. These cannot be used for other licenses. The last existing demo license cannot be deleted using the **COPA-DATA License Administration**.

The remaining duration and the number of the starts that are still possible for demo licenses and demo mode are shown in the start screen and in the version and license information.

MISSING DEMO LICENSE

If no demo license is available on your computer, then:

1. Open the **COPA-DATA License Administration**.
2. Open the **License usage** tab.
3. Select the desired demo license.
4. Select the desired product.
5. Click on the button at the far right of the list.
   The button turns green in color and the license is now being used.

Note: If there is also no demo license available in **COPA-DATA License Administration**, contact your COPA-DATA sales partner.

> **Hint**
>
> *You can use demo licenses to test products and editions. To do this, place the demo license at the first location of the license list in the **COPA-DATA License Administration**. This license is used the next time the product is started.*

20.5 Education & Training

Licenses for education & training mode are issued especially for training purposes.

They allow a maximum of 90 minutes duration; the program is then ended automatically. There is 90 minutes of running time available again after a restart.

21. Version checking and service period / service agreement

From version 8.00, the product version is saved in the license. The product is only started if the product version of the license and the product version of the product match each other. Otherwise a corresponding error message is shown.

If there is a valid service agreement (SLA/SUS/CDDN), the a service period is saved in the license. All versions that have been unlocked during this service period are covered by the license.

The check is carried out for all products in this sequence:

1. Service period present and valid for the product.
    - Yes: Product starts.
    - No: Next step for checking.
2. Product version in license correspond to the product version.
    - Yes: Product starts.
    - No: The license is invalid. Product does not start.

Example:

The license has a service period of 1/1/2018 - 31/12/2020. All versions that have been unlocked by COPA-DATA within this time period run with this license. All other versions (earlier or later) cannot be started.

22. Product-specific themes

This chapter contains details about COPA-DATA products:

22.1 Variables: Selecting the appropriate license size

Licenses for zenon Editor and Runtime are always issued for a certain number of TAGs (variables). A TAG corresponds to an external variable, regardless of data type. Internal variables are not counted as a TAG. TAGs are only used for licensing. For determining the license size, the total sum of TAGs from the following drivers are used: All PLCs and bus drivers.
The following are not counted: Internal process variables (**internal driver** for internal use without time stamp) as well as process variables from the **system driver**, **math driver** and **simulator driver**.

For determining the license size, consider the total number of TAGs (= variables) of the following drivers:

- PLC drivers and bus drivers.
- **Internal driver** with complete support for all time stamps (internal and external) and complete status display.
  You can find further information in relation to this in the driver documentation for the **internal driver** in the **Licensing and display in Runtime** chapter.

Variables of the following drivers do not count:

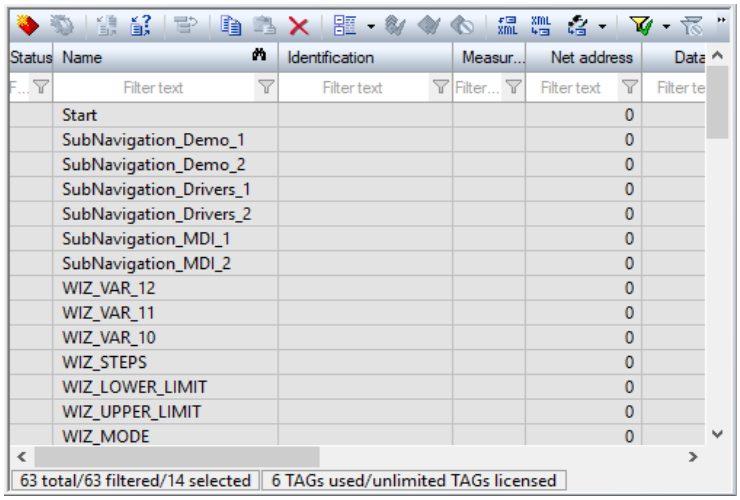
- Internal drivers without support for the internal time stamp and limited display of the status bits.
  You can find further information in relation to this in the driver documentation for the **internal driver** in the **Licensing and display in Runtime** chapter.
- **System driver**
- **Mathematics driver**
- **Simulation driver**
- **Alternative Data Point driver**

You can license TAGs for the Editor and the Runtime in the following gradation:

- 64 TAGs
- 128 TAGs
- 256 TAGs
- 512 TAGs
- 1,024 TAGs
- 2,048 TAGs
- 4,096 TAGs
- 8,192 TAGs
- 16,384 TAGs
- 65536 TAGs
- unlimited

DISPLAY IN ZENON

In the status line of the detail view of the variables the following information can be found:



How many variables:

- are present in the project
- are shown in filtered form
- are selected
- are used in the project
- are licensed

22.2 Client License

You can use client licenses if:

- The start project is a standalone project or a client project
- The start project uses a maximum of 64 TAGs when a license is required, if it is not a client project
- All sub-project client projects are

22.3 Licensing drivers

Drivers must be licensed for use in Runtime. Different models are available for this: The license models can be mixed. In this case, the licensing is supplemented. If no driver has been licensed, only the licensed drivers can be used in Runtime. All drivers can always be used in the Editor.

Note: Drivers do not need a license for use in the Runtime simulation (Process Recorder module).

LICENSE MODELS:

The following license models are available for drivers:

License model	Description	Example
Individual licensing	Certain drivers have dedicated licenses. Only these drivers that require a license are available in Runtime.	The IEC850 driver is licensed. Only the IEC850 driver can be used in Runtime, as well as all license-free drivers, such as internal drivers.
Individual group licensing	Drivers are licensed by means of price groups. The following are available: ▸ Price group **A** ▸ Price group **B** ▸ Price group **C** ▸ Price group **R** Each group contains certain drivers. You can see the drivers that are contained from the price list valid for your product version. The licensed number of drivers from each group can be used. Several groups can be licensed at the same time.	3 drivers from the **A** group and 2 drivers from the **R** group are licensed. 5 drivers from these two groups can be used in Runtime. This is also applicable in addition to drivers that have been licensed individually.
Group licensing ABC	A certain number of drivers in the groups **A**, **B** or **C** can be licensed. In doing so, drivers in group R are not included	3 drivers from the groups **ABC** are licensed. 3 drivers can thus be used in Runtime, regardless of which group (except R). This is also applicable in addition to drivers that have been licensed individually.
Volume licensing	A certain number of any desired drivers are licensed. Any desired driver can be used in Runtime, as long as the overall number is not exceeded. Excepted from this are the drivers for **SICAM 230**.	5 drivers are licensed in general. 5 desired drivers can be used in Runtime. This is also applicable in addition to drivers that have been licensed individually or through a group.
Free drivers	Some drivers are license free. These can be used at any time. They are also not deducted from the licensed quantity with volume licenses.	No drivers have been licensed. The internal driver can be used in Runtime however.
Customer-specific driver	If the customer develops their own driver on the basis of the driver kit, it does not need to be licensed.	
SICAM 230 driver. (Price group K)	Do not fall under the zenon driver license models and must be licensed individually. These drivers are not	

	licensed via volume licensing.	

Example

*5 drivers in general are licensed, 3 drivers of the **R** group and the IEC850 driver. First the IEC850 driver is checked, then the **R** price group, then volume licensing.*
Result: 9 drivers can be used in Runtime:

- IEC850 driver.
  Even if it is part of the **R** group.
- 3 drivers from the **R** group.
  In addition to the IEC850 driver
- 5 further drivers.
  In addition to the 3 drivers of the **R** group and for the IEC850 driver

CHECKING IN RUNTIME

In Runtime, all projects including subprojects are checked for licensing of the drivers used. If a driver is not licensed, an error message is issued and an entry is written to the LOG file. The Runtime is closed. A driver is not licensed if none of the models available has a valid license

Procedure for checking:

1. First a check is carried out to see if it is a license-free driver.
   It is accepted if that is the case. It is no longer taken into account for individual licensing, group licensing or volume licensing.
2. The individual licensing is checked if it is not a license-free driver.
   The driver is accepted if it is included here. It is no longer taken into account for group licensing or volume licensing.
3. If the driver is not included in the individual licensing, the group licensing is checked.
   The driver is accepted if it is included here. It is no longer taken into account for volume licensing.
4. If the driver is not included in group licensing, the volume licensing is checked.
   If there is still a license available for a driver, it is accepted.
5. It is not evaluated as licensed if the driver is not contained in any model.

Note: SICAM 230 drivers must always be licensed individually. They are checked separately and no longer covered by the other zenon license models.

You can however check which drivers are licensed:

- In the **COPA-DATA License Administration**
- In the Editor in the License information (on page 120).
- In Runtime using the **Show license information** function

BEHAVIOR WITH SUBLICENSING

If it is established in Runtime that non-licensed drivers are being used, a corresponding error message is output. The message states that at least 1 driver has not been licensed. Runtime is ended afterwards.

This is how you amend the licensing:

1. Open the **COPA-DATA License Administration**.
2. Check in the License Use (on page 59) tab:
   - Which license is currently being used for Runtime.
   - How many and which drivers have been licensed.
3. Check which drivers are used in the project configuration.
4. License the missing drivers.
5. Restart Runtime.
6. The driver licenses are checked and Runtime starts with successful checking.

22.4 zenon Analyzer licensing

The components of zenon Analyzer must have a valid license. The servers and clients must be licensed for the same version.

The license data is entered via the **COPA-DATA License Administration**. This dialog (on page 49) is also used for other COPA-DATA products.

Note: Ensure that you have sufficient licensing to provide all users with a fixed license and possibly provide additional users with licenses.

LIMITATIONS

There are the following restrictions without a valid license:

- No external access via the default access site is possible.
- There is no connector functionality
- Report templates and reports cannot be used.
- ZAMS, Data Editors and the Prediction Model Manager can be started without a license, but do not allow connection to the Analyzer Server.
  Without connection it is only possible:
  - To configure the application
  - Opening the version information
  - Opening the help

- Opening the **COPA-DATA License Administration** (ZAMS only)
  Note: If a license is lost during ongoing operation, all reports that are open in ZAMS are closed. You are able to save them before they are closed.

LICENSING IN WORKGROUPS

For licensing for computers that are not in domains, but in Windows workgroups, note the procedure in the Licensing in workgroups (on page 119) chapter.

22.4.1 Licensing in workgroups

Licensing for zenon Analyzer in Windows workgroups is different from the licensing for domains.

REQUIREMENTS

For licensing within workgroups, the zenon Analyzer License Service must work in Workgroup mode. To do this, the following requirements must be fulfilled:

- The computer that acts as the Analyzer Server must be a member of the workgroup.
- All users of the workgroup must also be present on the Analyzer Server.
- The license service on the Analyzer Server must run in the user context of a user of the workgroup. Other computers in the workgroup are thus recognized as members of the group.

CHANGING LICENSE SERVICE USER CONTEXT

This is how you change the user context for the license service:

1. Open the administration of the local services.
2. Go to the **zrsLicSrv** service.
3. Stop the service.
4. Click on **Properties** in the context menu of the service.

   The dialog with the properties of the service is opened.
5. Open the **Log in** tab.
6. Activate the **This account** radio button.
7. Enter the user name, password and password confirmation for the desired user.
8. Close the dialog by clicking on **OK**.
9. Start the service.

23. Display version and license information

You can see the version and license that you are currently using and which modules are included in this in the license information for the respective product.

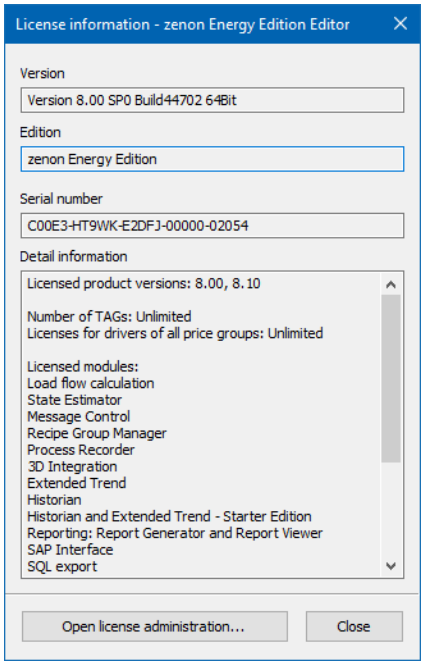
23.1 zenon Editor:

To display license information in the Editor:

1. Open the menu **Help**.
2. Click on **About...** .

   The license information dialog is opened.

LICENSE INFORMATION DIALOG



Option	Description
Version	Editor version number.
Edition	Edition used.
Serial number	License serial number.
Expiration time (optional)	Shows, with a time-limited license, information about the expiry date.
Detail information	Information on licensed: ▸ Version ▸ Variables ▸ Modules and their their expansion
Open License Administration	Opens the **COPA-DATA License Administration**. Licenses can be activated, returned and managed with this tool. The serial number is needed for this.
Close	Closes the dialog.

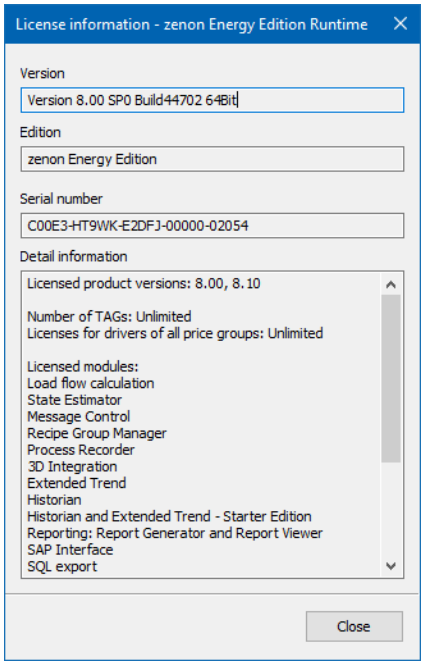
23.2 zenon Runtime

To display license information in Runtime:

1. Configure the function **Show license information**.
2. Execute this in Runtime.

   The license information dialog is opened.

LICENSE INFORMATION DIALOG



Option	Description
Version	Version number of Runtime.
Edition	Edition used.
Serial number	License serial number.
Expiration time (optional)	Shows, with a time-limited license information using the expiry date.
Detail information	Information on licensed: ▸ Version ▸ Variables ▸ Modules and their their expansion
Close	Closes the dialog.

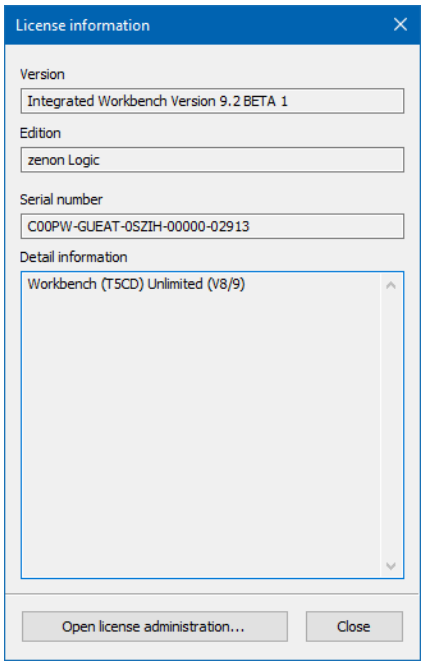
23.3 zenon Logic Workbench

To display license information in zenon Logic Workbench:

1. Open the menu **Help**.
2. Click on **About...** .

The license information dialog is opened.

LICENSE INFORMATION DIALOG



Parameters/buttons	Description
Version	Version number of the integrated workbench.
Edition	Edition used.
Serial number	License serial number.
Detail information	Shows details on the license.
Open license administration	Opens the **COPA-DATA License Administration**. Licenses can be activated, returned and managed with this tool. The serial number is needed for this.
Close	Closes the dialog.

23.4 zenon Logic Runtime

To view the license information:

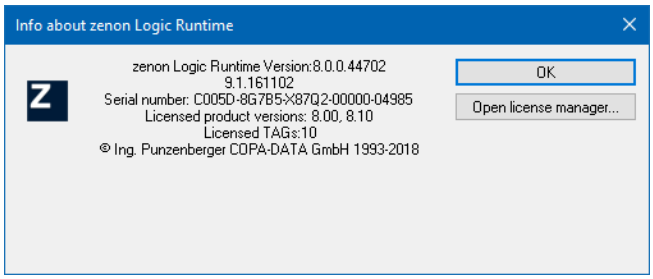
1. With Runtime running, double-click on the symbol for zenon Logic in the system tray.

   The dialog with the status information is opened.

2. In the top left corner, click on the zenon Logic logo.
3. In the drop-down list, select **About zenon Logic Runtime...**.

   The dialog with the license information is opened.

LICENSE INFORMATION DIALOG



Option	Description
License information	Shows information about the license currently being used.
OK	Closes the dialog.
Open License Administration	Opens the **COPA-DATA License Administration**. Licenses can be activated, returned and managed with this tool. The serial number is needed for this.

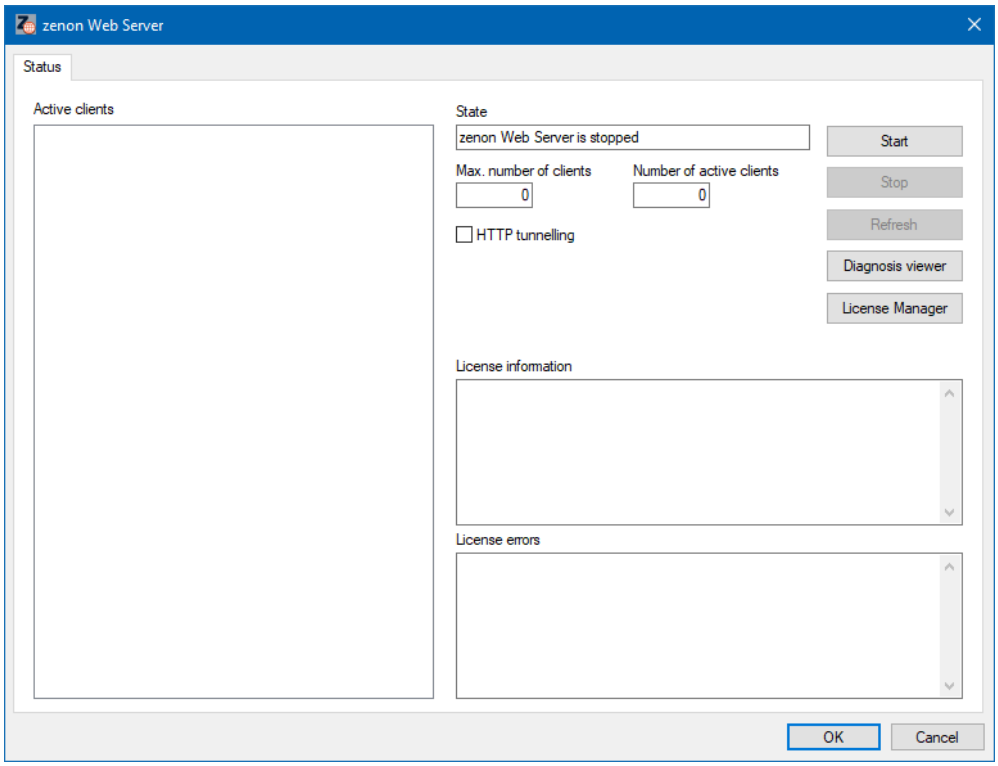
23.5 zenon Web Server

To view license information:

1. Open the **Control Panel** or the **Start Menu**.
2. Click on **zenon Web Server.**

   The dialog for configuration and licensing is opened.

ZENON WEB SERVER DIALOG



Option	Description
Active Clients	List of the currently-connected zenon web clients.
State:	Displays version and status of the Web Server: Possible versions: ▸ zenon Web Server ▸ zenon Web Server Pro ▸ zenon Web Server Pro Light Possible status messages: ▸ `running`: Web Server is running with valid license ▸ `stopped`: Web Server stopped: ▸ Demo mode: Web Server is running in demo mode without license ▸ `not installed`: Web Server not registered as service or installation error
Max. number of clients:	Maximum number of clients that are permitted to connect to the Web Server. The number is defined by the license. Two clients are licensed for 30 minutes in demo mode. Default: `0`
Number of active clients:	Displays the number of clients currently connected.
HTTP tunnelling	`Active`: HTTP tunneling is activated. Not available in the Web Server Pro Light version. **Note:** Can only be changed if the Web Server has the status `stopped`. Cannot be switched during operation. Default: `Inactive`
Start	Starts the Web Server

Stop	Stops the Web Server
Refresh	Refreshes the display.
Diagnosis Viewer	Opens the Diagnosis Viewer to evaluate error messages.
License Manager	Opens the **COPA-DATA License Administration**. Licenses can be activated, returned and managed with this tool. The serial number is needed for this.
License information	Shows information about the license currently being used. ▸ If used: demo license / education & training license ▸ Licensed product versions ▸ Serial number ▸ Expiry time / duration of use
License errors	Shows information about errors for the licenses found.
OK	Applies settings and closes the dialog.
Cancel	Discards all changes and closes the dialog.

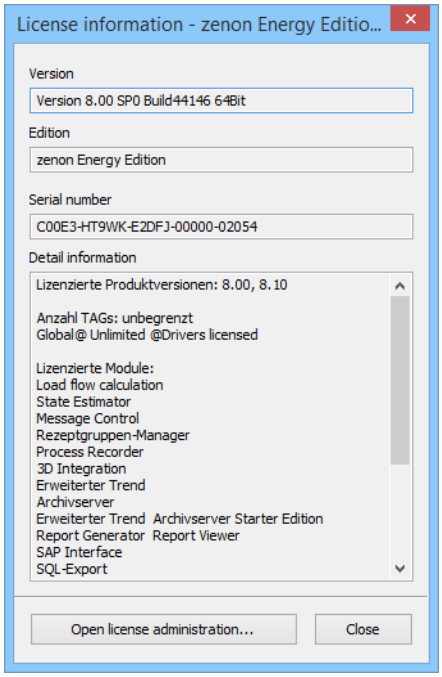
23.6 HTML Web Engine

To display license information in the HTML web engine:

1. Open the menu **Help**.
2. Click on **About...** .

   The license information dialog is opened.

LICENSE INFORMATION DIALOG



Option	Description
Version	Editor version number.
Edition	Edition used.
Serial number	License serial number.
Detail information	Information on licensed: ▸ Version ▸ Variables ▸ Modules and their their expansion
Open license manager	Opens the **COPA-DATA License Administration**. Licenses can be activated, returned and managed with this tool. The serial number is needed for this.
Close	Closes the dialog.

23.7 Process Gateway

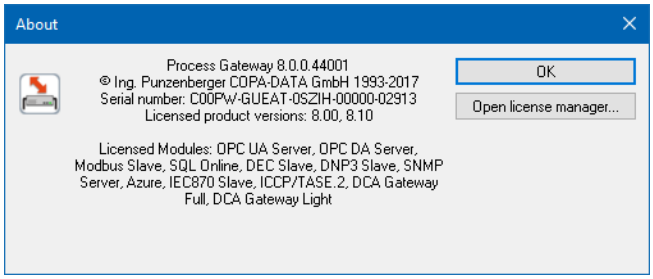
To view license information in the **Process Gateway**:

1. Open the **Process Gateway**.

2. Click the **About** button .

   The **About** dialog is opened.

DIALOG ABOUT



Option	Description
License information	Information on licensed modules including serial number.
OK	Closes the dialog.
Open license manager	Opens the **COPA-DATA License Administration**. Licenses can be activated, returned and managed with this tool. The serial number is needed for this.

If the **Process Gateway** is opened without an existing module configuration, a model must be selected first. After selecting a module, the corresponding start dialog for the **Process Gateway** is opened. In doing so, the **Settings** button is inactive until the **Process Gateway** is licensed.

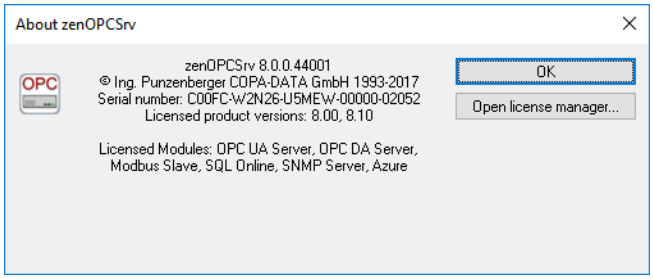
23.8 OPC DA Server

To display license information in the Process Gateway:

1. Open the OPC DA server.
2. Click **About**.

   The **About** dialog is opened.

DIALOG ABOUT



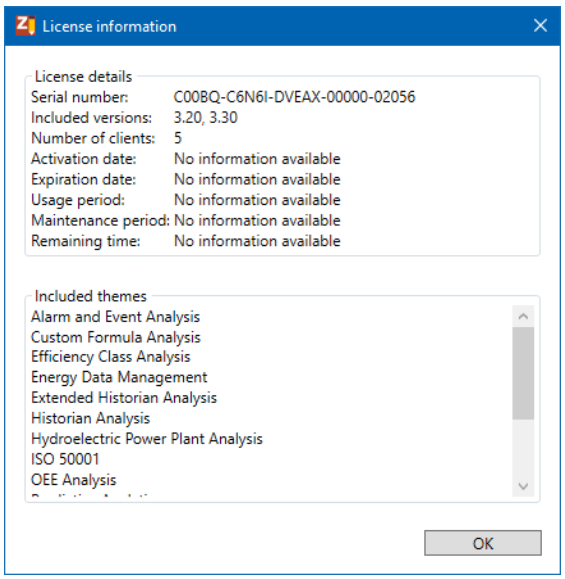
Option	Description
License information	Information on licensed modules including serial number.
OK	Closes the dialog.
Open license manager	Opens the **COPA-DATA License Administration**. Licenses can be activated, returned and managed with this tool. The serial number is needed for this.

23.9 zenon Analyzer

To display the license used by the Analyzer server:

1. Select, in the **Analyzer server** ribbon, the **Show license** command

   The dialog with the license information is opened.



Option	Description
Licensing details	Shows the details of the actual license. Above all: ▸ Serial number ▸ licensed versions ▸ Licensed clients ▸ Validity and expiration data
Included themes	Display of the report themes, included in this license.
OK	Closes the window.

For details on licensing, see also the **Licensing** (on page 118) chapter.

24. Redundant license protection

In some equipment, constant availability is essential. It must be ensured that the license protection can always be achieved. For such applications, a license search list can be created (on page 59) in the **COPA-DATA License Administration**.

This search list is taken into account both when starting as well as during ongoing operation. All products always attempt to assign the next license in the list. Demo licenses are not taken into account at the time. If a license expires during ongoing operation, the next license is automatically used as a substitute license, if it complies with the rules.

RULES FOR THE RECONNECT

- The sequence of the query corresponds to the sequence in **License.ini**. This is established via the **COPA-DATA License Administration** in the **License Use** (on page 59) tab.
- A maximum of 10 licenses are queried.
- In runtime, demo licenses are not taken into account as substitute licenses. They are skipped.
- A substitute license must be valid for the product version used and must be at least the same license version as the original license. It can also have a higher license version, for example more TAGs, more modules, etc. However, it is always only the versions available in the original license that are provided.
- The edition must be the same in both licenses.
- Examples:

- Example 1: The license used the first time Runtime is started is an operator license. The substitute license is a supervisor license. The substitute license cannot be used because the edition is not the same.
- Example 2: The license used when Runtime is started for the first time has 2000 TAGs, the Historian, Extended Trend modules and two drivers licensed. The substitute license has 4000 TAGs, in addition the Message Control module and three drivers are licensed. The substitute license is used. The increased TAG number, the new modules and drivers cannot be used however.

BEHAVIOR ON RESTARTING

On restarting, the license search list in `License.ini` is also taken into account.
The difference to the reconnect:

- No comparison with the first license is made
- The complete version of the license is taken into account
- Demo licenses are taken into account.
  Attention: This may result in unwanted behavior.
  If you have, for example, entered a demo license as a second license, the behavior is different when restarting and reconnecting:
  - With a reconnect, the demo license is skipped and the third license is used.
  - The demo license is started when restarting.

25. Defective hard drive - replace hard drive - reinstall operating system

This chapter describes the procedure if a software dongle is used and the hard drive is replaced or the operating system is reinstalled.
Note: With hardware dongles, the license must be transferred again when the operating system is reinstalled. For details, see the Apply license from the hardware dongle (on page 54) chapter.

SOFTWARE DONGLE: PLANNED HARD DRIVE REPLACEMENT - REINSTALL OPERATING SYSTEM

If you want to replace the hard drive with the operating system (generally the **C** drive) or reinstall the operating system:

1. Return the license punctually.
2. Replace the hard drive and/or reinstall the operating system.

3. Activate the licenses again.

You can find details in chapter **Transfer/relocate license** (on page 88).

SOFTWARE DONGLE: UNPLANNED HARD DRIVE REPLACEMENT

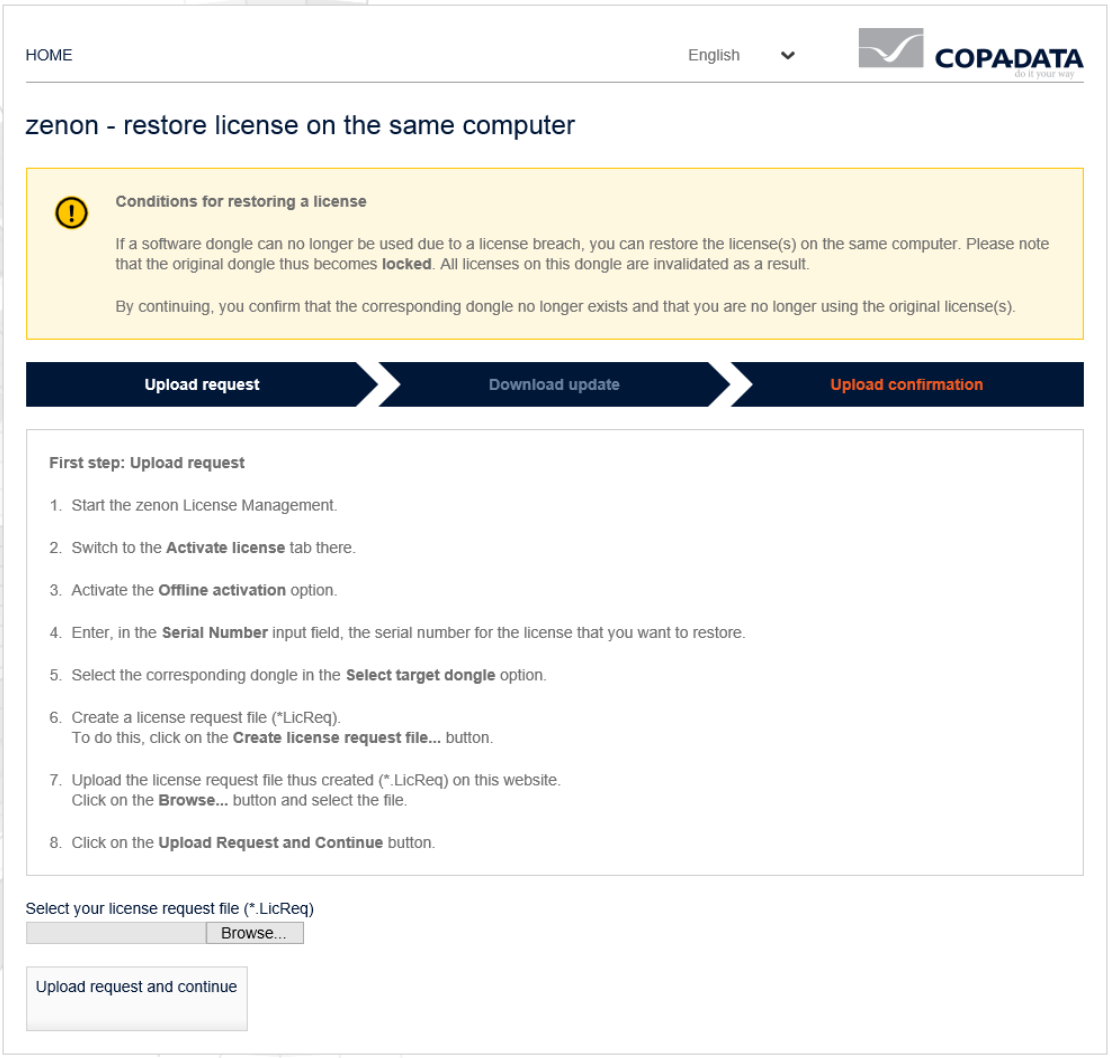
If the hard drive designated as the **C** drive is defective, the license can no longer be returned to the license depot. The license is thus lost. This is also applicable if the operating system has been reinstalled without the license having been returned beforehand. In general, the same serial number can be used again for reactivation.

> **Attention**
>
> *No components other than the hard drive can be replaced. A replacement license must be issued if other components are changed.*

To restore a license when a hard drive is replaced:

1. Set up the computer again and reinstall zenon.
2. Start the **COPA-DATA License Administration**.
3. Switch to the **Activate license** tab in the advanced view.
4. Select the option **Offline activation**.
5. Enter the serial number that was used for the last activation.
6. Click on the **Create license request file** button.
7. Open the web browser.
8. Do not under any circumstances open the web address that is shown in the dialog! Instead, you must open this web address: **https://copadata-license.copadata.com/restore.php**

(**https://copadata-license.copadata.com/restore.php**)



Attention: There is an error message if the host computer is not recognized as identical to the original activation computer. A substitute license (on page 135) must be requested in this case.

9. Upload the license request file **<SN>.LicRec** .
10. Download the update file **<SN>.LicUpd**.
11. Transfer the update file to the **COPA-DATA License Administration**.
12. Upload the **<SN>.LicConf** confirmation file.

Your license is ready to use again.

26. License invalidation with software dongles

Licenses for software dongles are computer-based. They can only be used on the originally-licensed computers. They are invalid if they are used on other computers.

Whether a license can continue to be used when a computer is physically rebuilt depends on which components and how many components are changed. A change of the computer name or a replacement of a hard drive (except drive **C**) generally does not constitute a problem.

Information

Licenses can be returned and reactivated. It is thus possible to transfer a license to another computer or to another virtual machine without invalidating the license.

TYPES OF SOFTWARE DONGLES

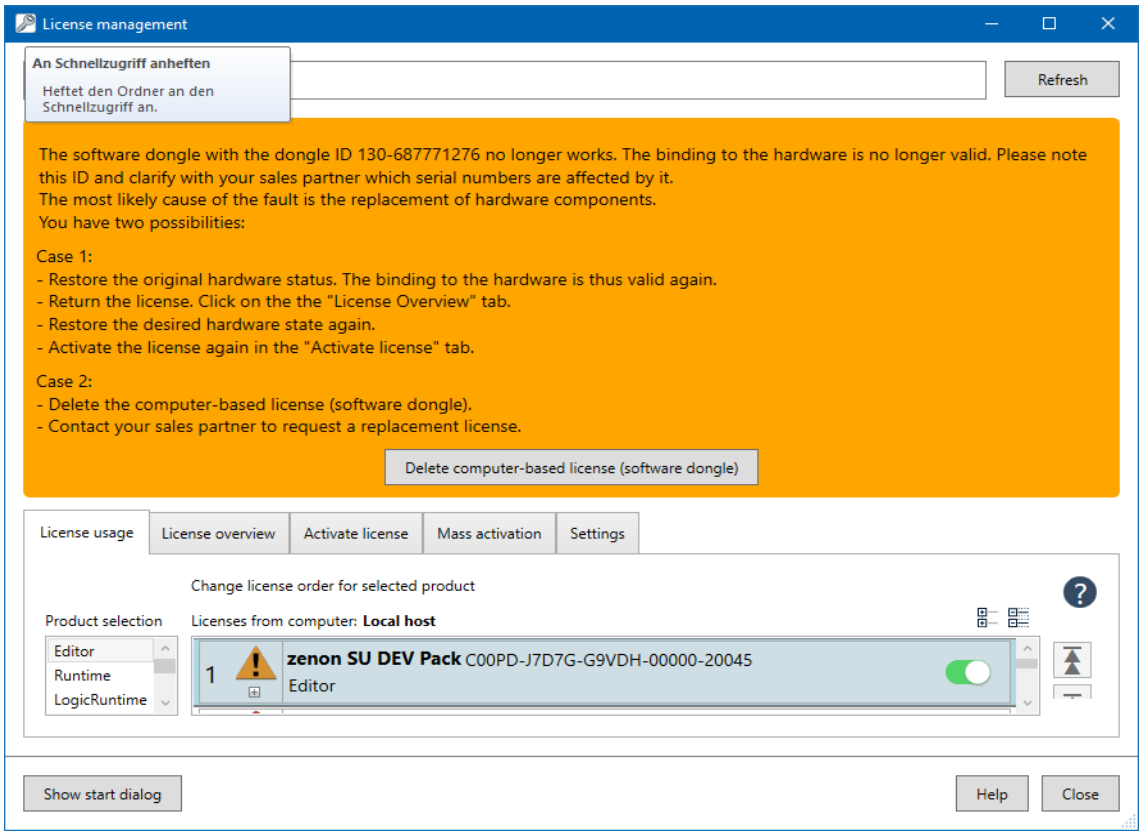
Software dongles are available in the following types. They are different in the way that they are used and in triggers for license invalidation.

Dongle type	Functionality	License invalidation
Software-Dongle Standard: (computer-based license)	▸ License is only valid on the computer on which is was activated. ▸ License can only be used on a physical computer, but not in a virtual machine.	The license is invalidated as a result of the following events: ▸ The hardware of the computer is changed. ▸ The operating system is reinstalled. For details in relation to this, read the **Defective hard drive - replace hard drive - reinstall operating system** (on page 132) chapter.
Software-Dongle VirtualMachine: (computer-based license for virtual machine)	▸ License is only valid on the host computer on which the virtual machine was activated. ▸ License can be used in a virtual machine and on a physical computer.	The license is invalidated as a result of the following events: ▸ The virtual machine is transferred to another host computer. ▸ The hardware of the host computer is changed.

Software-Dongle VM DataCenter: (license for virtual machine in data center)	▸ License can be used in a virtual machine in a public data center such as Microsoft Azure or Amazon Web Services (AWS), as well as in private data centers. ▸ The virtual machine can be moved to different host systems within the data center.	The license is invalidated as a result of the following events: ▸ The virtual machine is copied.

LICENSE INVALIDATION

If a license becomes invalid, a corresponding message is shown in the **COPA-DATA License Administration**. Depending on the cause of the license invalidation, the license can either be restored or must be replaced with a new license.



Attention: Always note the serial numbers in question if a license is invalidated! If the serial numbers can no longer be established, the **Dongle-ID** must be given. You must therefore always note the **Dongle-ID** shown in the error message. Only then can the license issuer find out which dongles have been activated on the dongle. No other information can be read from invalidated software dongles.

RESTORING AND SUBSTITUTE LICENSES

If a software dongle becomes invalid, the licenses contained on it can be restored or re-requested under certain conditions.

- Restoring of the original status.
  The software dongle becomes valid again as a result. The license can then be transferred with the regular procedure (on page 88).
- Restoring is no longer possible. Requesting a replacement license.

RESTORE LICENSE

A license can be restored if the physical status of the host can be reset back to the initial status.

1. Restore the computer's original hardware status. For example, by transferring the virtual machine back to the original host system.
   The time of the zenon installation is decisive for this. The software dongle is bound to the hardware during installation.
2. The license is valid again.
3. Return the license.
4. Transfer the virtual machine or change the computer's hardware.
5. Activate the license again.

REQUEST SUBSTITUTE LICENSE:

A substitute license can be issued in the following cases:

- A license has been invalidated and cannot be restored.
- A license had been irretrievably lost due to a defective hard drive. Also see chapter: Defective hard drive - replace hard drive - reinstall operating system (on page 132)

The previous dongle is locked when the substitute license is issued. It can no longer be used. All licenses that were saved on the dongle thus become invalid. The lost serial numbers are required for the creation of substitute licenses. If these cannot be established, they can be found out via the **Dongle-ID**.

1. Delete the invalidated license
2. Contact your sales partner.
3. Request a new license.
4. Activate the new license.

> **Attention**
>
> *Virtual machine in data center:*
>
> *In a public data center such as Microsoft Azure or Amazon Web Services (AWS), as well as in private data centers, automated switching of the host system can trigger license invalidation on a virtual machine. In this case, request a license that is suitable for data centers from the license issuer.*

27. Switch between virtual machine and Virtual Machine DataCenter

A virtual machine can either be operated with the **Software-Dongle VirtualMachine** dongle type or with the **Software-Dongle VM DataCenter** dongle type. The **Software-Dongle VirtualMachine** dongle type is generally used. If the virtual machine is operated in a public data center such as Microsoft Azure or Amazon Web Services (AWS), or in a private data center , it is expressly recommended that the **Software-Dongle VM DataCenter** dongle type is used. Otherwise the software dongle would be invalidated (on page 135) each time the host system is switched. The switch cannot generally be influenced by the user. Unlocking of this dongle type must be applied for from the license issuer.

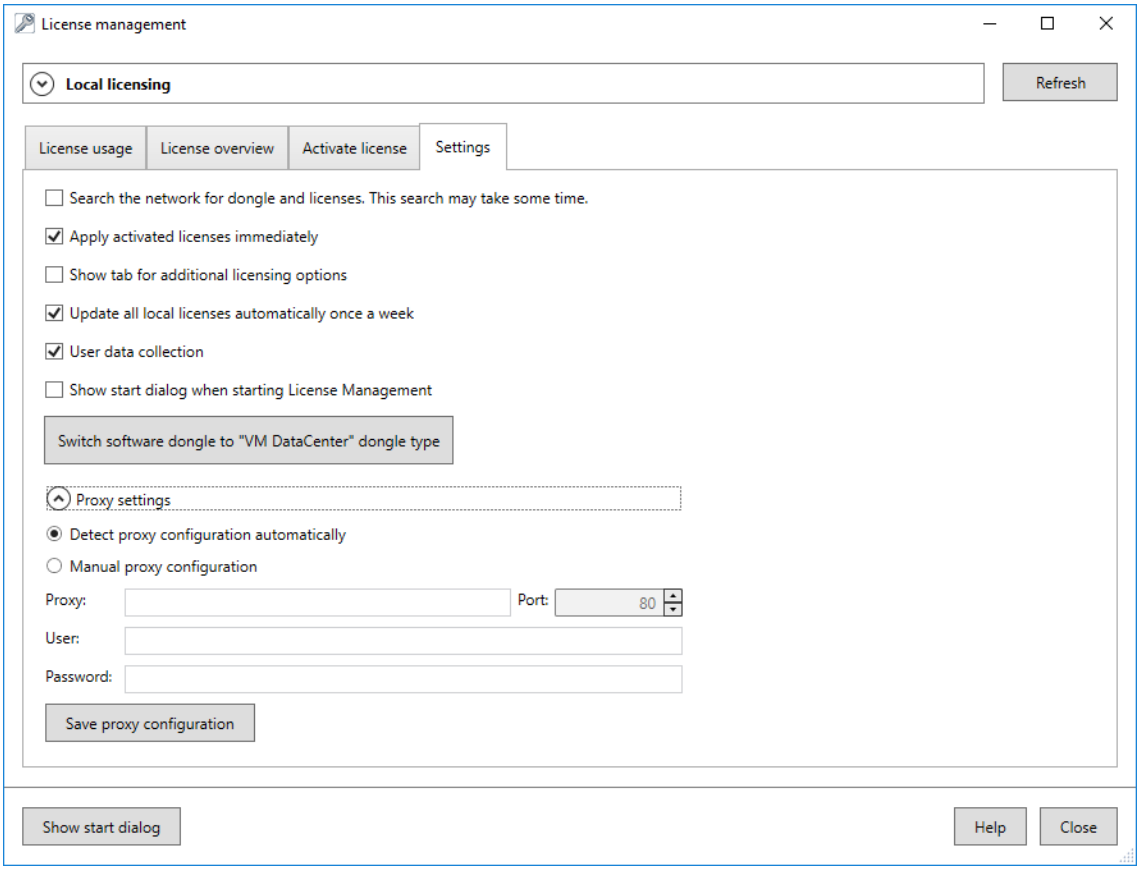
The switch is manual by switching in the **COPA-DATA License Administration** or automatic by applying a corresponding license.

MANUAL SWITCH OF VIRTUAL MACHINE TO VIRTUAL MACHINE DATACENTER

Manual switch via **COPA-DATA License Administration**:

1. Start the **COPA-DATA License Administration** in the virtual machine.
2. Return licenses if there are any on the dongle.
3. Open the **Settings** tab.

4. Click on the **Switch software dongle to "VM DataCenter" dongle type**.



Note: This button is only displayed for licensing in a virtual machine.

5. Confirm this when requested to do so.

   The existing **Software-Dongle VirtualMachine** is deleted and a **Software-Dongle VM DataCenter** is created.
   The button changes it function to **Switch software dongle to "Virtual Machine" dongle type**.

6. Activate the required licenses on the new dongle.

To change a dongle to **Software-Dongle VirtualMachine**, carry out the steps again and click on **Switch software dongle to "Virtual Machine" dongle type**.

AUTOMATIC SWITCHING OF THE DONGLE WHEN APPLYING A LICENSE

The **Software-Dongle VirtualMachine** and **Software-Dongle VM DataCenter** dongles can also be switched automatically.

This happens if:

- The target dongle is empty
  and

- a corresponding license is activated on it

An error message is shown if there are already licenses present.

Note:

- If a license that is unlocked for **Software-Dongle VM DataCenter** is activated on a **Software-Dongle VirtualMachine**, the license loses its property of being able to be deployed in a data center regardless of hardware.
- If the dongle type is automatically switched during the licensing procedure but the licensing process fails, the dongle type is not reset.

EXAMPLE

A license for **Software-Dongle VM DataCenter** is activated online on a **Software-Dongle VirtualMachine** dongle. The dongle does not yet contain a license. It is automatically switched to a **Software-Dongle VM DataCenter**.

28. License query during operation

The license for the product being used is regularly checked during ongoing operation. If there is no license, an attempt is made to establish the connection again. If that does not succeed, the computer and the license are checked for further suitable licenses.

RULES FOR THE RECONNECT

- The sequence of the query corresponds to the sequence in **License.ini**. This is established via the **COPA-DATA License Administration** in the **License Use** (on page 59) tab.
- A maximum of 10 licenses are queried.
- In runtime, demo licenses are not taken into account as substitute licenses. They are skipped.
- A substitute license must be valid for the product version used and must be at least the same license version as the original license. It can also have a higher license version, for example more TAGs, more modules, etc. However, it is always only the versions available in the original license that are provided.
- The edition must be the same in both licenses.
- Examples:
  - Example 1: The license used the first time Runtime is started is an operator license. The substitute license is a supervisor license. The substitute license cannot be used because the edition is not the same.

- Example 2: The license used when Runtime is started for the first time has 2000 TAGs, the Historian, Extended Trend modules and two drivers licensed. The substitute license has 4000 TAGs, in addition the Message Control module and three drivers are licensed. The substitute license is used. The increased TAG number, the new modules and drivers cannot be used however.

LICENSE LOSS WITHOUT SUBSTITUDE LICENSE

If no valid license is found when running, the products act as follows:

- zenon Runtime: Runtime continues.
  Entries are written to the CEL. The presence of license protection can be monitored locally and in the network using the system driver variable **[System information] License protection active SYSDRV.chm::/25965.htm**.
- zenon Web Server: The zenon web server continues to run.
  Corresponding information is shown in the zenon web server dialog.
- zenon Editor: Then the Editor is closed.
- HTML Web Engine: (continues to be executed)
- zenon Logic, Process Gateway and OPC DA Server: All products continue to be executed.
  The loss of a license is shown in the **About...** dialog.
- zenon Analyzer ZAMS: Is closed.
- zenon Analyzer Report Launcher: New reports cannot be opened. Opened reports cannot be updated.

The following applies to products: If no license is available, the product cannot be restarted. The products run up to the next restart at most. Demo mode can continue to be used.

POSSIBLE REASONS FOR LOSS OF LICENSE

If your product reports a loss of license, there can be a number of reasons for this.
The most frequent causes of a loss of license are:

- The network connection to the license server is no longer available.
- The hardware dongle was removed.
- The license has expired.
- The time quota for the product is exhausted.

29. Computer defect with software dongle: Use 30-day demo license

If a hardware problem occurs with a computer, such as a defective hard drive for example, software licenses are usually affected by this. Either the license is invalidated or it is no longer present.

In this case, you can use a demo license (on page 110) until the license is replaced. All Runtime demo licenses have a 30-day duration from when they are first started. Except: Virtual machine demo licenses.

If you have never used a demo license before, you have 30 days available from the first time the product was started. The usage period is started individually for each product (Editor/Runtime/Web Server etc...).

30. Particular features with client-server operation

When licensing of modules in the client-server operation, the following particular features are applicable:

Module	Description
Historian	The following cases are distinguished: ▸ Server and client licensed: Archives can be opened and edited at the client. ▸ Server licensed and client not licensed: Archives can be opened but not edited at the client. ▸ Historian not licensed and started as standalone: The `archive revision` screen can be opened but the individual archives cannot be edited however.
Automatic Line Coloring	The client gets the license from the server and does not need its own license. If the server does not have a license of its own, the client cannot use the module.
Batch Control	The client gets the license from the server and does not need its own license. If the server does not have a license of its own, the client cannot use the module.
Load Management	The client gets the license from the server and does not need its own license. If the server does not have a license of its own, the client cannot use the module.
Message Control	The client gets the license from the server and does not need its own license. If the server does not have a license of its own, the client cannot use the module.
Everywhere Server by zenon	**Everywhere Server** gets the license of the Runtime. The **Everywhere Server** can not be used, If the Runtime does not have a corresponding license. This can lead to Runtime running but the **Everywhere Server** not being able to be started due to missing licenses.

31. Serial number

Each COPA-DATA product must be licensed by means of a serial number.
The serial number is created according to certain rules. It consists of 5 groups each with 5 characters and contains a checksum. The last 10 places contain a continuous number and make the serial numbers easily distinguishable from one another.

Example: `C00GF-2SQ5T-QWERT-00000-00035`

The serial number can only contain certain alphanumeric characters:

- Permitted characters:
  - Only Arabic figures: `0-9`

- Only letters from the Latin alphabet.
- A-N
- P-Z

▶ Non-permitted characters:

- Letter O, so that there is no confusion with the character 0.
- Special characters

32. License.ini file

The information on licensing is stored in the **License.ini** file. However, actions for licensing are always executed via the **COPA-DATA License Administration**.

Path to **License.ini**: %programdata%\COPA-DATA\System
Hint: You can also call up the path with the **%CD_System%** environment variable.

> **Attention**
>
> *Never edit the **License.ini** file manually!*
> *Changes to this file can lead to correctly-licensed products no longer being able to be used. Always carry out actions in relation to licensing through the **COPA-DATA License Administration**.*

33. CodeMeter requirements

Hardware and software from **CodeMeter** is used for licensing.
To do this, the following requirements must be met:

General:

▶ The **CodeMeter** Runtime version must be 6.60 or higher and running on the computer.

Hardware dongle:

▶ The hardware dongle must be series 3 or higher. The serial number of this dongle starts with 3. For example: 3-1234567.
Dongles from series 1 and 2 are not supported.

▶ **CodeMeter** There are various forms of dongles, such as internal and external USB sticks, as well as SD, PCMCIA and CFast cards. All forms have the same security chip inside and can be used.

- The **CodeMeter** hardware dongle must be available at a USB port on the local computer or as a server on a network computer.
- For virtual machines (VMs) (on page 46), Wibu Systems recommend not accessing the dongle by means of USB port in the VM. Instead, operate the dongle as a Wibu server in the host system and access it using the network.

Network:

- With license queries of network dongles, the **CodeMeter** service must be activated as a network server (on page 151).
  Recommendation: Enter the server on the client system into the server search list (on page 152).

Note: When starting **COPA-DATA License Administration**, the **CodeMeter** runtime is always checked for the correct version. In the event of an error, a corresponding message is displayed and the licensing is canceled. In this case, install the current **CodeMeter** Runtime.

34. CodeMeter Software

*The dongles used by COPA-DATA dongles for licensing are based on **CodeMeter** hardware and software. Licenses are administered using the **COPA-DATA License Administration**. The **CodeMeter Webadmin** provides additional functions for administrations. These are not generally needed in regular operation.*

*You can find detailed help on the use of **CodeMeter** in the help integrated into **CodeMeter**.*
You call this up using:

- Control center: In the **Help** menu, click on the **Help** entry.
- WebAdmin: Click on the question mark in the second line of the menu.
  The **CodeMeter** help is opened context-sensitively.

Note: Descriptions of the **CodeMeter WebAdmin** relate to the respective version 6.60. This manual covers the most important applications for zenon users.

REQUIREMENTS

In order for the licensing via **CodeMeter** to work, the following requirements must be met:

General:

- The **CodeMeter** Runtime version must be 6.60 or higher and running on the computer.

Hardware dongle:

- The hardware dongle must be series 3 or higher. The serial number of this dongle starts with 3. For example: 3-1234567.
  Dongles from series 1 and 2 are not supported.

- **CodeMeter** There are various forms of dongles, such as internal and external USB sticks, as well as SD, PCMCIA and CFast cards. All forms have the same security chip inside and can be used.
- The **CodeMeter** hardware dongle must be available at a USB port on the local computer or as a server on a network computer.
- For virtual machines (VMs) (on page 46), Wibu Systems recommend not accessing the dongle by means of USB port in the VM. Instead, operate the dongle as a Wibu server in the host system and access it using the network.

Network:

- With license queries of network dongles, the **CodeMeter** service must be activated as a network server (on page 151).
  Recommendation: Enter the server on the client system into the server search list (on page 152).

> **ATTENTION**
>
> *If the CodeMeter dongle is removed during ongoing operation, zenon closes and is opened in demo mode until a valid license is detected again.*

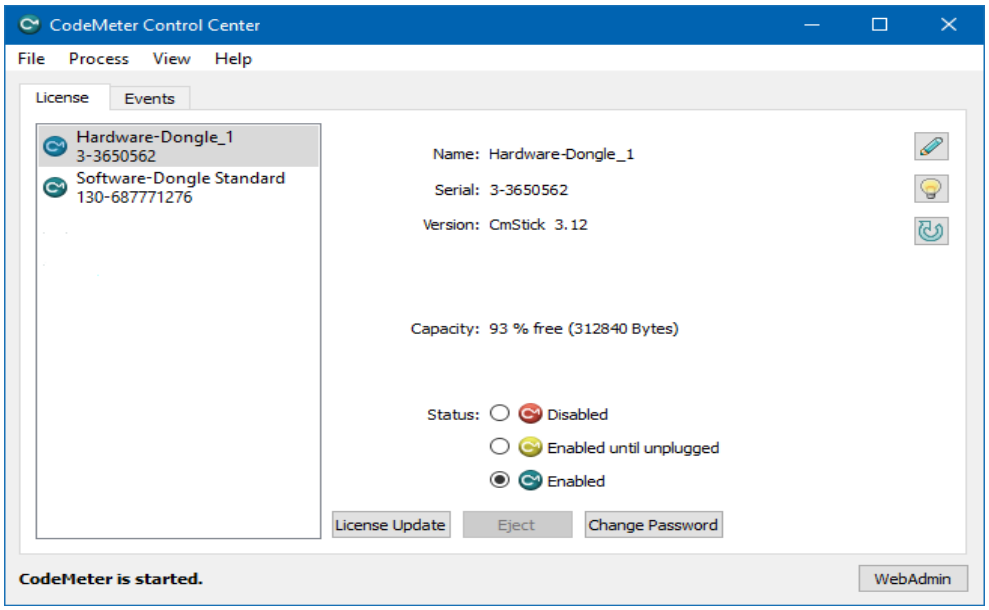
34.1 Control Center

You start the **CodeMeter Control Center** using: *Windows -> CodeMeter -> CodeMeter Control Center*.
The **CodeMeter** Control Center is opened with 2 tabs:

- **License**: Contains information about the dongles found and allows actions with dongles and licenses.
- **Events**: Displays the number of sticks connected, the license entries, the firm items found and all access to the **CodeMeter** Runtime server. To log the entries on a permanent basis, activate the **Logging** entry in the **File** menu.

34.1.1 License tab

Dongles and licenses are displayed and configured in this tab.



Option	Description
License	Lists all active **CodeMeter** dongles.
Name:	Individual name of the selected dongle. With hardware dongles, the name can be changed using the button with the **pen** (to the right of it).
Serial Number:	Serial number of the selected dongle.
Version:	Firmware version of the selected dongle. Recommendation: Always use the most recent firmware. To update the firmware: Click on the **arrow** button. The online update via a Wibu server is started.
Capacity:	Display of free memory in percentage and bytes on the dongle.
Symbols:	Three symbols allow actions with the dongle: ▸ **Pen**: Rename the name of the dongle. ▸ **Lamp**: Let the selected stick flash. ▸ **Arrow**: Update the firmware of the selected stick.
Status	Display and possible change of the status for a dongle. Hardware dongle: Selection of the status of the selected **CodeMeter** dongle using radio buttons. ▸ **Deactivated**: The dongle connected is deactivated and cannot be used by any application. ▸ **Activates when connected**: The stick is activated as long as it is connected. It is automatically deactivated after removal from the PC. ▸ **Activated**: The stick is fully activated and remains activated after it is removed. Recommended status: Ensures that unauthorized persons do not have access to licenses and personal data (such as CmPasswordManager) if the stick is lost. Changes must be confirmed using the dongle password. Software dongle: ▸ Display of the license status.
License updating	Starts the assistant to add, amend and delete licenses. Note: Is not available for COPA-DATA products. Licenses are administered using the **COPA-DATA License Administration**.
Eject	Allows the stick to be ejected. Only available for hardware dongles.
Change password	Allows the password to be changed.

	Only available for hardware dongles.
Delete license	Deletes selected license. Only available for software dongles. Caution: This option must not be executed under any circumstances, because restoring of licenses that are saved on the dongle is not possible. The following is applicable for demo mode with software dongles: These can no longer be applied after deletion.
CodeMeter has been started/stopped	Information on whether the **CodeMeter** service is running. Can be changed in the **Action** menu. Attention: The service cannot be stopped or restarted using the **Control Center**, because the zenon license transfer service depends on the CodeMeter service. Closing the service is only possible using the **services.msc** application of the operating system.
WebAdmin	Starts the web browser with the administration user interface for dongles. Port 22350 must be open for this. For details, see the **WebAdmin** (on page 149) chapter.

34.2 WebAdmin

The **CodeMeter WebAdmin** is for the configuration and administration of dongles in the network.

To start the **CodeMeter WebAdmin**:

1. Open the **CodeMeter Control Center**.
2. Click on the **WebAdmin** button.

   The **CodeMeter WebAdmin** is opened in the web browser.

Alternatively, use the following link: http://localhost:22350/index.html (http://localhost:22350/index.html)

Detailed information on the individual settings can be found in the **CodeMeter WebAdmin** help pages. You can get to this using the question mark (**?**) symbol in WebAdmin. The most important options and instructions are also in this document.

Attention

CodeMeter WebAdmin *uses port 22350 by default.*
Note:

- If a firewall other than that integrated into the Windows operating system is used, this port must be enabled.
- If the port is changed, the WebAdmin surface cannot be started, because the

port is part of the address
for example: B: http://localhost:22350/configuration/extra.html
If you have changed the port and no longer know which port it is, you can look it up in the registry. To do this, open Regedit.exe and go to the following node:
HKEY_LOCAL_MACHINE\SOFTWARE\WIBU-SYSTEMS\CodeMeter\Server\CurrentVersion. You can find the current port number in the **NetworkPort** entry. Enter the port used there into the browser address line instead of 22350.
Then amend the port in WebAdmin via *Settings-> Advanced-> Extras* .

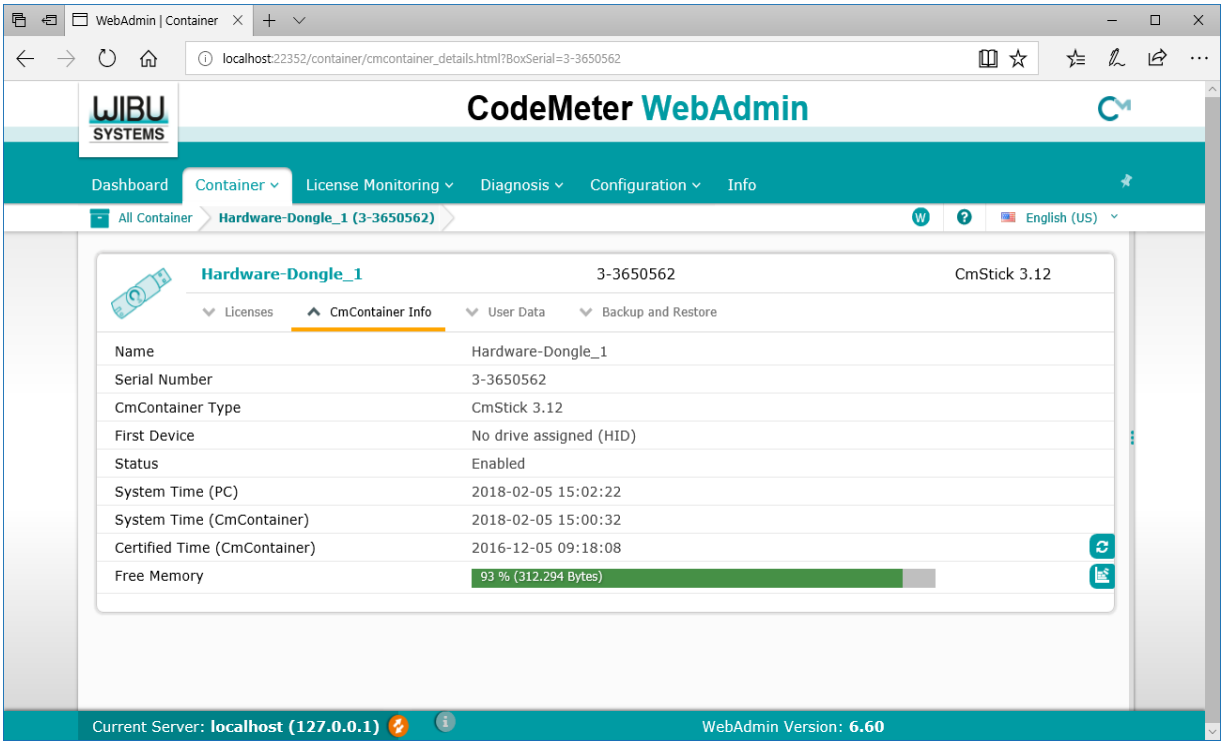
34.3 Update certified time

You can update the certified time saved in the dongle via the **CodeMeter** time server. You need access to the Internet for this.

To update the time:

1. Start the **CodeMeter WebAdmin**.
2. Check your network settings:
   a) Are the proxy settings correct in **CodeMeter Webadmin**?
   b) Is your access data up-to-date?
3. Navigate to the **Container** menu.
4. Select the desired dongle.

5. Click on **CMContainer info**



6. Select the **Time Certificate (CM Container)** entry.
7. Click on the symbol to update:
8. You are notified that this will update all sticks.
9. Click on **OK**.

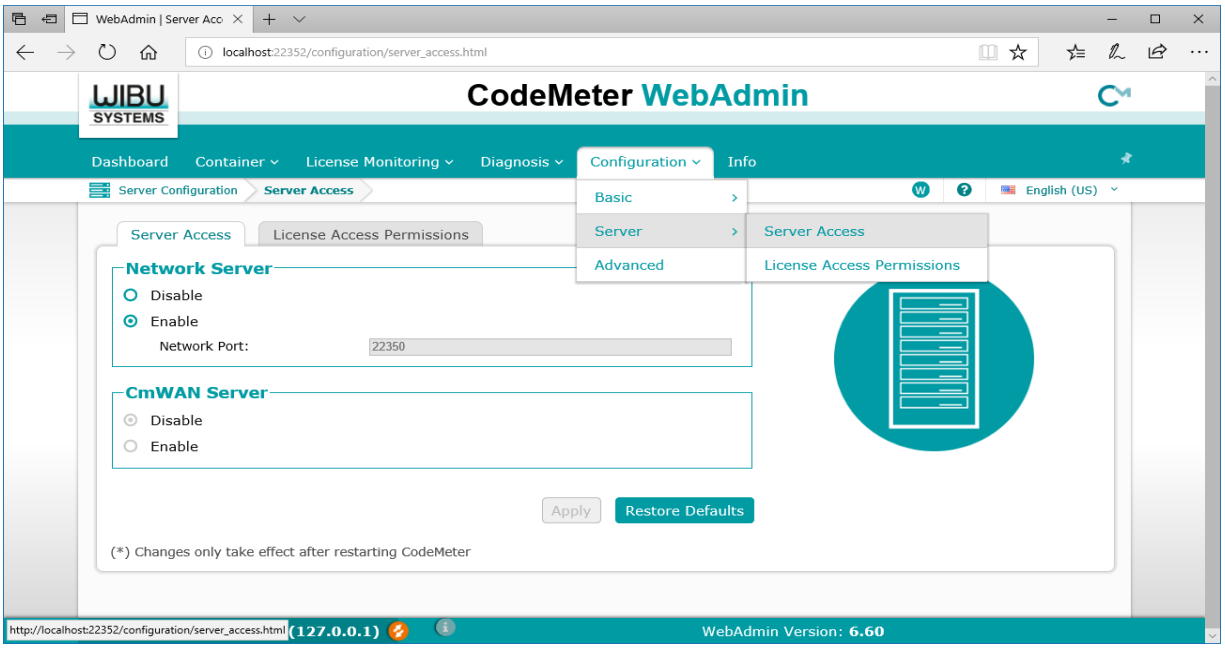
   You receive information on the update carried out.
   Hint: In the event of an error message (on page 164), you primarily check your access data for the proxy server.

34.4 Network dongles

Each license can be used in the network. In order for **CodeMeter** dongles to be able to be reached in the network, the **CodeMeter Runtime** service must be started as a network server.

To do this:

1. Open **CodeMeter Webadmin**: http://localhost:22350/configuration/server_access.html (http://localhost:22350/configuration/server_access.html).
   You can also start **WebAdmin** via the CodeMeter Control Center (on page 146).



2. Go to the *Settings -> Basic -> Server Access* page and set the `activate` network server option.
3. Click on the **Accept** button.

   The CodeMeter Runtime service is restarted.

All locally-connected hardware and software dongles are thus available via the network. Demo licenses on demo dongles are an exception. These can always only be used locally.

34.4.1 Set up server search list for network dongles

Dongles in the network are found using mechanisms in **CodeMeter Runtime.**. This is independent from zenon and can only be influenced by **CodeMeter**. If a dongle is not found by **CodeMeter** it is also not found by zenon products.

Information

*The **CodeMeter** mechanism is not to be mistaken with the mechanism of the **COPA-DATA License Administration**.*

This establishes a direct connection via the zenon license transfer. This connection is fundamentally different to the CodeMeter connection.

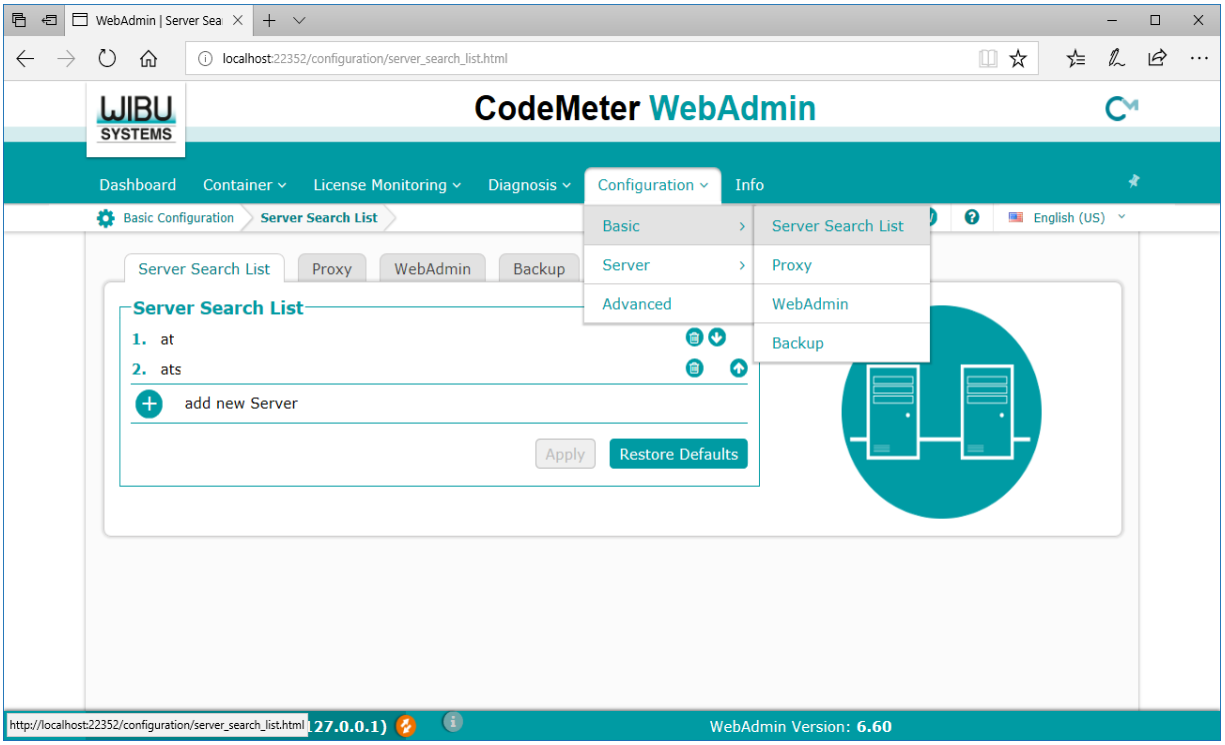
The CodeMeter mechanism always looks for dongles locally first. If the license being searched for is not found, a search in the network is carried out. In doing so, a broadcast is used as standard.
Broadcasts have the following disadvantages:

- All computers in the network are always searched for.
  As a result, it is possible, especially with large networks or many dongles in the network, that there are long response times.
- Dongles that do not have the license being searched for are queried.
  As a result, the network and **CodeMeter Runtime** are subjected to unnecessary load.
- Broadcasts only work in the local subset.
  If the dongle is in another subnet, the dongle is not found.

Recommendation: Enter the dongles into the server search list. You thus avoid the described limitations.

To enter a CodeMeter server into the server search list:

1. Start the **CodeMeter WebAdmin:** http://localhost:22350/configuration/server_search_list.html (http://localhost:22350/configuration/server_search_list.html).
   You can also start **WebAdmin** via the CodeMeter Control Center (on page 146).
2. Go to *Settings -> Basic -> Server search list*.



3. Add the server by clicking on the plus sign.
4. With several servers: Position the server with the arrow symbols in the desired sequence of the query.

5. Apply the settings by clicking on the **Apply** button.

34.4.2 Check whether a dongle is found in the network

The finding of dongles in the network is carried out using **CodeMeter Runtime** mechanism. The check is therefore best carried out using the **CodeMeter** mechanisms:

1. Start the **CodeMeter WebAdmin:** http://localhost:22350/index.html (http://localhost:22350/index.html).
   You can also start **WebAdmin** via the CodeMeter Control Center (on page 146).
2. At the lower edge, you can see the **Current server: localhost (127.0.0.1)** entry.
   Click on the button

   A dialog with all **CodeMeter** network servers found is opened.
3. Select the desired server to control where the dongle being searched for is found.
   Attention: They are connected to the **CodeMeter** server remotely. All displayed information comes from the remote computer.

If the server being searched for is not on the list, then check it:

- Is the **CodeMeter** Runtime activated as a network server (on page 151)?
- Is the server entered into the server search list (on page 152)?
  Was the TCP/IP port of CodeMeter runtime changed?
  The standard port is `22350` and should not be changed. If you have changed the port and no longer know which port it is, you can look it up in the registry. To do this, open Regedit.exe and go to the following node:
  HKEY_LOCAL_MACHINE\SOFTWARE\WIBU-SYSTEMS\CodeMeter\Server\CurrentVersion.
  You can find the current port number in the **NetworkPort** entry.It is best to reset the port number to the default of `22350` .
  The port must be the same on all **CodeMeter** computers.
- Is the **CodeMeter** runtime blocked by a firewall?
  Check the firewall settings both on the server and on the client.

34.5 Configure CodeMeter dongle as an HID or drive

The dongle is integrated into the system as an HID (Human Interface Device) device by default. This configuration is recommended. The dongle can also be configured as a local mass-storage device or removable media.

Requirements:

- **CodeMeter** Container with the identification "**2-xxxxxxx**" or **3-xxxxxxx**".

- At least **CodeMeter** firmware 2.02.
- **CodeMeter** Runtime 6.60 or higher. Should the version of **CodeMeter** that you have installed be older, you can download the current **CodeMeter** Runtime from Wibu Systems (www.wibu.com (http://www.wibu.com/support-downloads.html)).

CONFIGURATIONS

CodeMeter Sticks can be configured as:

Device	Description	Limitations
HID (**Human Interface Device**)	Dongle is signed into the HID on the system. The dongle is thus not shown in the list of available drives and is not allocated a drive letter. Default for sticks without memory. Special USB host drivers are not required.	Only available for **CodeMeter** dongles without memory.
Local mass-storage device (Mass Storage Device - MSD**)**	The dongle is displayed and managed as a fixed local drive with its own drive letter.	Can lead to: ▸ The operating system reporting too little memory for the dongle ▸ the icon for the Windows Recycle Bin no longer being displayed ▸ the dongle not being found in a virtual machine
Removable media	The dongle is displayed and managed as removable media with its own drive letter. The dongle must have flash memory.	*With configuration as removable media:* ▸ The booting of the computer can be prevented for with computers that can boot from a USB drive ▸ The dongle appears as a drive in the task bar and can be removed (ejected) at any time

PROCESS OF RECONFIGURING DONGLE

Status dongle	Target	Procedure
HID	Local mass-storage device	▸ Configuration as mass-storage device. ▸ Configuration as local harddisk
HID	Removable media	▸ Configuration as mass-storage device. Is automatically configured as removable media.
Local mass-storage device	Removable media	▸ Configuration as removable media
Removable media	Local mass-storage device	▸ Configuration as local harddisk

Local mass-storage device	HID	▸ Configuration as HID
Removable media	HID	▸ Configuration as HID

SYNTAX AND COMMANDS FOR DONGLE CONFIGURATION

There are commands and parameters for the configuration of dongles in the **CodeMeter Command Prompt**.

Syntax: `cmu32 /s <serial> --[command parameter]`

- `cmu32:` Call.
- `/s (/s)`: Entry of the serial number of the dongle that is to be applicable for the action.
- `--[Command parameters]`: Entry of command and possibly parameters.

Commands

Command	Meaning
`cmu32 /s <serial> --show-config-disk`	Show configuration for stick with certain serial number.
`cmu32 /s <serial> --set-config-disk`	Configure stick with certain serial number.
`cmu32 /h`	Shows the help for further commands and parameters.

Parameter:

Parameter	Meaning
`HidCommunication`	Configuration as HID. Only possible if no flash memory is present.
`MsdCommunication`	Configuration as mass-storage device. Dongles with this configuration can be configured as a local mass-storage device or removable media.
`RemovableDisk`	Configuration as removable media Requires `MsdCommunication`. Not directly possible from HID status.
`LocalDisk`	Configuration as local harddisk Requires `MsdCommunication`. Not directly possible from HID status.

Examples:

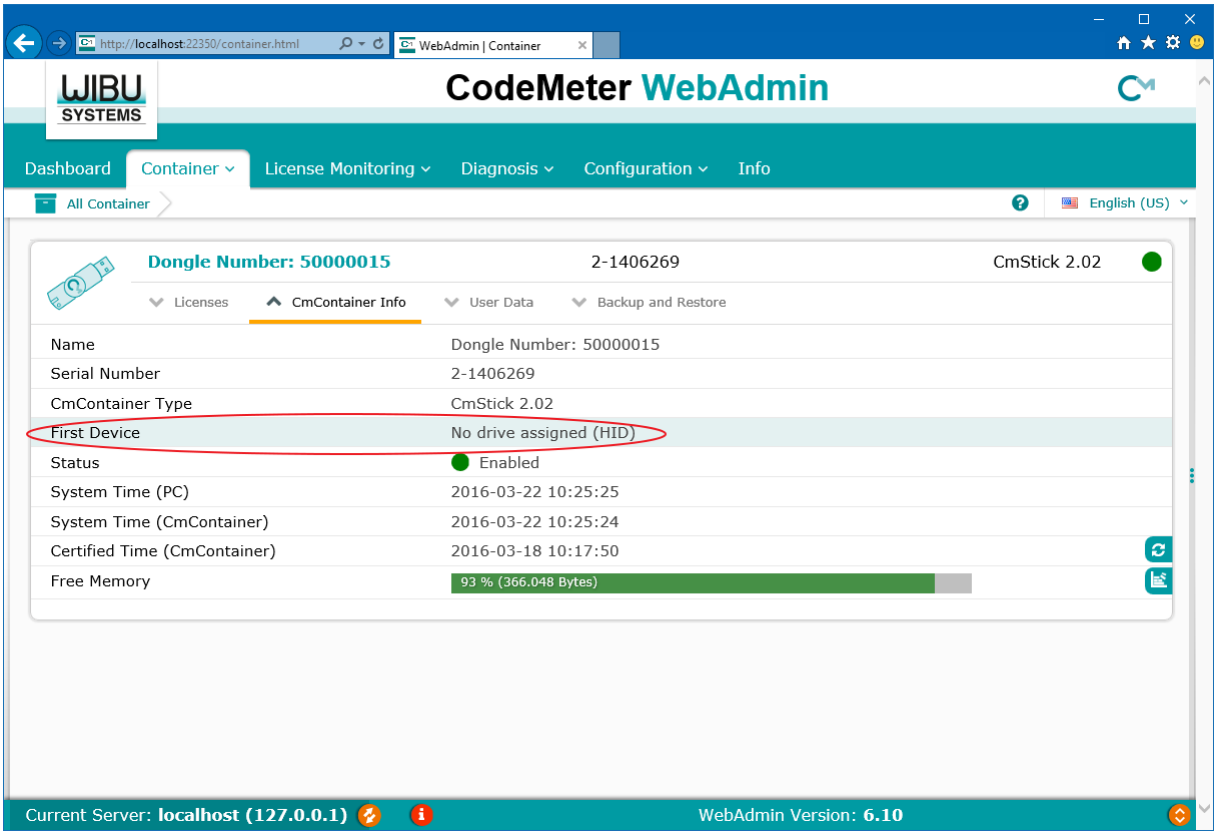
- Show configuration: `cmu32 /s3-1234567 --show-config-disk`
- Configure stick as HID: `cmu32 /s3-1234567 --set-config-disk HidCommunication`

34.5.1 Configure dongle as an local mass-storage device

To address the dongle in the USB communication as a fixed local mass-storage device (Mass Storage Device):

1. Check the status of the dongle via **CodeMeter Command Prompt**, **CodeMeter WebAdmin** or the file browser of the operating system.

   No drive (HID) is assigned or removable media is displayed.



2. Call up the **CodeMeter Command Prompt cmu**: *Start -> Program Files -> CodeMeter -> Tools -> CodeMeter Command Prompt*.

   If the dongle is currently configured as HID, then:

   - Enter the following at the command prompt that has been started: `cmu32 /s <serial> --set-config-disk MsdCommunication`
     The dongle is configured as mass storage.
   - Remove the dongle and insert it again.
   - Enter the following at the command prompt: `cmu32 /s <serial> --set-config-disk LocalDisk`
     The dongle is configured as fixed local mass storage.

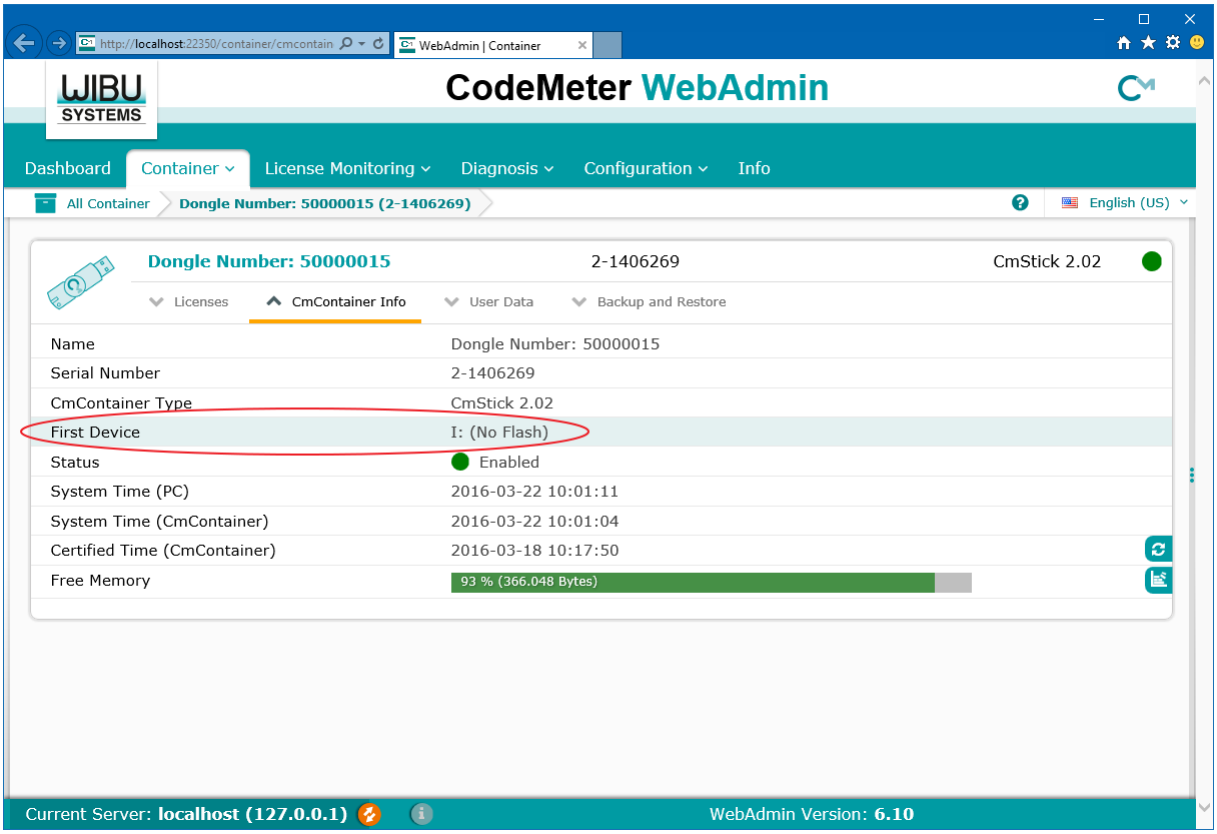
   If the dongle is currently configured as removable media, then:

- Enter the following at the command prompt: `cmu32 /s <serial> --set-config-disk LocalDisk`
  The dongle is configured as fixed local mass storage.

Note: For `<serial>`, enter the serial number of the stick.

3. Remove the dongle from the computer.
4. Reconnect the dongle to the computer.

   In the **CodeMeter Command Prompt** and in the **CodeMeter WebAdmin**, the dongle is now displayed as mass storage, in the file browser of the operating system with the drive letter.

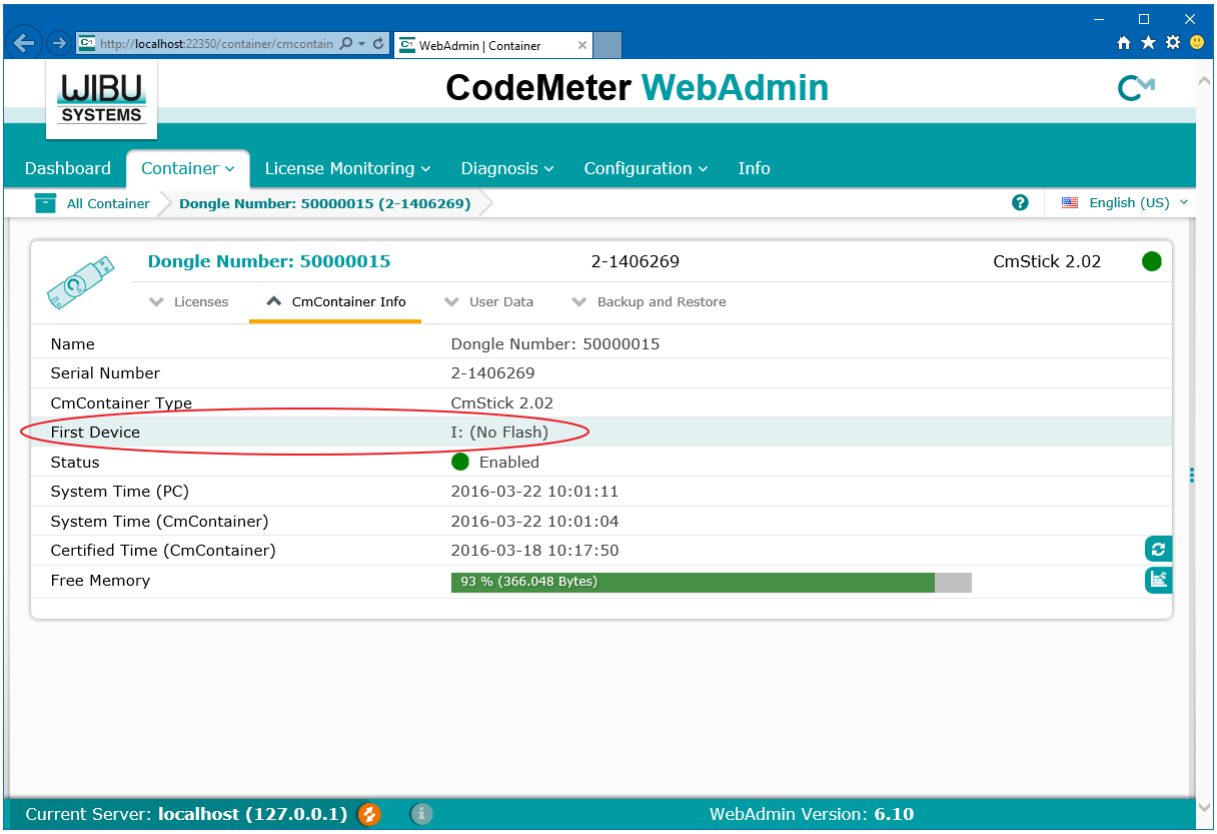


34.5.2 Configuring the dongle as HID

To address the dongle in the USB communication (Human Interface Device):

1. Check the status of the dongle via **CodeMeter Command Prompt**, **CodeMeter WebAdmin** or the file browser of the operating system.

2. Local mass storage or removable media is assigned, each with a drive letter.



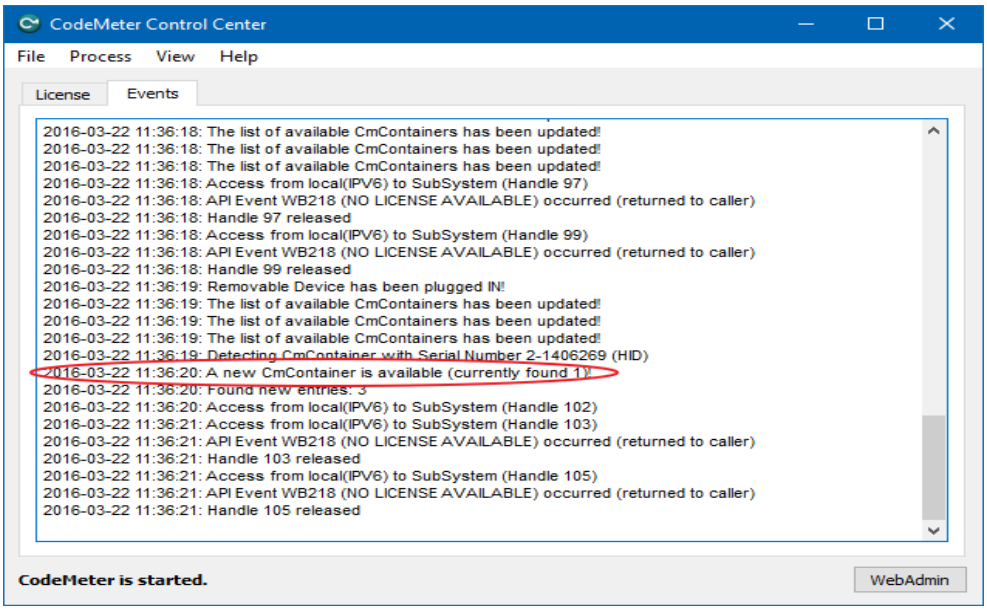
3. Call up the **CodeMeter Command Prompt cmu**: *Start -> Program Files -> CodeMeter -> Tools -> CodeMeter Command Prompt*.

   Enter the following at the command prompt that has been started: `cmu32 /s <serial> --set-config-disk HidCommunication`
   The dongle is configured as HID.
   Note: For `<serial>`, enter the serial number of the stick.

4. Remove the dongle from the computer.

5. Reconnect the dongle to the computer.

6. In the **CodeMeter Command Prompt** and in the **CodeMeter Control Center**, the dongle is now displayed as an HID without drive letter. It is no longer displayed in the file browser of the operating system.

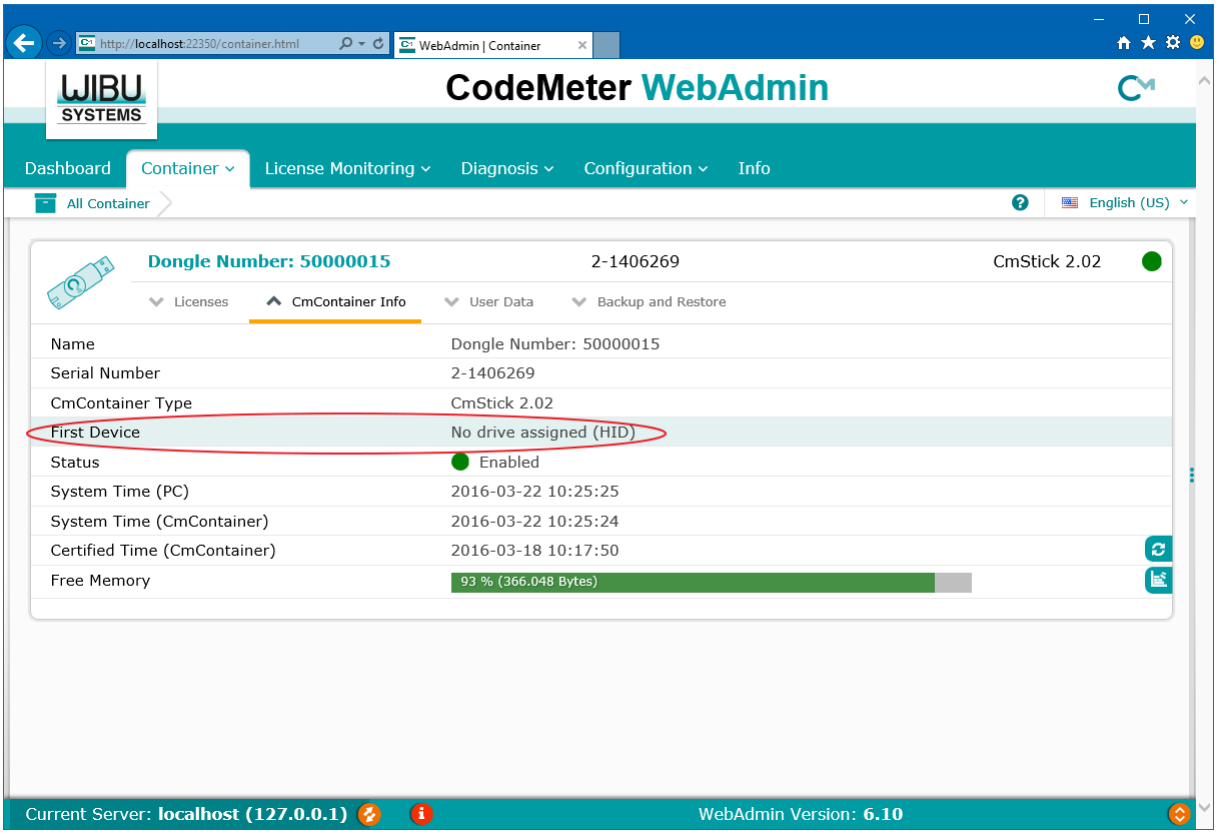


34.5.3 Configuring the dongle as removable media

To address the dongle in the USB communication as removable media:

1. Check the status of the dongle via **CodeMeter Command Prompt**, **CodeMeter WebAdmin** or the file browser of the operating system.

No drive (HID) is assigned or local mass storage with a fixed drive letter.



2. Call up the CodeMeter command line interface **cmu**: *Start -> Program Files -> CodeMeter -> Tools -> CodeMeter Command Prompt*.

   If the dongle is currently configured as HID, then:

   - Enter the following at the command prompt that has been started: `cmu32 /s <serial> --set-config-disk MsdCommunication`
     The dongle is configured as mass storage in removable media form.

   If the dongle is currently configured as local mass storage, then:

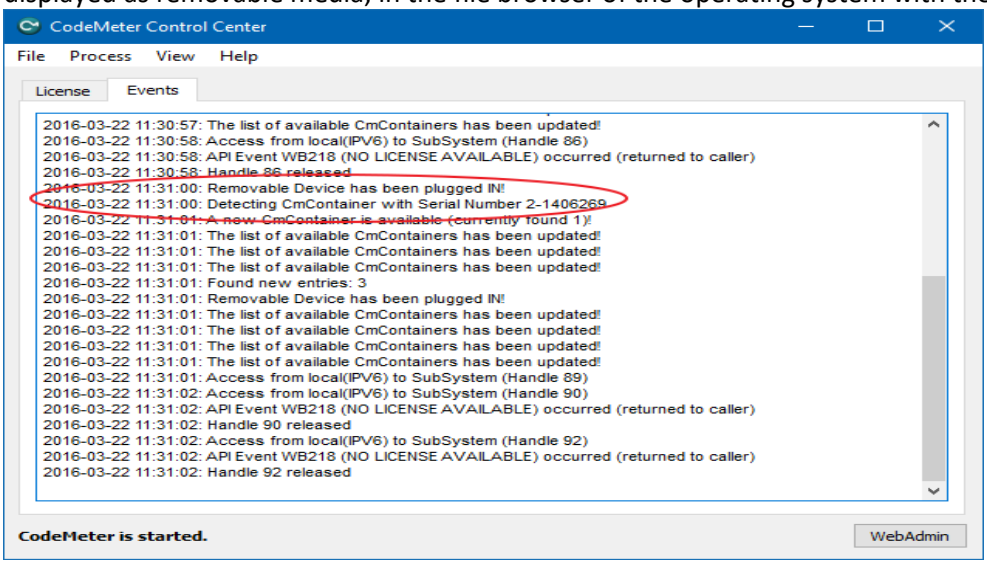
   - Enter the following at the command prompt: `cmu32 /s <serial> --set-config-disk MsdCommunication`
     The dongle is configured as removable media.

   Note: For `<serial>`, enter the serial number of the stick.

3. Remove the dongle from the computer.

4. Reconnect the dongle to the computer.

   In the **CodeMeter Command Prompt** and in the **CodeMeter Control Center**, the dongle is now displayed as removable media, in the file browser of the operating system with the drive letter.



34.6 Troubleshooting

Error	Solution
zenon only runs in demo mode.	Check using CodeMeter and/or **COPA-DATA License Administration**: ▸ Is the dongle connected and contactable via CodeMeter mechanisms (on page 154)? ▸ Is the license entered at the first position for the respective product? ▸ Has the license expired? ▸ Is the software dongle broken? ▸ Is the license assigned to another product on another computer? (http://localhost:22350/license_monitoring/sessions.html) (http://localhost:22350/license_monitoring/sessions.html)
Dongle is not found.	▸ Check the network settings. ▸ If the stick is in another domain, add it to the server search list (on page 152). ▸ Increase the UDP response time. ▸ If it is a virtual machine, then configure the stick as **removable media** (on page 154). Attention: Configuration as removable media can - depending on the computer configuration - also lead to a computer no longer booting. ▸ Configure the stick as HID (on page 158).
Error 410 (with SD cards)	The connection to the SD card is unstable. Use an external card reader.
Certified time cannot be updated.	Please check: ▸ Proxy settings, especially access data and Password ▸ List of time server under *Settings -> time server* for example: cmtime.codemeter.com, cmtime.codemeter.de, cmtime.codemeter.fr, cmtime.codemeter.us
Error message when updating the license when applying a WibuCmRaU file: **Error at updating the CmSticks x-xxxxxxx: This update can no longer be installed. The content of the CmStick has a newer version, error229.**	The update for this license has already been written to the dongle. The dongle is up-to-date.

Windows operating system shows the message: **Low Memory**	The dongle is identified as local memory. In some cases, this can lead to the operating system giving the message "Insufficient memory". This message can be ignored. Alternatively, the dongle can also be configured as HID (on page 159). It thus no longer appears in the Windows drive list.
Windows operating system no longer shows symbol for the Recycle Bin.	This may happen if the dongle is identified as a fixed local network. Alternatively, the dongle can also be configured as HID (on page 159). It thus no longer appears in the Windows drive list.

35. Configuration file zenAnalyzer.ini

Settings for zenon Analyzer are amended in the **zenAnalyzer.ini** configuration file. This documentation contains information for system administrators who want to edit the INI files directly.

You can find the INI file in the following path: `%cd_system%`.
It is only present if the Analyzer Server is installed. If there is only Report Launcher or ZAMS on the system, there is also no **zenAnalyzer.ini**.

Information

Settings should primarily be made using the user interface of zenon Analyzer. Changes to the INI files are reserved for experienced users.

zenAnalyzer.ini contains the following sections:

Section:	Description
[NETZ] (on page 166)	Settings for connection security.
[**USER_LEVELS_3]** (on page 167)	Information on users and user authorisations.
[DEDICATED_USERS_3] (on page 167)	Configuration of dedicated users.
[CONNECTION_ZA2] (on page 167)	Information for connections to version **ZA2** databases.
[CONNECTION_ZAX] (on page 168)	Information for connections to version **ZA3** databases and higher.

[DEBUG] (on page 169)	Activation of debugging.

The sequence of the sections and the entries in the sections can vary.

FORMAT IN WHICH THE INI FILES ARE SAVED

Due to the system, only ANSI and Unicode are supported for reading the INI files.

> **Attention**
>
> UTF-8 format is not supported!
>
> You should therefore always save your INI files as a text file in ANSI or Unicode format.

36. Connection security and timeout [NETZ]

Settings for the connection security and timeout

CONNECTION SECURITY

Settings for connection security must only be set using ZAMS. To do this, use the **Configure connection security** dialog.

> **Attention**
>
> *Manual changes to these entries in **zenAnalyzer.ini** can lead to no connection to the Analyzer Server, license server or report server being possible any more.*

TIMEOUT

Entry	Description
RUNTIME_CONNECTOR_TIMEOUT_MSEC=	Connection timeout of the connector clients in milliseconds. Is read by the Connector Stub before each connector function call. Changes are immediately applied by saving **zenAnalyzer.ini**. Default: 300000 (5 minutes)

37. User [USER_LEVELS_3]

Settings for user authorizations.

These settings must only be set via ZAMS. To do this, use the **Analyzer applications access rights** dialog.

> **Attention**
>
> *Manual changes to these entries in **zenAnalyzer.ini** may lead to the connection to Analyzer Server no longer being possible.*

These entries are written by the license server if it receives a corresponding command. The entries are read when the license server starts. Manual changes to the INI file are only taken into account if the license server service **zrsLicSrv** is restarted.

38. Dedicated users [DEDICATED_USERS_3]

Settings for dedicated users with a fixed license.
You change these settings in ZAMS using the **Users with fixed license** dialog.

These entries are written by the license server if it receives a corresponding command. The entries are read when the license server starts. Manual changes to the INI file are only taken into account if the license server service **zrsLicSrv** is restarted.

39. Connection to ZA2 [CONNECTION_ZA2]

Entries for the Connector Stubs connection to a Connector Container. These entries cannot be created with a tool. They must therefore be changed manually in the INI file if necessary.

The entries are read if the first Connector function after the SQL Server start that needs a connection with a Connector Conatainer is executed. If these entries are amended, it must be ensured that the Connector Stub uses the new entries. To do this, the SQL-Server instance that is used for **Analyzer 2.xx** must be restarted.

Entry	Description
[CONNECTION_ZA2]	Configuration of the database connection of the Connector Stub components that establish the connection to the Connector Container. These settings only relate to the connection to an Analyzer Server instance ZA2. Connections to other instances are configured by means of the settings in **Connection to ZA3 and higher [CONNECTION_ZAX]** (on page 168).
USER=	User name for the connection. Default: `ReportingUser`
PW=	Password for the connection. The password can be entered as open or encrypted. Note: Entry of an encrypted password is not possible via the INI file. Default: `Copa-Data`
SQLINSTANCE=	Denotes the SQL server instance to which the connection is to be made. Default: `Localhost\ZA2`

40. Connection to ZA3 and higher [CONNECTION_ZAX]

Entries for the Connector Stubs connection to a Connector Container. These entries cannot be created with a tool. They must therefore be changed manually in the INI file if necessary.

The entries are read if the first Connector function after the SQL Server start that needs a connection with a Connector Conatainer is executed. If these entries are amended, it must be ensured that the Connector Stub uses the new entries. To do this, the SQL-Server instance that is used for **Analyzer 3.xx** (or higher) must be restarted.

Entry	Description
[CONNECTION_ZAX]	Configuration of the database connection of the Connector Stub components that establish the connection to the Connector Container. These settings only concern the connection to an Analyzer Server instance ZA3 or higher. Connections to instances of version 2.xx are configured using the settings in **Connection to ZA2** [**CONNECTION_ZA2**] (on page 167).
USER=	User name for the connection. Default: `ReportingUser`
PW=	Password for the connection. The password can be entered as open or encrypted. **Note:** Entry of an encrypted password is not possible via the INI file. Default: `Copa-Data`
SQLINSTANCE=	Denotes the SQL server instance to which the connection is to be made. Default: `Localhost\ZA3`

41. Troubleshooting [DEBUG]

Settings for debugging.

These settings can only be changed manually in the INI file.

Parameter	Description
[DEBUG]	Settings for the writing of enhanced LOG entries.
EXTENDEDLOG=	Switches the writing of enhanced log entries off or on: ▸ `0`: off ▸ `1`: on At the time at whch the first log entry is to be written, write protection is still activated. To ensure that the first entry is also written, the license server service **zrsLicSrv** must be restarted. Default: `0`

42. Data preparation

The data preparation is done in several levels. With this data from different sources and formats can be evaluated universally and maintained easily.

- Level 1: Data abstraction (on page 170)
  On the lowest level the data abstraction or data unification is done. It makes sure that the source data are always available in the same format and in the same type for the actual evaluation algorithm.
- Level 2: Compression and calculation (on page 172)
  A level above the actual compression and calculation is done to create the data which should then be displayed in the report. This level is already independent of the data origin and therefore universal.
- Level 3: Report (on page 172)
  The output data of the second level are then displayed graphically in the report as third level. The display in the report in turn is independent of the algorithms necessary for the calculation on the second level. This means that no calculation and no compression is carried out in the report, which exceed the mere display (e.g. formating of local times or similar).

43. Level 1: Data abstraction

At data abstraction there are two different categories of data:

1. Engineering data

   They normally remain the same during the Runtime and are called meta data there.
   The metadata is abstracted or harmonized by the import wizard during import into the database. Regardless of their origin they are available in the format in which they are defined in chapter data structure.

2. Runtime data
   The actual Runtime data are those data which are generally used as the base for all evaluations. They are called user data there.

   Runtime data is tapped via connectors. COPA-DATA provides a Runtime connector and SQL connector with zenon Analyzer. Individual additions can be integrated into the connectors by agreement with COPA-DATA.

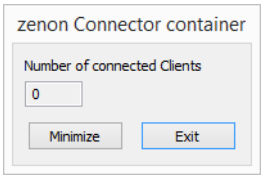
CONNECTOR CONTAINER

The connector container is an application (EXE) which runs at the source system and which loads and executes the connector plug-ins (DLLs). The connector container is a normal user process (no service) which is normally started together with the application which should deliver the data. The connector container opens a TCP port and waits for query requests from the connector stub whereon it loads the requested connector plug-in and invokes the fitting access function for the request. The return data is then sent to the connector stub. Several queries from different TCP connections can be executed in parallel if the source system supports this.

In normal operation the connector container is displayed as icon in the task tray and does not have an own main window. Additional status information can be displayed via a status dialog.

You can read more in the manual for report developers in the Connectors chapter.

DIALOG



Option	Description
Number of connected Clients	Displays the number of clients connected.
Minimize	Minimizes the dialog into the info area of the task bar.
Exit	Closes the connector container.

RESTART

If the connector container has been closed, it can be restarted by:

- Restarting the computer.
- Manual start.
  - From Windows 8: *Task-Manager -> Tab -> Autostart -> Connector-Container -> Open file path-> Double-click on* **zrsConnector.exe**.
  - Other operating systems: *Open file path-> Double-click on* **zrsConnector.exe**.
    32-bit path: %`Program Files (x86)`%\Common Files\COPA-DATA\Connectors

44. Level 2: Compression and calculation

All sorts of compression and calculation of the user data prepared in level 1 (on page 170) is carried out in the **Stored Procedures**. If necessary, filter criteria are handed over to them via parameters.

The **stored procedures** are independent of the format of the user data and of the visual display of the result. They contain only the calculation algorithms and the filter methods with regards to the meta data.

So far as it is technical feasible, they are also independent of specific presumptions concerning the meta data; i.e. independent of specific variable names. If this is not possible, the allocation to these fixed meta data parts is implemented as an obvious block at the beginning of the **stored procedures** in order to separate project-specific and universal evaluation part.

45. Level 3: Report

The result data generated in level 2 (on page 172) are formatted graphically in an SQL Server 2016 Reporting Services report. There is no calculation in the report itself. Also a direct access to database tables is never done but only to the **stored procedures** from level 2 (on page 172). With this the reports are:

- completely independent of the database structure
- universal and
- interchangeable