

zenon manual

zenon Web Server and zenon Web Server Pro

v.7.11



©2014 Ing. Punzenberger COPA-DATA GmbH

All rights reserved.

Distribution and/or reproduction of this document or parts thereof in any form are permitted solely with the written permission of the company COPA-DATA. The technical data contained herein has been provided solely for informational purposes and is not legally binding. Subject to change, technical or otherwise.

Contents

| | |
|---|-----------|
| 1. Welcome to COPA-DATA help | 5 |
| 2. zenon Web Server and zenon Web Server Pro | 6 |
| 3. Versions | 7 |
| 4. Basics | 8 |
| 5. General limitations | 9 |
| 6. Licensing | 12 |
| 6.1 Dongle licensing | 16 |
| 6.2 Soft licensing | 17 |
| 7. zenon Web Server (Pro) | 19 |
| 7.1 Instruction: Preparing - installing - starting | 19 |
| 7.1.1 Installation of zenon Web Server from the installation medium | 22 |
| 7.1.2 User rights for installation | 23 |
| 7.1.3 Starting and server settings | 24 |
| 7.1.4 Settings in global_vars.js | 32 |
| 7.1.5 Storage of Runtime files | 34 |
| 7.1.6 Redundancy operation | 35 |
| 8. zenon Web Client | 35 |
| 8.1 Browser | 36 |
| 8.2 Encryption of the communication in the network. | 40 |
| 8.3 Language setting of zenon Web Client | 41 |
| 8.4 zenon Web Client - compatibility | 43 |
| 9. VSTA with zenon Web Client, zenon Web Server and zenon Web Server Pro | 44 |
| 10. Engineering in the Editor | 45 |
| 10.1 Project configuration 5.x | 45 |
| 10.2 Project configuration from 6.x onwards | 46 |
| 10.3 Screen resolution and monitor administration | 46 |

| | | |
|------------|--|-----------|
| 10.4 | Multi-project administration and redundant projects..... | 48 |
| 11. | Creation of the HTML page for the project entry..... | 48 |
| 11.1 | Example of project entry page init.htm for TCP..... | 49 |
| 11.1.1 | init.htm | 49 |
| 11.2 | Example of project entry page init.htm for HTTP | 53 |
| 11.2.1 | init.htm | 54 |
| 11.3 | Example of zenon Web Server installation medium | 58 |
| 11.3.1 | The page index.htm | 58 |
| 11.3.2 | Selection of window mode for starting the Web Client | 60 |
| 11.3.3 | Configuration of the example page..... | 61 |
| 12. | Troubleshooting | 65 |
| 12.1 | Crash after browser refresh | 65 |
| 12.2 | ActiveX control failed to load..... | 66 |
| 12.3 | ActiveX control not installed correctly..... | 67 |
| 12.4 | Exceptional Web Client error in Internet Explorer 8..... | 67 |
| 12.5 | HTTP error messages | 68 |
| 12.6 | Init Runtime Error | 72 |
| 12.7 | Keyboards in Firefox..... | 73 |
| 12.8 | Max. clients | 73 |
| 13. | Implementing the zenon Web Server in the internet environment | 74 |

1. Welcome to COPA-DATA help

GENERAL HELP

If you cannot find any information you require in this help chapter or can think of anything that you would like added, please send an email to documentation@copadata.com (<mailto:documentation@copadata.com>).

PROJECT SUPPORT

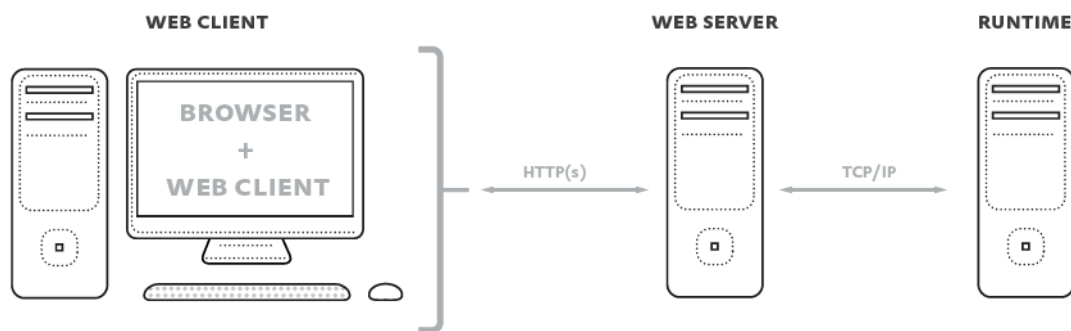
You can receive support for any real project you may have from our Support Team, who you can contact via email at support@copadata.com (<mailto:support@copadata.com>).

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 (<mailto:sales@copadata.com>).

2. zenon Web Server and zenon Web Server Pro

The **zenon Web Server** gets projects to the intranet or internet. This way, production data can be published throughout a company or group of companies. For the transfer no project adaptations are required.



Information

zenon Web Server communicates using IPv4 or IPv6 (selectable). IPv6 is only possible with version 7 or later.

zenon Web Server is currently available in three versions:

- ▶ **zenon Web Server Pro:** monitoring functionality only
- ▶ **zenon Web Server Pro:** offers complete viewing and operating functionality. It is possible to directly engage in processes over the web.
- ▶ **zenon Web Server Pro Light:** limited functionality of zenon Web Servers PRO for use with zenon Operator.

To find out the differences, see Versions (on page 7).



License information

zenon Web Server, zenon Web Server Pro and zenon Web Server Pro Light require a license to run. For further details see chapter Licensing (on page 12)

3. Versions

There are different versions of zenon Web Server available. Web Server is supplied as a 32-bit application up to zenon 7.10. From version 7.11 onwards, it has also been available as a 64-bit application.

Versions:

► **zenon Web Server Pro:**

Allows active user actions with zenon Supervisor.

Starting and operation with Windows CE (on page 24) is subject to certain limitations.

► **zenon Web Server Pro Light:**

Allows active user actions with zenon Operator and zenon Supervisor. Differences to **zenon Web Server Pro**:

- The Runtime server that the **zenon Web Clients** connect to must be the same computer on which **zenon Web Server Pro Light** is running.
The computer name is used for checking; domains are not taken into account.
Attention: For projects with redundancy, **zenon Web Server Pro Light** must be implemented redundantly - one instance on the server and one on the Standby Server.
- Maximum 3 clients.
- No support for encrypted network traffic. It does not start or it ends itself with encrypted communication. The check for encryption is made in Runtime every 60 seconds.
- HTTP tunneling is not supported.
- Projects must run on the same computer as the "server". Projects that run on this computer as a client are not supported.
- Multiple projects are supported if all projects run locally as a server.

► **zenon Web Server:**

Only acts as a viewer. Active user actions, such as sending values, executing recipes, saving PFS settings etc. are not possible.

Exception: From version 6.22 SP1 build 5, the following active user actions can also be carried out with **zenon Web Server**:

- **Internal variables** (calculated locally) are written to the Web Client using the **send value** function.

Note: It is not possible to write by means of inputting elements or VBA.

EXAMPLE OF USE WITH ZENON WEB SERVER PRO LIGHT

When starting **zenon Web Server**, the serial number defines whether **Web Server**, **Web Server Pro** Or **Web Server Pro Light** is started. If **Web Server Pro Light** is started, its limitations are active:

1. HTTP tunneling is not available.
2. A check is made regularly to see if network encryption is active. **Web Server Pro Light** is ended if encryption is active.
3. Connections are then only made if the computer name of the target (Runtime server) is identical to the computer name of the Web Server.
 - a) A project runs with a Server (computer A) and Standby Server (computer B).
 - b) **zenon Web Server Pro Light** is started on computer A.
 - c) A client connects to the Runtime server via **Web Server Pro Light**.
 - d) Runtime on computer A crashes. Computer B takes over as a Standby Server.
 - e) The client attempts to switch to Standby Server computer B.
 - f) Because the web server is running with a license for **Web Server Pro Light**, this rejects the connection from the Web Client to computer B. The web client is offline.

4. Basics

zenon Web Client displays Runtime in a browser, as it would be displayed on a normal client with **zenon**. To do this, it needs a **zenon Web Server** and a Runtime server.

DEFINITIONS

► zenon Web Client

The **zenon Web Client** is a program that runs in a standard web browser and displays a project. It connects to a Runtime server using a **zenon Web Server**. It shows the project of the Runtime server, just as a normal client would do. Only difference: With the **zenon Web Client** the project is displayed in a browser.

Note: **zenon Web Client** always provides the properties of the **zenon Energy Edition** license. However the normal screen is displayed when starting.

► Runtime Server

The Runtime server is the PC, where the project runs as a server project. The Runtime server manages all data: Project data, online data, historical data.

► zenon Web Server

zenon Web Server is a gateway (proxy server) that performs the following tasks:

- Data interface (TCP/IP port conversion) between the Runtime server and the Web Client.
- Checking the licence and checking the number of clients simultaneously connected to the zenon Web Server.

► Publishing service

The publishing service is a standard HTTP Web Server of any manufacturer. It is necessary, so that the project entry page can be published. This service is not required for actual zenon Web Client operation. zenon Web Client does not access the publishing service. To make a clear distinction between zenon Web Server, this service is not called a web server, but is always called a publishing service.

Attention: The publishing service must be added to the trustworthy pages in the web browser.



Information

For small projects, the Runtime server, the zenon Web Server and the publishing service can run on one and the same computer.

The zenon Web Client and the Runtime server must always be operated on different computers.

5. General limitations

Projects that are operated using zenon Web Client have the following limitations:

► Alarms:

Acknowledgement of alarms is only possible when **zenon Web Server Pro** is used.

► Archives:

Archives cannot be read, edited or saved.

► User administration

AD and ADAM/ADLDS only work with certain limitations (as on standard clients too):

AD: The computers must be in the same domain

ADAM/ADLDS: The zenon Web Client needs a physical connection to the zenon Web Server (plus an open port) and to the ADAM/ADLDS server

► Screens:

- The screen of type Archive revision is not available.

► Print:

Before the first printing on the zenon Web Client the function `select printer` has to be executed. Here the printers for the client can be defined. These settings are saved in the `zenon6.ini` so that this procedure does not have to be executed again with each new print job.

► IPA:

The Industrial Performance Analyzer (IPA) module is only available on zenon Web Clients in an intranet, because no connection can be made to the database via the internet. If there is an intranet connection, the database authorizations have to be set accordingly, so that a remote computer can access the database as a zenon Web Client.

► Menus

On the zenon Web Client Main menus are not displayed.

► Monitor Administration:

The Monitor Administration works only with limited functionality. Thus `Adjust resolution` and `scrollbar` are not available.

► PFS:

The Production & Facility Scheduler (PFS) is only available in versions 6.01 or higher.

► Status information:

The status information, which is displayed by pressing the right mouse button, is not available.

► Keyboard combinations:

The key combinations on buttons like e.g. F3 are not available.

► VBA:

VBA is only available if VBA has been installed on the zenon Web Client manually. For detailed information on this, please contact zenon Support.

- ▶ VSTA: zenon Web Server and zenon Web Client support different versions of VSTA.

In general, zenon Web Client supports VSTA, **with the exception of:**

- Debugging
- `Display VSTA editor` function
- Compiling

For details, see the VSTA with zenon Web Client, zenon Web Server and zenon Web Server Pro (on page 44) chapters.

ADDITIONAL RESTRICTIONS FOR WINDOWS CE:

- ▶ A maximum of three zenon Web Clients can be connect with a CE Runtime simultaneously.
- ▶ The zenon Web Server must be running on the same device as the CE Runtime to which it is connected. It is not possible to connect to a CE Runtime on another device.

The zenon Web Server for CE is licensed via the Remote Licensing.

BROWSER



Attention

VBA/VSTA AND DATA EXECUTION PREVENTION

Via function **Data Execution Prevention (DEP)** the operation prevents that the VBA code is executed in the browser.

Microsoft Internet Explorer 8 and 9:

The Microsoft Internet Explorer version 8 and higher offers the possibility to deactivate DEP for the browser.

- ▶ go to *Extras* -> *Internet options* -> *Advanced*-> *Security*
- ▶ deactivate the option *Activate memory protection* in order to reduce the risk of online attacks

Other browsers and Internet Explorer from Version 10 (Windows 8)

DEP must be turned off completely as the browser process cannot be excepted explicitly. This is not recommended due to security issues.

to deactivate DEP:

- ▶ Run the command line with administrative rights
- ▶ Execute the following command:
`bcdedit.exe/set {current} nx AlwaysOff`
- ▶ restart the computer

The setting can be undone with the command `bcdedit.exe/set {current} nx AlwaysOn`

General recommendation: Use VSTA instead of VBA.

6. Licensing

The licensing determines:

- ▶ The version of **zenon Web Server** that runs:
 - **zenon Web Server Standard**
 - **zenon Web Server Pro**
 - **zenon Web Server Pro Light**
- ▶ Number of possible parallel **zenon Web Client** connections (Concurrent Use License)

Note: **zenon Web Server** runs in demo mode without a valid license. In doing so, the following restrictions apply:

- ▶ the **zenon Web Server** can only be started manually
- ▶ The duration that the program can run for is limited to 30 minutes
- ▶ The number of possible clients is limited to 2

To switch from demo mode to a valid license, stop the **zenon Web Server** and enter a valid license number in the License (on page 12) tab. Restart the **zenon Web Server** manually.

ZENON OPERATOR AND WINDOWS CE

zenon Web Server Pro Light is available for **zenon Operator**.

For Windows CE, there is **zenon Web Server Pro** built into Runtime available - Runtime must be started in order for **zenon Web Server Pro** to run. This is limited in functionality due to the platform. Licensing is checked via Remote Transport in the Editor with remote licensing.

REGISTERING THE LICENSE

To license **zenon Web Server**:

1. open *Start -> All programs -> COPA-DATA -> Tools 7.11 -> Licensing*

or:

start the Web Server via *Control panel -> zenon Web Server*.

2. the dialog for entering license data opens
 - **Select Web Server**
3. enter the serial number and the activation number

You find the data for this:

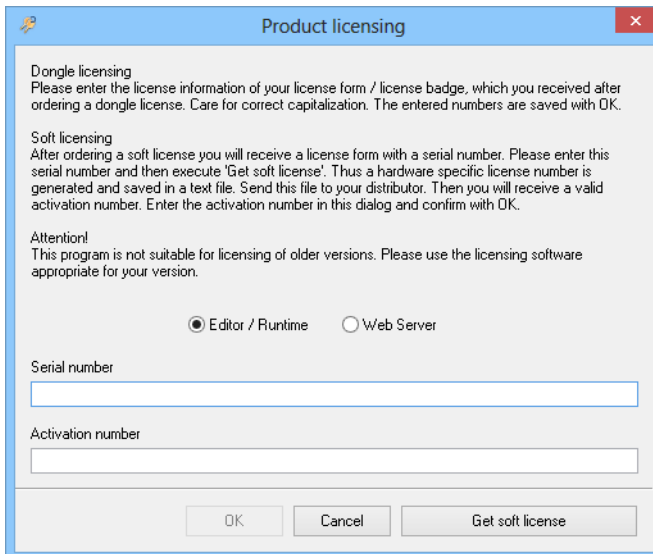
- on your license certificate
- On the license sticker
- in the license file `License.txt`

Path Vista/7/8: `C:\Users\Public\Documents\zenon_Projects\`

Note: Pay attention to capital letters and small letters when entering the data!

4. restart the **zenon Web Server** on the **state** tab (on page 24).
5. after the restart use the zenon Web Server with the license entered

LICENSING DIALOG



The image shows a Windows-style dialog box titled "Product licensing". It contains instructions for "Dongle licensing" and "Soft licensing". Under "Soft licensing", there are two radio buttons: "Editor / Runtime" (which is selected) and "Web Server". Below these are two text input fields labeled "Serial number" and "Activation number". At the bottom, there are three buttons: "OK", "Cancel", and "Get soft license".

Product licensing

Dongle licensing
Please enter the license information of your license form / license badge, which you received after ordering a dongle license. Care for correct capitalization. The entered numbers are saved with OK.

Soft licensing
After ordering a soft license you will receive a license form with a serial number. Please enter this serial number and then execute 'Get soft license'. Thus a hardware specific license number is generated and saved in a text file. Send this file to your distributor. Then you will receive a valid activation number. Enter the activation number in this dialog and confirm with OK.

Attention!
This program is not suitable for licensing of older versions. Please use the licensing software appropriate for your version.

☒ Editor / Runtime ☐ Web Server

Serial number

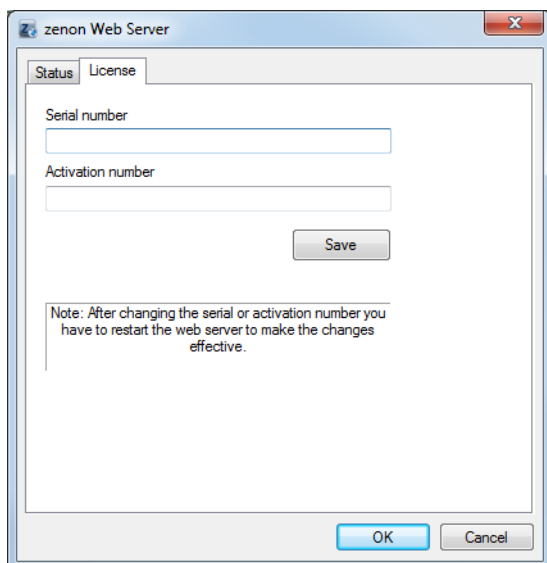
Activation number

OK Cancel Get soft license

| Parameters | Description |
|----------------------|---|
| Editor/Runtime | Active: License is valid for the zenon Editor and/or the zenon Runtime. |
| Web Server | Active: License valid for zenon Web Server. |
| Serial Number | License serial number. If there is already a license available, its license number is displayed here. |
| Activation number: | License activation number. If there is already a license available, its activation number is displayed here. |
| OK | Import data and start zenon with this license when it is next started. |
| Cancel | Discard entries and use zenon with the previous license or no license. |
| Request soft license | Opens the dialog to request a soft license. |

Alternative:

1. Start the Web Server via *Control panel* -> *zenon Web Server*.
2. Enter, in the **License** tab in **zenon Web Server** (on page 24), the serial number and the activation number that is on the license form.



3. Click on **save** in order to save the two numbers.

4. Restart the **zenon Web Server** on the **state** tab (on page 24).



Attention

*The **zenon Web Clients** that are connected lose their connection when restarted. The **zenon Web Clients** will do an automatic reconnect after a certain timeout.*

Note: License number and activation number are entered in the **zenSrv.ini**.

6.1 Dongle licensing

zenon supports the WIBU key and Codemeter systems for licensing with a dongle. For details on this, read the Dongle licensing section in the Licensing manual.

Dongle licensing is carried out via:

- ▶ Computer-based dongle or
- ▶ Network dongle

COMPUTER-BASED DONGLE

Using a computer-based dongle:

1. You receive a dongle and a license form with a serial number and an activation number.
2. Close the dongle with the same computer on which you have installed the **zenon Web Server**.
3. Register the license (on page 12) in the system.

NETWORK DONGLE

As an alternative to the dongle on the same computer, you could also use a central COPA-DATA network dongle. This can be plugged into any computer in the network. Licensing is carried out in a similar manner to licensing the computer-based dongle.



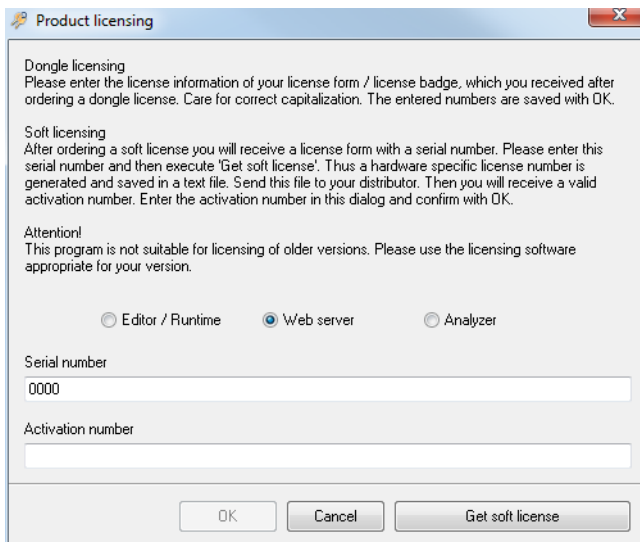
Information

*If a copy of **zenon Web Server** licensed with Codemeter loses the connection to the dongle, the Web Server is ended.*

6.2 Soft licensing

For soft licensing:

1. Start the Web Server licensing program.



The 'Product licensing' dialog box contains instructions for both Dongle and Soft licensing. It features three radio buttons: 'Editor / Runtime', 'Web server' (which is selected), and 'Analyzer'. Below these are input fields for 'Serial number' (containing '0000') and 'Activation number'. At the bottom are 'OK', 'Cancel', and 'Get soft license' buttons.

Product licensing

Dongle licensing
Please enter the license information of your license form / license badge, which you received after ordering a dongle license. Care for correct capitalization. The entered numbers are saved with OK.

Soft licensing
After ordering a soft license you will receive a license form with a serial number. Please enter this serial number and then execute 'Get soft license'. Thus a hardware specific license number is generated and saved in a text file. Send this file to your distributor. Then you will receive a valid activation number. Enter the activation number in this dialog and confirm with OK.

Attention!
This program is not suitable for licensing of older versions. Please use the licensing software appropriate for your version.

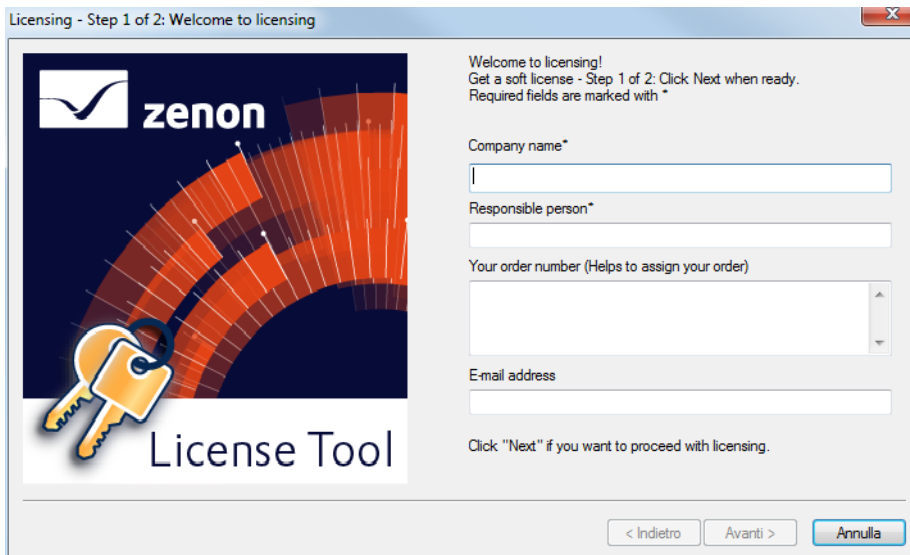
☐ Editor / Runtime ☒ Web server ☐ Analyzer

Serial number
0000

Activation number

OK Cancel Get soft license

2. Click on the **License request for soft licensing** button.
3. The form for your license data is opened.



The 'Licensing - Step 1 of 2: Welcome to licensing' dialog box features the Zenon logo and a 'License Tool' graphic on the left. On the right, it contains a welcome message and several input fields: 'Company name*', 'Responsible person*', 'Your order number (Helps to assign your order)', and 'E-mail address'. At the bottom are '< Indietro', 'Avanti >', and 'Annulla' buttons.

Licensing - Step 1 of 2: Welcome to licensing

Welcome to licensing!
Get a soft license - Step 1 of 2: Click Next when ready.
Required fields are marked with *

Company name*

Responsible person*

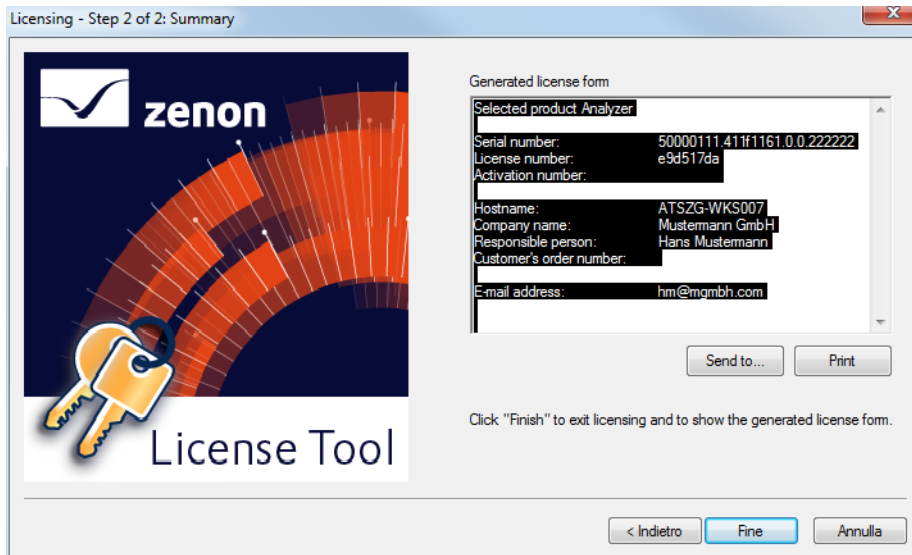
Your order number (Helps to assign your order)

E-mail address

Click "Next" if you want to proceed with licensing.

< Indietro Avanti > Annulla

4. Fill out all fields and click on **Next**.
5. The program then generates a license order form with the license number valid for your PC.



Licensing - Step 2 of 2: Summary

zenon

License Tool

Generated license form

Selected product Analyzer

Serial number: 50000111.411f1161.0.0.222222

License number: e9d517da

Activation number: [redacted]

Hostname: ATSZG-WKS007

Company name: Mustermann GmbH

Responsible person: Hans Mustermann

Customer's order number: [redacted]

E-mail address: hm@mgmbh.com

Send to... Print

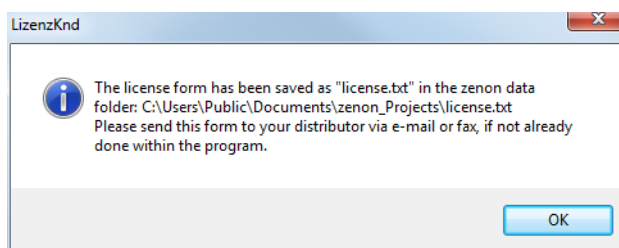
Click: "Finish" to exit licensing and to show the generated license form.

< Indietro Fine Annulla

6. Send your license request to your sales partner:
 - a) By clicking on send by email
 - b) By clicking on print as print-out or fax

The license number is also on this form and has to match with that of your PC.

7. An info box summarizes the process.



8. Register the license (on page 12) in the system as soon as you have received your license data

7. zenon Web Server (Pro)

zenon Web Server is necessary to establish a connection between **zenon Web Client** and the Runtime server. It can be installed on any computer in the network that has a physical network connection to the Runtime server. It is **not** possible to operate **zenon Web Clients** and the Runtime server on the same computer. However, **zenon Web Server** can also be installed on the same computer as the Runtime server.



Information

A complete deinstallation of the Web Server is only possible when the Web Server is not running.

Note: Files that can be edited by user are also not removed after a complete deinstallation. This ensures that no information is lost when carrying out an upgrade, for example. If these data is also to be removed, it must be deleted manually.

Find out more information in the Redundant operation (on page 35) chapter.

7.1 Instruction: Preparing - installing - starting

The following steps are necessary to use zenon Web Server (Pro):

1. Configuring network and server in project setting
2. Install WWW publishing service on the PC
3. Installing zenon Web Server
4. Create a start page (on page 48) and start up zenon Web Server
5. Install and start zenon Web Client

1. PROJECT SETTING

The project that is to be started using zenon Web Server requires the following basic settings in the zenon Editor:

- ▶ Activate the `> Network -> Network` active project property
- ▶ Enter project property `-> Network -> Server 1 -> computer (name)` with Runtime.

2. INSTALL WWW PUBLISHING SERVICE ON THE PC

The publishing service is necessary to publish the project entry page. You can use any desired systems to do this. To use Windows' own publishing service:

1. Open, in the *Control panel* - >*Programs and functions* - >*Activate or deactivate Windows functions*.
2. Navigate to *Internet information services* -> *WWW services*.
3. Activate all WWW services.
4. Add the pushing service to **Trustworthy pages** in the web browser.

You can find information from Microsoft on this topic at:

[http://technet.microsoft.com/en-us/library/cc782498\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc782498(WS.10).aspx)

([http://technet.microsoft.com/de-de/library/cc782498\(WS.10\).aspx](http://technet.microsoft.com/de-de/library/cc782498(WS.10).aspx))

If the services were activated successfully, the following folder must be present in the root directory:

C:\inetpub\wwwroot



Information

If zenon Web Server has already been installed, the folder that was created in the process C:\Program Files (x86) \COPA-DATA\zenon Webserver\zenon must be moved to C:\inetpub\wwwroot.

3. INSTALLING ZENON WEB SERVER

zenon Web Server is installed on the computer with the activated WWW services.

1. Start the installation from the installation medium and follow the instructions of the installation assistant. You can find details on installation in the Installation of zenon Web Server from the installation medium (on page 22) chapter.
2. Configure the COPA-DATA Web Server settings:
 - From zenon version 6.20 onwards, in the file `global_vars.js` (on page 32) in the folder C:\inetpub\wwwroot\zenon\config
 - up to zenon 6.20, along the lines of the file `init.htm` (on page 54)

4. START UP ZENON WEB SERVER

To put the zenon Web Server into operation:

1. Ensure that the WWW publishing services were started and that the entry page (on page 48) is ready
2. Start the Runtime project on the computer
3. Start zenon Web Server

You can find details on starting zenon Web Server and its settings in the Starting and server settings (on page 24) chapter.

5. INSTALL AND START ZENON WEB CLIENT

To observe or operate Runtime using a browser, you need zenon Web Client on the corresponding computer.

1. Install zenon Web Client

You can find details on Web Client in the zenon Web Client (on page 35) chapter.

2. Start Microsoft Internet Explorer and connect the web client to the computer on which zenon Web Server is running.

This may need to be added as a "**trusted site**" in the Internet Explorer settings under *Extras* -> *Internet options* -> *Security*.

3. The number of web clients that can be used at the same time depends on your license (on page 12).



Attention

VBA/VSTA AND DATA EXECUTION PREVENTION

Via function **Data Execution Prevention (DEP)** the operation prevents that the VBA code is executed in the browser.

Microsoft Internet Explorer 8 and 9:

The Microsoft Internet Explorer version 8 and higher offers the possibility to deactivate DEP for the browser.

- ▶ go to *Extras -> Internet options -> Advanced-> Security*
- ▶ *deactivate the option Activate memory protection in order to reduce the risk of online attacks*

Other browsers and Internet Explorer from Version 10 (Windows 8)

DEP must be turned off completely as the browser process cannot be excepted explicitly. This is not recommended due to security issues.

to deactivate DEP:

- ▶ Run the command line with administrative rights
- ▶ Execute the following command:
bcdedit.exe/set {current} nx AlwaysOff
- ▶ restart the computer

*The setting can be undone with the command **bcdedit.exe/set {current} nx AlwaysOn***

General recommendation: Use VSTA instead of VBA.

Limitations of zenon Web Server and zenon Web Client can be found in the General Limitations (on page 9) chapter.

7.1.1 Installation of zenon Web Server from the installation medium

To install **zenon Web Server** Or **zenon Web Server Pro**:

1. Activate the WWW services on the computer.

Folder `C:\inetpub\wwwroot` must exist.

2. Start the zenon installation medium. The start screen is displayed

If you have deactivated the autostart feature, execute `start.exe` from the installation medium.

3. Select zenon Web Server.
4. Follow the installation routine.
5. Restart the computer.

After installation, You can find the setup files for the web client in subfolders of the zenon Web Server installation path (xxx stands for the respective version of zenon), for example: `C:/Program Files (x86)/COPA-DATA/zenonWebserver/zenon/controlversions/Versionxxx/zenon_Webclient_Setup_ENGLISH.EXE`
or

`C:/Inetpub/wwwroot/zenon/controlversions/Versionxxx/zenon_Webclient_Setup_ENGLISH.EXE`

The website examples (`index*.html` and `init*.html`) are also installed. These can be found in the subfolder `zenon` of the zenon Web Server installation path, for example:

`C:/Programs/zenonWebserver/zenon/index.htm`

or

`C:/Inetpub/wwwroot/zenon/index.html`



Information

*The **zenon Web Server** service is started automatically only in the licensed version. In demo mode, you have to start the zenon Web Server manually via zenon Web Server console in the Control Panel.*

7.1.2 User rights for installation

You need the following user rights for installation:

zenon Web Server:

- ▶ For the installation and the configuration of the zenon Web Server (enter the serial number and the activation key) you need administrator rights.
- ▶ For the actual operation: As the zenon Web Server runs as a service (in the context of the SYSTEM user) in the background, no user has to be logged in for operation. It therefore does not matter which Windows user rights the logged in user has.

zenon Web Client:

- ▶ Windows administrator rights are required for installation.
- ▶ Normal user rights are sufficient for installation.

7.1.3 Starting and server settings

zenon Web Server is automatically started in normal operation. If it is to be stopped or the license number is to be reentered, it must be restarted manually.

Note: **zenon Web Server** runs in demo mode without a valid license. In doing so, the following restrictions apply:

- ▶ the **zenon Web Server** can only be started manually
- ▶ The duration that the program can run for is limited to 30 minutes
- ▶ The number of possible clients is limited to 2

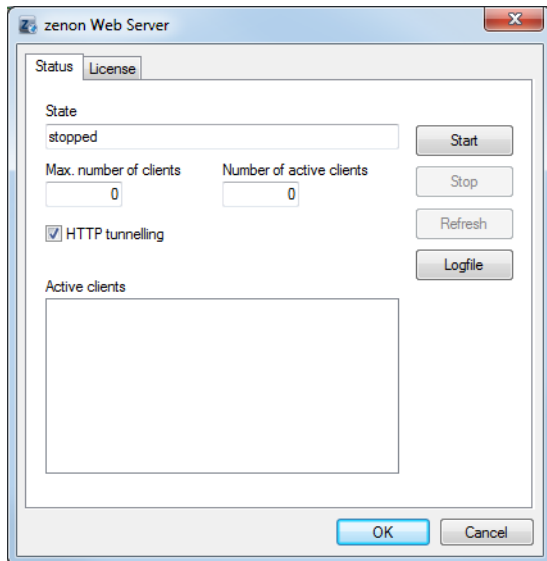
To switch from demo mode to a valid license, stop the **zenon Web Server** and enter a valid license number in the License (on page 12) tab. Restart the **zenon Web Server** manually.

CONFIGURING ZENON WEB SERVER

To configure the Web Server:

1. Open system control
2. Double click on **zenon Web Server**

3. The dialog for configuration and licensing (on page 12) opens

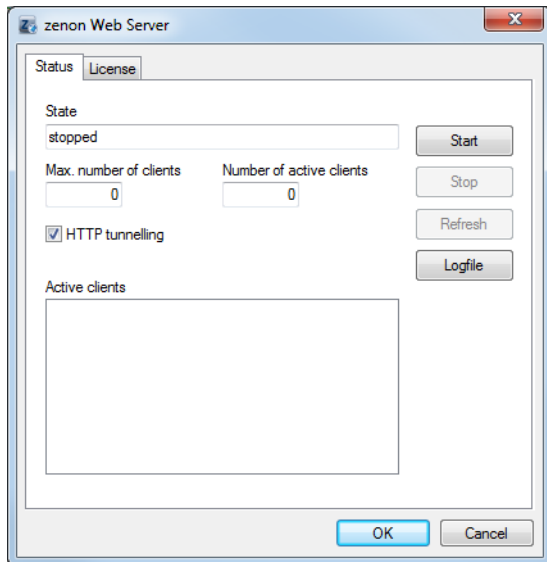


| TAG | Description |
|---------------------------|--|
| State: | <p>Displays version and status of the Web Server:</p> <p>Version:</p> <ul style="list-style-type: none"> ▸ zenon Web Server Pro ▸ zenon Web Server Pro Light <p>Status messages:</p> <ul style="list-style-type: none"> ▸ running: Web Server 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: | <p>Maximum number of clients that are permitted to connect to the Web Server. The number is defined by the license.</p> <p>Two clients are licensed for 30 minutes in demo mode.</p> |
| Number of active clients: | Displays number of clients currently connected. |
| Start | Starts Web Server |
| Stop | Stops Web Server |
| Refresh | Updates display. |
| Log file | Opens the log file. |
| HTTP tunneling | <p>Active: HTTP tunneling (on page 28) is activated.</p> <p>Only available for zenon Web Server Pro, not in the Light version.</p> <p>Note: Can only be amended if the Web Server has the status stopped. Cannot be switched during operation.</p> |
| Active clients | List of connected clients. |
| OK | Applies settings and closes the dialog. |
| Cancel | Discards changes and closes the dialog. |

START ZENON WEB SERVER MANUALLY

To start Web Server manually:

1. Open system control
2. Double click on **zenon Web Server**
3. The dialog for configuration and licensing (on page 12) opens



4. Select a connection via TCP or HTTP
5. Click on the **start** button

STARTING AND CONFIGURING UNDER WINDOWS CE

There is no start dialog for Windows CE. zenon Web Server is already integrated into Runtime.

To start zenon Web Server under Windows CE, the following must be the case:

- ▶ The **Network active** property must be activated in the project
- ▶ Runtime must have been started
- ▶ zenon Web Server must be licensed

Note: HTTP tunneling (on page 28) is not available with Windows CE.

Configuration is similar to the information provided in the init.htm (on page 54) chapter.

With Windows CE, the functionality is subject to all the limitations that are generally applicable for Windows CE and zenon Web Server under Windows CE.

HTTP Tunneling

The zenon Web Server can also, instead of TCP connections, accept HTTP connections. HTTP connections are only accepted by zenon Web Clients. The connection to Runtime server is always made via TCP. A separate HTTP connection is created for each TCP connection from the Web Client to the Web Server.

Connections are made via TCP by default. To use HTTP tunneling, the following must be the case:

- ▶ HTTP must be activated using the configuration dialog (on page 24) or the entry in **zenon6.ini**
- ▶ Port 8080 or the alternative port configured in **zenon6.ini** on the PC Web Server must be reachable
- ▶ The Project entry page (on page 53) for Web Clients, which should connect to the Web Server with HTTP tunneling, should have the **UseHTTP** parameter with a value that is not 0 in the **<embed>** and **<object>** entry

Note: HTTP tunneling (on page 28) is not available with Windows CE.

CONFIGURATION OF THE PORT

To configure the port for HTTP tunneling on zenon Web Server:

1. Open **zenon6.ini**
2. Navigate to the **NET_PROXYPORT=** entry or create this
3. set the desired port

Default: 8080

The Web Server eavesdrops on the port, the Web Client connects to the port.

4. save **zenon6.ini**

Each change to the port number in zenon6.ini on the computer on which the Web Server is running must also be created accordingly on all computers with the zenon Web Client.

PROCEDURE

The Web Client sends its messages for the Runtime server to the Web Server via HTTP POST. This forwards it to the assigned connection to the Runtime server via TCP. The Runtime server sends its messages for the Web Client via TCP to the Web Server, which buffers them.

The buffer of a connection is emptied by the Web Client through HTTP GET requests. If no message is available for a connection, the client waits for a configurable time (`POLLING_INTERVALL` entry in `zenon6.ini` with a standard value of 2 seconds).

For details, see the Procedure for HTTP connection (on page 29) chapter.

ERROR MESSAGES

If the HTTP connection is active, network-specific messages are sometimes shown in the Diagnosis Viewer instead of HTTP-specific messages (on page 68). For example, if a connection is made or disconnected or in the event of an HTTP error.

Procedure with HTTP connection

STARTING THE WEB SERVER

The Web Server can be started using

- ▶ A dialog in the control panel
- ▶ Manual

A DIALOG IN THE CONTROL PANEL

1. Open system control
2. Open the **zenon Web Server** configuration dialog (on page 24)
3. Activate the **HTTP** checkbox
4. Click on the **start** button

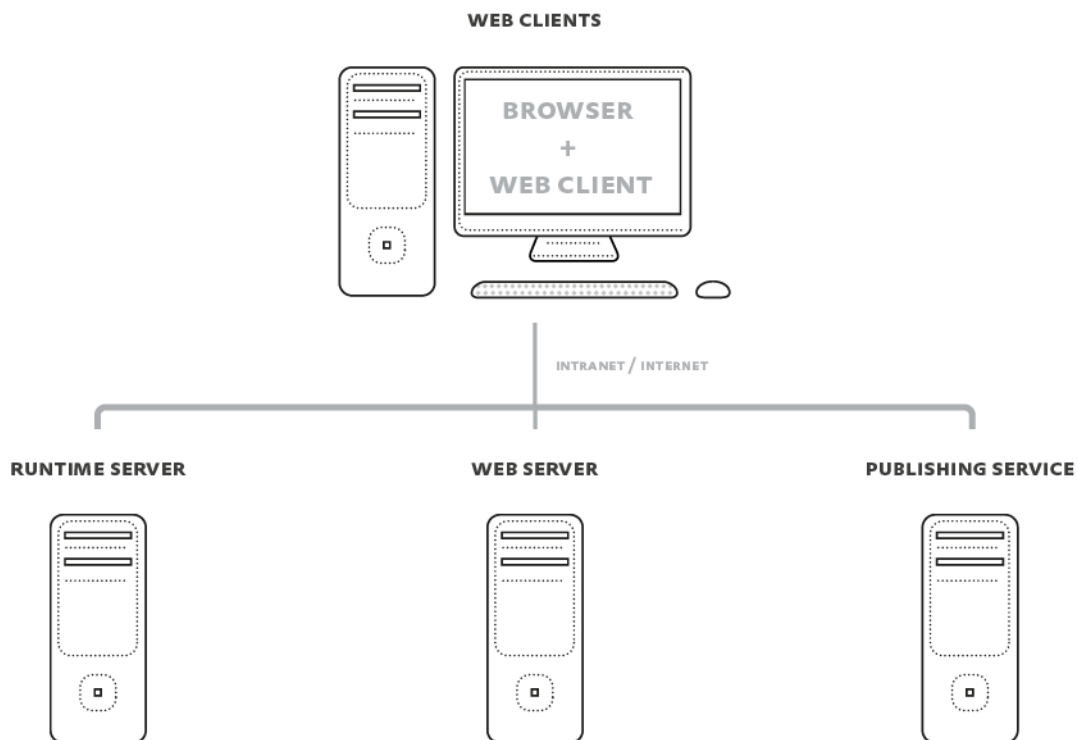
MANUAL START

1. Open Explorer
2. Enter at the address line: `%cd_system%`
3. Open the file `zenWebSrv.ini` with a text editor.
4. Navigate to the [DEFAULT] entry

5. Create or edit the entry `USE_HTTP_PROXY=` and set the value to 1.
(`USE_HTTP_PROXY=1`)
6. Save and close the file
7. Start zenon Web Server by means of one of the four following possibilities:
 - a) The configuration dialog (on page 24) in the control panel
 - b) Using the command line: Starting Web Server as a service or by entering the complete path
 - c) Start, in the service view of the Task Managers or in the `services` system control element, the `zenWebSrv` service
 - d) Navigate in Windows Explorer to the installation directory of the Web Server and start this by double clicking on `zenWebSrv.exe`

PROCEDURE FOR CONNECTIONS

If a Web Client is started, it connects to the Runtime server via the Web Server:



1. The user starts the browser and opens the project entry page (on page 48).

2. The project entry page instigates the browser to start the Web Client with the pre-defined HTTP tunneling configuration.
3. The Web Client makes 3 HTTP connections (control, data and file synchronization connection) to the Web Server:
 - a) A connection ID is requested from the Web Client.
 - b) The Web Server sends a free connection ID if one is available. The ID sent is entered into the list of connection IDs issued. This happens so that no ID can be issued twice and to transfer the HTTP connection to a TCP connection.
 - c) The network init packet is sent to the Web Server via the HTTP connection.
 - d) The Web Server checks to see if this Web Client is already in the list of active clients. If the client is new, a check is made to see if the maximum number of clients has already been reached. If the client connection can be accepted, a TCP connection is made in Runtime and the init packet is forwarded. The accepted client connection and the server connection that has been made are mapped to each other until the connection has ended: Data from the client connection is forwarded via the server connection and vice versa.
4. Data exchange:
 - a) The Web Server works as a protocol translator between TCP and HTTP and buffers the messages.
 - b) Data from Runtime for the Web Client is buffered on the server. The Web Client calls this up by means of GET requests.
 - c) Data from the Web Client for Runtime is sent by the Web Client by means of a POST request and forwarded to Runtime by the Web Server.
5. If the Web Client is ended in the browser (browser is closed or the project entry page is left), the connections to the Web Client are disconnected.
 - a) The web client sends a network-end package to Web Server. The Web Server forwards this to Runtime, ends the connection and clears the occupied resources (working memory, ports, connection ID ...).
 - b) When the client is cleared, an additional HTTP end packet is sent to the Web Server, to ensure that the connection ID was removed from the list.

7.1.4 Settings in global_vars.js

The configuration file `global_vars.js` is used for zenon versions from 6.20. It is in the folder `C:\inetpub\wwwroot\zenon\config\`

`global_vars.js`

```
// Here enter the exact string how your project is named
var PROJECTNAME = "ENTER_PROJECTNAME_HERE";
// Please enter here the computername, where your zenon Runtime is installed and running
var RUNTIMESERVER= "ENTER_RUNTIMESERVERNAME_HERE";
// Here you have to enter computername, where you installed the zenon Web Server
var WEBSERVER = "ENTER_WEBSERVERNAME_HERE";
// Enter an optional init-zenon-function to be executed when the zenon Web Clients connects
to its server. Defaultvalue = "Init"
var INITFUNCTION = "Init";
// Enable zoom feature (will stretch the project resolution to the size of the zenon Web
Client control) OFF = "0" / ON = "1"
var ZOOM = "0";
// Here you have to enter the version number corresponding to the zenon Web Client.
var VERSION = "6,51,0,0";
```

PARAMETERS

| TAG | Description |
|----------------------|---|
| Projectname | <p>Defines the name of the Runtime project.</p> <pre>var PROJECTNAME = "NAME";</pre> <p>For example:</p> <pre>var PROJECTNAME = "zenon";</pre> <p>Note: The project must as a server project on the stipulated Runtime server.</p> |
| RuntimeServer | <p>Denotes the target computer on which Runtime for the project runs.</p> <pre>var RUNTIMESERVER = "NAME";</pre> <p>For example:</p> <pre>var RUNTIMESERVER = "T13-XPDE32";</pre> <p>Note: Use capital letters only. State computer names without domain</p> |

| | |
|---------------------|--|
| | <p>suffix.</p> <p>The name must correspond with the server name in the project configuration, see also: Project configuration zenon 5.x (on page 45) and Project configuration from zenon 6.x (on page 46).</p> <p>Runtime server redundancy</p> <p>Only the name of the server is given for redundant Runtime projects, not the name of the Standby Server. The name of the Standby Server is saved in the project's <code>project.ini</code> file. zenon Web Client saves this locally the first time it connects with the Runtime Server. That means: The Runtime server has to be online the first time a connection to a redundant project is made. For each further connection, the redundancy concept then will work, i.e. the zenon Web Client first tries to establish a connection to the Runtime server. If it cannot be reached, it automatically connects to the standby server.</p> <p>Web Server redundancy</p> <p>If, in addition to zenon Runtime-Server, the zenon Web Server is also to be operated as redundant, the following must be the case:</p> <ul style="list-style-type: none"> ▶ Two copies of zenon Web Server installed and licensed on different computers ▶ Both copies of zenon Web Server, separated by a comma, must be entered in the variable declaration on the HTML page: <pre>var WEBSERVER = WEBSERVER,WEB-STANDBY-SERVER;</pre> |
| Web Server | <p>Denotes the target computer on which zenon Web Server was installed.</p> <p>Attention: That is not the publishing server!</p> <pre>var WEBSERVER = "NAME";</pre> <p>For example:</p> <pre>var WEBSERVER = "CD1111";</pre> <p>Note: Use capital letters only. State computer names without domain suffix.</p> |
| Initfunction | <p>Defines a zenon function that is executed when a project is started in the browser.</p> <pre>var INITFUNCTION = "Init";</pre> <p>For example:</p> <pre>var INITFUNCTION = "Init";</pre> |

| | |
|--------------------|---|
| | <p>Default: "Init"</p> <p>Note: The wording must correspond to the function names in zenon (capitalization).</p> |
| Zoom | <p>Defines if the project can be zoomed in or out of in the browser view.</p> <p>var ZOOM = "WERT";</p> <p>0: OFF</p> <p>1: ON</p> <p>For example:</p> <p>var ZOOM = "0";</p> <p>Note: The zoom adjustment is only considered on initializing, not when the Runtime is running. If a certain size is wanted, it has to be defined by the ActiveX control.</p> |
| var VERSION | <p>Defines the zenon Web Client version.</p> <p>var VERSION = "WERT";</p> <p>for example:</p> <p>var VERSION = "6,50,1,0";</p> <p>This must always be the same or higher than the version of zenon Runtime.</p> |

Note: When entering parameters in the `global_vars.js` file, note capitalization.

You can find an example configuration on the installation medium. You can read how this is adapted in the Configuration of the example page (on page 61) chapter. (on page 61)

7.1.5 Storage of Runtime files

zenon Web Server saves the Runtime files in the `%Temp%\zenWebCli.` folder as standard

`%Temp%` signifies the temporary file folder under Windows. This is saved individually for each user and can be changed under *System control -> System -> Advanced system settings -> Environment variables*.

You can define any desired folder as the storage location for the Runtime files with the `zenon6.ini` entry:

1. Open `zenon6.ini`
2. Navigate to the section
`[PATH]`
3. Create or modify the entry
`WEB_PROJECT_PATH=`

7.1.6 Redundancy operation

zenon Web Server can also be operated redundantly from zenon Web Client 6.01.

With redundant Runtime stations, a redundant zenon Web Server is also recommended. If a zenon Web Server fails or is stopped, the zenon Web Client automatically switches to the Standby Web Server.



Attention

An automatic switch back - as with the Runtime server - is not carried out. zenon Web Client remains connected to the zenon Standby Web Server until:

- ▶ zenon Web Client is restarted or
- ▶ The zenon Standby Web Server is stopped or fails

Then the zenon Web Client tries to connect with the first zenon Web Server defined as standard.

When using a zenon Web Server only, we recommend that you do not use it on the same computer as the Runtime Server or the Runtime Standby Server, because the zenon Web Server would also fail in the event that this computer fails.

8. zenon Web Client

To be able to display projects in Runtime in a browser, **zenon Web Client** must be installed locally on the same computer. The zenon Web Client is available as a 32-bit application. You can find details on browser operating systems in the Browser (on page 36) chapter.

zenon Web Client primarily consists of an ActiveX control. This provides the information in a browser exactly as in a normal Runtime client. The connection to the Runtime server is implemented with **zenon Web Server** (on page 19).

You can find the current installation files for the **zenon Web Client** after installation of **zenon Web Server** (Pro) in the respective subdirectory, for example:

```
C:\inetpub\wwwroot\zenon\controlversions\version711SP0\WebClient.exe or  
WebClient_small.exe.
```

All **zenon Web Client** setups are signed digitally and can also be provided on a website for download. In the properties of the **zenon Web Client** setups you will find the according certificate information.

zenon Web Client setups in all language versions available can be called up online in the customer area of the Ing. Punzenberger COPA-DATA GmbH website.



Information

*The **zenon Web Client** sends error files and log files. The diagnosis server is also installed when **zenon Web Client** is installed.*

8.1 Browser

zenon Web Client supports the following browsers:

- ▶ Microsoft Internet Explorer

Attention: zenon Web Client, as a 32-bit application, must be used with the 32-bit version of Internet Explorer.

The 64-bit version cannot be used.

- ▶ Mozilla Firefox
- ▶ Google Chrome
- ▶ Apple Safari

It is recommended that you always use the most up to date version.



Information

The browser for zenon Web Client must support one of the following operating systems:

- ▶ Windows Vista
- ▶ Windows 7
- ▶ Windows 8 and 8.1
- ▶ Windows Server 2008 and 2008 R2
- ▶ Windows Server 2012

Other operating systems, such as Windows CE, Linux or others are only usable in combination with a terminal server.

BROWSER START

The project entry page (on page 48) decides the basis of browser identification, if and how the Web Client is started:

- ▶ Internet Explorer: Start as ActiveX component
- ▶ Firefox: Start as plug-in
- ▶ Chrome: Start as plug-in
- ▶ Safari: Start as plug-in
- ▶ Other browsers or non-supported versions: An error message is displayed; the zenon Web Client does not start

SUPPORTED VERSIONS

| Browser | From version | Remark |
|-----------------------------|--|--|
| Microsoft Internet Explorer | ▶ 6.0 | <ul style="list-style-type: none">▶ Recommended from: 8.0▶ 32-bit version only▶ Note the information on memory protection for IE 8/9 |
| Mozilla Firefox | ▶ 3.6:4 Plug-in container must be activated manually | <ul style="list-style-type: none">▶ Recommended from: 4.0 (plug-in container is activated as standard)▶ Note the information on configuration and keyboards |
| Google Chrome | ▶ 1.0 | ▶ recommended: from version 7.0 |
| Apple Safari | ▶ 3.0 | ▶ recommended: from version 5.0 |



Attention

VBA/VSTA AND DATA EXECUTION PREVENTION

Via function **Data Execution Prevention (DEP)** the operation prevents that the VBA code is executed in the browser.

Microsoft Internet Explorer 8 and 9:

The Microsoft Internet Explorer version 8 and higher offers the possibility to deactivate DEP for the browser.

- ▶ go to *Extras -> Internet options -> Advanced-> Security*
- ▶ deactivate the option *Activate memory protection* in order to reduce the risk of online attacks

Other browsers and Internet Explorer from Version 10 (Windows 8)

DEP must be turned off completely as the browser process cannot be excepted explicitly. This is not recommended due to security issues.

to deactivate DEP:

- ▶ Run the command line with administrative rights
- ▶ Execute the following command:
bcdedit.exe/set {current} nx AlwaysOff
- ▶ restart the computer

*The setting can be undone with the command **bcdedit.exe/set {current} nx AlwaysOn***

General recommendation: Use VSTA instead of VBA.

MOZILLA FIREFOX CONFIGURATION

For all versions of Mozilla Firefox before version 4, it is necessary to activate the plug-in containers manually. To do this:

1. Enter at the address line: **about:config**
2. The browser may bring up a warning: **The guarantee may be invalid here!**
3. Click on the button: **I'll be careful, I promise!**

4. Navigate to the `dom.ipc.plugins.enabled` property
5. This must be set to `true`
6. To set this status:
 - a) Right-click on the property
 - b) select, in the context menu, the command: `switching`
7. Close the browser

Note: If these settings are not made, the zenon Web Client in Firefox cannot communicate with Runtime. Screens are displayed, but all variables are displayed as offline; screen elements thus have no values and are highlighted in blue.



Attention

*Individually adapted screens of type **Keyboard** may under certain circumstances not work properly with the Mozilla Firefox browser.*

Reason: *Mozilla Firefox loads new windows in the background without putting the focus on them. Individually adapted keyboard screens are however closed when they lose the focus.*

Solution: *Use another browser such as Microsoft Internet Explorer, Apple Safari or Google Chrome.*

Automatic keyboards are not affected!

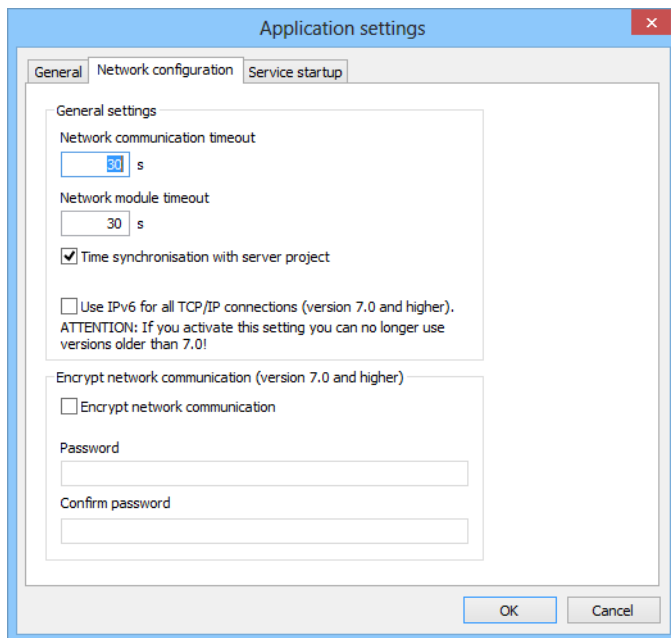
8.2 Encryption of the communication in the network.

From zenon version 7, communication in the network can be protected with strong encryption. From zenon version 7.11, the configuration for the encryption of the communication of the Web Server has been integrated into the Startup Tool.

TO ACTIVATE ENCRYPTION IN THE WEB CLIENT:

1. Start the Startup Tool
2. Select the `Options...` menu entry

3. Switch to the **Network configuration** tab
4. Activate the **Encrypt network communication** checkbox to activate encrypted Web Client communication.



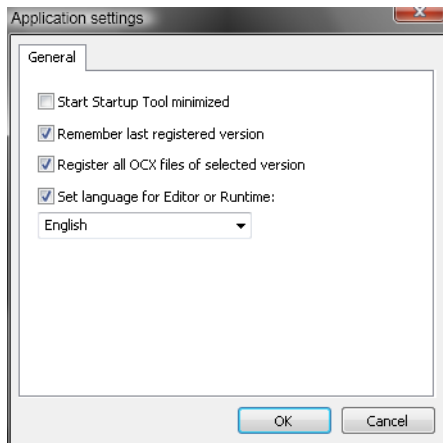
Information

You can get further information for the network configuration in the Startup Tool in the Tools manual in the Network Configuration chapter.

8.3 Language setting of zenon Web Client

From zenon version 7.11, the configuration for the language setting of the Web Server has been integrated into the Startup Tool.

TO CONFIGURE THE LANGUAGE FOR THE WEB CLIENT:



1. Start the Startup Tool
2. Select the **General...** menu entry
3. Select the desired language in the **Language for Editor and Runtime** drop-down list.

AVAILABLE LANGUAGES FOR THE WEB CLIENT:

- ▶ Czech
- ▶ Chinese
- ▶ German
- ▶ English
- ▶ Spanish
- ▶ French
- ▶ Italian
- ▶ Russian



Information

You can get further information for the language setting in the Startup Tool in the Tools manual in the General chapter.

8.4 zenon Web Client - compatibility

With the zenon Web Client, you access different versions of Runtime, along the lines of Runtime compatibility. The version number of the Web Client must only be the same or higher than the Runtime version.

The Runtime online compatibility makes interoperability of Runtime systems (also via Web Clients) in the zenon network possible even if the version of the client Runtime is higher than the version of the server Runtime.

The current Runtime can load projects of the following versions:

- ▶ 6.20 SP4
- ▶ 6.21 SP0
- ▶ 6.21 SP1
- ▶ 6.22 SP0
- ▶ 6.22 SP1
- ▶ 6.50 SP0
- ▶ 6.51 SP0
- ▶ 7.00 SP0
- ▶ 7.10 SP0
- ▶ 7.11 SP0

Due to the multi-project administration projects from different versions can be loaded. For example the Integration project can have version 7.11, a sub-project version 7.00 and another sub-project version 6.51.



Information

It is best to always use the zenon Web Client with the highest service pack number within a version.

9. VSTA with zenon Web Client, zenon Web Server and zenon Web Server Pro

VSTA is supported by zenon with different versions of zenon Web Server und zenon Web Server Pro (on page 6).

| Function | zenon Web Client with zenon Web Server Standard | zenon Web Client with zenon Web Server Pro |
|------------------------|---|--|
| Show VSTA macro dialog | + | + |
| Execute VSTA macro | + | + |
| Open VSTA editor | - | - |
| VSTA events | + | + |
| Comment | <ul style="list-style-type: none"> ▶ No values are written to zenon variables. ▶ Windows messages boxes can be opened. ▶ Compiling and debugging is not possible. To do this, a standard zenon Runtime must be used. | <ul style="list-style-type: none"> ▶ All zenon VSTA functionalities are available in full. ▶ Compiling and debugging is not possible. To do this, a standard zenon Runtime must be used. |

INSTALLATION

For the use of VSTA

- ▶ The following applications must be present on the system or installed manually:
 - Microsoft Visual Studio Tools for Applications 2.0 (VSTA 2.0)
 - Microsoft .NET Framework 3.5

Both programs are on the installation medium for zenon Web Server and/or zenon 7.11.

- ▶ `VSTAIntegration.dll` must be in the zenon program directory.
This is installed automatically when zenon is installed.

INI ENTRIES

The following entries must be set in `zenon6.ini`:

[VSTA]

ON=1

CSHARP=1

[VBA]

EIN=1

EVENT=1

Comment: You can find **zenon6.ini** in the folder **C:\ProgramData\COPA-DATA\System**

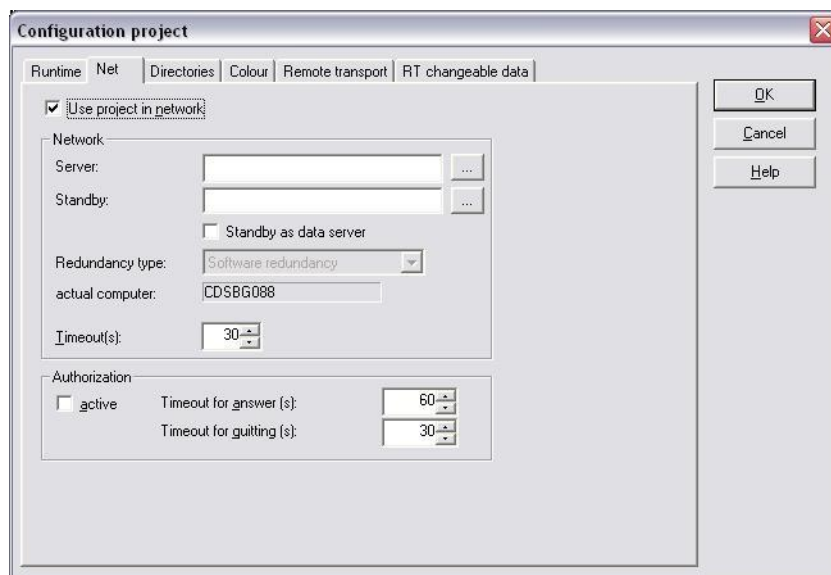
10. Engineering in the Editor

In order to access a Runtime server via the internet or intranet, the project must be a network project.

10.1 Project configuration 5.x

The Runtime has to be started as a server. This is configured in the project configuration in the property page Net. The option Use project in network must be **activated** in order to be able to use the project in a network.. Using the ... button the computer that is to take on the role of the server for this project is selected. This computer name must then also be stated in the project entry page (e.g.:

Globalvars.js, see Configuration of the example page (on page 61), so that the connection can be established.

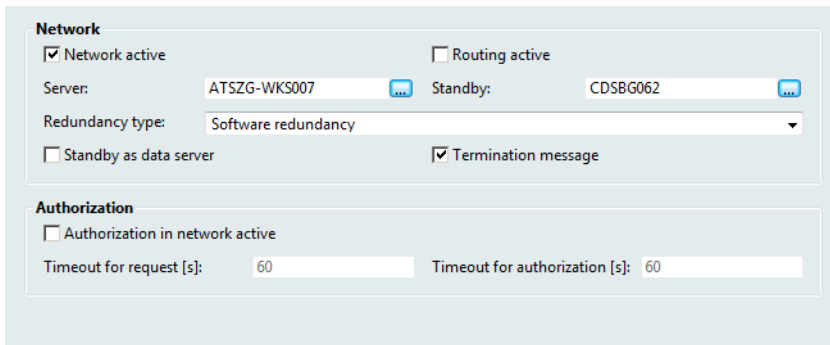


You will find more information on the network possibilities and settings in the chapter Network.

10.2 Project configuration from 6.x onwards

The Runtime has to be started as a server. This is configured in the Editor in the project properties in the `Network` section:

- ▶ The checkbox for the `Network active` property must be activated
- ▶ The computer name of the Runtime server must be entered in the `Server 1` property. This PC must be subsequently stated in the HTML – project entry page (e.g.: `Globalvars.js`, see Configuration of the example page (on page 61), so that the connection can be established.



The screenshot shows the configuration interface for the Network and Authorization settings. The **Network** section includes:

- ☒ Network active
- ☐ Routing active
- Server: (with a PC icon)
- Standby: (with a PC icon)
- Redundancy type: (dropdown menu)
- ☐ Standby as data server
- ☒ Termination message

The **Authorization** section includes:

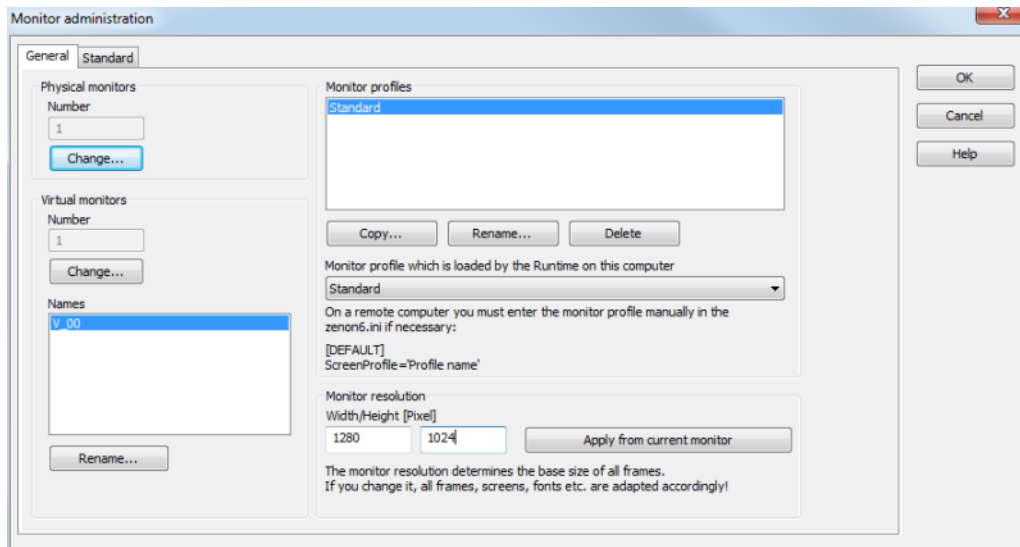
- ☐ Authorization in network active
- Timeout for request [s]:
- Timeout for authorization [s]:

You can find further information on the zenon network in the Network chapter.

10.3 Screen resolution and monitor administration

zenon monitor administration is available in zenon Web Client with limitations.

Important for configuration: The automatic adaptation of the resolution to the client cannot be used for web use. For this reason, the screen size must be set accordingly during configuration. zenon Web Client uses the screen size set for the project as standard: *Project properties -> Graphical design -> Monitor administration -> Click on the ... button -> General tab - Screen resolution.*



The resolution can be scaled using the zenon Web Client setting. For details, see Configuration of the example page (on page 61) chapter.

With the help of the zoom property, zenon Web Client can be zoomed to the size of an ActiveX element.

SIZE IN THE BROWSER

The browser always needs some screen area for menus and scroll bars. So the area, which is available for the zenon Web Client, is always smaller than the defined monitor resolution. If you would like to have a full screen of the project in the browser, you must set the screen size as smaller than that actually present on zenon Web Client.

For example:

Monitor resolution on zenon Web Client PC: 1024x768 pixel

Screen size in monitor administration: 800 x 600.



Information

If you want to use the multi-project administration on the zenon Web Client, the screen size has to be the same for all projects!

MULTI-MONITOR SYSTEM:

On a multi-monitor system, the process screens are opened as defined in the profile, on different real monitors. When using a Web Client, these are then outside of the visible area, but can be reached by scrolling.

Recommendation: Configure the monitor profile in such a way that all monitors are on Main monitor mapped; you then have access to all monitors.



Information

The standard profile is always loaded by default on the zenon Web Client. However, you can stipulate a different monitor profile using the `SCREENPROFILE=` entry in `zenon6.ini`.

10.4 Multi-project administration and redundant projects

zenon Web Client supports all network functionalities like a normal client. If the start project is an integration project, all subprojects are therefore loaded.

Note: The Web Client computer needs the same memory and the same hardware as a normal client for integration projects.

Redundant Runtime servers (on page 35) are also supported.

11. Creation of the HTML page for the project entry

A project start page is required, so that web browser can start the zenon Web Client and so that this can then connect to the corresponding Runtime server. This page contains the necessary code. Java Script is used as a script language.

Requirements:

- ▶ JavaScript must be activated in the browser.
- ▶ zenon Web Client must also be installed locally on the computer on which the web browser is executed.

Recommendation: Switch, before the project entry page (`init.htm`) (on page 49), to a start page (`index.htm`) (on page 58) , that allows the download of the Web Client. This start page contains hyperlinks:

- To download the zenon Web Client controls
- To project entry page `init.htm`, which carries out a browser check and makes the connection from zenon Web Server to the Runtime server

TCP AND HTTP SETTINGS

The settings only differ for connections using TCP and HTTP in terms of the `useHTTP` entry.

- ▶ Example for TCP (on page 49)
- ▶ Example for HTTP (on page 53)

11.1 Example of project entry page `init.htm` for TCP

On the project entry page, a browser check checks to see which browser the Web Client uses. Depending on the result, the Web Client is started or an error message is given.

EXAMPLE OF PROJECT ENTRY

The entry page (on page 49) calls up three scripts to check the browser being used and either make the connection to Runtime or to give an error message:

- ▶ `global_vars.js`: Defines values of transfer parameters to start the Web Client
- ▶ `browsercheck.js`: Checks the version of the browser
- ▶ `initcode.js`: Defines functions that are used to start the Web Client

11.1.1 `init.htm`

The `init.htm` file checks the browser being used and then either starts the project or gives an error message. Scripts are used for this:

1. The configuration is loaded from `global_vars.js` (on page 51).
2. The browser is determined by `browsercheck.js` (on page 51).
3. If it is a supported browser, the appropriate function to include the zenon Web Client from `initcode.js` (on page 52) is executed.

EXAMPLE

```
<html>
<head>
<title></title>
</head>
<BODY scroll="no" leftmargin="0" topmargin="0" marginwidth="0" marginheight="0"
BGCOLOR=#FFFFFF>
<script language="javascript" type="text/javascript" src="global_vars.js"></script>
<script language="javascript" type="text/javascript" src="browsercheck.js"></script>
<script language="javascript" type="text/javascript" src="initcode.js"></script>
<script language="JavaScript" type="text/javascript">
switch(browsercheck()) {
    case "IEXPLORER":

        runIexplorer(PROJECTNAME,RUNTIMESERVER,WEBSERVER,INITFUNCTION,ZOOM,VERSION);
        break;
    case "NPAPI":
        runNPAPI(PROJECTNAME,RUNTIMESERVER,WEBSERVER,INITFUNCTION,ZOOM,VERSION);
        break;
    case "UNSUPPORTED_BROWSER":
        alert(navigator.appName + ' : ' + navigator.appVersion + ' is not
supported!');
        break;
    default:
        alert("invalid parameter");
        break;
}
</script>
</html>
```

global_vars.js

zenon Web Client is configured with this Javascript. You can find more details about the options in the Settings in global_vars.js (on page 32) chapter.

Sample configuration:

```
// Here enter the exact string how your project is named
var PROJECTNAME = "Project_001";

// Please enter here the computer name, where your zenon Runtime is installed and running
var RUNTIMESERVER= "PC_016";

// Here you have to enter computername, where you installed the zenon Web Server
var WEBSERVER = "PC_016";

// Enter an optional init-zenOn-function to be executed when the zenon Web Clients connects
to its server. Defaultvalue = "Init"
var INITFUNCTION = "Init";

// Enable zoom feature (will stretch the project resolution to the size of the zenon Web
Client control) OFF = "0" / ON = "1"
var ZOOM = "0";

// Here you have to enter the version number corresponding to the zenon Web Client.
var VERSION = "6,22,0,0";
```

browsercheck.js:

This JavaScript finds out which browser the the Web Client wants to start and gives the result back to **init.htm**.

```
function browsercheck(){
    var UserAgent = navigator.userAgent;
    var fWin32 = (UserAgent.lastIndexOf('Win') != -1) &&
    (UserAgent.lastIndexOf('Windows 3.1') == -1) && (UserAgent.lastIndexOf('Win16') == -1);
    var fMSIE = (UserAgent.lastIndexOf('MSIE ') != -1);
    var fNPAPI = (UserAgent.lastIndexOf('Firefox/') != -1) ||
    (UserAgent.lastIndexOf('Chrome/') != -1) || ((UserAgent.lastIndexOf('Safari') != -1) &&
    (UserAgent.lastIndexOf('Version/') != -1));
```

```

if(fWin32)
{
    //Win32-Browser
    if(fMSIE)
    {
        //Internet Explorer --> use ActiveX-Control
        return "IEXPLORER";
    }
    if(fNPAPI)
    {
        //Firefox, Chrome or Safari --> use NPAPI-Plugin
        return "NPAPI";
    }
}
//Non-Win32-Browser or not supported Browser (Opera, ...)
return "UNSUPPORTED_BROWSER";
}

```

initcode.js

This Javascript sets

- ▶ the <embed> entry to start the zenon Web Client in Apple Safari, Google Chrome or Mozilla Firefox
- ▶ The <object> entry to start zenon Web Client in Microsoft Internet Explorer

Script:

```

function runNPAPI(PROJECTNAME,RUNTIMESERVER,WEBSERVER,INITFUNCTION,ZOOM,VERSION) {
    document.write ('<embed type="application/x-zenon">');
    document.write ('    width=100%');
    document.write ('    height=100%');
    document.write ('    Project="' +PROJECTNAME+ '"');
    document.write ('    Server="' +RUNTIMESERVER+ '"');
    document.write ('    WebServer="' +WEBSERVER+ '"');
    document.write ('    Load="-1"');
    document.write ('    ScrollV="0"');
    document.write ('    Scrollh="0"');
    document.write ('    InitFunction="' +INITFUNCTION+ '"');
    document.write ('    Zoom="' +ZOOM+ '"');
}

```

```

        document.write ('>');
        document.write (' </EMBED> ');
    }
function runIexplorer(PROJECTNAME,RUNTIMESERVER,WEBSERVER,INITFUNCTION,ZOOM,VERSION) {
    document.write ('<object');
    document.write ('    id="CD_IClient1"');
    document.write ('
classid="clsid:2A3BC66B-03D7-11D4-991A-080009ABB492"');
    document.write ('    codebase="zenWebCli.ocx#version=' +VERSION+ '"');
    document.write ('    width=100%');
    document.write ('    height=100%');
    document.write ('>');
    document.write ('    <PARAM NAME="Project" VALUE="' +PROJECTNAME+ '">');
    document.write ('    <PARAM NAME="Server" VALUE="' +RUNTIMESERVER+ '">');
    document.write ('    <PARAM NAME="WebServer" VALUE="' +WEBSERVER+ '">');
    document.write ('    <PARAM NAME="Load" VALUE="-1">');
    document.write ('    <PARAM NAME="Scrollv" VALUE="0">');
    document.write ('    <PARAM NAME="Scrollh" VALUE="0">');
    document.write ('    <PARAM NAME="InitFunction" VALUE="' +INITFUNCTION+
'">');

    document.write ('    <PARAM NAME="Zoom" VALUE="' +ZOOM+ '">');
    document.write ('</object>');
}

```

11.2 Example of project entry page init.htm for HTTP

On the project entry page, a browser check checks to see which browser the Web Client uses. Depending on the result, the parameters for the use of HTTP are set and the Web Client is started without an error message being given.

EXAMPLE OF PROJECT ENTRY

The entry page (on page 54) calls up three scripts to check the browser being used and either make the connection to Runtime or to give an error message:

- `global_vars.js`: Defines values of transfer parameters to start the Web Client

- ▶ browsercheck.js: Checks the version of the browser
- ▶ initcode.js: Defines functions that are used to start the Web Client

11.2.1 init.htm

The actual project entry for the browser takes place here. Scripts are used for this:

1. The configuration is loaded from `global_vars.js` (on page 55).
2. The browser is determined by `browsercheck.js` (on page 56).
3. If it is a supported browser, the appropriate function to include the zenon Web Client from `initcode.js` (on page 56) is executed.

`<html>`

`<head>`

`<title></title>`

`</head>`

`<BODY scroll="no" leftmargin="0" topmargin="0" marginwidth="0" marginheight="0" BGCOLOR=#FFFFFF>`

`<script language="javascript" type="text/javascript" src="global_vars.js"></script>`

`<script language="javascript" type="text/javascript" src="browsercheck.js"></script>`

`<script language="javascript" type="text/javascript" src="initcode.js"></script>`

`<script language="JavaScript" type="text/javascript">`

`switch(browsercheck()) {`

`case "IEXPLORER":`

`runIexplorer (PROJECTNAME,RUNTIMESERVER,WEBSERVER,INITFUNCTION,ZOOM,VERSION) ;`

`break;`

`case "NPAPI":`

`runNPAPI (PROJECTNAME,RUNTIMESERVER,WEBSERVER,INITFUNCTION,ZOOM,VERSION) ;`

`break;`

`case "UNSUPPORTED_BROWSER":`

`alert(navigator.appName + ' : ' + navigator.appVersion + ' is not supported!');`

`break;`

`default:`

```
        alert("invalid parameter");
        break;
    }
</script>
</html>
```

global_vars.js

zenon Web Client is configured with this Javascript. You can find more details about the options in the Settings in global_vars.js (on page 32) chapter.

Sample configuration:

```
// Here enter the exact string how your project is named
var PROJECTNAME = "HAUSVISU_CDA";

// Please enter here the computer name, where your zenon Runtime is installed and running
var RUNTIMESERVER= "CDSBG016";

// Here you have to enter computername, where you installed the zenon Web Server
var WEBSERVER = "CDSBG036";

// Enter an optional init-zenon-function to be executed when the zenon Web Clients connects
to its server. Defaultvalue = "Init"
var INITFUNCTION = "Init";

// Enable zoom feature (will stretch the project resolution to the size of the zenon Web
Client control) OFF = "0" / ON = "1"
var ZOOM = "0";

// Here you have to enter the version number corresponding to the zenon Web Client.
var VERSION = "7,00,0,0";

// Enable HTTP tunneling feature: 0 = inactive (available on zenon Web Client version 7.00
and higher)
var HTTP = "1";
```

browsercheck.js:

This JavaScript finds out which browser the the Web Client wants to start and gives the result back to `init.htm`.

```
function browsercheck(){
    var UserAgent = navigator.userAgent;
    var fWin32 = (UserAgent.lastIndexOf('Win') != -1) &&
(UserAgent.lastIndexOf('Windows 3.1') == -1) && (UserAgent.lastIndexOf('Win16') == -1);
    var fMSIE = (UserAgent.lastIndexOf('MSIE ') != -1);
    var fNPAPI = (UserAgent.lastIndexOf('Firefox/') != -1) ||
(UserAgent.lastIndexOf('Chrome/') != -1) || ((UserAgent.lastIndexOf('Safari') != -1) &&
(UserAgent.lastIndexOf('Version/') != -1));
    if(fWin32)
    {
        //Win32-Browser
        if(fMSIE)
        {
            //Internet Explorer --> use ActiveX-Control
            return "IEXPLORER";
        }
        if(fNPAPI)
        {
            //Firefox, Chrome or Safari --> use NPAPI-Plugin
            return "NPAPI";
        }
    }
    //Non-Win32-Browser or not supported Browser (Opera, ...)
    return "UNSUPPORTED_BROWSER";
}
```

initcode.js

This Javascript sets:

- ▶ The `<embed>` entry to start zenon Web clients in Apple Safari, Google Chrome or Mozilla Firefox
- ▶ The `<object>` entry to start zenon Web clients in Microsoft Internet Explorer

Script:

```
function runNPAPI (PROJECTNAME,RUNTIMESERVER,WEBSERVER,INITFUNCTION,ZOOM,VERSION) {
```

```

document.write ('<embed type="application/x-zenon"');
document.write ('    width=100%');
document.write ('    height=100%');
document.write ('    Project="' +PROJECTNAME+ '");
document.write ('    Server="' +RUNTIMESERVER+ '");
document.write ('    WebServer="' +WEBSERVER+ '");
document.write ('    Load="-1");
document.write ('    ScrollV="0");
document.write ('    Scrollh="0");
document.write ('    InitFunction="' +INITFUNCTION+ '");
document.write ('    Zoom="' +ZOOM+ '");
document.write ('    UseHTTP = "' +HTTP+ '");
document.write ('>');
document.write (' </EMBED> ');
}

function runIexplorer(PROJECTNAME,RUNTIMESERVER,WEBSERVER,INITFUNCTION,ZOOM,VERSION) {
    document.write ('<object');
    document.write ('    id="CD_IClient1");
    document.write ('
classid="clsid:2A3BC66B-03D7-11D4-991A-080009ABB492");
    document.write ('    codebase="zenWebCli.ocx#version=' +VERSION+ '");
    document.write ('    width=100%');
    document.write ('    height=100%');
    document.write ('>');
    document.write ('    <PARAM NAME="Project" VALUE="' +PROJECTNAME+ '">');
    document.write ('    <PARAM NAME="Server" VALUE="' +RUNTIMESERVER+ '">');
    document.write ('    <PARAM NAME="WebServer" VALUE="' +WEBSERVER+ '">');
    document.write ('    <PARAM NAME="Load" VALUE="-1">');
    document.write ('    <PARAM NAME="ScrollV" VALUE="0">');
    document.write ('    <PARAM NAME="Scrollh" VALUE="0">');
    document.write ('    <PARAM NAME="InitFunction" VALUE="' +INITFUNCTION+
'">');

    document.write ('    <PARAM NAME="Zoom" VALUE="' +ZOOM+ '">');
    document.write ('    <PARAM NAME="UseHTTP" VALUE="' +HTTP + '">');
    document.write ('</object>');
}

```

11.3 Example of zenon Web Server installation medium

When zenon Web Server is installed, an example of a start page (`index.htm`) with hyperlinks for download of zenon Web Client controls and hyperlinks for the project entry page are also installed.

Folder on the hard drive: `%PROGRAM FILES (X86)%/COPA-DATA/zenon WebServer/zenon`.

If an Internet Information Server is already installed on your computer, the setup automatically creates the folder `zenon` in the `wwwroot` folder of the IIS.

Installation of zenon Web Client is offered via the `index.htm` (on page 58) file.

The project entry uses the file `init.htm` (on page 49).

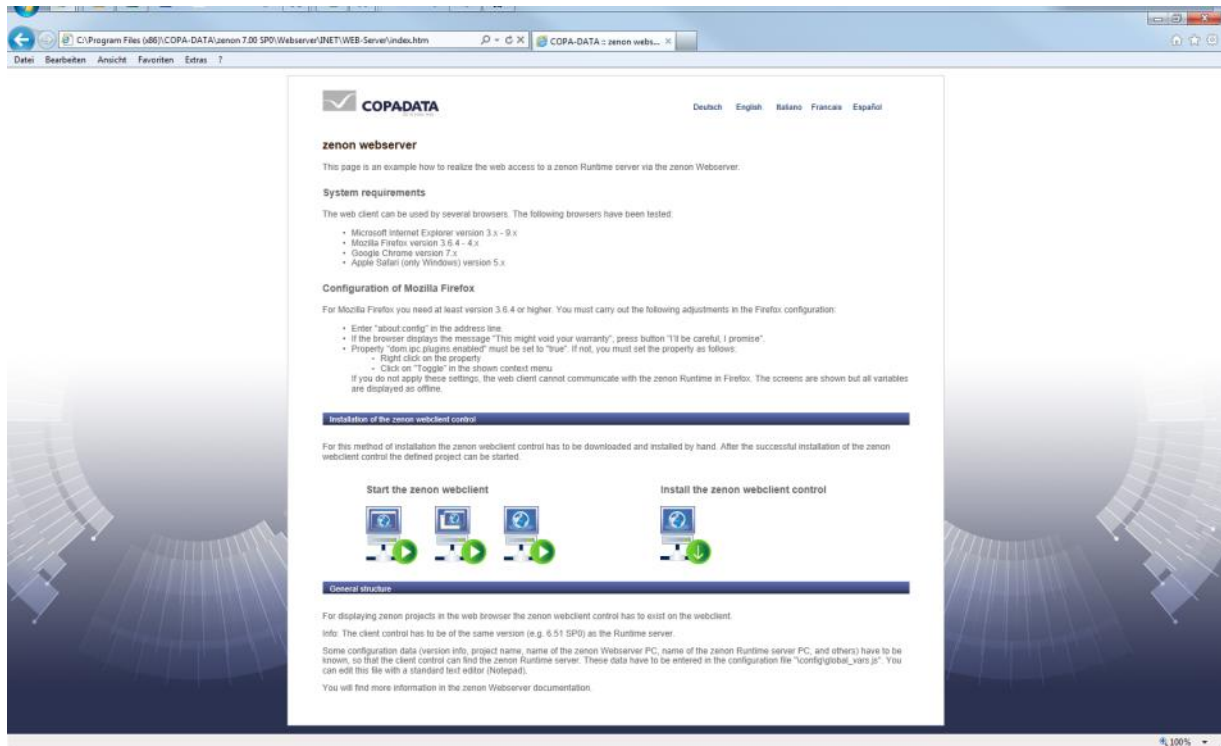
11.3.1 The page `index.htm`

The page `index.htm` is the start page for our example. It starts by default in English and can be switched to other languages directly on the page on the top right.

The page `index.htm`:

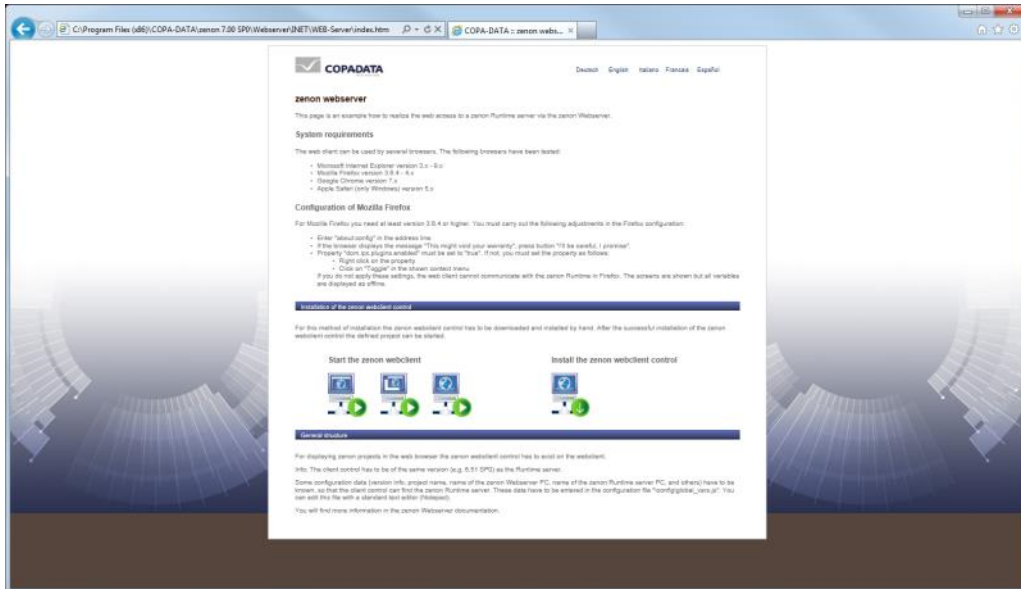
- ▶ Informs you about compatible browsers
- ▶ Offers links to start the zenon Web Clients
- ▶ Offers link to installation of zenon Web Client controls; this is necessary if zenon is not installed on the computer with the Web Client

- Calls up the project entry page init.htm (on page 49) when the Web Client is started, which carries out the browser check



11.3.2 Selection of window mode for starting the Web Client

Links to start zenon Web Client can be implemented in different ways:



zenon Web Client can be started in different modes:

1. Standard
2. New window
3. Fullscreen

1. STANDARD

The zenon Web Client and therefore the project is displayed within the HTML frameset.

```
<html>
<head>
</head>

<body>
<a href= ../ init. html >Link_für_Stardard</a>
</body>
</html>
```

2. NEW WINDOW

The zenon Web Client and therefore the project is opened in a new browser window in normal mode.

```
<html>
<head>
</head>
<body>
<a href= ../ init . html target=_blank>Link_für_Standard</a>
</body>
</html>
```

3. FULLSCREEN

The zenon Web Client and therefore the project is opened in an new browser window in full-screen mode, with the help of a Java script. The path `ofindex.html` is globally defined in the Java script function.

```
<html>
<head>
<script>
<!--
function fullwin(){
window.open( ../projekt_M.htm ,,fullscreen)
}
//-->
</script>
</head>

<body>
<a href=# onclick=javascript:fullwin()>Link_für_Fullscreen</a>
</body>
</html>
```

11.3.3 Configuration of the example page

The zenon Web Server is also installed during setup:

The configuration file `Global_vars (on page 32).js` in the folder `C:\inetpub\wwwroot\zenon\config`, can be opened in a text editor.

CONFIGURATION

REDUNDANT ZENON WEB SERVER (SINCE WEB CLIENT 6.01):

| TAG | Description |
|---------------|---|
| Projectname | <p>Defines the name of the Runtime project.</p> <pre>var PROJECTNAME = "NAME";</pre> <p>For example:</p> <pre>var PROJECTNAME = "zenon";</pre> <p>Note: The project must as a server project on the stipulated Runtime server.</p> |
| RuntimeServer | <p>Denotes the target computer on which Runtime for the project runs.</p> <pre>var RUNTIMESERVER = "NAME";</pre> <p>For example:</p> <pre>var RUNTIMESERVER = "T13-XPDE32";</pre> <p>Note: Use capital letters only. State computer names without domain suffix.</p> <p>The name must correspond with the server name in the project configuration, see also: Project configuration zenon 5.x (on page 45) and Project configuration from zenon 6.x (on page 46).</p> <p>Runtime server redundancy</p> <p>Only the name of the server is given for redundant Runtime projects, not the name of the Standby Server. The name of the Standby Server is saved in the project's <code>project.ini</code> file. zenon Web Client saves this locally the first time it connects with the Runtime Server. That means: The Runtime server has to be online the first time a connection to a redundant project is made. For each further connection, the redundancy concept then will work, i.e. the zenon Web Client first tries to establish a connection to the Runtime server. If it cannot be reached, it automatically connects to the standby server.</p> <p>Web Server redundancy</p> <p>If, in addition to zenon Runtime-Server, the zenon Web Server is also to be operated as redundant, the following must be the case:</p> |

| | |
|---------------------|---|
| | <ul style="list-style-type: none"> ▶ Two copies of zenon Web Server installed and licensed on different computers ▶ Both copies of zenon Web Server, separated by a comma, must be entered in the variable declaration on the HTML page: <pre>var WEBSERVER = WEBSERVER,WEB-STANDBY-SERVER";</pre> |
| Web Server | <p>Denotes the target computer on which zenon Web Server was installed. Attention: That is not the publishing server!</p> <pre>var WEBSERVER = "NAME";</pre> <p>For example:</p> <pre>var WEBSERVER = "CD1111";</pre> <p>Note: Use capital letters only. State computer names without domain suffix.</p> |
| Initfunction | <p>Defines a zenon function that is executed when a project is started in the browser.</p> <pre>var INITFUNCTION = "Init";</pre> <p>For example:</p> <pre>var INITFUNCTION = "Init";</pre> <p>Default: "Init"</p> <p>Note: The wording must correspond to the function names in zenon (capitalization).</p> |
| Zoom | <p>Defines if the project can be zoomed in or out of in the browser view.</p> <pre>var ZOOM = "WERT";</pre> <p>0: OFF 1: ON</p> <p>For example:</p> <pre>var ZOOM = "0";</pre> <p>Note: The zoom adjustment is only considered on initializing, not when the Runtime is running. If a certain size is wanted, it has to be defined by the ActiveX control.</p> |
| var VERSION | <p>Defines the zenon Web Client version.</p> |

| | |
|--|--|
| | <pre>var VERSION = "WERT";</pre> <p>for example:</p> <pre>var VERSION = "6,50,1,0";</pre> <p>This must always be the same or higher than the version of zenon Runtime.</p> |
|--|--|

ADDITIONAL PARAMETERS

The parameters `width/height` define the size of the ActiveX control (zenon Web Client) in the browser. Default is 100%:



Information

If the scroll bars are set to 105%, they are moved to the non-visible area of the browser. The `ScrollV` and `ScrollH` parameters define where the browser should scroll when the zenon Web Client is started. Default is 0. You can use this settings, if you button bar is at the bottom of the project. Then you can scroll the browser there automatically when starting the project. So the users see the button bar immediately when starting the projects and do not have to scroll there first.

FOR VBA OR OTHER CONNECTIONS

It is possible to implement a web client control (`CD_IClient`) with the help of an external application (e.g. VBA, C# etc.) without using the standard Web Client by means of Internet Explorer.

Create: in accordance with the specified parameters (Project, Server, Web Server) a connection can be established with the help of "`create`". With this the connection to the Runtime server is started (ActiveX initialized).

GetApplication: Access to the zenon COM objects (VBA interface) of the Runtime. With this it is possible to access the Runtime objects of the active zenon project (`Application.Projects.Item`)

START OF THE ZENON WEB CLIENT

You can start and test the zenon Web Client at any time by double-clicking the `init.html` page in the `C:\inetpub\wwwroot\zenon` folder.

12. Troubleshooting

Known error messages or execution errors:

- ▶ Crash after browser refresh (on page 65)
- ▶ ActiveX control failed to load (on page 66)
- ▶ ActiveX control not installed correctly (on page 67)
- ▶ Exceptional Web Client error in Internet Explorer 8 (on page 67)
- ▶ HTTP error messages (on page 68)
- ▶ Init Runtime Error (on page 72)
- ▶ Keyboards in Firefox (on page 73)
- ▶ Max. clients (on page 73)

12.1 Crash after browser refresh

Using Internet Explorer 6 with the zenon Web Client can lead to Internet Explorer crashing if the browser **refresh** button is clicked. We therefore recommend that you do not use the **refresh** button.

This button causes a complete closure and restart of the zenon Web Client. This means, that the connection to the Runtime server is closed and has to be re-established by the Web Client.

ERROR 101

If zenon Web Client was already installed on the client computer, the following error message can be displayed when zenon Web Client connects to zenon Web Server or Runtime:

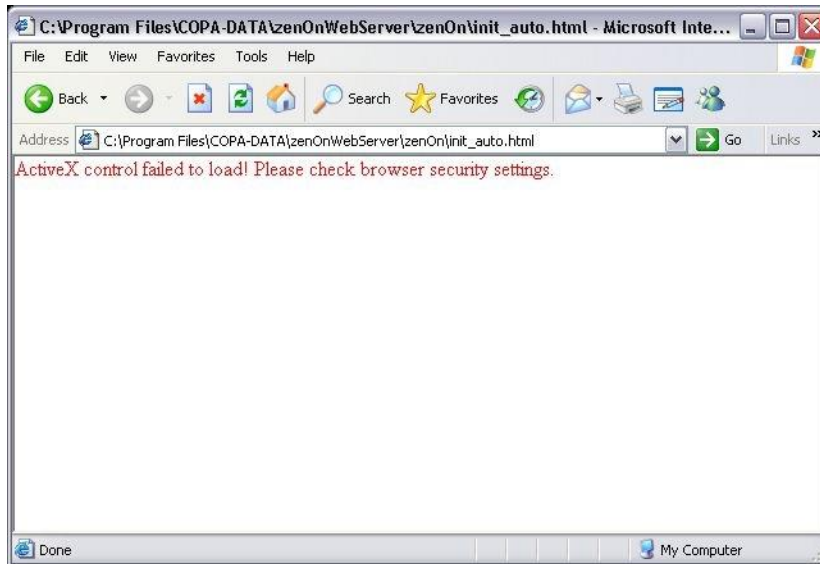
Error 101

Project XXX was edited with version XXX and cannot be opened here

In this case:

1. Uninstalling Web Client
2. Restart the computer
3. New installation of zenon Web Client

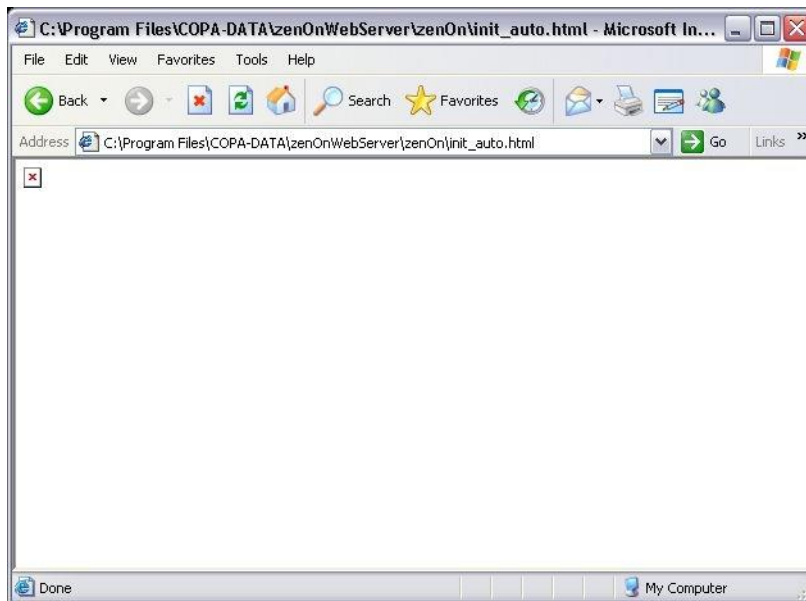
12.2 ActiveX control failed to load



If the browser displays an init Runtime Error, there are several possible reasons for that. The most probable:

- The security settings of the browsers prevent correct execution of the ActiveX control.

12.3 ActiveX control not installed correctly



If the only browser only displays an X instead of Runtime when the project entry page is called up:

- ▶ The ActiveX control for zenon Web Client (on page 35) was not installed correctly
- ▶ The wrong version (on page 43) of zenon Web Client is installed

12.4 Exceptional Web Client error in Internet Explorer 8

ERRORS

The Web Client is ended with an exceptional error if VSTA or VBA is executed in the project in the project.

REASON

Microsoft Internet Explorer has a setting for memory protection from version 8. If this is active, executing VBA leads to an exceptional error and Internet Explorer ends. VSTA always activates VBA too.

SOLUTION

Deactivate the memory protection in Internet Explorer under:

Extras->Internet options->Advanced->Enable memory protection to help mitigate online attacks

12.5 HTTP error messages

Error messages and what they mean:

| Entry | Level | Description |
|--|--------|---|
| NetSrv Error Do Send HTTP failed! HTTP-Status: [HTTP-Status] | ERRORS | The HTTP Web Server has responded to an HTTP POST request with an error. |
| NetSrv Error Do Send HTTP failed! | ERRORS | The HTTP POST request failed (time-out, for example timeout). |
| NetSrv Error Do Send HTTP Server failed! Data Management Class Error! | ERRORS | An error occurred when saving a message in the buffer to the HTTP Web Server. The error occurred in the data management class. |
| NetSrv Error Do Send HTTP Server failed! | ERRORS | An error occurred when saving a message in the buffer to the HTTP Web Server. The error occurred in the buffer list. |
| NetSrv Error Do Recv HTTP failed! HTTP status: [HTTP-Status] | ERRORS | The HTTP Web Server has responded to an HTTP GET request with an error. |
| NetSrv Error Do Recv HTTP failed! | ERRORS | The HTTP Get request failed (time-out, for example timeout). |
| NetSrv Error Do Recv HTTP Server failed! Data Management Class Error! | ERRORS | An error occurred when reading a message in the buffer to the HTTP Web Server. The error occurred in the data management class. |
| NetSrv Error Do Recv HTTP Server failed! Buffer Too Small! | ERRORS | The packet read from the buffer list is too large for the data buffer. Note: Due to the uniform maximum packet size, which also serves as a buffer length definition, this should never occur. |
| NetSrv Error Do Recv HTTP Server failed! Error While Copying Data Into Buffer! | ERRORS | An error occurred when copying data from the buffer list. |
| Error Out Of Memory While Adding Data to HTTP GET Response | ERRORS | Creation of a memory area was not possible when compiling an HTTP response at the HTTP Web Server. |
| Error On Adding Data to HTTP GET Response | ERRORS | An error occurred when copying data from the buffer list in the HTTP response. |
| HTTP Send Get Response Failed: [Status] | ERRORS | Sending of a response to an HTTP GET request has failed. The status code is a system error code (can be looked up in the MSDN library). |
| Error Out Of Memory While Receiving Data from HTTP POST | ERRORS | Creation of a memory area was not possible when reading off an HTTP POST response at the HTTP Web Server. |
| Error on Receiving Data from HTTP POST [Status] | ERRORS | Reading off data from the HTTP-POST request has failed. The status code is a system error code (can be looked up in the MSDN library). |
| Error Data Block Of HTTP Post Request Too Large | ERRORS | The data from the request received exceeds the defined maximum packet size. |

| | | |
|---|--------|--|
| HTTP Send Post Response Failed: [Status] | ERRORS | Sending of a response to an HTTP POST request has failed. The status code is a system error code (can be looked up in the MSDN library). |
| Error Out Of Memory While Parsing HTTP Request | ERRORS | Creation of a memory area was not possible when forwarding an HTTP response to the relevant thread. |
| Memory Error on Creating Receive Buffer | ERRORS | Creation of a memory area when creating the HTTP receipt buffer was not possible. |
| Error on Creating HTTP Request Event | ERRORS | Creation of events for the receipt of HTTP requests has failed. |
| Error While Waiting For HTTP Request: [Status] --> Exiting Listening Thread | ERRORS | An error occurred when waiting for an HTTP request. The status code is a system error code (can be looked up in the MSDN library). |
| Unexpected Result While Waiting For HTTP Request: [Status] --> Exiting Listening Thread | ERRORS | waiting for an HTTP request provides an unexpected result. The status code is a system error code (can be looked up in the MSDN library). |
| HTTP Request Without ID Received | ERRORS | The connection ID was not present in the HTTP request. |
| Error on Extracting HTTP-Request-ID From URL | ERRORS | The connection ID of the HTTP request cannot be read off. |
| Error: Closing HTTP Connection ID [ID] Could Not Be Resolved | ERRORS | An attempt was made to close a connection that does not exist or was already closed. This error is less critical because the request to delete the connection ID when clearing connection resources can be made more than once after it has ended. |
| HTTP Request With Incompatible ID Format Received | ERRORS | The connection ID in the HTTP request does not have the expected format. |
| Could Not Assign New HTTP ID Because The Map Is Full | ERRORS | A new connection could not be accepted because there is no more space in the connection list. The list contains space for over 4.2 billion connections, so this message should therefore never appear. |
| Error During HTTP Accept | ERRORS | An error occurred when accepting the HTTP connection. |
| Error On Sending HTTP ID: [Status] | ERRORS | The sending of an HTTP response with the connection ID for the new client connection has failed. The status code is a system error code (can be looked up in the MSDN library). |
| Error: HTTP Connection ID [ID] Could Not Be Resolved | ERRORS | The connection ID of the HTTP request cannot be resolved. |
| Error: HTTP Request Could Not Be Assigned To The Socket | ERRORS | the HTTP request could not be forwarded to the relevant thread. |
| Unsupported HTTP-Request Received | ERRORS | An unsupported HTTP request was received. GET and POST requests |

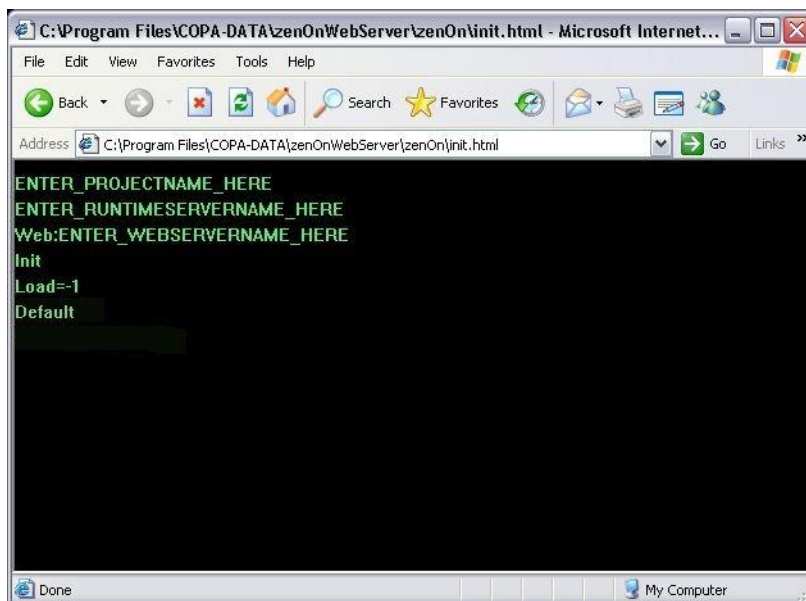
| | | |
|---|--------|---|
| | | are supported. |
| Error While Receiving HTTP Request: [Status] --> Exiting Listening Thread | ERRORS | An error occurred when receiving an HTTP request. |
| Error on Removing HTTP Connection ID From The Map! | ERRORS | An error occurred when removing a connection ID from the list. Connection IDs are removed if a connection is closed. |
| Removing HTTP Connection ID [ID] From The Map! | DEBUG | The connection was closed and the ID was removed from the list. |
| Error on Removing Non-Active HTTP Connection ID From The Map! | ERRORS | An error occurred when removing an inactive connection ID. A connection is then active if no HTTP requests have been received for 5 minutes. Such a connection should really already be removed due to the lack of a watchdog. |
| Removing Non-Active HTTP Connection ID [ID] From The Map! | DEBUG | The connection ID was removed from the list because the connection is inactive. A connection is then active if no HTTP requests have been received for 5 minutes. Such a connection should really already be removed due to the lack of a watchdog. |
| Error While Waiting for HTTP Connection Map Check [Status]! | ERRORS | The thread to check the connection ID established an error when waiting for the next cycle and is ended. The status code is a system error code (can be looked up in the MSDN library). |
| NetSrv Accept HTTP Client Socket Error On Starting HTTP Reply Thread | ERRORS | The thread to respond to HTTP requests could not be started. |
| NetSrv Info Accept HTTP Client IP:[IP-Adressr]:[Port] Ok | DEBUG | The HTTP connection has been accepted successfully. |
| NetSrv Memory Error Do Recv HTTP failed! | ERRORS | An error occurred due to too little memory being available when receiving data via HTTP tunneling. |

LOG ENTRIES FROM CNSBLOCKINGSOCKETEXCEPTIONS

Level: Always ERRORS

| Entry: Exception text | Description |
|--|--|
| Connect: HTTP error | The HTTP Web Server has responded to a connection ID request with an error. |
| Connect: ID-Data did not have the expected Format | The connection ID provided by the HTTP Web Server does not have the expected format. |
| Connect: Server denied HTTP ID | The HTTP Web Server has rejected the granting of a connection ID. |
| Connect: Error during ID-Acquisition | An error occurred when requesting a connection ID (a time-out, for example). |
| HttpInitialize Failed | HTTP server API could not be initialized |
| HttpCreateHttpHandle Failed | The HTTP request list could not be created |
| HttpAddUrl Failed | The server could not enter list mode |

12.6 Init Runtime Error



If the browser displays an Init Runtime Error, there are several possible reasons for that:

- Runtime is not active on Runtime Server

- ▶ SERVER NAME in `Globalvars.js` (on page 32) is spelled or defined incorrectly (always use capital letters).
- ▶ PROJECT NAME in `Globalvars.js` (on page 32) is spelled or defined incorrectly (always use capital letters).
- ▶ The zenon Web Server is not started (on page 24).

You may find notes on the causes of errors in the `zenNetErr.txt` file. This logs network information.

12.7 Keyboards in Firefox

If individual keyboards do not work correctly in Firefox, consider the following note:



Attention

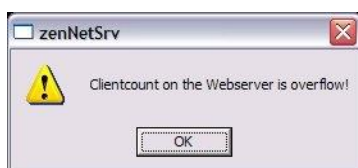
*Individually adapted screens of type **Keyboard** may under certain circumstances not work properly with the Mozilla Firefox browser.*

Reason: Mozilla Firefox loads new windows in the background without putting the focus on them. Individually adapted keyboard screens are however closed when they lose the focus.

Solution: Use another browser such as Microsoft Internet Explorer, Apple Safari or Google Chrome.

Automatic keyboards are not affected!

12.8 Max. clients



Message to the zenon Web Client.

More clients than are licensed (on page 12) are attempting to connect to the zenon Web Server.

13. Implementing the zenon Web Server in the internet environment

To integrate zenon Web Server into an internet environment:

- ▶ Any firewall that may be present must be configured accordingly:
 - Port 1102 on the firewall must be open for incoming packages, so that a zenon Web Client can access a zenon Web Server and therefore access a Runtime server.
 - NAT (Network Address Transformation) must run on the gateway station. NAT transforms the internal LAN address to the address of the gateway station. If, for example, somebody surfs inside the LAN, it always looks as if the gateway station were sending the requests from outside.
 - Static IP address for zenon Web Server:
The firewall on the gateway station has to be configured in such a way that all incoming packages for port 1102 are automatically sent to the station with the zenon Web Server. That means: This station must have a static IP address.
- ▶ The project entry page has to be adapted so that zenon Web Client knows which station to access in the internet: The amendment is made in `global_vars.js` or, for older versions, in `project_A_X.html` (X stands for the language version, such as G for German) :
 - Under Webserver `VALUE= WEB-SERVERNAME`, the computer name of the gateway station (the station visible from the internet and not the computer name of the real zenon Web Server) has to be entered. The real zenon Web Server is not visible from the internet. The gateway station then automatically forwards the requests from the zenon Web Client to port 1102, then automatically to the real zenon Web Server.