

zenon manual

zenon Webserver and zenon Webserver Pro

v.7.10



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Contents

1.	Welc	Welcome to COPA-DATA help5				
2.	zenon Webserver and zenon Webserver Pro					
	2.1	Version	S	7		
	2.2	Basics		8		
	2.3	Genera	l limitations	9		
	2.4	Licensir	ng	12		
		2.4.1	Dongle licensing	16		
		2.4.2	Soft licensing	17		
	2.5	zenon V	Nebserver (Pro)	19		
		2.5.1	Instruction: Preparing - installing - starting	20		
	2.6	zenon V	Neb client	39		
		2.6.1	Browser	40		
		2.6.2	Encryption of communication in the network	43		
		2.6.3	zenon web client - compatibility	44		
	2.7	VSTA w	ith Webclient, Webserver and Webserver Pro	45		
	2.8	Engine	ering in the Editor	47		
		2.8.1	Project configuration 5.x	47		
		2.8.2	Project configuration from 6.x onwards	47		
		2.8.3	Screen resolution and monitor administration	48		
		2.8.4	Multi-project administration and redundant projects	50		
	2.9	Creatio	n of the HTML page for the project entry	50		
		2.9.1	Example of project entry page init.htm for TCP	51		
		2.9.2	Example of project entry page init.htm for HTTP	55		
		2.9.3	Example from the Webserver DVD	59		
	2.10	Trouble	eshooting	69		
		2.10.1	Crash after browser refresh	69		
		2.10.2	ActiveX control failed to load	70		
		2.10.3	ActiveX control not installed correctly	71		
		2.10.4	Exceptional web client error with Internet Explorer 8 and more recent versions	71		
		2.10.5	HTTP error messages	72		
		2 10 6	Init Runtime Error	76		



	2.10.7	Keyboards in Firefox	77
	2.10.8	Max. clients	77
2.11	Integrat	e zenon web server into an internet environment	78



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).

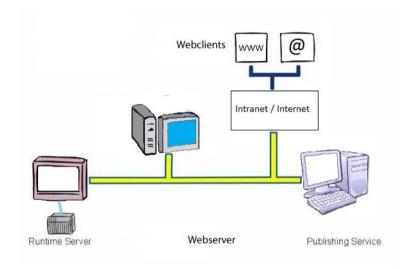
LICENSES AND MODULES

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 Webserver and zenon Webserver Pro

zenon Webserver brings projects to the internet and intranets in their exact form. This way, production data can be published throughout a company or group of companies. For the transfer no project adaptations are required.





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

zenon Webserver is currently available in three versions:

- ▶ zenon Webserver: Pure monitoring functionality.
- ▶ **zenon Webserver Pro**: Complete operation and monitoring functionality. It is possible to directly engage in processes over the web.
- zenon Webserver Pro Light: Limited functionality of zenon Webserver PRO for use with zenon Operator.

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



License information

zenon Webserver, Webserver Pro and Webserver Pro Light require a license. For further details, see Licensing (on page 12).



2.1 Versions

The different versions of zenon Webserver differ in functionality:

▶ zenon Webserver Pro:

Allows active user actions with zenon Supervisor.

Starting and operation with Windows CE (on page 25) is subject to certain limitations.

zenon Webserver Pro Light:

Allows active user actions with zenon Operator and zenon Supervisor. zenon Webserver Pro:

- The Runtime server that the zenon web clients connect to must be the same computer on which zenon Webserver Pro Light is running.
 The computer name is used for chekcing; domains are not taken into account.
 Attention: For projects with redundancy, zenon Webserver Pro Light must be implemented redundantly one instance on the server and one on the standby
- Maximum 3 clients.

server.

- 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 Webserver:

• 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 WEBSERVER PRO LIGHT

When starting zenon Webserver, the serial number defines whether Webserver, Webserver Pro Or Webserver Pro Light is Started. If Webserver 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. Webserver 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 Webserver PRO Light is started on computer A.
 - c) A client connects to the Runtime server via Webserver PRO Light.
 - d) Runtime on computer A crashes. Computer B takes over as the standby server.
 - e) The client attempts to switch to standby server computer B.
 - f) Because the web server is running with a license for Webserver PRO Light, this rejects the connection from the web client to computer B. The web client is offline.

2.2 Basics

zenon Webclient 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 Webclient

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, it is displayed in a browser.

Note: zenon Webclient 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.

▶ <u>zenon Webserver</u>

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 license and number of clients connected to zenon web server at the same time.

► <u>Publishing service</u>

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 Webserver, this service is not called a web server, but us always called a publishing service.

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



Info

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.

2.3 General limitations

Projects that are operated using zenon Webclient have the following limitations:

- ► Alarms:
 - Acknowledgement of alarms is only possible when zenon Webserver Pro is used.
- Archives:



Archives cannot be read, edited or saved.

▶ <u>User administration</u>

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

AD: The computer must be in the same domain

ADAM/ADLDS: The web client needs a physical connection to the 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 print-out on the zenon web client, the select printer function has to be executed. Here the printers for the client can be defined. These settings are saved in the zenon6.ini so that this procedures does not have to be executed again with each new print job.

► <u>IPA:</u>

The Industrial Performance Analyzer (IPA) module is only available on zenon Webclient 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

In 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 and 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.

► <u>Keyboard combinations:</u>

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

► VBA:



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

▶ VSTA: Webserver and Webclient support different versions of VSTA.

In general, Webclient supports VSTA, except:

- Debugging
- Display VSTA editor fUNCtiON
- Compiling

For details, see VSTA with Webclient, Webserver and Webserver Pro (on page 45) chapter.

ADDITIONAL RESTRICTIONS FOR WINDOWS CE:

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

The zenon web servers for CE is licensed via 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 Always0n

General recommendation: Use VSTA instead of VBA.

Licensing 2.4

The licensing determines:

The version of zenon Webserver that runs:



- Zenon Webserver Standard
- Zenon Webserver Pro
- Zenon Webserver Pro Light
- Number of possible parallel zenon web client connections (Concurrent Use License)

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

- zenon Webserver 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 Webserver and enter a valid license number in the License (on page 12) tab. Restart the web server manually.

ZENON OPERATOR AND WINDOWS CE

zenon Webserver Pro Light is available for zenon Operator.

For Windows CE, there is zenon Webserver Pro built into Runtime available - Runtime must be started in order for zenon Webserver 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 -> Licensing 7.00

or:

start the web server via *Control panel -> zenon web server*.

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

You find the data for this:

on your license certificate



- On the license sticker
- in the license fileLicense.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 25).
- 5. after the restart use the zenon web server with the license entered

LICENSING DIALOG





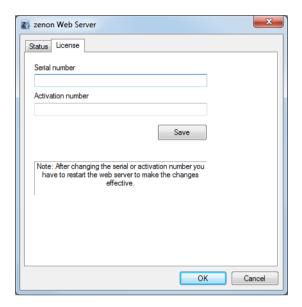
Parameters	Description
Editor/Runtime	Active: License is valid for the zenon Editor and/or the zenon Runtime.
Web server	Active: License valid for zenon web server.
Analyzer	Active: License valid for the zenon Analyzer.
Serial Number	License serial number.
	If there is already a license available, its license number is displayed here.
Activation number:	License activation number.
	If there is already a license available, its activasion 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 Webserver.



2. Enter, in the License tab in zenon Webserver (on page 25), 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 25).



The zenon web clients that are connected lose their connection when restarted. The zenon web clients will automatically reconnect after the set timeout.

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

2.4.1 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 zenon Webserver.
- 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.



Info

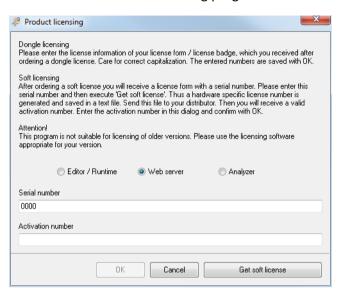
If a copy of zenon Webserver licensed with Codemeter loses the connection to the dongle, the web server is ended.

2.4.2 Soft licensing

For soft licensing:



1. Start the web server licensing program.

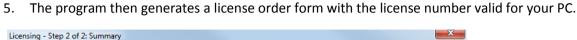


- 2. Click on the License request for soft licensing button.
- 3. The form for your license data is opened.



4. Fill out all fields and click on Next.







- 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

2.5 zenon Webserver (Pro)

zenon Webserver is necessary to establish a connection between zenon Webclient 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 Webclient and the Runtime server on the same



computer. However, zenon Webserver can also be installed on the same computer as the Runtime server.



Info

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 38) chapter.

2.5.1 Instruction: Preparing - installing - starting

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

- 1. Network and server in project setting
- 2. Install WWW publishing service on the PC
- 3. Install zenon Webserver
- 4. Start up zenon Webserver
- 5. Install and start zenon Webclient

1. PROJECT SETTING

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

- Activate the > Network -> Network active project property
- Enter project property -> Network -> Server -> 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/enus/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



Info

If zenon Webserver was already installed beforehand, the folder that was created in the process C:\Program Files \COPA-DATA\zenon WEB Server\zenon must be moved toC: \inetpub\wwwroot.

3. INSTALLING THE WEB SERVER

zenon Webserver is installed on the computer with the activated WWW services.

- 1. Start the installation of the DVD and follow the instructions of the installation assistant. You can find details on installation in the Installation of zenon Webserver by DVD (on page 23) chapter.
- 2. Configure the settings of the web server:
 - 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, in the file project. html (on page 35) in the folder

4. PUTTING THE WEB SERVER INTO OPERATION

To put the zenon web server into operation:

- 1. Ensure that the WWW publishing services were started and that the entry page (on page 50) is ready
- 2. Start the Runtime project on the computer
- 3. Start zenon Webserver



You can find details on starting zenon Webserver and its settings in the Starting and server settings (on page 25) chapter.

5. INSTALLING AND STARTING THE WEB CLIENT

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

1. Install zenon Webclient.

You can find details on the web client in the zenon Webclient (on page 39) chapter.

2. Start Microsoft Internet Explorer and connect the web client to the computer on which zenon Webserver 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 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 Always0n

General recommendation: Use VSTA instead of VBA.

Limitations of zenon Webserver and zenon Webclient can be found in the General limitations (on page 9) chapter.

Installation of zenon web server from DVD

To install the zenon Webserver Or Webserver Pro:



1. Activate the WWW services on the computer.

Folder C:\inetpub\wwwroot must exist.

2. Insert the zenon DVD in the drive, the splash screen is displayed.

If you have deactivated the autostart-feature from CD/DVD, execute start.exe from the CD.

- 3. Select the zenon web server.
- 4. Follow the installation routine.
- 5. Restart the computer.

The setup files for the web client can be found after installation in subdirectories of the webserver installation path (xxx stands for the version of zenon), e.g.: C:/Program Files/COPA-DATA/zenonWebServer/zenon/controlversions/Versionxxx/zenon WEB Client Setup GERMAN.EXE

or

C:/Inetpub/wwwroot/zenon/controlversions/Versionxxx/zenon WEB Client S etup GERMAN.EXE

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

C:/Programs/zenonWebServer/zenon/index.htm

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



Info

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

User rights for installation

You need the following user rights for installation:



ZENON WEB SERVER:

< You need administrator rights to install and configure the zenon web server (entering the serial number and the activation key).

For the actual operation: As the zenon web server runs in the background as a service (in the context of the SYSTEM user), 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.

Starting and server settings

zenon Webserver 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 Webserver runs in demo mode without a valid license. In doing so, the following restrictions apply:

- ▶ zenon Webserver 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 Webserver and enter a valid license number in the License (on page 12) tab. Restart the web server manually.

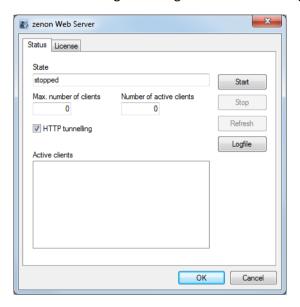
CONFIGURING ZENON WEBSERVER

To configure the web server:

- 1. Open system control
- 2. Double click on zenon Webserver



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





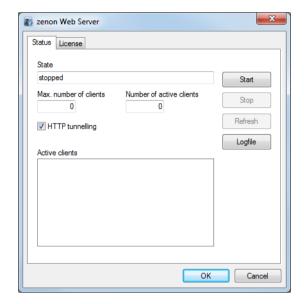
Parameter	Description
State:	Displays version and status of the web server:
	Version:
	> zenon Webserver Pro
	> zenon Webserver Pro Light
	Status messages:
	running: Web server is running with valid license
	▶ stopped: Web server was stopped
	▶ Demo mode: Web server is running in demo mode without license
	not installed: Web server not registered as service or installation error
Max. number of clients:	Maximum number of clients that are permitted to connect to the web server. The number is defined by the license. Two clients are licensed for 30 minutes in demo mode.
Number of active clients:	Displays number of clients currently connected.
Play	Starts web server.
Stop	Stops web server.
Refresh	Updates display.
Log file	Opens the log file.
HTTP tunneling	Active: HTTP tunneling (on page 29) is activated.
	Only available for zenon Webserver PRO, not in the Light version. Note: Can only be amended if the web server has the status stopped. Cannot be switched during operation.
Active clients	List of connected clients.
OK	Applies settings and closes dialog.
Cancel	Discards changes and closes dialog.

STARTING ZENON WEBSERVER MANUALLY

To start the web server manually:



- 1. Open system control
- 2. Double click on zenon Webserver
- 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 Webserver is already integrated into Runtime.

To start zenon Webserver 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 Webserver must be licensed

Note: HTTP tunneling (on page 29) is not available with Windows CE.

Configuration is similar to the details in the Settings in projekt.html (on page 35) chapter.

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



HTTP Tunneling

-zenon Webserver 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 25) 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 55) 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 <mbed> and <object> entry

Note: HTTP tunneling (on page 29) is not available with Windows CE.

CONFIGURATION OF THE PORT

To configure the port for HTTP tunneling on zenon Webserver:

- 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 Webserver is running must also be created accordingly on all computers with the zenon Webclient.

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 30) chapter.

ERROR MESSAGE

If the HTTP connection is active, network-specific messages are sometimes shown in the Diagnosis Viewer instead of HTTP-specific messages (on page 72). 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 Webserver configuration dialog (on page 25)
- 3. Activate the HTTP checkbox
- 4. Click on the Start button

MANUAL START

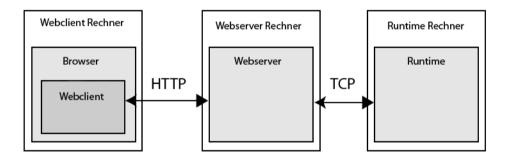
- 1. Open Explorer
- 2. Enter at the address line: %cd system%
- 3. Open the file zenWebSrv.ini with a text editor.
- 4. Navigate to the [DEFAULT] entry



- 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 Webserver by means of one of the four following possibilities:
 - a) The configuration dialog (on page 25) in the control panel
 - b) Using the command line: Starting Webserver 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 50).
- 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 packet to the 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 Webserver, to ensure that the connection ID was removed from the list.

Settings in global_vars.js

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

```
global_vars.js
```

```
// Here enter the exact string how your project is named
var PROJECTNAME = "ENTER_PROJECTNAME_HERE";
// Please enter here the computer name, where your zenon Runtime is installed and running
var RUNTIMESERVER = "ENTER_RUNTIMESERVERNAME_HERE";
// Here you have to enter computer name, where you installed the zenon Webserver
var WEBSERVER = "ENTER WEBSERVERNAME HERE";
```



```
// Enter an optional init-zenon-function to be executed when the web client connects
to its server. Defaultvalue = "Init"
var INITFUNCTION = "Init";
// Enable zoom feature (will stretch the project resolution to the size of the web
client control) OFF = "0" / ON = "1"
var ZOOM = "0";
// Here you have to enter the version number corresponding to the Webclient.
var VERSION = "6,51,0,0";
```

PARAMETERS

Parameter	Description
Projectname	Defines the name of the Runtime project.
	<pre>var PROJECTNAME = "NAME";</pre>
	For example:
	<pre>var PROJECTNAME = "zenon";</pre>
	Note: The project must as a server project on the stipulated Runtime
	server.
RuntimeServer	Denotes the target computer on which Runtime for the project runs.
	<pre>var RUNTIMESERVER = "NAME";</pre>
	For example:
	<pre>var RUNTIMESERVER = "T13-XPDE32";</pre>
	Note: Use capital letters only. State computer names without domain suffix.
	The name must correspond with the server name in the project
	configuration, see also: Project configuration zenon 5.x (on page 47) and Project configuration zenon 6.x (on page 47).
	Runtime server redundancy
	Only the name of the server is given for redundant Runtime projects, not
	the name of the standby server. The name of the standby servers is saved
	in the project's project.ini file. zenon Webclient 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 client first tries to establish a connection to



	the Runtime server. If it cannot be reached, it automatically connects to the standby server.
	Webserver redundancy
	If, in addition to zenon Runtime-Server, the zenon Webserver is also to be operated as redundant, the following must be the case:
	► Two copies of zenon Webserver installed and licensed on different computers
	► Both copies of zenon Webserver, 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	Denotes the target computer on which zenon Webserver was installed. Attention: That is not the publishing server!
	<pre>var WEBSERVER = "NAME";</pre>
	For example:
	<pre>var WEBSERVER = "CD1111";</pre>
	Note: Use capital letters only. State computer names without domain suffix.
Initfunction	Defines a zenon function that is executed when a project is started in the browser.
	<pre>var INITFUNCTION = "Init";</pre>
	For example:
	<pre>var INITFUNCTION = "Init";</pre>
	Default: "Init"
	Note: The wording must correspond to the function names in zenon (capitalization).
Zoom	Defines if the project can be zoomed in or out of in the browser view.
	<pre>var ZOOM = "WERT";</pre>
	0: OFF
	1: ON
	For example:
	var ZOOM = "0";



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

Hint: Note capitalization when entering the parameters in the global_vars.js file.

You can find an example configuration on the DVD. You can read how this is adjusted in the Configuration of the example page (on page 66) chapter.

Settings in projekt.html

For older versions of zenon, the configuration file project.html is used.



```
codebase="zenwebcli.ocx#version=1.0.0.1"');
             document.write ('
             document.write ('
                                 width=100%');
             document.write (' height=100%');
             document.write ('
                                 Project="' +PROJECTNAME+ '"');
             document.write ('
                                 Server="' +RUNTIMESERVER+ '"');
                                 WebServer="' +WEBSERVER+ '"');
             document.write ('
             document.write ('
                                 Load="-1"');
             document.write ('
                                 ScrollV="0"');
                                 Scrollh="0"');
             document.write ('
             document.write (' InitFunction="Init"');
             document.write ('>');
      }
      else
      {
             document.write ('<object');</pre>
             document.write (' id="CD IClient1"');
             document.write (' classid="clsid:2A3BC66B-03D7-11D4-991A-
080009ABB492"');
             document.write (' codebase="zenwebcli.ocx#version=1.0.0.1"');
             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="Init">');
             document.write ('</object>');
      }
// --></script>
```

This HTML file is configured in a similar manner to global_vars.js:



PARAMETER

Parameter	Description
Projectname	Defines the name of the Runtime project.
	Note: The project must as a server project on the stipulated Runtime server.
RuntimeServer	Denotes the target computer on which Runtime for the project runs.
	Note: Use capital letters only. State computer names without domain suffix.
	The name must correspond with the server name in the project configuration, see also: Project configuration zenon 5.x (on page 47) and Project configuration zenon 6.x (on page 47).
	Runtime server redundancy
	Only the name of the server is given for redundant Runtime projects, not the name of the standby server. The name of the standby servers is saved in the project's project.ini file. zenon Webclient 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 client first tries to establish a connection to the Runtime server. If it cannot be reached, it automatically connects to the standby server.
	Webserver redundancy
	If, in addition to zenon Runtime-Server, the zenon Webserver is also to be operated as redundant, the following must be the case:
	► Two copies of zenon Webserver installed and licensed on different computers
	► Both copies of zenon Webserver, 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	Denotes the target computer on which zenon Webserver was installed. Attention: That is not the publishing service!
	Note: Use capital letters only. State computer names without domain suffix.



Initfunction	Defines a zenon function that is executed when a project is started in the browser.
	Note: The wording must correspond to the function names in zenon (capitalization).
Zoom	Defines if the project can be zoomed in or out of in the browser view. 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.

Storage of Runtime files

zenon Webserver 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=

Redundancy operation

zenon Webserver can also be operated redundantly from zenon Webclient 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 Webclient remains connected to the zenon standby web server until:

- zenon Webclient 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 only a zenon web server, 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.

2.6 zenon Web client

To be able to display projects in Runtime in a browser, zenon Webclient must be installed locally on the same computer. You can find details on browser operating systems in the Browser (on page 40) chapter.

zenon Webclient 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 Webserver (on page 19).

You can find the current installation files for the zenon Webclient after installation of zenon Webserver (Pro) in the respective subdirectory, for example:

C:\inetpub\wwwroot\zenon\controlversions\version651SP0\WEB Client Setu p GERMAN.exe.

All zenon Webclient setups are signed digitally and can also be provided on a website for download. You will find the corresponding certificate information in the zenon Webclient Setup properties.

zenon Webclient Setups in all available languages are on the zenon Webserver DVD in the COPA-DATA\Web Client versions folder.



Info

zenon Webclient sends error and log files. The diagnosis server is also installed when zenon Webclient is installed.



2.6.1 Browser

zenon Webclient supports the following browsers:

- ► Microsoft Internet Explorer
- ▶ Mozilla Firefox
- Google Chrome
- ► Apple Safari

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



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

- Windows Vista
- Windows 7
- Windows 8
- ▶ Windows Server 2008

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 50) 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 web client does not start



SUPPORTED VERSIONS

Browser	From version	Remark
Microsoft Internet Explorer	▶ 3.0	 Recommended from: 8.0 Note the information on memory protection for IE 8/9
Mozilla Firefox	3.6:4 Plug-in container must be activated manually	 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 Always0n

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!
- 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 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!

2.6.2 Encryption of communication in the network

From zenon version 7 onwards, communication in the network can be protected with strong encryption.

To activate encryption in the web client:

1. In the Start menu, launch the link \Programme\COPA-DATA\Network communication encryption

or the file zenWebCryptConfig.exe in the zenon program file.



2. The dialog for configuration is opened



Parameters	Description
Encrypt network communication	Active: Communication in the network is encrypted.
Password	Enter password.
	For the criteria, see the "Network encryption password" section in the Strong encryption of network communication chapter.
	The displayed length is always set at 20 characters, in order to hide the actual length.
Verify password	Enter the password for verification again.
OK	Applies changes and closes dialog.
Cancel	Discards changes and closes dialog.



2.6.3 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 cam 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

Due to the multi-project administration projects from different versions can be loaded. For example the Integration project can have version 7.00, a sub-project version 6.51 and another sub-project version 6.22 SP1.



Info

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

VSTA with Webclient, Webserver and Webserver Pro 2.7

VSTA is supported by zenon in Webserver und Webserver Pro (on page 6) in different ways.



Function	Webclient with Webserver Standard	Webclient with Webserver Pro
Show VSTA macro dialog	+	+
Execute VSTA macro	+	+
Open VSTA editor	-	-
VSTA events	+	+
Remark	 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. 	 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 Webserver and/or zenon 7.10.

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\



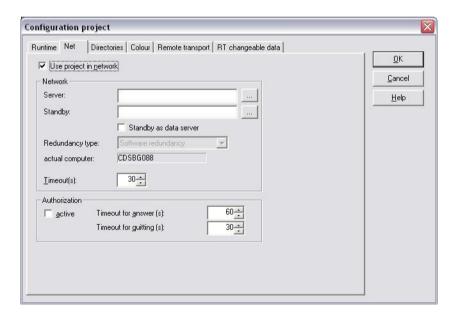
2.8 Engineering in the Editor

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

2.8.1 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 66), so that the connection can be established.



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

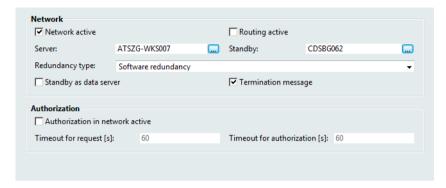
2.8.2 Project configuration from 6.x onwards

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 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 66), so that the connection can be established.

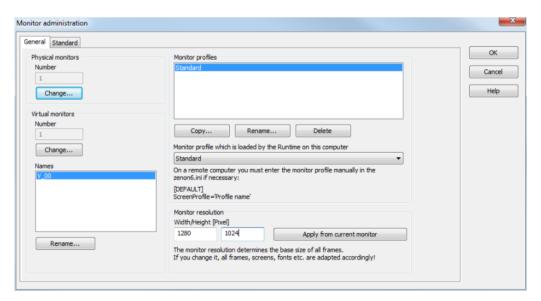


You can find further information on the zenon network in the Network chapter.

2.8.3 Screen resolution and monitor administration

zenon monitor administration is available in zenon Webclient 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 Webclient 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 Webclient setting. For details, see Configuration of the example page (on page 66) chapter.

With the help of the zoom property, zenon Webclient 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. The area that is available to zenon Webclient is therefore 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 Webclient.

For example:

Monitor resolution on zenon Webclient PC: 1024x768 pixel Screen size in monitor administration: 800×600 .



Info

If you want to use the multi-project administration on the zenon Webclient, 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.



Info

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



2.8.4 Multi-project administration and redundant projects

zenon Webclient 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 38) are also supported.

2.9 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 this can then connect to the corresponding Runtime server. This page contains the necessary code. Java Script is used as a script language.

Prerequisites:

- ▶ JavaScript must be activated in the browser.
- zenon Webclient 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 51), to a start page (index.htm) (on page 60), that allows the download of the web clients. This start page contains hyperlinks:

- To download the zenon Webclient controls
- To project entry page init.htm, which carries out a browser check and makes the connection from zenon Webserver 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 51)
- ► Example for HTTP (on page 55)



2.9.1 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 51) 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

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 52).
- 2. The browser is determined by browsercheck.js (on page 53).
- 3. If it is a supported browser, the appropriate function to include the web client from initcode.js (on page 54) is executed.

EXAMPLE

```
<html>
<head>
<title></title>
</head>
<br/>
<head>
<br/>
<br/
```



```
switch(browsercheck()) {
       case "IEXPLORER":
       runlexplorer (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

The 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 computer name, where you installed the zenon Webserver
var WEBSERVER = "PC_016";

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



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

// Here you have to enter the version number corresponding to the Webclient.
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 6to9 = (UserAgent.lastIndexOf('MSIE 6.0') != -1) ||
 (UserAgent.lastIndexOf('MSIE 7.0') != -1) \ || \ (UserAgent.lastIndexOf('MSIE 8.0') != -1) \\
|| (UserAgent.lastIndexOf('MSIE 9.0') != -1);
      var fNPAPI = (UserAgent.lastIndexOf('Firefox/3.6.') != -1) ||
(UserAgent.lastIndexOf('Firefox/4.') != -1) || (UserAgent.lastIndexOf('Chrome/7.') !=
-1) || ((UserAgent.lastIndexOf('Safari') != -1) &&
(UserAgent.lastIndexOf('Version/5.') != -1));
      if(fWin32)
             //Win32-Browser
             if(fMSIE 6to9)
             {
                    //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 web client in Apple Safari, Google Chrome and Mozilla Firefox and the <object> entry to start the web client in Microsoft Internet Explorer:

```
function runNPAPI(PROJECTNAME, RUNTIMESERVER, WEBSERVER, INITFUNCTION, ZOOM, VERSION) {
             document.write ('<embed type="application/x-zenon"');</pre>
             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 runlexplorer (PROJECTNAME, RUNTIMESERVER, WEBSERVER, INITFUNCTION, ZOOM, VERSION) {
             document.write ('<object');</pre>
             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">');
```



2.9.2 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 55) 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

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 56).
- 2. The browser is determined by browsercheck.js (on page 57).
- 3. If it is a supported browser, the appropriate function to include the web client from initcode.js (on page 58) is executed.

<html>

<head>



```
<title></title>
<BODY scroll="no" leftmargin="0" topmargin="0" marginwidth="0" marginheight="0"</pre>
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":
       runlexplorer (PROJECTNAME, RUNTIMESERVER, WEBSERVER, INITFUNCTION, ZOOM, VERSION);
       case "NPAPI":
              runnpapi (PROJECTNAME, RUNTIMESERVER, WEBSERVER, INITFUNCTION, ZOOM, VERSION);
       case "UNSUPPORTED BROWSER":
              alert(navigator.appName + ' : ' + navigator.appVersion + ' is not
supported!');
             break;
       default:
              alert("invalid parameter");
             break:
}
</script>
</html>
```

global_vars.js

The 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 computer name, where you installed the zenon Webserver
var WEBSERVER = "CDSBG036";

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

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

// Here you have to enter the version number corresponding to the Webclient.
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.



initcode.js

This JavaScript sets the <embed> entry to start the web client in Apple Safari, Google Chrome and Mozilla Firefox and the <object> entry to start the web client in Microsoft Internet Explorer:

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



```
function runlexplorer (PROJECTNAME, RUNTIMESERVER, WEBSERVER, INITFUNCTION, ZOOM, VERSION) {
             document.write ('<object');</pre>
             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+ '">');
                                 <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 ('
             document.write (' <PARAM NAME="Scrollh" VALUE="0">');
             document.write ('
                                 <PARAM NAME="InitFunction" VALUE="' +INITFUNCTION+
'">');
             document.write (' <PARAM NAME="Zoom" VALUE="' +ZOOM+ '">');
                                 <PARAM NAME="UseHTTP" VALUE="' +HTTP + '">');
             document.write ('
             document.write ('</object>');
```

2.9.3 Example from the Webserver DVD

When zenon Webserver is installed, an example for a start page (index.htm) with hyperlinks for download of web client controls and hyperlinks for the project entry page are also installed.

Directory structure on the hard drive:

```
C:/Programme/COPA-DATA/zenonWebServer/zenon.
```

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

Installation of the web clients is offered via the index.htm (on page 60) file.

The project entry uses the file init.htm (on page 51).



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 zenon Webclient 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 51) when the web client is started, which carries out the browser check



HTML code for index.htm

The HTML code of the example home page index.thml (on page 51):



```
<?xml version="1.0" ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"</pre>
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
      <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
      <link rel="stylesheet" type="text/css" href="ressources/style.css" />
      <title>COPA-DATA :: zenon webserver demo</title>
</head>
<body>
<div class="bodywrap1">
<div class="bodywrap2">
<div class="main">
      <div class="innerheader">
             <div class="languageSwitch">
                   <111>
                   <a href="index de.htm">Deutsch</a>
                   <a href="index.htm">English</a>
                   <a href="index it.htm">Italiano</a>
                   <a href="index fr.htm">Francais</a>
                   <a href="index_es.htm">Español</a>
                   </div><!-- languageSwitch -->
             <a href="http://www.copadata.com" target="_blank"><img</pre>
src="ressources/logo.png" alt="COPA-DATA Home" /></a>
      </div><!-- inner header -->
      <div class="content">
             <h1>zenon webserver</h1>
             This page is an example how to realize the web access to a zenon
Runtime-Server via the zenon Webserver.
```



<h3>System requirements</h3> The web client can be used by several browsers. The following browsers have been tested: <1111> Microsoft Internet Explorer version 3.x - 9.x Mozilla Firefox version 3.6.4 - 4.x Google Chrome version 7.x Apple Safari (only Windows) version 5.x <h3>Configuration of Mozilla Firefox</h3> For Mozilla Firefox you need at least version 3.6.4 or higher. You must carry out the following adjustments in the Firefox configuration: <l Enter "about:config" in the address line. If the browser displays the message " This might void your warranty", press button " I'll be careful, I promise" . >Eigenschaft "dom.ipc.plugins.enabled" must be set to "true". If not, you must set the Eigenschaft as follows: <l Right click on the property Click on "Toggle" in the shown context menu If you do not apply these settings, the web client cannot communicate with the zenon Runtime in Firefox. The screens are shown but all variables are displayed as offline. <h2>Installation of the zenon webclient control </h2> For this method of installation the zenon webclient control has to be downloaded and installed by hand. After the successful installation of the zenon webclient control the defined project can be started. <div style="margin: 0px auto 0px auto" > <div class="startdown">

<h3>Start the zenon webclient</h3>



```
<img src="ressources/start-windowed.png" width="71"</pre>
height="80" alt="Start the zenon web client" onclick="window.location.href='init.htm'"
/>
                           <img src="ressources/start-new-window.png" width="71"</pre>
height="80" alt="Start the zenon web client in a new window"
onclick="window.open('init.htm','WindowTitle','width=1024,height=768')" />
                           <img src="ressources/start-fullscreen.png" width="71"</pre>
height="80" alt="Start the zenon web client in full-screen mode"
onclick="window.open('init.htm','WindowTitle','fullscreen')" />
                    </div>
                    <div class="startdown">
                           <h3>Install the zenon webclient control</h3>
                           <img src="ressources/download-700.png" width="71"</pre>
height="80" alt="Download the zenon client control setup (7.00 SP0)"
onclick="window.location.href='controlversions/version700SP0/WEB Client Setup ENGLISH.
EXE'" />
                           <img src="ressources/download-651.png" width="71"</pre>
height="80" alt="Download the zenon client control setup (6.51 SP0)"
onclick="window.location.href='controlversions/version651SP0/WEB_Client_Setup_ENGLISH.
EXE'" />
                           <img src="ressources/download-622.png" width="71"</pre>
height="80" alt="Download the zenon client control setup (6.22 SP1)"
onclick="window.location.href='controlversions/version622SP1/WEB Client Setup ENGLISH.
EXE'" />
                    </div>
             </div>
             <h2>General structure</h2>
              For displaying zenon projects in the web browser the zenon webclient
control has to exist on the webclient.
             \ensuremath{\scriptsize <\!p>} Info: The client control has to be of the same version (e.g. 6.51
SPO) as the Runtime server.
              Some configuration data (version info, project name, name of the
zenon webserver PC, name of the zenon Runtime-Server PC, and others) have to be known,
so that the client control can find the zenon Runtime server. These data have to be
entered in the configuration file "\config\qlobal vars.js". You can edit
this file with a standard text editor (Notepad).
             You will find more information in the zenon Webserver
documentation.
```



```
</div></div><!-- main -->
</div><!-- bodywrap2 -->
</div><!-- bodywrap1 -->
</body>
</html>
```

Selection of window mode for starting the web client

Links to start zenon Webclient can be implemented in different ways:



zenon Webclient 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_Stardard</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>
```



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 (FROM WEB CLIENT 6.01):

Parameter	Description
	1
Projectname	Defines the name of the Runtime project.
	<pre>var PROJECTNAME = "NAME";</pre>
	For example:
	<pre>var PROJECTNAME = "zenon";</pre>
	Note: The project must as a server project on the stipulated Runtime server.
RuntimeServer	Denotes the target computer on which Runtime for the project runs.
	<pre>var RUNTIMESERVER = "NAME";</pre>
	For example:
	<pre>var RUNTIMESERVER = "T13-XPDE32";</pre>
	Note: Use capital letters only. State computer names without domain suffix.
	The name must correspond with the server name in the project configuration, see also: Project configuration zenon 5.x (on page 47) and Project configuration zenon 6.x (on page 47).
	Runtime server redundancy
	Only the name of the server is given for redundant Runtime projects, not
	the name of the standby server. The name of the standby servers is saved
	in the project's project.ini file. zenon Webclient 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 client first tries to establish a connection to the Runtime server. If it cannot be reached, it automatically connects to the standby server.				
	Webserver redundancy				
	If, in addition to zenon Runtime-Server, the zenon Webserver is also to be operated as redundant, the following must be the case:				
	► Two copies of zenon Webserver installed and licensed on different computers				
	► Both copies of zenon Webserver, 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	Denotes the target computer on which zenon Webserver was installed. Attention: That is not the publishing server!				
	var WEBSERVER = "NAME";				
	For example:				
	var WEBSERVER = "CD1111";				
	Note: Use capital letters only. State computer names without domain suffix.				
Initfunction	Defines a zenon function that is executed when a project is started in the browser.				
	<pre>var INITFUNCTION = "Init";</pre>				
	For example:				
	<pre>var INITFUNCTION = "Init";</pre>				
	Default: "Init"				
	Note: The wording must correspond to the function names in zenon (capitalization).				
Zoom	Defines if the project can be zoomed in or out of in the browser view.				
	<pre>var ZOOM = "WERT";</pre>				
	0: OFF				
	1: ON				



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

ADDITIONAL PARAMETERS

The width/height parameters define the size of the scroll bars (zenon web client) in the browser. Default is 100%:



💡 Info

If the scroll bars are set to 105%, they are moved to the non-visible area of the browser. The ScrollV und 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 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.

2.10 Troubleshooting

Known error messages or execution errors:

- Crash after browser refresh (on page 69)
- ActiveX control failed to load (on page 70)
- ActiveX control not installed correctly (on page 71)
- ► Exceptional web client error, Internet Explorer 8 and more recent versions (on page 71)
- ► HTTP error messages (on page 72)
- ▶ Init Runtime Error (on page 76)
- Keyboards in Firefox (on page 77)
- ► Max. clients (on page 77)

2.10.1 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 Webclient was already installed on the client computer, the following error message can be displayed when zenon Webclient connects to zenon Webserver or Runtime:

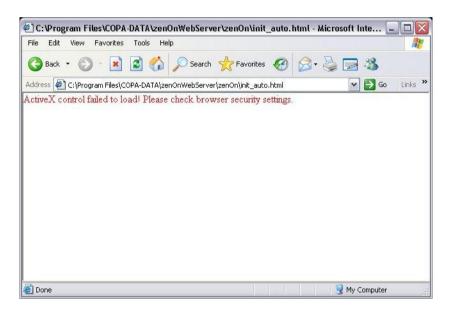
Error 101

Project XXX was edited with version XXX and cannot be opened here In this case:



- 1. Uninstall the web client
- 2. Restart the computer
- 3. Reinstall zenon Webclient

2.10.2 ActiveX control failed to load

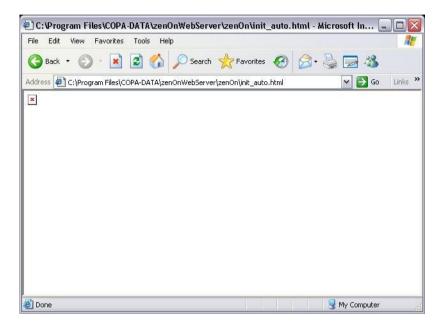


If the browser displays an init Runtime Error, there are several possible reasons for that. The most probable:

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



2.10.3 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 Webclient (on page 39) was not installed correctly
- ▶ The wrong version (on page 44) of zenon Webclient is installed

2.10.4 Exceptional web client error with Internet Explorer 8 and more recent versions

ERROR

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

2.10.5 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	ERRORS	An unsupported HTTP request was received. GET and POST requests
Received	LINIONS	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.

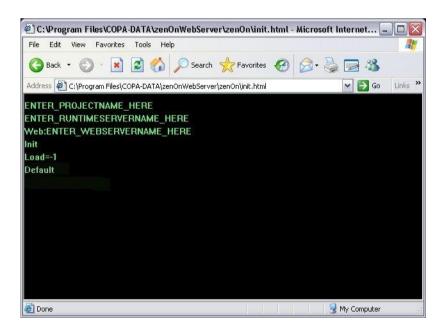
LOG ENTRIES FROM CNSBLOCKINGSOCKETEXCEPTIONS

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	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

2.10.6 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).
- zenon web server has not been started (on page 25).

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

2.10.7 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!

2.10.8 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.



2.11 Integrate zenon web server into an internet environment

To integrate zenon Webserver 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:
 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 Webclient 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 web server 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 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.