

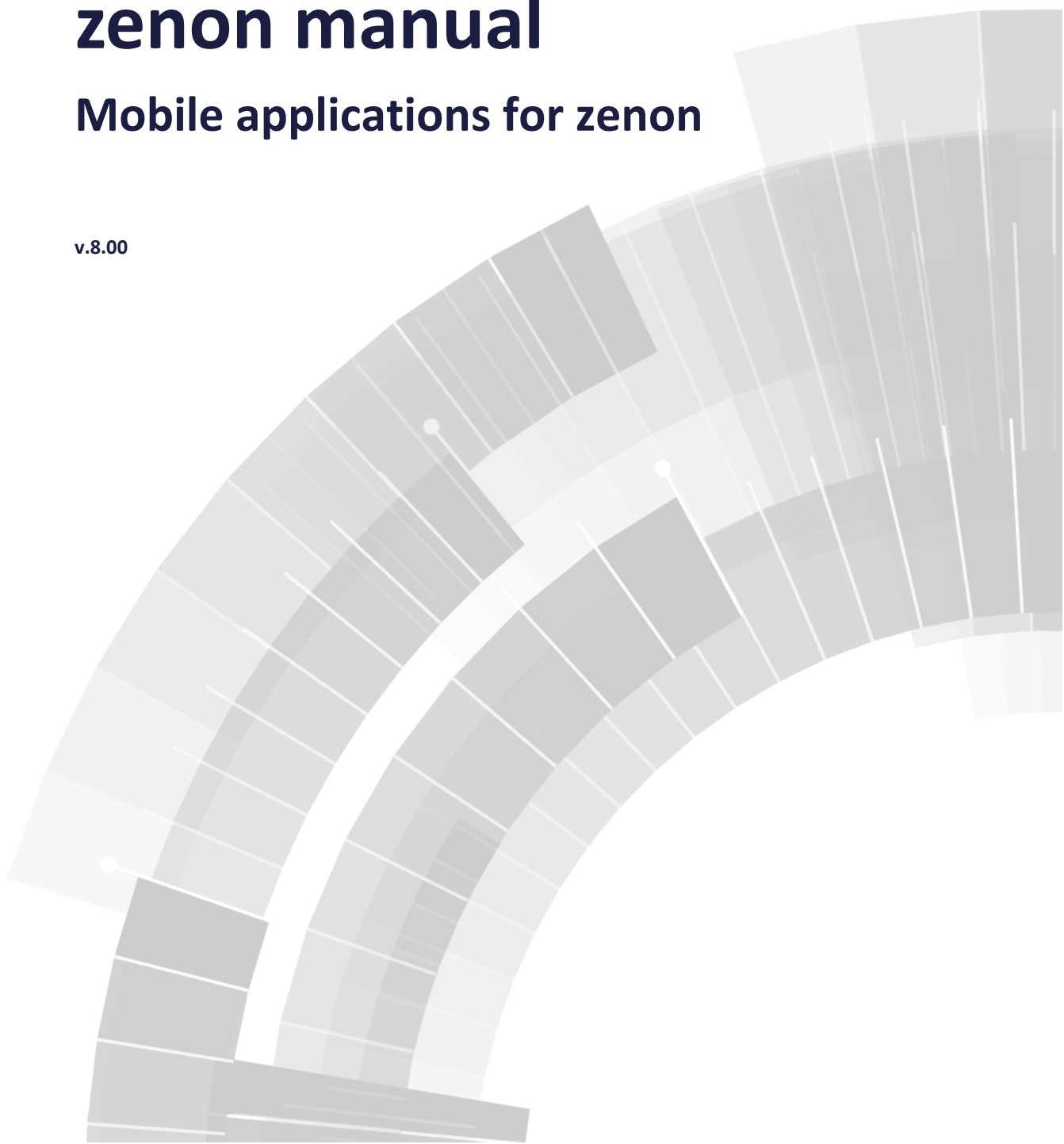


COPADATA
do it your way

zenon manual

Mobile applications for zenon

v.8.00





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1. Welcome to COPA-DATA help

ZENON VIDEO-TUTORIALS

You can find practical examples for project configuration with zenon in our YouTube channel. The tutorials are grouped according to topics and give an initial insight into working with different zenon modules. All tutorials are available in English.

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.

PROJECT SUPPORT

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

LICENSES AND MODULES

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

2. Mobile applications for zenon

With the mobile applications, you can visualize your zenon projects on mobile end devices, tablets and desktop computers. The basis of this display is an existing zenon project. There is no additional project configuration work required.

For display on mobile end devices, tablets and desktop computers, there are zenon apps available in the respective app store.

You can also create your own mobile applications for the visualization of your zenon project

configuration. You can find further information and examples of code in the Everywhere Server data model (on page 119) chapter.

THE FOLLOWING APPS ARE AVAILABLE:

- ▶ **Everywhere Essentials Alarm Management** (on page 8)
visualizes alarms of the productive Runtime on mobile devices. Filtering of the alarms according to equipment groups can be configured in the connection.
This app is available for devices with the Apple iOS operating system.
- ▶ **Everywhere Essentials QR Data App** (on page 15)
Visualizes real-time data from the productive Runtime to mobile devices. Individual variables can be entered. Alternatively, a QR code with the connection settings contained in it and variables to be displayed can be scanned.
This App is available for devices with the Android and Apple iOS operating systems.
- ▶ **Notifier-App by zenon** (on page 30):
Allows the receipt and acknowledgment of SMS messages that are sent by the Message Control module.
This App is available for the Android operating system.
- ▶ **Everywhere App by zenon:**
This app allows simple access to zenon via smartphones, tablets and desktop computers.
The following apps are available:
 - **Everywhere App by zenon** (on page 45) for Windows Mobile
 - **Everywhere App by zenon** (on page 61) for iPhone, iPad product range
 - **Everywhere App by zenon** (on page 78) for Windows Desktop
 - **Everywhere App by zenon** (on page 89) for Android
- ▶ **Everywhere Server by zenon** (on page 101):
Provides zenon data for mobile applications.

Once a server has been configured, the following functions are available via the app:

- ▶ Visualization of values of a zenon project in real time.
- ▶ Authentication by means of the mobile application
- ▶ Selection of the equipment model of the active project
- ▶ Assignment of the configured user authorizations (via .INI entry)
- ▶ Individual variables can be activated
- ▶ Display of values in lists ...
 - ... with graphic progress bars
 - ... with dynamic pointer instruments
 - ... Alarm messages with time

3. Everywhere - Alarm Management



Everywhere Essentials - Alarm Management visualizes the alarm message list of zenon Runtime in a simplified display.

A connection to the COPA-DATA demo server is pre-configured by default.



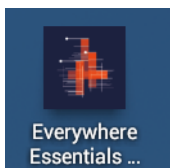
Information

The app is available for devices with the Apple iOS operating system.

3.1 Installation

Carry out the following steps in order to be able to use **Everywhere Essentials - Alarm Management** on your device:

- ▶ Start the app store on your device.
- ▶ Enter **Everywhere Essentials** or **Alarm Management** as a search term.
- ▶ Select **Everywhere Essentials - Alarm Management** and install the app on your device.

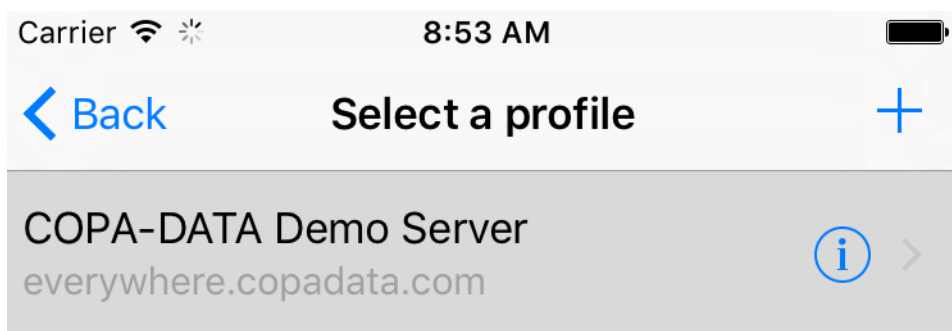


To use the app:

- ▶ Open **Everywhere Essentials - Alarm Management** on your device.
The app starts with the alarm screen (on page 12).

3.2 Profile List

The profile overview lists existing profiles and administers these.



HEADER


Parameter	Description
< Back	Switches to the alarm screen (on page 12).
+	Creates a new profile and opens the configuration dialog for a profile (on page 10).

PROFILE LIST


List with all configured connections. Select an existing profile to connect to the respective server.

3.2.1 Edit profile

In this screen, existing profiles can be changed and new profiles can be configured.

Carrier 

8:53 AM



Done

Profile name:

COPA-DATA Demo Server

Server address:

everywhere.copadata.com

Port:

8050

Project name:

DEMO_AUTOMOTIVE

Select alarms from equipmentgroup:

User:

Manager

Password:

●●●●●●

HEADER


Parameter	Description
Done	Saves the configuration and switches to the alarm screen (on page 12).

CONNECTION SETTINGS

Parameter	Description
Profile Name	Freely definable name of the connection.
Server address	Name or IP address of the Everywhere Server to which a connection is to be created.
Port	HTTPS port for communication with the Everywhere Server Default: 8050
Project name	Name of the Everywhere Server project.
Select alarms from equipment group	Name of the equipment group, as configured in the zenon Editor. Note: In the alarm screen, only the alarms that are linked to selected equipment group are visualized.
User	User name for login at the Everywhere Server.
Password	Password for login at the Everywhere Server.

3.3 Alarm screen

The alarm screen visualizes the alarm message list of zenon Runtime in a simplified display.

Everywhere Essentials - Alarms 

Connection status: online

Wartung Spanner RS01

Time received: 10.06.2016, 08:53:45
Status: Active

Wartung Schrauber SC01

Time received: 10.06.2016, 08:53:43
Status: Active

Störung Schrauber SC02

HEADER

Parameter	Description
Cog symbol	Switches to profile overview (on page 9) for the selection or configuration of a connection.
Connection status	Shows the status of the current connection to the Everywhere Server by zenon <ul style="list-style-type: none">▶ online Active connection to the server▶ offline No connection to the server

ALARM ENTRY**Wartung Spanner RS01**


Time received: 10.06.2016, 08:53:45

Status: Active

Parameter	Description
[Alarm text]	Alarm text
Time received	Timestamp of the alarm: DD.MM.YYYY, hh:mm:ss
Status	Status of the alarm: <ul style="list-style-type: none"> ▶ Active Alarm is active. ▶ Acknowledged Alarm has been acknowledged. ▶ Gone Alarm has gone.

EXAMPLE

Carrier 
8:53 AM


Everywhere Essentials - Alarms


Connection status: online

Wartung Spanner RS01

Time received: 10.06.2016, 08:53:45
Status: Active

Wartung Schrauber SC01

Time received: 10.06.2016, 08:53:43
Status: Active

Störung Schrauber SC02

Time received: 10.06.2016, 08:53:40
Status: Active

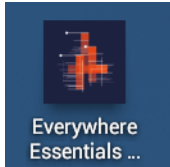
Bus Warnung

Time received: 10.06.2016, 08:53:36
Status: Active

Roboter Störung RS01

Time received: 10.06.2016, 08:53:33
Status: Active

4. Everywhere Essentials QR Data App



The free **Everywhere Essentials QR Data App** visualizes real-time data from the productive Runtime to mobile devices. The relevant information is read from a QR code directly.

The QR code can be created for the App with the **Everywhere Essentials QR Code Generator** of an existing configuration.

Note: The App is available for devices with the Windows 10, Windows 10 Mobile, Android and Apple iOS operating systems.



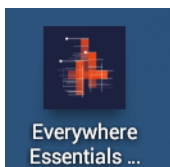
Information

The **Everywhere Essentials QR Data App** visualizes the project data provided by the Everywhere Server (on page 101).

4.1 Installation

Carry out the following steps in order to be able to use **Everywhere Essentials QR Data App** on your device:

- ▶ Start the app store on your device.
- ▶ Enter QR Data App or Essentials QR as a search term.
- ▶ Select **Everywhere Essentials QR Data App** and install the app on your device.



To use the app:

- ▶ Open the **Everywhere Essentials QR Data App** on your device.
The start screen (on page 16) is shown.

4.2 App Bar



The app bar is for navigation on Android devices.

Note: There is no app bar available for Apple iOS devices.

APP BAR

Symbol

zurück

(symbol: curved arrow to the right)

Home

(symbol: house)

nn

(symbol: overlaid screens)

Description

Switches to the previous app screen.

Closes the app and switches back to the Start screen of the Android device.

Overview of the last apps open on the device.



Information

The appearance and functionality of the app bar is the same on all screens. This bar is very often already integrated into the hardware of an Android device. In this case, no app bar is displayed.

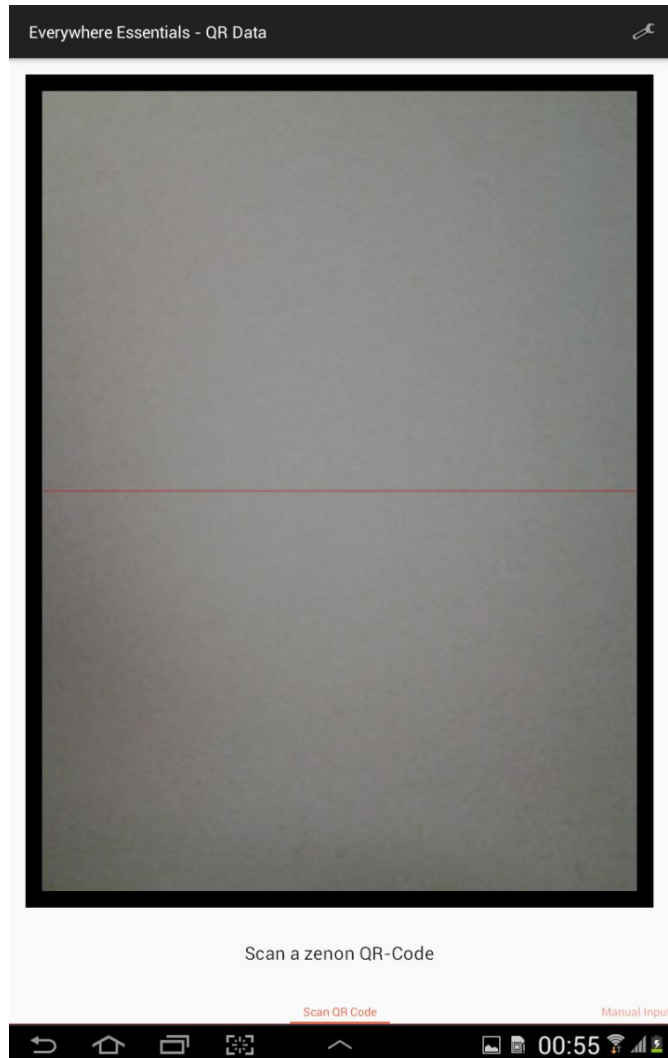
4.3 Start screen

The **Everywhere Essentials QR Data App** starts either with the **scan screen** (on page 17) or with the **screen for manual entry** (on page 19).

This depends on the view in which the app was last closed.

4.3.1 Scan screen

QR codes are scanned and the profile list is called up in the scan screen.



ACTION BAR - ACTION BUTTONS

Parameters	Description
Profiles (symbol: screw-wrench)	Calls up the Profil list (on page 21).

FOOTER

Parameters	Description
Manual Input	Switches to manual input (on page 19).

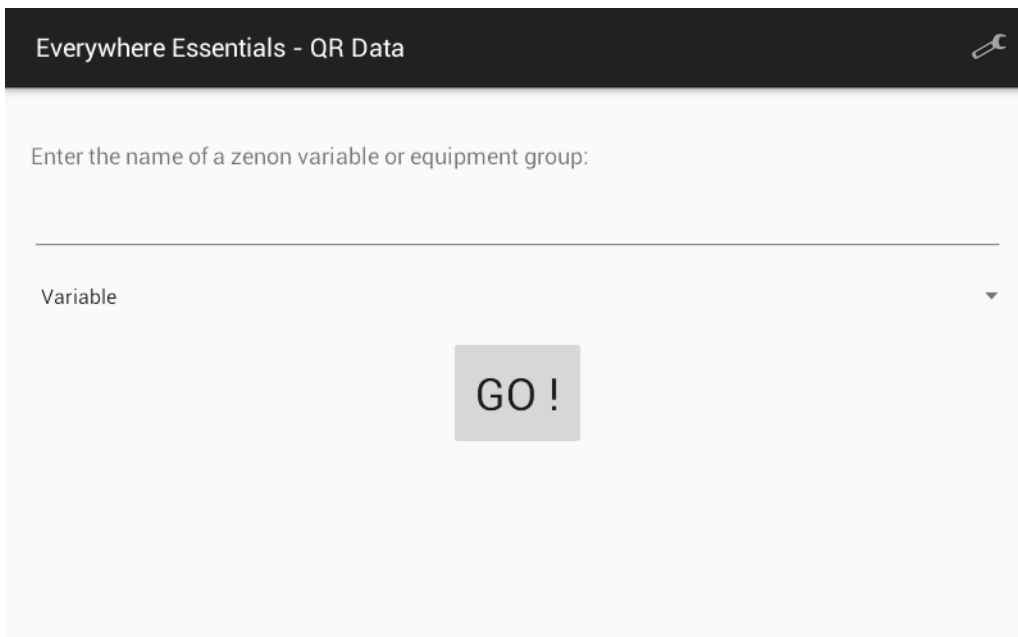
SCAN PROCESS

To scan a QR code:

- ▶ Focus on the QR code with your device's camera.
After successful identification of the QR code:
 - The screen is highlighted with a thick edge.
 - Prominent parts of the QR code are also accentuated in color.
 - The name of the detected project or the detected equipment group is visualized in the footer
- ▶ The app establishes a connection to Everywhere Server by zenon.
Note: You can find detailed information on this in the Establishing a connection (on page 26) chapter.
- ▶ After successful connection to Everywhere Server by zenon, the app switches to the event screen (on page 27).
The values of the variables identified are shown according to the configuration.

4.3.2 Screen for manual entry

You can enter the variable name or the name of the equipment group manually in the **screen for manual entry**.



The screenshot shows the 'Everywhere Essentials - QR Data' app interface. At the top, there is a dark header bar with the title 'Everywhere Essentials - QR Data' and a wrench icon on the right. Below the header, the main area is light gray. It contains a text prompt 'Enter the name of a zenon variable or equipment group:' followed by a horizontal input line. Below the input line, the word 'Variable' is displayed on the left, and a small downward-pointing triangle is on the right, indicating a dropdown menu. At the bottom center, there is a gray rectangular button with the text 'GO !' in bold black letters.

ACTION BAR - ACTION BUTTONS

Parameters	Description
Profiles (symbol: screw-wrench)	Calls up the Profil list (on page 21).

MANUAL INPUT

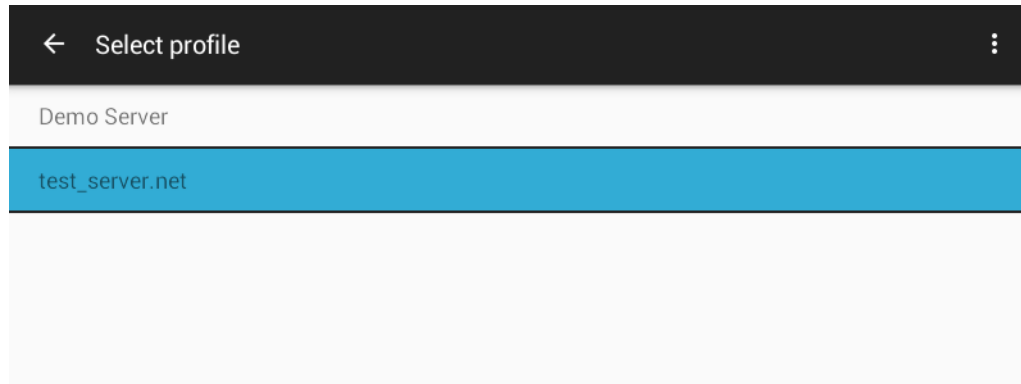
Parameters	Description
Input field	Input field for variable name or name of the equipment group. Note: Pay attention to capital letters and small letters when entering the data!
Input type	Drop-down list to select the query type: <ul style="list-style-type: none"> ▶ Variable The name entered corresponds to a variable name (Name). ▶ Equipment Group The name entered corresponds to the name of an equipment group (Name).
Go	Button to start the query. The result is then visualized in the event screen (on page 27).

FOOTER

Parameters	Description
Scan QR Code	Switches to the scan screen (on page 17).

4.4 Profile List

The profile overview lists existing profiles and administers these.



ACTION BAR - ACTION BUTTONS

Parameters	Description
<- Select profile	<p>Switches back to the input screen:</p> <ul style="list-style-type: none"> ▸ Scan screen ▸ Screen for manual entry <p>This depends on the view in which the profile overview was called up.</p>
Action Overflow (symbol: three vertical dots)	Click the button to open a drop-down list of the actions.

LIST OF PROFILES

Lists all configured profiles. Selection of a profile by tapping on the profile name.

Parameters	Description
Add new profile	Creates a new profile and opens the screen to configure a profile (on page 22). Note: You can find further information on the use of profiles when establishing a connection in the Establishing a Connection (on page 26) chapter.
Edit selected profile	Opens the screen to configure a profile (on page 22).
Delete selected profile	Deletes the selected profile. Before deletion, you are requested to confirm the deletion of the profile.

SAFETY QUERY

Delete Profile?	
Delete the profile Demo Server?	
No	Yes

A confirmation dialog is called up before a profile is deleted.

Parameters	Description
No	The profile will not be removed from the list The dialog is closed in the process.
Yes	The profile is deleted The dialog is closed in the process.

4.4.1 Edit Profile

In this screen, existing profiles can be changed and new profiles can be configured. In addition, you configure the granularity of the results display (on page 27).



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

← Add Profile

Profile name:

Server address:

everywhere.copadata.con

Port:

8050

Project name:

DEMO_AUTOMOTIVE

User:

Manager

Password:

Read Connection Settings from QR-Code

ON

Show Variable Name

ON

Show Variable Identification

ON

Show Variable Timestamp

ON

Show Variable Status

ON

Show Identification after Scanning

OFF

↶

🏠

📄

🔍

⬆

🖼

📄

00:57

📶

🔋

ACTION BAR - ACTION BUTTONS

Parameters	Description
<- Add Profiles	Switches back to the profile overview.
Save profile (symbol: floppy-disk)	Saves the profile settings and switches to the profile overview. A confirmation dialog is called up before saving.

CONNECTION SETTINGS

Parameters	Description
Profile Name	Freely definable name of the connection.
Server	Name or IP address of the Everywhere Server to which a connection is to be created.
Port	HTTPS port for communication with the Everywhere Server Default: 8050
Project Name	Name of the Everywhere Server project.
User	User name for login at the Everywhere Server.
Password	Password for login at the Everywhere Server.

DISPLAY DETAILS

The properties are each activated or deactivated with a slider.

These settings have a direct effect on the characteristics of the display in the results screen.

Parameters	Description
Read Connection Settings from QR Code	<p>The connection settings to the Everywhere Server are taken from the QR code.</p> <p>Default: <i>active</i></p> <p>If this property is deactivated or no connection settings are coded into the QR code, the connection settings of the last profile that was selected are used.</p>
Show Variable Name	<p>The variable name is displayed.</p> <p>Activates or deactivates the display of the variable name in the event screen.</p> <p>Default: <i>active</i></p> <p>Note: This corresponds to the Name property in the zenon configuration.</p>
Show Variable Identification	<p>Activates or deactivates the display of variable detection in the results screen.</p> <p>Default: <i>active</i></p> <p>Note: This corresponds to the Identification property in the zenon configuration.</p>
Show Variable Timestamp	<p>Activates or deactivates the display of the time stamp in the event screen.</p> <p>Default: <i>active</i></p> <p>Note: This corresponds to the property in the zenon configuration.</p>
Show Variable Status	<p>Activates or deactivates the display of the variable status in the event screen.</p> <p>Default: <i>active</i></p> <p>Note: This corresponds to the StatusString property in the zenon configuration.</p>
Show Identification after Scan	<p>The login data for the Everywhere Server is shown whilst the connection is established.</p> <p>Default: <i>Inactive</i>.</p>

SAVING PROFILES - CONFIRMATION DIALOG

Save Profile?	
No	Yes

A confirmation dialog is called up before a profile is saved.

Parameters	Description
No	The profile will not be saved. The dialog is closed in the process.
Yes	The profile is saved The dialog is closed in the process.

4.5 Connection establishment

The following rules are applicable before connection to an Everywhere Server by zenon:

- ▶ If the QR code contains connection settings that have already been saved in an existing profile, the app establishes the connection immediately. The result is shown if the connection is successfully established without further interim steps in the results screen (on page 27).
- ▶ With manual entry of the value query or if no connection settings are included in the QR code, the connection settings of the current profile are always used.
- ▶ If the QR code contains connection settings that are not yet saved in a profile, a new profile with the default settings is automatically created.
The login data is queried in a dialog before the connection is established.
- ▶ If the login data (**User** or **Password**) are not present or have been configured incorrectly, a dialog to enter the login data is called up.
- ▶ An error message is shown if no connection to the Everywhere Server by zenon could be established.

ERROR WHEN ESTABLISHING CONNECTION

If no connection to the Everywhere Server by zenon could be established, the following error message is shown.

Looking up the server returned an undefined state

4.5.1 Login dialog

Dialog for the entry of the login data on the server.

User Credentials

User

Password

☐ Save Credentials in Profile

Cancel

OK

Parameters	Description
User	Input field for user name.
Password	Input field for password.
Save Credentials in Profile	Checkbox to save the data entered. <div><div>▶ If activated:</div><div>Login data entered is saved in the profile.</div></div> <div>If the checkbox is not activated, the login dialog is shown again the next time a connection is established.</div>
Cancel	Discards all changes and closes the dialog. <div>No connection is established.</div>
OK	Applies settings and closes the dialog.

4.6 Result screen

Current variable values of the productive Runtime environment are visualized in this screen. The values are continually updated.

Note: The characteristics of the display depend on the setting in the profile settings (on page 22).

Parameters	Description
< Value of [Input source]	<p>Switches back to the input screen:</p> <ul style="list-style-type: none"> ▸ Scan screen Input source = <code>variable name</code> ▸ Screen for manual entry Input source = <code>equipment group</code> <p>This depends on the view in which the profile overview was called up.</p>

EXAMPLES

← Value of '4264126f-e7a8-49e4-a7ea-37ae5d494edd'			
327.376 MW Energy06 04/02/2016 10:09:00	612.176 MW Energy03 04/02/2016 10:08:58	695.467 MW Energy04 04/02/2016 10:09:00	922.444 MW Energy01 04/02/2016 10:08:58
990.203 MW Energy05 04/02/2016 10:08:58	424.942 MW Energy02 04/02/2016 10:09:00		

← Value of '297866ed-7e0e-4b63-9683-e8074ce83c10'			
160 BodyShop1.Sum 11/01/2016 15:34:58 Online, Time invalid	54 BodyShop1.Target 22/01/2016 09:23:40 Online, Time invalid	-0.773 BodyShop1.Delta 22/01/2016 09:23:43 Switched off	53.227 BodyShop1.Actual 22/01/2016 09:23:40 Online, Time invalid



← Value of 'Energy06'

202.32 MW

Energy06

Online, Time invalid

<div>← Value of '4264126f-e7a8-49e4-a7ea-37ae5d494edd'</div> <div>326.637 MW</div> <div>Energy06</div> <div>Online, Time invalid</div>	<div>574.979 MW</div> <div>Energy03</div> <div>Online, Time invalid</div>
<div>701.249 MW</div> <div>Energy04</div> <div>Online, Time invalid</div>	<div>849.834 MW</div> <div>Energy01</div> <div>Online, Time invalid</div>
<div>973.426 MW</div> <div>Energy05</div> <div>Online, Time invalid</div>	<div>447.106 MW</div> <div>Energy02</div> <div>Online, Time invalid</div>

5. Notifier App by zenon

The **Notifier App by zenon** makes it possible to acknowledge alarms that are sent by means of **Message Control** as a SMS to a mobile device.

Note: The App is only available for devices with the **Android** operating system.

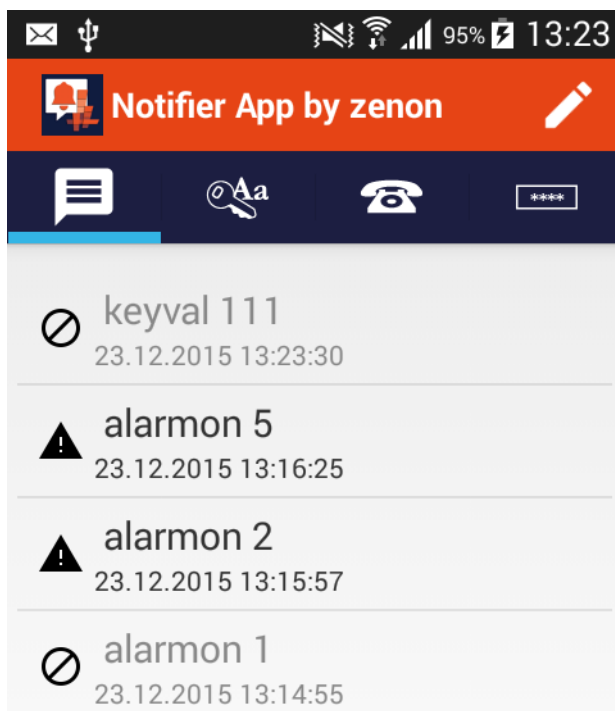
5.1 Functionality

The **Notifier App by zenon** shows SMSs that:

- ▶ Have been sent by the **Message Control** module and
- ▶ Contain certain key words or were sent by certain telephone numbers

After receipt, an alarm is played back on the receiving device for 30 seconds. If the message is opened within this time period, the user can acknowledge the alarm by SMS, reject it or ignore the alarm with a button. If a message is not reacted to in time, the information is filed to the **Notification-Bar**. If this is activated, a list of the alarms that have not yet been acknowledged and ignored is shown.

The current alarm list is always shown as a the start screen.



Navigation in the app is carried out by pressing the symbols or swiping. The following are available from left to right:

- ▶ Show alarm list
- ▶ Configure keywords
- ▶ Configure telephone numbers
- ▶ Configure codes

5.2 Configuration

Key words and telephone numbers, as well as PIN and NA can be configured and alarms can be edited with the App.

To use the App:

1. Download the **Notifier App by zenon** from the Store.
2. Open the **Notifier App**.



3. The configuration window is shown.

CONFIGURE APP

On the configuration screen, you define:

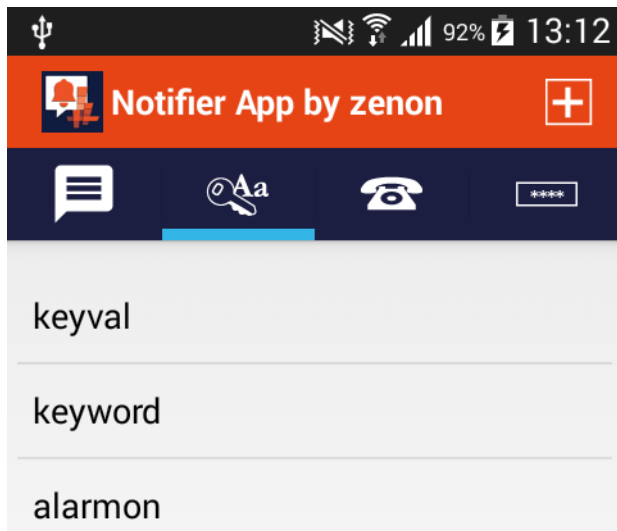
- ▶ Keywords (on page 32): List with all keywords that have been set.
- ▶ Phone numbers (on page 33): List showing all telephone numbers to which the app is to react with an SMS.
- ▶ PIN and NA-Code (on page 35): PIN for positive acknowledgment and NA for reject.

You also edit the alarms entered in the alarm list (on page 37).

5.2.1 Configure keywords

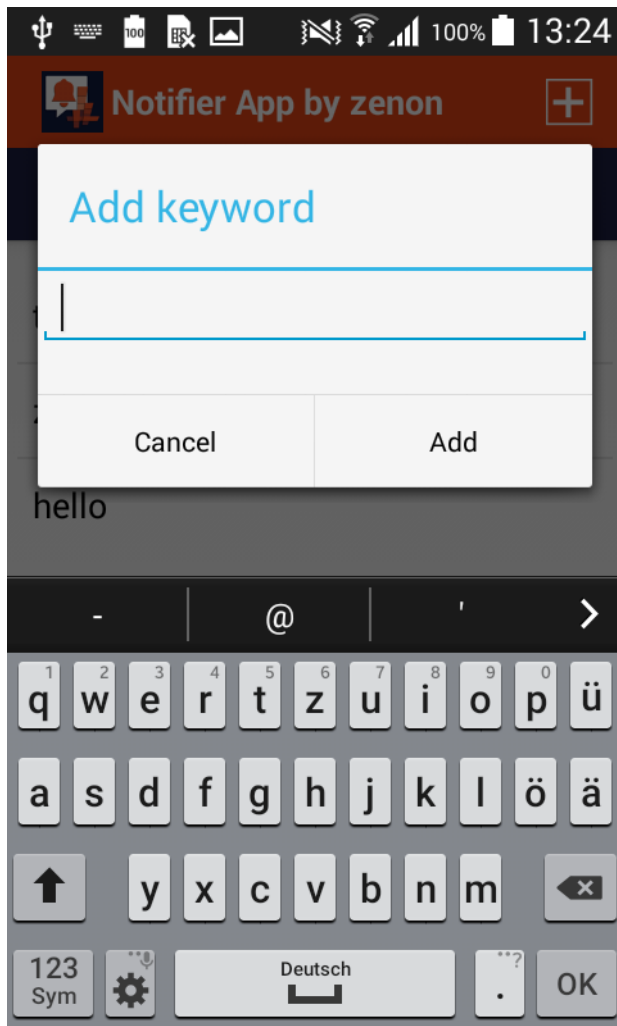
To configure keywords:

1. Click on the symbol with the key for **Keywords**.
2. A list of configured key words is shown.



3. If a key word is selected, it can be deleted by means of a dialog.
4. To create a new key word, click on the + button.
Note: With **Android** version <3.0, adding is carried out by clicking on the **Add New Item** button.

5. The dialog to add it is opened.



6. Enter the key word and click on **Add**.

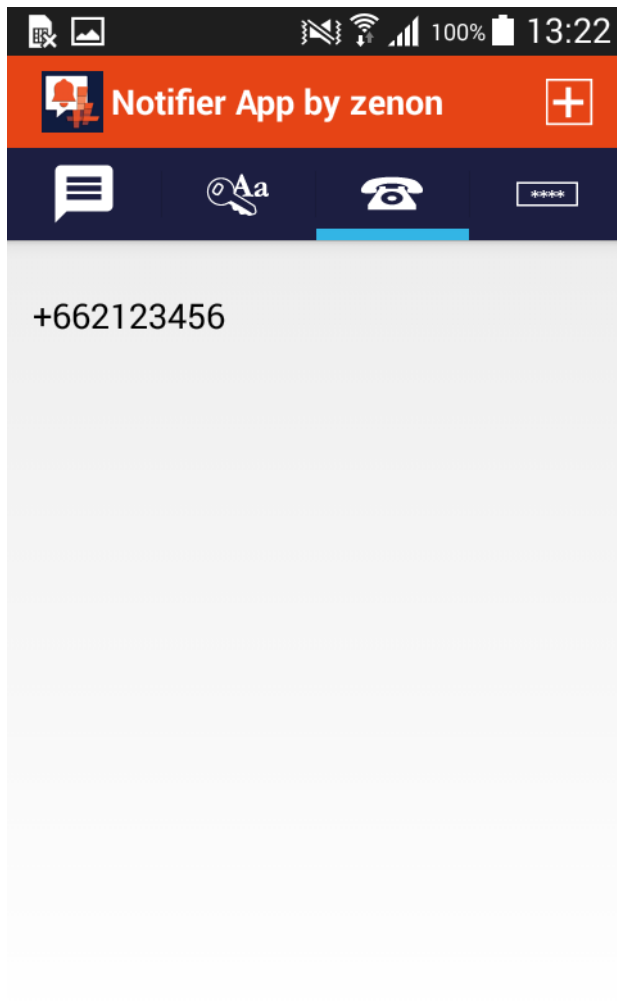
Note: Only one single keyword can be entered. Spaces are not permitted:

5.2.2 Configure telephone numbers

To configure telephone numbers whose SMS is accepted as messages:

1. Tap on the symbol with the telephone.

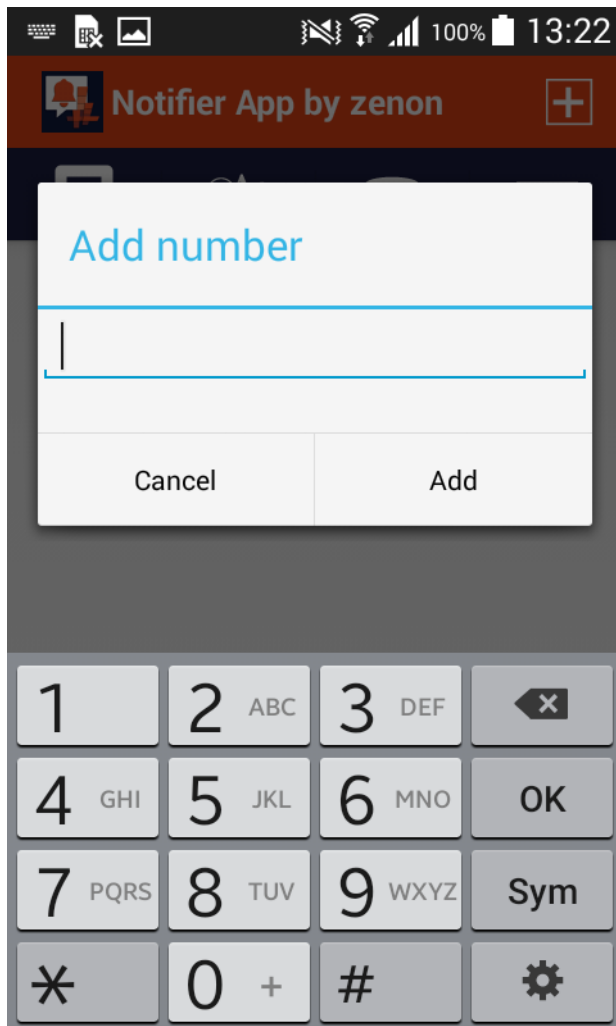
2. A list of the configured telephone numbers is displayed.



3. If a telephone number is selected, it can be deleted by means of a dialog.
4. To create a new telephone number, click on the + button.

Note: With **Android** version <3.0, adding is carried out by clicking on the **Add New Item** button.

5. The dialog to add it is opened.



6. Enter the telephone number and click on **Add**.

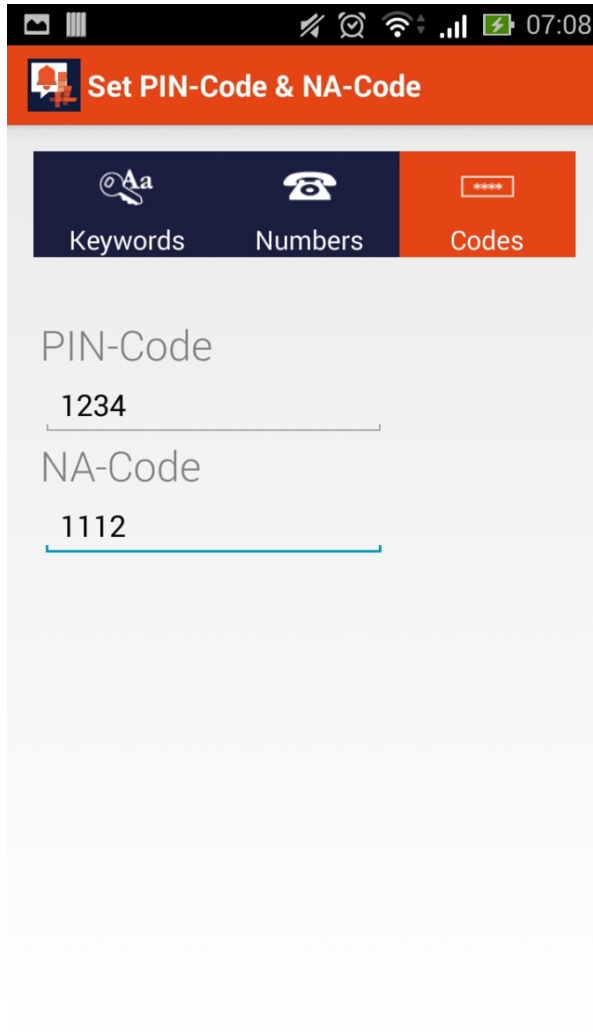
Attention: Telephone numbers must be entered in the format **+[country code][number]**.

Example: +4369912345678

5.2.3 Configure PIN and NA code

To configure PIN and NA code:

1. Tap on the symbol with the stars for **Codes**.



Set PIN-Code & NA-Code

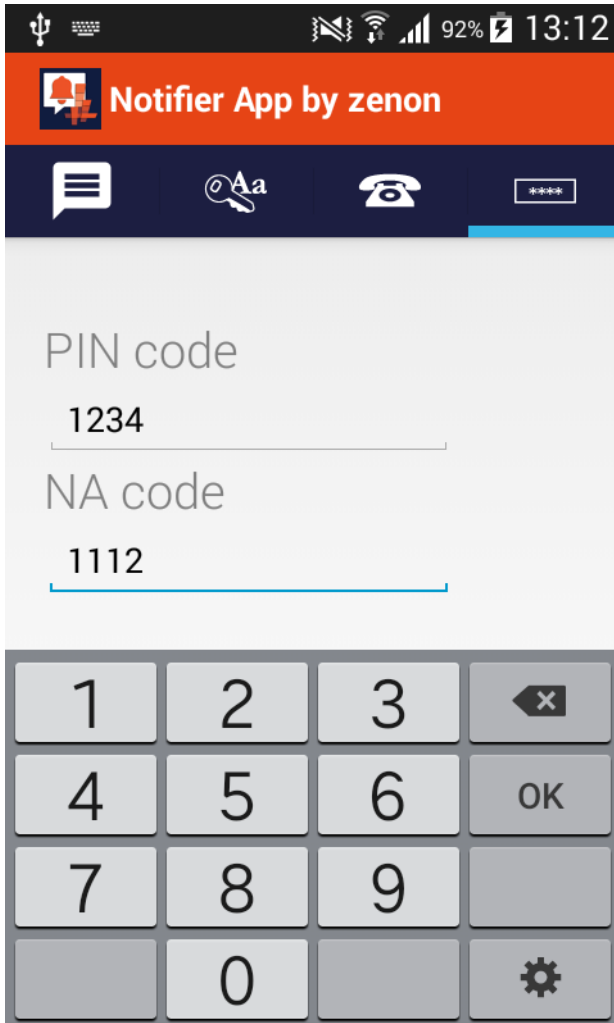
Keywords Numbers Codes

PIN-Code
1234

NA-Code
1112

2. The codes for PIN and NA are shown.
3. To enter or change a code, click in the input field.

4. The touch keyboard to enter the PIN and NA is opened.



The screenshot shows the 'Notifier App by zenon' interface. At the top, there is a status bar with icons for USB, signal, and battery (92%), and the time 13:12. Below the status bar is a dark blue header with the app name and a red icon. Underneath is a dark blue bar with icons for a list, search, phone, and a PIN field. The main area is light gray and contains two input fields: 'PIN code' with the value '1234' and 'NA code' with the value '1112'. At the bottom is a touch keyboard with a numeric keypad (0-9), a backspace key, an 'OK' key, and a settings gear icon.

5. Enter the 4-digit PIN required for acknowledgment.
6. Enter the 4-digit NA required for rejecting the alarm.
7. Click **OK**.

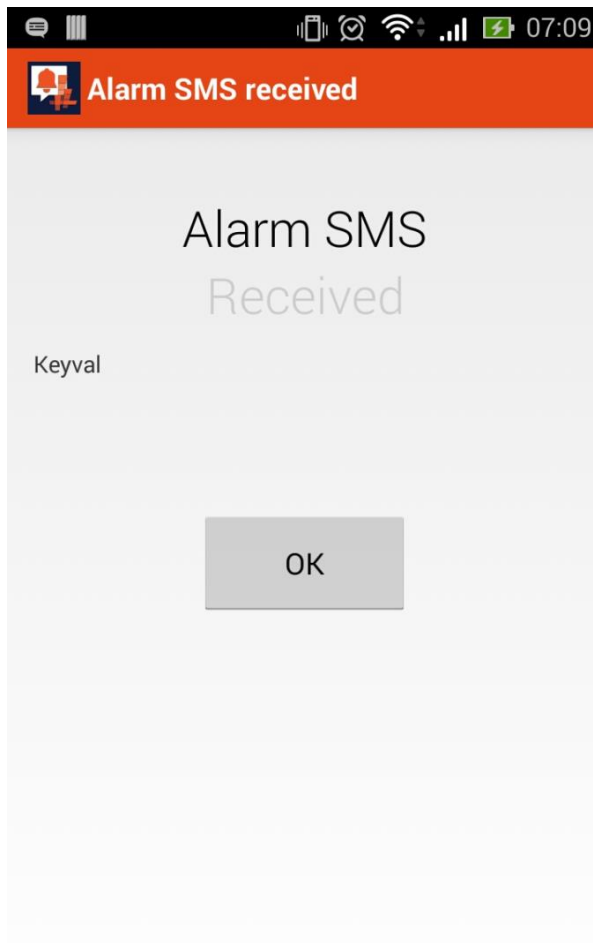
5.3 Receive and acknowledge alarm SMS

RECEIVE ALARM SMS

Procedure for receipt of SMS:

1. The **Notifier App by zenon** checks all incoming SMSs for key words and sender telephone number.

2. If the telephone number and a word in the text of the SMS correspond to the set parameters, an alarm is played back for 30 seconds and a notice window is opened.



3. To accept the alarm SMS and to react to this, click on **OK**.
 - If the SMS contains an alarm, the window to acknowledge the alarm is opened by clicking on **OK**.
 - If the SMS does not contain an alarm, the window is closed by clicking on **OK**. The App continues to run in the background.
4. If you do not react within 30 seconds, then:
 - a) The window is closed
 - b) The alarm ends and information is sent to the **Notification-Bar** of the mobile device
 - c) The alarm is saved in the alarm list

RESPOND TO ALARM SMS

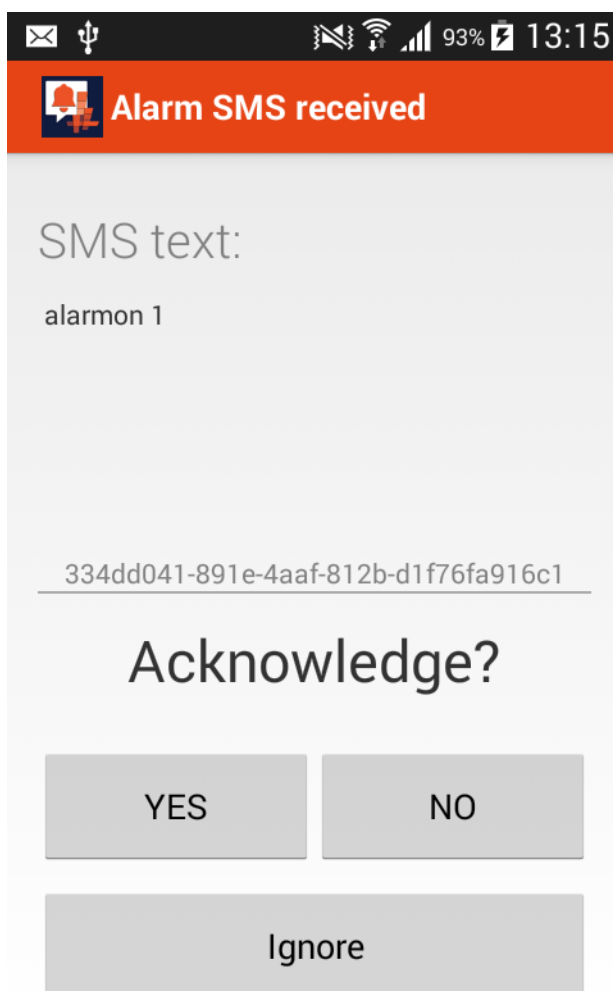
Process when responding to a SMS:

1. If the alarm SMS is received, a dialog with the message and response possibilities is opened.
2. Select the desired reaction:
 - a) **YES**: Acknowledges the alarm.
 - b) **NO**: Rejects acknowledgment.
 - c) **Ignore**: Ignores the alarm and moves it to the alarm list.

Note: The respective authorization code (PIN/NA) must be stored in the App.

3. Close the App.
The App continues to run in the background after it has been closed.

ALARM WINDOW



Parameters	Description
SMS Text:	Display of the text of the SMS.
YES	Acknowledges the alarm. An SMS in Alarm-ID;PIN format is sent. The PIN must be stored in the configuration to do this.
NO	Declines acknowledgment of the alarm. An SMS in Alarm-ID;NA format is sent. The NA must be stored in the configuration to do this.
Ignore	Alarm is saved in the alarm list. This can be called up at any time using the symbol in the App and the alarm can be acknowledged or deleted.

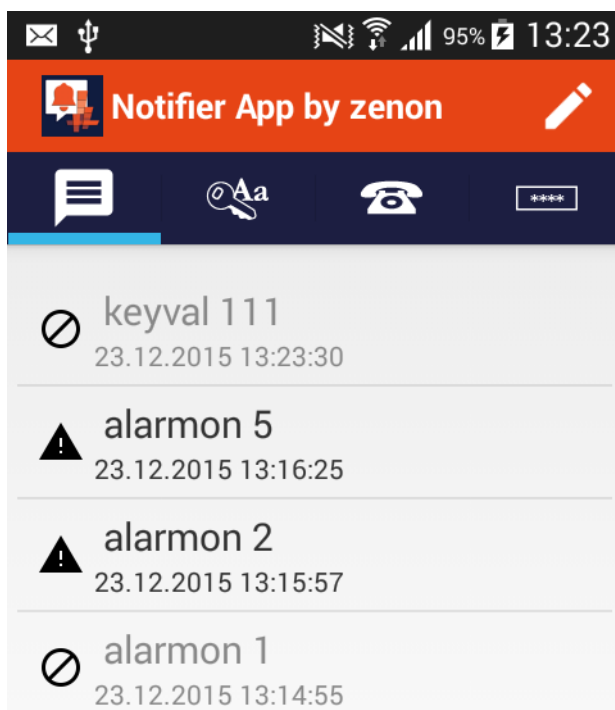


Information

You can also find details on acknowledging the **Message Control** module in the **Acknowledging messages** chapter in the **Message Control** manual.

ADMINISTERING THE ALARM LIST

If the App is opened, you get to the alarm list by tapping on the symbol with the speech bubble.



- ▶ Ignored messages are shown as deactivated (gray).
- ▶ Messages with an unclear status are active and shown with a warning symbol.

If an alarm SMS is not reacted to quickly enough or the **Notifier App by zenon** is ended without an action, information is sent to the **Notification-Bar** of the mobile device. This is shown by alarm information. The type of messages depends on the mobile device.



Tap on the alarm symbol to react to this message. The alarm list is opened.

PROCESSING MESSAGES

To process messages with an unclear status:

1. Tap on the message.
2. Acknowledge or ignore the message.

Acknowledged alarms are removed from the list.

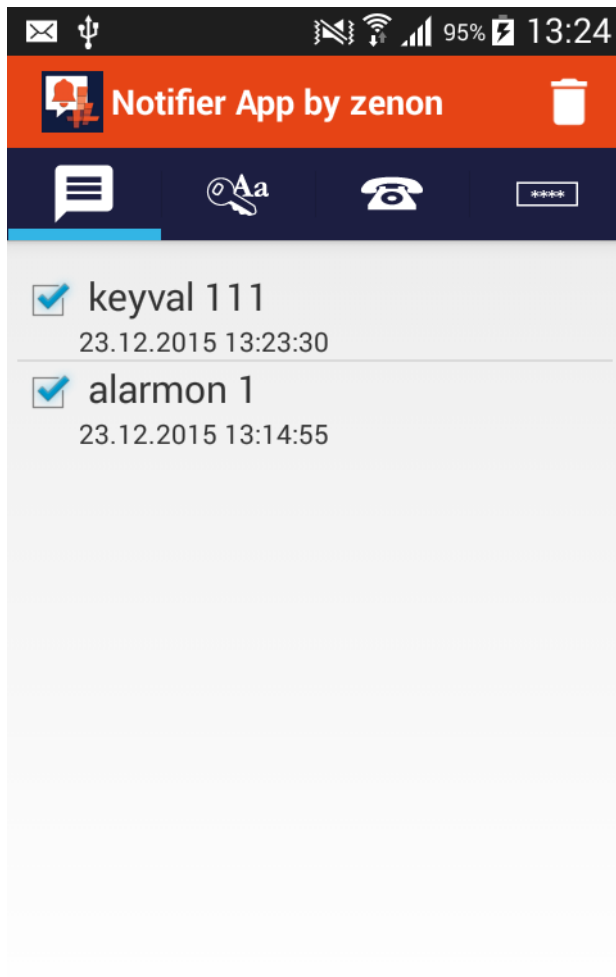
Ignored alarms are shown as inactive.

DELETING MESSAGES

To remove ignored alarms from the list:

1. Tap on the pen symbol at the top right.

The alarm list is opened in editing mode and ignored alarms are displayed.



2. Activate the checkbox in front of the alarm.
3. Tap on the Delete symbol at the top right.

All selected alarms are removed from the list.

6. Everywhere App by zenon

Apps allow the visualization of a zenon project on mobile end devices, tablets and desktop computers. The range of functions is identical. The graphical user interface varies depending on the operating system used.

The respective apps guide you through your project configuration step by step. You select the respective parameters you want and thus receive the attendant information. Navigation is intuitive and follows a chronological sequence.

7. The following Apps are available:

- ▶ Everywhere App by zenon for MS Windows Phone (on page 45)
- ▶ Everywhere App by zenon for iPhone and iPad (on page 61)
- ▶ Everywhere App for Desktop for Desktop (on page 78)
- ▶ Everywhere App by zenon (on page 89) for Android

7.1 Requirements

The Everywhere App by zenon visualizes the project configuration provided by Everywhere Server (on page 101) on a smartphone, tablet or desktop computer.

SYSTEM REQUIREMENTS

- ▶ Windows Phone 7.5 or higher (Windows Phone 8 or higher recommended)
- ▶ iOS 6 or higher for Apple iPhone and iPad
- ▶ Windows 8 or higher for Everywhere App for Desktop
- ▶ Android 2.2.x - Froyo or higher



Information

The Everywhere App by zenon user interface is only available in English.

7.2 Installation

Carry out the following steps in order to be able to use Everywhere App by zenon on your device:

- ▶ Start the app store.
- ▶ Enter `zenon` or `Everywhere App` as a search term.

- ▶ Select Everywhere App by zenon.



Hint

A profile for a demo project is already installed during the installation. You can thus also test Everywhere App by zenon if you have not yet configured your own project with zenon.

7.2.1 Note for OEM user:



Information

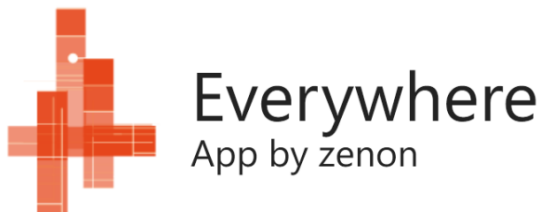
Always select Everywhere App by zenon!
The app is used for different products.

Everywhere App by zenon is compatible with all OEM project configurations.

7.3 Everywhere App by zenon for MS Windows Phone

7.3.1 Authentication

The login screen allows you to log in to an Everywhere Server by zenon and to select user profiles.



Profile

COPA-DATA demo server

User name

Manager

Password

••••••••



Parameters	Description
Profile	Name of the selected profile. <ul style="list-style-type: none">▶ Tapping on the profile name opens the dialog to select an existing profile.▶ Tapping on the profile name also opens the dialog to create a new profile.
User name	User name for login at the Everywhere Server.
Password	Password for login at the Everywhere Server.

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

APP BAR

login (Symbol >)	Logs the app into Everywhere Server and switches to the next screen.
...	Extends the display of the app bar.

7.3.2 Profile List

The profile overview lists existing profiles and administers these.



 SELECT PROFILE

COPA-DATA demo server

Server: ATSZG-WKS062

Port: 8050

Project: DEMO_AUTOMOTIVE



Parameters	Description
Profile List	<p>Lists existing profiles.</p> <p>The profile that is currently selected is highlighted in color.</p> <p>Tapping on the desired profile activates the profile and switches to the login screen.</p>

APP BAR


Parameters	Description
edit (pencil symbol)	Tapping on the symbol switches to the symbol display from edit (pencil symbol) to add (+ symbol).
add (+ symbol)	Tapping on the edit symbol makes the add symbol available. Another tap opens the screen to configure a profile.
...	Extends the display of the app bar.


TO EDIT AN EXISTING PROFILE:

- ▶ Tap the **edit symbol** in the app bar.
- ▶ Tap an existing profile from the list.

7.3.3 Edit Profile

In this screen, existing profiles can be changed and new profiles can be configured.

 9:54

 EDIT PROFILE

Profile name


Server host name


Port HTTPS

Project name

Display variables by

Remember Password

On 

Parameter	Description
Profile name	Name of the profile: Freely selectable
Server host name	Name of the Everywhere Server to which a connection is to be created.
Port HTTPS	Port address for the connection to the Everywhere Server. Default: 8050
Project name	Project name for the connection to Everywhere Server.
Display variables by:	Display of the variables. Select from drop-down list: <ul style="list-style-type: none"> ▶ Name Variable display according to name ▶ Identification Variable display according to identification ▶ Res. Label Variable display according to resources label
Remember password: (Slider)	Save password for input. The setting is also shown as text: <ul style="list-style-type: none"> ▶ OFF: (slider left and bright) Password for login is not saved in the profile settings. ▶ On : (slider left and dark) Password is saved in the profile settings. Default: OFF

APP BAR

Parameter	Description
Save (Symbol)	Saves the current settings and returns to the profile overview.
Delete (Recycle Bin symbol)	Deletes the selected profile.
...	Extends the display of the app bar.

7.3.4 Equipment Model

This screen shows the configured equipment model.

 CHOOSE VARIABLES
Home

models

Automotive




Tapping on the equipment model names switches to the next screen with the selection of the equipment groups.

APP BAR

Symbol	Description
continue (Symbol >)	Logs the app into Everywhere Server and switches to the next screen.
logout (X-Symbol)	Ends connection to the server and returns to the login screen.
...	Extends the display of the app bar.

7.3.5 Equipment Groups

In this screen, the configured equipment groups are listed and selected.

 CHOOSE VARIABLES
Automotive

groups

Body-Shop

Paint-Shop

Assembly-Shop

Alarm Messages



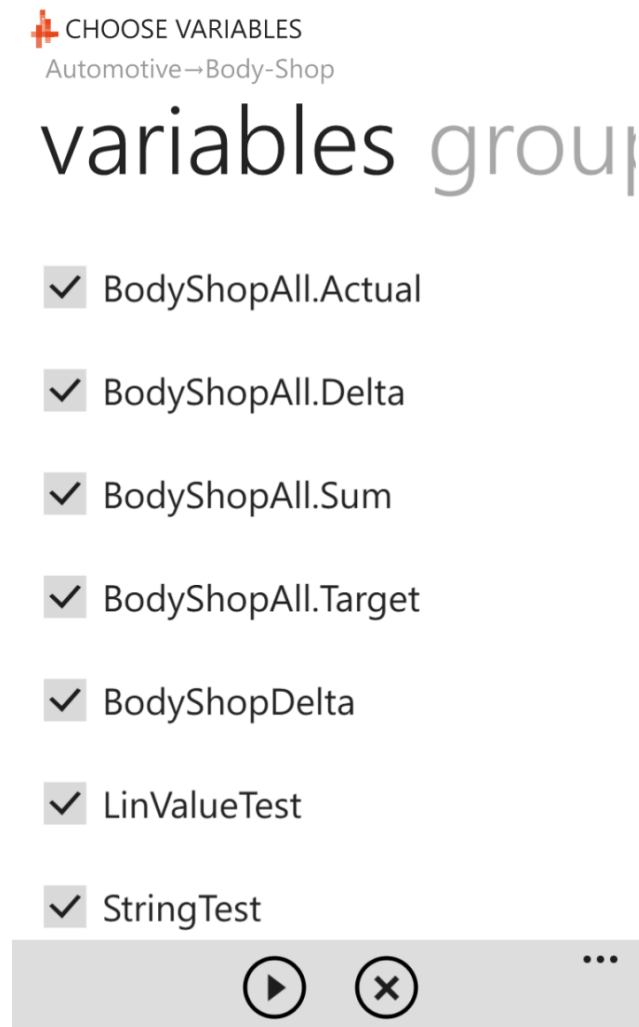
Tapping on the equipment model names switches to the next screen with the selection of the allocated variables.

APP BAR

Symbol	Description
continue (Symbol >)	Logs the app into Everywhere Server and switches to the next screen.
logout (X-Symbol)	Ends connection to the server and returns to the login screen.
...	Extends the display of the app bar.

7.3.6 Variables selection

In this screen, configured variables from the selected equipment group are listed and selected.



Lists all available variables. Select the variables by tapping.

Note: All variables can be selected or deselected with the **Extended app bar**.

APP BAR

Symbol	Description
continue (Symbol >)	Logs the app into Everywhere Server and switches to the next screen.
logout (X-Symbol)	Ends connection to the server and returns to the login screen.
...	Extends the display of the app bar.

EXTENDED APP BAR

(only visible if the app bar has been extended by tapping on ...)

Button	Description
select all variables	Activates/deactivates all variables in the list.
clear variables	Shows new screen with detail view of the selected variable(s). Inactive if no variable is selected.

7.3.7 Values view

This screen visualizes the values of the selected variables. There are two views available.



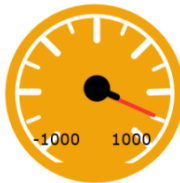
Automotive→Body-Shop

variables alarm

BodyShopAll.Actual

832.437

1/21/2014, 9:55:52 AM, 640ms
SPONT, T_STD



BodyShopAll.Delta

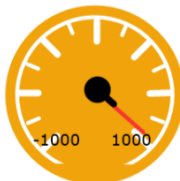
4.437



BodyShopAll.Sum

960

1/21/2014, 9:14:34 AM, 141ms
SPONT, T_STD



BodyShopAll.Target

828



VARIABLE LIST

Parameters	Description
Variablenliste	<p>List of selected variables:</p> <p>Tapping on the variable switches between "normal view" and "detailed view"</p> <ul style="list-style-type: none">▶ Normal view:<ul style="list-style-type: none">Variable nameVariable value (numerical)Variable value (bar display)▶ Detail view:<ul style="list-style-type: none">Variable nameDate and time of last updateCommunication typeData type of the variablevalue with pointer instrument display

7.3.8 Alarm List

This screen visualizes active alarms in a list. Alarms can be acknowledged by tapping on the alarm entry.



Automotive→Alarm Messages

alarms variable

Not Aus Roboter RS02

Alarms_BodyShop[4]

Value: 1
Received: 1/21/2014, 9:57:13 AM, 50ms
Cleared: No
Acknowledged: No

Not Aus gedrückt

Alarms_PaintShop[4]

Value: 1
Received: 1/21/2014, 9:57:11 AM, 299ms
Cleared: No
Acknowledged: No

Sammelalarm Linie 1

Alarms_PaintShop[1]

Value: 1
Received: 1/21/2014, 9:57:00 AM, 801ms
Cleared: No



ALARMS

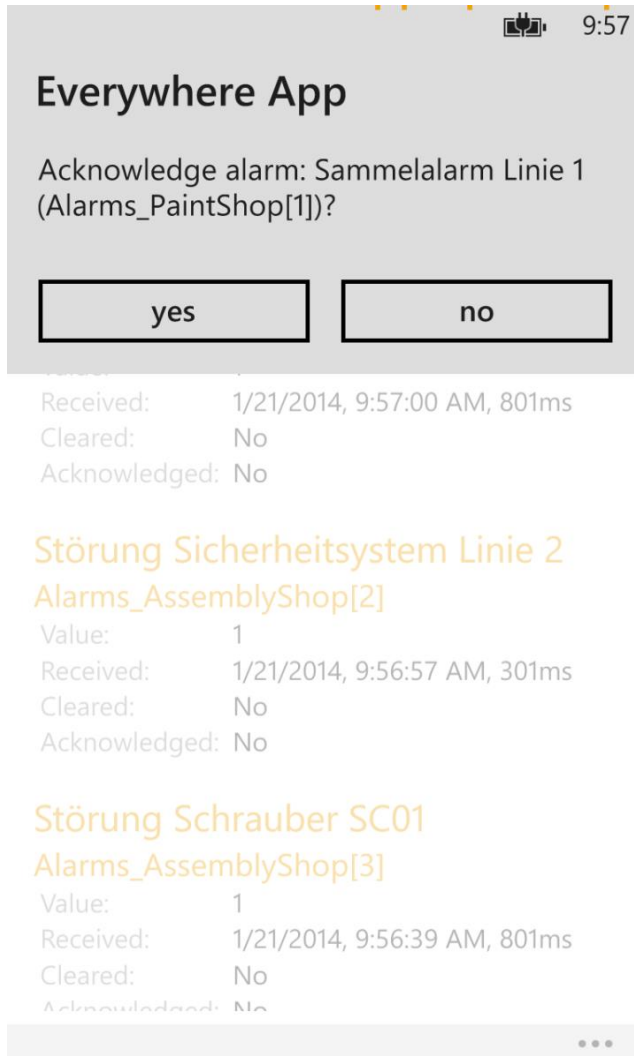
Parameters	Description
Liste mit Alarmeinträgen	<p>List of active alarms:</p> <ul style="list-style-type: none">▶ Variable nameValueDate and time of the alarmAcknowledged alarm: Yes/NoCleared alarm: Yes/No <p>Tapping on an alarm entry acknowledges that entry.</p>

APP BAR

...	Extends the display of the app bar.
-----	-------------------------------------

7.3.9 Acknowledge alarms

An alarm can be acknowledged by tapping on the list entry.



ACKNOWLEDGING AN ALARM WITH EVERYWHERE APP:

1. Tap on the alarm entry in the alarm screen.
2. A dialog is opened.
3. Tap **Yes** if you want to acknowledge the alarm.
4. **No** closes the acknowledgment dialog

After acknowledgment, the entry for the alarm (**Acknowledged:**) shows the date and time of acknowledgment.

7.4 Everywhere App by zenon for iPhone and iPad

7.4.1 Authentication

The login screen allows you to log in to an Everywhere Server by zenon and to select user profiles.

Carrier 

5:42 PM



ATSZG-WKS062.copa-da... 

Manager

● ● ● ● ● ● ●

 Login

The following Apps are available:

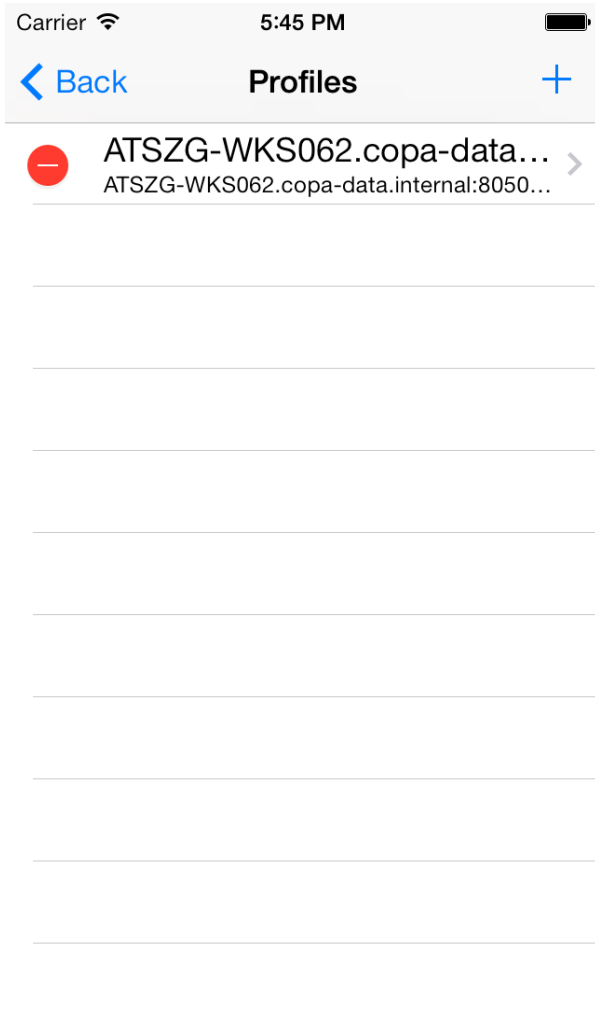


Parameters	Description
Profilname	Name of the selected profile.
(arrow symbol)	Opens the profile overview screen.
Username	User name for login at the Everywhere Server.
Passwort	Password for login at the Everywhere Server.
Login (button)	Logs the app into Everywhere Server and switches to the next screen.

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

7.4.2 Profile List

The profile overview lists existing profiles and administers these.



Parameters	Description
< Back	Switches back to the login screen
Edit	Switches the list of existing profiles into edit mode Note: if the Edit button is clicked, it is displayed as + symbol . A white - in a red circle is placed before it in the list of configured profiles. (the screen to edit the profiles opens by clicking on the profile name.)
> (Symbol)	Opens the screen to edit the profiles.
Profile name	List of the already-configured profiles.

CREATING A NEW PROFILE

- ▶ To create a new profile, click on the **+** button


EDITING A PROFILE

To switch to the editing mode of a profile:


- ▶ Tap on the **>** symbol, on the right next to the profile name.

7.4.3 Edit Profile

In this screen, existing profiles can be changed and new profiles can be configured.

Carrier 

5:47 PM



Cancel

Edit profile

Save

Profile name

ATSZG-WKS062.copa-data.internal

Server

ATSZG-WKS062.copa-data.internal

HTTPS Port

8050

Project

DEMO_AUTOMOTIVE


Display variables by:

Name

Identification

Res. label

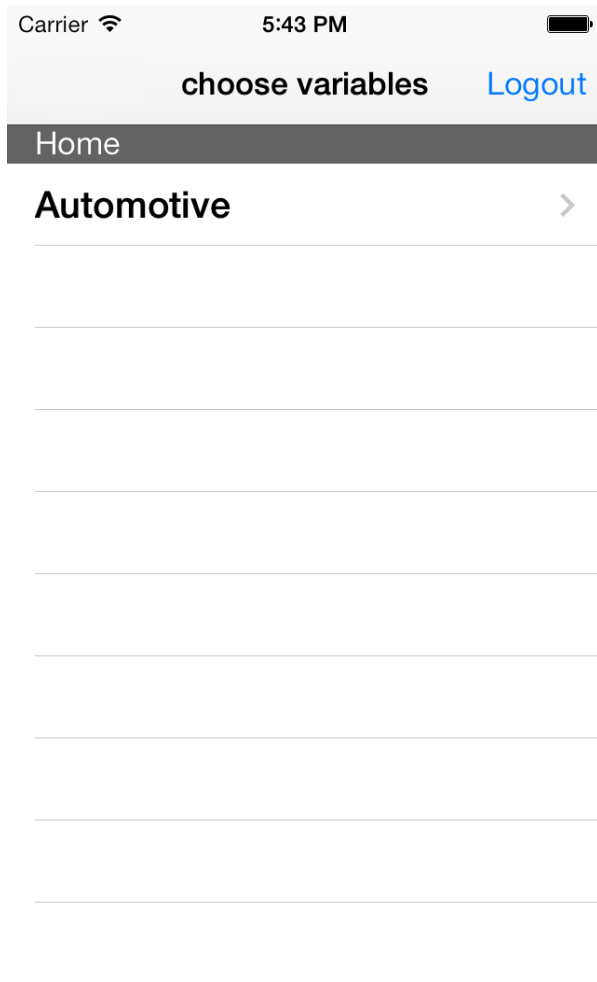
Remember password:



Parameters	Description
Cancel	Cancels input and returns to the profile overview.
Save	Saves the input and returns to the profile overview.
Profile name	Name of the profile: Freely selectable
Server	Name of the Everywhere Server to which a connection is to be created.
HTTPS Port	Port address for the connection to the Everywhere Server. Default: 8050
Project	Project name for the connection to Everywhere Server.
Display variables by: (Toolbar)	Display of the variables. Select from drop-down list: <ul style="list-style-type: none"> ▶ Name Variable display according to name ▶ Identification Variable display according to identification ▶ Res. Label Variable display according to resources label
Remember password: (Slider)	Save password for input: <ul style="list-style-type: none"> ▶ OFF: (slider left and bright) Password for login is not saved in the profile settings ▶ On : (slider right and dark) Password is saved in the profile settings Default: OFF

7.4.4 Equipment Model

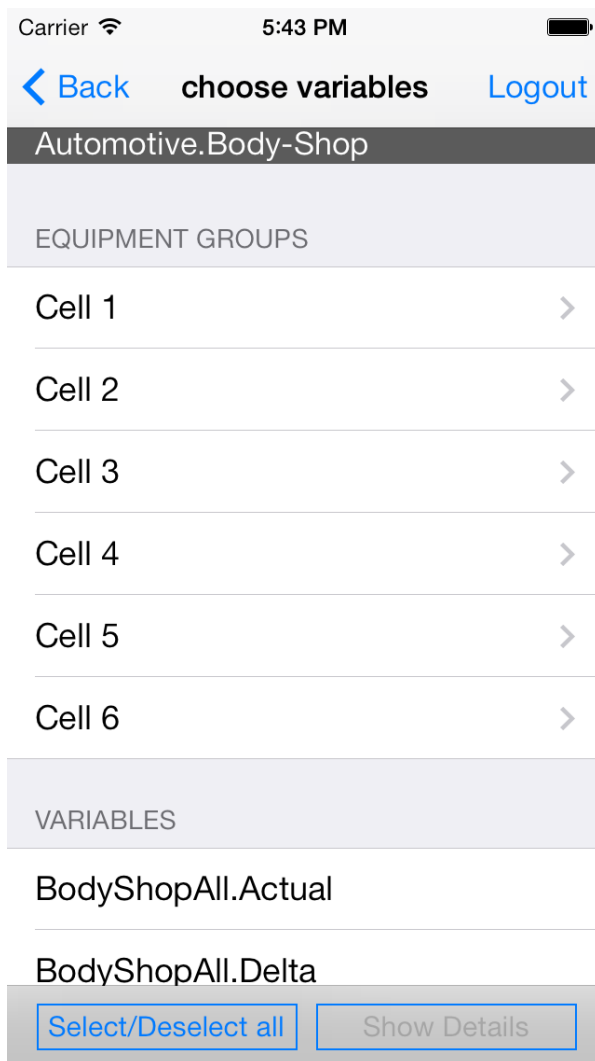
This screen shows the configured equipment model.



Parameters	Description
Logout	Ends connection to the server and returns to the login screen.
Project name	List of available projects on the Everywhere Server
> (Symbol)	Opens the screen to select an equipment model.

7.4.5 Equipment groups and variables

This screen lists available equipment groups of the selected equipment model as well as the attendant variables.



HEADER

Parameters	Description
Back	Returns to previous screen. Note: <i>Swipe to the right</i> also returns to the previous screen.
Logout	Ends connection to the server and returns to the login screen.

EQUIPMENT GROUPS

Parameters	Description
List of equipment groups	
> (Symbol)	

VARIABLES

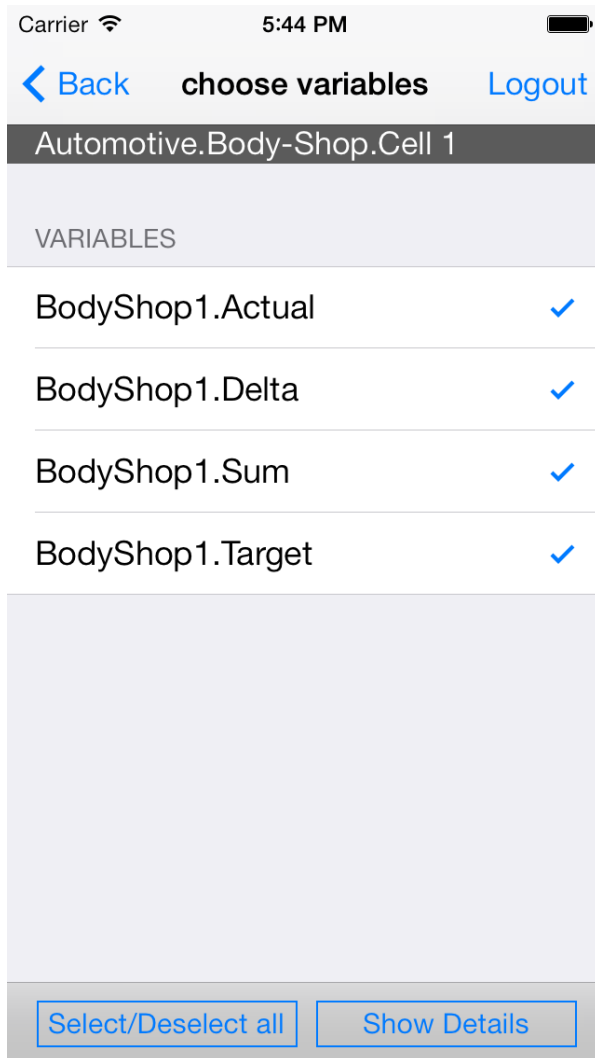
Parameter	Description
Variable list	List of the available variables. Selection/deselection by simply tapping. Selected variables are indicated by a blue tick .

FOOTER

Parameter	Description
Select/Deselect all	Activates/deactivates all variables in the list.
Show Details	Shows new screen with detail view of the selected variable(s). Inactive if no variable is selected.

7.4.6 Variables selection

In this screen, configured variables from the selected equipment group are listed and selected.



HEADER

Parameters	Description
Back	Returns to previous screen. Note: <i>Swipe to the right</i> also returns to the previous screen.
Logout	Ends connection to the server and returns to the login screen.

VARIABLES

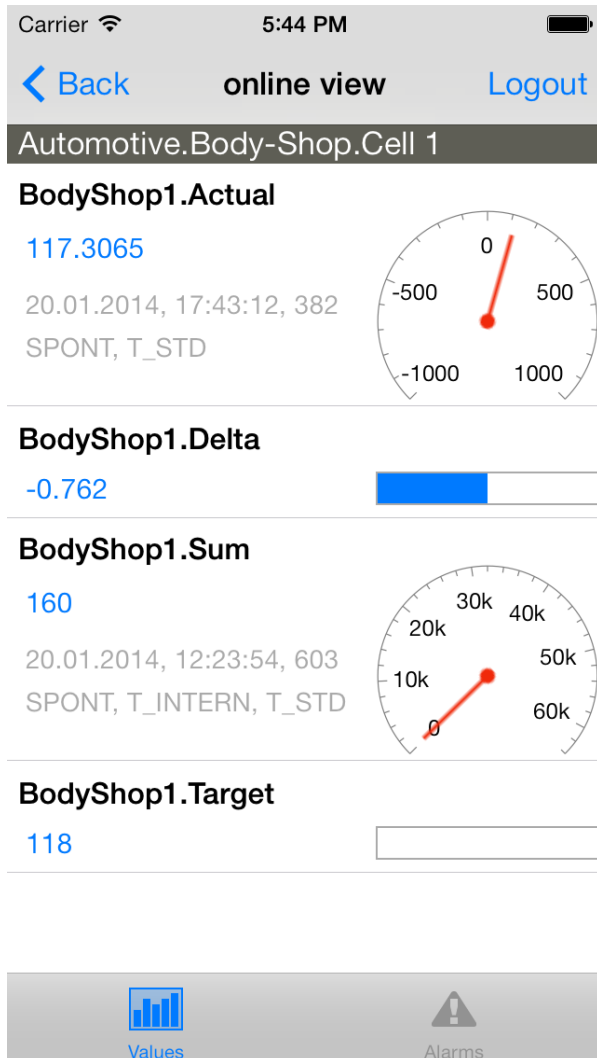
Parameter	Description
Variable list	List of the available variables. Selection/deselection by simply tapping. Selected variables are indicated by a blue tick .

FOOTER

Parameter	Description
Select/Deselect all	Activates/deactivates all variables in the list.
Show Details	Shows new screen with detail view of the selected variable(s). Inactive if no variable is selected.

7.4.7 Values view

This screen visualizes the values of the selected variables. There are two views available.



HEADER

Parameters	Description
Back	Returns to previous screen. Note: <i>Swipe to the right</i> also returns to the previous screen.
Logout	Ends connection to the server and returns to the login screen.

VARIABLE OVERVIEW

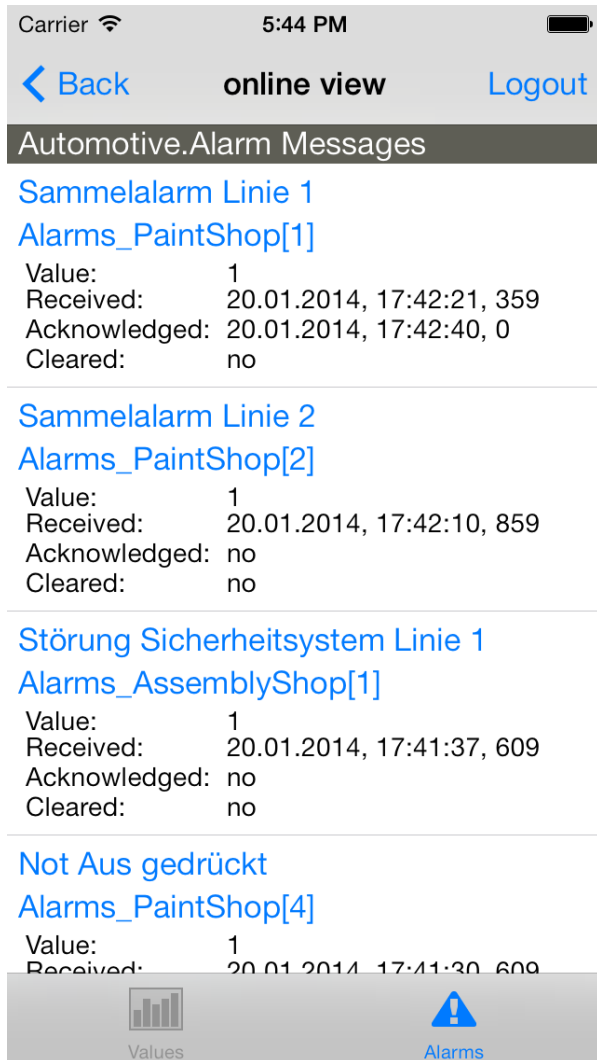
Parameters	Description
Variable list	<p>List of selected variables:</p> <ul style="list-style-type: none"> ▸ Normal view: <ul style="list-style-type: none"> Variable name Variable value (numerical) Variable value (bar display) ▸ Detail view: <ul style="list-style-type: none"> Variable name Date and time of last update Communication type Data type of the variable value with pointer instrument display

FOOTER

Parameters	Description
Values (Symbol)	Switches to display of values of the variables. Blue background if active.
Alarms (Symbol)	Switches to display of alarms. Blue background if active.

7.4.8 Alarm List

This screen visualizes active alarms in a list. Alarms can be acknowledged by tapping on the alarm entry.



ALARMS

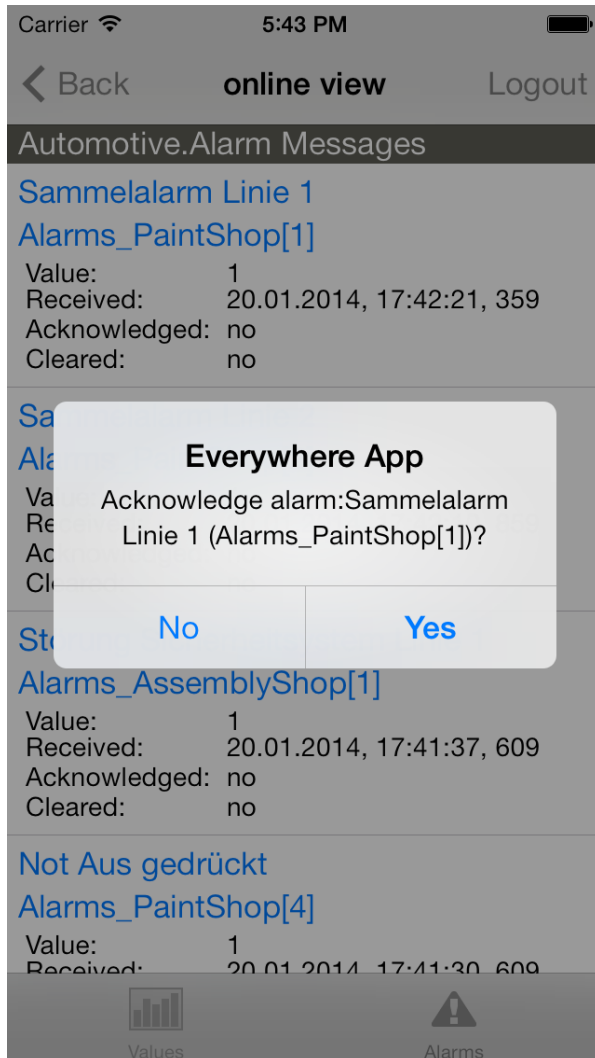
Parameters	Description
List with alarm entries	<p>List of active alarms:</p> <ul style="list-style-type: none">▶ Variable nameValueDate and time of the alarmAcknowledged alarm: Yes/NoCleared alarm: Yes/No <p>Tapping on an alarm entry acknowledges that entry.</p>

FOOTER

Parameters	Description
Values (Symbol)	Switches to display of values of the variables. Blue background if active.
Alarms (Symbol)	Switches to display of alarms. Blue background if active.

7.4.9 Acknowledge alarms

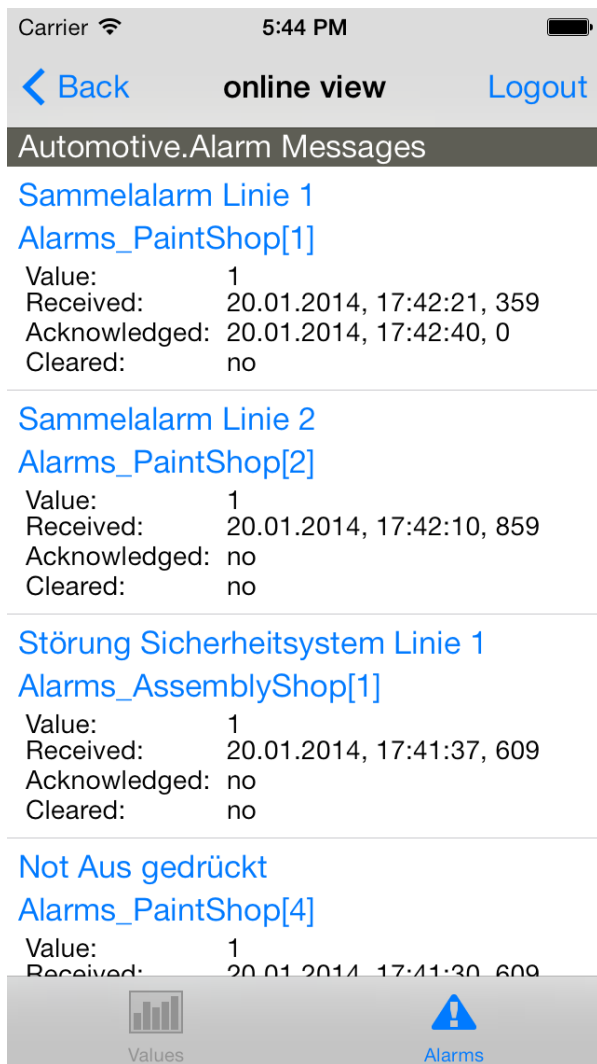
An alarm can be acknowledged by tapping on the list entry.



ACKNOWLEDGE AN ALARM WITH EVERYWHERE APP:

1. Tap on the alarm entry in the alarm screen.
2. A dialog is opened.
3. Tap **Yes** if you want to acknowledge the alarm.
4. **No** closes the acknowledgment dialog

After acknowledgment, the entry for the alarm (Acknowledged:) shows the date and time of acknowledgment.



Carrier 5:44 PM

[Back](#) **online view** [Logout](#)



Automotive.Alarm Messages

[Sammelalarm Linie 1](#)
[Alarms_PaintShop\[1\]](#)
 Value: 1
 Received: 20.01.2014, 17:42:21, 359
 Acknowledged: 20.01.2014, 17:42:40, 0
 Cleared: no

[Sammelalarm Linie 2](#)
[Alarms_PaintShop\[2\]](#)
 Value: 1
 Received: 20.01.2014, 17:42:10, 859
 Acknowledged: no
 Cleared: no

[Störung Sicherheitsystem Linie 1](#)
[Alarms_AssemblyShop\[1\]](#)
 Value: 1
 Received: 20.01.2014, 17:41:37, 609
 Acknowledged: no
 Cleared: no

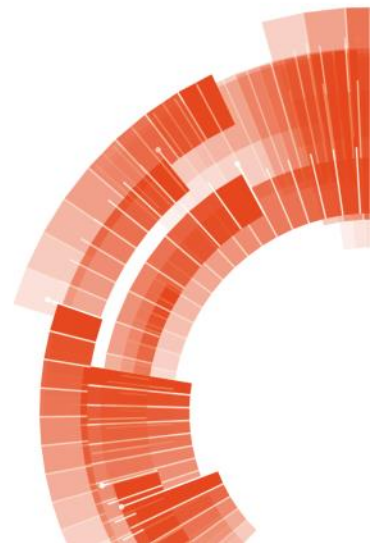
[Not Aus gedrückt](#)
[Alarms_PaintShop\[4\]](#)
 Value: 1
 Received: 20.01.2014, 17:41:30, 609

 Values  Alarms

7.5 Everywhere App for Desktop

7.5.1 Authentication

The login screen allows you to log in to an Everywhere Server by zenon and to select user profiles.



Parameters	Description
Profile	Name of the selected profile. <ul style="list-style-type: none"> ▶ Tapping or left-clicking opens the drop-down list to select an existing profile.
User name	User name for login at the Everywhere Server.
Password	Password for login at the Everywhere Server.
login (Symbol)	Logs the app into Everywhere Server and switches to the next screen.

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

APP BAR

Parameters	Description
edit (pencil symbol)	Tapping or left-clicking opens the screen to configure a profile.

7.5.2 Profile List

The profile overview lists existing profiles and administers these.

↶ Edit profile



NAVIGATION

<- (Symbol)	Switches to the previous screen.
--------------------------	----------------------------------

Parameters	Description
Profile List	<p>Lists existing profiles.</p> <ul style="list-style-type: none"> ▶ The profile that is currently selected is accentuated graphically. ▶ Tapping or left-clicking on the desired profile selects the profile. ▶ Tap or click the edit symbol to edit the selected profile.

APP BAR

Parameter	Description
Edit (pencil symbol)	Switches the selected profile to editing mode.
Add (+ symbol)	Creates a new profile.
Delete (Recycle Bin symbol)	Deletes the selected profile.
Save (Disk symbol)	<p>Saves changes to the selected profile.</p> <p>Note: Inactive if no profile is being edited.</p>
Reset (X-Symbol)	<p>Discards all inputs.</p> <p>Note: Inactive if no profile is being edited.</p>

TO EDIT AN EXISTING PROFILE:

- ▶ Tap or click on an existing profile from the list.
- ▶ Tap or click on the edit symbol in the app bar.

7.5.3 Edit Profile

In this screen, existing profiles can be changed and new profiles can be configured.

← Edit profile



NAVIGATION

←
(Symbol)

Switches to the previous screen.

Parameters	Description
Profile name	Name of the profile: Freely selectable
Server host name	Name or IP address of the Everywhere Server to which a connection is to be created.
Port HTTPS	Port address for the connection to the Everywhere Server. Default: 8050
Project name	Project name for the connection to Everywhere Server.
Display variables by: (Drop-down list)	Display of the variables. Select from drop-down list: <ul style="list-style-type: none"> ▶ Name Variable display according to name ▶ Identification Variable display according to identification ▶ Res. Label Variable display according to resources label
Remember password: (Slider)	Save password for input. The setting is also shown as text: <ul style="list-style-type: none"> ▶ OFF: (slider left and bright) Password for login is not saved in the profile settings ▶ On : (slider right and dark) Password is saved in the profile settings Default: OFF

APP BAR

Parameters	Description
Edit (pencil symbol)	Switches the selected profile to editing mode.
Add (+ symbol)	Creates a new profile.
Delete (Recycle Bin symbol)	Deletes the selected profile.
Save (Disk symbol)	Saves changes to the selected profile.
Reset (X-Symbol)	Discards all inputs.

7.5.4 Equipment model and equipment groups

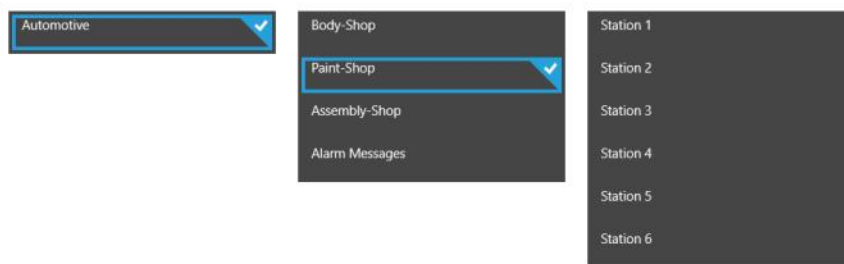
This screen shows the configured equipment model. Once an equipment model has been selected, the attendant equipment groups are displayed.

The attendant hierarchy is displayed by selecting an equipment group.

If a selected group contains variables, the view switches to the variable overview screen.

← variables groups

Automotive → Assembly-Shop → Paint-Shop



APP BAR

Logout

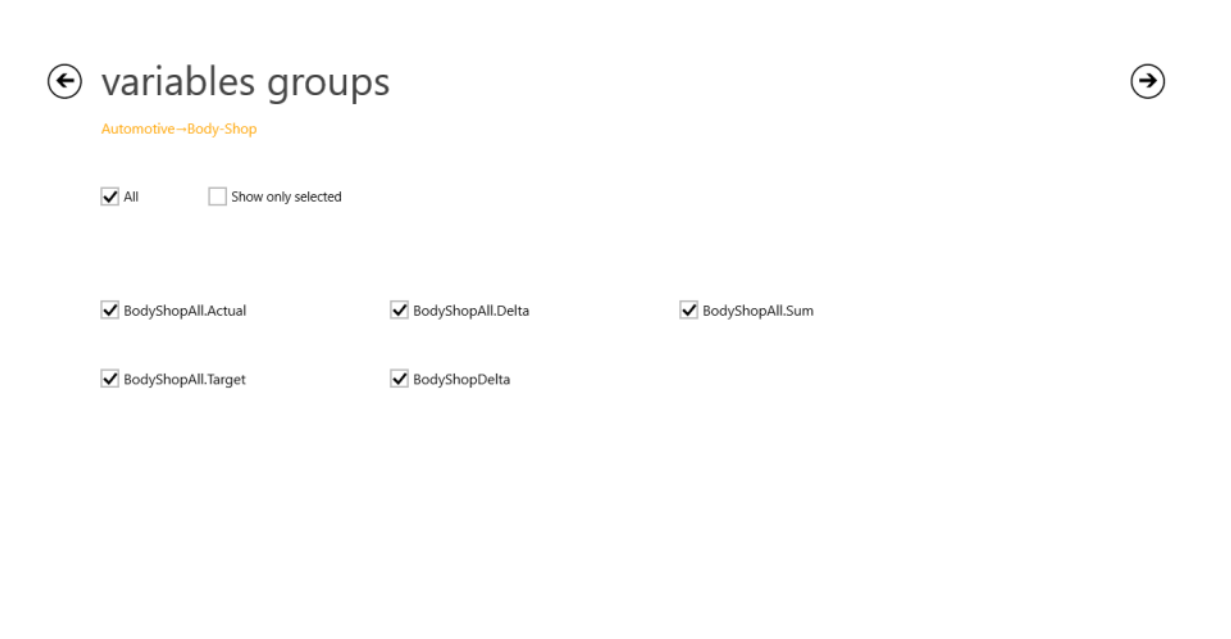
(open lock symbol)

Ends connection to the server and returns to the login screen.



7.5.5 Variables selection

In this screen, configured variables from the selected equipment group are listed and selected.



Select the variables by tapping or left-clicking.

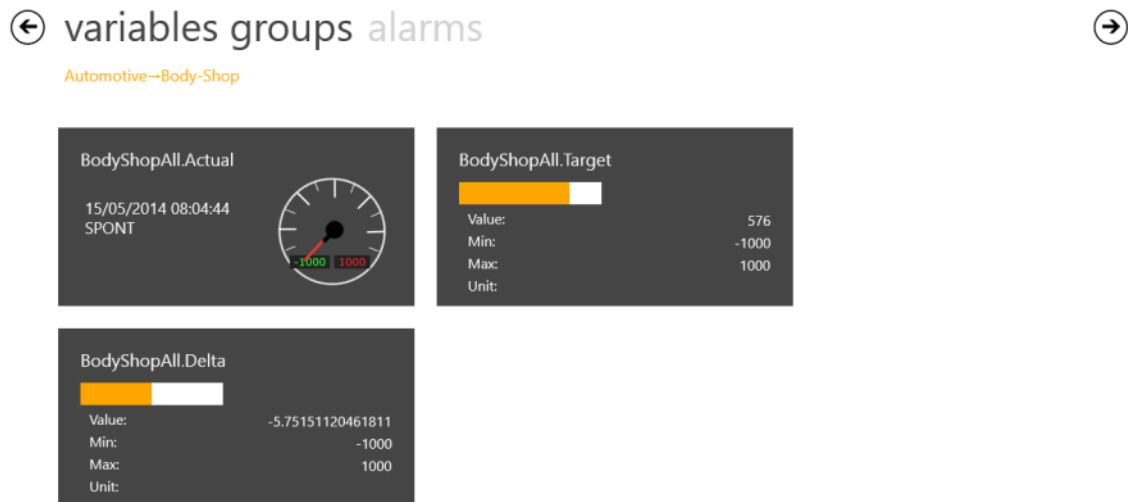
<- (Symbol)	Switches to the previous screen.
-> (Symbol)	Switches to the next screen.
All	Activates/deactivates all variables.
Show only selected	Only the selected variables are displayed in the screen of the variable view. Inactive if there is not at least one variables selected.

APP BAR

Logout (open lock symbol)	Ends connection to the server and returns to the login screen.
-------------------------------------	--

7.5.6 Values view

This screen visualizes the values of the selected variables. There are two views available.



Select the variables by left-clicking or tapping.

<- (Symbol)	Switches to the previous screen.
-> (Symbol)	Switches to the next screen.

VARIABLE LIST

Parameters	Description
Variable display	<p>Tapping or left-clicking on the variable switches between "normal view and "detailed view"</p> <ul style="list-style-type: none"> ▶ Normal view: <ul style="list-style-type: none"> Variable name Variable value (numeric) Variable value (bar display) Min, max and unit ▶ Detail view: <ul style="list-style-type: none"> Variable name Date and time of the last update Communication type Data type of the variable Value in numerical display Value with pointer instrument display

APP BAR

Logout (open lock symbol)	Ends connection to the server and returns to the login screen.
-------------------------------------	--

7.5.7 Alarm List

This screen visualizes active alarms in a list. Alarms can be acknowledged by tapping on the alarm entry.

⬅ variables groups alarms

Automotive--Alarm Messages

Maintenance Screwdriver SC01 Alarms_AssemblyShop[5] Value: 1 Received: 15/05/2014 08:12:58 Cleared: No Acknowledged: No	Alarm Screwdriver SC01 Alarms_AssemblyShop[3] Value: 1 Received: 15/05/2014 08:14:20 Cleared: No Acknowledged: No	General Alarm Line 1 Alarms_PaintShop[1] Value: 1 Received: 15/05/2014 08:14:31 Cleared: No Acknowledged: No
flow rate too low Alarms_PaintShop[3] Value: 1 Received: 15/05/2014 08:14:06 Cleared: No Acknowledged: No	Robot RS01 in Manual Mode Alarms_BodyShop[3] Value: 1 Received: 15/05/2014 08:14:27 Cleared: No Acknowledged: No	Emergency Stop Robot RS01 Alarms_BodyShop[1] Value: 1 Received: 15/05/2014 08:14:36 Cleared: No Acknowledged: No

Select the alarms by tapping or left-clicking.

<- (Symbol)	Switches to the previous screen.
--------------------------	----------------------------------

ALARMS

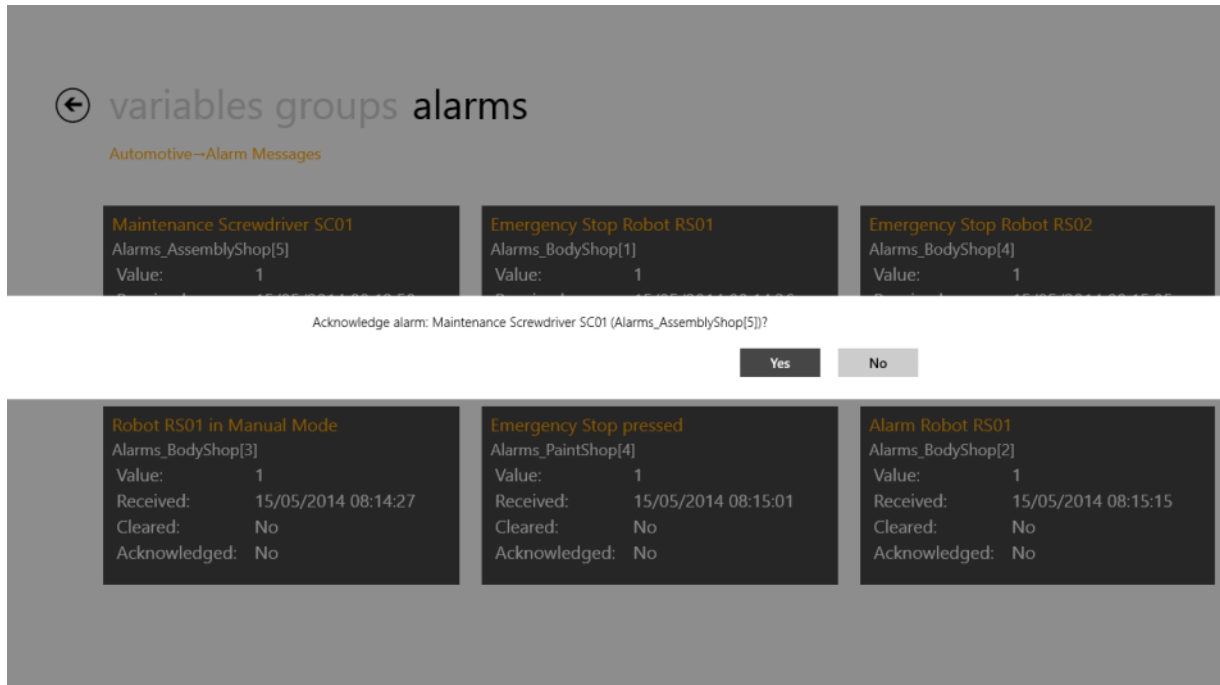
Parameters	Description
List with alarm entries	<p>List of active alarms:</p> <ul style="list-style-type: none"> ▶ Variable name Value Date and time of the alarm Acknowledged alarm: Yes/No Cleared alarm: Yes/No <p>This alarm can be acknowledged by tapping or left-clicking.</p>

APP BAR

Logout (open lock symbol)	Ends connection to the server and returns to the login screen.
-------------------------------------	--

7.5.8 Acknowledge alarms

An alarm can be acknowledged by tapping on the list entry.



ACKNOWLEDGING AN ALARM WITH EVERYWHERE APP FOR DESKTOP:

1. Tap or click on the alarm entry in the alarm screen.
2. A dialog is opened.
3. Tap or click **Yes** if you want to acknowledge the alarm.
4. **No** closes the acknowledgment dialog

After acknowledgment, the entry for the alarm (**Acknowledged:**) shows the date and time of acknowledgment.

7.6 Everywhere App by zenon for Android

7.6.1 Self-signed certificates

Self-signed certificates can be used from Android version 4.4. Only official certificates can be used for versions before this. Version 4.03 or higher must be used for the use of certificates.

For each profile, a certificate installed on the device can be selected and linked. This certificate is used when establishing a connection. In this case, the **Everywhere TrustManager** replaces the **Android TrustManager** for precisely this profile and only this application. This does not influence the security of other apps and also does not replace the standard **Android TrustManager**.

USE SELF-SIGNED CERTIFICATE

To use a self-signed certificate:

1. Ensure that the desired certificate has been installed on the device. You can find information on the creation and distribution of self-signed certificates in the **Everywhere Server by zenon** (on page 101) manual, **Everywhere - Certificate creator** (on page 107) chapter.

2. Open the profile settings (on page 93).

3. Click on the **Browse** button.

The file manager to select a certificate file is opened.

4. Navigate to the desired certificate.

Note: All data types are displayed. However, only **CER**-coded certificate files (*.cer or *.crt) are accepted.

5. Select the certificate

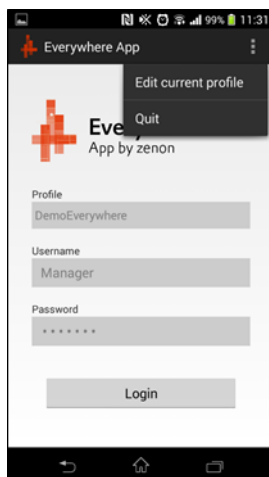
If a file is not accepted, the user is informed accordingly.

If a correct certificate has been detected, it is accepted and the selection dialog is closed.

The installed certificate is shown in the profile.

7.6.2 Authentication

The login screen allows you to log in to an Everywhere Server by zenon and to select user profiles.



ACTION BAR - ACTION BUTTONS

Parameters	Description
Action Overflow (symbol: three vertical dots)	Click the button to open a drop-down list of the actions.
Edit current profile	Opens the screen to configure a profile (on page 93).
Quit	Closes the app and switches back to the Start screen of the Android device.

Parameters	Description
Profile	Name of the selected profile. Tapping on the profile name opens the dialog to select an existing profile.
Username	User name for login at the Everywhere Server.
Password	Password for login at the Everywhere Server.
Login	Logs the app into Everywhere Server and switches to the next screen.

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

APP BAR

Symbol	Description
zurück (symbol: curved arrow to the right)	Switches to the previous app screen.
Home (symbol: house)	Closes the app and switches back to the Start screen of the Android device.
nn (symbol: overlaid screens)	Overview of the last apps open on the device.

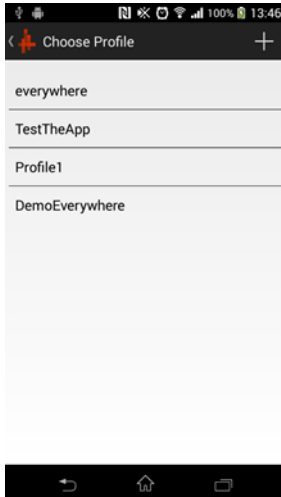


Information

The appearance and functionality of the app bar is the same on all screens. This bar is very often already integrated into the hardware of an Android device. In this case, app bar is displayed.

7.6.3 Profile List

The profile overview lists existing profiles and administers these.



ACTION BAR - ACTION BUTTONS

Parameter	Description
< (Symbol)	Switches back one screen.
+ (Symbol)	Creates a new profile and switches to the Edit profile screen.

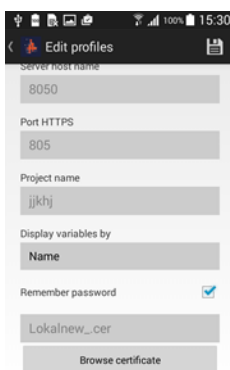
Parameter	Description
Profile List	<p>Lists existing profiles.</p> <p>A long click on an entry opens a context menu:</p> <ul style="list-style-type: none"> ▶ Edit profile Switches to the profile editing screen. Allows changes to an existing profile. ▶ Delete profile Deletes selected profile <p>Tapping on the desired profile activates the profile and switches to the login screen.</p>

TO EDIT AN EXISTING PROFILE:

- ▶ Tap an existing profile from the list.
Attention: Ensure that you tap on the list entry for a long time.
- ▶ Select the **Edit profile** entry in the context menu that appears.
- ▶ You switch to the **Edit profile** screen.

7.6.4 Edit Profile

In this screen, existing profiles can be changed and new profiles can be configured.



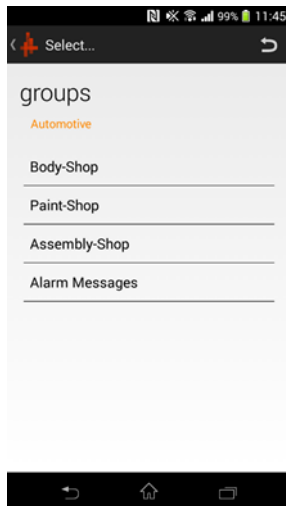
ACTION BAR - ACTION BUTTONS

Parameter	Description
< (Symbol)	Switches back one screen.
Save (Floppy-disk symbol)	Saves the current settings and returns to editing the profiles .

Parameter	Description
Profile name	Name of the profile: Freely selectable
Server host name	Name of the Everywhere Server to which a connection is to be created.
Port HTTPS	Port address for the connection to the Everywhere Server. Default: 8050
Project name	Project name for the connection to Everywhere Server.
Display variables by:	Display of the variables. Select from drop-down list: <ul style="list-style-type: none"> ▶ Name Variable display according to name ▶ Identification Variable display according to identification ▶ Res. Label Variable display according to resources label
Remember password: (Checkbox)	Save password for input. The setting is also shown as text: <ul style="list-style-type: none"> ▶ inactive: Password for login is not saved in the profile settings ▶ active: Password is saved in the profile settings. Default: <i>inactive</i> .
Certificate	Display of certificate
Browse	Opens the file browser to select a certificate.

7.6.5 Equipment model and equipment groups

This screen shows the configured equipment model. Tapping on an equipment model shows the equipment groups contained therein. Tapping on an equipment group name switches to the next screen with the selection of the allocated variables.



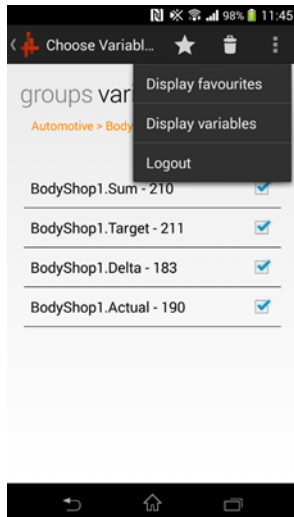
ACTION BAR - ACTION BUTTONS

Parameter	Description
< (Symbol)	Switches back one screen.
Logout: (symbol: curved arrow to the left)	Ends connection to the server and returns to the login screen.

Parameters	Description
[name of equipment group]	For easier orientation, either the equipment model name or the equipment group name - depending on the selection - is displayed in orange text above the list.
List of the configured equipment groups or variables.	<p>Lists existing profiles:</p> <p>Clicking on the equipment group name switches to the overview of configured equipment groups.</p> <p>Clicking on an equipment group name switches to the variable overview and lists all variables configured in the equipment group in a list.</p>

7.6.6 Variables selection

In this screen, configured variables from the selected equipment group are listed and selected.

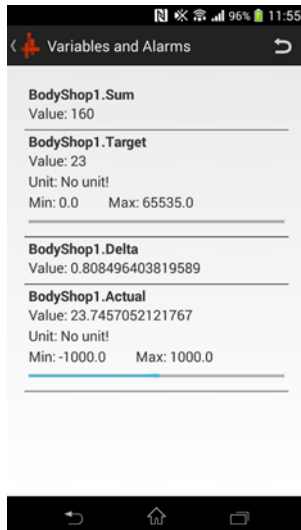


ACTION BAR - ACTION BUTTONS

Parameters	Description
< (Symbol)	Switches back one screen.
Favorites (star symbol)	Adds the selected variable(s) to the list of favorites.
Delete favorites (Recycle Bin symbol)	Deletes all variables from the list of favorites.
Action Overflow (symbol: three vertical dots)	Click the button to open a drop-down list of the actions.
Display favorites	Displays all variables from the list of favorites in a list.
Display variables	Displays all activated variables of the selected equipment group in a list. To activate a variable, the checkbox in the right column must be activated.
Logout	Ends connection to the server and returns to the login screen.
Display all	Selects all listed variables. This is visualized by a blue tick in the checkbox next to the variable name.

7.6.7 Values view

This screen visualizes the values of the selected variables. There are two views available.



ACTION BAR - ACTION BUTTONS

Parameter	Description
< (Symbol)	Switches back one screen.
Logout: (symbol: curved arrow to the left)	Ends connection to the server and returns to the login screen.

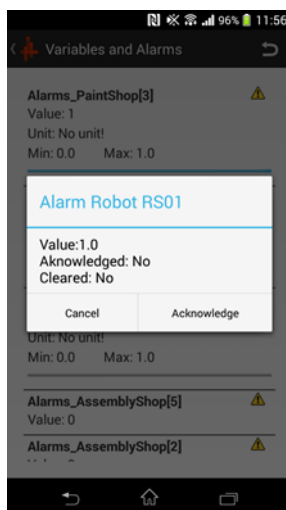
VARIABLE LIST

Parameters	Description
Variable list	<p>List of selected variables:</p> <p>Clicking on the variable switches between "normal view" and "detailed view"</p> <ul style="list-style-type: none"> ▶ Normal view: <ul style="list-style-type: none"> Variable name Variable value (numerical) ▶ Detailed view: <ul style="list-style-type: none"> Variable name Variable value Minimum and Maximum value Value in bar graph display

7.6.8 Acknowledging alarm list and alarms

The alarms are integrated directly into the value view of the variables. If there is an alarm, a warning sign is shown next to the variable in the value view screen.

A long click on the variable entry opens the attendant alarm entry. The alarm can be confirmed in the subsequent dialog.



ACTION BAR - ACTION BUTTONS

Parameter	Description
< (Symbol)	Switches back one screen.
Logout: (symbol: curved arrow to the left)	Ends connection to the server and returns to the login screen.

ALARMS

Parameters	Description
List with alarm entries	<p>The word Alarms_ is placed in front of the variable name.</p> <p>A long tap on an alarm entry opens the dialog to acknowledge an alarm.</p>

CONFIRM ALARM DIALOG

Parameters	Description
Variablenname	Name of the variable with pending alarm. The word "Alarm_" is placed in front of the variable name.
Wert	Value of the variable.
Acknowledged:	<p>Alarm confirmed:</p> <ul style="list-style-type: none"> ▶ No : Alarm has not yet been confirmed ▶ Yes : Alarm has already been confirmed <p>Default: No</p> <p>Note: This field cannot be changed.</p>
Clear	<p>Alarm ended:</p> <ul style="list-style-type: none"> ▶ No : The alarm state still keeps occurring. ▶ Yes : The alarm state no longer occurs. <p>Default: No</p> <p>Note: This field cannot be changed.</p>

Cancel	Closes the dialog and returns to the value view of the variables.
Acknowledge	Confirms alarm and closes the dialog.

ACKNOWLEDGING AN ALARM WITH EVERYWHERE APP:

1. Click on the alarm entry in the **value view** for a long time.
2. A dialog is opened.
3. Tap **Acknowledge** if you want to acknowledge the alarm.
4. **Cancel** closes the acknowledgment dialog

After acknowledgment, the entry for the alarm (Acknowledged:) shows the date and time of acknowledgment.

8. Everywhere Server by zenon

The Everywhere Server by zenon is for visualization of real-time data of a zenon project configuration on smartphones, tablets and desktop computers.

It runs in the context of zenon Runtime and is configured in zenon6.ini. No additional program need be started for configuration.



Information

Any device that supports the OData protocol can be used as a client.

In addition to its programming, an app is provided for smartphones, tablets and desktop computers.

These apps are available for free in the respective app stores.

8.1 Licensing

Everywhere Server gets the license of the Runtime. The **Everywhere Server** can not be used, if the Runtime does not have a corresponding license. This can lead to Runtime running but the **Everywhere Server** not being able to be started due to missing licenses.

8.2 Requirements

To use the server for use with mobile applications, the following requirements must be met:

- ▶ zenon from version 7.11 on
- ▶ Users have to be configured in the project.
For details about user administration, see also the Elements in the report area chapter.
- ▶ For communication via HTTPS, the corresponding port must be enabled on the Server and the Client. This is port 8050 by default.
- ▶ zenon Runtime must also be running on the computer on which Everywhere Server by zenon is running.
This computer/server must at least be contactable in the internal network.

REQUIREMENT FOR THE USE OF EVERYWHERE APP BY ZENON

The following requirements need only be met if the zenon project is visualized with Everywhere App by zenon:

- ▶ An equipment model must be configured in the project.
Variables can be linked from zenon 7.11 at each level.
You can find details on the configuration of an equipment model in the Equipment modeling chapter.
- ▶ zenon Runtime must also be running on the computer on which Everywhere Server by zenon is running.
If the Everywhere App is only used in an internal network, no Internet connection is required.
Tip: If the Everywhere Server by zenon is to be contactable from outside, it is highly recommended that a VPN connection is used and the Everywhere Server by zenon and the computer with the publishing service is placed in a DMZ.
This computer must also have a public IP address. In this case, ensure that you define strict rules on the firewall.
Attention: 192.168.xxx.xxx is not a public address!



Information

You can find additional safety notices in the zenon Hardening Guide. If you are interested in this manual, contact support@copadata.com.

8.3 Data security

Secure transfer of data via HTTPS is ensured by the use of the Transport Layer Security encryption protocol (TLS). The identity of the Server is checked by the Client. This guarantees the integrity, origin and target of the data transfer.

OVERVIEW OF COMMUNICATION

- ▶ Everywhere Server by zenon uses a server certificate.
Everywhere Server is not started without a server certificate. This server certificate is created with the `Everywhere - Certificate creator.exe` tool.
If several servers are in use, separate server certificates can be used for each server.
- ▶ The server certificate is based on a root certificate.
If several servers are in use, separate server certificates can be used for each server.
These server certificates originate from the same root certificate.
Advantage: different servers can be called up with a single root certificate.
- ▶ The root certificate can be purchased or you can create one yourself.
Root certificates are also called SLL certificates.
Tip: If a root certificate or SLL certificate is purchased from a provider, there is no installation on the Client. These certificates are installed together with the installation of the operating system.

8.4 Configuration

Everywhere Server by zenon is integrated into zenon Runtime. No additional program needs to be started. The necessary settings are made in `zenon6.ini` directly.



Hint

All .ini entries can also be made with the `Everywhere.Config.exe` (on page 105) program. This program offers a graphical user interface. The configurations are also transferred to `zenon6.ini`.

9. zenon6.ini entries:

- ▶ Open `zenon6.ini` in a text editor.
Note: You can find `zenon6.ini` under the following path:
`%ProgramData%\COPA-DATA\System`
- ▶ Insert the server entries:

Entry	Description
[EVERYWHERE]	Configuration of the global properties for Everywhere Server.
CERTIFICATE=	<p>Server certificate subject for HTTPS</p> <p>Subject of the certificate. The certificate must be saved in the Machine Store in the MY node (your own certificates).</p> <p>e.g.: CERTIFICATE=CN=MyComputerName</p>
ENABLE=	<ul style="list-style-type: none"> ▶ 1: Everywhere Server is started with zenon Runtime. ▶ 0: Everywhere Server is not started. <p>Default: 0</p>
PORT=	<p>HTTPS port for communication with the Everywhere Server</p> <p>Default: 8050</p>
WRITE_ACCESS=	<ul style="list-style-type: none"> ▶ 0: Only read access via Everywhere Server is possible. ▶ 1: Allows the writing of variables and the acknowledgment of alarms. <p>Default: 0</p>

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



Attention

UTF-8 format is not supported!

You should therefore always save your INI files as a text file in ANSI or Unicode format.



Hint

You can find further information on .ini entries in the Configuration files manual.

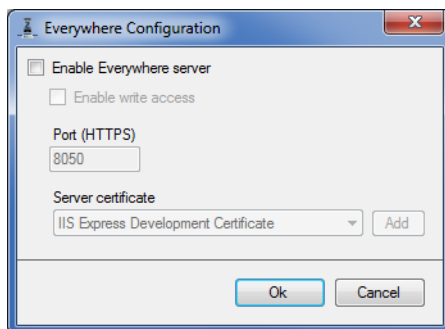
9.1.1 Configuration with the Everywhere.Config.exe

The .ini entries for the Everywhere Server can also be configured using the **Everywhere.Config.exe** program. You can find this program in the folder C:\Program Files (x86)\Common Files\COPA-DATA\STARTUP.

Information

*The program **Everywhere.Config.exe** is only available in English.*

Double-clicking on the program opens the configuration dialog:



Parameter	Description
Enable Everywhere server	<p>If the checkbox is active, the Everywhere Server by zenon starts when zenon Runtime is started.</p> <p>Default: <code>Inactive</code></p> <p>Note: If this checkbox is not active, all other settings are also inactive and grayed out.</p>
Enable Everywhere write access	<p>Activates write access to variables and alarms (acknowledgment) by the server.</p> <p>0 : read access only</p> <p>1 : Writing to variables and acknowledgment of alarms possible</p> <p>Default: 0</p>
HTTPS port:	<p>HTTPS port that is used by the Everywhere Server by zenon.</p> <p>Default: 8050</p>
Server certificate	<p>Server certificate for HTTPS communication. This can be selected in the drop-down list.</p> <p>This drop-down list contains all available certificates.</p> <p>Note: The certificate must contain a private key. If no server certificate is selected, Everywhere Server is not started! Certificates can be created with the Everywhere.CertificateCreator.exe tool.</p>
Add	<p>The Everywhere.CertificateCreator.exe (on page 107) program is opened by clicking on the button. This program is used for the creation of separate server certificates.</p> <p>The entry in the drop-down list is based on the Friendly name of the Everywhere.CertificateCreator.exe</p>
OK	Applies settings and closes the dialog.
Cancel	Discards all changes and closes the dialog.

Note: These configurations are saved in `zenon6.ini`.

You can find further information about these .ini entries in the *Configuration files manual* in the *Everywhere Server [EVERYWHERE]* chapter



Attention

The configuration is also applicable for all zenon installations on one computer.

9.1.2 User authorization

The assignment of configured user authorizations is possible via the zenon6.ini file or in the zenon Editor.

IN THE EDITOR:

- ▶ Click on the **Workspace** node
- ▶ Select the **Everywhere Server** property group
- ▶ Select, from the **Authorization level** drop-down list, the authorization level that is to have access to Everywhere Server.



Information

Authorization level 0 means write and read access for all users.

You can find further information in the user administration manual in the Authorization levels chapter.

INI ENTRY:

To configure the level of user authorization for Everywhere Server, the following must be added to the zenon6.ini file:

Entry	Description
[PASSWORD]	Configuration of the access authorization for Everywhere Server.
EVWH_ACCESS=	Authorization level that has access to the Everywhere Server. Value: Number of the configured authorization level Default: 0 (= everyone has access)

9.1.3 Everywhere - Certificate creator

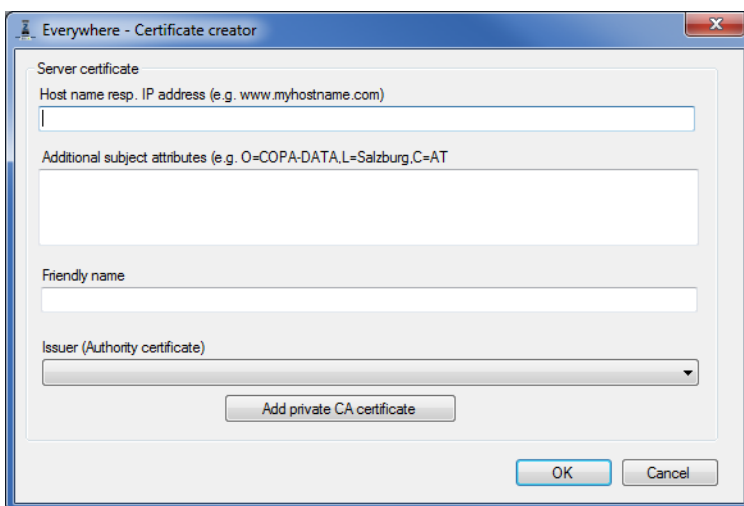
The **Everywhere - Certificate creator** is used to create new server certificates. Certificates are required for secure communication between the client and server. You can find this program in the following folder: %Program Files (x86)%\Common Files\COPA-DATA\STARTUP.



Information

*Android apps before version 4.4 do not allow self-signed certificates. Only official certificates can be used for communication on these Android devices.
From version 4.4, it was also possible to use certificates (on page 89) signed through Everywhere Server by zenon.*

To start the program, double-click on **Everywhere.CertificateCreator.exe**. A configuration dialog is opened:



Parameters	Description
Server certificate	
Host name resp. IP address	<p>Name or IP address via which the Everywhere Server is accessed by the clients.</p> <p>This is either the IP address or the name of the computer on which the service is running, or the address/name of the firewall/router that connects the computer to the internet.</p>
Additional subject attributes	<p>Additional attributes for the certificate (optional).</p> <p>(e.g. O=Firma, L=Ort, C=AT)</p>

Friendly name	Name for the display in the program Everywhere.Config.exe.
Issuer (Authority certificate)	Issuer certificate or certificate that is to be used to verify the server certificate. The certificates present are shown in the drop-down list. The entry in the drop-down list is based on the Friendly name from the Create root certificate dialog.
Add private CA certificate	Opens dialog to configure the root certificate (on page 109). Note: The root certificate is a mandatory part of the server certificate!
OK	Applies settings and closes the dialog.
Cancel	Discards all changes and closes the dialog.



Attention

Administrator rights are required to execute this program.

9.1.4 Create root certificate

A root certificate is used on the mobile device for secure communication between the server and mobile devices. This ensures that the end device is also actually connected to the given server.

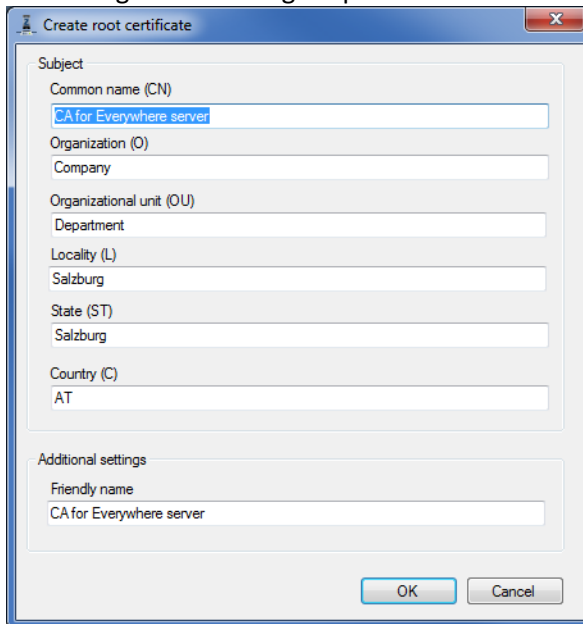


Information

*Android apps before version 4.4 do not allow self-signed certificates. Only official certificates can be used for communication on these Android devices.
From version 4.4, it was also possible to use certificates (on page 89) signed through Everywhere Server by zenon.*

To create your own root certificate:

- ▶ Click on the **Add private CA certificate** button in the **Everywhere - Certificate creator** (on page 107) .
- ▶ The configuration dialog is opened:

A screenshot of a Windows-style dialog box titled "Create root certificate". The dialog has a blue title bar with a close button (X) in the top right corner. It contains two main sections: "Subject" and "Additional settings". The "Subject" section has several text input fields: "Common name (CN)" with the value "CA for Everywhere server", "Organization (O)", "Company", "Organizational unit (OU)", "Department", "Locality (L)" with the value "Salzburg", "State (ST)" with the value "Salzburg", and "Country (C)" with the value "AT". The "Additional settings" section has a "Friendly name" field with the value "CA for Everywhere server". At the bottom right, there are "OK" and "Cancel" buttons.

Create root certificate

Subject

Common name (CN)
CA for Everywhere server

Organization (O)
Company

Organizational unit (OU)
Department

Locality (L)
Salzburg

State (ST)
Salzburg

Country (C)
AT

Additional settings

Friendly name
CA for Everywhere server

OK Cancel

Parameter	Description
Subject	
Common name (CN)	General name Default: CA for Everywhere Server
Organization (O)	Company name Default: Company
Organizational unit (OU)	Name of the organizational unit (department name) Default: Department
Locality (L)	Locality name Default: Salzburg
State (ST)	State or district name Default: Salzburg
Country (C)	Country name Default: AT
Additional settings	Additional information
Friendly name	Short name Default: CA for Everywhere server
OK	Accepts the changes and opens the save dialog to save the root certificate.
Cancel	Discards all changes and closes the dialog.



Information

The Everywhere - Certificate creator creates signatures with the sha256 hash algorithm.

9.1.5 Certificate on the client

The certificate is checked on the Client. If this certificate has not been created by a root certificate from a generally-known Authority (=purchase certificate), the certificate used must be installed on the Client.



Information

*Android apps before version 4.4 do not allow self-signed certificates. Only official certificates can be used for communication on these Android devices.
From version 4.4, it was also possible to use certificates (on page 89) signed through Everywhere Server by zenon.*

INSTALLATION OF A CERTIFICATE ON THE CLIENT

Unverified certificates must be installed on the Client in order for them to be accepted.

Carry out the following steps for the installation:

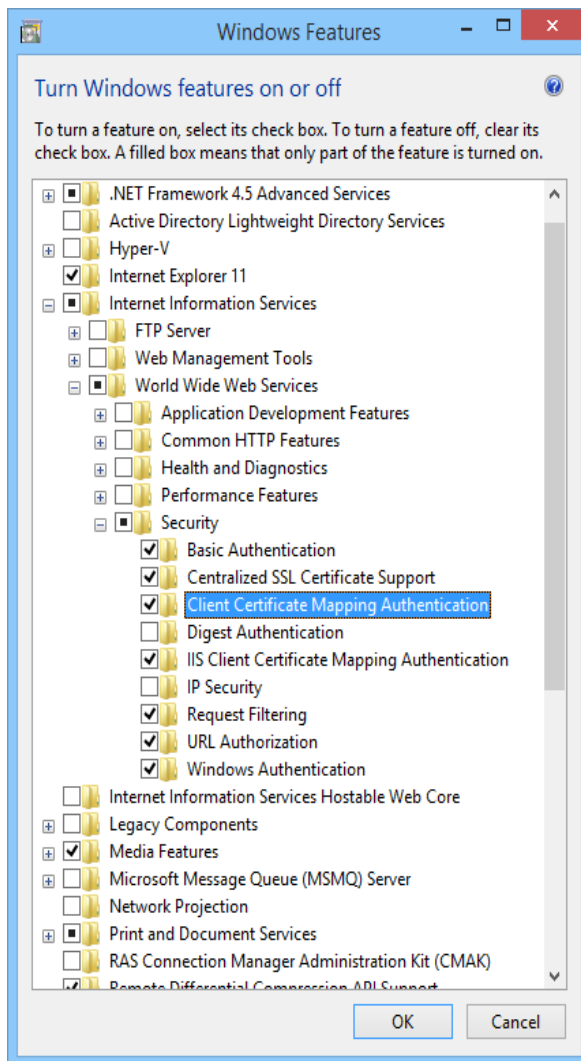
1. Make the the exported certificate (.cer file) available on a web server or FTP server.
You can find detailed instructions for this in the Offer certificate for download (on page 112) chapter.
2. Open this certificate on the client using the browser.

Alternatively, it can also be sent as an email attachment and opened on the client.

9.1.6 Offer certificate for download

A certificate on the client is required for encrypted connections. These instructions describe how this certificate is provided for download.

1. Install IIS (optional)
Install - if not already present - the Internet Information Services.
To do this, open the Control Panel on the computer.
 - a) Click on **Start** and then on **Control Panel**
 - b) In the Control Panel, click on **Programs** and then on **Turn Windows features on or off**.
The dialog to activate the Windows features is opened.
 - c) Click on Internet Information Services in the Windows Features dialog.
 - d) Tick the **World Wide Web Services** checkbox.
Activate the corresponding services in the subnodes.
2. Finish activation by clicking on the **OK** button.
The selected components are installed.



Note: If you install IIS using the Control Panel, you get the standard installation with a minimum number of features. If you need additional IIS features, such as application development features or web management tools, you must tick the checkbox for these features in the Windows Functions dialog field.

You can also find further information in the zenon Web Server manual, in the Publishing service installation chapter.

3. Copy certificate
Copy the Everywhere certificate (example name: `Certificate.cer`) to the IIS root folder.
Path: `C:\inetpub\wwwroot`

4. Creation of index.html
Create an additional page, index.html. Insert the following HTML code into the document:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Certificate download</title>
  </head>
  <body>
    <a href="Certificate.cer"><font size="5">Click to download the
```

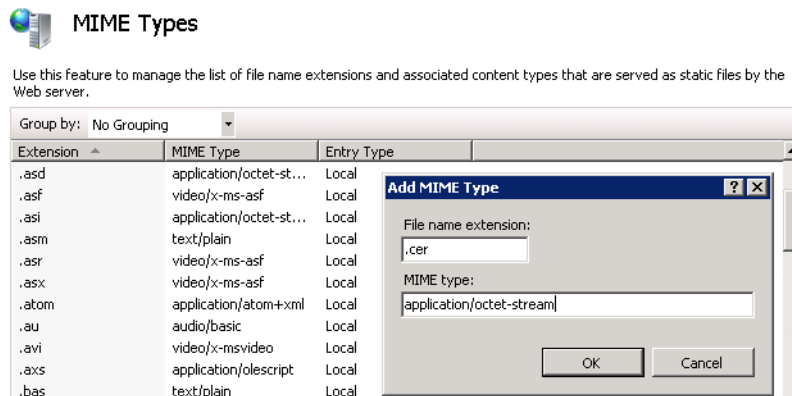
```
certificate.</font></a>
</body>
</html>
```

Note: Amend the name of the certificate. In this example, the certificate name is Certificate.cer.

5. Configure MIME type in the IIS

Add the new MIME type .cer in the IIS Manager:

- Open the Internet Information Services (IIS) Manager program.
- In the node of the Manager, switch to the node of your computer.
- In the IIS group, select the MIME types property symbol:
The dialog to configure the MIME types is opened.
- Select the **Add...** entry in the context menu.
The Add Mime Type dialog is opened.
- Enter .cer in the File name extension input field.
- Enter, in the **MIME-type:** input field, `application/octet-stream`.



The certificate can then be easily downloaded using the browser.

INSTALLATION SCRIPT FOR IIS

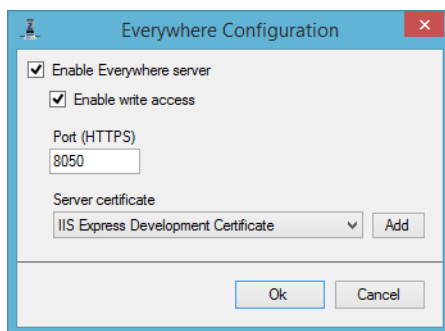
You get the complete IIS 7.5 installation with all available feature packages with this script. If you do not require certain feature packages, you should edit the script so that only the required packages are installed.

```
start /w pkgmgr
/iu:IIS-WebServerRole;IIS-WebServer;IIS-CommonHttpFeatures;IIS-StaticContent;
IIS-DefaultDocument;IIS-DirectoryBrowsing;IIS-HttpErrors;IIS-HttpRedirect;IIS
-ApplicationDevelopment;IIS-ASPNET;IIS-NetFxExtensibility;IIS-ASP;IIS-CGI;IIS
-ISAPIExtensions;IIS-ISAPIFilter;IIS-ServerSideIncludes;IIS-HealthAndDiagnost
ics;IIS-HttpLogging;IIS-LoggingLibraries;IIS-RequestMonitor;IIS-HttpTracing;I
IS-CustomLogging;IIS-ODBCLogging;IIS-Security;IIS-BasicAuthentication;IIS-Win
dowsAuthentication;IIS-DigestAuthentication;IIS-ClientCertificateMappingAuth
entication;IIS-IISCertificateMappingAuthentication;IIS-URLAuthorization;IIS-Re
questFiltering;IIS-IPSecurity;IIS-Performance;IIS-HttpCompressionStatic;IIS-H
ttpCompressionDynamic;IIS-WebServerManagementTools;IIS-ManagementConsole;IIS-
```

```
ManagementScriptingTools;IIS-ManagementService;IIS-IIS6ManagementCompatibility;IIS-Metabase;IIS-WMICompatibility;IIS-LegacyScripts;IIS-LegacySnapIn;IIS-FTP PublishingService;IIS-FTPService;IIS-FTPManagement;WAS-WindowsActivationService;WAS-ProcessModel;WAS-NetFxEnvironment;WAS-ConfigurationAPI
```

9.1.7 Certificates

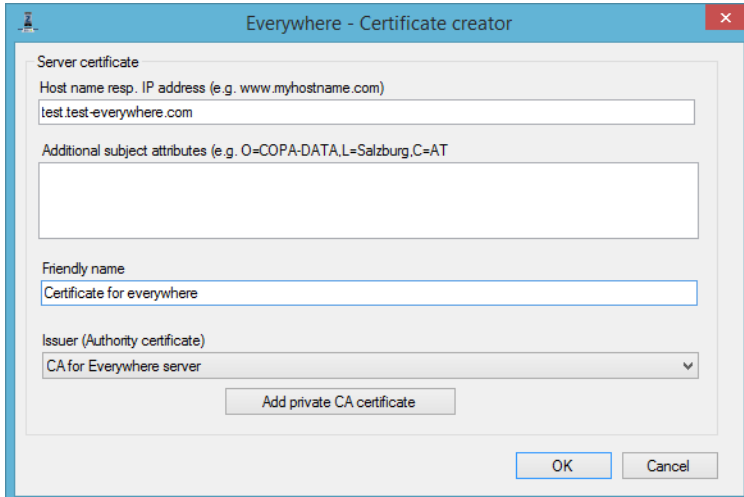
To install Everywhere Server by zenon correctly, carry out the following steps:



1. Start the **Everywhere.Config.exe** program .
2. Activate the **Enable Everywhere server** checkbox
3. Enter the correct port in the **Port (HTTPS)** input field.
4. Select a server certificate from the **Server certificate** drop-down list.

CREATE A SERVER CERTIFICATE

To create a server certificate:



1. Click, in the **Everywhere.Config.exe** program, on the **Add** button to start the **Everywhere - Certificate creator** program.
2. Enter your data into the input fields.
3. Assign a **Friendly name**.
4. Select an SLL certificate from the **Issuer (Authority certificate)** drop-down list.



Information

Android apps before version 4.4 do not allow self-signed certificates. Only official certificates can be used for communication on these Android devices. From version 4.4, it was also possible to use certificates (on page 89) signed through Everywhere Server by zenon.

CREATION OF A ROOT CERTIFICATE (SLL CERTIFICATE)

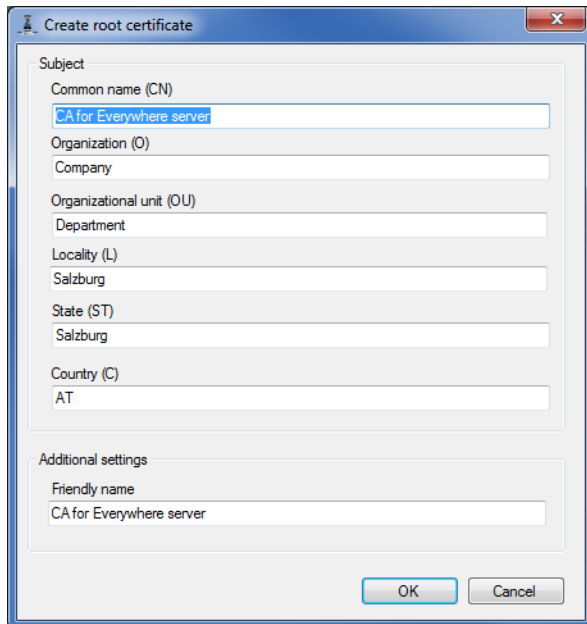
Purchase a certificate from a provider of SLL certificates.

Installation on the Client becomes superfluous as a result, because common certificate providers are already installed on the end device by default.

Search for "SLL certificates" on the Internet. Some providers are, for example:

1. GoDaddy (<http://www.godaddy.com>)
2. VeriSign (<http://www.verisign.com>)
3. CAcert (<http://wiki.cacert.org/FAQ/AboutUs>)

Alternatively, create your own root certificate:



1. Click, in the `Everywhere - Certificate creator`, the **Add private CA certificate** button.
2. Enter your data into the input fields.
3. Assign a **Friendly name**.
4. Click on the **OK** button
5. The dialog to save the SLL certificate appears.
6. Name your SLL certificate and save it.



Information

This saved root certificate is the certificate that must be installed on the Client.

9.2 CEL entries

When logging into the Everywhere Server, a CEL entry is created if

- the login data sent was checked by Runtime.

This happens:

- On the first request of a client.

- Every 5 minutes
- Always before a write request if more than a second has passed since the last check.

For variables that have not been acknowledged, alarms and CEL entries are supported by an incremental transfer of value changes.

LOG ENTRIES:

Level error	Description
Level Error	Errors that occur during the execution of the Everywhere Server. However not an error that has something to do with the execution of client requests.
Level Warning	Errors that occur during the execution of the Everywhere Server. However not an error that has something to do with the execution of client requests.
Level Success	Successfully-executed client requests that lead to a change of the internal status of the Everywhere Server or the zenon Runtime.
Level Failed	<ul style="list-style-type: none"> ▶ Error in the execution of client requests ▶ Error in the checking of credentials
Level Msg	Everywhere Server status: <ul style="list-style-type: none"> ▶ Start / stop ▶ Successful creation of sessions ▶ Ending of sessions
Level Debug	Incoming and outgoing requests with <ul style="list-style-type: none"> ▶ Session-ID, ▶ URI (Uniform Resource Identifier) ▶ Method and status
Level Deep Debug	Status of the Everywhere Server as well as incoming and outgoing requests, compiled into an entry (Level Msg + Level Debug).

9.3 Data model of the Everywhere Server

The **Open Data Protocol (= OData)** is used as an interface for the inclusion of data in your own web application. This protocol is a "WCF data service".

This data service is a "**RESTful services**" (**REpresentational State Transfer Architecture – REST**). Only methods for manipulating or querying the data model are defined in this (**CRUD – Create – Read – Update – Delete**).

Because these methods cover the HTTP commands ((**GET, PUT, POST, DELETE**)) data services can be implemented very well via the HTTP protocol. In doing so, the desired object is identified by means of the URL and the operation via the respective HTTP command.



Hint

PUT, CREATE and DELETE must "point" to different instances.

You can find further information in the official ODATA online documentation.

*Link: <http://www.odata.org/documentation/odata-version-2-0/operations/>
(<http://www.odata.org/documentation/odata-version-2-0/operations/>)*

The data is, like a relational database, organized in tables. Filter criteria can be defined for querying data (comparable to an SQL query).

Note: In contrast to traditional data services, a session-dependent data model is used in the Everywhere service. This means that the data model can - depending on the session - contain different data.



Information

The Everywhere service is a WCF data service.

You can find details and comprehensive documentation for the OData services at: www.odata.org (<http://www.odata.org>).

9.3.1 Data model - static project data

EQUIPMENT MODELS (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonEquipmentModel
 - Name (string)
 - Guid (string, key)
 - EquipmentGroups (collection, Everywhere.Service.Data.ZenonEquipmentGroup)

EQUIPMENTGROUPS (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonEquipmentGroup
 - Guid (string, key)
 - Name (string)
 - ParentGroup (Everywhere.Service.Data.ZenonEquipmentGroup)
 - ChildGroups (collection, Everywhere.Service.Data.ZenonEquipmentGroup)
 - Model (Everywhere.Service.Data.ZenonEquipmentModel)

VARIABLES (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonEquipmentModel
 - EquipmentGroupGuids (String, commaseparated GUIDs of the related groups)
 - MinimumValue (Real)
 - MaximumValue (Real)
 - Unit (String)
 - ResourcesLabel (String)
 - Identification (String)
 - Name (String)
 - Id (int, key)

ALARMCLASSES (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonAlarmClass
 - EquipmentGroupGuids (String, commaseparated GUIDs of the related groups)
 - Description (String)
 - Number (int, key)
 - Name (String)

ALARMGROUPS (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonAlarmGroup
 - EquipmentGroupGuids (String, commaseparated GUIDs of the related groups)
 - Description (String)
 - Number (int, key)
 - Name (String)

ARCHIVES (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonArchive
 - Id (String, key)
 - Name (String)
 - Values (Collection, Everywhere.Service.Data.ZenonArchiveValue)

ARCHIVEVALUES (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonArchiveValue
 - ArchiveId (String, key)
 - VariableName (String)
 - Timestamp (Int64, Unixtime [ms], key)
 - Type (int, key, **None** = 0, **Sum** = 1, **Average** = 2, **Min** = 3, **Max** = 4)
 - Value (string)
 - VariableId (int, key)

9.3.2 Data model - project data that changes

Below you can find the data model for values that update themselves.

ALARMS (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonAlarm
 - Deleted (bool)

- Acknowledged (bool, writeable)
- VariableStatus (Int64)
- Value (string)
- AlarmClass (**Everywhere.Service.Data.ZenonAlarmClass**)
- AlarmGroup (**Everywhere.Service.Data.ZenonAlarmGroup**)
- UserId (String)
- ReactivateNumber (int)
- ReactivateStatus (Int64)
- ReactivateTime (Int64, Unixtime [ms])
- TimeAcknowledged (Int64, Unixtime [ms])
- TimeCleared (Int64, Unixtime [ms])
- TimeReceived (Int64, Unixtime [ms], key)
- ComputerName (string)
- Comment (string, writeable)
- Text (string)
- Variable (**Everywhere.Service.Data.ZenonVariable**)
- AlarmStatus (int)
- Cookie (int)
- Id (int, key)



Example

The "**Acknowledged**" and "**Comment**" properties can be used to acknowledge an alarm in zenon or to save a comment.

These properties can then be transferred to the server with the "**PUT**" or "**MERGE**" command.

CEL (COLLECTION)

- Type: Everywhere.Service.Data.ZenonEvent
 - VariableStatus (Int64)
 - Value (string)
 - AlarmClass (**Everywhere.Service.Data.ZenonAlarmClass**)

- AlarmGroup (**Everywhere.Service.Data.ZenonAlarmGroup**)
- UserId (String)
- TimeReceived (Int64, Unixtime [ms], key)
- ComputerName (string)
- Comment (string)
- Text (string)
- Variable (**Everywhere.Service.Data.ZenonVariable**)
- Cookie (int)
- Id (int, key)

ONLINEVARIABLES (COLLECTION)

- ▶ Type: Everywhere.Service.Data.ZenonOnlineVariable
 - Id (int, key)
 - Variable (**Everywhere.Service.Data.ZenonVariable**)
 - Status (Int64)
 - Timestamp TimeReceived (Int64, Unixtime [ms])
 - Value (string, writeable)



Example

- ▶ To sign variables in again, a new instance must be created in the collection. This is carried out with the **CREATE** command.
This registration is removed again with **DELETE**.
- ▶ For identification of the online variable that was created on the client, its ID must be established. This ID corresponds to the ID of the zenon variable whose values are to be queried.
PUT or **MERGE** writes a value to a variable.

9.3.3 Querying archives

Archive variables can only be queried from the respective project of the Everywhere Server. Cross-project variables are not supported.

NOTE ON THE QUERYING OF ARCHIVE VALUES:

In order to query archive data, the following properties must also be entered for the server query:

- ▶ Archive ID
- ▶ Start time
- ▶ End time



Attention

Values without these filter criteria being stated cannot be queried.

Examples:

- ▶ `https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE/ArchiveValues?$format=json&$filter=ArchiveId%20eq%20%27FI%27%20and%20Timestamp%20gt%201377690800000L%20and%20Timestamp%20lt%201377690862000L`
- ▶ `https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE/Archives%28%27FI%27%29/Values?$format=json&$filter=Timestamp%20gt%201379934601375L%20and%20Timestamp%20lt%201379934601377L%20and%20VariableName%20eq%20%27BodyShop1.Actual%27`

9.3.4 Calling up the data model using a web browser

The data model of the Everywhere Server can be displayed in a web browser. This can be used to give you a quick overview and test the first programming lines.

To call up a data model, use Mozilla Firefox or Google Chrome (recommended).

Attention: Microsoft Internet Explorer does not support the full functionality!

URI ADDRESS

`https://server address or DNS name:port number\zendata\project name`

Parameters	Description
https://	URI schematic of the WWW communication protocol. https: stands for the secure transfer protocol Hypertext Transfer Protocol Secure
Server address or DNS name	IP address or DNS name of the Everywhere Server.
:	: (colon) Separates the server address from the port number.
Port number	Port number for communication, as configured in Everywhere Server (on page 103).
zendata	Constant: is always zendata
Project name	Name of the zenon project configuration.



Example

https://89.26.13.1:8050/zendata/Demo_Automotive

Logging in to the data model

If it is not possible to log in when in secure mode (https://), a warning sign appears in the browser. This warning sign can be skipped by clicking on the respective button (Chrome: "**Continue anyway**", Firefox: "**I am aware of the risk**"). Communication then takes place unsecured.

THE LOGIN DIALOG APPEARS:

USER NAME:

The user name is the session ID at the same time. This session ID comprises:

Time Stamp|Device ID|User Name

Parameters	Description
Timestamp	32-bit time stamp of the session: <ul style="list-style-type: none"> ▶ UTC Unix time (UTF8 coded: 8-digit HEX string) ▶ must be 8 digits
	Pipe character Alt GR key and <- key
Device ID	ID of the end device (mobile device, ...) - normally UUID. The device ID is device-dependent and must be unique.
	Pipe character Alt GR key and <- key
User name	User name, as configured in zenon. When entering this, note capitalization. Note: The user name must not contain a colon.



Example

538497B4|550e8400-e29b-11d4-a716-446655440000|Manager

PASSWORD:

The password comprises:

Type of password sending and password

Parameters	Description
Type of password sending	How the password is sent: <ul style="list-style-type: none"> ▶ = (equal sign) unencrypted ▶ + (plus sign) encrypted Note: The password must be preceded with the type of sending (= or +). Otherwise logging in to the data model will not be successful!
Password	Password as configured in zenon. Note: Pay attention to capital letters and small letters when entering the data!



Example

+Manager

Encrypted communication with the Everywhere Server - login with the password Manager.

9.3.5 Examples

You can find some examples of code here. These examples should show how values from the server can be updated.

Note: The examples use the Java programming language.

Code example - login to the server

Example of code for logging in to an Everywhere Server:

```
// get authentication information from the user interface
    String userName = arg0[0].getString("UserName");
    String password = arg0[0].getString("Password");
    String server = arg0[0].getString("Server");
    String project = arg0[0].getString("Project");
    String port = arg0[0].getString("Port");
    Date curTime = new Date();

    // full username -> as described
    String fullUserName = Long.toHexString(curTime.getTime())+"|";    // 8
digit hex timestamp
    fullUserName = fullUserName + Settings.Secure.ANDROID_ID+"|";
    fullUserName = fullUserName + userName;

    // set the authentication to basic https (OClientBehaviour from odata4j)
    OClientBehavior authBehavior = OClientBehaviors.basicAuth(fullUserName, "="
+ password);

    OClientBehavior allowSelfSignedBehavior =
AllowSelfSignedCertsBehavior.allowSelfSignedCerts();

    // Consumer declaration: private ODataConsumer consumer;
```

```
// here the url to the server has to be inserted
// we have https:"the server IP or name":Portnumber(for HTTPS
8050)/zendata(fixed)/Projectname

consumer =
ODataConsumers.newBuilder("https://" + server + ":" + port + "/zendata/" + project).setClientBeh
aviors
(authBehavior, allowSelfSignedBehavior).build();
```

Examples for browser display

A browser can be used to display your zenon project configuration in a browser.

Note: The web addresses shown here relate to the demo project of the Everywhere Server.

DATA MODEL - OVERVIEW

To display a simplified overview of your data model in your browser, enter the following URI into the browser:

https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE

DATA MODEL - DETAILED OVERVIEW

The following URI lists the complete data model:

[https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE/\\$metadata](https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE/$metadata)

DISPLAY OF VARIABLES

You get an overview of all variables with the URI:

[https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE/Variables?\\$format=json](https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE/Variables?$format=json)

DISPLAY OF VARIABLES WITH FILTERING

The display of variables can be filtered. The address below displays the variable with the ID 321

[https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE/Variables?\\$format=json&\\$filter=Id%20eq%20321](https://89.26.13.1:8050/zendata/DEMO_AUTOMOTIVE/Variables?$format=json&$filter=Id%20eq%20321)

Note: You can find a precise description of all filters in the OData online documentation. You can find this documentation on the Internet at the address www.odata.org (<http://www.odata.org>).

Example of code - calling up instances from the server

RECEIVING ALARMS

The example shows how alarms are updated. This syntax can also be used for the other data types in the same way.

```
private class RequestPollAlarmsTask extends ConnectionTask{

    public RequestPollAlarmsTask(EverywhereConnectionHandler handler) {
        super(handler);
    }

    @Override
    protected Void doInBackground(Bundle... arg0) {

        try {
            lock.acquire();
        } catch (InterruptedException e1) {
            // TODO Auto-generated catch block
            e1.printStackTrace();
        }

        int updateIntervall = arg0[0].getInt("Intervall");
        String filter = arg0[0].getString("Filter");

        try
        {
            // Consumer declaration: private ODataConsumer consumer;
            // alarms declaration: private Enumerable <OEntity>
            alarms =
consumer.getEntities("Alarms").expand("Variable").execute();
            isConnected=true;
        }
        catch (Exception e)
        {
            isConnected=false;
            connectionException=e;
        }
    }
}
```

```

        lock.release();
        return null;
    }

```

Example of code - calling up OEntity objects from the server

This example shows how information in relation to an OEntity object can be called up from the server. This data can thus be taken on for the user programming. This example also shows how properties can be called up from a data object.

```

/**
 *
 * @param position: Object at which position of the entityset should be returned
 * @return the finished Item Alarm for the List of Alarms
 */
protected Alarm GetAlarmFromEntity(int position) {

    Alarm retAlarm = new Alarm();

    // We use position as listItemId. Here we could use some other unique id
    // to reference the list data
    ListView listViewAlarms = (ListView)findViewById(R.id.Alarmlist);
    OEntity var = alarms.elementAt(position).getLink("Variable",
OLink.class).getRelatedEntity();

    int EntityItemCnt= alarms.count();
    OProperty<String> varName = var.getProperty("Name", String.class);

    OProperty<String> alarmText =
alarms.elementAt(position).getProperty("Text", String.class);
    String Header = varName.getValue() + " - " + alarmText.getValue();

    // Body data
    Bundle bodyBundle = new Bundle();
    OProperty<?> alarmValue =
alarms.elementAt(position).getProperty("Value");
    String timeReceived =
alarms.elementAt(position).getProperty("TimeReceived").getValue().toString();

```

```

        String timeCleared =
alarms.elementAt(position).getProperty("TimeCleared").getValue().toString();
        String Acknowledged =
alarms.elementAt(position).getProperty("Acknowledged").getValue().toString();
        Date date = new java.util.Date(Long.parseLong(timeReceived));
        String dateString = new SimpleDateFormat("dd.MM.yyyy HH:mm").format(date);

        retAlarm.setAlarmName(varName.getValue());
        retAlarm.setTimeReceived(dateString);
        retAlarm.setValue(alarmValue.getValue().toString());
        retAlarm.setAcknowledged(Acknowledged);
        retAlarm.setCleared(timeCleared);
        retAlarm.setAlmText(alarmText.getValue());

        return retAlarm;
    }

```

Other examples of code

Other examples for programming with OData are on the Internet.

The example given shows how information relating to an OEntity objects can be called up from the server to the end device. This example also shows how properties of a data object can be received.

Link: <https://github.com/vorburger/odata4j/tree/master/odata4j-core/src/test/java/org/odata4j>
<https://github.com/vorburger/odata4j/tree/master/odata4j-core/src/test/java/org/odata4j>



Attention

This Internet site is not shown in Internet Explorer!

9.3.6 Using the app on a mobile device (Android)

In order to use your own applications on a mobile end device (Android), compile it with the **Eclipse** program.

Eclipse is a programming tool for developing software and was originally used as an integrated development environment for the Java programming language.



Information

Eclipse is available as a free download.

INSTALLATION:

In order to be able to use **Eclipse** for your development environment, install the program including the Android Developer Bundle.

The following components must be installed on the development computer:

- ▶ **The Android Developer Bundle**

The Android Developer Bundle is available free on the Internet.

Link to the installer: <http://developer.android.com/sdk/index.html>
(<http://developer.android.com/sdk/index.html>)

It is important that the correct driver for the mobile device is installed on the Desktop computer. Otherwise no communication between the development computer and the end device is possible.

- ▶ **The Java Development and Runtime Environment**

The Java Development Environment (JRE) and the Java Runtime Environment (JSE) must be installed on the development computer.

JRE and JSE can be downloaded directly from the Java website. Both environments must be installed separately.

Link to download: www.oracle.com/technetwork/java/javase/downloads/index.html
(<http://www.oracle.com/technetwork/java/javase/downloads/index.html>)

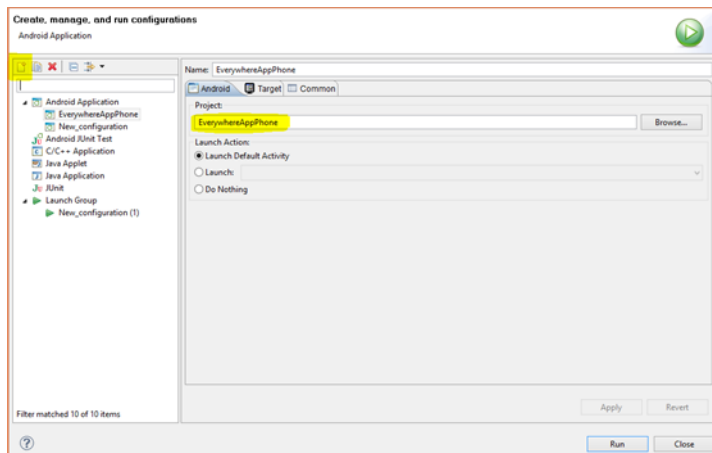
- ▶ **Required libraries:**

To be able to use OData in **Eclipse**, you then need to link the appropriate library for your preferred development environment in **Eclipse**.

Libraries for the common programming languages can be found on the OData Internet site. Select your desired programming language in the tabs shown in order to get to the respective downloads.

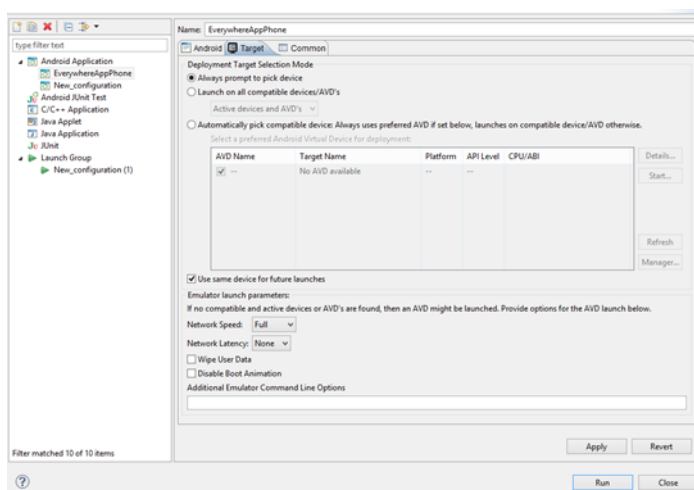
Link to the libraries: www.odata.org/libraries (<http://www.odata.org/libraries>).

Recommended settings for the Eclipse programming environment



To configure **Eclipse** for mobile end devices, carry out the following steps:

1. Select, the **Run configurations...** entry in the **Run** menu bar.
2. The configuration dialog for a new **Run** configuration appears.
3. Click on the symbol **New launch configuration**.
4. In the **Android Application** tree, the new entry `NEW_configuration` is added.
5. Name your Android app project in the **Android** tab.
6. Click on the **Browse...** button to select your Android project. This is then transferred to the mobile device.
7. Now connect your mobile end device to the development computer.



8. Configure your target device in the **Target** tab.
9. Ensure that the `Always prompt to pick device` property is activated.
Note: In this case, you are asked before execution which device your app is to be executed on.
10. Start the debug process:

11. Start the app.
Note: For the remaining entries, it is recommended that the existing default settings are left unchanged.
12. After clicking on the **Play** or **Debug** buttons, you are requested to select your end device or your emulator in order to start the program.
13. The app is then started automatically on the end device.