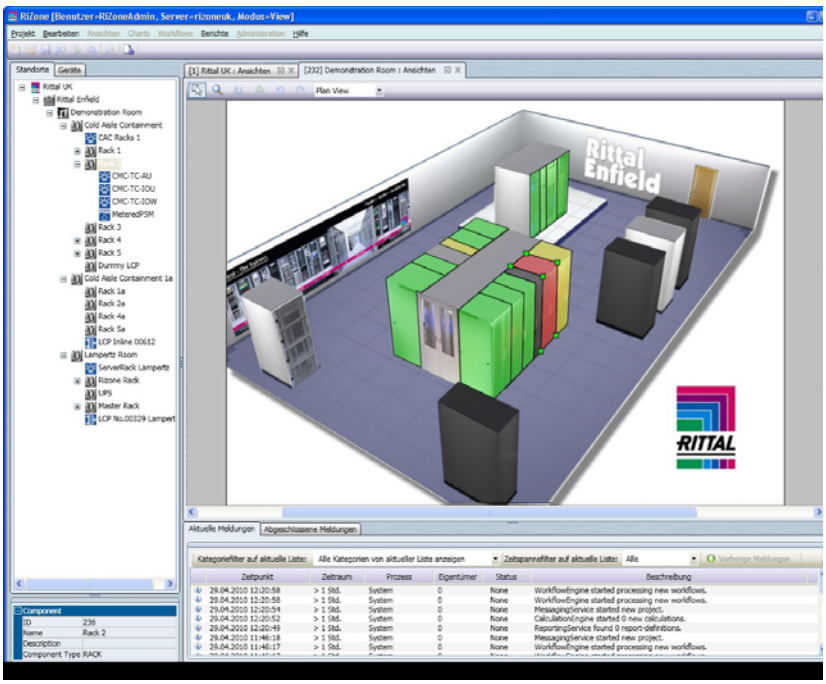

RiZone

The Rittal management software for IT infrastructure

DK 7990.001
DK 7990.003

Operating Manual

FRIEDHELM LOH GROUP

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1 Notes on documentation

These instructions are aimed at administrators and users who are familiar with the installation and the operation of the software. Read these operating instructions prior to commissioning and be sure to keep them accessible for later use. Rittal can accept no liability for damage and operating problems resulting from non-compliance with these instructions.

1.1 Retention of documents

These instructions and all other applicable documents constitute an integral part of the product. They must be given to the administrator. The device operator is responsible for the storage of the documents so that they are readily available when needed.

1.2 Used symbols and technical terms

The signal word classifies the effects of a danger in case of non-observance of the safety instructions.

- **Note**
  Identification of the situations that can lead to incorrect configurations or material damage.

The signal words are shown in the following form in the instructions:
e.g.

Signal word!
1. Description of the danger and its effect
2. Description of the behaviour of the user to prevent danger

2 Commissioning RiZone

RiZone is offered as Appliance and as Software Appliance. The Commissioning chapter describes the commissioning of both variants.

2.1 Commissioning the RiZone Software Appliance

The commissioning of the Software Appliance requires a hypervisor. The format of the virtual hard disk is not the same between platforms. The following virtualisation solutions are supported: VMware Server and ESX(i), Xen and Microsoft Virtual Server. The **RiZone Software Appliance requires 4 GB RAM, 70 GB hard disk and two CPUs with more than 2 GHz as resources**. Because of the large dependency between the speed and the availability of the network interface, we recommend that the Software Appliance is given its own network card.

The RiZone Software Appliance is started from the management tool of the virtualisation platform. The RiZone GUI is not yet available after booting.

For a detailed description of the integration of the virtual hard disk in the virtualisation platform, please consult the virtualisation manufacturer's documentation.

2.2 Commissioning the RiZone Appliance

The installation is performed in accordance with the hardware manufacturer's specifications. After switching on the Appliance, the server will boot. The required services start automatically. The system is ready.

2.3 Commissioning RiZone

The login to the RiZone server is made with the standard user **Administrator** and the password "**RiZ0ne!!**". We recommend that you change the password after the first login.

RiZone is supplied with the English keyboard layout. If necessary, change the keyboard layout after the first login.

2.3.1 Configuration of the server name, work group, domain

The configuration is made with the Windows Server 2008 R2 operating system. The computer name as delivered has the name **RiZone1-3**. If the computer name is changed, a new certificate for RiZone must be created. The certificate is created with an additional program. This program is available on the server at **C:\rizone_install\RittalSSLCfg.exe**.

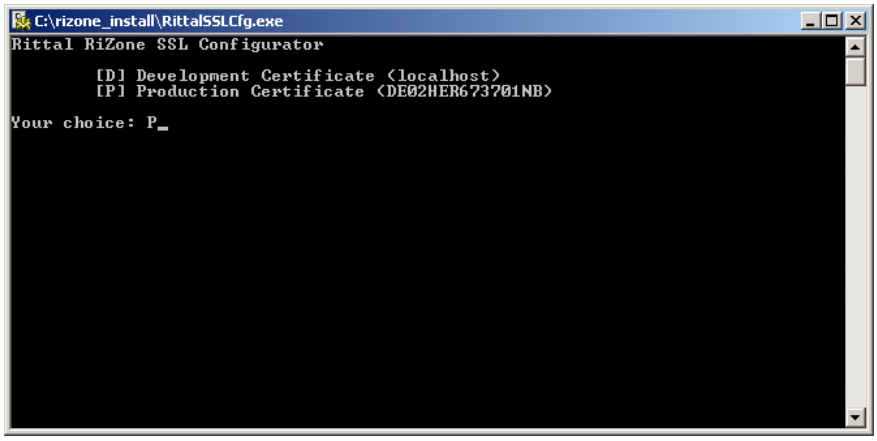

Fig. 1 Creating a certificate

P (a capital letter must be specified) selects the creation of a certificate for productive operation. Press the Enter key to confirm the selection. This creates the certificate.

2.3.2 Network cards configuration

The network setting is configured from the Windows Server 2008 R2 server operating system. Customise the network setting to your network using **Start > Control panel > Network and Sharing Center.**

If the IP address has been changed successfully, the trap receiver for all devices monitored with RiZone must be modified manually.

IP V6 is disabled in the delivered state.

2.3.3 Configuration of the Fully-Qualified Domain Name (FQDN)

If necessary, the **FQDN** is changed from **System properties (system) > Computer name > Change > More**. This configuration is not necessary if the RiZone server is a member of a directory service or the NetBios name of the RiZone server can be resolved.

2.3.4 NTP server configuration

All components of the RiZone installation must be operated synchronously.

If the RiZone server is member of a directory service, the **NTP server** does not need to be configured because the directory service makes this information available.

The NTP server is configured manually in the operating system using the **Change date/time** function.

2.3.5 Database backup

RiZone has its own internal Microsoft SQL Express database. This database is compressed and backed up once per day. The operation of RiZone requires that the database backups are deleted regularly from the RiZone server. The backups should be stored on an external backup medium. The retention time must be changed appropriately depending on the customer requirements.

No local backups will be created if RiZone is operated with an external database.

As supplied, RiZone operates with a Microsoft SQL Express edition. The size of a single database is limited to 4 GB.

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Caution!
Ensure that the databases and drives have sufficient free capacity.

To ensure the reliable operation of RiZone, the free storage space on the RiZone server must be checked in regular intervals. The C:\ drive contains the RiZone log files in the \Program Files(x86)\Rittal\RiZone folder and the SQL server log files in the \Program File\Microsoft SQL Server\MSQL10.SQLEXPRESS\MSQL\Log folder.
The D:\ drive provides the storage space for the database.

The E:\ drive is the backup drive for the database.

Old messages and values (Float, Int, String) are deleted automatically from the database after 30 or 90 days. The number of days after which messages or values are discarded can be set in the *%APPDATA%\Rittal\RiZone\Data\MetaData\Configurations\DataDBConfig.xml* file using the two parameters <DaysAfterMessagesGetDeleted> and <DaysAfterValuesGetDeleted>. If these parameters are not set, the standard values of 30 days for messages and 90 days for variable values will be assumed. Setting the parameter to 0 deactivates the automatic deletion.

The database backups are stored in the drive of the SQL instance.
If RiZone is connected to an external database (MS SQL or Oracle), the database backup must be performed there.

2.3.6 Updating the RiZone Appliance

If you have completed a service contract, you will receive updates for RiZone from our **R**ittal **S**ervice **I**nternational department (e-mail: service@rittal.de, Tel.: +49 (0) 2772 505 1855).

3 Installation of the RiZone GUI

The RiZone GUI is installed locally on the client PC. As prerequisite, the Microsoft **.NET Framework 4.0 SP1** must be installed. The **.Net Framework** is available at the following URL:
http://www.microsoft.com/download/en/details.aspx?id=17851
The installation file of the RiZone GUI is located in the C:\rizone_install\ path on the RiZone server. The RiZone administrator must make available the installation file.

3.1 Installing the RiZone GUI

The **Rittal.RiZone v2.xGUI.msi** MSI package must be available on the local client PC. A double-click executes the file.

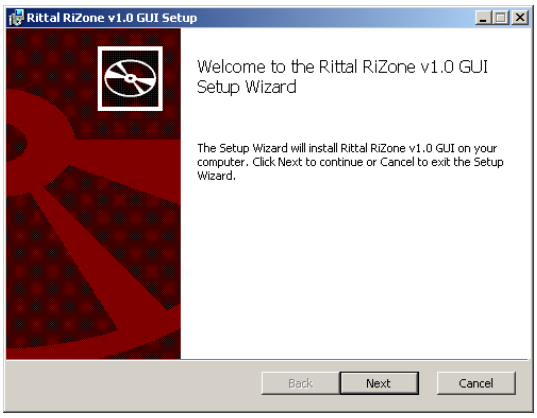

Fig. 2 Installing the RiZone GUI

Click the **Next** radio button to perform the RiZone installation.

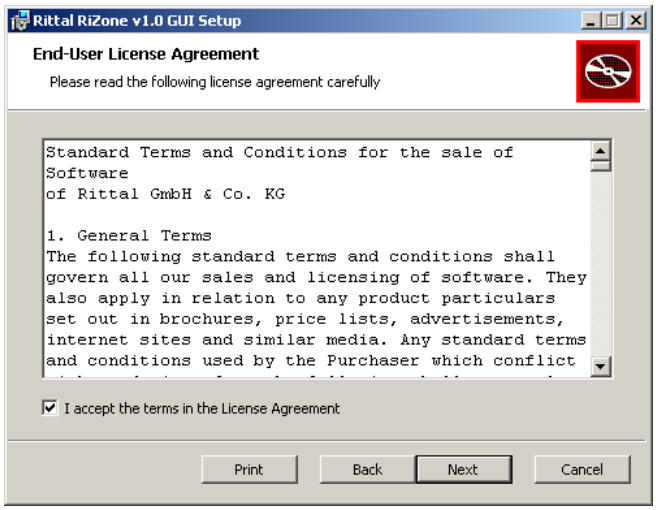

Fig. 3 Installing the RiZone GUI

The licence conditions must be accepted and **Next** clicked to continue the installation process.

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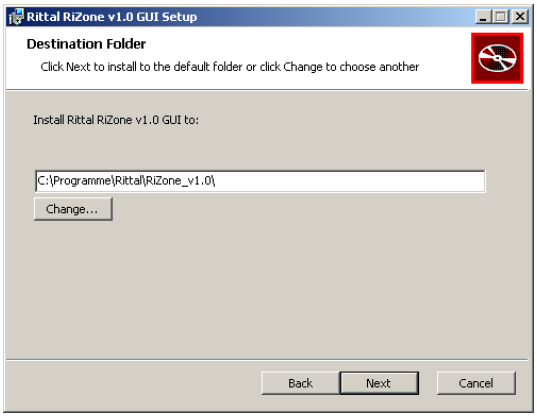

Fig. 4 Installing the RiZone GUI

The target directory can be changed. The preset target directory is:
C:\Programme\Rittal\RiZone
Click **Next** to continue the installation process.

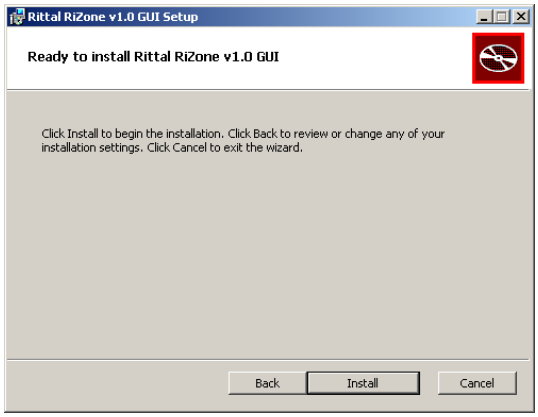

Fig. 5 Installing the RiZone GUI

Click the **Install** button to continue the installation process.

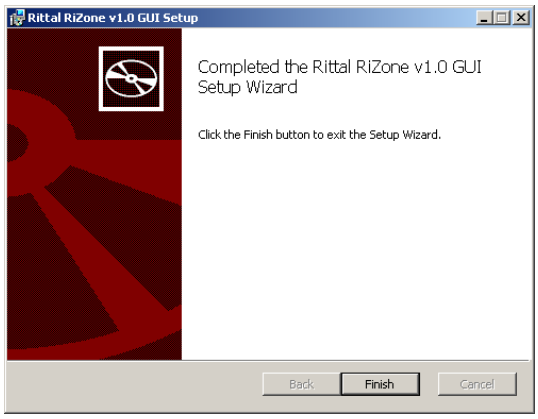

Fig. 6 Installing the RiZone GUI

Click **Finish** to complete the installation. A link to the RiZone GUI is now present on the desktop and a link is available at **Programme\Rittal**.

4 Licensing

RiZone's licensing concept provides a high flexibility matched to the needs of the end user. The licensing is made using the following criteria:

- The number of IP nodes to be monitored
- The number of concurrently logged-in users
- Additional functions (SCOM connection, SNMP agent)

The input of the licence key activates the licensed functions. An unlicensed RiZone Appliance has the functional scope of RiZone Light.

Model No.	Designation
7990.205 7990.305	RiZone volume licence for 10 IP nodes
7990.206 7990.306	RiZone volume licence for 25 IP nodes
7990.207 7990.307	RiZone volume licence for 50 IP nodes
7990.208 7990.308	RiZone volume licence for 100 IP nodes
7990.209 7990.309	RiZone volume licence for 250 IP nodes
7990.012	Microsoft SCOM Management Pack
7990.101 7990.201 7990.301	RiZone Server Appliance
7990.103 7990.203 7990.303	RiZone Server Software Appliance
7990.014	SNMP support for third-party devices

4.1 Querying the licence status

The **Administration > Licence** entry displays the customer number, the licence key, the instance number and all licensed functions.

4.2 Functional restriction of RiZone Light

RiZone Light supports the following components:

- **10 IP nodes**
- **1 client access licence**
- **UPS, single-phase**
- **CMC-TC, incl. LCP Standard**

4.3 Input of the licence key

The **Administration -> Licence** menu can be used in the dialog to enter a licence key.

If no code is entered, the server operates in RiZone Light mode.

The RiZone licence key is entered in conjunction with the customer number and the instance number. Once the licence data has been entered, **Check** must be clicked to check the input. The licensed functions will be shown in the licence window.

4.4 Exceeding the licensing for RiZone

The user adds an additional device from the Discovery. No licence check is made when the project is created. This check is done only when the project is uploaded to the server.

When the project is uploaded to the server, the following message appears in the message window: **The number of project nodes exceeds the limitation. The project was not uploaded.**

4.5 Configuring of unsupported devices for RiZone Light

The user adds an additional device from the Discovery. No licence check is made when the project is created. This check is done only when the project is uploaded to the server.

When the project is uploaded to the server, the following message appears in the message window: **The project contains devices that are not compatible with RiZone Light. The project was not uploaded.**

4.6 Exceeding the licensing of the logged-in clients

When a user is logged in to RiZone, a check will be made whether sufficient client access licences are present. If the maximum number of licences is reached, the following message will be issued:

The number of concurrently used clients is exceeded.

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5 Login mask

The RiZone server must be registered before the first login to RiZone is made. The registration installs a certificate for the encrypted communication from the server and the GUI on the client PC.

Important!
The certificate must have been created once previously on the server. For details, see Chapter 2.3.1.

5.1 Registering a RiZone server

Prior to the registration of a RiZone server, it must be guaranteed that the server can be accessed from the client PC. The accessibility can be checked with the **Ping** command from the command line of the operating system. If the **Ping** command is performed successfully, the registration of the server can be performed.

To register the RiZone server, the RiZone GUI is opened. If a server is already registered in the GUI, the server will be shown in the server selection box. A server is registered from the **Others** menu item.

Fig. 7 Registering a RiZone server

The login mask opens a second window that permits the registration of a server. Several servers can be registered.

Fig. 8 Registering a RiZone server

The name of the RiZone server is entered in the **Host** input field. If the RiZone server cannot be reached, a tooltip will appear when the **OK** button is clicked and an exclamation mark indicates the **Host** menu item.

Fig. 9 Registering a RiZone server

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When the registration of the RiZone server has been performed successfully, a message window will open that informs about the download of the certificate. This message must be confirmed with **Yes**. After the confirmation, the login mask opens.

Fig. 10 Registering a RiZone server

5.2 Login process

The RiZone GUI is started on the client PC. The RiZone login window opens. The RiZone server can be selected in the selection box. If no server is offered for selection, a RiZone server must be registered (see Section 5.1).

For the first login to the RiZone server, the user is preassigned with RiZoneAdmin. The standard password for the RiZoneAdmin is: **RiZ0ne!!** We recommend that you change the password before the first login.

5.3 Changing the password

The RiZone GUI is started on the client PC. The RiZone GUI login window opens. The RiZone server can be selected in the selection box.

The user's password is changed by clicking the **Change** menu item next to the Password input field. A second window opens in which the old password and the new password (twice) must be entered.

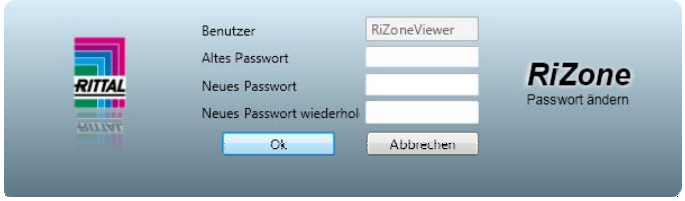

Fig. 11 Changing the password

The password for RiZoneAdmin must be at least seven characters (alphanumeric) long and contain a special character and both uppercase and lowercase characters. Once the password has been changed successfully, the login dialog opens.

If an unsafe password has been selected, a message text will appear in the window.

Fig. 12 Changing the password

5.4 Selecting the GUI language

The GUI language is selected at the login to RiZone. If the GUI language differs from that of the operating system, all RiZone message boxes use the language of the operating system.

Fig. 13 Selecting the GUI language

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6 RiZone user interface

This chapter provides an overview of the most important subareas of the RiZone user interface.

The RiZone user interface has two different modes, the admin mode and the view mode. You reach the admin mode only when you are logged in as user with administration rights. The user must be in admin mode to create new projects or edit existing projects. In view mode, the current RiZone project can be monitored only. Depending on the user rights, components can be controlled and device configurations changed from within RiZone.

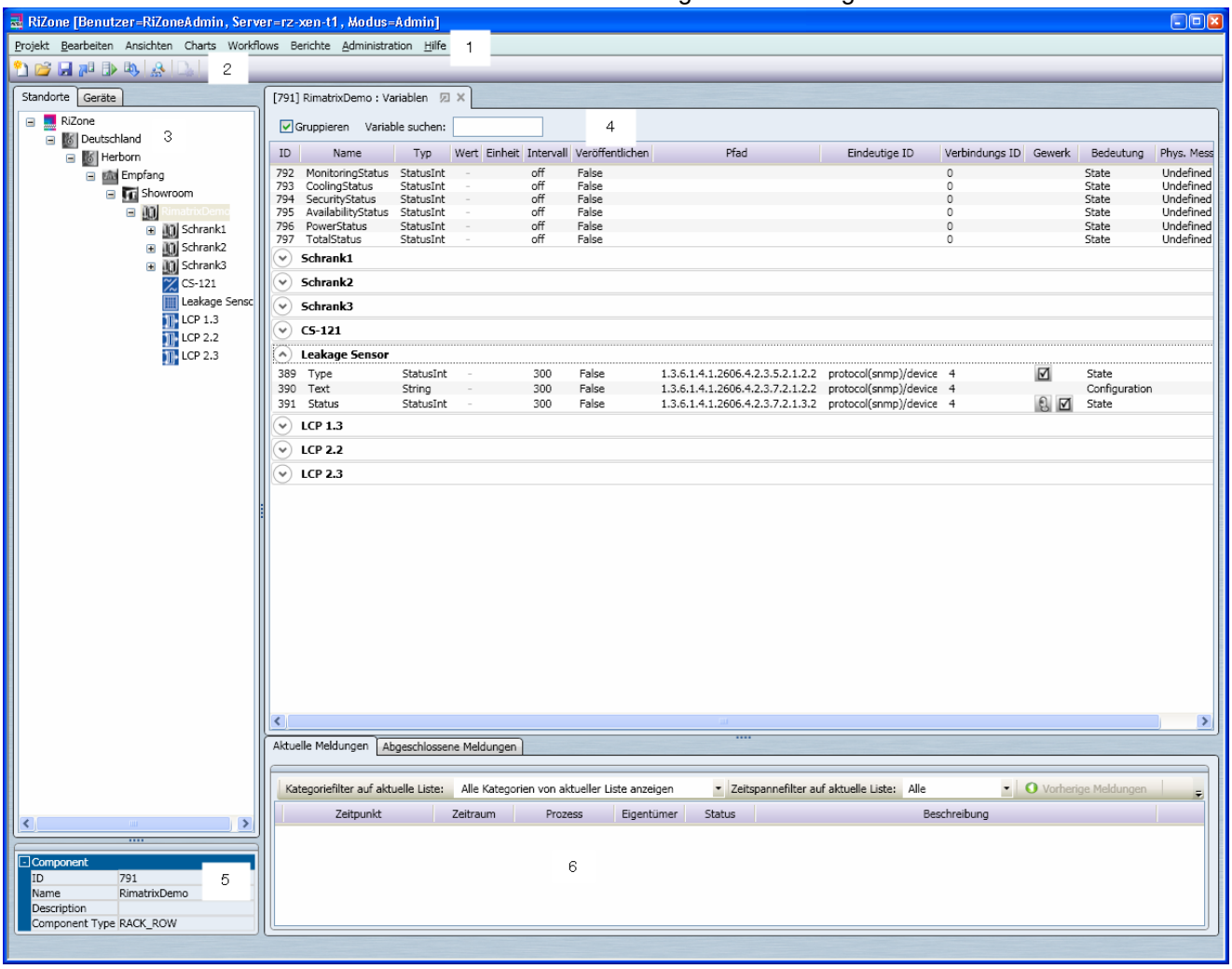

Fig. 14 RiZone user interface

1	Drop-down main menu
2	Toolbar (refer to the toolbar explanation)
3	Tabs for project trees **Locations** tab: Project tree for the location structure. The components are represented in accordance with their physical arrangement. **Devices** tab: Project tree of all SNMP components. The components are represented in accordance with their technical arrangement.
4	**View** window: Variable values and graphical evaluations are shown here. If several views are called, it is possible to switch between these using the tabs at the top of the View window.

5	Properties window of the components The properties of the components selected in window 2 are displayed.
6	Status window The current status messages appropriate for the currently selected action are output here.

Toolbar explanation

1. New project (active only in admin mode)
   Creates a new local project. To activate the project, it must be uploaded to the server.
2. Open project (active only in admin mode)
   Opens a project file on a drive and loads it to the client. To activate the project, it must be uploaded to the server.
3. Save project (active only in admin mode)
   Saves the project currently open in the client to a drive.
4. Upload to server (active only in admin mode)
   Uploads the project currently open in the client to the server and activates it there immediately. **Important:** The project currently present on the server will be overwritten.
5. Start project (active only in admin mode)
   The client changes to the view mode and then shows the current and historic data collected by the server. The project used here is that what was most recently uploaded to the server.
6. Download from the server (active only in admin mode)
   Downloads the current project from the server to the client. The project on the server remains active. Any changes made previously in admin mode will be discarded.
7. Discover (active only in admin mode)
   Opens the discover window.
8. Configure project (active only in view mode)
   The client changes to admin mode. The project can be edited here (discover, add or remove components, create charts, etc.).

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7 Creating a new project

To create a new project, the user must be logged in as RiZone administrator.

7.1 Creating a new project

To create a new project, first click **Project > New project** or click the **New project** icon, specify a name for the project and confirm by clicking **OK**. The newly-created project now appears in the left-hand side of the RiZone window.

For configuring, the existing infrastructure must first be created in a tree structure below the project name (root node).
To do this, select the **Locations** tab in the left-hand subwindow.

Then right-click the **Root node** and select the **Add** item from the opened context menu. Select here the required component from the Location, Building, Room, Enclosure Suite and Enclosure infrastructure components, assign a meaningful name and a description. After clicking **OK** to confirm, the new component appears below the root node.
Add additional components similarly until the infrastructure of your data centre is represented in the project tree.
Drag & drop can be used to subsequently assign created components to other components. Only logical moves, however, are possible here (e.g. a room cannot be assigned to an enclosure).
The context menu of the infrastructure components also contains the **Expand tree** and **Collapse tree** items. These items are used to open or close the complete tree structure below the selected node.
Please also note the functions 7.4.2 Copy components and 7.2.1 Autodiscovery of the SNMP components (multiselect functions), because they are very useful for creating a complete project tree.

7.2 Entering the SNMP components in the network

After the base project tree has been created, it must be populated with the components to be monitored actively.

7.2.1 Autodiscovery of the SNMP components

Active Rittal components in the network that support the SNMP protocol can be acquired using the Autodiscovery function and then added to the project tree.

Select from the **Edit > Discovery** drop-down menu or click the icon in the toolbar.
The discovery window then opens.

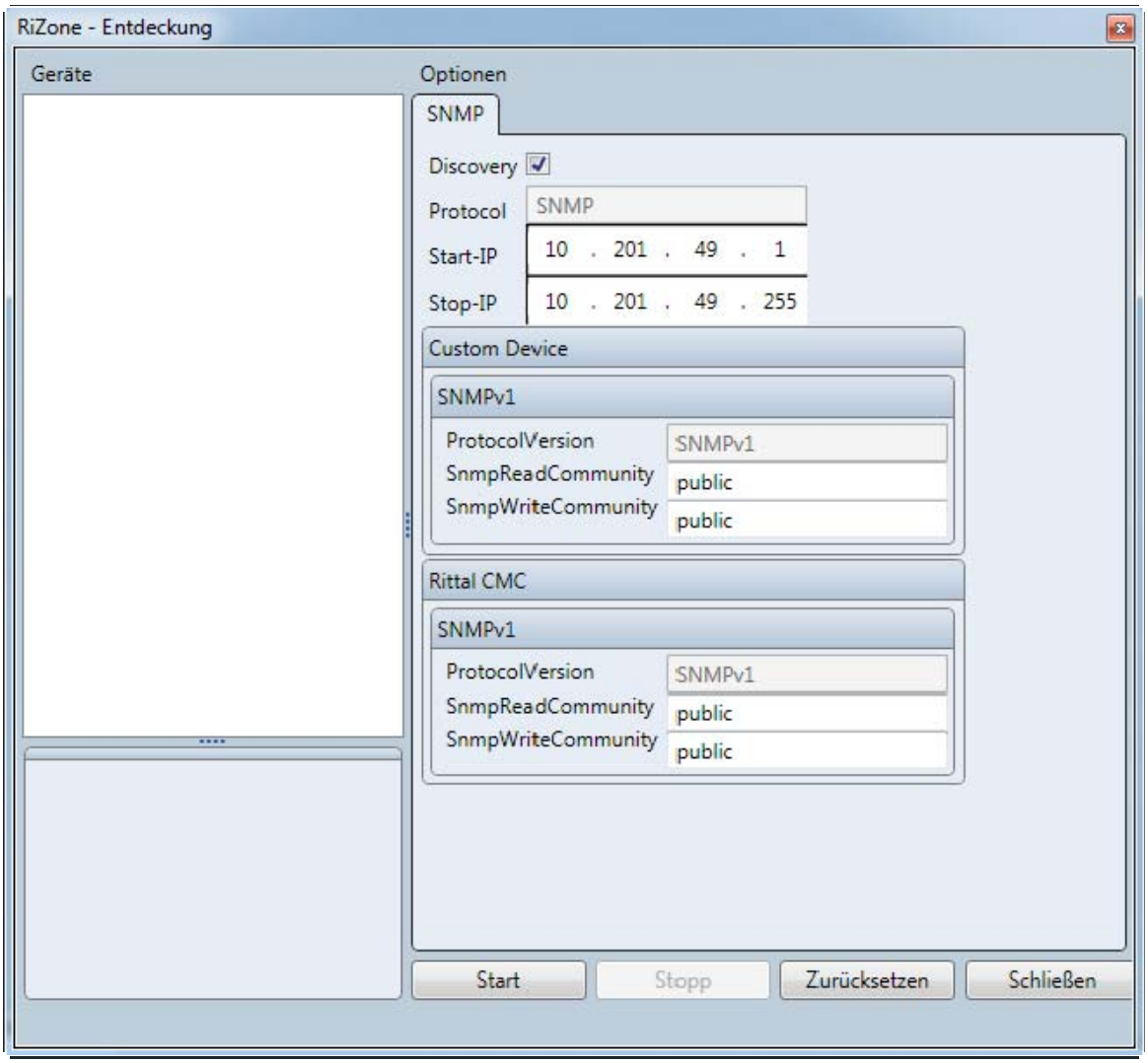

Fig. 15 Discovery

Parameters in the discovery window

Discovery	The Discovery checkbox activates the selected protocol for the discovery process.
Start-IP	RiZone begins with the search for Rittal SNMP components starting at this IP address.
Stop-IP	RiZone begins with the search for Rittal SNMP components ending at this IP address.
Custom Device	If a search should be made for third-party SNMP devices, the appropriate read/write communities must be entered in the following two fields. **Please note:** To access SNMP devices from third-parties, a driver must have been created previously using the RiZone 7990.014 supplementary module. Also refer to Chapter 7.3.
SNMPRead Community	Read community that contains the SNMP components (default **public**).
SNMPWrite Community	Write community that contains the SNMP components (default **public**).

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Rittal CMC	If a search should be made for Rittal SNMP devices, the appropriate read/write communities must be entered in the following two fields.
SNMPRead Community	Read community that contains the SNMP components (default **public**).
SNMPWrite Community	Write community that contains the SNMP components (default **public**).

Once the parameters have been set correctly, click **Start** to start the automatic discovery function.
RiZone now searches for active Rittal components in the specified address range. A list with the devices supported by the current release can be found in the Release Notes for the appropriate current version on www.rimatrix5.com (Service&Support > Downloads > Software area).

After completion of the discovery (100%), all discovered components will be found under **Devices**.

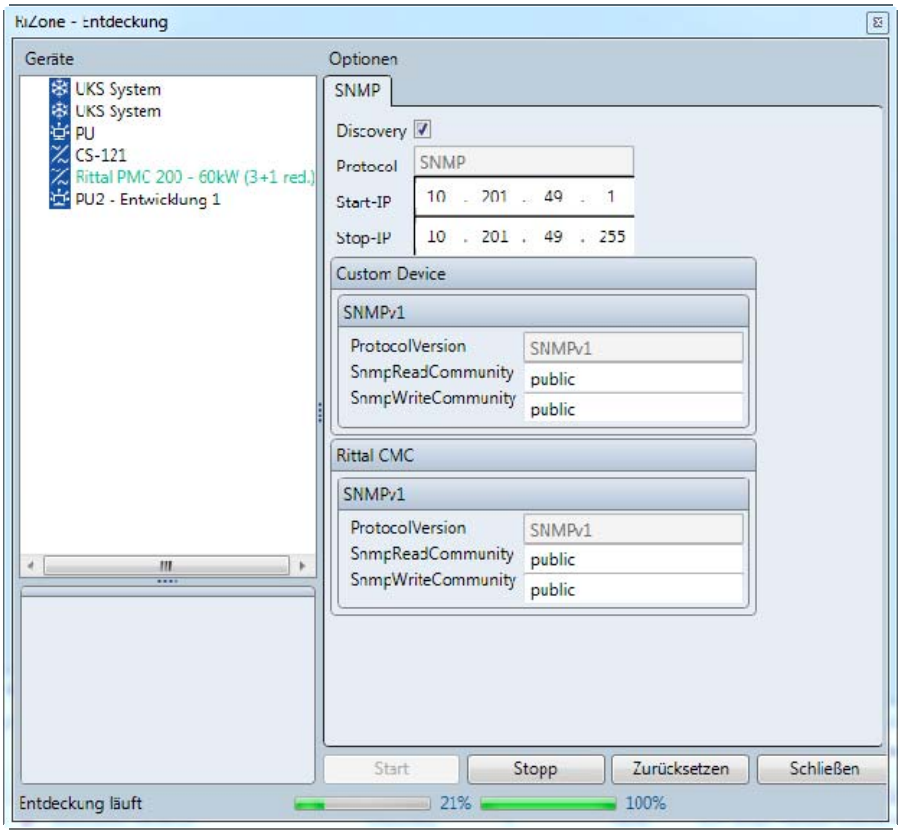

Fig. 16 Discovery with discovered components

Important!
If for the deployment of two communications modules not all devices are found during the discovery, check the IP address ranges that you have set for the modules.

A click on the plus sign in front of a component shows additional subcomponents (e.g. sensors).
From the device list, the components in accordance with their arrangement in the data centre can be moved with drag & drop into the **Locations** project tree.

Warning!
All components must be selected individually. For example, the selection of a PU does not automatically include the selection of the associated connected components.

Multiple components can be selected with multi-select and then moved. The order of clicking determines the order of the display in the tree after dragging.
Multi-select functions:

Ctrl + left mouse button	Select individual components
Ctrl + A	Select all components
Shift + left mouse button	Mark from the previously selected component through to the new component
Shift + up/down arrow	Mark from the previously selected component through to the component above/below
Ctrl + Plus (main keyboard)	Expand all components starting at the currently selected node
Ctrl + Minus (main keyboard)	Collapse all components starting at the currently selected node
Left/right arrow	Expand/collapse the current node
* (num block)	Expand all subcomponents
+ (num block)	Expand the next level
- (num block)	Collapse everything below the selected node

Components already assigned to a tree are marked light-blue in the discovery list.
During the move to the **Locations tree**, the device also appears automatically in the **Devices tree**, but not conversely. Components used only in the devices tree but not in the locations tree can be transferred to the locations tree with the **Add to locations** function.
To do this, right-click the component in the devices tree and then select **Add to locations**. The component will then be added at the end of the project in the locations tree from where it can be moved to any position in the project with drag & drop.
The moving of components with drag & drop to another position in the locations tree is always possible in admin mode.

If you want to update a component, perform the discovery of the component again and with pressed **Alt** key use drag & drop to move the newly discovered device to the component already present in the project. This updates the data for this component in the project.

The list of the discovered devices can be deleted by clicking the **Reset** button.

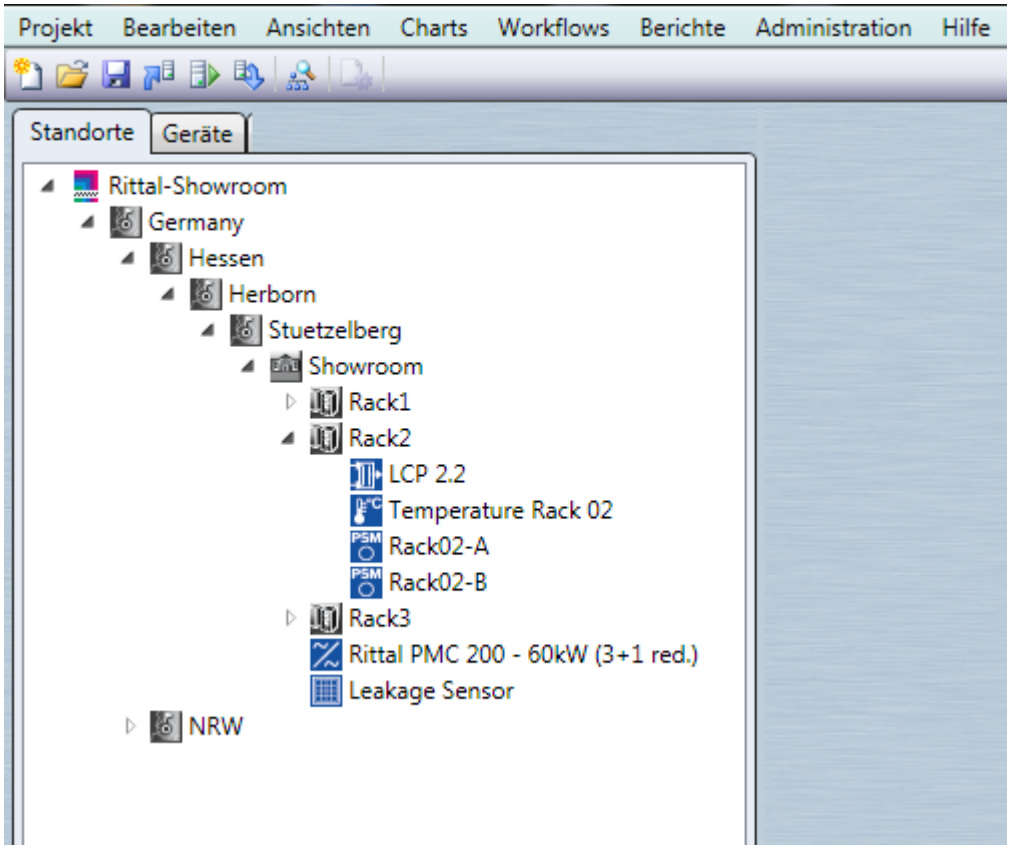

Fig. 17 Project tree with Rittal components

Fig. 17 shows a project tree for which the discovered components have already been added.

Basic configuring is completed once all infrastructure components have been acquired and the active SNMP components added.
The project should now be saved with **Project > Save project** or by clicking the icon.

Note!
The project can be saved only for the selected project tree.

Before saving a project, a component of the devices tree or locations tree must be selected.

7.3 Including third-party SNMP devices (MIB Browser)

To also query data for third-party SNMP devices (non-Rittal devices with SNMP support), as of RiZone version 2.0, the "MIB Browser" function can be used to generate your own driver templates. The function must be enabled with an appropriate licence key.

The MIB (Management Information Base) of the third-party device must also be available. You can normally download the MIB from the device manufacturer's web page.

7.3.1 Creating drivers for third-party devices

In admin mode (configure project), new drivers for SNMP devices can be created from the **SNMP templates** tab.

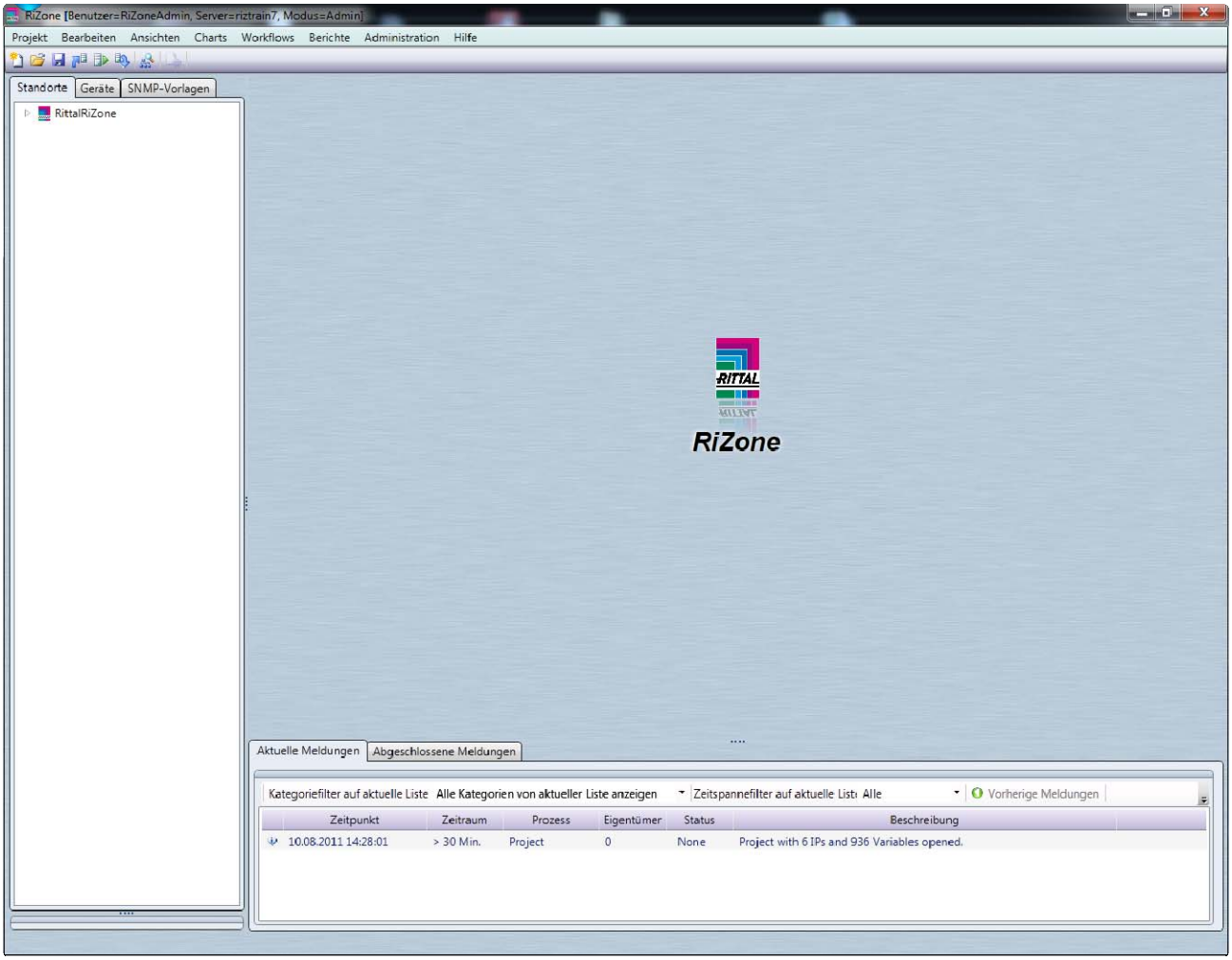

Fig.17b SNMP templates tab

To create a new driver template, first click the **Load SNMP templates** button, right-click the root node in the **SNMP templates** tab and select **Add**.

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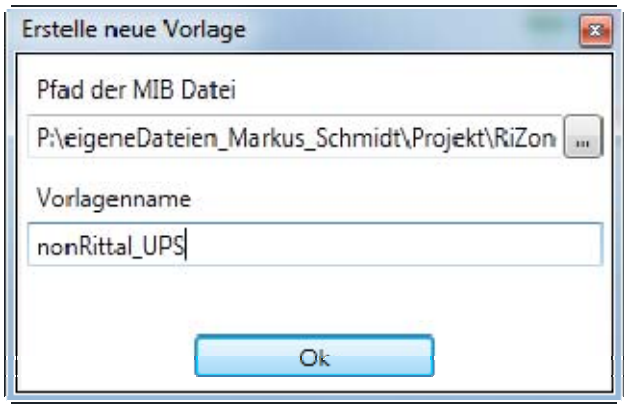

Fig. 17c Creating a new SNMP template

In the dialog that now opens, select the file path for the MIB of the device manufacturer and assign a name for the template.

Note!
MIBs that themselves contain references to another MIB cannot be used.

A two-part window now opens in the main area of the GUI. The device MIB is displayed in a tree structure on the left-hand side.
Now open the tree structure and find those variables (OIDs) whose values you want to query later from RiZone and use drag & drop to move them into the right-hand field.

If tables in the MIB are used for a third-party device for which the index of the table is not maintained, the exact OID in the table field must be added from the RiZone MIB Browser.
You can obtain the complete OID, for example, with the help of an external MIB tool (such as "iReasoning MIB Browser"). The table in the MIB branch must be selected with the MIB tool. A "get bulk" can then be used to fetch all table entries. When the appropriate variable of the table is now selected, the complete OID will be displayed.
The OID is augmented in RiZone in the "Table Rows" window of the RiZone MIB browser. An additional "HowTo" in PDF form is available on our web page www.rimatrix5.com (Service&Support > Downloads > Software area).

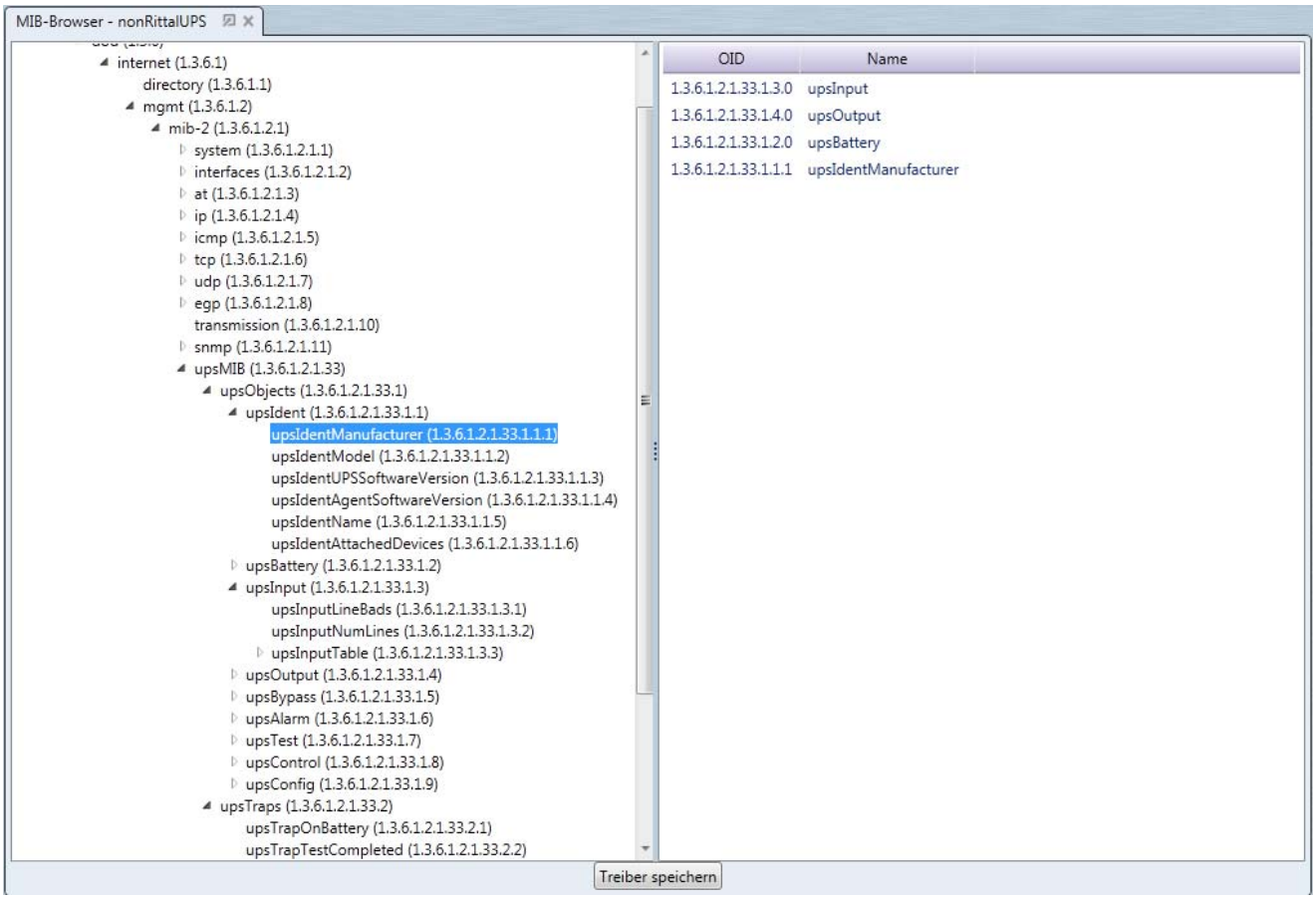

Fig. 17d MIB browser with opened MIB

If you want to delete a variable from the right-hand window, you can do this with a **right-click > Delete**.

Note!
You can obtain the description of the MIB and the meaning of the variables from the device manufacturer.
Because of the large number of available SNMP devices, Rittal cannot provide any information about specific MIBs.

Once you have moved all required variables into the right-hand window, you must now specify the details of the variables in the right-hand window. For details, consult Chapter 7.3.3.
The driver must now be saved and loaded to the server. This is done by clicking **Save driver**.

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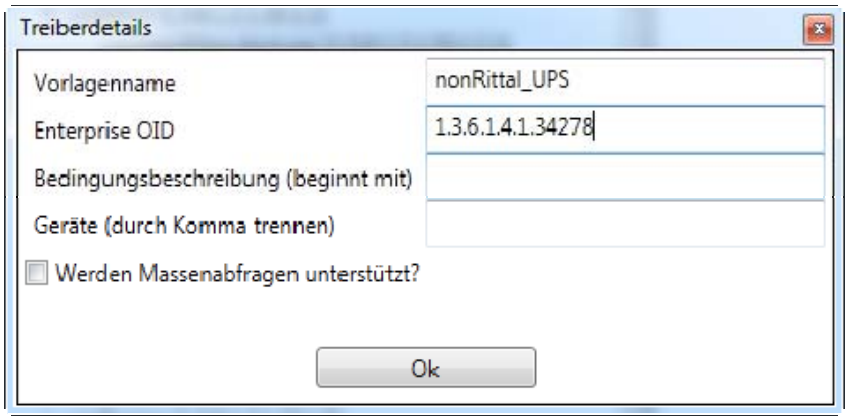

Fig. 17e Driver details

Further data is required before the driver template can be saved.

- **Template name**
  The name of the template with which it will be stored later on the server must be specified in this field. The template name must conform to the general code conventions. This means, the name may contain only alphabetic characters (A-Z, a-z) and digits (0-9), and must start with an alphabetic character. Underscores are also permitted. If the input does not satisfy the specifications, the field will be displayed with a red frame and the **OK** button will be greyed-out.
- **Enterprise OID**
  During the discovery action, the Enterprise OID of the driver will be compared with the "sysObjectID" variable of the device. Only when the Enterprise OID specified here matches that in the device can a device be found during the discovery action.
  Although RiZone normally automatically fetches the Enterprise OID from the MIB, it must always be checked again. If the ID is not fetched correctly, you can normally find the sysObjectID (=EnterpriseOID) in the "private" branch or in the "mgmt >mib-2 > system" area of the MIB.
- **Condition description (begins with)**
  In addition to the Enterprise OID mentioned above, a comparison is also made with the value in the "sysDescr" SNMP variable. However, the variable value does not need to be specified here, but only the start of the character string. A case-sensitive character comparison is made. The description only needs to be specified when several templates should be created for an MIB.
- **Devices (separated by a comma)**
  Character strings to which devices the driver is assigned can be specified in the Devices field. This input is used only to display the device information in the Properties window. Each individual device detail is separated with a comma.
- **Are bulk queries supported? (bulk query SNMP)**
  This checkbox should be activated only when the associated device can supply all configured variable values by bulk query.

Once at least the Name and Enterprise OID fields have been completed, the driver will be created automatically and loaded to the server when **OK** is clicked. The driver template also appears in the template tree structure in the **SNMP templates** tab.

7.3.2 Including third-party SNMP devices in the project

Once the driver has been created, third-party devices can be found with the discovery function and transferred to the project (locations or devices tree). See Chapter 7.2.

7.3.3 Third-party SNMP devices – variable details

Variables found with SNMP templates and included in the project differ from the details of a Rittal device.

You find the variable details of a third-party device variable when you have already moved variables into the right-hand window of the MIB browser. Double-click on the variable to be edited.

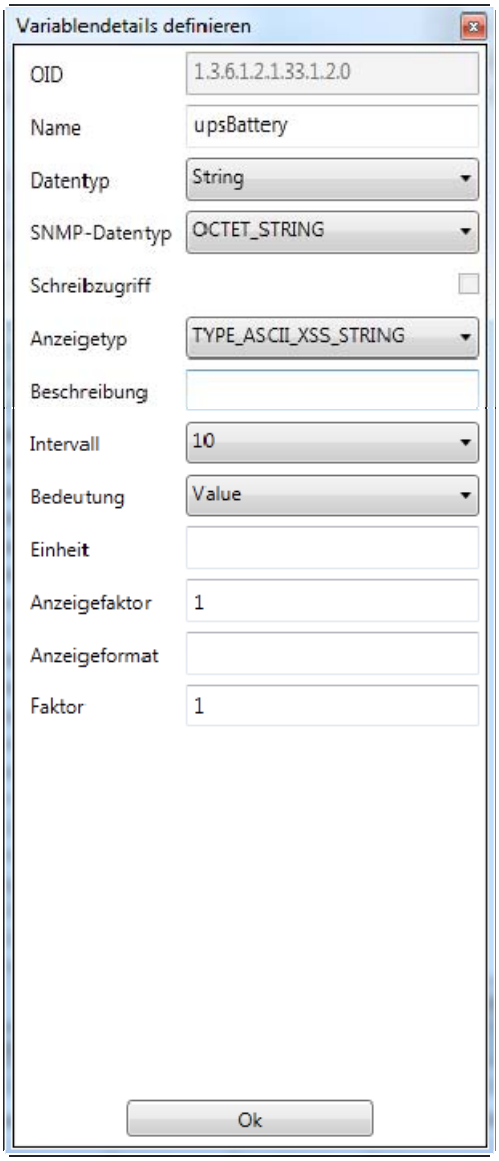

Fig. 17f Variable properties for third-party device variables

Variable property	Description
OID	Object ID of the variable to be polled. It is determined by moving the appropriate variable from the MIB tree.
Name	The name of the variable displayed later in the variable list. It must have a unique designation in the driver.
Data type	RiZone-internal data type. It is used for the visualisation and status evaluation of the variable. **StatusInt** -> Numeric value that RiZone should translate as status. **Float** -> Measured values and setpoints as floating-point number **String** -> Character string
SNMP data type	SNMP standard data types (INT, OCTET_STRING, OBJECT_IDENTYFIER). If possible, the SNMP data type is initialised from the MIB.
Write access	The write access can be selected when a variable can generally be written using SNMP. The RiZone administrator has the capability here to further limit the write rights of a variable.
Display type	The RiZone-internal type used to display the values. The type defines the appearance and behaviour of the Setting window of the variable. **TYPE_ASCII_XSS_STRING** -> A string checked for Cross-Site Scripting (security mechanism to prevent infected source code from being imported). When this display type is selected, Minimum and Maximum define the minimum and maximum character length, respectively. If it should be possible to set the value, these must be specified appropriately. **TYPE_FLOAT** -> Set a floating-point value **TYPE_PASSWORD** -> Passwords are displayed as asterisks. Combo-values are stored separated with a comma. The first value is the selected default value; the various selection possibilities follow.
Interval	The specification in which time intervals RiZone should cyclically poll the variable. The time is specified in seconds.
Meaning	The meaning defines the access to the variable. The meaning is used to automatically assign the appropriate right to the variable. State and Value are assigned the "Read" right. Service is assigned the "Configuration" right. The Set buttons are also created using this setting: they are displayed only for variables with the Setting, Configuration, Execute or Service meaning and then only when the write access is activated for this variable. **State** -> The variable will be translated as status variable. Integer values are translated to the OK, Warning or Alarm status. If State is selected as meaning in the combobox, three additional input fields appear for the default values of the status translation. One or more

	unsigned integer values can be entered for each field. The inputs must be separated with a semicolon or a minus (input of a range). Note: "String" must be selected as display type. **Value** -> Values that can only be displayed (example: text items or temperature values). **Setting** -> Setting variables can be written from the GUI to the SNMP device. If Setting is selected in the combobox, limits must also be entered in the Minimum and Maximum fields. These define the settable range and the standard axis section for the chart. A step size must also be assigned that specifies in which step intervals the variables can be set (example: 0.5). This type is assigned in the rights assignment to the Setting right. **Configuration** -> This type is assigned in the rights assignment to the Configuration right. **Service** -> This type is assigned in the rights assignment to the Service right. **Execute ->** This type is assigned in the rights assignment to the Execute right. Setting, Configuration, Service and Execute are configurable variables in RiZone and are displayed with the **Set** button provided the Write right has been assigned. All other types are assigned the Read right.
Stepsize	This field specifies the minimum distance between the values that can be set. It is used only when SNMP values are also marked as **settable**. The distances can be specified as Float number; that means, also contain decimal places. This field does not have any effect on the display of the values but only on the Setting dialog. It is displayed only when the write access is selected and Setting, Configuration, Service or Execute specified as meaning.
Unit	The string that can be entered here is used to display in which unit of measurement a value should be displayed on the GUI. (Example: °C, V, kW, ...).
Display factor	The display factor specifies a multiplier with which the data value stored in the database is converted before it is displayed on the GUI. The factor can be specified as Float number. The display factor is called Factor in the variable list of the GUI. Example: convert power value from W to kW with the factor 0.001.
Display format	The format strings that can be specified here effect the display of the values on the GUI. Examples (value = 1000000): 0 – placeholder: 0:00.0000 – result: 1000000,000 # – digit-placeholder: 0(#).## – result: (1000000) . – decimal point: 0:0.0 – result: 1000000,0 % – percentage value: 0:0% – result: 1000000% f – fixed-point value: 0:f – result: 1000000,00
Factor	The factor defines the multiplier with which the fetched SNMP value is written in the database. It can also be

	specified as Float number. Example: voltage value with one decimal place (230.2V -> SNMP value 2302) -> specification factor: 0.1.
Minimum	The minimum value for which settable values can be set later by the user in a device via SNMP. For strings, the value defines the minimum number of characters that must be entered; for numbers, the minimum numeric value that can be entered. For measured values, this value defines the default entry for the smallest value showed in the chart (Min-Y).
Maximum	The maximum value that can be set. For strings, the value defines the maximum number of characters that may be entered; for numbers, the maximum numeric value that can be entered. For measured values, this value defines the default entry for the largest value showed in the chart (Max-Y).
Group	Classification of variables into a category of infrastructure functions. The following can be selected: - Cooling - Power - Monitoring - Security The assignment to a functional area is of particular importance for the evaluation of status variables. Graphics change their colour depending on the status only when the variable is assigned to at least one functional area. The status value is also included in an overall status of the functional area. The selection is used and displayed only for status variables.

7.3.4 Deleting a template

A template can be deleted in the SNMP template tab. To do this, right-click the template to be deleted and then select **Delete** in the context menu. The subsequent delete prompt must be confirmed with **OK**.

Note!
After the deletion, no new devices can be discovered using the template.
After restarting the GUI, existing devices in the project will also no longer be displayed!

7.3.5 Changing an existing template

To change an existing template, right-click the template in the SNMP templates tab and select **Edit**. The MIB associated with the driver and the variables selected for the driver now opens in the main window. These variables can now be augmented, changed or deleted. The driver must then be saved again with **Save driver**.
The changes affect only those devices discovered after the change.
If the template name is changed when the save is made, a second template will be created with the new name. The old template is also retained.

Note!
Drivers must be unique. If a second driver should be generated from the same MIB, the device assignment must be made uniquely using the "Condition description (begins with)".

7.3.6 Creating a template symbol for views

You can create for the created template a standard symbol that can be added later to the views in the project and then behaves similarly as the supplied symbols for the Rittal components.
To create a standard symbol, right-click the required template on the SNMP templates tab and select **Symbol**.
The View editor now opens in which you can construct the standard symbol from the following components:

- Polygons
- Variables
- Free text

The creation is performed similarly as the creation of a normal view (see Chapter 8.6).

Once the symbol has been created, the editor must be closed with **View > Save view**. A red exclamation mark now appears after the template in the SNMP templates tab, because the template itself has not yet been saved in the current configuration.
Save the template with **right-click > Save**.

7.3.7 Creating standard charts

The Standard Charts function can be used to create charts for the template that are created automatically with each device moved into a project.
To create a standard chart, right-click the required template on the SNMP templates tab and select **Standard Chart**.
The Chart editor now opens in which you can create charts similar to the creation of a normal chart (see Chapter 9). Only the variable source no longer needs to be selected with drag & drop. You have direct access to all numeric and Boolean variables that have been defined in the template.

The standard chart must be saved with **Charts > Save charts**.
A red exclamation mark now appears after the template in the SNMP templates tab, because the template itself has not yet been saved in the current configuration.
Save the template with **right-click > Save**.

Note!
If a standard chart is added subsequently to a driver, the appropriate devices must be rediscovered and with pressed Alt key dragged to the "old" devices. To activate the chart, a new chart must be created and edited. The standard chart settings can then be accepted with "Charts > Load standard charts". This procedure prevents an existing, individual chart from being automatically overwritten by the default chart.

7.4 Editing components

All functions listed here are available in Admin mode for RiZone.

7.4.1 Deleting components

Right-click the component to be deleted and select the **Delete** item in the context menu.

The component will be deleted immediately from the view.

If a device is deleted in the **Locations** tree, it is still present in the project and in the **Devices** tree. If, however, a device is deleted in the **Devices** tree, it will also be deleted in the **Locations** tree. Calculations that contain a variable of the deleted component will be deactivated. Both messages will be displayed in the GUI message window.

7.4.2 Copying infrastructure components

Right-click the component to be copied and select the **Copy** item in the context menu. Then select in the locations tree the infrastructure components with a left mouse-click under which the copied component should be added. Then **right-click the component > insert**. The previously copied component now appears as copy under the previously selected position in the tree. Note that only infrastructure components but no sensors / active components can be copied with the function.

7.4.3 Transferring a component from the devices tree to the locations tree

Components used only in the devices tree but not in the locations tree can be transferred to the locations tree with the **Add to locations** function.

To do this, right-click the component in the devices tree and then select **Add to locations**. The component will then be added at the end of the project in the locations tree from where it can be moved to any position in the project with drag & drop.

7.4.4 Counting IP nodes

The **Number of IPs in the project** function can be used to determine the number of IP nodes used in the project. This is useful, for example, when you want to add new devices to the project and want to check beforehand whether the licence key provides sufficient free IP nodes.

To determine the used IP nodes, switch to the devices tree, right-click the root node and select the **Number of IPs in the project** function. The number of used IP nodes will now be displayed.

7.5 Starting a project

Before a project can be started, it must first be uploaded to the server. This is done from the **Project > Upload to server** main menu or with the icon. The prompt whether the project should be uploaded must be confirmed. The upload to the server has completed once the "Validation completed, the project has been uploaded to the project folder" message appears in the message list.

The created RiZone project will now be performed on the server and so all active components also fetched using SNMP and any created workflows performed.

Project > Start project or is used to switch the RiZone client to view mode. The live data arriving at the server can be displayed in view mode. In this mode, the user also has access to the historical values that have been collected since the start of the project. These values, for example, can be displayed using charts.
All project start messages are listed in the message list. The prompt whether the project should be started must be confirmed.

7.6 Editing a project

If necessary, an existing project can be changed. To edit the project, the user must be in GUI admin mode. The project can be downloaded from the RiZone server or opened locally from the hard disk. The project is downloaded from the **Project > Download from server** main menu or with the **icon.** The project can now be edited.
The original project will continue to run until the modified project has been uploaded to the server. The editing of the project does not affect any other users.

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7.7 Displaying values and variables

Once the project has been started, RiZone can be used to easily display all available values that the individual components supply.

CMC-TC sensor example:

- Right-click the required sensor (locations tree or devices tree) in the left-hand window.
- Select **Variables** in the context menu.
- The sensor variables will now be listed in the View window (right-hand side). All acquired values (in Fig. 18, the temperature) and the settings (SetHigh, SetLow, SetWarn) will be output.

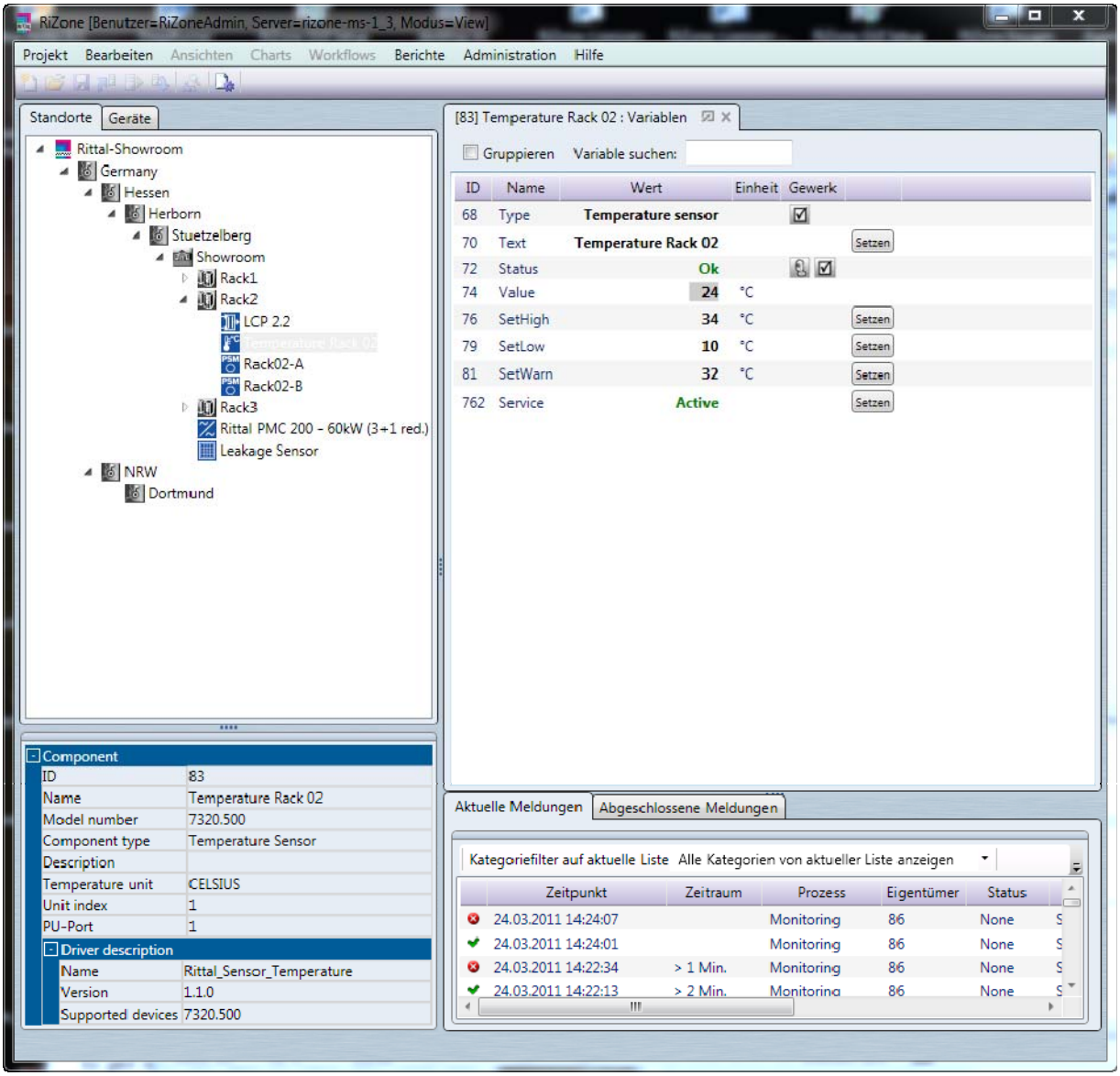

Fig. 18 Output values in the started project

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If the variables of a higher-level component (e.g. room or enclosure) are fetched, a list with all sensors, PSM busbars, etc. assigned to the component opens in the View window. A click on the arrow in front of a sensor then shows its values.

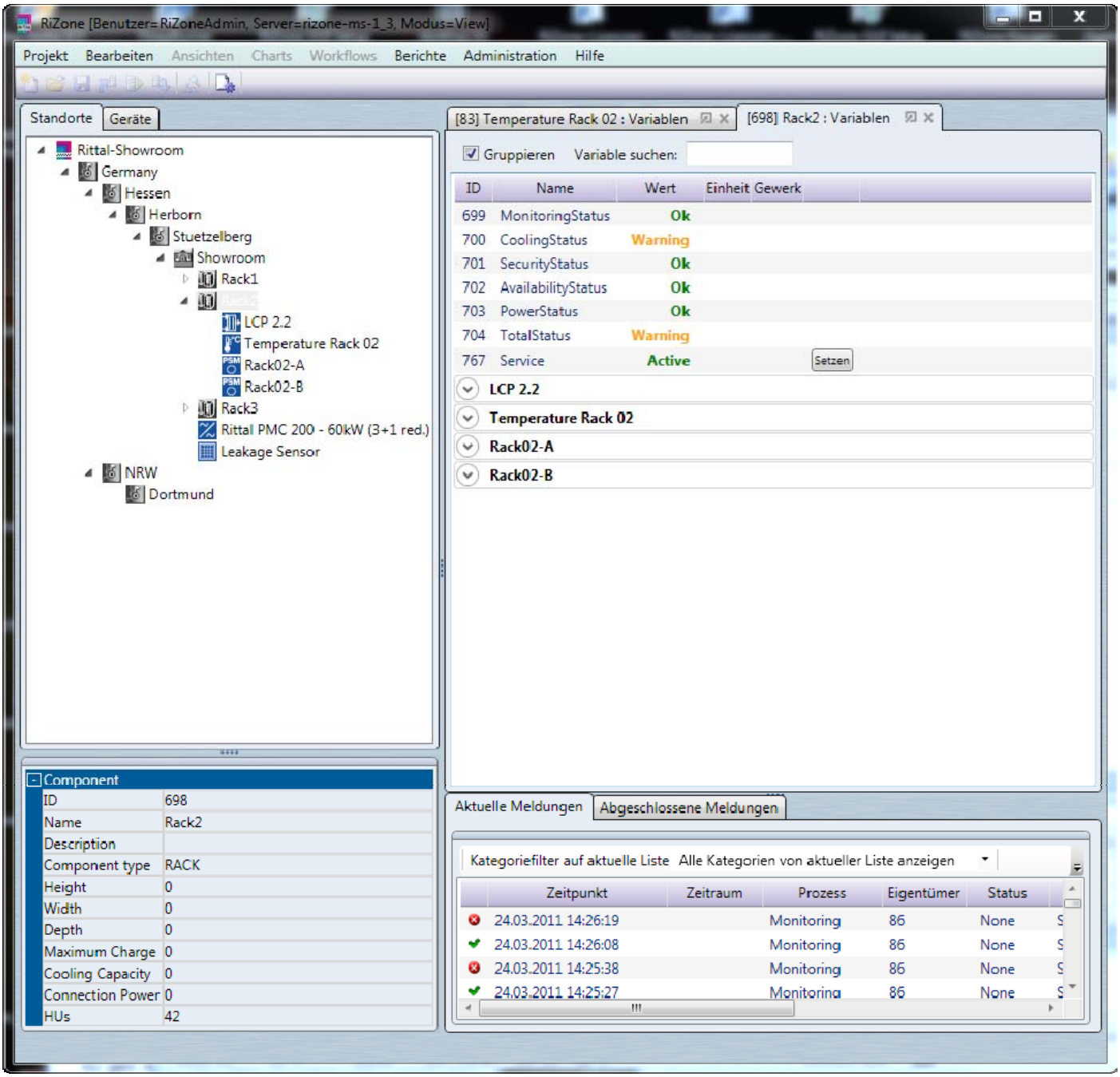

Fig. 19 Variables of an enclosure (Rack1)

The Monitoring, Cooling, Security, Availability and Power status variables describe the status of the associated groups of this infrastructure component.

TotalStatus provides the overall status of the infrastructure component over all groups.

The Service variable can be used to set individual devices or complete branches in the maintenance mode. Devices in maintenance mode are not used to determine the status.

7.8 Displaying values from the website

An alternative means of displaying sensor values involves calling the website of the components.

A right-click on the component and the selection of **Open website** opens a browser window in which the website of the component (e.g. CMC-TC Processing Unit II) is called.

Note!
The following functions are available only when you are in admin mode.

Log in with a user who is member of the RiZone administrators group.

Note!
Changes take effect only after the project is uploaded.

Save the project and upload it to the server.

7.9 Creating a new variable

Variables can be created in RiZone. These variables are assigned to an infrastructure component (e.g. room, enclosure, etc.).

A new variable is created by right-clicking in the variable view and selecting the **New variable in [location]** item in the menu.

Input possibilities for creating a new variable

Name	Name of the variable
Description	Description of the variable
Type	**Float** and **StatusInt** are possible as variable type. Float is used when a (float) numeric value is stored in the variable, StatusInt for status variables. **Important note:** The variable type can be selected only when the variable is created. A subsequent change is not possible.
Publish	If set, the variable will be passed to the Messaging Service. The variable can now be fetched via SNMP by a different system and the variable will be transferred to SCOM, if the Management Pack is activated. **Note:** **The number of variables that can be transferred to the SCOM is limited because of the interface of the SCOM. A maximum of 100 variables or 10 variables can be transferred to the SCOM when performance counters or SCOM SDK are used, respectively!**
Interval	Specifies the calculation cycle (in seconds). **Off** means that the variable will be calculated once after the project is uploaded.

Meaning	The meaning of the variable (undefined, state, value, setting, configuration, service, protected, execute). "Value" should normally be selected here.
Physical measurement quantity	Specifies the measurement quantity of the variable.
Unit	Specifies the unit of the variable.
Display factor	Display factor of the variable
Display format	**,n:m** where n specifies the number of digits before the decimal point and m the number of digits after the decimal point. Example: ,5:0.00 -> five digits before the decimal point and two digits after the decimal point.
Group	Selection of the group of the variable. The selection of the group affects the group status variables of the component to which the variable in the project is assigned. If the variable is assigned to a group and changes its status, the group status variable of the higher-level infrastructure component also changes its status to that of the variable (Exception: Another variable has already raised the status of the group status variable to a critical status).

7.10 Editing a variable

Variables can be edited in RiZone. A variable is edited by being right-clicked and the **Edit variable** item selected in the menu.

The variable name and the physical measurement quantity cannot be changed.

7.11 Deleting a variable

Variables you created in RiZone can be deleted. A variable is deleted by being right-clicked and the **Delete variable** item selected in the menu.

Note!
Only those variables you created yourself can be deleted.

7.12 Calculating a numeric variable

RiZone can calculate variables. The four basic arithmetic operations, brackets and Boolean algebra can be used as mathematical operators. Self-created variables (**Float** type) can be used to link variable values mathematically, for example, those supplied by sensors. The self-created variables can then be used further within RiZone, for example, for display in charts or in workflows.

7.12.1 Selecting a variable

Only self-created variables of the **Float** type can be calculated. To select the variable, the variable view of a component must be opened in admin mode. A right-click opens the context menu of the variable and selects the **Calculate variable** entry.
The **Calculate <variable name>** menu opens.

7.12.2 Selection of the component for calculating the variable

The component is selected using drag & drop. The component that contains the variable required for the calculation is selected in the project tree. Drag the component to the **Component** field in the variable calculation window; you then have access to all available values of the component.

Note!
Only those components that contain numeric variables can be selected.

7.12.3 Selection of variables

Once the component has been selected, all variables will be displayed in the window. These variables are selected individually and with the **Down arrow** button transferred to the variable list. Only numeric variables can be selected.

7.12.4 Transfer of the variables to the formula field

A variable is transferred to the formula field by being marked with the left mouse button and transferred to the formula field by copying the variable with **Ctrl-C** and pasting the variable with **Ctrl-V**.

7.12.5 Creating the formula

The mathematical expression can be created in the formula window. The four basic arithmetic operations, Boolean algebra and the setting of brackets are available.

7.12.6 Checking the calculation

RiZone checks the formula for mathematical correctness. If the formula is correct, it can be saved. The check is initiated by clicking the **Validate** button.

7.12.7 Saving the formula

If the formula has been validated successfully, it can be saved. To start the calculation, the project must be loaded to the server.
The formula is saved by clicking the **Save** button.

7.13 Calculation of a status variable

In addition to the normal variables that contain numeric values, status variables can also be created. Although status variables can be created on any infrastructure component (see 0), **StatusInt** and **state** must be selected as type and meaning, respectively.
The status variables can assume the values: **1**, **2**, **3**, **4** or **ok**, **warning**, **alarm** or **undefined**, and will be calculated in the following form:
if <number || variable> <operators> <number || variable> then

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<1||2||3||4||ok||alarm||warning||undefined> else
<1||2||3||4||ok||alarm||warning||undefined>

Example: **if VAR_4711 > 30 then ok else alarm** or
if VAR_4711 > 30 then 2 else 4

A space must be present before and after the operator.
The use of the **and**, **or**, **not** logical operators is also possible. These operators must always be used with Boolean operators, such as:
if not(a > b and c != b) then 1 else 2
or
if (a < b) and (c == d) then 1 else 2
or
if (((a + b) < c) or ((x - y) == z)) then 1 else 2

The calculation could have the following form in practical use:
if VAR_4711 > 30 and VAR_0815 < 40 then 1 else 2

Important!
The calculation of a status variable must always contain the *if .. then .. else ..* command structure!

7.14 Export/import project

The **Project > Export project** and **Project > Import project** functions can be used to transfer projects to other servers.

Export project
An uploaded project can be exported. This also stores the ClientRegistration.txt and NameRegistration.txt files in the project file.

Import project
This function can be used to import an exported project to the same or another RiZone server (with the same version number). This deletes all entries in the database (ClientRegistration and NameRegistration) and replaces them with the registrations from the imported project.
Using the import/export function, projects can be ported between different computers.
For this purpose, the two NameRegistration.txt and ClientRegistration.txt files are also uploaded when a project is uploaded and the entries written to the database when the RiZoneCore service is restarted. A check is also made to ensure that the project, the settings of the Communication Module and the DB match. These registrations make the project also operational on servers on which the devices were not detected previously with the discovery function.
This differs from the save/open project by the registration database entries also being saved.

Note!
After the import of a project, it is possible that other projects of the server that were saved with the "Save project" function will no longer operate correctly. If you want to reuse these projects later, you must save them previously with the "Export project" function.

Note!
Self-created SNMP templates are not transferred when a project is exported. If a project that contains SNMP templates for third-party devices is "moved" to a different server, third-party SNMP devices on the new server will not be recognised.

EN

8 Views

The views can be used to create graphical representations of your complete infrastructure components.

Views can be created for each component in the locations tree. A differentiation between the lateral view and the plan view is made for the representation of the views. Whereas the location, building and room component types have a plan view, the enclosure suite and the enclosure have a lateral view.

Customised graphics (e.g. the floor plan of a computing room) can be created for plan views. The graphic can be manually overlaid with active buttons that indicate the status of the components. For the lateral views, the corresponding graphics of the enclosures and components are already present in RiZone and only need to be assigned appropriately to the project. The views are configured in admin mode.

Note!
Status variables must be assigned to a group so they can be evaluated coloured in the view.

8.1 Creating a new view

The selection of the **Views** menu item creates the view for a component. Only the view for one component can be edited concurrently.

The view opens in edit mode in the main view of the GUI.

A view is created by right-clicking the component icon. A context menu now opens and the **View** function can be selected. Alternatively, moving the mouse over the component displays five icons. The second icon from the left opens a new view.

The new view must first be scaled before it is created. This function can be used to create scaled views on the component level because all RiZone components exist as SI units.

Scaling is made in mm and can be given a scale.

8.2 Editing a view

A previously opened and stored view is opened for editing by calling the **Edit view** function in the **View** menu.
The opened view has a pink frame that indicates the editing mode.

8.3 Loading a background picture

A right-click in the view window opens the dialog for loading a background picture. Call **Load background** to open the **Open file** window from which a .jpg format file can be selected. The file size of the picture may not exceed 1 MB.
The background picture will be created.

8.4 Assigning a component to a drawing

A component is assigned to a drawing by dragging in the drawing. The mouse can be used to place the component anywhere in the view.

8.5 Saving the view

A view is saved by calling the **Save view** function in the **Views** menu.

8.6 Operating the views editor

The views editor provides the following functions:

	Zoom
	Rotate
	Draw polygon
Text	Add text
V	Display variable in the view
	Undo
	Step forwards

8.6.1 Zoom

The zoom function can be performed by clicking the **Magnifying glass** icon or by pressing the **Ctrl key** and using the **mouse wheel**.

Selecting the **magnifying glass** activates the zoom function. It is now possible to zoom a rectangle from the view. A subsequent right-click restores the original size.

A view can be zoomed by pressing the **Ctrl key** and the **mouse wheel**. The view must be clicked to perform this function. The zoom function is then available. Pressing the right mouse button restores the original size. When the mouse wheel is turned forwards, zooming is made into the view; when the mouse wheel is turned backwards, zooming is made from the view.

8.6.2 Rotate

A component is rotated in a view always at the centre of the selected component. The **Rotate** icon is a sector of a circle with arrow . The component is selected in the view and then the **Rotate** icon selected. Once the rotate function has been selected, the component can be rotated.

EN

8.6.3 Polygons

The RiZone editor can be used to draw a polygon and then assign this polygon to a RiZone infrastructure component. The polygon in the drawing uses the colours green, yellow and red to indicate the three OK, warning and alarm states of the component, respectively.

Note!
Status variables must be assigned to a group so they can be evaluated coloured in the view.

The **Polygon** icon is used to activate the drawing of a polygon. A left-click can now be used to add a corner of the polygon. A double-click closes the polygon.

A drawn polygon can be edited in drawing mode. Individual corners can be moved or corners added (arrow cursor and **Ctlr right-click on a line**) or deleted (arrow cursor and **Ctrl right-click**).

A polygon can be assigned to a component in the component tree. Please proceed as follows:

1. Mark the component in the locations tree.
2. Keep the **Alt** key pressed.
3. Now drag & drop the marked component to the required polygon.

If the action completed successfully, the polygon colour changes to green.

8.6.4 Displaying free text in a view

The **Text** function can be used to display any free text items in a view.
The view must be open in edit mode. Click the **Text** icon in the editor toolbar. Then click the view position where the text should be displayed (the placement can be changed subsequently). A text input window opens. Enter the required text and click **OK** to confirm.
Once the project has been loaded onto the server, the text will be displayed in the view.

8.6.5 Displaying variables in a view

The **V** function can be used to display any variable values in a view.
The view must be open in edit mode. Click the **V** icon in the editor toolbar. Then click the view position where the values of the variable should be displayed (the placement can be changed subsequently). A variable selection window now opens. Move a sensor or component with drag & drop into the variable field. You now have the selection of all values of the sensor or the component. Select the required values and click **OK** to confirm. Once the project has been loaded onto the server, the variable value and the unit will be displayed in the view.

8.6.6 Undo

The **Undo** function can be used to undo the creation steps.

8.6.7 Restore

The **Restore** function undoes the undo function.

8.6.8 Multiple selection

A multiple selection of components is possible by drawing a frame around the components to be selected. The selected components are coloured.

8.6.9 "Go to" and "Open website" functions

View mode: If a view is open, a right-click on the individual components (e.g. PSM busbar) calls a context menu. Depending on the component and the configuring, none or one of the **Go to** or **Open website** options appears here.

Go to

The view of the clicked infrastructure components opens. This is possible only when the view was created previously in admin mode.

Example: In the multiple-enclosure view, a right-click is made on a specific enclosure and **Go to** selected. The enclosure view (provided created) of the selected enclosure now opens.

Open website

A right-click on a sensor connected to a Processing Unit II or an LCP opens the context menu with the **Open website** option. The selection of the **Open website** item opens in the standard browser the website of the Processing Unit II that belongs to the sensor.

8.6.10 View list

The view list of a component can be called from its context menu (right mouse key).

In admin mode, existing views can be edited or new views created in the view list.

In view mode, a selection from the existing views can be made. A double-click on the view opens it.

EN

9 Charts in RiZone

The chart function can be used to display measured values graphically in RiZone. It is possible here to display several values in a diagram.

Charts must be grouped in admin mode. When the project is started, the created charts can be called and then show the current and historic acquired values.

The chart list shows all charts assigned to the infrastructure component. The context menu (right-click), new charts can be created or existing charts renamed or deleted.

9.1 Creating charts

Charts are linked to a component (sensor, PU, LCP, etc.) or an infrastructure component (location, building, room, enclosure suite, enclosure) during their creation. For a started project, these charts can then be called using the appropriate (infrastructure) components.

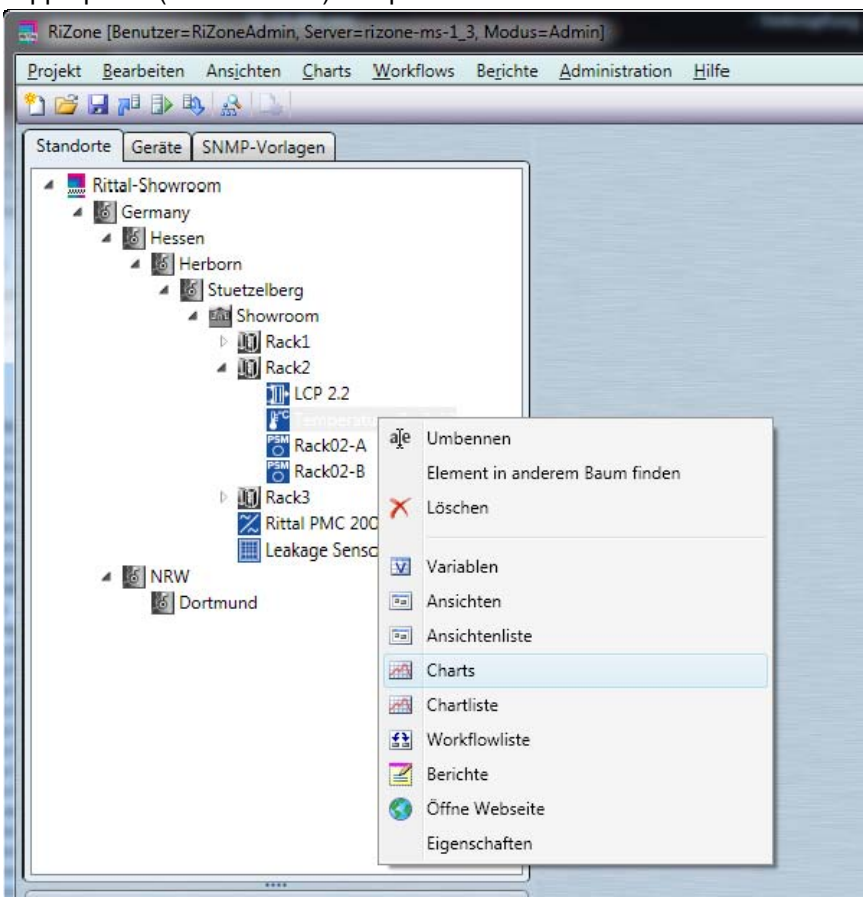

Fig. 20 Creating a chart

To create a new chart, right-click the component with which the chart is linked and select **Charts** or **Chart list**. The chart list shows all charts assigned to the infrastructure component. The required chart can be selected with a double-click from this list.

The chart configuration now opens in the View window.

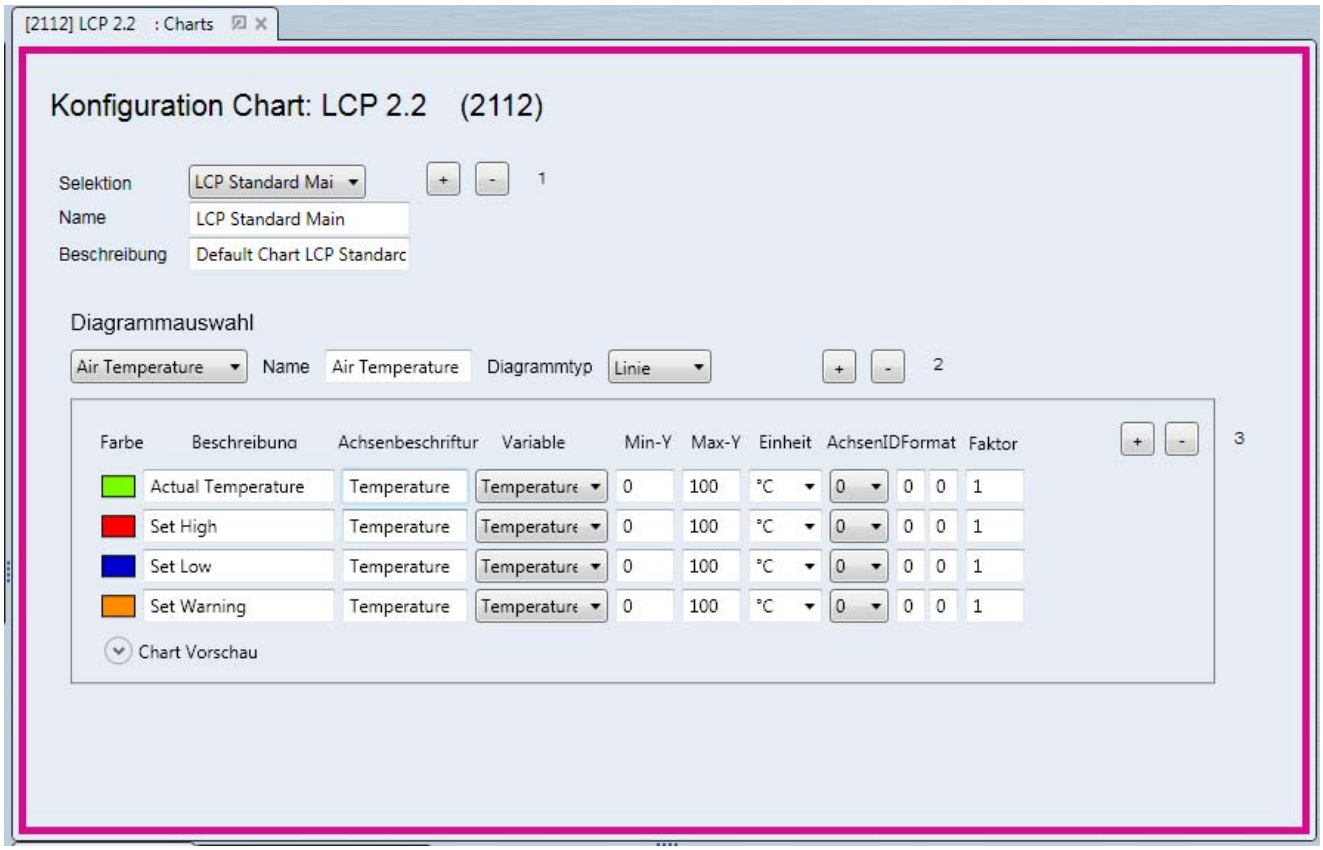

Fig. 21 Chart configuration

Legend

1 Add/remove a new chart
2 Add/remove a diagram within a chart
3 Add/remove a variable to/from a diagram

Input possibilities in the chart configuration

Name	Name of the chart
Description	Description of the chart
Name	Diagram name
Diagram type	Representation of the values in the diagram as line, pie or bar chart (Gantt)
Colour	Measuring curve colour. Clicking the colour opens a colour selection palette that can be used to specify the colour for this measured value.
Description	Description of the measured value
Axis caption	Title of the Y-axis for this measured value
Variable	The measured value to be displayed is selected here. Drag & drop a component from the project tree to the **Variable** field. The drop-down menu can then be used to select all available measured values of the selected component. This value will then be displayed later in the diagram.
Min-Y	Minimum value of the Y-axis. It should be adapted to the expected minimum value of the selected measured value.

Max-Y	Maximum value of the Y-axis. It should be adapted to the expected maximum value of the selected measured value. If Min and Max = 0 are specified, an automatic scaling will be performed.
Unit	Unit of the acquired measured value
AxisID	Selection of the associated axis. If several units are used, each unit has its own axis.
Format	1st field: Minimum number of digits before the decimal point (permits the alignment of the measured values under each other in the diagram legend) 2nd field: Digits after the decimal point
Factor	Scaling factor for the measurement curve and legend. Can be used, for example, to output energy values in kW rather than watts.
Chart preview	Displays a preview of the configured chart.

The **+** and **–** buttons can be used to add or remove values to/from the chart. Click **+** to add a new configuration row. These values can originate from different components. This allows the very flexible creation of individual charts.
A click on **–** removes the marked measured value row from the chart configuration.

The drop-down main menu can be used to discard any changes that have been made. To do this, select **Charts > Reset chart**. RiZone contains standard charts for some components (LCPs). They can be restored at any time with **Charts > Load standard charts**.

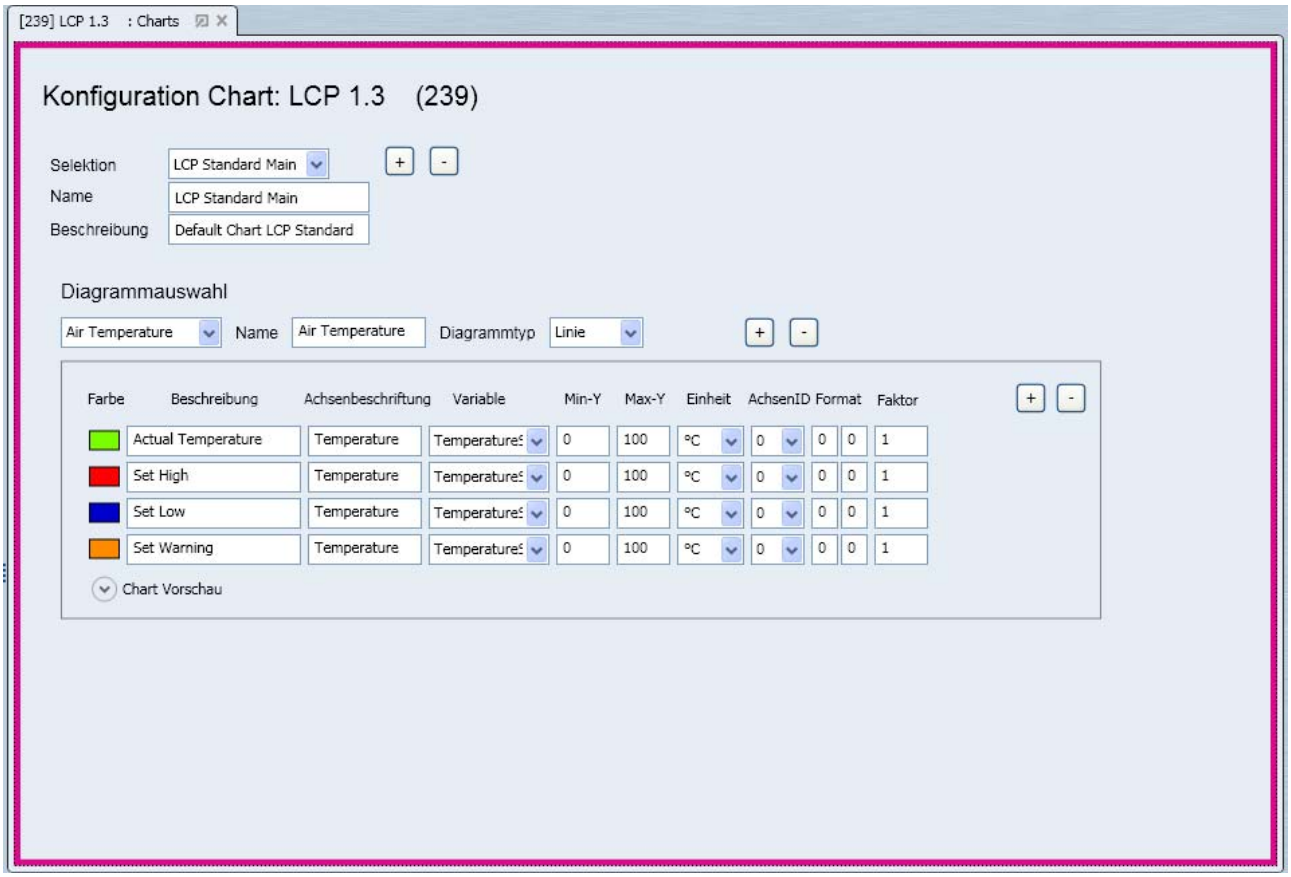

Fig. 22 Chart configuration example

Fig. 22 shows an example configuration for an LCP chart that shows the LCP temperature (green), the high temperature warning threshold of the LCP (red), the low temperature warning threshold of the LCP (blue) and the warning temperature warning threshold of the LCP (orange).

EN

9.2 Displaying a chart

Once the chart has been configured, the chart together with the complete project can be loaded to the server (**Project > Upload to server** or). The chart can also be fetched when the project is performed (**Project > Start project** or).

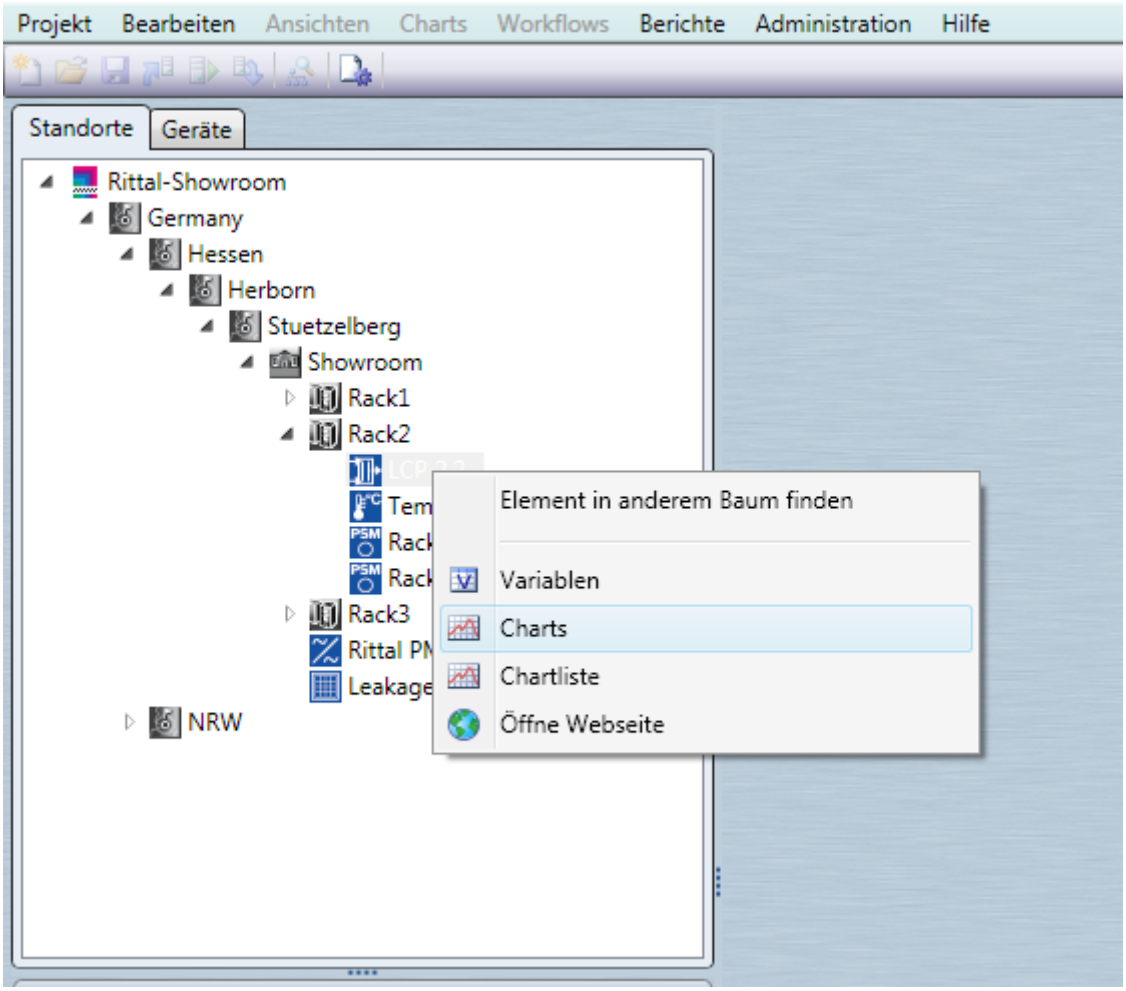

Fig. 23 Fetching a chart

To do this, right-click in the project tree the (infrastructure) components to which the chart was linked for the configuration and select **Charts** or **Chart list**. If **Chart list** was clicked, the chart still to be edited must now be selected.

The chart opens in the View window and the values supplied by the components to RiZone are shown.

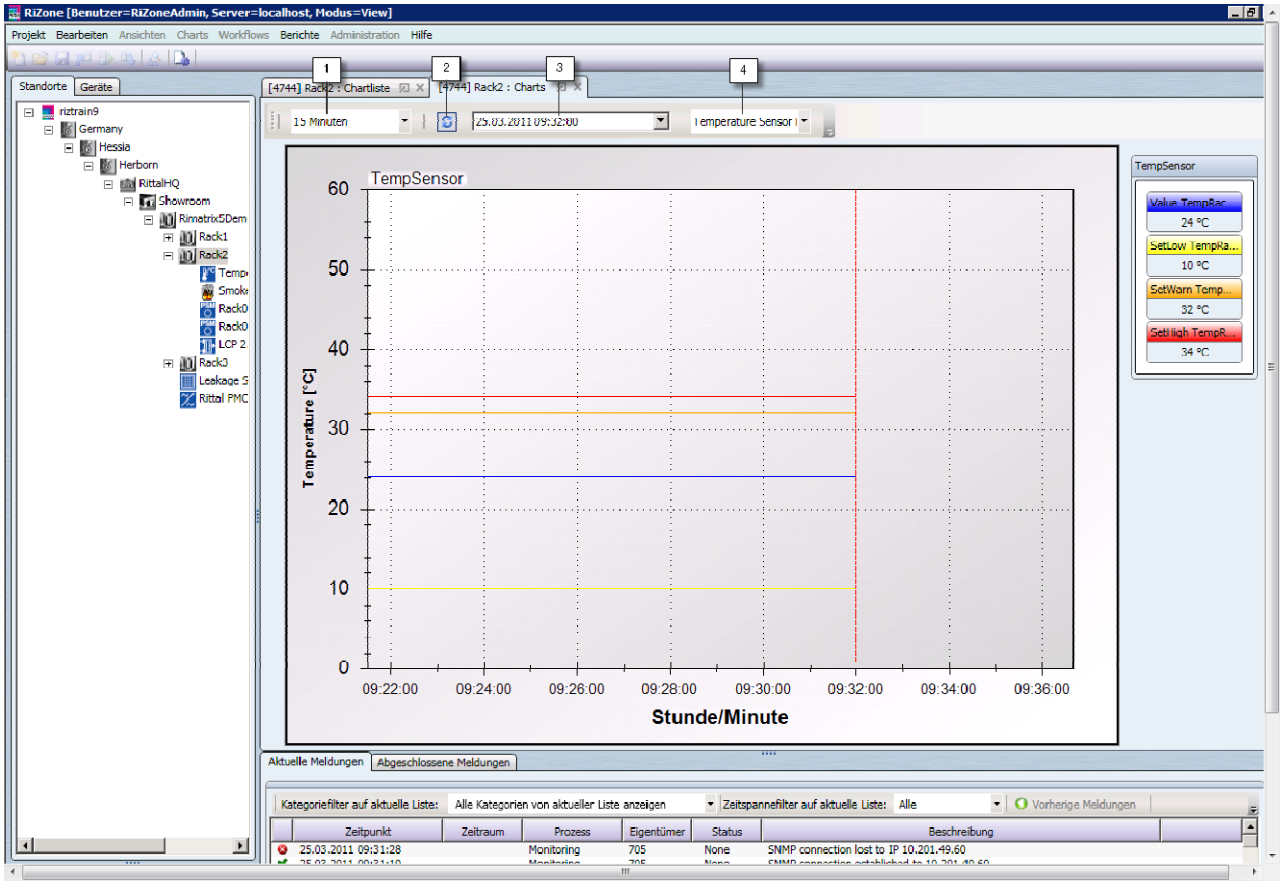

Fig. 24 Chart representation for the started project

The elements in the uppermost line of the chart window can be used to set the representation interval of the chart.

1	**Interval**	The time interval of the chart display can be selected here (15 minutes, hourly, daily, etc.).
2		Updates and sets the cursor to the current value in the chart.
3	**Time**	The date and the time when the chart display should begin can be specified directly here.
4	**Chart selection**	If several charts were created for the component, it is possible to switch between the individual charts here.

10 Workflows

10.1 Operation of the workflows in RiZone

The workflows in RiZone are used for the automatic processing of conditional actions. The actions involve the setting of values using SNMP, the sending of e-mails and the parameterised call of external programs. The values of the monitored devices collected by RiZone or the variables calculated by RiZone can be used for the conditions that determine the execution of an action. Once a workflow together with a project is uploaded to the server, the workflow becomes active and will be executed by the server.

10.2 Creating a new workflow

A workflow is always assigned to an infrastructure component (room, enclosure suite, etc.). Each workflow, however, always has access to all sensor values of the project and not just to the values assigned to "its" infrastructure component.

To create a new workflow, right-click the infrastructure component and select **Workflow list** in the context menu.

The overview window for all workflows of the component (workflow list) now opens. A right-click on **New** in the workflow list creates a new workflow. Enter a name for the workflow and click **OK to confirm.** The new workflow will now be shown in the list and can be edited.

10.3 Deleting a workflow

To delete an existing workflow, right-click the infrastructure component and select **Workflow list** in the context menu.

The overview window for all workflows of the component and the logically subordinate components now opens.

A right-click on the workflow to be deleted opens the associated context menu. Select **Delete** to delete the workflow.

Click **Yes** to confirm the delete action.

The workflow will now be deleted. To also delete the workflow on the server, the updated project must first be uploaded to the server (see Upload project).

10.4 Editing a workflow

To edit a workflow, right-click the infrastructure component and select **Workflow list** in the context menu.

Right-click to select the workflow to be edited. The associated context menu opens. Select **Open**.

The graphical workflow editor now opens.

The pink frame of the workflow editor window indicates the edit mode. The editing is completed with the **Workflow > Save workflow** drop-down menu (the pink frame vanishes). To return to the edit mode for an open workflow, select **Workflow > Edit workflow**.

The workflow can now be formed using workflow modules (see Workflow modules section). To create a workflow, click the required modules in the module bar which then appear immediately on the workflow work surface. After the first click on the icon, it appears on the work surface, brought to the correct position and released with a left-click.

A double-click on an icon opens the associated properties menu. The properties of the module can then be configured (for details, refer to the Workflow modules section).

10.5 Structure of a workflow

A workflow consists of various modules (refer to Workflow modules section) connected with each other using arrows (directed edges). The arrow direction also specifies the flow direction through the workflow.

During the creation, ensure that:

1. Just one start symbol exists.
2. At least one end symbol exists.
3. All modules have just one successor (= outgoing arrow). The Event Gateway and Data Gateway are exceptions. These elements can have several successors.
4. All symbols are connected with each other using arrows.
5. At least one action must be defined.

A workflow will be validated for correct syntax before it is saved. The workflow must be corrected if the validation fails.

The error description for the errors on the workflow will be output in the message list.

Otherwise the workflow will only be saved and not switched active when uploaded to the server.

Note!
During the RiZone operation, it is not possible to determine whether a workflow is active.

Check carefully the validation of the workflow.

10.6 Workflow modules

This section describes the individual workflow modules and their configuration capabilities.

10.6.1 Start event

Fig. 26 Start event

The **Start event** indicates the starting point of each workflow. It must be present just once in each workflow. The properties menu contains only the name and the unique symbol ID (UID).

10.6.2 Stop event

Fig. 27 Stop event

The **Stop event** terminates a workflow. At least one Stop event must exist for each workflow. Several Stop events are possible in a workflow.

The properties menu contains only the name and the unique symbol ID (UID).

EN

10.6.3 Condition event

Fig. 28 Condition event

The Condition event stops the workflow at this point until the set condition (e.g. an alarm of a specific sensor) occurs.

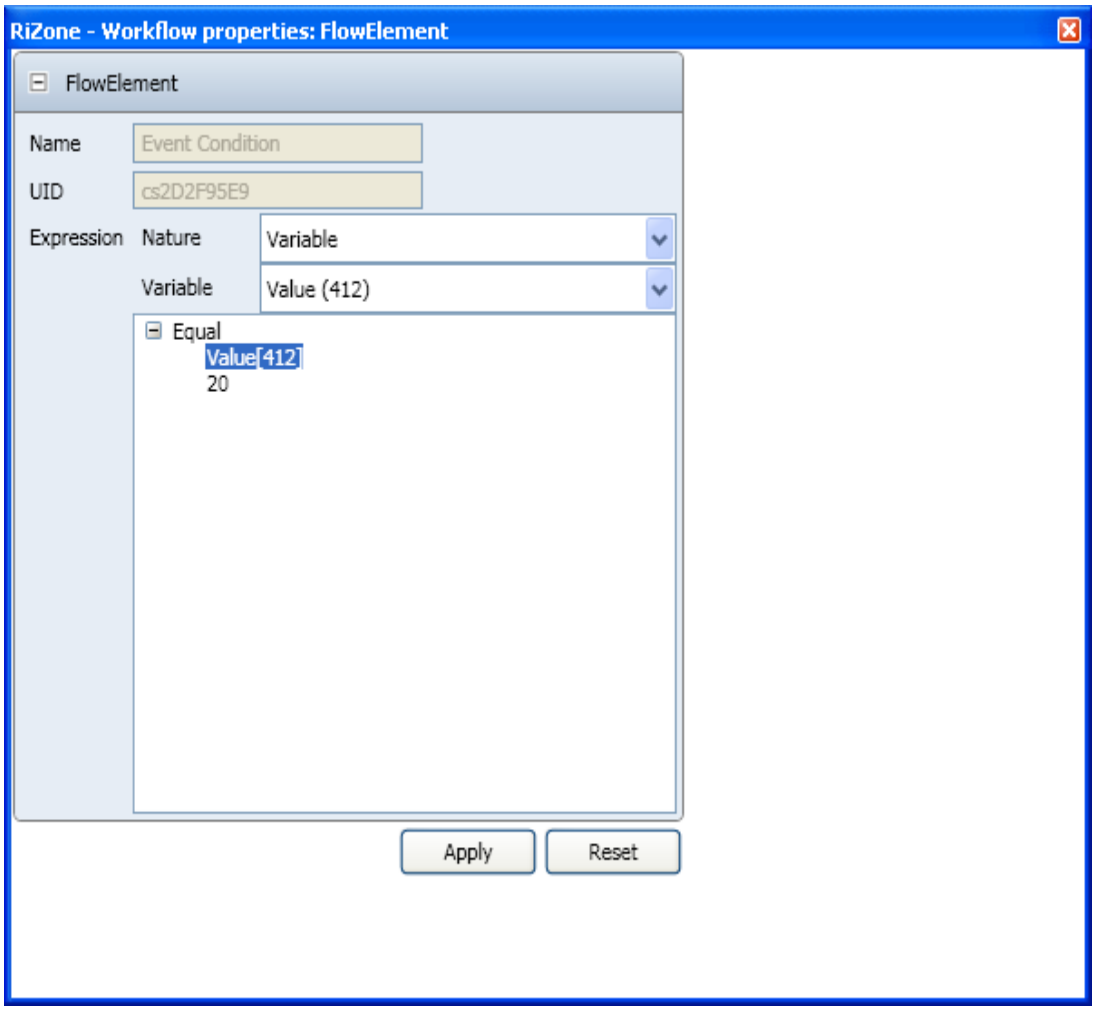

Fig. 29 Condition event properties

A double-click on the symbol opens the properties window of the Condition event. To configure the condition, proceed as follows:

1. Select the **Operator** in the lower window. The Equal operator is selected in the figure. Possible operators are: **Equal, Unequal, Above, Below, AboveOrEqual, BelowOrEqual, And, Or, NAND, NOR**.
2. Now select the first operand.
3. The **Nature** menu can be used here to select whether a constant or variable is involved. If you select a variable, a sensor that supplies the required sensor value must then be selected. To do this, left-click the required component from the locations or devices view and move with drag & drop to the free menu field with the designation **Variable**.

4. You can then select from the selection menu a variable from the list of all variables supplied by the component.
5. If you want to enter a constant, select for **Nature** the **Constant** option and enter the required value for **Value**.
6. Select this for the second operand and repeat steps 3 to 5 as for the first operand.

Note!
Nested operations are possible when "and" or "or" is selected as operator.

Click **Apply** to accept the changes or **Reset** to reset all settings. The window can be closed by clicking the "Close window" icon at the top right.

10.6.4 Timer event

Fig. 30 Timer event

The Timer event stops the workflow at this point until the set time has expired.
A double-click on the icon opens the properties window of the Timer event.
The time unit (seconds, minutes, hours, days) and the time value can be set here.

Example: A delay of 15 seconds should be set
Unit = seconds
Time = 15

10.6.5 Send Email

Fig. 31 Send Email event

The Send Email event can be used within a workflow to send an email. The email will be sent when the workflow reaches the Send Email event.
A double-click on the icon opens the properties window of the Send Email event.
The following parameters must be configured here:

- Receiver: Target address
- Subject: Subject line
- Text: Email text
- Sender: Sender address
- SMTP Server: IP address of the SMTP server
- SMTP User: If the authentication is successful, the user name must be entered here
- SMTP Password: If the authentication is required, the password must be entered here

EN

10.6.6 Execute Program

Fig. 32 Execute Program event

The Execute Program event can be used within a workflow to start an external program on the server. The program will be started when the workflow reaches the Execute Program event.
A double-click on the icon opens the properties window of the Execute Program event.
The following parameters can be configured here:

- Program: The program name, incl. path. Important: The program must be located on the RiZone server rather than on the client on which the GUI runs.
- Arguments: Call parameters for the program to be started. The values and the syntax depend on the program to be started.

Note!
The program will be executed on the RiZone server under the RizoneService user. This means the graphical user interface for the executed program is not visible.

10.6.7 Set Value

Fig. 33 Set Value event

The Set Value event can be used to set a value within a workflow using SNMP. This requires that the actor has already been integrated in the RiZone project using the Discovery function. The value will be set when the workflow reaches the Set Value event.
A double-click on the icon opens the properties window of the Set Value event.

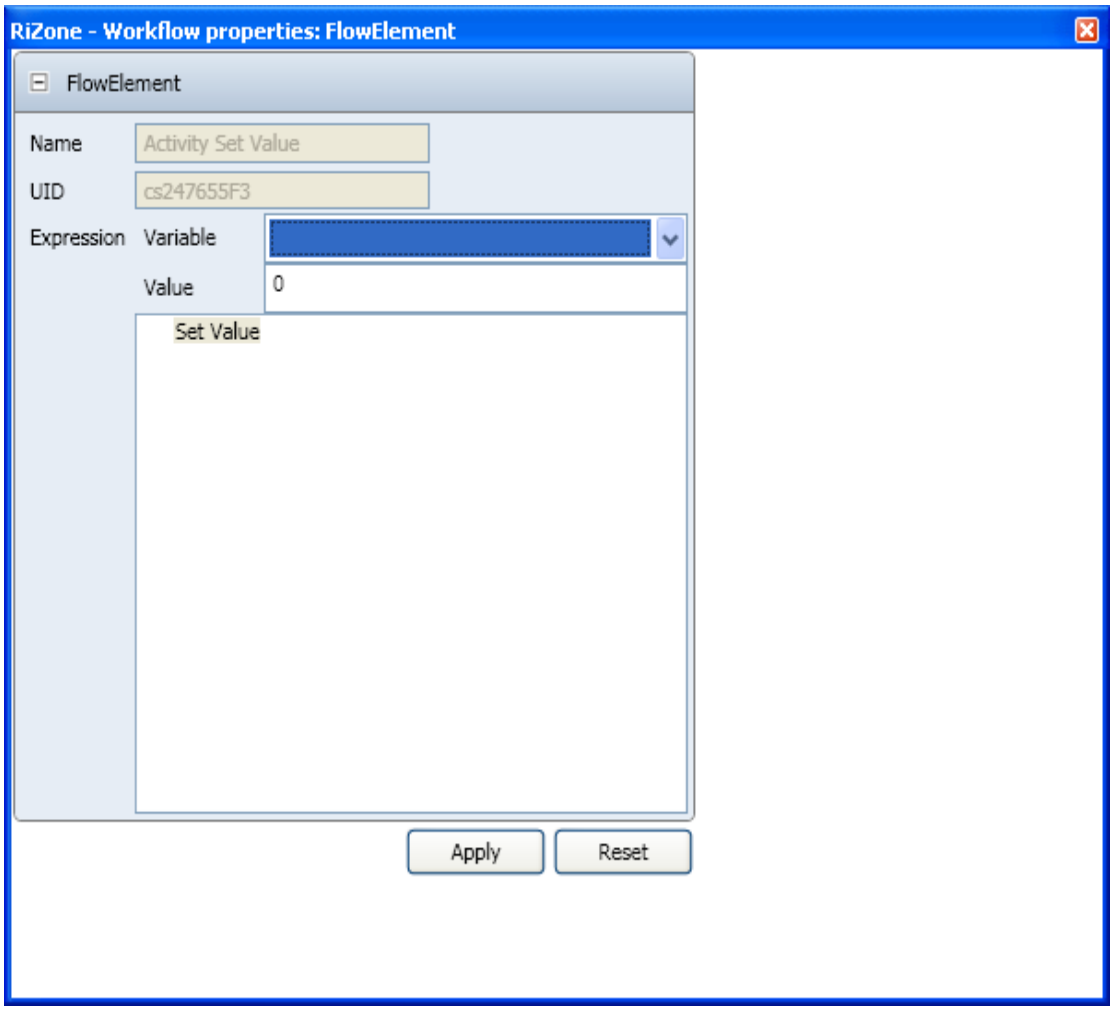

Fig. 34 Properties of the Set Value event

To configure the setting of a value, proceed as follows:

1. Left-click the required component from the locations or devices view and move with drag & drop to the free menu field with the designation **Variable**.

> **Note!**
> **If the Variable field remains empty after a device has been added, this device does not have any variables that can be set.**

2. You can then select from the selection menu a settable variable from the list of all variables supplied by the component.
3. Now enter for **Value** the value to be set on the actor or select one of the states that may be specified.

Click **Apply** to accept the changes or **Reset** to reset all settings. Click **OK** to close the window. **Cancel** terminates the configuration of the workflow.

EN

10.6.8 Event Gateway

Fig. 35 Event Gateway

The Event Gateway is a branch on two or more Condition events.
Important note: The direct successors of an Event Gateway can be only Condition events or Timer events (refer to the Event Gateway example figure).

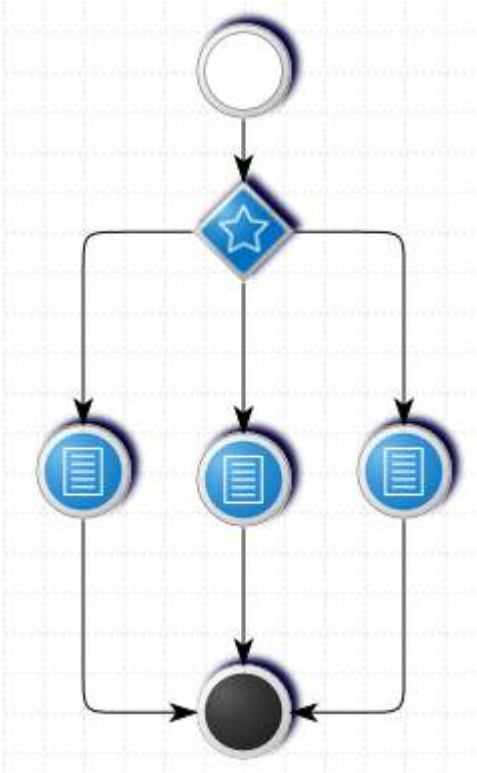

Fig. 36 Event Gateway example

If, during the processing, the workflow reaches the Event Gateway, the workflow will continue at that Condition event whose condition is satisfied (true) first.

Note!
This condition is executed just once.
The condition will be executed again only when it reoccurs.

Note!
If no condition is satisfied, a wait will be made at the Event Gateway.
The wait at the Event Gateway continues until one of the conditions is satisfied.

10.6.9 Data Gateway

Fig. 37 Data Gateway

The Data Gateway is a branch on two or more events.
The direct successors of a Data Gateway can be all modules except for the Start symbol.
The conditions that determine which path the workflow follows are linked at the outgoing edges for the Data Gateway.
To specify a condition, the properties window of the edge must first be opened with a double-click on the edge.

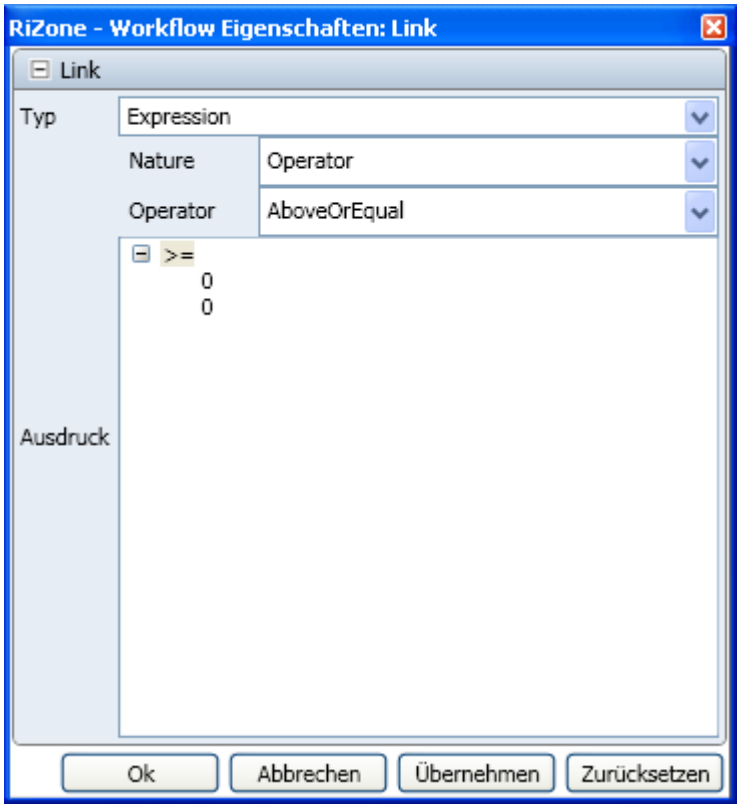

Fig. 38 Properties of an outgoing Data Gateway edge

The condition can now be specified as follows:

1. Select the **Operator** in the lower window. The AboveOrEqual operator is selected in figure 38. Possible operators are: **Equal, Unequal, Above, Below, AboveOrEqual, BelowOrEqual, And, Or, NAND, NOR**.
2. Now select the first operator.
3. The **Nature** menu can be used here to select whether a constant or variable is involved. If you select a variable, a component that supplies the required sensor value must then be selected. To do this, left-click the required component from the locations or devices view and move with drag & drop to the free menu field with the designation **Variable**.
4. You can then select from the selection menu a value from the list of all values supplied by the sensor.

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5. If you want to enter a constant, select for **Nature** the **Constant** option and enter the required value for **Value** or select one of the states that may have been specified.
6. Select this for the second operator and repeat steps 3 to 5 as for the first operator.
7. Click **Apply** to accept the settings.

The condition for this edge is now configured.

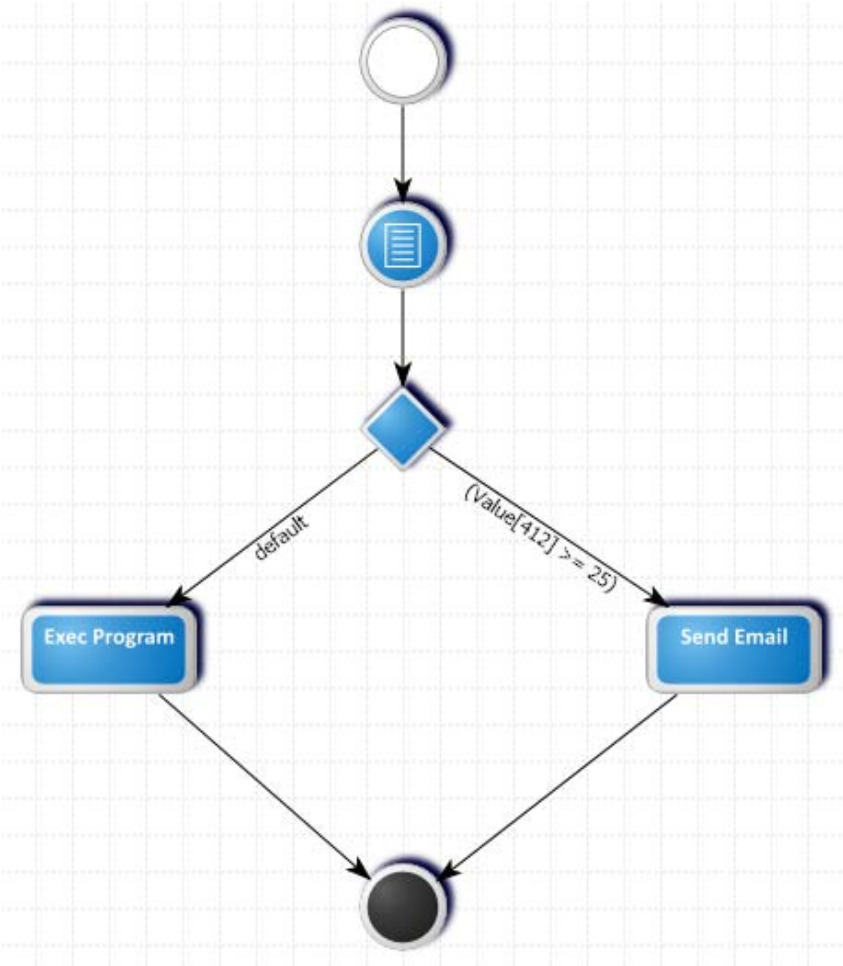


Fig. 39 Default Gateway example

Important!

One edge <u>must</u> be defined as default edge. To do this, the value for Type in the properties must be changed to default.

If during processing the workflow reaches the Data Gateway and no condition of any of the outgoing edges is satisfied (=true), the workflow will be continued at the default edge.

11 Maintenance mode

The maintenance mode indicates that the configuration of a device has changed. In this state, the device data can no longer be evaluated in RiZone. The maintenance mode can either be set manually with the Service variable or activated automatically by the system when certain events occur (see 11.1).
The maintenance mode is indicated by a spanner in front of the devices icon.

All variables of the affected device change their state:
Quality = "Bad"
Quality Detail = "COMPONENT_MAINTENANCE_MODE"
The maintenance mode causes the variable calculation of the Calculation Engine to be delivered automatically with the Quality Bad. No new events are initiated by the Quality Bad variable in the Workflow Engine.

There are several possibilities why a device has changed to maintenance mode. There are two ways of leaving the maintenance mode:

- The device changes its configuration back to the original state. In this case, the maintenance mode will be deactivated automatically.
- The device will be rediscovered in the configuration mode and with pressed **Alt** key moved to the affected device in the project tree. The current settings are now accepted as original.

11.1 Reasons for a maintenance mode

11.1.1 Change of the temperature unit

For Rittal CMC devices, the temperature unit can be changed between °C and °F. This also changes the values transported via the SNMP interface. This situation means the calculated values and limit value tests in a workflow are incorrect and the maintenance mode will be activated. If the device changes its temperature unit back to the configured state, the maintenance mode will be revoked automatically (if the change is made from the website, this can take as long as five minutes). Incorrect calculations and workflows cannot be excluded during this time.
The maintenance mode is activated only for those devices that supply a temperature value. You can recognise this by them having a "Temperature Unit" entry in the properties window. This shows the state present during the Discovery.

EN

Component	
ID	20553
Name	Temperatur Sensor
Model Number	7320.500
Component Type	Temperature Sensor
Description	
Temperature Unit	CELSIUS
Unit Index	2
PU-Port	1
Driver Description	
Name	Rittal_Sensor_Temperature
Version	1.1.0
Supported devices	7320.500

The following devices have this field:
LCP
LCP Extend
LCP Inline
LCP Inline EC
LCP Plus
LCP Plus EC
LCP Smart
LCP T3+
LCP T3+ AC
Temperature sensor
Temperature sensor WL
The Climate Unit does not have this field because the temperature sensor exists as an independent device.

11.1.2 Change of the hardware configuration

The possible changes are listed in the properties of the LCPs.

Component	
ID	7890
Name	Name of the Unit
Model Number	3301.480
Component Type	LCP Plus
IP Address	10.201.49.167
Temperature Unit	CELSIUS
Water sensors	Activ
Flowmeter	Activ
Control valve	Activ
Condensation pump	Activ
Serial Number	1395
Location	Location of the Unit

These properties are assigned to the device during the Discovery. If these no longer match those of the device, a switch is made to maintenance mode. The maintenance mode will be exited when the old state is restored. If the device with the changes is to be accepted, it must be deleted from the project and a new discovery performed. Alternatively, it can be moved with pressed **Alt** key to the existing component and so updated.

The following devices have these fields:
LCP Inline / Water sensor / Flowmeter / Control valve
LCP Inline EC / Water sensor / Flowmeter / Control valve
LCP Plus / Water sensor / Flowmeter / Control valve

LCP Plus EC	/ Water sensor / Flowmeter / Control valve
LCP Smart	/ Water sensor / Flowmeter / Control valve / Condensation pump
LCP	/ Fan module 1 / Fan module 2 / Fan module 3 / Water module

11.1.3 Change of the configuration

If a device (PU, LCP, etc.) enters the "Configuration Changed" mode, this device will be set into the maintenance mode.

The following procedure must be adopted to return the device to the **active** mode:

1. Acknowledge the "Configuration changed" status on the Processing Unit.
2. The component must be updated in the project. To do this, perform the discovery of the component again and with pressed **Alt** key use drag & drop to move the newly discovered device to the component already present in the project. This updates the data for this component in the project.
3. Components that no longer exist must be deleted from the project.
4. Finally, upload the updated project to the server.

11.1.4 Service variable

Devices and infrastructure components that possess the **Service** variable can be placed into the maintenance mode by setting the variable to the **Maintenance** value. To exit the maintenance mode again, either the **Service** variable can be set to **active** or the project uploaded to the server again.

Important!

If an infrastructure component (e.g. rack suite) or a device with subordinate components (e.g. PU with multiple sensors) is placed into the maintenance mode, all subordinate components/sensors will also be automatically placed into the maintenance mode.

To return all components to the "active" mode, the Service variable of all subcomponents/sensors must be individually set to "active" again.
As an alternative, the complete project can be uploaded to the server again. This also sets the components back to "active".

12 Message list

RiZone has a message list that contains all messages of the RiZone server. The messages have various categories, owners and states. Each message has a unique timestamp and owner. The message description explains the message. Moving the mouse over the message displays the description of the message as tooltip.

The message list differentiates between **current messages** and **finalised messages**. Closed messages are current messages whose **status** has been set manually to **Terminate.** To set the Terminate status, the message must be opened with a double-click. The status then can be changed from the drop-down field. The time interval for which messages are displayed can be restricted. The restrictions are:

All, 1 hour, 1 day, 1 week.

All messages for specific categories can be filtered. The categories are:

Errors, Warnings, Information and **OK.**

The filtering applies to the displayed messages rather than all messages in the database.

The arrow keys can be used to navigate through the message list. A **right-click** opens the context menu. A **double-click** opens the properties window of the message.

The individual columns can be sorted in ascending and descending sequence. The sorting applies to the displayed messages rather than all messages in the database.

12.1 Process

Process assigns the message. The following processes are differentiated:

12.1.1 Monitoring

The messages grouped in the Monitoring process apply to the active area of RiZone.

12.1.2 System

The messages grouped in the System process are system messages.

12.1.3 Workflow

The messages of the Workflow process are those messages issued while uploading a project when one or more workflows were created in a project.

12.1.4 Calculation

The messages of the Calculation process are those messages issued while uploading a project when one or more calculations were created in a project.

12.1.5 Discovery

The messages of the Discovery process provide information about the devices found during the discovery process. If RiZone does not support a firmware, an error message will be issued during the Discovery process.

12.2 Owner

The owner of a message is the component ID for RiZone. This can be a device, a workflow or a calculation.

12.3 Status

The status of a message indicates the processing status of a message.

12.3.1 None

The **None** status specifies that the message has not yet been accepted by any user in RiZone. The message is not yet processed.

12.3.2 Commit

The **Commit** status specifies that the message has been accepted by a user in RiZone. The message is not yet processed.

12.3.3 Confirm

The **Confirm** status indicates that the message from a user in RiZone has been confirmed. The message is not yet processed.

12.3.4 Work On

The **Work On** status specifies that the message has been accepted by a user in RiZone. The message is being processed.

12.3.5 Terminate

The **Terminate** status specifies that the message has been accepted by a user in RiZone. The message is completed.
Messages with the **Terminate** status can be viewed only from the **Finalised messages** tab.

12.4 Properties

A double-click on a message opens the properties window. The detailed message is displayed in the properties window. It is possible to change the status and add a comment to the message. The user who accepted the message is logged.
A history of the messages is saved.

EN

13 Report

RiZone provides the capability to generate a report for the variables associated with a node. This report can be executed cyclically and downloaded from the server to the client PC. The access control for a report is controlled in the user administration.

13.1 Creating a report

A report can be created for any component of the RiZone project. The **Report** function in admin mode opens the configuration window in the GUI. The **New** function creates a new report.

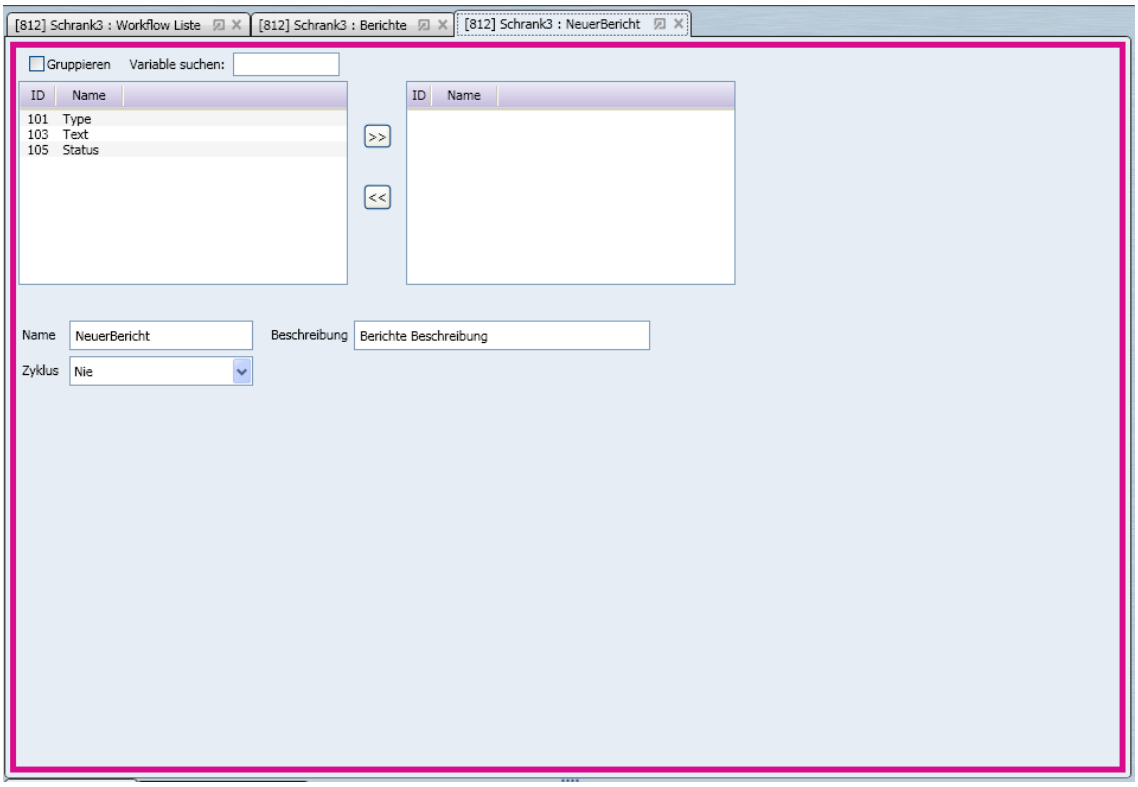


Fig. 39b Creating a report

13.1.1 Selecting variables

The variables are selected with a mouse click in the window. **Ctrl** and **mouse click** are used to select more than one item. **Shift** and **click** are used to select a group of variables. The marked variables have a blue background. A click on the **>>** double-arrow transfers the variables to the selection window. The selection of the variable and the click on the **<<** double-arrow deselects the variable.

13.1.2 Name/description

The name of a report is a mandatory field and preassigned. Only digits, alphabetic characters and the underscore can be used for a name. Accented characters are not supported. The name of a report may not begin with a digit. The maximum length of the name is 50 characters.

The report description is optional. The maximum length is 256 characters.

13.1.3 Cycle

The regular execution of the report is configured in the cycle selection window. **Never** specifies that no report will be created.

13.1.4 Saving a report

A report is saved by selecting the **Reports** tab in the menu and then clicking **Save**. The report will be saved under the selected node. The changes take effect on the RiZone server only when the project has once again been uploaded to the server.

13.2 Deleting a report

A report can have been created at any node of the RiZone project. The **Report** function in admin mode opens the configuration window in the GUI. A list of the reports present for the node is displayed. A click on **Delete** deletes the associated report. Respond with Shift and click to the prompt. Alternatively, you can mark the report with the left mouse button and delete with the Del **key.**

13.3 Downloading a report

A report can be downloaded in the view mode of the GUI. The logged-in user must have the appropriate authorisations. The report has CSV format. The reports are saved in the **~\My Documents\RiZone\Reports** directory. The report is downloaded by selecting the appropriate report and then selecting the **Synchronise** function. The **Reports > Synchronise all** option in the drop-down menu downloads all versions of the report.

EN

14 User administration

The RiZone user administration is based on the user administration of the RiZone Appliance operating system. The membership of the RiZone Appliance in the directory service is used to integrate the user administration in a directory service.

14.1 Creating a user with the GUI

A new RiZone user is created from the **Administration > User administration > Users > Create user** menu. The user is created as local user on the RiZone Appliance. The user name must consist of at least five characters and the password requires a minimum length of seven characters, including one special character. The assignment of the e-mail address must be unique: An e-mail address can only be entered for one user. All fields are mandatory for creating a user. The activation of the **Enable user?** checkbox activates the user.

Note!
A user must be activated in order to log in to the RiZone server.

Activate the user during the creation.

14.2 Changing a user account

A user account is changed using the **Administration > User administration > Users** menu. Select the user with a double-click.

The e-mail address and the comment for the user can be changed in the **Change details** menu item.

The **Change password** menu item is used to change the password.

The **Administer roles** menu is used to assign the user to one or several roles.

The **Delete user account** menu item is used to delete the selected user.

The **Deactivate user account** function is used to deactivate the user. The user can then no longer log in to RiZone. All user settings, however, are retained.

The **Activate user account** function is used to activate the user.

Administer other user accounts returns to the user selection.

14.3 Creating a role with the GUI

A new RiZone role is created from the **Administration > User administration > Roles > Create new role** menu. The role is created as local group on the RiZone Appliance. The group name must begin with RiZone.

Note!
Role names cannot be changed later!

14.4 Assigning a user to a role

The **Change user account > Administer roles** menu is used to assign the user to one or more roles.

This is also possible by selecting the appropriate role and assigning the user to the role in the **Roles** menu.

14.5 Removing a user from a role

The **Change user account > Administer roles** menu is used to remove the user from a role.

This is also possible by selecting the appropriate role in the **Roles** menu and removing the user from the role.

14.6 Deleting a user with the GUI

The **Delete user account** menu item is used to delete the selected user.

14.7 Deleting a role with the GUI

To delete a role, proceed as follows:

- Select the **Role** tab
- Double-click the role to be deleted
- Click **Delete role**
- Confirm the prompt

The role will now be deleted.

14.8 Configuring RiZone in a directory service

RiZone is integrated in a directory service by the membership of groups of the directory service in the local groups of the RiZone server that were created as role with the RiZone GUI.

15 Assigning rights for RiZone components

Rights are assigned in a project at the component level in the project tree. The component rights are assigned to a RiZone role. This role is assigned to a user group of the operating system. Rights can be assigned in the locations tree and the devices tree.

15.1 The rights concept for RiZone

RiZone has seven different authorisations. These authorisations can be used for just one component or can be inherited. The inheritance permits all subordinate components of the selected reference tree to be given the same rights.

15.2 RiZone rights

15.2.1 Read

The **read** right permits read access to the component. No changes can be made to the component.

15.2.2 Setting

The **setting** right permits the change of threshold values.

15.2.3 Configuration

The **configuration** right permits the change of a component. This permits the change of the component name or the change of the SNMP configuration. Specific LCP settings are also assigned to the "Configuration" group (some parameters from LCP Standard and Extend).

15.2.4 Execute

The **execute** right permits the switching of the outputs of a device that has a switching function.

15.2.5 Charts

The **charts** right permits the display of a chart. The chart must be created by an administrator.

15.2.6 Workflows

The **workflows** right permits the display of a workflow. The workflow must be created by an administrator.

15.2.7 Reports

The **reports** right permits the download of a report. The report must be created by an administrator.

15.3 Changing an authorisation in the object tree

The rights are assigned for a component in the properties window. The properties window is opened with a **right-click** on the component icon and the selection of **properties**. The properties window opens in the GUI main window. The selection of the **Rights** tab opens the **rights administration**.

The **Reference tree** drop-down menu is used to select in which project tree the rights assignment is made. The **Subordinate components ...** checkbox permits the inheritance of rights below the component.

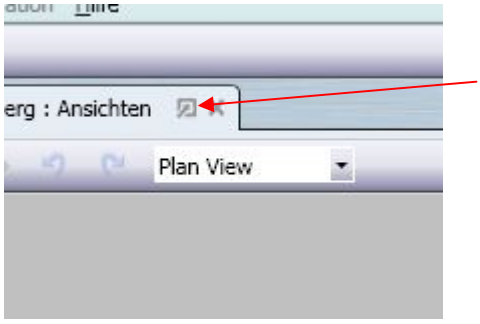
It is possible to assign a role to each individual right. Multiple selection is possible.
The changes take effect only after the upload of the project.

16 Searching for variables

RiZone provides the capability to search for variables. It must be selected under which component the variable should be searched. After the selection of the component in the location or device tree, all available variables will be displayed in the variable view. The search for a variable can now be made in the **Variable** window. The use of * wildcards is possible.

17 Relocating a tab as a single window

When several monitors are used, it can be desirable to relocate the individual tabs of the RiZone GUI to another monitor. This is done with a click on the **Relocate tab** icon.
This function is possible only in view mode.



If the relocated window is closed, it will once again be integrated as tab in the GUI.

EN

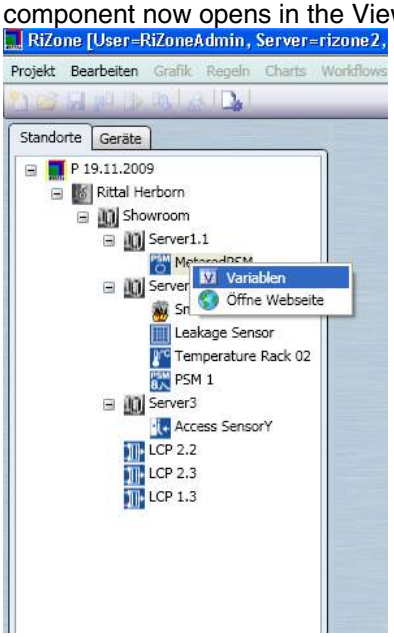
18 Setting values

18.1 Setting the values of a component from the user interface

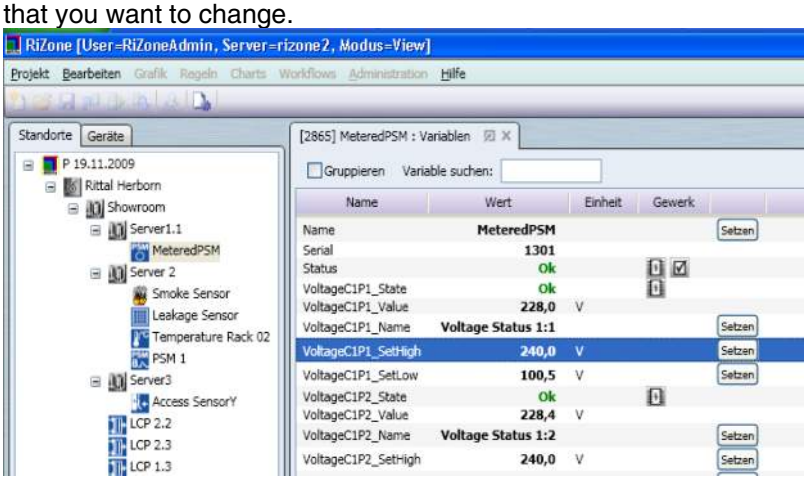
The RiZone user interface serves not only for querying of data using SNMP, values such as thresholds for temperature sensors can also be set. This function is available only in view mode and the logged-in user requires the necessary authorisations.

To set or change a value, proceed as follows:

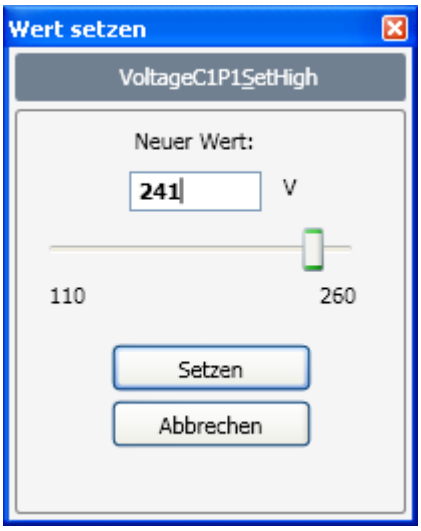
- Right-click to select the component/sensor in the project tree and select **Variables** in the context menu. The variable view of the component now opens in the View window.



- Now click the **Set** button after the variable value in the View window that you want to change.

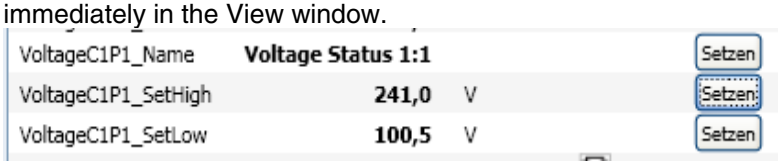


- You can change the value either by the direct input of the value or using the slider in the **Set value** window that now opens. The slider specifies the permitted value range to be selected.



If only certain values are permitted, a drop-down menu lists all possible inputs here.

- After changing the value, click the **Set** button to transfer the value to the component.
- Once the value has been written successfully, it will be displayed immediately in the View window.



Note!

To set one or more values, the IP of the RiZone server must be entered as trap receiver in the component (e.g. CMC Processing Unit II). If this is not the case, the component does not accept any values from the RiZone server.

Note!

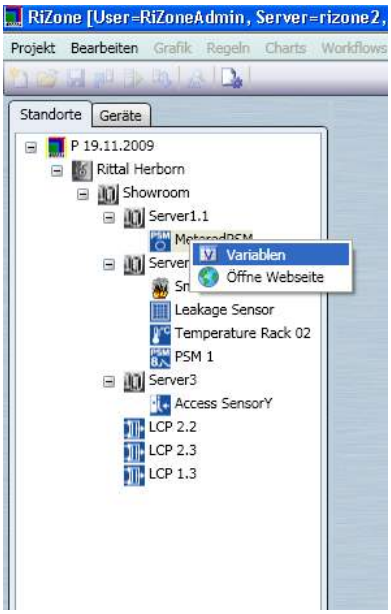
If the value cannot be set, an error message will indicate this situation. In this case, the value must be reset and Set clicked to reinitiate the action.

EN

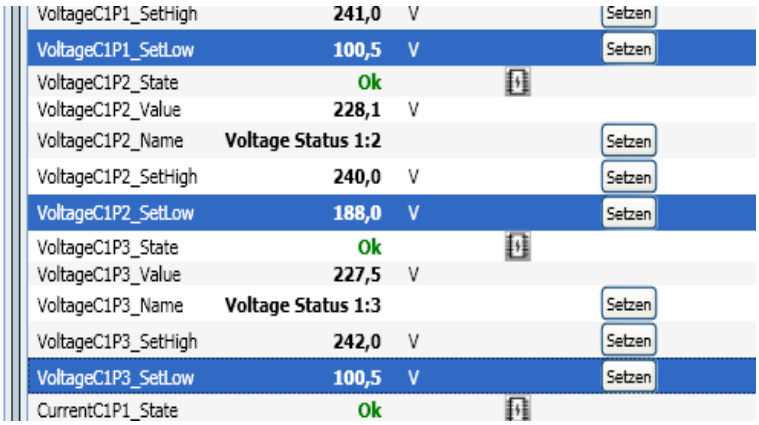
18.2 Setting several values simultaneously

In addition to the setting of individual values, the RiZone user interface can also be used to change several values simultaneously.

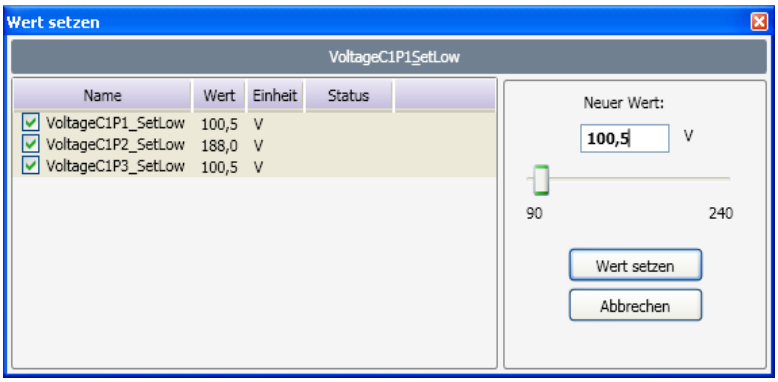
- Right-click to select the component/sensor in the project tree and select **Variables** in the context menu. The variable view of the component now opens in the View window.



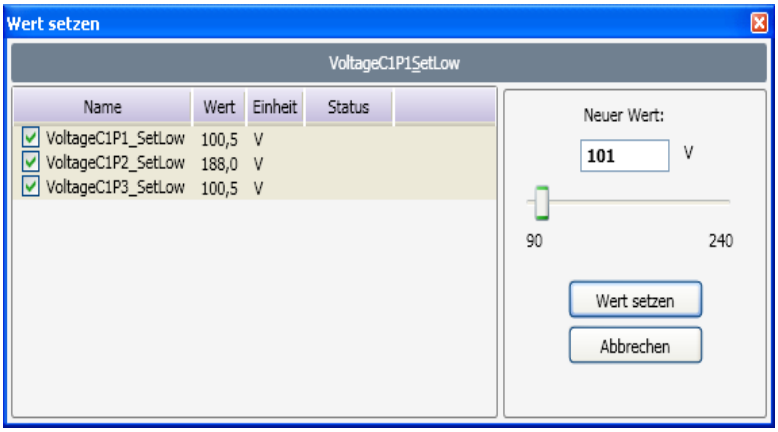
- Now select in the View window all values that are to be changed simultaneously. To do this, click successively all variables to be changed while keeping the **Ctrl** key pressed. It is also possible to mark an area by pressing the **Shift** key.



- Now click the **Set** button for one of the selected variables.
- The **Set value** dialog for several values opens.
- To set values simultaneously, the selection box in front of each selected variable must be set.



- Now enter the value to be used for all selected variables as **New value** and click **Set value** to confirm.



Caution!
Only the same variable types can be set with a multiple selection.

Select the same variable types, such as VoltageCxPx_SetLow

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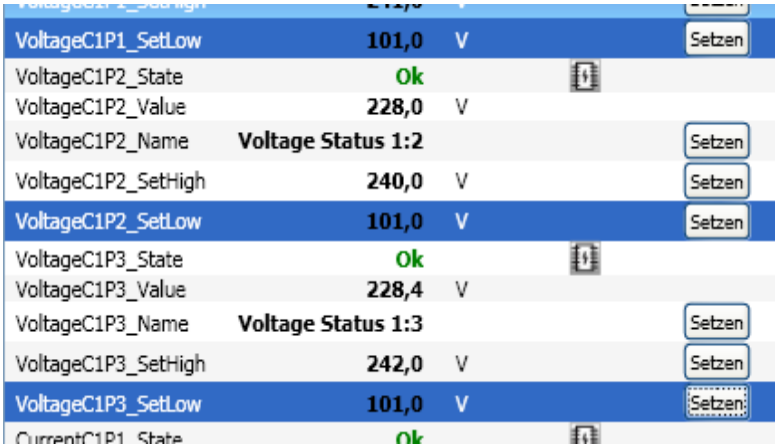
- Once the values have been written successfully, they will be displayed immediately in the View window.



Note!

If the trap receiver is not configured on the RiZone server for the PU, the changes will only be transferred to the RiZone server after five minutes at the latest. If the change should be made faster, the PU must be rediscovered and replaced in the project tree.

EN

19 Configuration of the SNMP devices

The SNMP devices are configured during the configuration and in the running project. During the configuration, the variables of the discovered devices are configured.
The SNMP communication will be activated when the project is started. If the project has been started, the individual devices can be configured.

19.1 Configuration of variables

In addition to the SNMP-polled variables, variables can also be created manually. Their value can be calculated using arithmetic operations for polled or other manually-created variables. This makes it possible, for example, to create a variable that calculates the total power consumption of a rack when the individual values are fetched in RiZone with SNMP polling.
For the configuration of a variable, the GUI must be in admin mode and a device in the project tree selected. A right-click on the variable opens the context menu. The **Variables** option will be selected. The variables window of the selected component opens in the main window (View window) of the RiZone GUI. If required, click **Down arrow** to open the variables list.

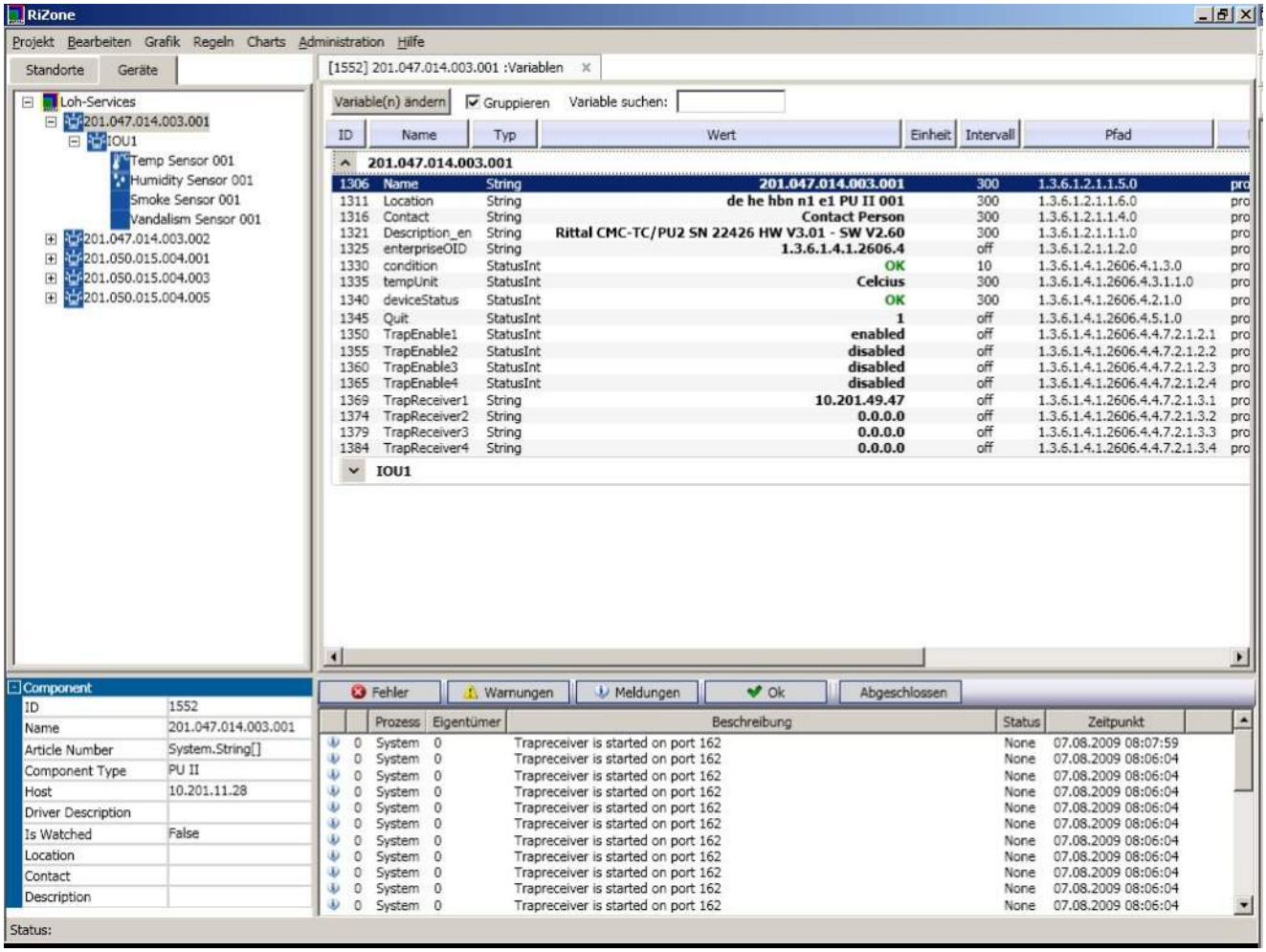


Fig. 40 Configuration of variables

The mouse can now be used to select a variable. A right-click opens the context menu.

➔ The **New variable** menu item is not required for the configuration of Rittal components because RiZone automatically discovers all variables of the components.

The **Edit variable** menu item permits the configuration of the automatically discovered variables of a Rittal component.

The **Shift** and **Ctrl** keys can be used to select multiple variables. Only the selected field is refreshed for a multiple selection. All other fields remain unchanged.

The following variables can be configured for the configuration:

- Interval
- Group
- Description
- Publish (forward the value of the variable to higher-level management systems if an appropriate interface is activated, such as the SCOM Management Pack)

To ensure correct operation, no other settings may be changed.

Ways of entering a variable

Name	Name of the variable
Description	Description of the variable
Type	**Float** and **StatusInt** are possible as variable type. Float is used when a (float) numeric value is stored in the variable, StatusInt for status variables. **Important note:** The variable type can be selected only when the variable is created. A subsequent change is not possible.
Publish	If set, the variable will be passed to the Messaging Service. The variable can now be fetched via SNMP by a different system and the variable will be transferred to the SCOM, if the Management Pack is activated. **Note:** **The number of variables that can be transferred to the SCOM is limited because of the interface of the SCOM. A maximum of 100 variables or 10 variables can be transferred to the SCOM when performance counters or SCOM SDK are used, respectively!**
Interval	Specifies the calculation cycle (in seconds). **Off** means that the variable will be calculated once after the project is uploaded.
Meaning	The meaning of the variable (undefined, state, value, setting, configuration, service, protected, execute). "Value" should normally be selected here.
Physical measurement quantity	Specifies the measurement quantity of the variable.
Unit	Specifies the unit of the variable.
Display factor	Display factor of the variable
Display format	**,n:m** where n specifies the number of digits before the decimal point and m the number of digits after the decimal point. Example: ,5:0.00 -> five digits before the decimal point and two digits after the decimal point.
Group	Selection of the group of the variable. The selection of the group affects the group status variables of the component to which the variable in the project is assigned. If the variable is assigned to a group and changes its status, the group status variable of the higher-level infrastructure component also changes its status to that of the variable (Exception: Another variable has already raised the status of the group status variable to a critical status).

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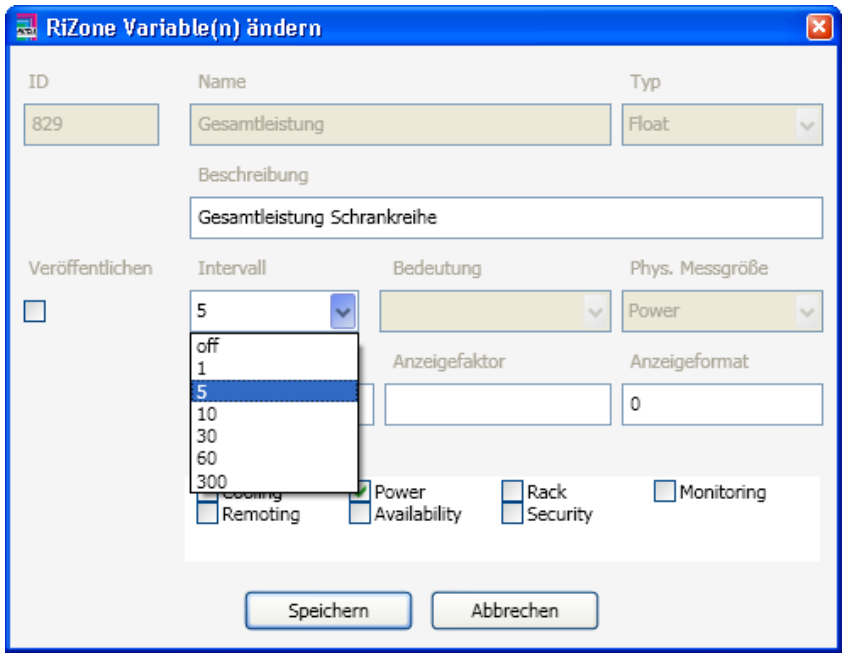

Fig. 41 Changing variables

19.2 Configuration of SNMP devices

The SNMP devices are configured in the running project; the logged-in user must have the appropriate rights. A device is selected in the project tree. A right-click on the selected component opens the associated context menu. The **Variable** menu item can now be selected. The variables list of the component opens in the RiZone GUI main window.

19.2.1 Component name

The component name is configured by selecting **Name** and clicking the **Set** button. Ensure that the name of the component is not longer than the maximum character length. Please observe here the operating instructions of the component used.

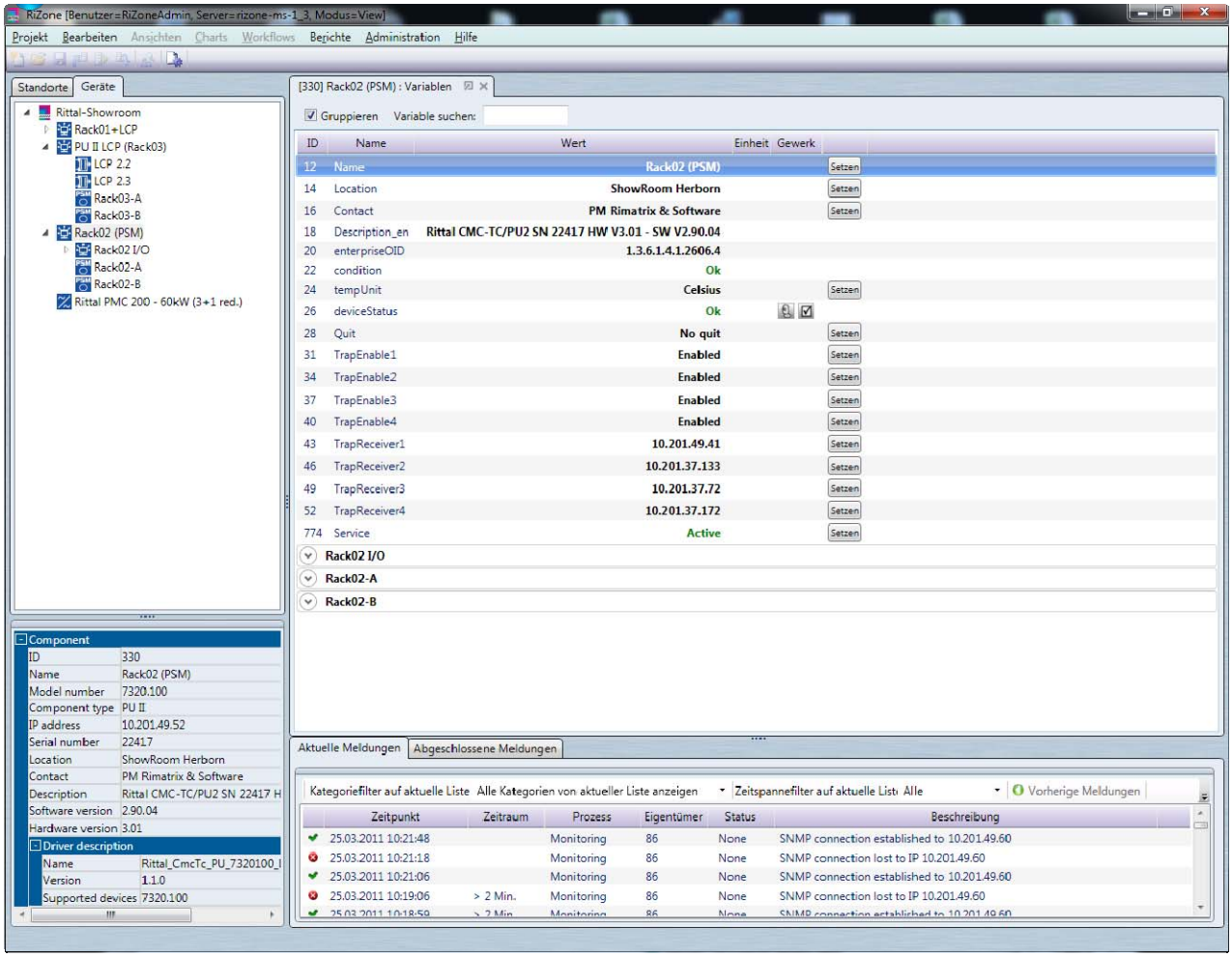

Fig. 42 Name of the component

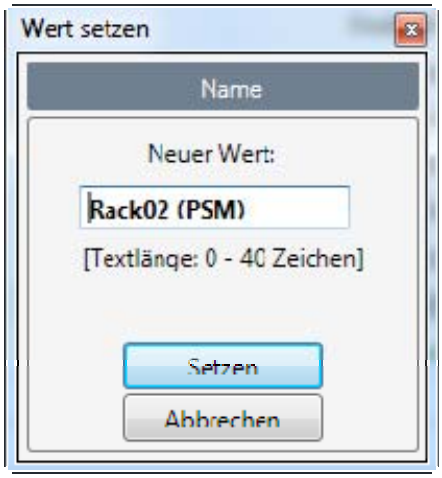

Fig. 43 Component name value input

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19.2.2 Location name

The location name is configured by selecting **Location** and clicking the **Set** button. Ensure that the name of the location is not longer than the maximum character length. Please observe here the operating instructions of the component used.

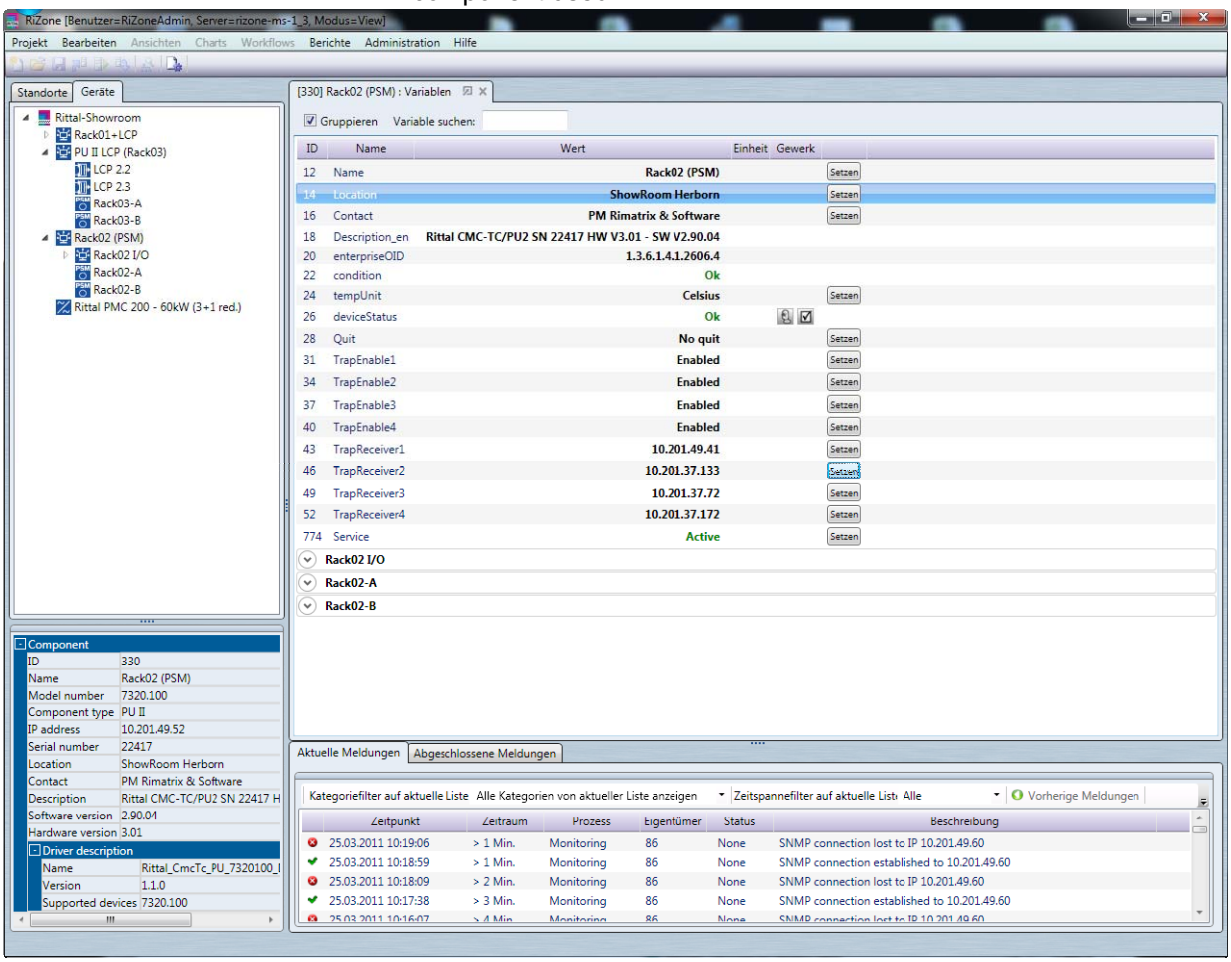

Fig. 44 Location name

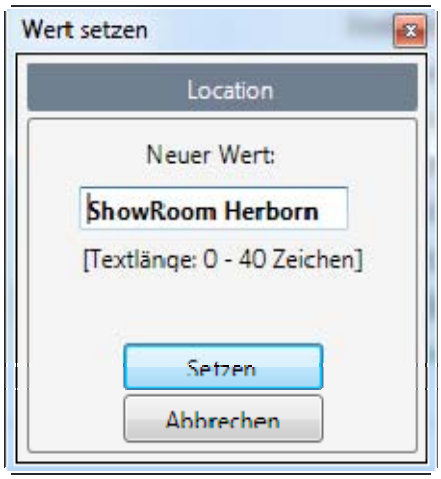

Fig. 45 Location name value input

19.2.3 Contact name

The contact name is configured by selecting **Contact** and clicking the **Set** button. Ensure that the name of the contact is not longer than the maximum character length. Please observe here the operating instructions of the component used.

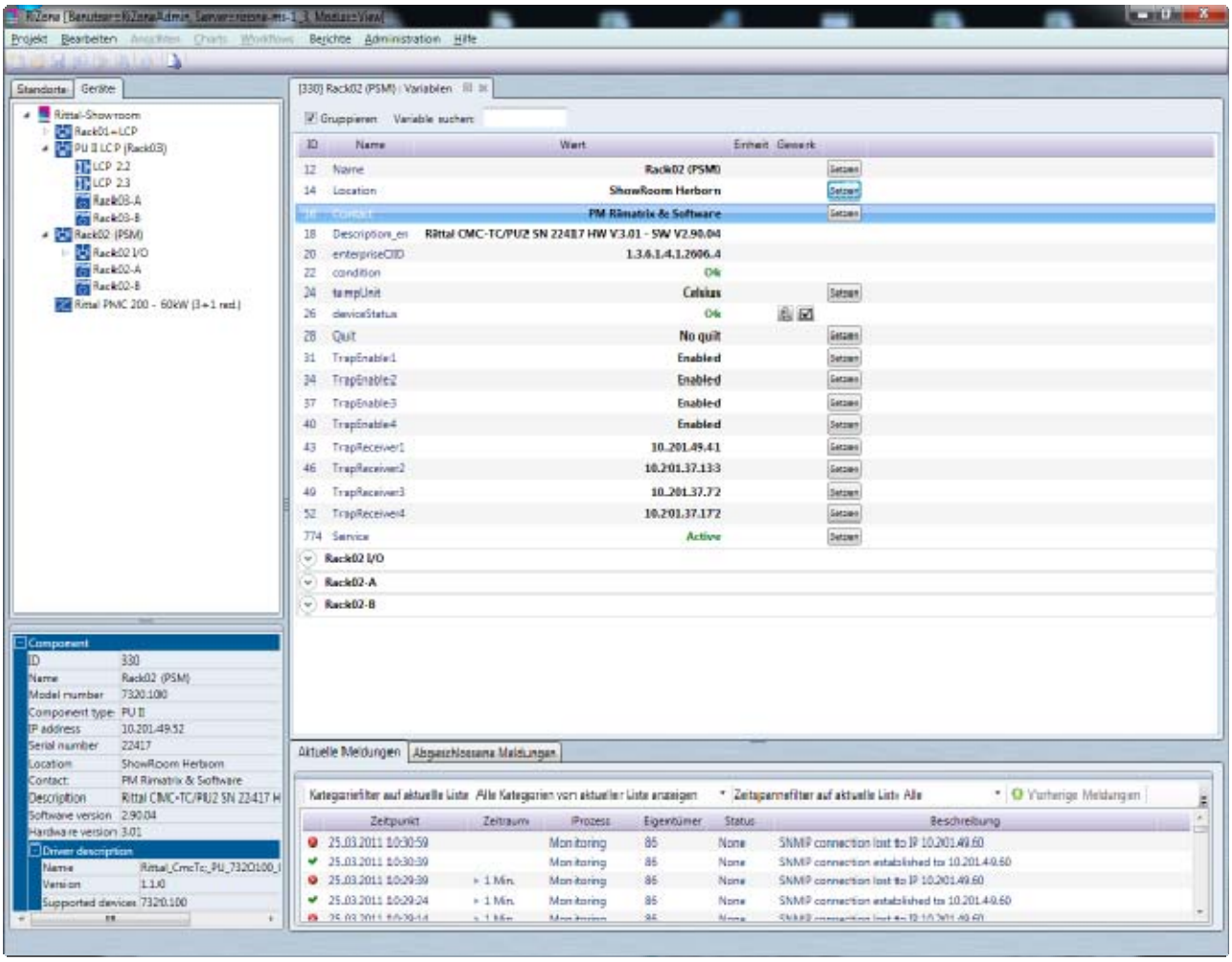

Fig. 46 Contact name

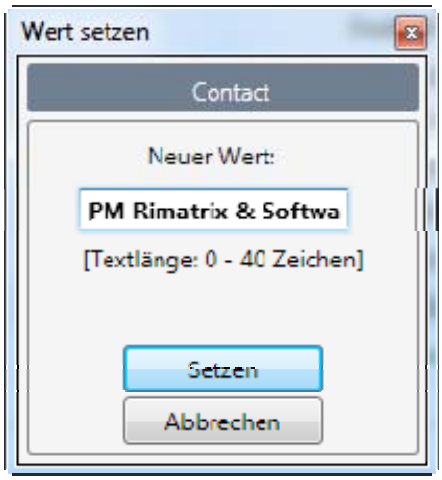

Fig. 47 Contact name value name

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19.2.4 Quit

The Quit function permits the automatic acknowledgement of a message and the confirmation of configuration changes for the CMC-TC system. The **Set** button enables and disables the function.
The "**Quit**", "**No quit**" and "**Restart**" functions can be selected.

Quit: The message will be acknowledged.
No quit: The message will not be acknowledged.
Restart: The Processing Unit will be booted.

Please observe here the operating instructions of the component used.

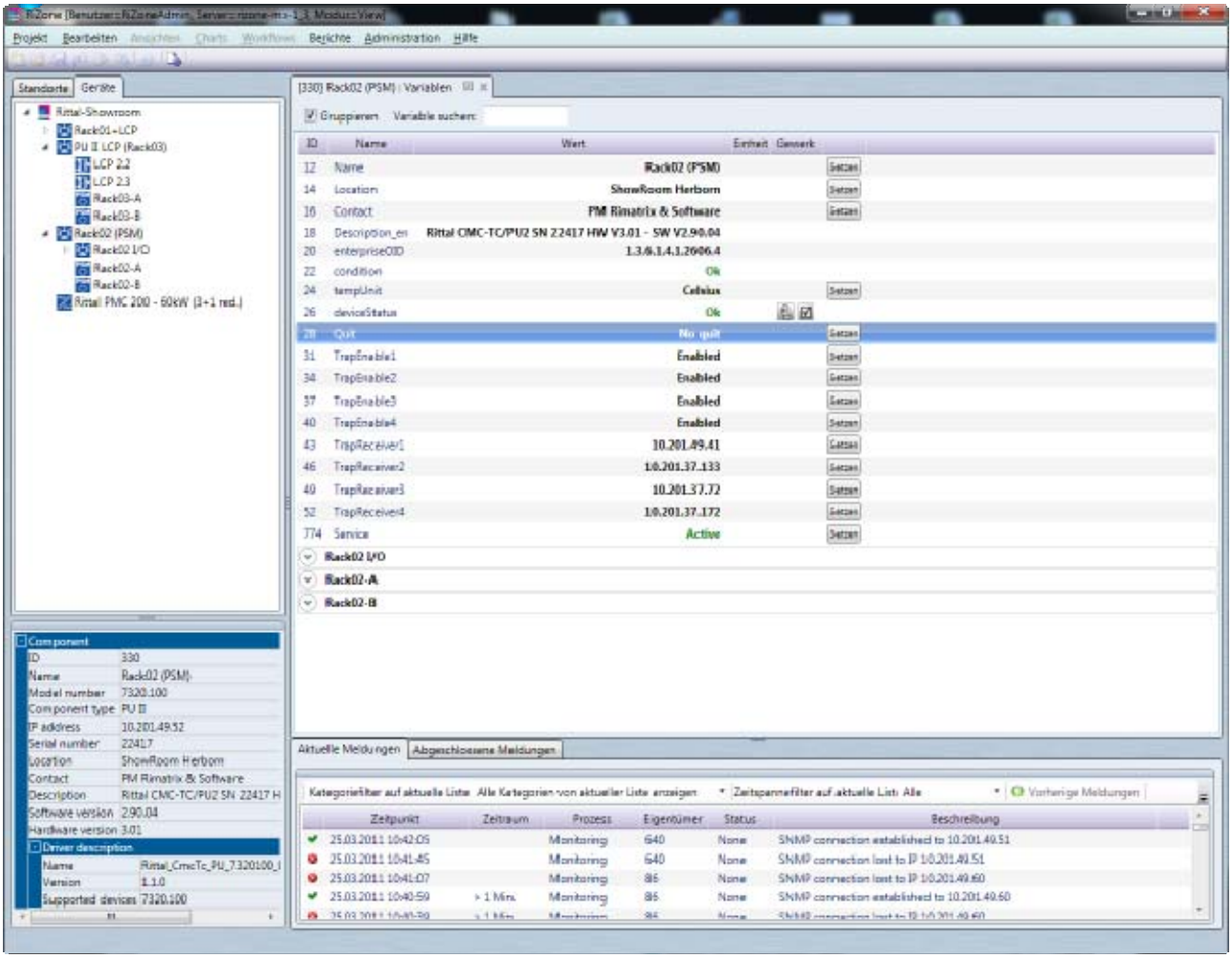

Fig. 48 Activating the Quit function

19.2.5 Trap enable 1-4

The **Trap enable** function is used to activate/deactivate the trap receiver. The **Set** button enables and disables the function. Please observe here the operating instructions of the component used.

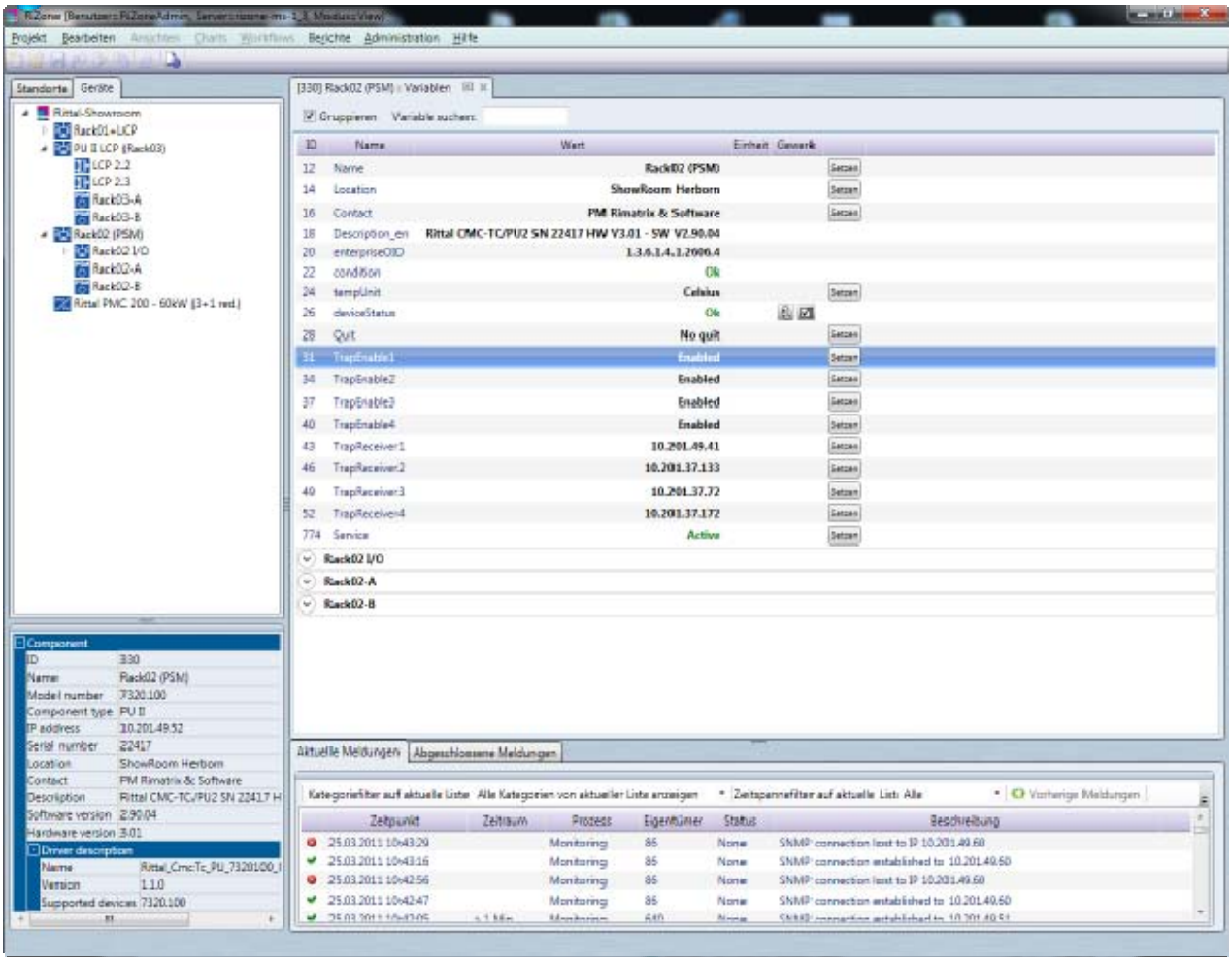

Fig. 49 Trap enable function

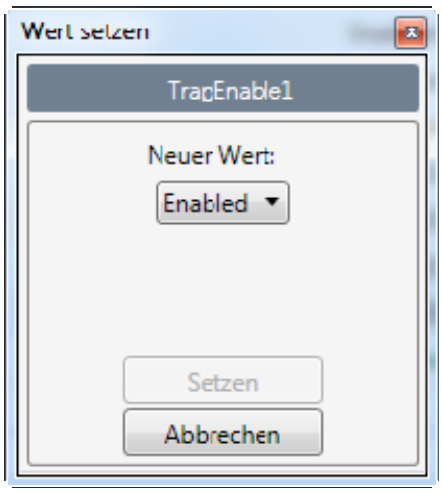

Fig. 50 Trap enable value selection

EN

19.2.6 Trap receiver 1-4

The **Trap receiver** function is used to configure the trap receiver. The **Set** button is used to configure the IP address of the trap receiver. Please observe here the operating instructions of the component used.

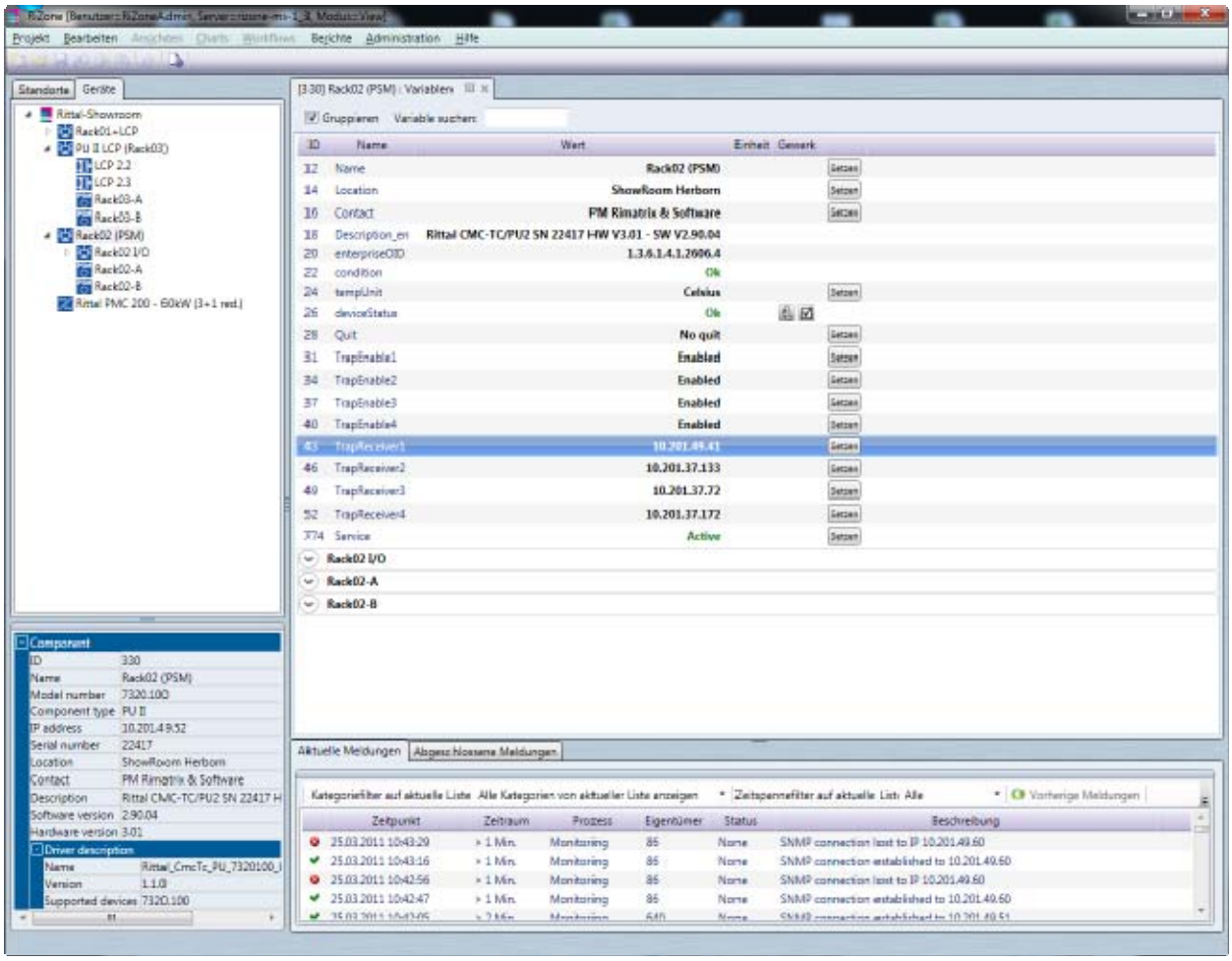

Fig. 51 Configuring the trap receiver

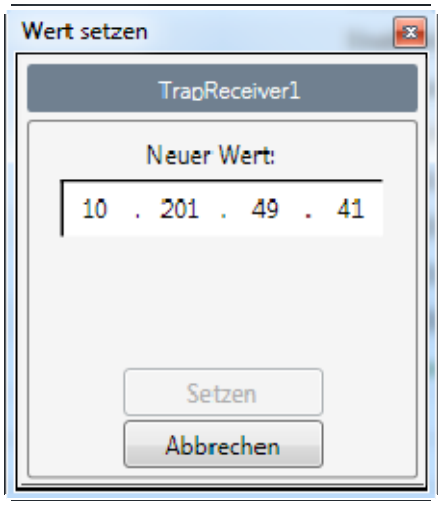

Fig. 52 Entering the IP address of the trap receiver

19.2.7 Configuring a value

The **Set** button is used to set a value. Please observe here the operating instructions of the component used.

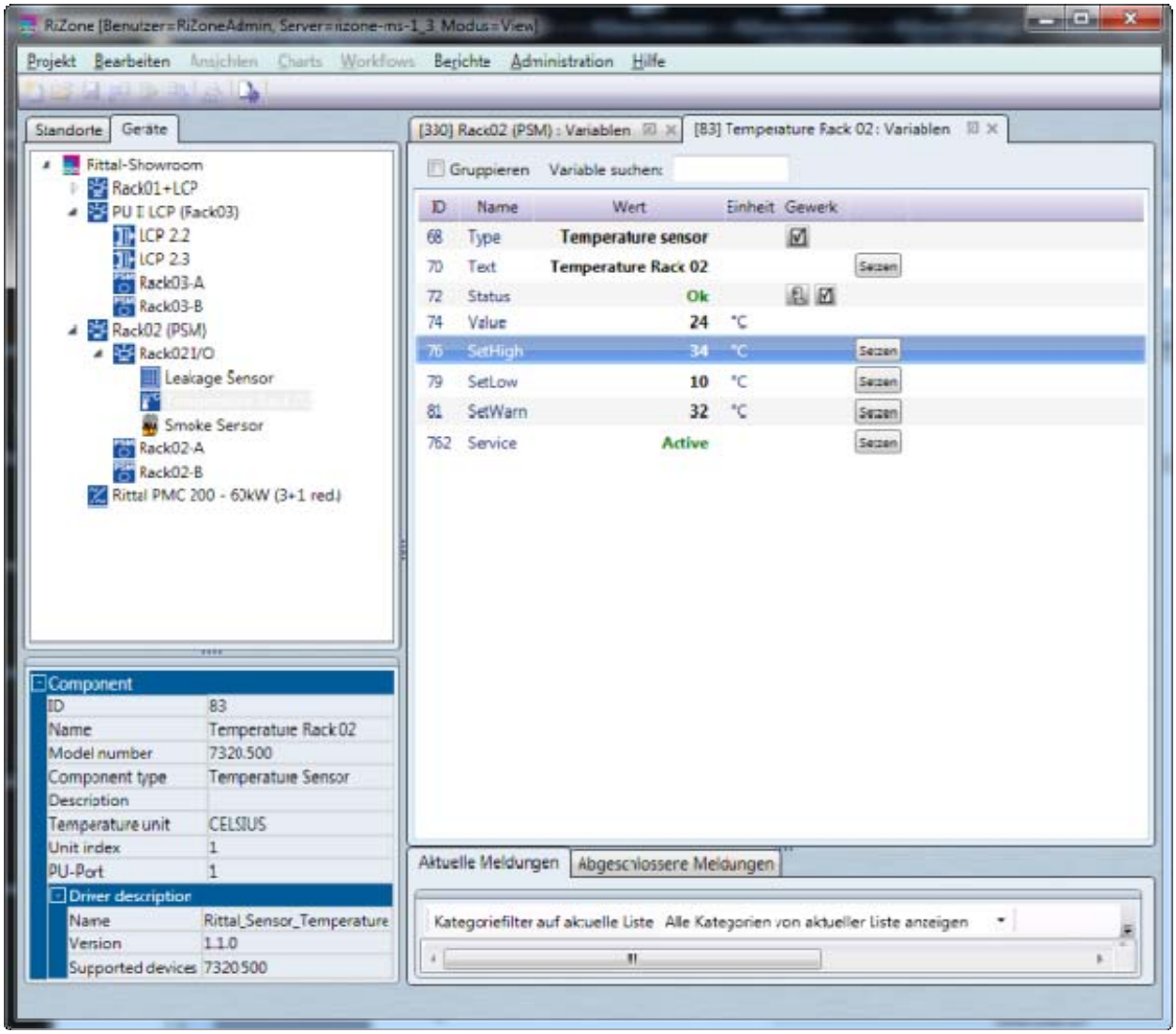

Fig. 53 Setting values (general)

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20 Replacement of a device

RiZone allows the replacement of a device in the project tree without changing the configured properties. Ensure that the device type and the configuration of the devices are identical.

Procedure:

- Selection of the new device
  Left-click the device to mark it in the **Discovery** window.
- Moving the device into the project tree
  Drag the device with pressed **Alt** key to the device to be replaced. The variables with the same IDs will be transferred. The message that now appears must be confirmed.

21 Configuring the communications modules

To increase the capability of RiZone for projects with a larger number of IP nodes (>150 IP nodes), a second communications module can be started on the server. The configuration options can be reached from the **Administration > Configure communications module** menu item.

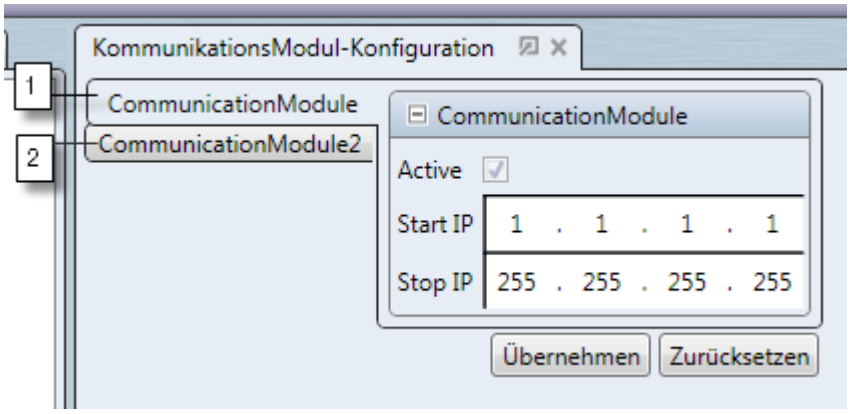

Fig. 53b Configuring communications modules

1 Tab for Communications module 1 configuration
2 Tab for Communications module 2 configuration

Active	The corresponding module is active when the checkbox is set. **Note:** The first communications module is the master module and cannot be deactivated.
Start IP	The start of the IP range that the communications module queries using the SNMP protocol.
Stop IP	The end of the IP range that the communications module queries using the SNMP protocol.

The communications module 1 is automatically active after the installation of RiZone.

To activate the second module, the "active" checkbox must be set for communications module 2 and the IP range to be queried entered (Start/Stop IP).
If the second module is activated, a second communications module service will be started automatically on the server.

Note!
To ensure that all IP addresses are monitored, enter the monitored address ranges.

22 Configuring the database connection

RiZone saves all fetched and calculated data automatically in an SQL database. The supplied system contains an MS SQL Express database that fully suffices for smaller projects and permits the saving of data for several months (depending on the number of IP nodes and type of the IP nodes).

For mid-sized and larger projects with more than 50 IP nodes or for projects in which mainly SNMP devices are deployed that supply many values (e.g. PMC busbars with measurement, LCP, etc.), it is desirable to connect RiZone to an external database with larger storage capacity.

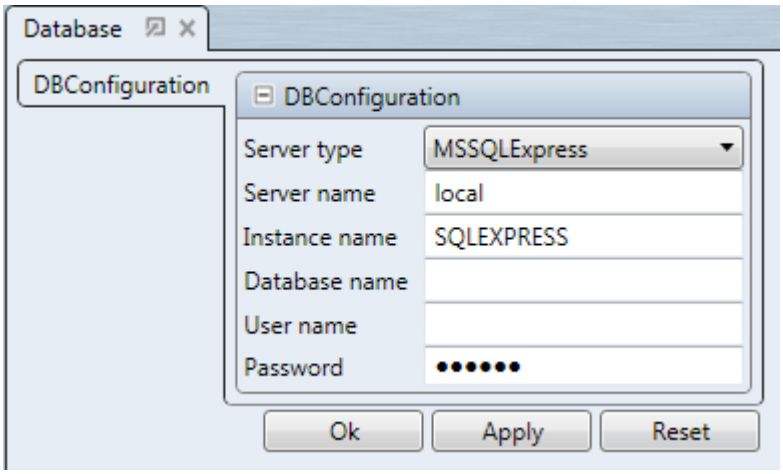

Fig. 53c Configuring the database connection

The following parameters can be set in the configurations tab (Fig. 53c):

Server type	The server type. **MSSQL Express** (default setting, database is supplied) **MSSQL** **Oracle**
Server name	The name or IP address of the database server (default: local)
Instance name	The name of the database instance (default: SQLEXPRESS)
Database name	The name of the database
User name	The user name for the database access. If a specific user should access the database, the user name must be entered here
Password	Enter the password that belongs to the user name

If RiZone should access an external MS SQL database (MSSQL option), the deployed database user (see User name) requires db.creator rights because RiZone must create the appropriate databases on the server. For further operation, db.owner rights suffice.

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Note!
When Oracle is deployed, the required database entered in the configurations tab must have been created on the Oracle database server prior to the start of RiZone. Otherwise RiZone cannot establish any connection to the database.

23 Updating the RiZone driver

The **Administration > Update device driver** function can be used to update the RiZone device driver.

If necessary, updated drivers will be made available as DLL file on our www.rimatrix5.com website or from our support.

To install the driver, proceed as follows:

1. Click **Administration > Update device driver** in the opened RiZone client. A file selection window now opens.
2. In the file selection window, change to the folder in which you stored the DLL file. Select the DLL file and click **Open**.
3. A window opens with the transfer status. Once the transfer has completed, click **OK** to confirm the action.

This completes the update and the driver will be updated.

After a driver has been updated, those devices previously discovered with the old driver must be rediscovered and moved to the project.

If the transfer status from item 3 reports an error: Note that only DLLs provided by Rittal are suitable for update. RiZone does not accept other DLL files.

24 Downloading the log files

The RiZone logs all user and system actions in the appropriate log files.

To download the log files to the local computer, select the **Administration > Download log files** function in the view mode of the client.

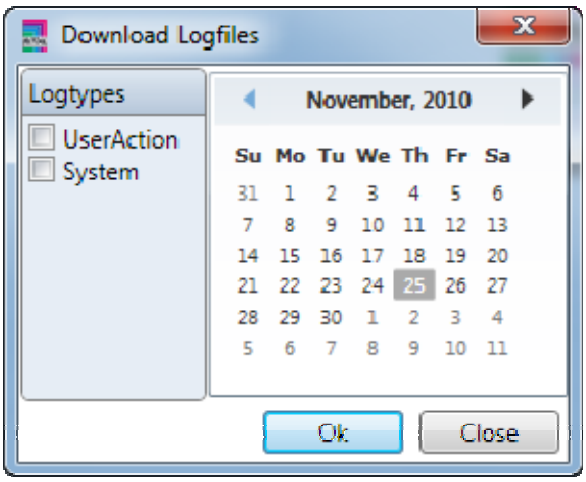

Fig. 53d Downloading the log files

In the opened selection window, you can select from the calendar the date for which you want to download the log files.
Furthermore, the UserAction and System selection fields must be used to specify which log files are wanted.

UserAction
This log file records all actions that the users made (login, mode change, set commands, etc.).

System
This log file records all actions that the RiZone or RiZone modules have performed.

After clicking **OK** to confirm, the selected files are written in txt format in the C:\Users*user*\Documents\Rizone\Logging folder (depending on the system configuration, the storage location for your own files can differ).

25 Messaging service (optional)

Provided activated with the licence key (optional), RiZone offers with the messaging service the capability to transfer not only the status of components but also individual, published variables to a higher-level network management system with the SNMP protocol.

The status of a component will be forwarded automatically to the messaging service.

25.1 Configuring a variable for the messaging service

During the creation or editing of a project, the **Publish** checkbox can be activated for the editing of a variable. If this checkbox is activated, the variable will be passed to the messaging service. To activate the changes, the changed project must be uploaded to the RiZone server.

25.2 SNMP configuration

The **SNMP agent** tab is selected in the **Administration > Messaging service** menu. The **Activate SNMP agent** checkbox activates the service for connection to a network management system.

The **Reinitialise SNMP agent** checkbox re-establishes the dynamic MIB for RiZone. This function can be used to delete the OID in the MIB when a variable is no longer published.

If the MIB is re-established, this can lead to integration incompatibilities of RiZone in the network management system.

25.2.1 Network

The **Network** menu can be used to assign the rights for the SNMP access. The configuration for the **Read community** and **Write community** controls this authorisation. This setting must be identical with that in the management system. The access from arbitrary management systems can be permitted when the Read and Write community fields are empty.

25.2.2 MIB-II

Settings are made in the MIB-II menu to identify the RiZone server using SNMP.

SysName:	SNMP name of the RiZone server
SysLocation:	Location of the RiZone server
SysContact:	System officer

25.2.3 Trap

RiZone supports a maximum of two trap recipients. These can be configured as **Trap recipient 1** and **Trap recipient 2**.

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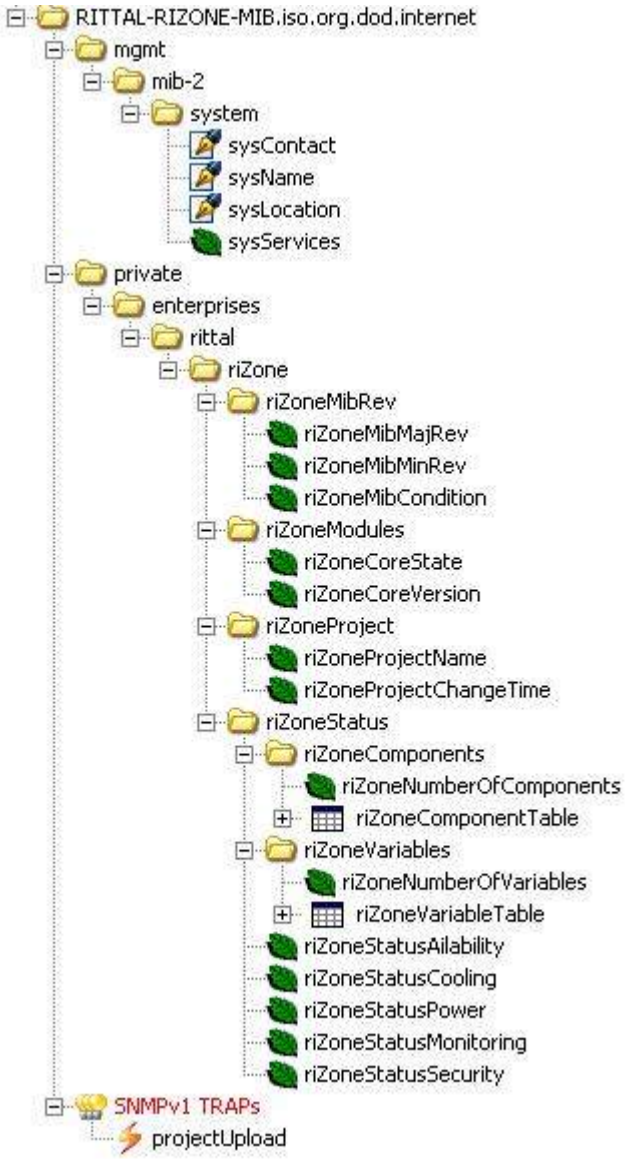
25.3 Specification of the MIB



mgmt.mib-2.system – Data for identifying the computer. In accordance with the MIB specification, some data can be written. For deviations between the SNMP agent and the setting dialog, the dialog data is used (to view the changes in the setting dialog, the dialog must be closed and re-opened).
private.enterprises.rittal.riZone.rizoneMibRev – version details of the used MIB. Currently 1.0.

private.enterprises.rittal.riZone.rizoneMibRev.riZoneMibCondition – status of the complete system
other (1),
ok (2),
degraded (3),
failed (4),
configChanged (5)
private.enterprises.rittal.riZone.rizoneMibRev.riZoneModule – status and version of the installed RiZone server
private.enterprises.rittal.riZone.rizoneMibRev.riZoneProject – project name and timestamp of the last change
private.enterprises.rittal.riZone.rizoneMibRev.riZoneStatus – status of the components and variables contained in RiZone. The overall status of the project can also be queried specifically. This corresponds to the status of the uppermost project node.

Component table
All RiZone components are always available in the component list.

	componentIndex	componentId	componentName	componentTyp	componentParent	componentStatusTotal	componentStatusAvailability	componentStatusCooling	componentStatusPower	componentStatusMonitoring	componentStatusSecurity
1	1	1	Neues Projekt	domain	0	alarm	ok	ok	ok	alarm	alarm
2	2	3903	Schrank 089	rack	1	alarm	ok	ok	ok	alarm	alarm
3	3	2902	Testunit	device	3903	ok	ok	ok	ok	ok	ok
4	4	3897	CMC-TC-10W	device	3903	alarm	ok	ok	ok	alarm	ok

Component Index –table index
Component Id – RiZone ID of the component
Component Name – RiZone component name
Component Type –
removed (1),
domain (2), – row is no longer used
location (3),
building (4),
room (5),
rackrow (6),
rack (7),
device (8), – component represented by a driver (CMC, LCP, DRC, UPS ...)
server (9)

Component Parent – ID of the higher-level component in the RiZone locations tree
Component Status Total – overall status of Availability, Cooling, Power, Monitoring and Security

Variables table
The variables list contains all variables that have activated the **Publish** option in the properties.

	variableIndex	variableId	variableName	variableMaintenanceGroup	variableMeasurand	variableParentId	variableType	variableQuality	variableValueInt	variableValueString	variableValueUnit	variableDivisor	variableMultiplicator
1	1	3628	Value	0	temperature	3632	number	good	29	29	C	1	1
2	2	2602	Status	192	undefined	2621	enum	good	4	Ok		1	1
3	3	4006	HumidityValue	0	humidity	1347	number	good	3330	333.0	% r.H.	10	1

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Note!

The table will be updated when the "Reinitialise SNMP agent" function has been executed. If the function is not called, values may remain in the table that are no longer present in the RiZone project or should no longer be published.

Variable Index – table index
Variable ID – RiZone ID of the variable
Variable Name – name from the RiZone variable list
Variable Maintenance Group – specifies to which group the status belongs. This is a bit-coded field.
undefined(1),
cooling(2),
power(4),
rack(8),
monitoring(16),
remoting(32),
availability(64),
security(128)
Variable Unit – specifies the physical measurement unit. This does not determine the factor (mW, W, KW).
undefined(1),
temperature(2),
current(3),
power(4),
effectivPower(5),
humidity(6),
voltage(7),
energy(8),
frequency(9),
access(10),
leakage(11),
percent(12),
rpm(13),
co2(14),
pue(15),
flow(16),
time(17),
costs(18),
imp(19)
Variable Parent ID – RiZone ID of the component to which the variable is assigned.
Variable Type – specifies the data type.
number(1),
string(2),
enum(3)
Variable Quality – validity of the measured value.
undefine(1), – value is not yet initialised. This can occur at the restart of the RiZone server.
good(2), – value is OK.
bad(3), – the value could not be determined (e.g. timeout). These values do not represent the current status and cannot be used for calculations.

Variable Value Int – integer value of the variable (type number or enum)
Variable Value String – written out value. For (type = number) the value taking account of the factors and a point as decimal separator. For (type = enum) the significance of the value, e.g. Int=4 > String="OK".
Variable Value Unit – measurement unit of the (Int value * multiplicand/divisor) e.g. (W, kW, mA, °C)
Variable Divisor – divisor of the value (e.g. value = 333 ; divisor = 10 ; unit = °C gives 33.3°C)
Variable Multiplicand – multiplicand of the value.

Trap
The RiZone MIB integrates a "projectUpload" trap. This is sent for each upload from a project to the entered trap receiver. The content of the trap are variables from the tree listed above – sysContact, sysName, sysLocation, riZoneProjectName, riZoneProjectChangeTime.

FAQs
There is no setting dialog for the SNMP agent.
Check your licence whether the SNMP agent is activated.

No message arrives in RiZone whether the SNMP agent has been started.
Activate "Activate SNMP agent". You must now receive a message in the RiZone message list. If not, check whether the Messaging Service is running. (As of version 1.3, the Messaging Service is a Windows service.)

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26 Update and deinstallation of the RiZone GUI

26.1 Update of the RiZone GUI

The RiZone GUI is updated by the deinstallation and the installation of the new GUI.
Detailed information is provided in the Installation and Deinstallation sections of the GUI.
As of RiZone 2.0, an installed Microsoft .Net Framework 4.0 is required for the operation.
The .Net 4.0 download is available at:
http://www.microsoft.com/download/en/details.aspx?id=17851

26.2 Deinstallation of the RiZone GUI

The RiZone GUI is deinstalled locally from the client PC control panel.
Example Windows XP: The control panel is opened and the **Software** menu item selected. Then select the **Rittal RiZone GUI** program.

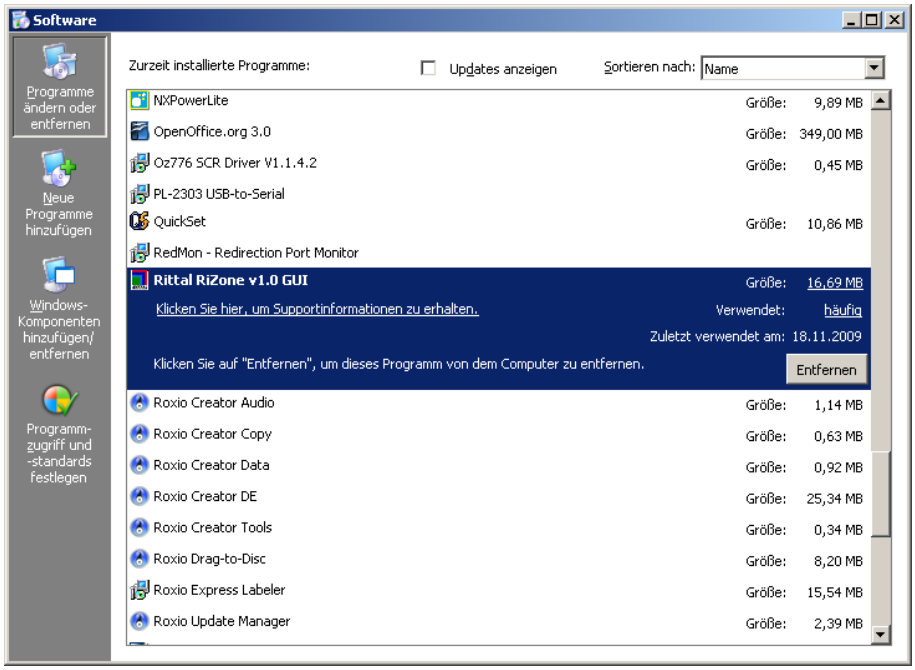

Fig. 54 Deinstallation of the RiZone GUI

Click the **Remove** button to prepare the deinstallation of RiZone.

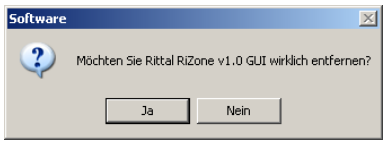

Fig. 55 Deinstallation of the RiZone GUI

The confirmation of the prompt causes the deinstallation to be performed.
A deinstallation under Vista or Windows 7 is performed similarly.

27 Technical specifications

27.1 Virtual machine (Software Appliance) technical specifications

System requirements*	
CPU	2 GHz dual core processor
RAM	4 GB
Hard disk capacity	70 GB
Network	1 Gbit SNMP 1 Gbit Fileshare/Management
Supported hypervisors	VMWare, Xen, Hyper-V
Client operating system	Windows 2008 Server R2 64-bit
Ports used	161, 162, 800, 3389, 4433, 22222, 22223

** The listed system prerequisites apply to the virtual machine. The virtualisation environment (hypervisor) must then run on more powerful hardware with more CPU power / RAM.*

27.2 Hardware Appliance technical specifications

CPU	1.86 GHz Xeon dual core processor
RAM	4 GB
Hard disk capacity	2 x 250 GB (RAID 1)
Network	2 x 1 Gbit Ethernet
Operating system	Windows 2008 Server R2 64-bit
Ports used	161, 162, 800, 3389, 4433, 22222, 22223

Schaltschrank-Systeme
Industrial Enclosures
Coffrets et armoires électriques
Kastsystemen
Apparatskåpssystem
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Sistemas de armarios
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Power Distribution
Distribution de courant
Stroomverdeling
Strömfördelning
Distribuzione di corrente
Distribución de corriente
分電・配電システム

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Electronique
Electronic Packaging Systems
Electronic Packaging
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System Climate Control
Climatisation
Systeemklimatisering
Systemklimatisering
Soluzioni di climatizzazione
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温度管理システム

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Solutions IT
IT-Solutions
IT-lösningar
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Communication Systems
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Armoires outdoor
Outdoor-behuizingen
Communication Systems
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コミュニケーションシステム

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