



ZRSOFTWARE.CLOUD FOR WINDOWS

User Manual

Written for ZRSoftware.Cloud 1.0.0.

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ZRSoftware.Cloud on the web: redzsoftware.com/zrsoftware-cloud/

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1 Introduction

ZRSOFTWARE.CLOUD reads electricity meters and keeps their values on this PC. It runs as a Windows service (ZRSOFTWARE.CLOUD, service name ZRSOFTWARE), and you work with it in a web browser on the same PC, at <http://127.0.0.1:5080> or at the port chosen in the setup (see [Installation and first start](#)).

The service runs and reads the meters on its schedules also when nobody is signed in to Windows and no browser is open, as long as the licence allows it ([License](#)). When the trial or the licence ends, meters are not read and automatic exports do not run; your data stays, and you can still look at it and, as far as the licence includes these parts, analyse it and export it by hand. When the licence server says that the licence was withdrawn or moved, or that it does not know it on this PC, meters are still read for seven days and then stop; a copy of a virtual PC stops at once.

What you do with it

- Connect the meters through a communication line: an optical probe or an RS-232 / RS-485 connection on a COM port of this PC, or a TCP gateway or modem ([Communication lines](#)).
- Keep a list of the meters, sort them into groups and choose many of them at once ([Meters and groups](#)).
- Read a meter's registers and its load profile, and follow the bytes exchanged with the meter ([Reading meters](#)).
- Look at the load profile in steps from 15 minutes to a day, split the energy into tariff zones, and combine meters in formulas and reports ([Analysis](#), [Tariffs](#), [Formulas & reports](#)).
- Let the service read the meters on schedules and, on its own, write export files into a folder, e-mail them or upload them to an FTP server ([Schedules](#), [Exports](#)).
- Bring in meters and lists from an Excel file, or the meters, readings and lists of ZR Software 7 ([Import](#)).
- Keep the program up to date: the **Updates** card of **Settings** shows whether a new version is out and offers to download and install it, unless it came out after the licence's maintenance ended. An admin, or REDZ support during a support session, can download and install an update. The versions come from REDZ's licence server (see [Settings](#)).

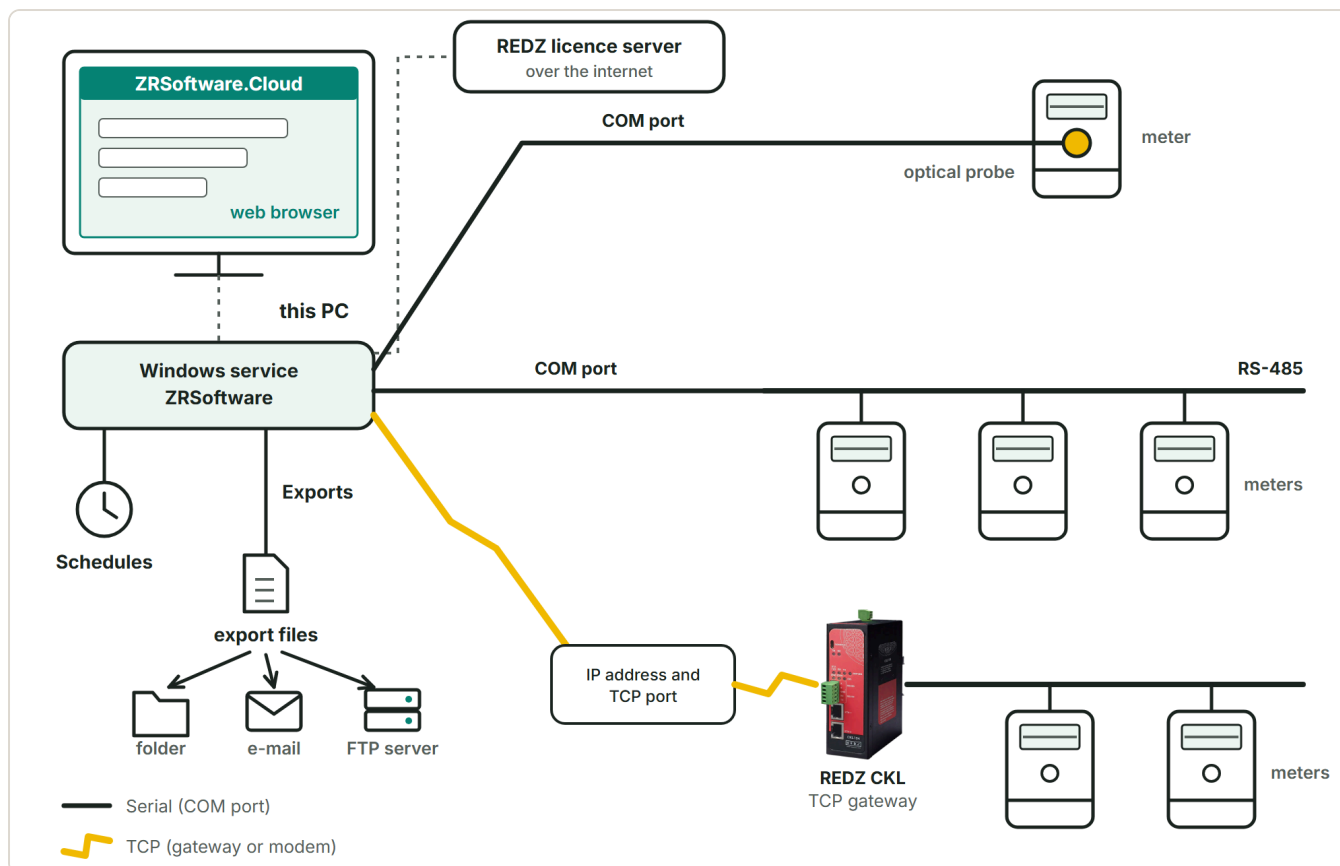


Figure 1.1 The Windows service on this PC reaches the meters through its communication lines: an optical probe or an RS-485 connection on a COM port, or TCP through a gateway such as the REDZ CKL. It reads them on its schedules and writes export files to a folder, e-mails them or uploads them to an FTP server; for the licence and for REDZ support it reaches the REDZ licence server over the internet. You work with it in a web browser on the same PC.

[Appendix: supported meters](#) lists the meter types that have been read on real meters with the program's meter drivers.

Who may do what depends on the user's role; [Users](#) describes the roles. What the pages offer also depends on the licence ([License](#)).

An admin activates the licence on the **License** page: online, with a licence key or a licence request sent to REDZ, or, on a PC without internet access, with a licence file from REDZ or your partner. On a virtual PC the licence is activated online only (see [License](#)).

When you need help, an admin can send a support bundle to REDZ support, or let REDZ support work in the program for 4, 12 or 24 hours, from the **Support** page (see [Support](#)). While a REDZ support session runs, a green window at the top right of every page says until when REDZ support is connected; there an admin can chat with REDZ and end the session. REDZ support works with the rights of an Admin. It cannot change or test the mail settings, its own account or the support session, and it cannot reset the password of the last enabled Admin; only an import of a ZR Software 7 database during the session, also a copy that REDZ support uploads, can still set that database's mail server, with user name and password, when none is set here and the licence includes Exports and e-mail. **Jobs &**

events gets a row with the source REDZ support for each change REDZ support makes or tries to make, and for each file or reading trace it takes, also when it saves the chart as a picture or prints a page; a refused or failed change is a warning, and what was typed, for example a password, is not in the row. Pages that REDZ support only looks at leave no row.

This manual

This manual describes version 1.0.0. Names of buttons, boxes and pages are printed in bold as the pages show them.

2 Installation and first start

ZRSoftware.Cloud has two parts: a Windows service that reads the meters and keeps their data on this PC, and the pages you work with in a web browser on the same PC. The setup program installs the service and starts it; after that you open the pages at <http://127.0.0.1:5080>.

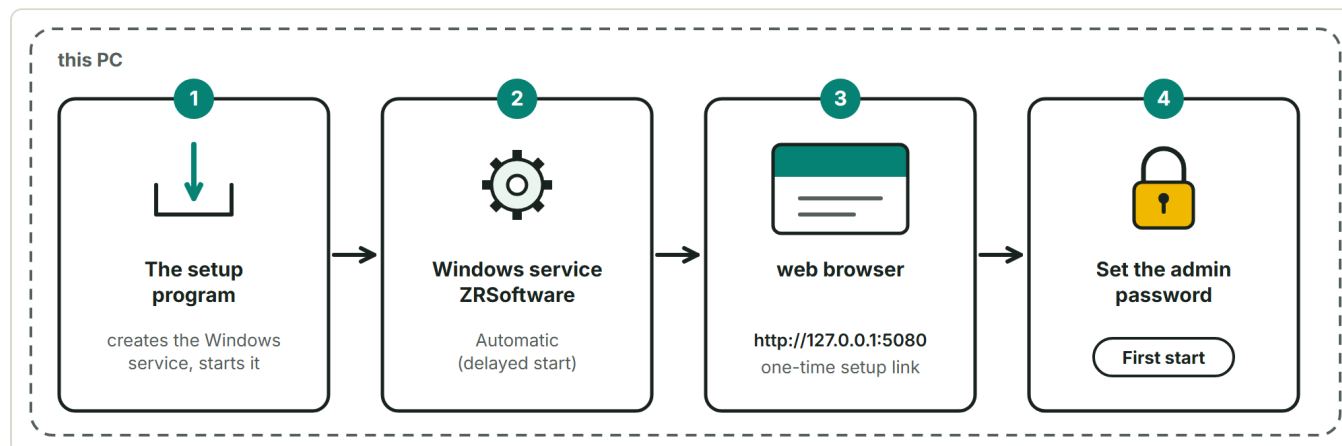


Figure 2.1 From the setup program to the first sign-in: the setup creates and starts the Windows service, the browser opens the pages on this PC, and you set the admin password.

What the PC needs

- A Windows version that .NET 10, which the program is built on, supports on x64 PCs: Windows 11 versions 24H2, 25H2 and 26H1; Windows 11 23H2 and Windows 10 versions 21H2, 1809 and 1607 only in the editions Microsoft's .NET 10 list names; Windows Server 2016, 2019, 2022, 23H2 and 2025, and Windows Server 2012 and 2012 R2 with Extended Security Updates.
- On a 32-bit Windows the setup stops with the message "ZRSoftware.Cloud needs 64-bit Windows."
- A Windows account with administrator rights to run the setup.
- Nothing else to install first: the runtime the program needs is inside the program file.
- A web browser on the same PC.

The setup program

Run ZRSoftware_Setup_1.0.0.exe. It shows four pages: a welcome page, Options, the installation itself with a list of what it does, and the Finish page.

NOTE

If Windows shows a warning when you start the setup program you downloaded from redzsoftware.com/zrsoftware-cloud/, confirm that you want to run it.

The setup does not ask for a folder. The program goes to C:\Program Files\REDZ\ZR Software. The data (database, backups, logs) goes to the folder REDZ\ZR Software in the ProgramData folder of Windows, which is C:\ProgramData\REDZ\ZR Software when Windows is on drive C. The Options page shows both folders.

On the Options page you can change the port the pages answer on. The default is 5080. A value outside 1 to 65535 is refused with "The port must be a number from 1 to 65535." If you change the port, use it in the address instead of 5080.

If ZR Software 7 is installed on the PC, the setup does not change or remove it. The setup looks for its database and, when it finds it, offers it later on the **Import** page and in the first start steps (see [Import](#)).

During the installation the setup creates the Windows service, starts it and waits up to 90 seconds for it to answer. If the service does not answer, the setup stops with a message that gives a code and points to the details list and the Windows event log.

If the installation fails for another reason, the setup takes back what it made and says that nothing is left installed. The data folder and the file setup.log in it stay.

What the setup does with the service (creating, starting and stopping it, the update task, the folder rights, the database copy and the result) is also written to the file setup.log in the data folder.

The Finish page

The Finish page has two ticked boxes: "Open ZRSoftware.Cloud in the browser" and "Create a desktop shortcut". Leave them ticked unless you have a reason not to.

On a new installation the first box opens a one-time setup link in your default browser. With it you set the admin password at once, without looking up the one-time password. The link works once, for 15 minutes, and only on this PC. When there is no admin waiting for a password (for example after an upgrade), the box opens the plain address <http://127.0.0.1:5080> instead.

The shortcut is placed on the desktop of every user of the PC, has the name ZRSoftware.Cloud and opens the pages in the browser.

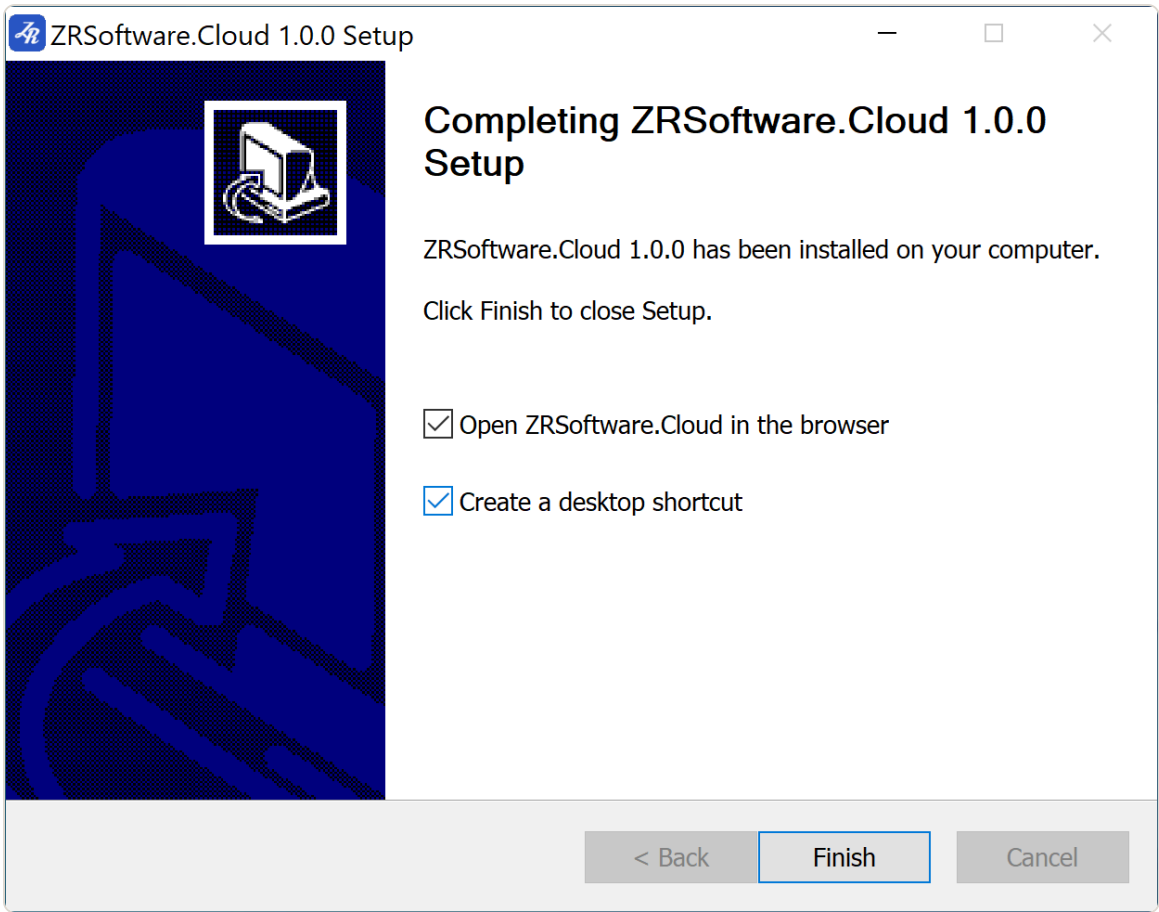


Figure 2.2 The setup's Finish page after a new installation on a clean Windows (Windows Sandbox): both boxes are ticked.

The Windows service

Item	Value
Service name	ZRSoftware
Display name	ZRSoftware.Cloud
Account	NT SERVICE\ZRSoftware (the service's own account)
Start	Automatic (delayed start)
After a crash	Windows starts it again after one minute for the first two crashes; the count starts again after a day without a crash

The pages open at <http://127.0.0.1:5080>, or at the port chosen on the Options page. The service runs and reads the meters on its schedules also when nobody is signed in to Windows.

The setup also adds the task REDZ\ZRSoftware Update to the Windows Task Scheduler. It runs every 5 minutes with the Windows account SYSTEM and does nothing until an update

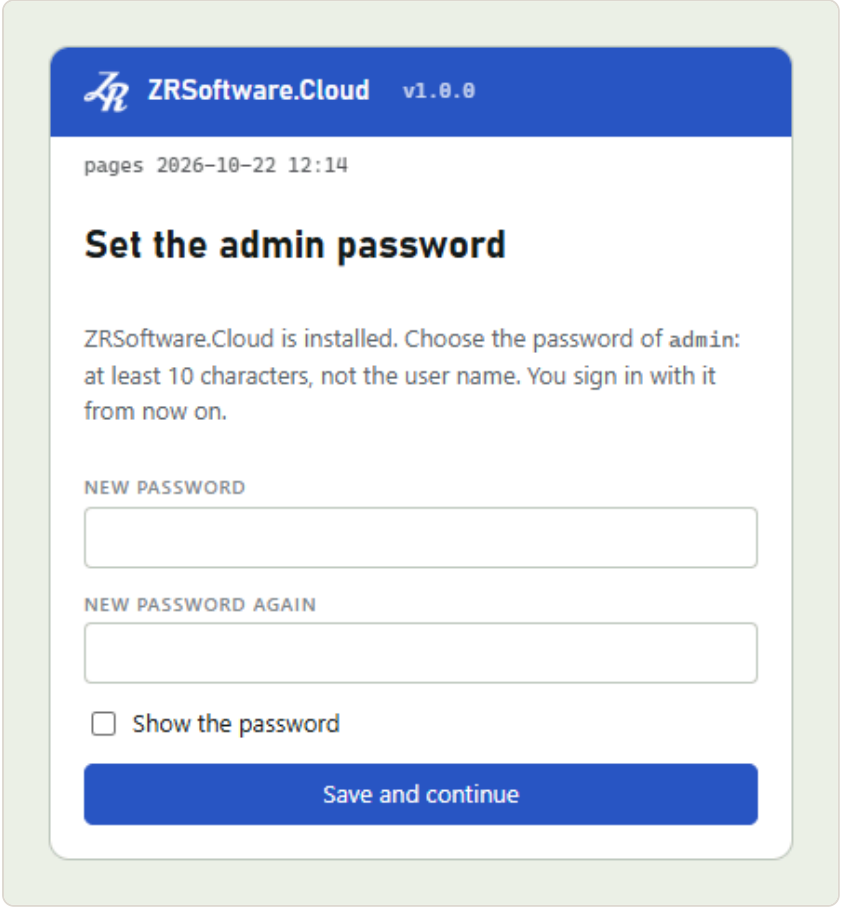
is asked for on the **Updates** card in **Settings** (see [Settings](#)). An admin, or REDZ support during a support session, can download and install an update. A successful upgrade makes the task again, and removing the program deletes it.

The setup gives the data folder its own permissions, not the ones of the ProgramData folder. Only the service, Windows itself and programs started with administrator rights can open the data folder; other Windows users of the PC cannot.

First start

When the browser opens with the setup link, the page **Set the admin password** asks for the password of the user admin. Type it in **New password** and again in **New password again**, then click **Save and continue**. The password needs at least 10 characters and must not be the user name. You are signed in as admin, and from now on you sign in with this password.

Tick **Show the password** to see what you type in both boxes.



ZRSoftware.Cloud v1.0.0

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Set the admin password

ZRSoftware.Cloud is installed. Choose the password of admin:
at least 10 characters, not the user name. You sign in with it
from now on.

NEW PASSWORD

NEW PASSWORD AGAIN

☐ Show the password

Save and continue

Figure 2.3 The page the setup link opens: choose the password of admin, type it twice and click Save and continue (sample installation).

If the link was already used or is older than 15 minutes, the page says "The setup link is used or expired. Sign in as admin with the one-time password." How to do that is described in [Signing in and the window](#).

After the password, the page **First start** opens with the first start steps. It opens by itself when an admin signs in, as long as there is no communication line and the steps were not closed.

Step	What you do
Password	Nothing more: your admin password is set. Other users are added on the Users page.
Licence	From the first start on this PC the program runs as a 30-day trial until a licence is loaded or activated. The License page is shown below the step (see License).
Old database	Only when ZR Software 7 was found. The Import page for its database is shown below the step (see Import).
Line	Add the line through which this PC reaches the meters (see Communication lines).
Meter	Add a meter on that line, then read it once on the Read page (see Meters and groups).
Done	Shows how many lines and meters there are and the licence state.

Move with **Next** and **Back**, or click a step at the top. Every step can be skipped. A step is marked in green when it is not the open one: **Password** always, **Licence** once the trial has started (also after it has ended) or a licence is there, **Line** and **Meter** once one exists.

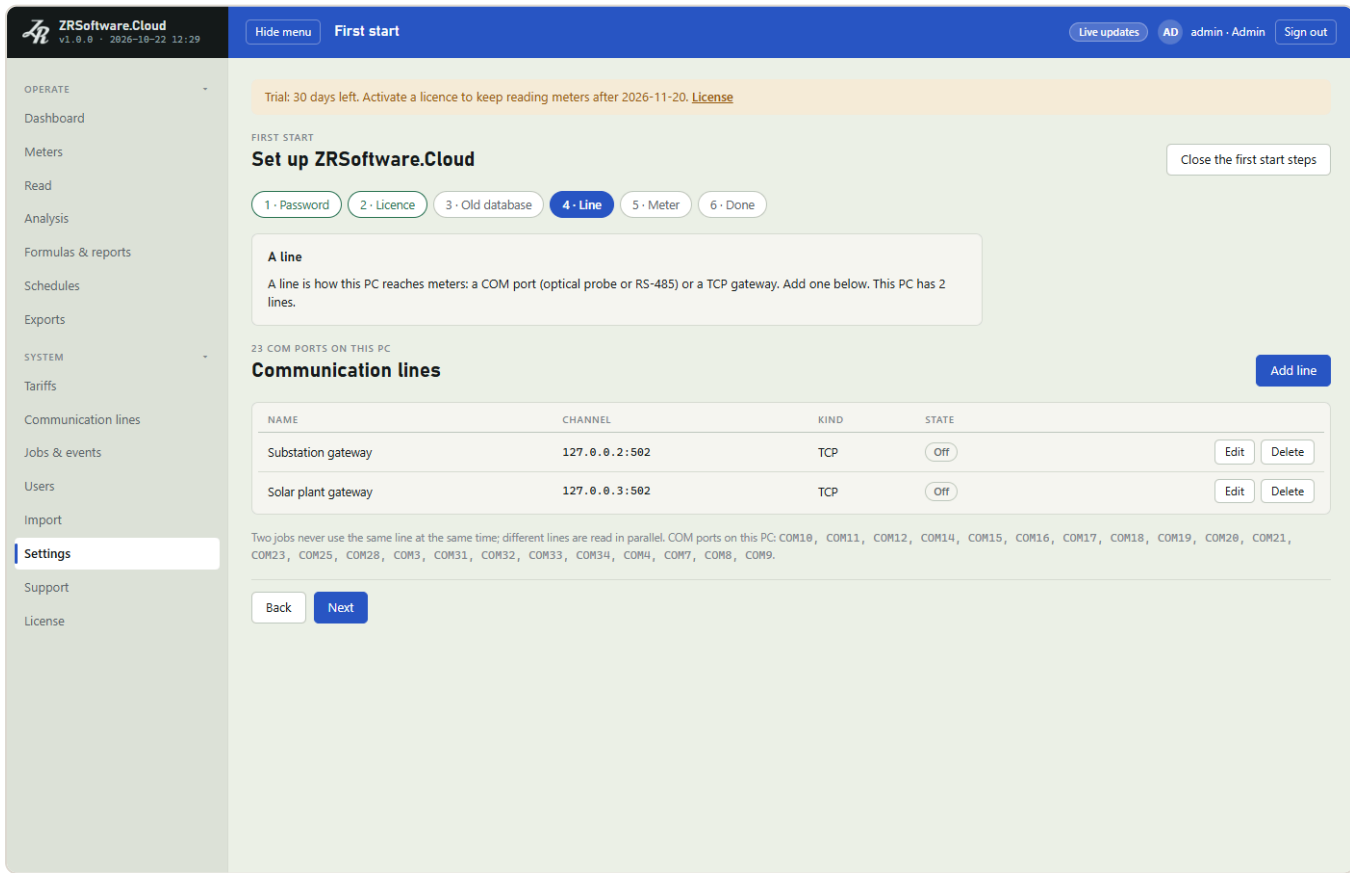


Figure 2.4 The first start steps with the Line step open, the steps already done marked in green and the sample lines listed below.

Close the first start steps or, on the last step, **Go to the dashboard** closes the steps and opens the **Dashboard**. After that they no longer open by themselves.

To see the steps again, open **Settings** and click **Open the first start steps**.

Silent installation

The setup can run without pages, for example from a deployment tool. Run it from an elevated command prompt with these switches:

Switch	Meaning
/S	Install without pages. No browser is opened.
/PORT=5080	The port of the pages. Used on a new installation only; an upgrade keeps the port.
/SHORTCUT=1	Make the desktop shortcut. Without it, a silent setup makes none.

The exit code of the setup tells the result:

Exit code	Result
0	Done. For an upgrade, see the warning about the end of maintenance under Upgrading.
2	The upgrade failed; the previous version and its database are back and running.
3	The service is already installed.
4	The service was installed but did not answer.
5	Wrong switches (also a /PORT outside 1 to 65535), or the Windows is not 64-bit. On a new installation nothing is left installed.
6	The setup failed with an unexpected error, or an upgrade could not start the previous version again. On a new installation nothing is left installed; after an upgrade the service ZRSoftware may be left stopped, so meters are not read until it is started again. See setup.log.

NOTE

Give /PORT a number from 1 to 65535 in plain digits without a leading zero, or leave the switch out. A number outside that range, also an empty value, stops the setup at once with exit code 5, before anything is installed.

Upgrading

To upgrade, run the setup of the new version on the PC. It finds the installed version, skips the Options page and keeps the folder and the port.

WARNING

Before you upgrade by hand, look at **Maintenance until** on the **License** page or on the **Updates** card. With a licence that has an end of maintenance, a version built after that day does not read meters: the upgrade itself still ends as done, but the licence state becomes **Version after maintenance**, meters are not read and automatic exports do not run until you install a version released by the last day of maintenance or REDZ extends the maintenance (see [License](#)).

An upgrade can also start from the **Updates** card in **Settings**: the update task then runs the setup of the new version, and the setup upgrades in the same steps (see [Settings](#)). An admin, or REDZ support during a support session, can download and install an update. An update installed from the Updates card runs the setup without its pages; what it reports is in setup.log.

1. The setup stops the service. If it does not stop within 60 seconds, nothing is changed and the old version is started again.
2. It waits up to 60 seconds until no other program holds the program file. If one still does, nothing is changed and the old version is started again.
3. It copies the database to the Backups folder in the data folder. The file name contains the old version number. If the copy cannot be made, nothing is changed and the old version is started again.
4. It keeps the old program file in the folder previous in the program folder and puts the new one in place.
5. It starts the service and waits up to 90 seconds for it to answer.
6. When the new version answers, the upgrade is done. An upgrade gives an older installation's data folder the same permissions as a new installation. If it cannot, the setup still ends as done, and the last line of its details list is a warning that names the data folder and asks you to run the setup again; setup.log has the reason.

If the new version does not start, the setup puts the old program file and the database copy back and starts the old version. It then says "The upgrade failed; the previous version and its database are back and running. See the details above."

If the setup finds the program folder of an earlier setup but no ZRSoftware.Cloud service, it installs the program anew in that folder.

When a new version changes the layout of the database, it makes one more copy in the Backups folder at its first start. The Backups folder keeps the five newest copies and deletes older ones.

Removing the program

Remove the program in the Windows list of installed apps, where it is listed as ZRSoftware.Cloud by REDZ.

The uninstaller stops and removes the service, deletes the update task, the program files and the desktop shortcut.

WARNING

The data folder is not deleted: the database, its backups, the logs and a downloaded update setup stay in C:\ProgramData\REDZ\ZR Software. The record of the trial period and of the licence state also stays on the PC, so installing again neither starts a new trial nor clears a state such as **Clock behind** or **Withdrawn**.

If you install the program again later, it uses the data that stayed: the users and their passwords are the same as before, and no new one-time password is made.

If the data folder is put back from an earlier copy and the licence is checked online, the licence server may count this PC as a copy (see [License](#)).

3 Signing in and the window

The pages ask you to sign in before they show anything. This chapter describes the sign-in page, the window you see after it, your own password and the Dashboard.

Signing in

Open `http://127.0.0.1:5080` in the browser, or double-click the desktop shortcut ZRSoftware.Cloud. The page **Sign in** shows the program name and version. Type your **User name** and **Password** and click **Sign in**.

Tick **Show the password** to see the password you type.

Figure 3.1 The Sign in page with empty User name and Password boxes and the note with the full path of the first-start password file, as on a sample installation.

Every user has one of three roles: Admin, Operator or Viewer. An Operator reads meters; a Viewer only looks at the data. An admin adds users and sets their roles (see [Users](#)).

A wrong user name or password gives the message "Wrong user name or password"; for an existing user name the message adds how many attempts are left before a 15-minute lock. After five wrong passwords in a row the account is locked for 15 minutes; the page then says how many minutes are left. An account an admin has disabled gets "The

account is disabled" once the right password is typed; a wrong password counts towards the lock as for any account.

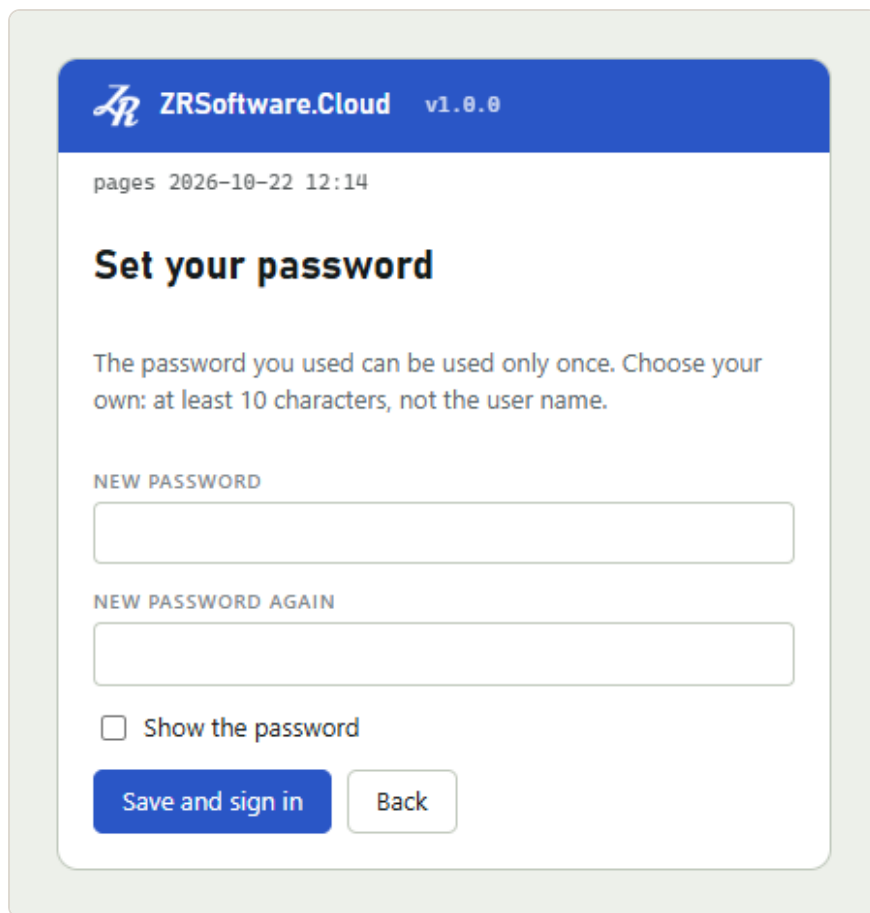
Every sign-in with a user name and password is written to the event list, and so is a lock after wrong passwords (see [Jobs & events](#)). When you sign in by setting a new password, on **Set your password** or with the setup link, the event list shows that the password was set instead of a sign-in; the password itself is not written.

A one-time password

If the setup link was not used, the first admin signs in with a one-time password. The sign-in page says where it is: "First start: the one-time password of admin is in the file C:\ProgramData\REDZ\ZR Software\admin-initial-password.txt on the PC where ZRSoftware.Cloud is installed. Only an administrator of that PC can open it."

The file is in the data folder of the program. The page names that folder for Windows on drive C; on another drive it is the same folder in the ProgramData folder of Windows (see [Installation and first start](#)). Only the service, Windows itself and programs started with administrator rights can open the data folder; other Windows users of the PC cannot. Open the file from a program started with Run as administrator. Then sign in with the user name admin and the password from the file.

A one-time password does not open the pages: after **Sign in** the page **Set your password** opens. Type your own password in **New password** and **New password again** and click **Save and sign in**. The password needs at least 10 characters, must not be the user name and must differ from the one-time password. The same page opens when an admin has given you a one-time password.



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Set your password

The password you used can be used only once. Choose your own: at least 10 characters, not the user name.

NEW PASSWORD

NEW PASSWORD AGAIN

☐ Show the password

Save and sign in Back

Figure 3.2 The Set your password page that opens after signing in with a one-time password (sample user).

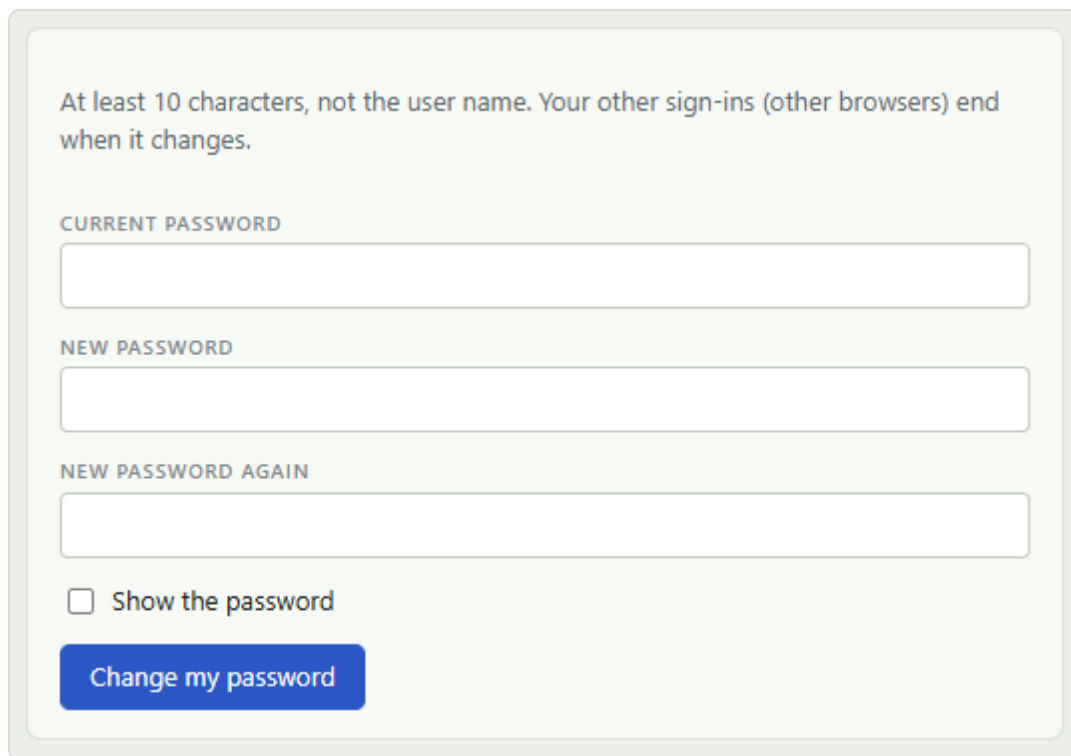
When the admin has set an own password, the program deletes the file admin-initial-password.txt.

When no admin can sign in, see [Troubleshooting](#).

Your own password

Every user can change their own password. Click your user name at the top right; in a narrow window only your initials are shown there, click them. The page **My password** opens, and the menu marks **Settings** while it is open.

1. Type your **Current password**.
2. Type the new password in **New password** and again in **New password again**. It needs at least 10 characters, must not be the user name and must differ from the current password.
3. Click **Change my password**.



At least 10 characters, not the user name. Your other sign-ins (other browsers) end when it changes.

CURRENT PASSWORD

NEW PASSWORD

NEW PASSWORD AGAIN

☐ Show the password

Change my password

Figure 3.3 The My password page of the sample user demo: the note, the three password boxes and Change my password.

The page says "Your password is changed. Other sign-ins of this user end." You stay signed in in this browser tab. The service refuses your user's sessions in other tabs and browsers at once; their pages go back to the sign-in page at their next request to the service, within 10 minutes at the latest. The change is written to the event list (see [Jobs & events](#)).

If the two new passwords differ, the page says "The two new passwords are not the same." A wrong current password gives "wrong user name or password" and counts towards the 15-minute lock like a wrong password at sign-in; the lock is written to the event list.

The session and signing out

A session lasts 8 hours and belongs to the browser tab: if you close the tab, you sign in again next time. When the session has ended, the sign-in page comes back at the next request the page makes to the service, at the latest at your next action, and says "The session has ended. Sign in again."

The service also refuses a session at once when your password is changed by an admin, your account is disabled or your role is changed; the page goes back to the sign-in page at its next request.

To sign out, click **Sign out** at the top right.

The window

After signing in you see a top bar, the menu on the left and the page on the right. The top bar shows the program name and version, the name of the open page, the live update mark, your user name with your role, and **Sign out**.

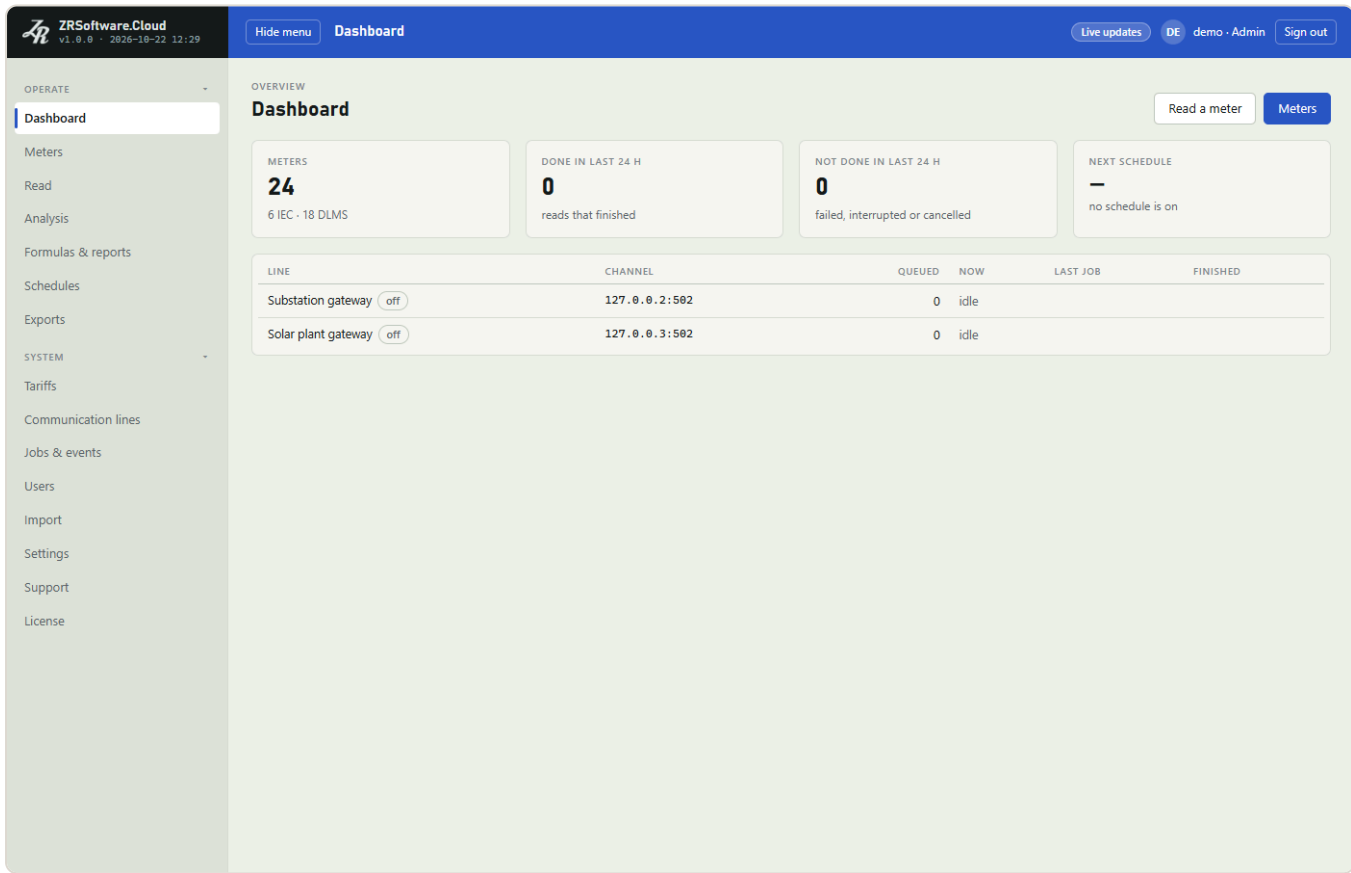


Figure 3.4 The window after signing in: the top bar with Live updates, the menu on the left and the Dashboard on the right (sample meters and lines).

The menu has two groups, **Operate** and **System**. Some pages are shown to administrators only:

Group	Page	Shown to
Operate	Dashboard	Everyone
Operate	Meters	Everyone
Operate	Read	Everyone
Operate	Analysis	Everyone
Operate	Formulas & reports	Everyone
Operate	Schedules	Everyone
Operate	Exports	Everyone

Group	Page	Shown to
System	Tariffs	Everyone
System	Communication lines	Everyone
System	Jobs & events	Everyone
System	Users	Administrators
System	Import	Administrators
System	Settings	Everyone
System	Support	Administrators
System	License	Everyone

A page that your licence does not include is not in the menu. This applies to **Analysis**, **Formulas & reports**, **Schedules**, **Exports**, **Tariffs** and **Import** (see [License](#)).

When meters are not read, for example after the trial or the licence has ended, **Schedules** and **Import** are not in the menu either; **Analysis**, **Formulas & reports**, **Tariffs** and **Exports** stay.

Click a group name to close or open it. At first **System** is closed; the group of the open page is always open. **Hide menu** in the top bar hides the menu to give the page more room, and **Show menu** brings it back. The browser remembers these choices.

In a narrow browser window the menu becomes a row above the page, and the top bar hides the version and the name of the open page.

Live updates in the top bar means the pages change by themselves as the service reads and exports. **Not live** means there is no live connection to the service; the page then changes only when you act.

During the trial, when the licence has ended or cannot be used, when its maintenance has ended, and in the last days of reading before meters stop being read (for example after the licence server called the licence withdrawn, or when this PC has not reached the licence server for too long), a coloured strip above the page shows the licence message and a **License** link; in those last days the message names the last day on which meters are read. The License page itself does not show the strip. See [License](#).

While a REDZ support session runs, a small green window at the top right of every page says so, for every user (see [Support](#)).

The Dashboard

Without a page in the address the **Dashboard** opens; an admin may first see the first start steps (see [Installation and first start](#)). **Read a meter** and **Meters** at the top open those

pages.

Tile	What it shows
Meters	The number of active meters, split into IEC and DLMS meters.
Done in last 24 h	Reads that finished successfully in the last 24 hours.
Not done in last 24 h	Reads that failed, were interrupted or were cancelled in the last 24 hours. The tile is marked when the number is above zero.
Next schedule	When the next schedule that is on runs, and its name. The year is shown only when the run is in another year.

When the last good registers reading of a meter is over a reactive limit, the card **Over the reactive limit** lists the meter, the ratio, its value and the limit. The **limits** link opens **Settings**, where an admin sets them (see [Settings](#)).

The table lists every communication line: its **Channel**, how many jobs are **Queued**, what it does **Now** (the running job, or **idle**), the **Last job** with its result, and when it **Finished**. A line that is switched off is marked **off**. Without lines the table says "No line yet. An admin adds one under Communication lines."

While the top bar shows **Live updates**, the Dashboard refreshes by itself when a job is queued, starts or ends.

4 First reading, step by step

This chapter takes one meter from nothing to its first values: a line to a TCP gateway, an EMH meter behind it, a read of its registers, the **Meter detail** page, a read of its load profile and the **Analysis** page. Each step names the pages and buttons; the chapters after this one describe every field and message.

The example is an EMH meter on the serial side of a TCP gateway such as the REDZ CKL. The program opens a TCP connection to the gateway's address and port; the serial speed and framing on the meter's side are the gateway's settings, not this program's.

NOTE

Steps 1 and 2 need an administrator. Reading (steps 3 and 5) needs an Operator or an administrator.

Step 1: add the line

1. If the **System** group of the menu is closed, click **System** to open it; then open **Communication lines** and click **Add line**.
2. Type a **Name** for the line.
3. Set **Kind** to **TCP (gateway or modem)**.
4. Type the gateway's **IP address** (an IPv4 address such as 192.168.1.20) and its **TCP port** (1 to 65535).
5. Leave **IEC opening before DLMS (Landis+Gyr over TCP)** unticked: it changes only DLMS reads, and an EMH meter is read with IEC 62056-21.
5. Leave **On** ticked and click **Save**.

Edit line

NAME
CKL gateway

KIND
TCP (gateway or modem) ▼

IP ADDRESS
192.168.0.112

TCP PORT
502

☐ IEC opening before DLMS (Landis+Gyr over TCP)

☒ On

Save Cancel

Figure 4.1 The line of a REDZ CKL gateway in the REDZ laboratory, opened with Edit; Add line shows the same fields.

The line appears in the list with its address and port under **Channel** and **On** under **State**. If the service refuses the line, the form stays open and shows the reason under the fields. See [Communication lines](#).

Step 2: add the meter

1. Under **Operate**, open **Meters** and click **Add meter**.
2. **Type** starts with EMH once a line exists; keep it.
3. Type the meter's **Serial no.** and, if you like, a **Location** such as the site or feeder.
4. **Communication line** starts with the first line; choose the line of step 1.
5. Leave **Physical address** empty when the meter needs no address; with an empty field the sign-on carries no address.
6. Click **Save**.

The form has no **Initial baud rate** for a meter on a TCP line: it says "TCP line: the gateway or modem sets the serial speed and framing." The **Meter password** is not used for IEC 62056-21 meters such as EMH; leave it empty.

Add meter

LOCATION

Demo - Bench meter (sample values)

TYPE

EMH

SERIAL NO.

90000002

COMMUNICATION LINE

TCP gateway (sample)

PHYSICAL ADDRESS

empty: none

MULTIPLIER (CT × VT)

1

PROFILE PERIOD (MIN)

auto

Empty: the period the stored readings show.

TCP line: the gateway or modem sets the serial speed and framing.

METER PASSWORD

none stored

Not used for IEC 62056-21 meters: the service never sends it to them. Stored encrypted on this PC and never shown again. A wrong password is not tried twice by the service.

Save

Cancel

Figure 4.2 Add meter for an EMH meter on the TCP line, before Save (sample values).

The meter appears in the list with a **Read** button in its row. See [Meters and groups](#).

Step 3: read the registers

1. Click **Read** in the meter's row. The page **Read** opens with the meter chosen and **Registers** chosen under **What**.
2. To see the values on this page, untick **Open the result when the read is good**. While it is ticked, as it is at first, **Meter detail** opens by itself after a good read (step 4); the page remembers the choice in this browser.
3. Click **Read now**.

While the meter answers, the **Values** card lists the values as they arrive, and the **Line log** shows every byte to and from the meter.

After a good read the **Values** card shows the stored reading: each OBIS code with its value and unit, and for the energy registers **This period** and **Previous period**. When the meter sends its clock, a line above the table gives it and how far it is from the PC's clock. The **Line log** card shows the result and the job number; **Show more** makes the log taller and **Hex** shows the bytes in hex. When a read does not succeed, the note under the log says why (see [Troubleshooting](#)).

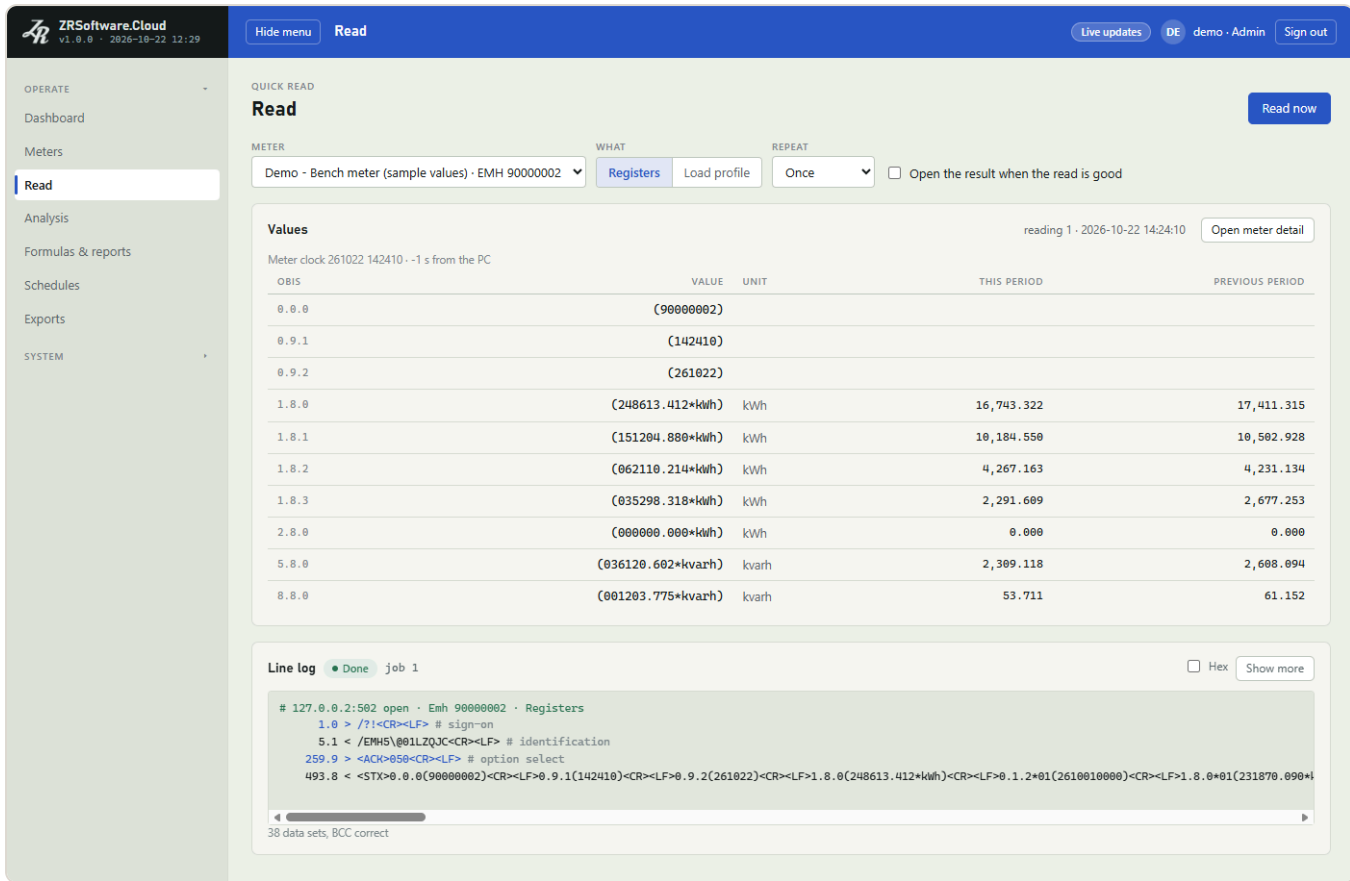


Figure 4.3 The Read page after the first registers read, with the Values card and the Line log (sample values).

See [Reading meters](#).

Step 4: open Meter detail

Click **Open meter detail** in the **Values** card. **Meter detail** shows one registers reading as the meter sent it, in the tabs **Import**, **Export**, **Billing**, **Instantaneous**, **General & events** and **All values**. It opens at **Billing**: the registers at the last and the previous end of billing and the energy of this and the previous period, with the **Billing history** below. The list at the top chooses an earlier reading, and **Print readout** prints the one shown.

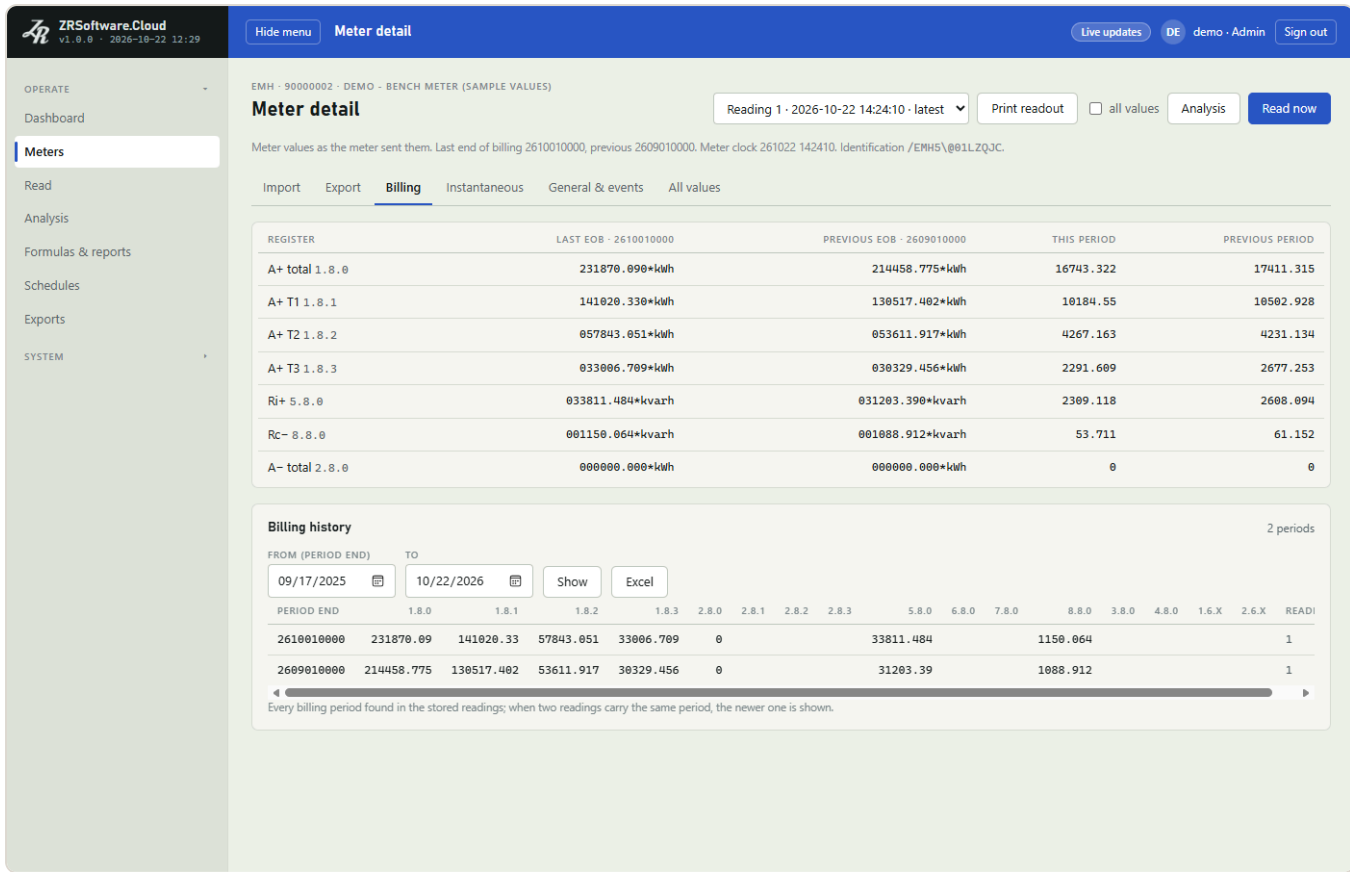


Figure 4.4 Meter detail of the meter, Billing tab and Billing history (sample values).

See [Meters and groups](#).

Step 5: read the load profile

1. Click **Read now** on **Meter detail**: it opens the **Read** page with the meter chosen, and does not read yet. Or open **Read** in the menu and choose the meter under **Meter**.
2. Under **What**, choose **Load profile**.
3. The page proposes yesterday in **From (meter calendar)** and today in the second box. For an EMH meter, as for every IEC 62056-21 meter, that box is **To (until 00:00 of this day)**, so the proposed days read yesterday's profile.
4. Click **Read now**.

After a good read the **Load profile** card shows how many intervals were stored and their length, the first and the last, and the sum of each channel. When the licence includes analysis, **Open in Analysis** opens them on the **Analysis** page; with **Open the result when the read is good** ticked it opens by itself.

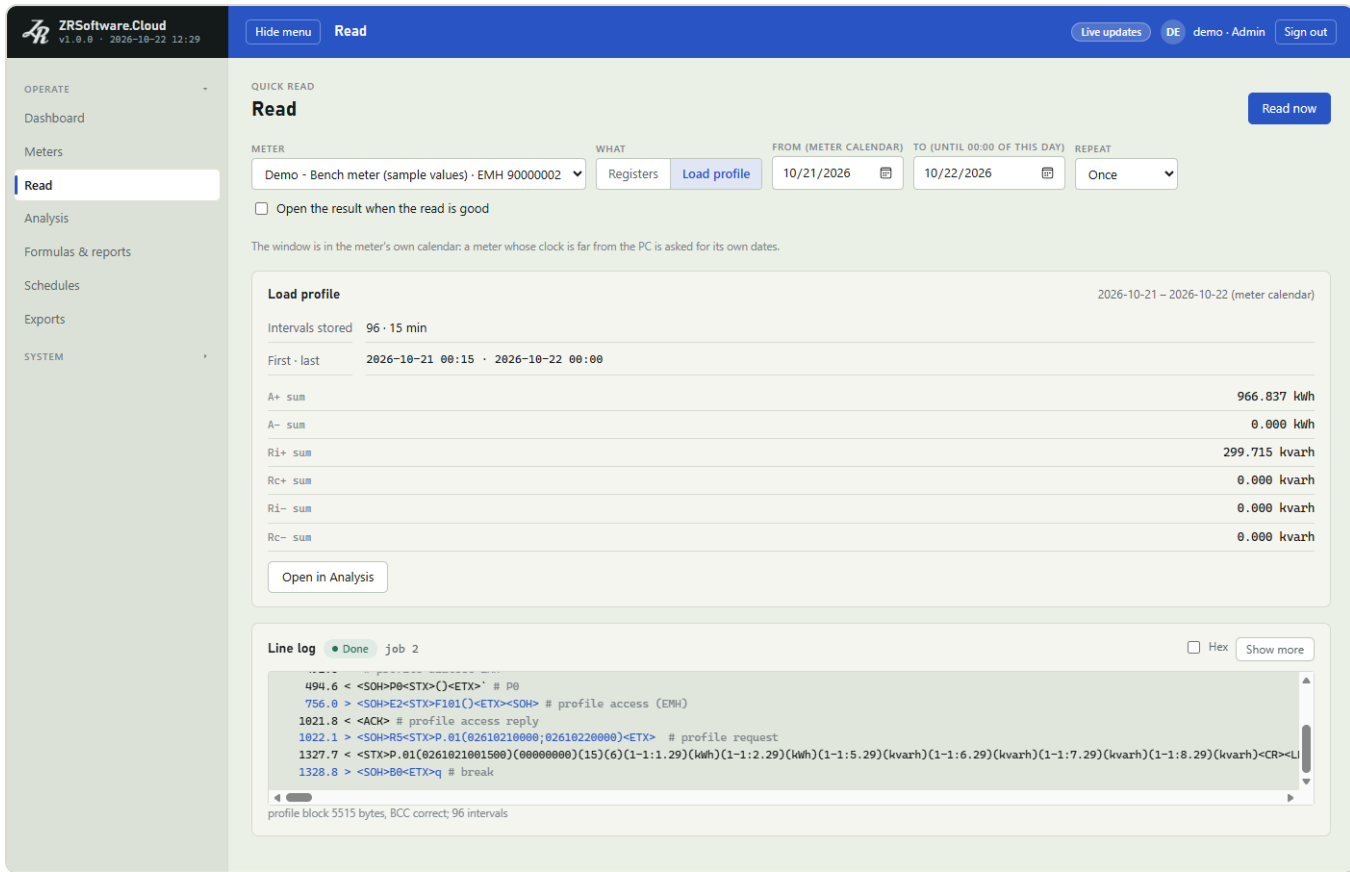


Figure 4.5 The Read page after a load profile read of yesterday (sample values).

See [Reading meters](#).

Step 6: look at the values in Analysis

NOTE

The **Analysis** page is there when the licence includes analysis (the trial includes it).

Analysis shows the stored profile of the meter as a chart and as rows.

- **Step** groups the intervals: **Detailed**, **15 min**, **30 min**, **Hourly** or **Daily**. **Unit** chooses **Energy** or **Power**. The page shows the result again at once.
- The ready ranges from **Today** to **Last month** set the days and show them; or set **From (meter calendar)** and **To** and click **Show**.
- Under the chart, each series has a box that shows or hides it, and its colour.
- Pointing at the chart shows the time and the values of the series at that point.
- A **Tariff** adds the **Tariff zones** table under the rows, with the sum of each zone (see [Tariffs](#)).
- The **Rows** table lists the rows, the newest first while **Newest first** is ticked, with **MIN**, **MAX**, **AVG** and **SUM** at the bottom.

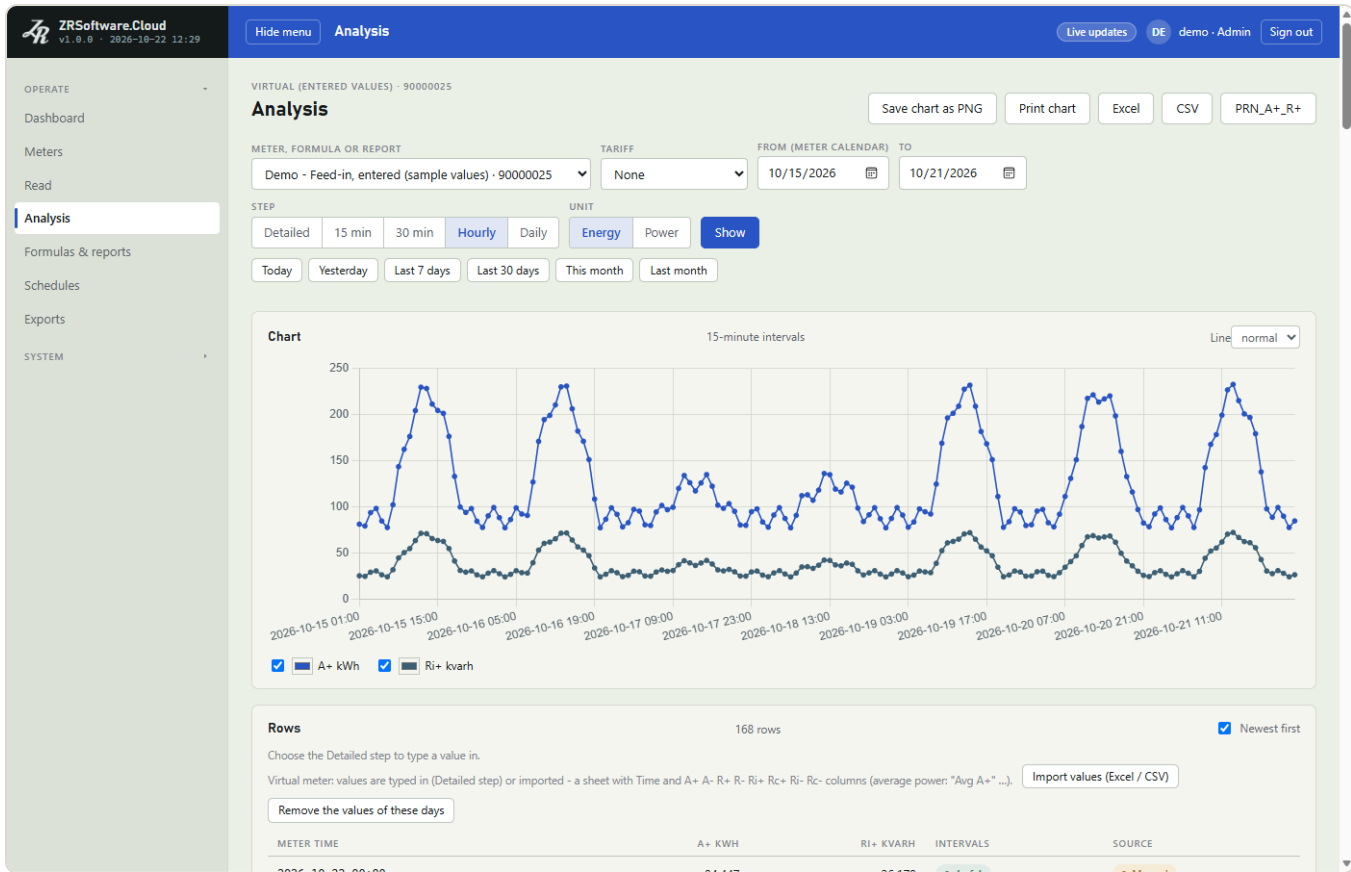
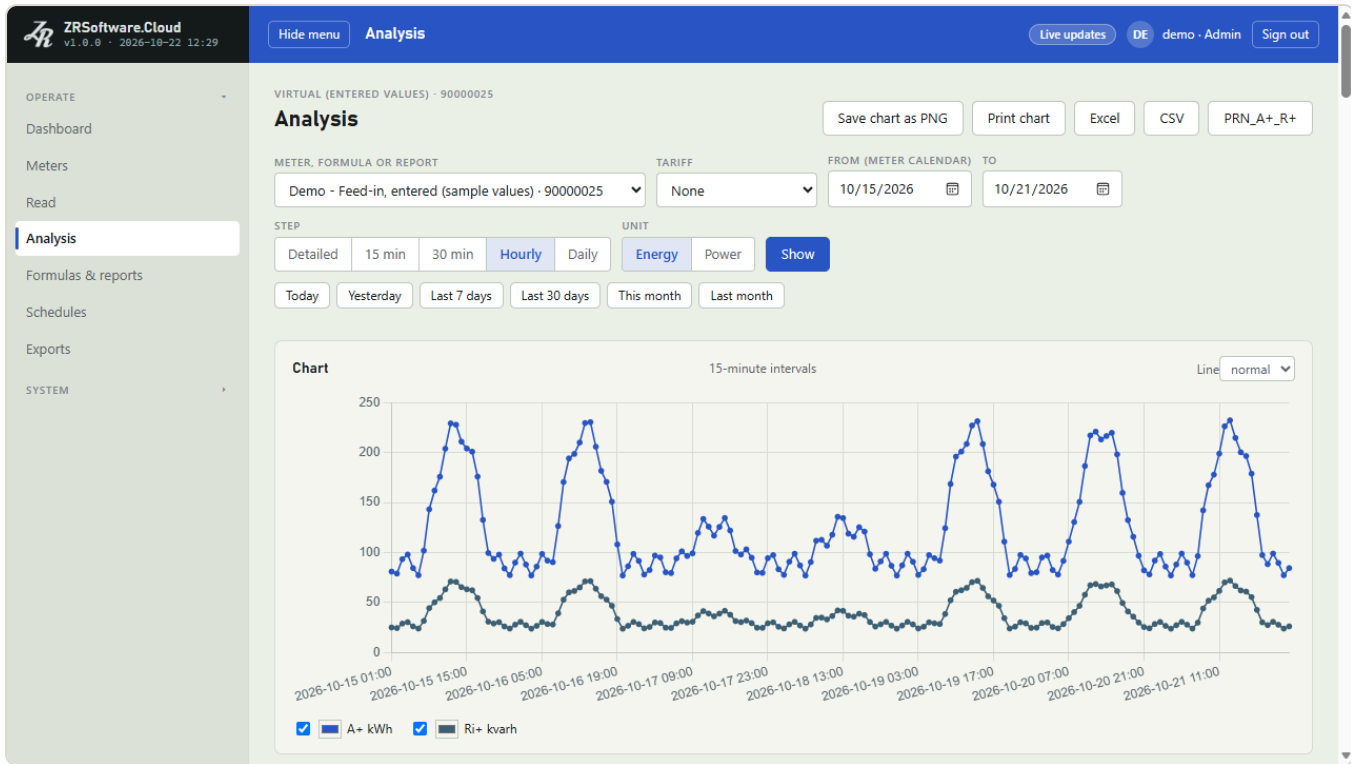


Figure 4.6 Analysis of a virtual meter over seven days, step Hourly (sample values).

See [Analysis](#).



Video 4.1 A short video of the Analysis page with a sample virtual meter: chart, steps, tariff zones and rows (sample values). [Watch the video in the online manual.](#)

5 Communication lines

A communication line is the way the program reaches meters: a COM port on this PC (an optical probe or an RS-232 / RS-485 connection) or a TCP address (a gateway or modem). Every meter that is read hangs on one line; a virtual meter has none. You find the lines under **System** in the menu, on the page **Communication lines**.

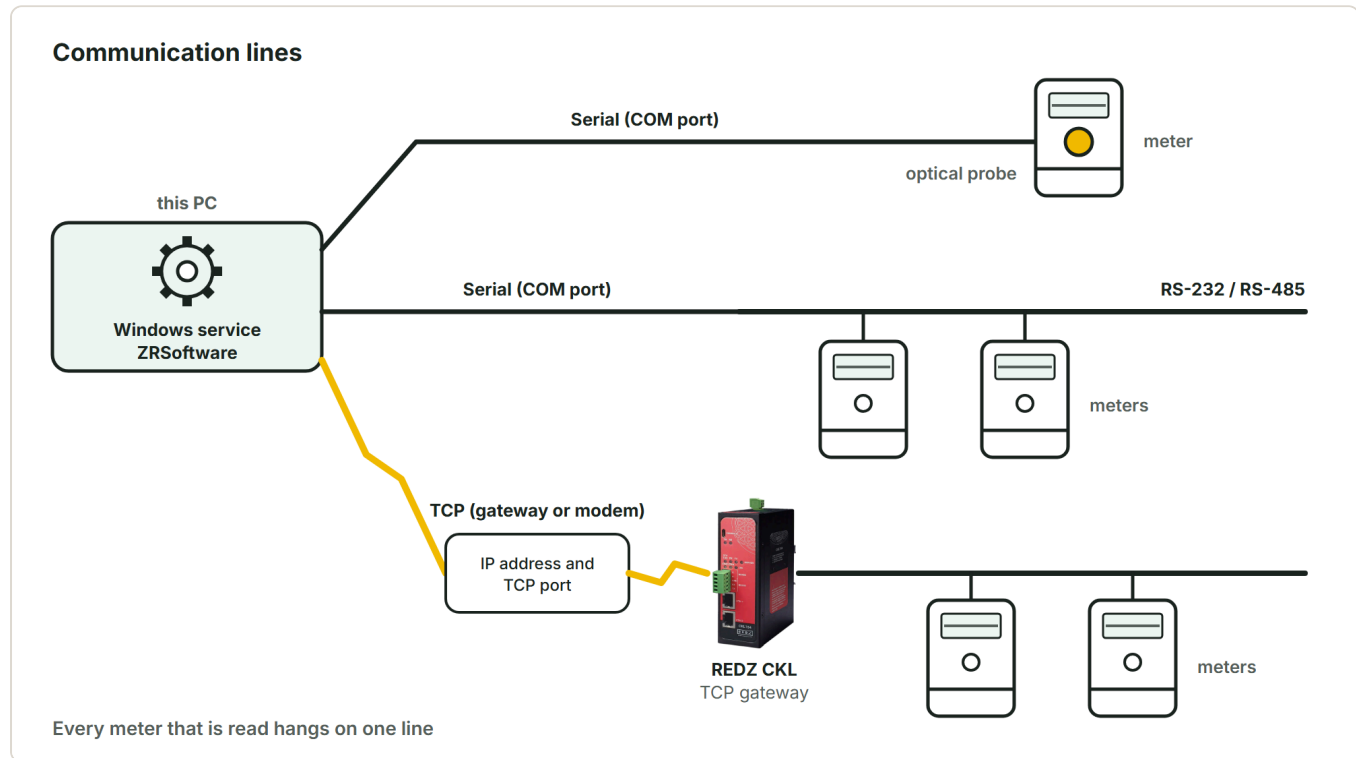


Figure 5.1 The kinds of communication line: a COM port with an optical probe or an RS-232 / RS-485 connection, or TCP to a gateway or modem, here the REDZ CKL.

Every signed-in user sees the list. Only an administrator sees the **Add line**, **Edit** and **Delete** buttons and can change a line.

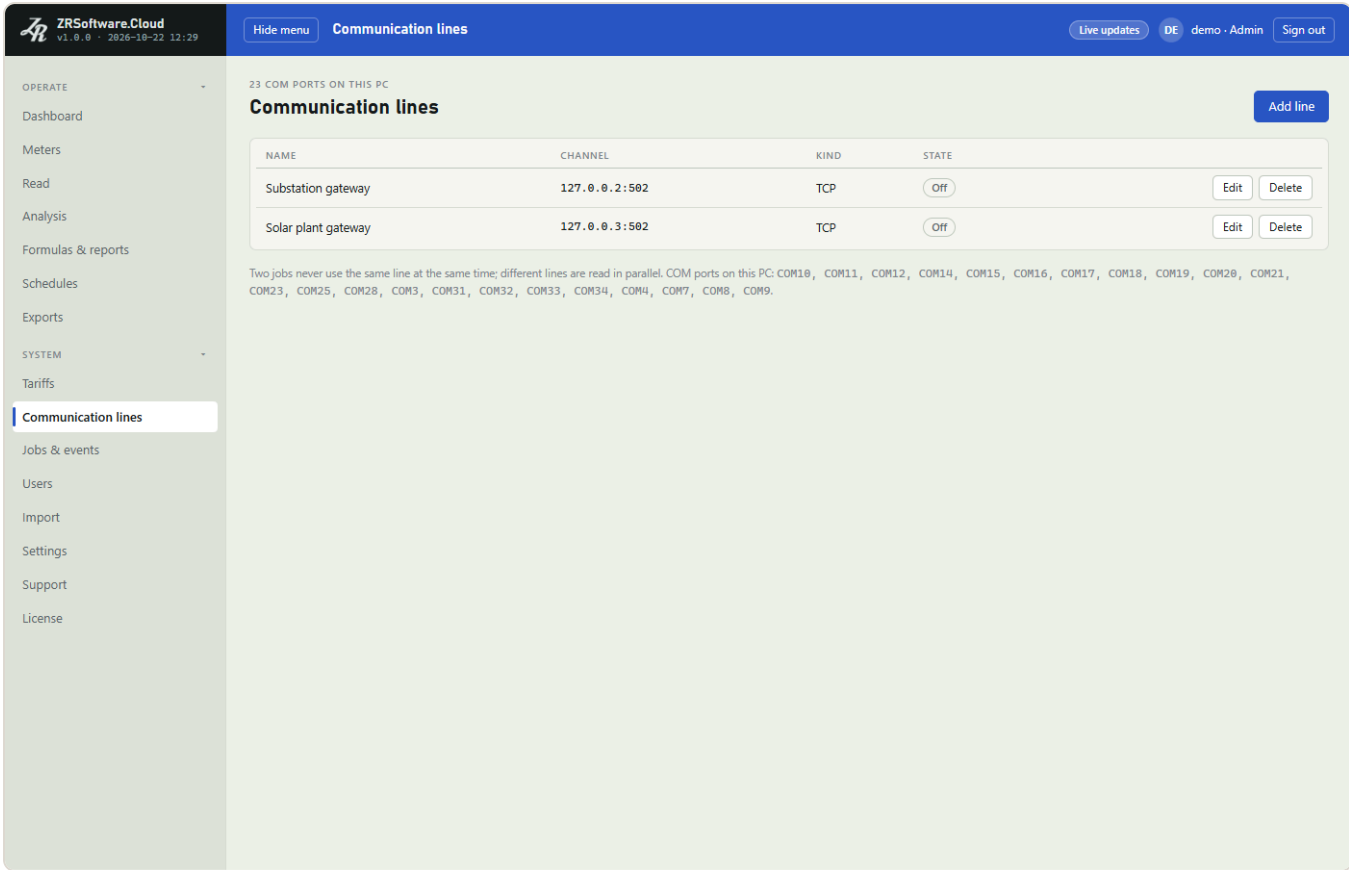


Figure 5.2 The Communication lines page as an administrator sees it, with two sample TCP lines and the Add line, Edit and Delete buttons.

The line list

Column	What it shows
--------	---------------

Name	The name you gave the line.
Channel	The COM port of a serial line, or the IP address and TCP port of a TCP line.
Kind	For a serial line the interface, the framing and, when set, the probe; for a TCP line whether the IEC opening is used.
State	On or Off.

Above the list the page counts the COM ports of this PC, and the note under the list names them (or says **none**). The list comes from Windows on the PC where the service runs, at the moment the page opens.

With no line yet, the list shows **No line yet**.

Adding a line

1. Open **Communication lines** and click **Add line**.
2. Type a **Name** (required).

- 3. Choose the **Kind: Serial (COM port) or TCP (gateway or modem).**
- 4. Fill in the fields of that kind (see the tables below).
- 5. Leave **On** ticked to use the line, and click **Save**.

If the service refuses the line, the form stays open and shows the reason under the fields.
Cancel closes the form without saving.

Add line

NAME

Optical probe

KIND

Serial (COM port)

COM PORT

COM10

FRAMING

7E1

INTERFACE

Optical probe

PROBE

None

☒ On

Save

Cancel

IEC 62056-21 meters are read 7E1 and DLMS meters 8N1 whatever it says.

Figure 5.3 Add line for an optical probe on a COM port of this PC, before Save (sample values).

Field (serial line)	Values	New line starts with
COM port	The COM ports of this PC. A stored port that Windows no longer lists is shown with (not present) after it.	The first port in the list
Framing	7E1, 8N1, 8E1 or 8O1. IEC 62056-21 meters are read at 7E1 and DLMS meters at 8N1, whatever this field says; the note under the field says so too: "IEC 62056-21 meters are read 7E1 and DLMS meters 8N1 whatever it says." Through the REDZ BT probe the PC side is 19200 baud, 8N1 (see below).	7E1

Field (serial line)	Values	New line starts with
Interface	Optical probe or Electrical (RS-232 / RS-485) .	Optical probe
Probe	None or REDZ BT probe . Shown only for an optical serial line.	None

The service opens a serial line at the meter's **Initial baud rate** (set on the meter, see [Meters and groups](#)) and keeps the DTR and RTS signals on while the port is open; some optical probes take their supply from these signals.

Through the **REDZ BT probe** the PC talks to the probe at 19200 baud, 8N1. The service does not send the meter's **Initial baud rate** to the probe: the probe's own mode decides how the sign-on reaches the meter. When the probe is in a mode that keeps the meter side at 8N1 or 8E1, it does not make the IEC opening at 300 baud, 7E1; if the meter then does not answer, the service's message names the probe's mode.

The **Interface** matters for DLMS meters: on an optical line the service first sends the IEC sign-on and switches the meter to DLMS, on an electrical line it talks DLMS directly at 8N1.

Choose **REDZ BT probe** when the optical line is that REDZ probe. The service then asks the probe for its mode, firmware and battery before each read. In command mode, and when the probe does not report its mode, the service sends the meter's new speed to the probe; in the other modes the probe follows the meter's speed by itself. The service never changes the probe's settings. Only IEC 62056-21 meters are read through this probe; for a DLMS meter the read ends without sending anything.

Field (TCP line)	Values
IP address	An IPv4 address such as 192.168.1.20. A host name is refused.
TCP port	1 to 65535.
IEC opening before DLMS (Landis+Gyr over TCP)	Tick it when the meters behind the gateway or modem need the IEC sign-on before DLMS; the label names Landis+Gyr meters over TCP. It changes only DLMS reads. Off for a new line.

Edit line

NAME
Substation gateway

KIND
TCP (gateway or modem)

IP ADDRESS
127.0.0.2

TCP PORT
502

☐ IEC opening before DLMS (Landis+Gyr over TCP)

☐ On

Save Cancel

Figure 5.4 The Edit line form of a sample TCP line with its IP address and TCP port.

On a TCP line the gateway or modem sets the serial speed and framing; the program does not change the speed of the connection. That is why the meter form hides **Initial baud rate** for a meter on a TCP line.

When the TCP address does not answer within 5 seconds, or a COM port cannot be opened, the attempt ends at once and the line log names the channel and the reason. A scheduled read can make another attempt (see [Schedules](#)).

What the service checks when you save

- A line needs a name.
- A serial line needs a COM port named COM1 to COM999.
- A TCP line needs an IPv4 address and a port from 1 to 65535.
- Two lines cannot use the same COM port, or the same IP address and TCP port. The message names the line that already uses it.
- When the service is set up with a list of allowed COM ports or networks, a port or address outside that list is refused, and the message names what is allowed.
- The REDZ BT probe can be set only on a serial line with the optical interface.

Changing a line

Click **Edit** on the line's row, change the fields and click **Save**. The same checks apply as for a new line. The meters stay on the line; their next read uses the new settings.

If you change a serial line into a TCP line (or back), the service clears the fields of the old kind: the COM port, or the IP address and TCP port.

Switching a line off

Untick **On** and save to stop using a line without losing it. The list shows **Off**. On the **Read** page, **Read now** is disabled for a meter on a line that is off, and a banner names the line and says that it is turned off (see [Reading meters](#)). A scheduled read of such a meter, or **Read the missing profile** on the **Analysis** page, still makes a job; it ends with a message that the line is disabled, and nothing is sent.

Deleting a line

An administrator deletes a line with **Delete** on its row. The browser asks you to confirm the line's name first; after the delete a banner above the list says the line was deleted.

The service deletes a line only while no meter uses it, archived meters included, and no read is waiting for it or running on it. Otherwise the delete is refused, and the banner above the list gives the reason: how many meters use the line, or that a job is waiting or running.

To delete a line that still has meters, move them to another line first with **Move to line** on the **Meters** page; tick **Show archived** there to choose the archived meters too (see [Meters and groups](#)). To keep the meters where they are, switch the line off instead.

WARNING

A deleted line cannot be brought back; to use its channel again, add a new line. The deletion is written to the event list with your user name. Past jobs of the line stay on **Jobs & events**, where their line is shown by its number after a # sign instead of its name.

NOTE

While a REDZ support session runs, REDZ support works with the rights of an Admin (see [Support](#)), so it can also add, change and delete lines.

One meter at a time on a line

Every line has its own queue. The service reads one meter at a time on a line, in the order the reads were asked for; different lines are read at the same time, up to four lines at once. The note under the list says it too: "Two jobs never use the same line at the same time; different lines are read in parallel."

A read you start while the line is busy waits in the queue until the reads before it have finished. The **Read** page then shows the job as **Queued** (see [Reading meters](#)).

Before it sends anything the service listens to the line for 1.5 seconds. If a meter is still sending, the attempt ends with a LineBusy message that says the meter is still sending, and nothing is sent.

A job, with all its attempts, is stopped after 15 minutes, so one meter cannot hold a line for ever. It ends as cancelled, and its message says that it timed out after 900 seconds, the longest a job may run.

6 Meters and groups

The page **Meters** lists the meters the program knows, with their line, address and last reading. From here you add and change meters, sort them into groups, choose many meters at once, and open each meter's own page, **Meter detail**.

Role **What the role can do on this page**

Viewer See the list, the groups of each meter and **Meter detail**.

Operator As Viewer, and open the **Read** page for a meter.

Admin As Operator, and add, change, archive and restore meters, set meter passwords, make groups and change many meters at once.

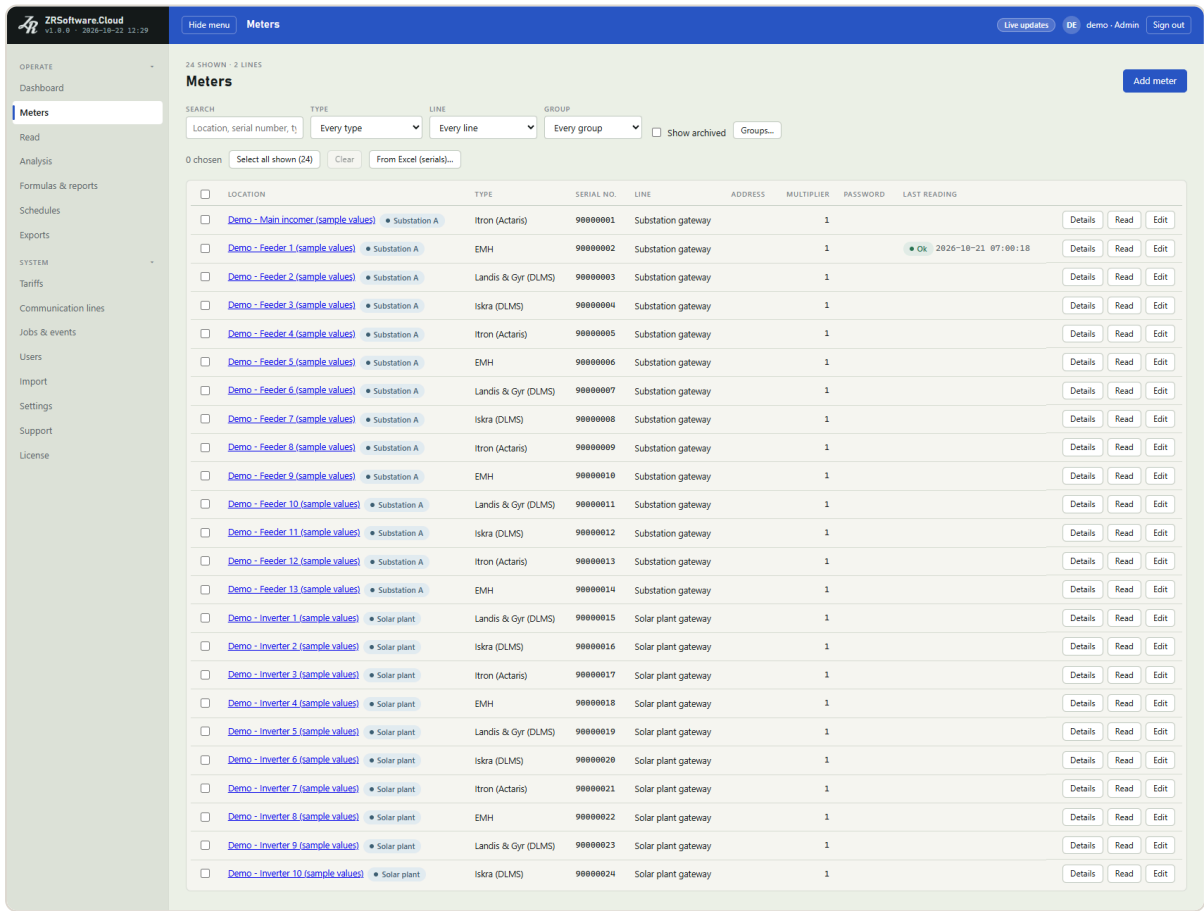


Figure 6.1 The Meters page with the 24 sample meters, the filters above the list and the group of each meter.

The meter list

Column **What it shows**

Location The location, or the serial number when no location is set, as a link to **Meter detail**, followed by the meter's groups and the chips **archived** and **reactive** when they apply.

Type The meter type (see [Appendix: supported meters](#)).

Column	What it shows
Serial no.	The serial number.
Line	The communication line; a dash for a virtual meter.
Address	The physical address, empty when none is set.
Multiplier	The multiplier of the meter.
Password	stored when a meter password is stored. The password itself is never shown.
Last reading	The outcome of the meter's newest reading of any kind (registers or load profile), good or failed, and when it finished; the outcome is written as one word here, for example NoAnswer. Empty for a meter that has never been read.

The buttons at the end of a row open **Details** (the meter's page), **Read** (the **Read** page with this meter chosen; only for an active meter of a type the program reads) and, for an administrator, **Edit**.

The list shows 50 meters per page; **Previous** and **Next** under the list move between pages.

The **reactive** chip marks a meter whose newest good registers reading is over a reactive ratio limit; point at it to see which ratio is over and its value, and click it to open **Meter detail**. The limits are on the **Settings** page (see [Settings](#)) and the ratios on **Meter detail**.

Adding a meter

A meter that is read needs its line, so add the line first (see [Communication lines](#)). While there is no line, the form offers only the type **Virtual (entered values)**, which needs no line.

1. Click **Add meter**.
2. Fill in the fields (see the table below). **Serial no.** and **Communication line** are required.
3. If the meter needs a password, type it into **Meter password**.
4. Click **Save**.

If the service refuses the meter, the form stays open and shows the reason under the fields.

The service keeps one active meter per type and serial number. A second meter of the same type with the same serial number is refused, and the message names the location of the meter already on the list. Archived meters do not count here.

The password is stored right after the meter. If the meter is saved but storing the password fails, the form stays open on the saved meter with the reason; clicking **Save** again stores the password into that meter and does not add the meter twice.

Edit meter

LOCATION

Demo - Main incomer (sample values)

TYPE

Itron (Actaris)

SERIAL NO.

90000001

COMMUNICATION LINE

Substation gateway

PHYSICAL ADDRESS

empty: none

MULTIPLIER (CT × VT)

1

PROFILE PERIOD (MIN)

auto

Empty: the period the stored readings show.

TCP line: the gateway or modem sets the serial speed and framing.

METER PASSWORD

none stored

The meter's reading password (DLMS). Empty: a registers read tries the passwords ZR Software 7 made from the serial number and keeps the one the meter takes. Stored encrypted on this PC and never shown again. A wrong password is not tried twice by the service.

Save

Cancel

Archive

Figure 6.2 The Edit meter form of a sample meter on a TCP line; no meter password is stored.

Field	What to enter	New meter starts with
Location	Free text, for example the site or feeder. Searched by the filters.	Empty
Type	The meter type. The list is in Appendix: supported meters .	The first type of the list; Virtual (entered values) while there is no line
Serial no.	The meter's serial number (required).	Empty
Communication line	The line the meter hangs on (required, except for a virtual meter).	The first line
Physical address	The meter's address on the line. Leave it empty when the meter needs none.	Empty
Multiplier	The CT ratio times the VT ratio; a number above 0.	1

Field	What to enter	New meter starts with
Initial baud rate	300, 600, 1200, 2400, 4800, 9600 or 19200. Not shown for a meter on a TCP line.	300
Profile period (min)	The interval length the program assumes when it looks for missing intervals and shows the profile. Empty: the interval length of most of the stored profile (15 minutes while none is stored); the note under the field says "Empty: the period the stored readings show." It is not sent to the meter. For a meter that is read, to remove a saved period, empty the box and save.	Empty
Meter password	The password the meter asks for, if any (see below).	Empty

The licence sets how many meters you can have. When the limit is reached the service refuses a new meter, or bringing back an archived one, and the message says how many the licence allows; archived meters do not count (see [License](#)). Virtual meters count toward the meter limit too. When more meters are registered than the licence allows, the meters registered first are read, as many as the limit, virtual meters among them; a virtual meter is never read, and its place does not go to another meter. The meters that are not read keep their readings (see [Reading meters](#)). This happens, for example, when meters were added during the trial.

The physical address

For an IEC 62056-21 meter the address goes into the sign-on; with an empty field the sign-on carries no address. An Itron or Landis & Gyr DLMS meter needs its address, 1 to 16383. For an Iskra or Cewe DLMS meter the service first tries the address in the field (or, when the field is empty, the address made from the serial number), then the address made from the serial number and the addresses those meters use by default. For these two types the serial number must have at least 8 characters; with a shorter one the read ends with an internal error, also when the field holds an address. When the service has no address it can use, the read ends with "the meter record has no HDLC physical address (1..16383)".

The meter password

The password field never shows a stored password: it says **stored; type to replace** when one is stored and **none stored** when there is none. The service seals the password on this PC and never sends it back to a page, so no one can read it from the pages.

- To keep the stored password, leave the field empty when you save.
- To replace it, type the new password and save.
- To remove it, click **Remove the stored password**.

WARNING

Remove the stored password removes the password at once, without asking; **Cancel** does not bring it back. Type the password again to store it.

The note under the field says what the service does with the password for the chosen type. For IEC 62056-21 meters it says "Not used for IEC 62056-21 meters: the service never sends it to them." For DLMS meters it says whether the type uses the password and what the service does when the field is empty. The note ends with "Stored encrypted on this PC and never shown again. A wrong password is not tried twice by the service."

For an Itron meter, a registers read also tries passwords made from the serial number when the stored one is refused; the one the meter accepts replaces the stored password, and **Jobs & events** says so. When the serial number is not 8 digits, no password is sent.

NOTE

The sealed password can be opened only on the PC where it was stored. If the program's data is moved to another PC, reads of that meter end with "the stored password cannot be opened on this machine; enter it again". Type the password again in the meter's form.

NOTE

While a REDZ support session runs, REDZ support works with the rights of an Admin (see [Support](#)): it can store, replace and remove meter passwords. An Excel import during the session also stores the meter passwords in the file, and an import of a ZR Software 7 database stores the passwords of the meters it adds. REDZ support cannot change or test the mail settings; only an import of a ZR Software 7 database during the session, also a copy that REDZ support uploads, can still set that database's mail server, with user name and password, when none is set here and the licence includes **Exports and e-mail**.

Virtual meters

Choose the type **Virtual (entered values)** for a meter whose values you type in or import instead of reading them. A virtual meter has no line, address, speed or password, and it is not offered on the **Read** page. Its **Profile period (min)** must be 1, 5, 10, 15, 30 or 60; empty means 15. Formulas, reports, exports and tariffs use it like any other meter (see [Analysis](#) and [Import](#)).

A meter that has read values does not become a virtual meter: the form of a meter whose newest reading is good does not offer the type, and the service refuses the change with "this meter has read values: a read meter does not become virtual (its read values would be open to hand edits). Add a virtual meter instead."

Changing, archiving and restoring a meter

Click **Edit** on the meter's row, change the fields and click **Save**. Readings already stored stay with the meter.

To take a meter out of use, click **Archive** in its form. A second button takes its place; it says that the meter is not read any more, that its readings are kept and that Restore brings it back. Click it to confirm. The meter and its readings stay in the program, but it is no longer read (a read already waiting in the queue still runs when the licence has no meter limit, as during the trial; under a meter limit it ends as an error with the licence's meter-limit message) and it leaves the list; tick **Show archived** to see archived meters again.

To bring an archived meter back, tick **Show archived**, click **Edit** on its row and click **Restore**. The meter becomes active with all its readings and is read again. Restoring is refused, with the reason under the fields, when the licence has no room for another meter or when an active meter of the same type and serial number is already on the list.

ZRSoftware.Cloud

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Hide menu

Meters

OPERATE

Dashboard

Meters

Read

Analysis

Formulas & reports

Schedules

Exports

SYSTEM

Tariffs

Communication lines

Jobs & events

Users

Import

Settings

Support

License

24 SHOWN · 2 LINES

Meters

SEARCH

Location, serial number, t

TYPE

Every type

LINE

Every line

GROUP

Every group

0 chosen

Select all shown (24)

Clear

From Excel (serials)...

☐	LOCATION		TYPE	SERIAL NO.	LINE
☐	Demo - Main incomer (sample values)	• Substation A	Itron (Actaris)	90000001	Substation
☐	Demo - Feeder 1 (sample values)	• Substation A	EMH	90000002	Substation
☐	Demo - Feeder 2 (sample values)	• Substation A	Landis & Gyr (DLMS)	90000003	Substation
☐	Demo - Feeder 3 (sample values)	• Substation A	Iskra (DLMS)	90000004	Substation
☐	Demo - Feeder 4 (sample values)	archived • Substation A	Itron (Actaris)	90000005	Substation
☐	Demo - Feeder 5 (sample values)	• Substation A	EMH	90000006	Substation
☐	Demo - Feeder 6 (sample values)	• Substation A	Landis & Gyr (DLMS)	90000007	Substation
☐	Demo - Feeder 7 (sample values)	• Substation A	Iskra (DLMS)	90000008	Substation
☐	Demo - Feeder 8 (sample values)	• Substation A	Itron (Actaris)	90000009	Substation
☐	Demo - Feeder 9 (sample values)	• Substation A	EMH	90000010	Substation
☐	Demo - Feeder 10 (sample values)	• Substation A	Landis & Gyr (DLMS)	90000011	Substation
☐	Demo - Feeder 11 (sample values)	• Substation A	Iskra (DLMS)	90000012	Substation
☐	Demo - Feeder 12 (sample values)	• Substation A	Itron (Actaris)	90000013	Substation
☐	Demo - Feeder 13 (sample values)	• Substation A	EMH	90000014	Substation
☐	Demo - Inverter 1 (sample values)	• Solar plant	Landis & Gyr (DLMS)	90000015	Solar plan

Edit meter

LOCATION

Demo - Feeder 4 (sample values)

TYPE

Itron (Actaris)

SERIAL NO.

90000005

COMMUNICATION LINE

Substation gateway

PHYSICAL ADDRESS

empty: none

MULTIPLIER (CT × VT)

1

PROFILE PERIOD (MIN)

auto

Empty: the period the stored readings show.

TCP line: the gateway or modem sets the serial speed and framing.

METER PASSWORD

none stored

The meter's reading password (DLMS). Empty: a registers read tries the passwords ZR Software 7 made from the serial number and keeps the one the meter takes. Stored encrypted on this PC and never shown again. A wrong password is not tried twice by the service.

Save

Cancel

Restore

Figure 6.3 An archived sample meter with Show archived ticked: the list marks it archived, and its form has Restore.

NOTE

A meter cannot be deleted; archive it instead.

Groups

Groups are labels for meters. The meter lists of **Meters**, **Schedules** and **Exports** can be filtered by them. A meter can be in several groups. An administrator opens the **Groups** card with the **Groups** button next to the filters.

- To make a group, type its name into **New group (e.g. Substation A)** and click **Add group**. A name has 1 to 60 characters and must differ from the other groups' names (upper and lower case count as the same).
- To rename a group, change its name in the box and leave the box. If the service refuses the name, the reason appears next to the box and the box shows the saved name again.
- To delete a group, click **Delete** on its row. A second button then says how many meters lose the label and that the meters stay; click it to delete the group. The Keep button next to it closes the question and keeps the group.

WARNING

Deleting a group cannot be undone. Making a group with the same name again does not bring its members back.

Each group shows how many meters it has. To put meters into a group, use the bulk buttons below.

Finding meters

- **Search** finds the text anywhere in the location, serial number, type name and group names; upper and lower case are the same.
- **Type** shows only meters of one type; the list offers the types your meters have.
- **Line** and **Group** show only the meters of one line or one group.
- **Show archived** adds the archived meters.

The filters work together, and the list goes back to its first page when you change one.

Choosing many meters

An administrator can choose meters in the list and change them together. The bar above the list counts the meters **chosen**.

- Tick a meter's box to choose it, or the box in the heading (**Choose this page**) to choose every meter on the page.
- The select-all button next to the count chooses every meter the filters show, on all pages; its label gives the number.
- **Clear** empties the choice.

The choice stays when you change the filters, so you can build it from several searches.

WARNING

An action works on every chosen meter, also the ones the filters now hide.

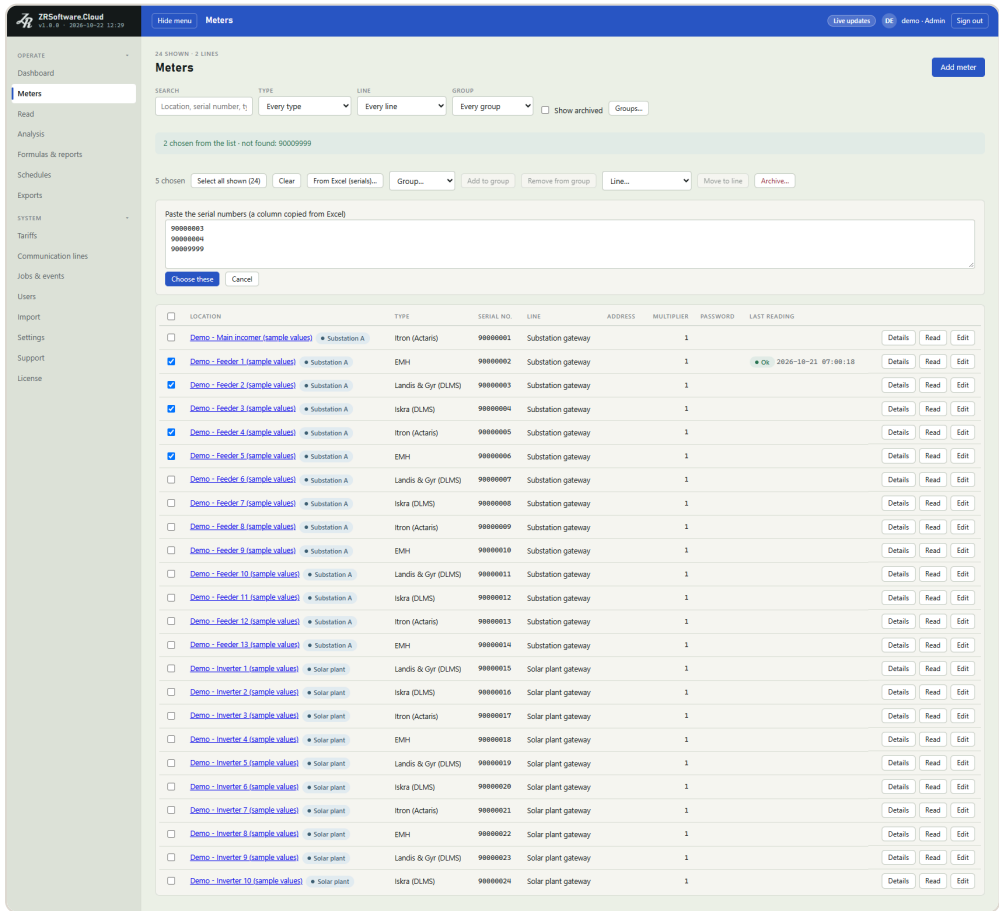


Figure 6.4 Choosing sample meters with a pasted list of serial numbers: the page names the serial number it did not find, and the bulk buttons act on the chosen meters.

Action	What it does
Add to group / Remove from group	Choose the group in the list next to the buttons first. Adds the chosen meters to it, or takes them out.
Move to line	Choose the line in the list next to the button first. Puts the chosen meters on that line, archived ones too. Virtual meters are skipped, because they have no line; the message after the action says how many were skipped.
Archive	Asks once more: the second button names the number of meters and says that readings are kept and that each meter can be restored. Archives the chosen meters.

After an action the page says how many of the chosen meters changed; a meter that was already in that state is not counted. Each action is written to the event list with your user name (see [Jobs & events](#)).

NOTE

The choice is emptied after bulk archiving. There is no bulk restore: bring archived meters back one by one with **Restore** in each meter's form.

Choosing meters from a list of serial numbers

When you have the serial numbers in Excel, you do not need to tick the meters one by one:

1. Click **From Excel (serials)** in the bar above the list.
2. Copy the column of serial numbers in Excel and paste it into **Paste the serial numbers (a column copied from Excel)**.
3. Click **Choose these**.

The program splits the text at line breaks, tabs, commas and semicolons, and chooses each meter whose serial number matches exactly (upper and lower case are the same). The search and the **Type**, **Line** and **Group** filters do not narrow a pasted list. Archived meters are chosen only while **Show archived** is ticked; otherwise the message counts them as archived and not chosen. When two meters have the same serial number (for example the same meter entered with two types), only one of them is chosen; tick the other one by hand. The meters are added to the ones already chosen. The message above the list says how many were chosen and names the serial numbers it did not find (the first ten, then how many more).

The meter pickers of the **Schedules** and **Exports** pages work the same way: search, the **Type**, **Line** and **Group** filters, the select-all and **Clear** buttons and the pasted serial list. A picker lists at most 300 meters; narrow the search to see others, or use the select-all button, which takes every meter the filters show.

The meter detail page

Meter detail shows one good registers reading of the meter, the way a meter readout sheet does. It opens with the newest reading; the list at the top offers the last 100 good registers readings.

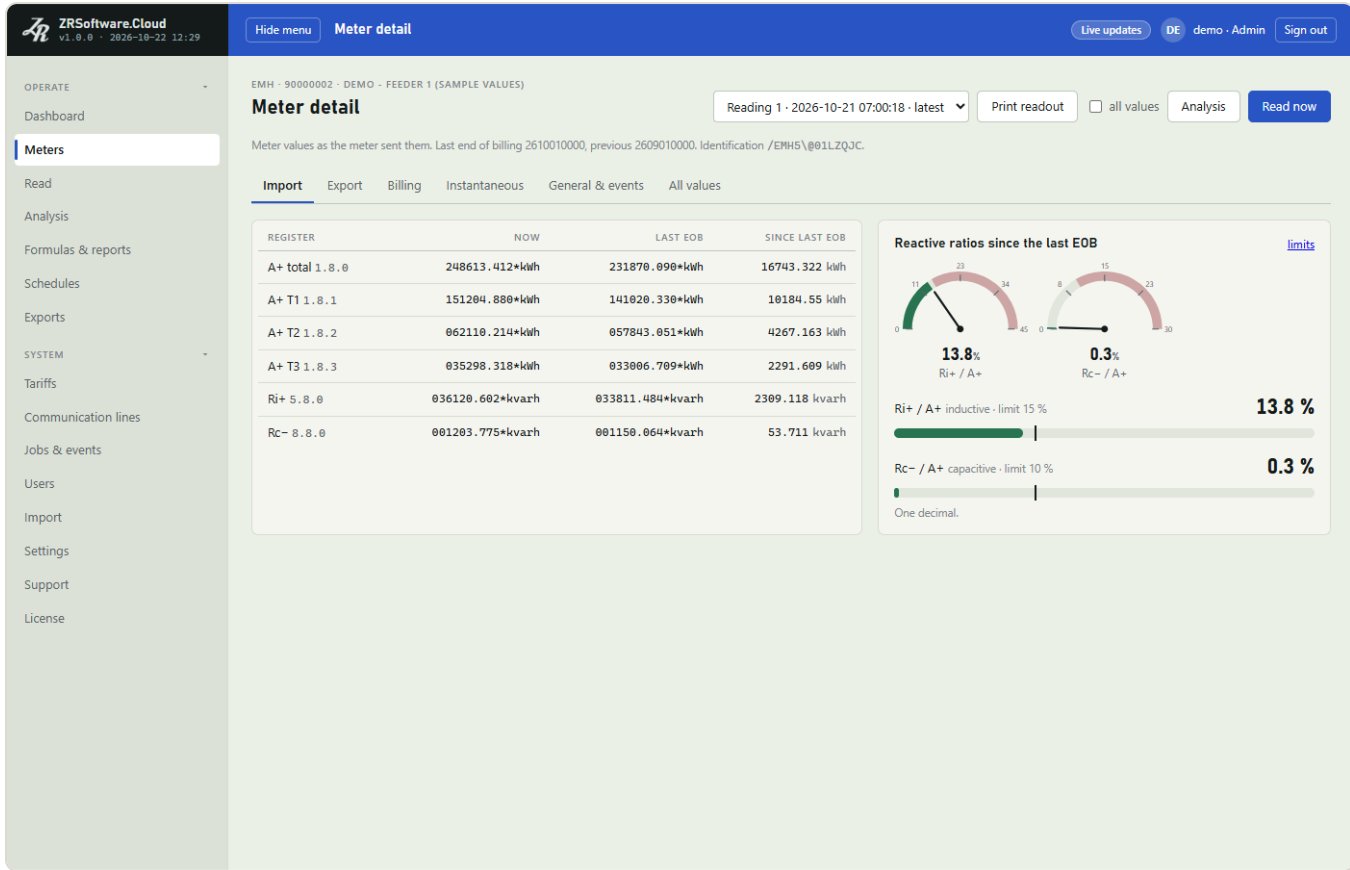


Figure 6.5 Meter detail of a sample meter on the Import tab: each energy register now, at the last end of billing and the difference since then, with the reactive ratios.

Tab	What it shows
Import / Export	Each energy register now, at the last end of billing, and the difference since then, with the reactive ratios of that direction.
Billing	The last and previous end of billing, this period and the previous period, and the Billing history over all stored readings.
Instantaneous	Voltages, currents and other instant values, with dials for the phases, and the Extra profile channels of the load profile with their newest value.
General & events	The general values of the reading and the event registers.
All values	Every value of the reading as the meter sent it.

The values are shown as the meter sent them. When the meter's multiplier is not 1, the note above the tabs says that it is not applied here.

A difference below zero is shown in red; its tip asks whether the meter was reset.

Reactive ratios since the last EOB compares the inductive and capacitive reactive energy with the active energy since the last end of billing, in per cent with one decimal. A ratio

over its limit is shown in red. Without your own settings the limits are 15 % inductive and 10 % capacitive; an administrator changes them under **Reactive ratio limits** on the **Settings** page.

In **Billing history** choose **From (period end)** and **To**, click **Show**, and **Excel** to save the rows as an Excel file. When two readings carry the same billing period, the newer one is shown.

Print readout prints the reading on paper: the meter and the reading, the import and export registers, the reactive ratios and the instantaneous, general and event values. The **Billing** tab and the **Extra profile channels** are not printed. Tick **all values** next to it to add the full list of values.

When the identification in the reading shown names another maker than the meter's type, a warning banner says so. Check the type in the meter's form; the program never changes it by itself (see [Reading meters](#)).

A meter without a good registers reading shows "This meter has no good registers reading yet. Read it from the Read page."

When the licence includes analysis, **Analysis** opens the meter's load profile (see [Analysis](#)). **Read now** opens the **Read** page for this meter (Operator and Admin, only for an active meter).

7 Reading meters

The page **Read** reads one meter now and shows what happens on the line while it reads. Operators and administrators start and cancel reads and see the line log; a viewer sees the meter's newest stored values.

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v1.0.0 · 2026-10-22 12:29

OPERATE

Dashboard

Meters

Read

Analysis

Formulas & reports

Schedules

Exports

SYSTEM

Tariffs

Communication lines

Jobs & events

Users

Import

Settings

Support

License

Hide menu

Read

Live updates

DE

demo · Admin

Sign out

QUICK READ

Read

Read now

METER

WHAT

REPEAT

Demo - Feeder 1 (sample values) · EMH 90000002

Registers

Load profile

Once

☐ Open the result when the read is good

Values

reading 2 · 2026-10-22 14:27:21

Open meter detail

Meter clock 261022 142720 · -2 s from the PC

OBIS	VALUE	UNIT	THIS PERIOD	PREVIOUS PERIOD
0.0.0	(90000002)			
0.9.1	(142720)			
0.9.2	(261022)			
1.8.0	(248613.412*kWh)	kWh	16,743.322	17,411.315
1.8.1	(151204.880*kWh)	kWh	10,184.550	10,502.928
1.8.2	(062110.214*kWh)	kWh	4,267.163	4,231.134
1.8.3	(035298.318*kWh)	kWh	2,291.609	2,677.253
2.8.0	(000000.000*kWh)	kWh	0.000	0.000
5.8.0	(036120.602*kvarh)	kvarh	2,309.118	2,608.094
8.8.0	(001203.775*kvarh)	kvarh	53.711	61.152

Line log

Done

job 1

☐ Hex

Show more

127.0.0.2:502 open · Emh 90000002 · Registers

0.0 > /?1<CR><LF> # sign-on

0.7 < /EMH5\001LZQ3C<CR><LF> # identification

254.9 > <ACK>050<CR><LF> # option select

477.8 < <STX>0.0.0(90000002)<CR><LF>0.9.1(142720)<CR><LF>0.9.2(261022)<CR><LF>1.8.0(248613.412*kWh)<CR><LF>0.1.2+01(2610010000)<CR><LF>1.8.0+01(231870.090+...

38 data sets, BCC correct

Figure 7.1 The Read page after a registers read of a sample meter: the Values card above and the Line log below.

QUICK READ

Read Read now

METER: Demo - Bench meter (sample values) - EMH 90000002 WHAT: Registers REPEAT: Once ☐ Open the result when the read is good

Values reading 1 - 2026-10-22 14:25:19 Open meter detail

Meter clock 261022 142514 - -6 s from the PC

OBIS	VALUE	UNIT	THIS PERIOD	PREVIOUS PERIOD
0.0.0	(90000002)			
0.9.1	(142514)			
0.9.2	(261022)			
1.8.0	(248613.412*kWh)	kWh	16,743.322	17,411.315
1.8.1	(151204.880*kWh)	kWh	10,184.550	10,502.928
1.8.2	(062110.214*kWh)	kWh	4,267.163	4,231.134
1.8.3	(035298.318*kWh)	kWh	2,291.609	2,677.253
2.8.0	(000000.000*kWh)	kWh	0.000	0.000
5.8.0	(036120.602*kvarh)	kvarh	2,309.118	2,608.094
8.8.0	(001203.775*kvarh)	kvarh	53.711	61.152

Line log Done job 1 Hex Show more

Video 7.1 A short video of a registers read on the Read page with a sample meter: Read now, the line log, the values, Show more and Hex (sample values).

[Watch the video in the online manual.](#)

Starting a read

1. Choose the **Meter**. The list holds the active meters that are read from a line. The **Read** button on **Meters** and **Read now** on **Meter detail** open this page with the meter already chosen.
2. Under **What**, choose **Registers** or **Load profile**.
3. For a load profile, choose the days: **From (meter calendar)** and the last day. The label of the second box says what that day means for the chosen meter (see below).
4. Click **Read now**.

When the page is opened for a meter that is archived or virtual, no meter is chosen, and a banner says "That meter is archived or virtual, so it is not read. Choose a meter above."

Read now stays disabled while a read of this page runs, for a meter type the program does not read, and for a meter whose line is turned off. A banner then says that the service does not read that type yet, or names the line, says that it is turned off and that you turn it on in **Communication lines** (see [Communication lines](#)).

If the service refuses the read, the reason appears in a banner. It refuses, for example, when the licence does not allow reads (see [License](#)) or when a load profile window is longer than 31 days.

When the trial or the licence has ended, the licence is for another PC and the trial is over, or this version was built after the licence's maintenance ended, meters are not read: **Read now** and **Read the missing profile** are refused with the licence's message, a read already waiting in the queue ends with that message, and schedules do not read either. For an ended trial or licence the message says "Meters are not read and automatic exports do not run." The readings already stored stay (see [License](#)).

When the licence server says that the licence was withdrawn or moved, or that it does not know it on this PC, the program goes on reading meters for seven days and then stops (the state Withdrawn); a copy of a virtual PC stops at once. From then on reads are refused and end in the same way.

Virtual meters count toward the meter limit too. When more meters are registered than the licence allows, the meters registered first are read, as many as the limit, virtual meters among them; a virtual meter is never read, and its place does not go to another meter. For a meter that is not among them, **Read now** and **Read the missing profile** are refused with a message that gives the licence's number of meters and the number registered, and suggests archiving a meter or asking for a larger licence. A read of such a meter already waiting in the queue ends with the same message, and a schedule leaves those meters out and writes a warning row in **Jobs & events** (see [Meters and groups](#), [Schedules](#) and [Jobs & events](#)).

The read becomes a job on the meter's line. When another read uses the line, it waits its turn (see [Communication lines](#)); the chip of the line log then shows **Queued**, and **Running** once it starts.

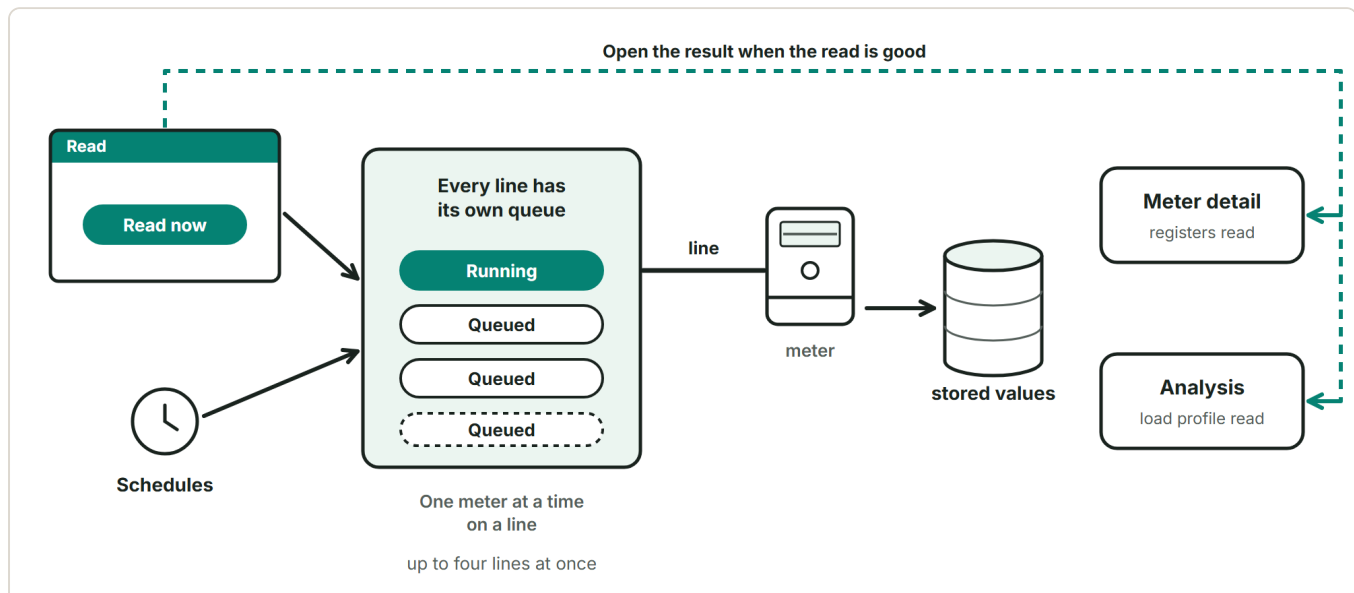


Figure 7.2 The way of a read: Read now or a schedule puts a job in the queue of the meter's line; a line reads one meter at a time, and the values are stored. With Open the result when the read is good ticked, a registers read started on the Read page opens Meter detail and a load profile read Analysis (when the licence includes analysis).

A read started here makes one attempt. Scheduled reads can repeat a failed attempt (see [Schedules](#)).

If you leave the page during a read, the read goes on in the service. Its result is on the **Jobs & events** page (see [Jobs & events](#)) and, for a good registers read, in the **Values** card the next time you open the page.

Opening the result

With **Open the result when the read is good** ticked, the page opens the result as soon as a read ends well: a registers read opens **Meter detail** at the billing tab (see [Meters and groups](#)), a load profile read opens the **Analysis** page for the same meter and the same days (see [Analysis](#)). When the licence does not include analysis, a load profile read stays on this page (see [License](#)). A read that fails, or is cancelled, stays on this page with the line log.

The box is ticked at first, and the page remembers your choice in this browser. Untick it to stay on the **Read** page and see the **Values** card or the **Load profile** card after the read. While **Repeat** is set, the box is disabled and the page does not leave.

Reading the load profile

For an IEC 62056-21 meter the second box is labelled **To (until 00:00 of this day)**: the window starts at 00:00 on the **From (meter calendar)** day and ends at 00:00 on that day, so the day itself is not read. For a DLMS meter it is labelled **To (this day included)**: the meter is asked, day by day, from the day before the **From (meter calendar)** day up to and including that day. When the window reaches the end of a month that has fewer than 31 days, the DLMS request starts one to three days earlier still; for example **From (meter calendar)** 30 September and 1 October ask from 28 September. The page starts with yesterday and today.

The days are in the meter's own calendar: the service asks the meter for these dates as the meter's clock counts them, even when that clock is far from the PC's. The note on the page says so too.

The last day must be after the **From (meter calendar)** day, and at most 31 days after it.

Reading days that are already stored replaces the stored values of those intervals with the new ones; an interval corrected by hand is kept.

As soon as a load profile read starts, a **Load profile** card with the chosen days takes the place of the values card and says that the profile is being read. If the read fails, the card says "The load profile read did not succeed; the line log below says why."

Read

METER: Demo - Feeder 1 (sample values) · EMH 90000002 WHAT: Registers Load profile FROM (METER CALENDAR): 10/13/2026 TO (UNTIL 00:00 OF THIS DAY): 10/14/2026 REPEAT: Once

☐ Open the result when the read is good

The window is in the meter's own calendar: a meter whose clock is far from the PC is asked for its own dates.

Load profile 2026-10-13 – 2026-10-14 (meter calendar)

Intervals stored: 96 · 15 min

First - last: 2026-10-13 00:15 · 2026-10-14 00:00

A+ sum	970.797 kWh
A- sum	0.000 kWh
Ri+ sum	300.944 kvarh
Rc+ sum	0.000 kvarh
Ri- sum	0.000 kvarh
Rc- sum	0.000 kvarh

[Open in Analysis](#)

Line log Done job 2 ☐ Hex [Show more](#)

```

498.9 < <SOH>P0<STX>()<ETX> # P0
751.5 > <SOH>E2<STX>F101()<ETX><SOH> # profile access (EMH)
1002.3 < <ACH> # profile access reply
1002.7 > <SOH>R5<STX>P.01(02610130000;02610140000)<ETX>$ # profile request
1308.7 < <STX>P.01(0261013001500)(00000000)(15)(6)(1-1:1.29)(kWh)(1-1:2.29)(kWh)(1-1:5.29)(kvarh)(1-1:6.29)(kvarh)(1-1:7.29)(kvarh)(1-1:8.29)(kvarh)<CR>LJ
1308.9 > <SOH>B0<ETX>q # break
    
```

profile block 5515 bytes, BCC correct; 96 intervals

Figure 7.3 The Read page after a good load profile read of a sample meter with Open the result when the read is good unticked: the Load profile card and the Line log.

When the page stays after a good load profile read, the card shows what is stored for the days from the **From (meter calendar)** day up to and including the last day, whatever this read asked for: for an IEC 62056-21 meter it also counts intervals of the last day that were stored before. It shows **Intervals stored** with the interval length, the first and last interval, and, when the meter has them, the number of other channels (voltage, current and the like), and the sum of each energy channel. When the licence includes analysis, **Open in Analysis** opens the same days on the **Analysis** page (see [Analysis](#)).

If the summary cannot be made, the card says "The profile is stored; the Analysis page shows it." When the licence does not include analysis, the card says only that the profile is stored, without the summary and without **Open in Analysis**.

Reading only the missing intervals

To fill gaps in a stored load profile, use **Read the missing profile** on the **Analysis** page (Operators and administrators). The service looks for missing intervals in the days shown there, the last day included, but only in the last 31 days of them; when more days are shown, the answer says that only the last 31 days were looked at. When the last day is today, the search starts on the day before the **From** day, at the present time of day, so gaps of that afternoon or evening are read too. Gaps with more than 6 hours of stored profile between them are read as separate jobs, each from its first missing interval to its

last; gaps closer together share one window, and the intervals already stored inside it are read again. For a DLMS meter each window is widened to whole days, from the day before the day of its first missing interval (earlier still at the end of a short month, as described above) up to and including the day of its last one. A gap that a finished read has already covered is not asked again.

The answer under the button names each window that is being read and, when there are several, how many jobs were made. When nothing is missing, the answer is "no interval is missing in these days". For a meter type whose load profile the program does not read, the request is refused.

Values, units and billing periods

While a registers read runs, the **Values** card fills as the meter sends its values. When the read ends well and the page stays (see above), the card shows the stored reading instead. After a failed read the card keeps the last good reading; the chip and the line log say what failed.

When the page opens it shows the meter's newest good registers reading, with its number and time in the card's heading (**none yet** when there is none). **Open meter detail** opens **Meter detail** at the billing tab with the newest good registers reading (see [Meters and groups](#)).

Column	What it shows
OBIS	The register code as the meter sent it.
Value	The value. For a DLMS meter a plain number is shown here and its unit in the next column. An IEC 62056-21 meter's value is shown as the meter sent it, in brackets with its unit, for example (248613.412*kWh); the unit is in the next column too. Any other text is shown exactly as the meter sent it.
Unit	The unit the meter gave.
This period	For an energy register: the value now minus the value at the last end of billing, with three decimals.
Previous period	For an energy register: the last end of billing minus the one before, with three decimals.

The **This period** and **Previous period** columns appear only when the program can work out a period for at least one energy register of the reading.

The table lists the current values. The values of past billing periods are stored with the reading and shown on **Meter detail**.

For a DLMS meter the values come in groups, and each group starts with a heading row.

A row whose period is below zero shows both periods in red; the negative value keeps its minus sign.

Above the table the card gives the meter's clock and how many seconds it is ahead of (+) or behind (-) the PC.

A meter read through the REDZ BT probe also shows what the probe reported before the read (firmware, battery, mode) as chips.

NOTE

The values in the **Values** card are the meter's own: the meter's multiplier is not applied there. The sums on the **Load profile** card come from the analysis and have the multiplier applied (see [Analysis](#)).

The line log

The **Line log** card shows the bytes between the PC and the meter as it happens; a DLMS login with a password is not recorded, as described below. Before the first read it says "Press Read now. Every byte to and from the meter appears here as it happens." While the job waits or opens the line, the card shows what the service is doing, for example "opening the line". When a job ends before the line was opened, the card says "Nothing went over the line: the job ended before the line was opened (see below)."

The log opens as a short box that scrolls to the newest row. Click **Show more** to make it taller, and **Show less** to make it short again.

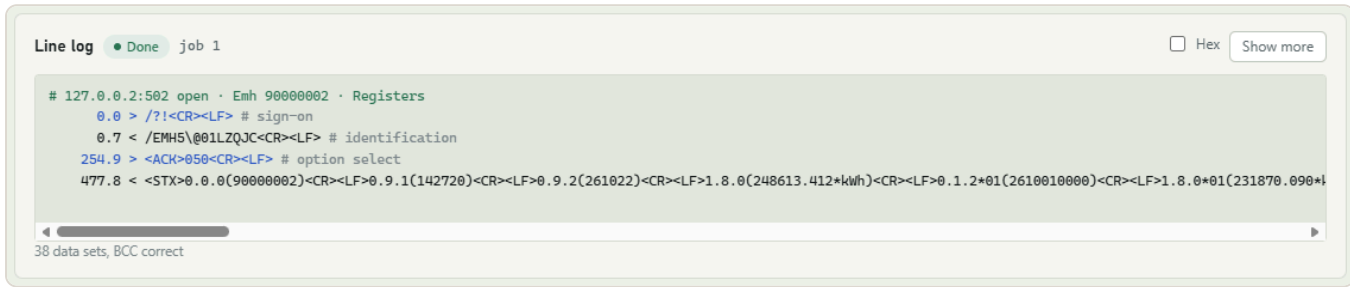


Figure 7.4 The Line log of a registers read of a sample meter, short with Show more: heading rows start with #, and Hex is unticked.

Part of a row	Meaning
The first number	Milliseconds since the exchange with the meter began.
> or <	> is sent by the PC, < is received from the meter.
The text	The bytes as text. Control characters are shown in angle brackets, such as <CR> and <LF>; a byte without a printable character is shown as its hex value, such as <1F>.

Part of a row Meaning

# ...	A note of the service on that row, for example the step of the sign-on.
A dot in place of > or <	A step of the service without bytes, for example the speed switch; its note follows after #.

Rows starting with # are headings, such as the line that was opened and the meter. Tick **Hex** to see the bytes as hex numbers instead of text.

The chip in the card's heading gives the job's state and the job number: **Queued**, **Running**, Done or Cancelled. When the read fails, the chip shows the outcome in words instead of the state, and the service's message appears under the log.

Outcome Meaning

Ok	The read is complete and stored; the chip shows Done.
No answer	No identification, no DLMS answer or no data block came back.
Bad checksum	A block came back incomplete or with a wrong checksum, or an IEC 62056-21 meter refused the load profile request twice.
Login failed	The meter refused the password (for an Itron meter: every password tried, the stored one and the ones made from the serial number), no password is stored for a meter that needs one, an Itron meter's serial number is not 8 digits, so no password is sent, or the stored password cannot be opened on this PC.
No data	An IEC 62056-21 meter answered the load profile request with an error: the window holds no records, or the meter does not accept the request.
Not supported	The program does not read this type or kind yet, or the meter's record lacks what the read needs (for example an address).
Cancelled	The read was cancelled with Cancel , it ran longer than the time allowed for one job, or the service stopped during the read; the message says which. The chip shows Cancelled. A read that could not end in time when the service stopped shows Interrupted after the service starts again.
Error	Any other failure, for example an IEC 62056-21 meter that did not accept the profile access; the message says what happened.

The stored meter password never appears in the log. For a DLMS meter that logs in with a password, the login request is not recorded at all: its row says how many bytes were left out because of the password. In the meter's answer to the login, the authentication value is replaced by '0' characters, and the row says so. The stored meter password is never sent to an IEC 62056-21 meter.

The log of a finished read is kept with the reading when bytes went over the line. On **Jobs & events**, Operators and administrators open it with **Trace** and save it with **Save as .txt**; a job whose reading kept no log has no **Trace** button. The note above the log depends on the meter: for a DLMS meter it says that the login request is not recorded and the meter's authentication value is masked; for a Landis & Gyr DLMS meter it says "As stored: Landis & Gyr DLMS meters are read without a password, so the sign-in is recorded in full."

Cancelling a read

While the read waits or runs, **Cancel** stops it. A job still in the queue is closed with "cancelled before it started"; for a running job the service closes the line, and the job ends as Cancelled, its message ending with "cancelled". The same button is on the **Jobs & events** page.

Repeating a read

Repeat reads the meter again after a pause: **Once** (no repeat), **Every 30 s**, **Every 60 s** or **Every 5 min**. It works for registers and for the load profile. After each read, good or not, a note under the controls says when the next read starts; after a read that did not succeed the note begins with "The last read did not succeed."

Leaving the page stops the repeat, and so does a read that the service refuses (the banner gives the reason). **Cancel** stops only the running read: the next one follows after the pause. To stop repeating, choose **Once**; a next read that is already waiting still starts once, and no other read follows it. If that read ends well with **Open the result when the read is good** ticked, the page opens the result.

Warnings after a read

When the identification the meter sends names another maker than the meter's type in the program, the service writes a warning to the event list and, for a good registers reading, **Meter detail** shows a warning banner. The read itself is kept, and the program does not change the type: check the meter type in the meter's form (see [Meters and groups](#)).

When a good registers reading puts a reactive ratio over its limit, the meter's row on **Meters** gets the **reactive** chip and the **Dashboard** lists the meter under **Over the reactive limit**. The ratios and limits are explained in [Meters and groups](#); the limits are set in [Settings](#).

8 Analysis

The **Analysis** page shows the load profile that is stored for a meter: as a chart, as a table of rows with minimum, maximum, average and sum, and as files you can save. It works on the intervals that were already read (see [Reading meters](#)); it does not ask the meter for anything (except **Read the missing profile**, below).

NOTE

The **Analysis** page is in the menu only when the licence includes the feature **Analysis and tariffs** (the **License** page names it under **Features**, or shows **All features**; see [License](#)). Every role can open it.

NOTE

When the trial or the licence has ended, or meters are not read for another licence reason, the **Analysis** page, the tariffs, formulas and custom reports that the licence includes stay open with the stored data, and the files can still be saved (see [License](#)). **Read the missing profile** is then refused, and the values of a virtual meter are not typed in, imported or removed: operators and administrators see the note on **Manual edit** described under Values of a virtual meter, also when the licence includes that feature; the reason is that meters are not read, as the **License** page shows. The program in the browser asks for the licence state at sign-in and then every ten minutes; until it has the new state, it still offers these tools and the service refuses them with "the licence does not include Manual edit".

Choosing what to show

In **Meter, formula or report** you pick the source. The list has the groups **Meters**, **Formulas** and **Custom reports**; a meter is listed with its location (or its type) and its serial number. Archived meters are not in the list. Formulas and custom reports are made on the **Formulas & reports** page (see [Formulas & reports](#)).

The **Formulas** group is there only when there is a formula, and the **Custom reports** group only when there is a report. When the licence does not include formulas or custom reports, the page still opens with the meters.

From (meter calendar) and **To** are days in the meter's own calendar. Both start at yesterday, taken from the clock of this PC. The page shows whole days: from the start of the first day to the end of the last day.

The range can be at most 366 days. If **To** is before **From (meter calendar)**, the page shows "to is before from".

The row of buttons under the boxes fills in both days and shows the result at once: **Today**, **Yesterday**, **Last 7 days** (today and the six days before), **Last 30 days** (today and the 29 days before), **This month** (from the 1st to today) and **Last month** (its first to its last day). These buttons take today's date from the clock of this PC.

- **Detailed:** one row for each stored interval, as the meter recorded it.
- **15 min, 30 min, Hourly, Daily:** the intervals are grouped into steps of that length.

Unit is **Energy** (kWh, kvarh; a step adds up its intervals) or **Power** (kW, kvar). For **Power** the page shows this note:

NOTE

"Power is the meter's own average-power channel; a step shows the mean of its intervals.
A meter that records only energy has no power values."

The page shows the result as soon as you change the source, the step, the unit or the tariff. After you type or pick other days in the boxes, select **Show**.

The page remembers the step and the unit you last used for each meter, formula and report, in this browser.

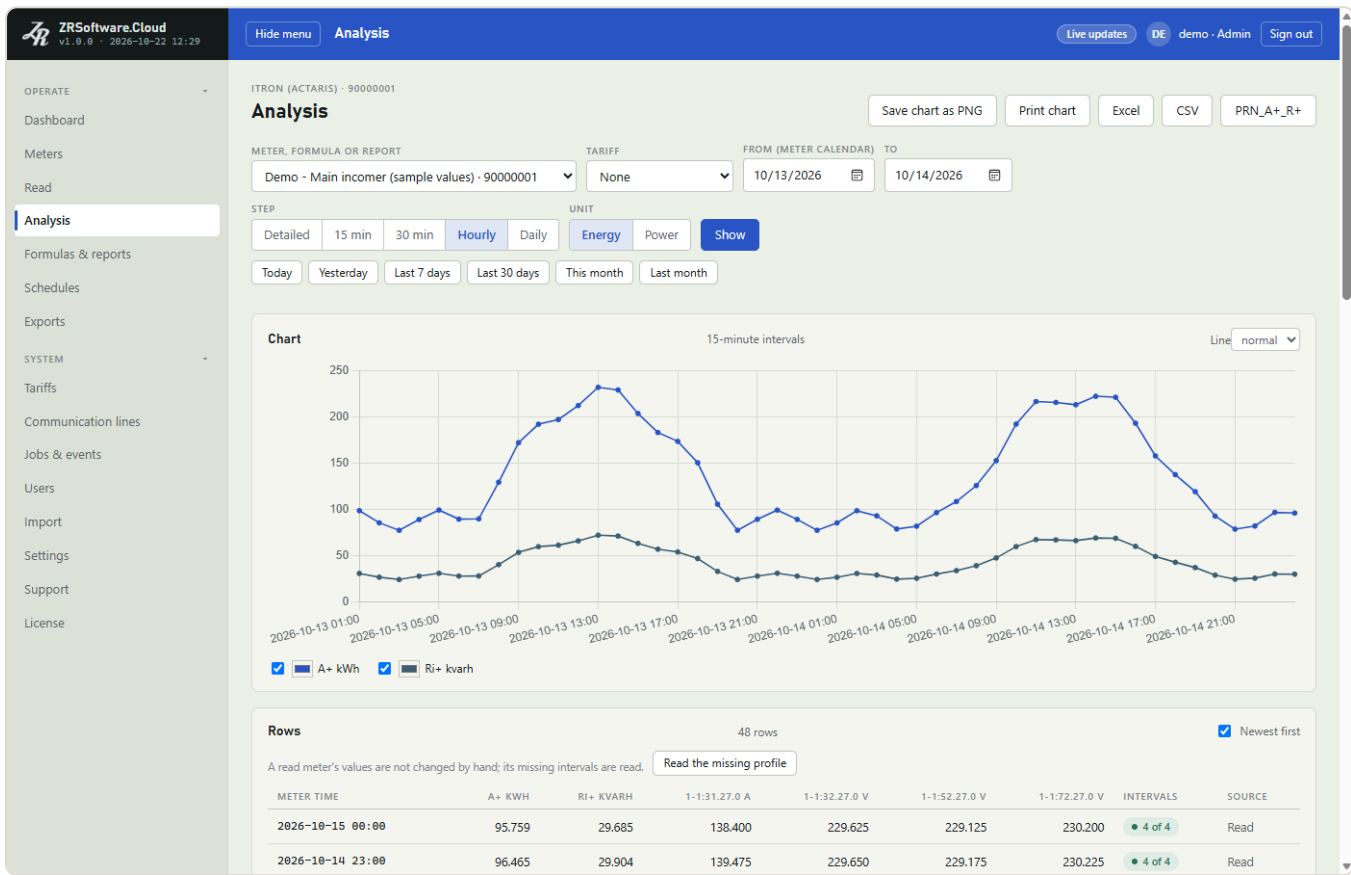


Figure 8.1 The Analysis page with the stored load profile of a sample meter in hourly steps, as a chart and as rows, newest first.

How the steps group the intervals

A row's time is the end of its step, in the meter's calendar. An interval belongs to the step in which it ends: in the **Hourly** step, the intervals ending at 10:15, 10:30, 10:45 and 11:00 form the row 11:00.

In the **Daily** step, 00:00 closes the day before: the row of 5 May has the time 6 May 00:00.

Values are shown with the meter's multiplier applied, rounded to three decimals. Next to the **Chart** heading the page shows the meter's interval length and, when it is not 1, the multiplier.

The eight channels are A+, A-, R+, R-, Ri+, Rc+, Ri- and Rc-. For a meter, a channel without any value in the range is left out of the chart and the table.

Missing intervals

In every step except **Detailed**, the **Intervals** column shows how many intervals of the step are stored and how many the meter's interval length allows, for example 3 of 4. A step with fewer intervals is highlighted, and the **Rows** heading counts these rows as **short**. A step without any stored interval is still a row, with no values.

When the step is shorter than the meter's interval (for example **15 min** on a meter that records every 30 minutes), a row in which no interval can end shows a dash in **Intervals** and is not counted as **short**.

For a meter that is read, operators and administrators see the button **Read the missing profile**. It asks the service to read from the meter the missing intervals of the days in **From (meter calendar)** and **To**, also when you changed them without selecting **Show**.

The service puts profile reads for the meter on its line and the page shows the answer next to the button; the answer names the times that will be read. Missing intervals that lie more than six hours apart are read in separate reads, so the stored intervals between them are not read again; the answer then also gives the number of jobs. An interval that a finished read already asked for is not asked again. When nothing is missing, the answer is "no interval is missing in these days". You follow the reads on the **Jobs & events** page (see [Jobs & events](#)).

On a line that is turned off the reads are still queued, but each one ends with a message that the line is disabled; nothing is sent to the meter (see [Communication lines](#)).

The service looks back at most 31 days from the end of the range (from now, when the range reaches today). When the range is longer, the answer says that only the last 31 days were looked at, and up to which day. When the range reaches today, the service counts whole days back from now, so it also looks at the last hours of the day before **From (meter calendar)**: with 10 May to 12 May at 15:00 on 12 May, it looks from 15:00 on 9 May.

NOTE

The read is refused when the licence does not allow reading meters at the moment, for a meter type whose load profile the service does not read, and for a meter beyond the licence's meter limit (only the meters registered first are read; see [License](#)). A refusal is shown in the banner above the chart, not next to the button; for such a meter type it says that the profile is not read by the service yet.

The chart

The **Chart** draws one line for each channel shown. Under the chart, each channel has a check box that shows or hides its line and a colour box that changes its colour.

The chart always runs from the oldest time on the left to the newest on the right, whatever order the table uses.

Line sets the line width: **thin**, **normal** or **thick**. The colours and the width are kept in this browser.

When the step is shorter than the meter's interval, the chart also leaves out the rows in which no interval can end; the table keeps every row.

For a meter, if the range has no stored values in the chosen unit, the chart area says so.

The table

Rows lists the rows. **Meter time** is the end of the row in the meter's calendar; then come the channels with their units. **Source** is **Manual** for values typed in or imported on this page (the values of a virtual meter) and **Read** for the other values, also for a load profile taken over from a ZR Software 7 database (see [Import](#)).

With **Newest first** ticked, which it is at the start, the newest row is at the top; untick it to list the oldest row first. The page keeps your choice in this browser.

The last four rows are **MIN**, **MAX**, **AVG** and **SUM** of the rows that have a value.

Extra profile channels

Some meters store more channels in their load profile, such as voltages or currents. These extra channels appear in the table after the eight channels, under their OBIS code and unit. They are not drawn in the chart.

In a step, an extra channel shows the average of its values in the step, not their sum. No multiplier is applied to them. Their **SUM** cell stays empty.

An extra channel without any value in the range is left out.

Rows

24 rows

☒ Newest first

A read meter's values are not changed by hand; its missing intervals are read.

Read the missing profile

METER TIME	A+ KWH	RI+ KVARH	1-1:31.27.0 A	1-1:32.27.0 V	1-1:52.27.0 V	1-1:72.27.0 V	INTERVALS	SOURCE
2026-10-14 00:00	77.170	23.923	112.000	230.375	229.875	230.975	4 of 4	Read
2026-10-13 23:00	88.923	27.566	128.850	230.050	229.550	230.650	4 of 4	Read
2026-10-13 22:00	98.996	30.689	143.250	229.750	229.300	230.325	4 of 4	Read
2026-10-13 21:00	89.071	27.612	128.775	229.750	229.275	230.350	4 of 4	Read
2026-10-13 20:00	77.197	23.931	111.500	229.850	229.300	230.450	4 of 4	Read
2026-10-13 19:00	105.387	32.670	152.375	229.500	229.025	230.050	4 of 4	Read
2026-10-13 18:00	150.179	46.555	217.350	229.050	228.600	229.550	4 of 4	Read
2026-10-13 17:00	173.308	53.725	251.025	228.900	228.500	229.350	4 of 4	Read
2026-10-13 16:00	182.870	56.689	265.050	228.900	228.550	229.400	4 of 4	Read
2026-10-13 15:00	203.409	63.057	294.950	228.850	228.475	229.300	4 of 4	Read
2026-10-13 14:00	228.840	70.940	331.975	228.650	228.325	229.050	4 of 4	Read
2026-10-13 13:00	231.698	71.826	336.150	228.700	228.375	229.100	4 of 4	Read
2026-10-13 12:00	211.997	65.721	307.625	228.925	228.600	229.375	4 of 4	Read
2026-10-13 11:00	196.902	61.039	285.675	229.075	228.700	229.500	4 of 4	Read
2026-10-13 10:00	191.826	59.466	278.175	229.000	228.625	229.425	4 of 4	Read
2026-10-13 09:00	171.870	53.280	249.125	229.075	228.675	229.575	4 of 4	Read
2026-10-13 08:00	129.086	40.017	186.925	229.450	228.975	229.975	4 of 4	Read
2026-10-13 07:00	89.508	27.747	129.425	229.800	229.300	230.375	4 of 4	Read
2026-10-13 06:00	89.221	27.660	128.925	229.700	229.200	230.300	4 of 4	Read
2026-10-13 05:00	98.996	30.687	143.075	229.600	229.100	230.125	4 of 4	Read
2026-10-13 04:00	88.773	27.520	128.325	229.750	229.275	230.350	4 of 4	Read
2026-10-13 03:00	77.146	23.914	111.600	230.050	229.550	230.650	4 of 4	Read
2026-10-13 02:00	85.261	26.431	123.550	230.100	229.600	230.700	4 of 4	Read
2026-10-13 01:00	98.358	30.491	142.675	230.100	229.625	230.700	4 of 4	Read
MIN	77.146	23.914	111.500	228.650	228.325	229.050		
MAX	231.698	71.826	336.150	230.375	229.875	230.975		
AVG	134.833	41.798	195.348	229.456	229.016	229.983		
SUM	3235.992	1003.156						

Figure 8.2 The Rows table of a sample meter for one day, newest first, with extra channels after the energy columns and the summary rows at the bottom.

Tariff zone totals

In **Tariff** you can choose a tariff instead of **None**. Under the rows the page then shows **Tariff zones**: one row for each zone with the channels and the number of intervals in it.

The zone totals are made from the stored intervals, so they are the same in every step. Energy is added up and power is averaged. Zones with the same name (a zone used twice in a day) give one total.

Which zone an interval goes to is described in [Tariffs](#).

Tariff zones · Three-rate (sample) · from the stored intervals, the same in every step

ZONE	A+ KWH	RI+ KVARH	INTERVALS
T1 day	4027.454	1248.509	88
T2 peak	1029.648	319.194	40
T3 night	1428.605	442.866	64

Figure 8.3 Tariff zone totals of a sample meter for the sample tariff.

Saving and printing

The **Excel**, **CSV** and **PRN_A+_R+** files are made by the service; the page hands each to the browser under the name the service gives and then shows that name. **Save chart as**

PNG saves the chart as it is drawn. The order you choose with **Newest first** does not change the files. The files, the picture's name and the printed sheet take the days now in **From (meter calendar)** and **To**, also when you changed them without selecting **Show**. The chart in the picture and on the sheet is always the one on the screen, so select **Show** first when you have changed the days.

Button	What you get
Save chart as PNG	The chart as a picture, named Graph_ with the serial number (or the formula or report name) and the two days.
Print chart	A sheet headed with the meter's serial number and type (or the formula or report name), with the days, the step, the unit and the chart, sent to the browser's print dialog.
Excel	An Excel workbook (.xlsx) of the rows, with the zone totals when a tariff is chosen.
CSV	A CSV file of the rows with the extra channels. Only for a meter.
PRN_A+_R+	A text file with A+ and R+ for each row. Only for a meter, in the Energy unit and a step other than Detailed .

When **PRN_A+_R+** is not available, its tip says why: "PRN_A+_R+ is written for a meter" or "PRN_A+_R+ is energy in 15 min, 30 min, hourly or daily steps".

During a REDZ support session (see [Support](#)), every file that REDZ support saves on this page leaves a row with the source REDZ support in **Jobs & events**, with the file name and the session number. When REDZ support saves the chart as a picture or prints a page, the program tells the service and Jobs & events gets a row. Files saved and pages printed by your own users leave no such row.

The Excel file of a meter

The file name has the form location_serial d_M_yyyy H_m.s.xlsx: the meter's location and serial number, then the day and time the file was made without leading zeros, such as 17_10_2026 9_5_30. The workbook has one sheet, named with the serial number.

Unit	Columns
Energy	Meter Date Time, Import Active, Export Active, IMP Reactive Energy, EXP Reactive Energy, Import Inductive, Import Capacitive, Export Inductive, Export Capacitive
Power	Meter Date Time, IMP Active Energy Avrg, EXP Active Energy Avrg, IMP Reactive Energy Avrg, EXP Reactive Energy Avrg, IMP Reactive Inductive Avrg, IMP Reactive Capacitive Avrg, EXP Reactive Inductive Avrg, EXP Reactive Capacitive Avrg

The extra channels follow as OBIS code with the unit in brackets. The rows go newest first; a step without any stored interval is left out. In the eight channels a missing value is written

as 0, also for a channel the screen leaves out; an extra channel's missing value stays empty. Times have the format M/d/yyyy h:mm AM/PM and numbers three decimals.

With a tariff, an empty row, a row Tariff zone and one row for each zone follow the rows.

The CSV file

The file name has the form location_serial yyyy-MM-dd HH-mm-ss.csv. It is UTF-8 text with commas and a point for decimals. The first column is Meter time (yyyy-MM-dd HH:mm), then the eight channels with their units, such as A+ (kWh), then the extra channels. Rows go oldest first, a missing value is an empty cell, and a step without any stored value is left out.

The CSV file has no zone totals.

The PRN_A+_R+ file

The file is named with the serial number and the date it was made, for example 90000001 2026-10-17.prn. It starts with header lines (the program, its version, the report type, the date and time it was made, the meter's location, serial number and type, the type as ZR Software 7 names it and None for a virtual meter, and the step as 15MIN, 30MIN, 1HOUR or 1DAY), then a line with one space and the line -----DATA STARTS AFTER THIS LINE-----.

The next line is the serial number, 2 and the meter's interval length in minutes. Each row then has day, month, two-digit year, hour, minute, A+ and R+, separated by commas. A row ending at 00:00 is written as hour 24 of the day before. A missing A+ or R+ is written as 0, and a step without any stored interval is left out.

Values of a virtual meter

A virtual meter is not read; its values are typed in or imported here (adding a meter is described in [Meters and groups](#)). Operators and administrators can do this. Values are typed in the **Detailed** step; in another step the page says "Choose the Detailed step to type a value in."

1. Choose the virtual meter, the days and the **Detailed** step. With **Energy** you type energy values, with **Power** average-power values.
2. Select **Edit** on a row. The row gets a box for each of the eight channels, also for a channel that has no value yet.
3. Type the values as the page shows them (with the multiplier). An empty box means no value.
4. Select **Save**, or **Cancel** to leave the row as it was.

To add an interval that is not in the table, enter its end in **Add a missing interval (meter calendar, interval end)** and select **Add**. The time must be on the meter's interval

boundary, for example 10:15 for a 15-minute meter. Typing in and importing use the same interval length.

If a value changed after the page showed it, nothing is saved and the page names the channel and tells you its current value as the table shows it; show the range again and repeat.

When a save leaves an interval without any value (no energy and no power value), the interval is removed and the page says so.

Import values (Excel / CSV) reads an .xlsx, .xls or .csv file. The first column is the time of the interval end, for example 2026-10-16 10:15. The other columns are headed A+, A-, R+, R-, Ri+, Rc+, Ri- or Rc- for energy values, or Avg A+ to Avg Rc- for average-power values, and hold the values as the page shows them (with the multiplier). Each channel column may appear only once. An empty cell leaves that value as it is. Each time must be on the meter's interval boundary and appear only once.

If any row has a problem, nothing is imported and the page gives the number of problems and lists the first ten. A file without a row of values under its header row, also one with only empty rows there, is refused with a message that the file needs a header row and at least one row of values. Otherwise the values are imported, the table is shown again with them, and the page reports how many intervals were imported, how many are new and how many changed.

WARNING

Remove the values of these days removes every value, energy and power, of the virtual meter in the days of the result now on the screen: their intervals are removed as a whole. This takes back an import into days that had no values before. An import into days that already had values wrote over them; removing these days does not bring the old values back but removes them too, so type or import the old values from **Corrections** instead. If you have changed **From (meter calendar)** or **To** without selecting **Show**, the days on the screen count, not the boxes. At most 31 days are removed at once; the service refuses a longer range. The page first asks for confirmation and names the number of days and the two days, and in the **Detailed** step the number of intervals on the screen: check them before you confirm. Then it says how many intervals of how many days were removed.

WARNING

Saving, importing and removing change the stored values; there is no undo button. An import writes over the values that are already there. In the **Detailed** step, **Corrections** lists each value that a save, an import or a removal changed, with **Interval**, **Value**, **Was**, **Now**, **By** and **When**; a value that was not there shows as empty. Values are listed with three decimals. It shows at most the 1000 newest changes of the days in **From (meter calendar)** and **To**; choose fewer days to see older ones. One day can hold more than 1000 changes, for example when a day of a meter with 15-minute intervals and values in all eight energy and all eight power channels is removed (1536 changes); the older changes of such a day are not listed. To go back, type or import the old values from this list. A power value is listed with Power before the channel, such as Power A+, and is imported in a column such as Avg A+. **Corrections** is offered only when a meter is the source, not for a formula or a custom report.

NOTE

Typing in, importing and removing values need the licence feature **Manual edit** (see [License](#)). Without it the page does not offer these tools for a virtual meter, and operators and administrators see the note "The licence does not include Manual edit, so this virtual meter's values are not typed in or imported here."

The values of a meter that is read cannot be changed by hand; read its missing intervals instead. A meter that already has read values cannot be changed into a virtual meter either; add a virtual meter instead.

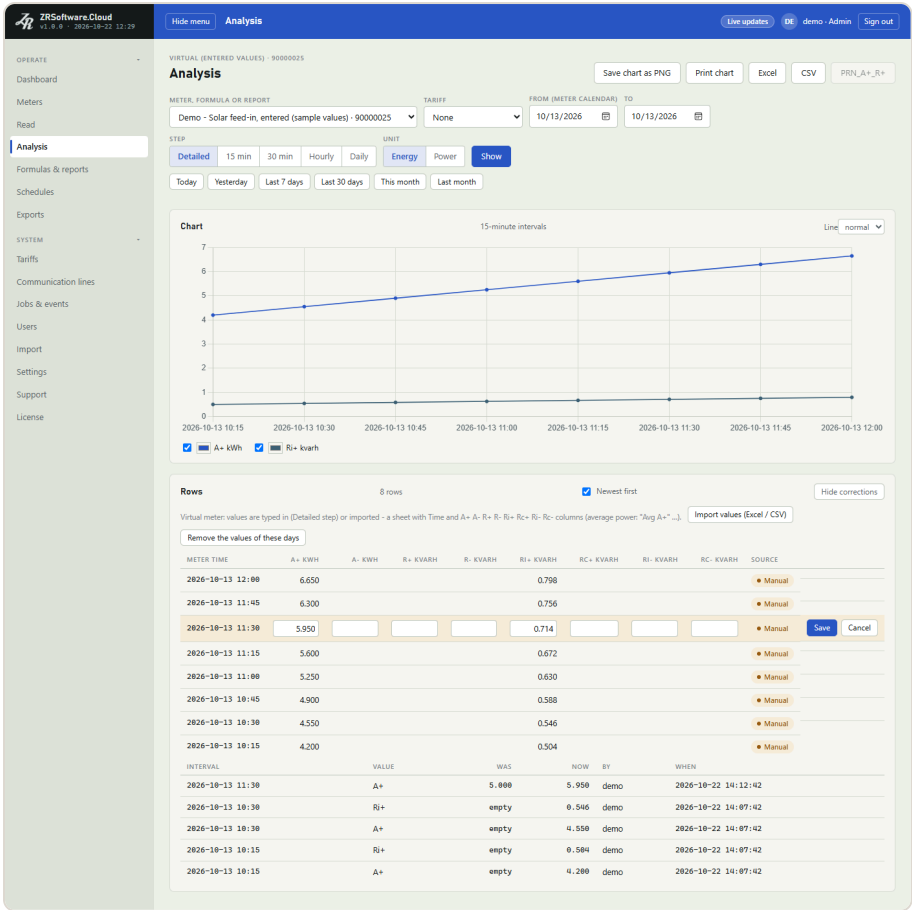


Figure 8.4 A sample virtual meter on the Analysis page in the Detailed step: its own buttons, one row being edited and the corrections below.

9 Tariffs

A tariff divides the day into time-of-use zones, such as day, peak and night. On the **Analysis** page a tariff adds the totals of each zone to the load profile. The **Tariffs** page lists the tariffs and lets an administrator add, change and delete them.

NOTE

The **Tariffs** page is in the System group of the menu when the licence includes the feature **Analysis and tariffs** (the **License** page names it under **Features**, or shows **All features**; see [License](#)). Every role can see the tariffs; only administrators see **Add tariff**, **Edit** and **Delete**.

The tariff list

Each tariff is a card with its name and either **Every day** or **Weekdays, Saturday, Sunday**. Its table lists the zones with **Zone**, **From**, **To** and the length of the zone; a zone that runs past midnight is marked as crossing midnight. A tariff with day types also has the **Days** column.

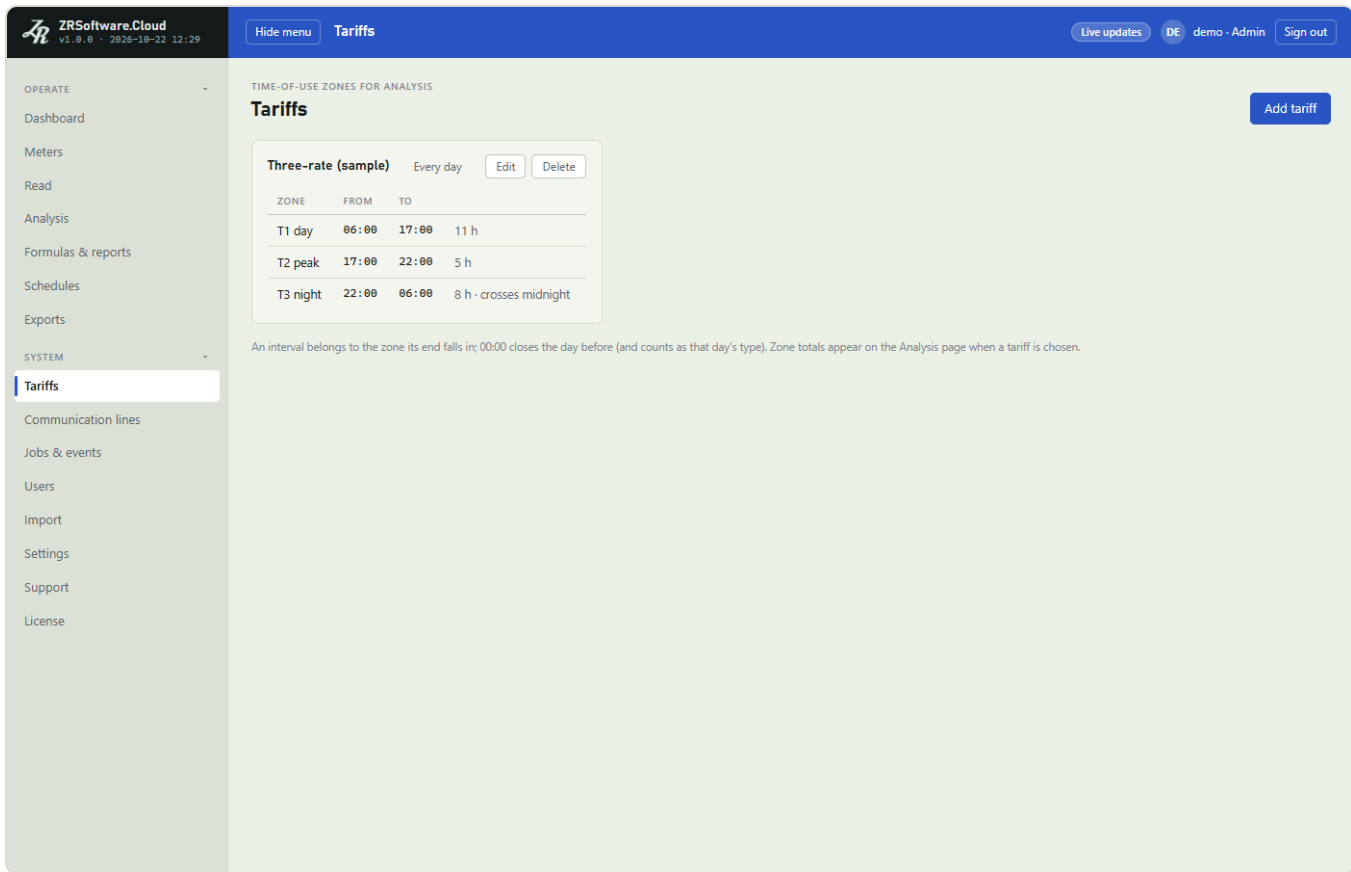


Figure 9.1 The Tariffs page with the sample tariff: its zones with From, To and length, and the zone that crosses midnight marked.

Zones and day types

Zones apply to chooses between one set of zones for **Every day** and one set each for **Weekdays**, **Saturday** and **Sunday**. Each set must cover the whole day: every minute belongs to exactly one zone.

The day type comes only from the day of the week. There is no separate day type for public holidays.

NOTE

"Times as HH:mm; 24:00 is the end of the day. A zone whose end is before its start crosses midnight (22:00 to 06:00)."

An end of 00:00 is stored as 24:00 and shown that way after saving.

Which zone an interval belongs to

NOTE

"An interval belongs to the zone its end falls in; 00:00 closes the day before (and counts as that day's type). Zone totals appear on the Analysis page when a tariff is chosen."

A zone from 06:00 to 17:00 takes the intervals that end after 06:00 and at or before 17:00. With 15-minute intervals, the interval 16:45 to 17:00 is in this zone and the interval 17:00 to 17:15 is in the next one.

The interval that ends at 00:00 on a Monday belongs to Sunday, and is counted in Sunday's zones.

A zone that crosses midnight, such as 22:00 to 06:00, takes the intervals of both ends of the same day: those ending after 22:00 and those ending at or before 06:00.

Adding or changing a tariff

1. Select **Add tariff**, or **Edit** on a tariff's card. A new tariff starts with three zones: T1 06:00 to 17:00, T2 17:00 to 22:00 and T3 22:00 to 06:00.
2. Type the **Name** (at most 60 characters; two tariffs cannot have the same name, and capital and small letters A to Z count as the same).
3. Choose **Zones apply to**.
4. For each zone type its name (at most 40 characters) and its start and end. **Add zone** adds a zone and **Remove** removes one.
5. Select **Save**. **Cancel** closes the form without saving.

A click outside the form closes it when you have changed nothing. When you have changed something, the page first asks "Close the form without saving the changes?".

A zone added with **Add zone** starts where the last zone of the set ends and ends where that zone starts. Change the times so that the zones do not overlap.

When you switch to **Weekdays, Saturday, Sunday**, the every-day zones are copied into each of the three sets. When you switch back to **Every day**, the weekday zones are kept for every day and the form says: "The weekday zones now apply to every day; the Saturday and Sunday zones go when you save (Cancel keeps them)."

The service checks the tariff when you save it and shows the first problem in the form, for example when two zones overlap or when a time of the day has no zone. A zone whose start and end are the same time, such as 06:00 to 06:00 or 00:00 to 00:00, covers the whole day. A tariff has at most 48 zones in all its sets together; each set needs at least one.

A change to a tariff changes the zone totals of every analysis and automatic export that uses it, from the next time they are shown or run. Files saved before keep the totals they had.

Edit tariff

NAME

Three-rate (sample)

ZONES APPLY TO

Every dayWeekdays, Saturday, Sunday

WEEKDAYS

T1 day06:0017:0011 hRemove

T2 peak17:0022:005 hRemove

T3 night22:0006:008 h · crosses midnightRemove

Add zone

SATURDAY

T1 day06:0017:0011 hRemove

T2 peak17:0022:005 hRemove

T3 night22:0006:008 h · crosses midnightRemove

Add zone

SUNDAY

T1 day06:0017:0011 hRemove

T2 peak17:0022:005 hRemove

T3 night22:0006:008 h · crosses midnightRemove

Add zone

Times as HH:mm; 24:00 is the end of the day. A zone whose end is before its start crosses midnight (22:00 to 06:00).

SaveCancel

Figure 9.2 The Edit tariff form of the sample tariff, switched to zones for Weekdays, Saturday and Sunday (not saved yet).

Deleting a tariff

Delete asks for confirmation and then deletes the tariff. A tariff that an automatic export uses cannot be deleted; the page says how many exports use it and names up to three of

them by number and target (see [Exports](#)).

WARNING

A deleted tariff cannot be restored. To use it again, add it again with the same zones.

A tariff in the analysis

On the **Analysis** page, choose the tariff in **Tariff**. The **Tariff zones** table then shows, for each zone, the channels and the number of intervals in it. The totals come from the stored intervals and are the same in every step; energy is added up and power is averaged.

Zones with the same name give one total, so a zone such as T1 can appear twice in a day (morning and evening). See [Analysis](#).

A tariff works the same way for a formula and a custom report. There, a value that is empty in an interval (because a meter has no value in it) adds nothing to the zone totals, but the interval is still counted in **Intervals**.

The **Excel** file of the analysis then ends with the zone totals. The CSV and PRN_A+_R+ files have no zone totals.

An automatic export can also add a tariff's zone totals; see [Exports](#).

10 Formulas & reports

A formula calculates a new load profile from the channels of several meters, for example a main meter minus its sub-meters. A custom report puts meter channels and formulas side by side in one table. Both are made on the **Formulas & reports** page and shown on the **Analysis** page like a meter.

NOTE

The page is in the menu when the licence includes the feature **Formulas** or **Custom reports** (the **License** page names them under **Features**, or shows **All features**; see [License](#)); each of the two needs its own feature. Every role can see the formulas and reports. The **Analysis** button of a formula or report is there only when the licence also includes the feature **Analysis and tariffs**. Only administrators see **Add formula**, **Add report**, **Edit** and **Delete**.

The analysis of a formula or report on the **Analysis** page, and its **Excel** file there, also need the feature **Analysis and tariffs**. An export of a formula runs only while the licence includes **Formulas**, and one of a report only while it includes **Custom reports**, also with **Run now**; otherwise the run is skipped with "the licence does not include formulas" or "the licence does not include reports" (see [Exports](#)).

When the licence includes only one of the two, the page still opens: the list of the other kind stays empty, and the service refuses to save one of that kind with a message that the licence does not include it.

The formula list

Formulas lists each formula with **Name**, **Expression**, the **Meters** it reads and its **Unit**. **Analysis** opens the formula on the **Analysis** page.

The unit is kWh when every channel in the formula is active (A+ or A-) and kvarh when every one is reactive. A formula that mixes active and reactive channels has no unit.

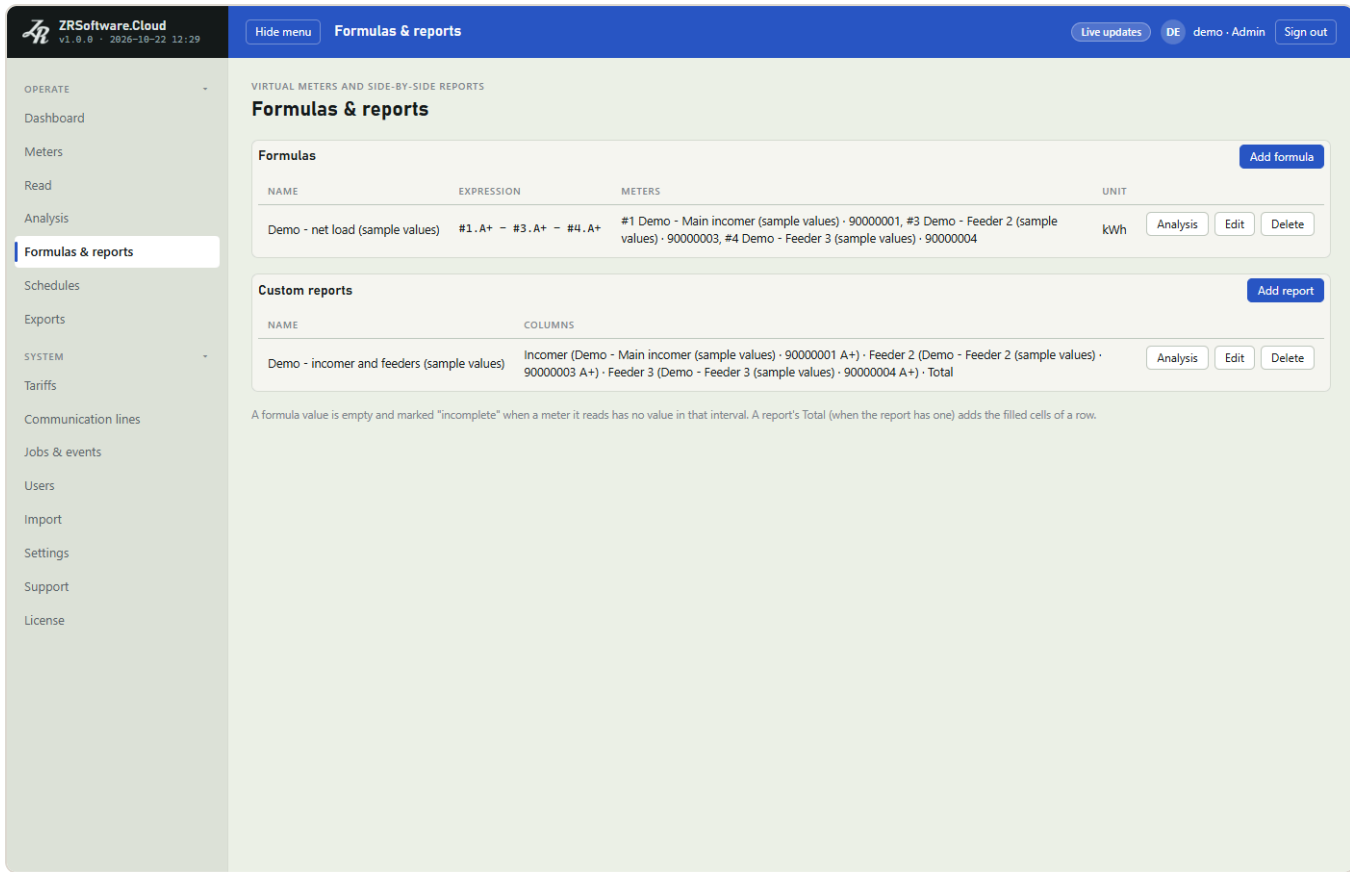


Figure 10.1 The Formulas and reports page with a sample formula and a sample custom report.

Writing a formula

A formula is an expression of meter channels, numbers and the operators + - * /, with parentheses. The form shows this note:

NOTE

"#meter.channel reads a meter's channel (A+ A- R+ R- Ri+ Rc+ Ri- Rc-); numbers use a point (0.98). A formula cannot use another formula."

The meter number is the number after # in the **Meter** list of the form. For example #1.A+ is the A+ channel of meter 1; the empty **Expression** box shows the example #1.A+ - #2.A+ - #3.A+. Channel names can be typed in small or capital letters.

Multiplication and division are done before addition and subtraction; use parentheses to change the order. A minus sign can also stand before a value. Example: #1.A+ - (#2.A+ + #3.A+) * 0.98.

A formula is at most 1000 characters long and reads at most 50 different meter channels (each #meter.channel counts once).

The formula is saved in a tidy form, with one space around each operator and only the parentheses it needs, so the saved text can look slightly different from what you typed.

Adding or changing a formula

1. Select **Add formula**, or **Edit** on a formula.
2. Type the **Name** (at most 60 characters; two formulas cannot have the same name, and capital and small letters A to Z count as the same).
3. Type the **Expression**. To put a channel in at the cursor, choose the meter in **Meter** and the channel in **Channel** under the expression, then select **Insert**. The buttons + - * / () put in an operator.
4. Check the table under the expression: it shows each **Reference** and the **Meter** it names.
5. Select **Save**, or **Cancel** to close without saving.

A click outside the form closes it when you have changed nothing. When you have changed something, the page first asks "Close the form without saving the changes?". The same holds for the report form.

The service checks the formula when you save it. If the expression cannot be read, the form shows the position of the first problem and what was expected there. A meter number that names no meter is refused. The number of an archived meter is accepted.

Only active meters are in the **Meter** list under the expression.

NOTE

A change to a formula also changes every custom report and every automatic export that uses it, from the next time they are shown or run.

Edit formula

NAME

Demo - net load (sample values)

EXPRESSION

#1.A+ - #3.A+ - #4.A+

Meter

#1 Demo - Main incomer (sample values) · 90000001

Channel

A+

Insert

+

-

*

/

(

)

REFERENCE

METER

#1.A+

Demo - Main incomer (sample values) · 90000001

#3.A+

Demo - Feeder 2 (sample values) · 90000003

#4.A+

Demo - Feeder 3 (sample values) · 90000004

#meter.channel reads a meter's channel (A+ A- R+ R- Ri+ Ri- Rc+ Rc-); numbers use a point (0.98). A formula cannot use another formula.

Save

Cancel

Figure 10.2 The Edit formula form of the sample formula, with the meter and channel lists, Insert and the operator buttons.

How a formula is calculated

For each row of the chosen step and unit, the formula uses the value of each meter in the same row, with each meter's own multiplier. The result is rounded to three decimals.

When a meter the formula reads has no value in a row, the formula's value is empty and marked INCOMPLETE; it is not counted as 0. A division by zero leaves the value empty and marked DIVISION BY ZERO. A row in which none of the meters has a stored interval stays empty without a mark.

On the **Analysis** page, the **Rows** heading counts the rows with a marked value as incomplete (and, as for a meter, the rows with fewer intervals as **short**), and the page shows this note:

NOTE

"A value is empty and marked when a meter it reads has no value in that row; it is not counted as 0."

Custom reports

Custom reports lists each report with its **Name** and its **Columns**: each column's title and what it shows. **Analysis** opens the report on the **Analysis** page.

1. Select **Add report**, or **Edit** on a report.
2. Type the **Name** (at most 60 characters; two reports cannot have the same name, and capital and small letters A to Z count as the same).
3. For each column type its **Title** and choose its source in **Meter or formula**: a meter and one of its channels in **Channel**, or a formula. **Add column** adds a column, **Up** and **Down** move a column one place (Up is off on the first column, Down on the last) and **Remove** removes it.
4. Tick **Add a total column (the sum of the row) after the last one** if the report should have a total.
5. Select **Save**, or **Cancel** to close without saving.

As the form notes, a report without the total column has the same columns on the screen and in the files as in ZR Software 7.

A report has 1 to 20 columns. A title is at most 40 characters and can be used only once in a report, whatever the letter case.

The title Total, in any letter case, is kept for the total column; the service refuses a column with this title.

The total column adds up the filled cells of the row. When a cell of the row is empty, the total is marked INCOMPLETE. The total has a unit only when all columns have the same unit.

A meter column is empty and marked INCOMPLETE in a row where the meter has no value. A row in which none of the meters has a stored interval stays empty without a mark, also in the total column.

Only active meters can be chosen as a new source. A column that already reads an archived meter keeps it: the list shows that meter with (archived) after its name.

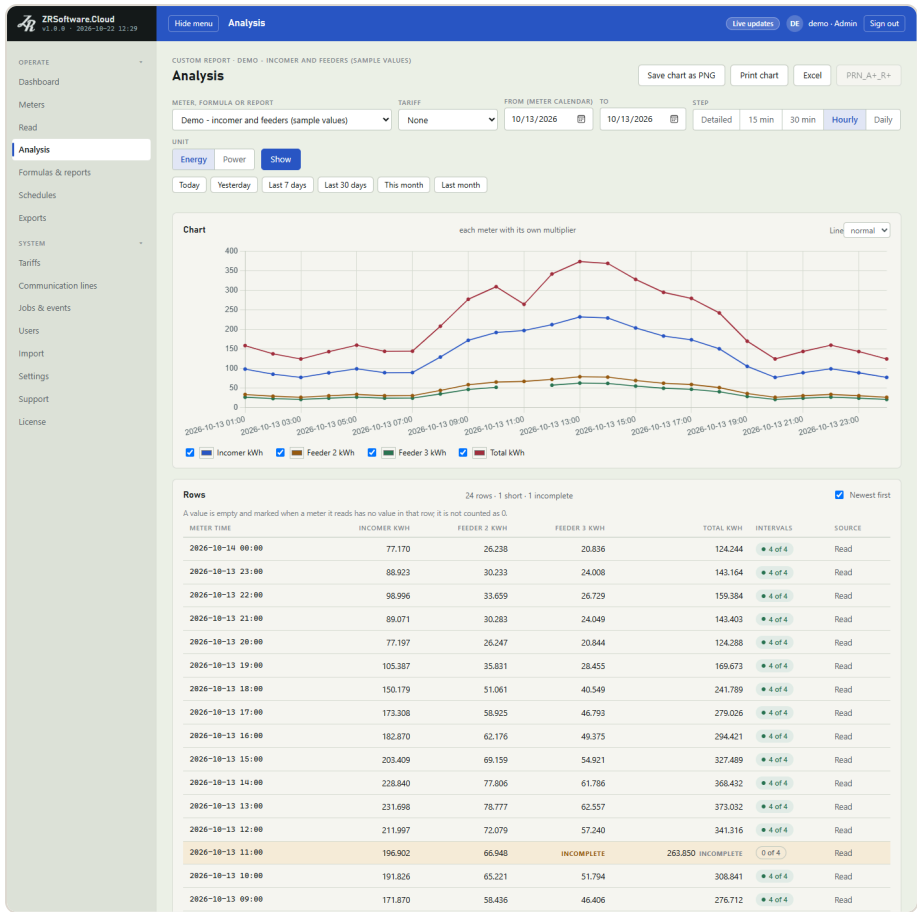


Figure 10.3 A sample custom report on the Analysis page: in a row where a meter has no value, its cell is empty and marked incomplete.

Formulas and reports in the analysis

On the **Analysis** page, choose the formula or report in **Meter, formula or report**. Days, ready ranges, step, unit, tariff and **Newest first** work as for a meter (see [Analysis](#)).

All columns are shown, also those without values. A formula or report has no extra profile channels, no values to type in and no CSV or PRN_A+_R+ file; **Excel**, **Save chart as PNG** and **Print chart** work.

With a tariff, a value that is empty in an interval (because a meter has no value in it) adds nothing to the zone totals, but the interval is still counted in **Intervals**.

The Excel file of a formula or report

The file name has the form name d_M_yyyy H_m_s.xlsx: the formula or report name, then the day and time the file was made without leading zeros. A / or \ in the name becomes _ . The sheet is named Formula or Report.

The first column is Meter Date Time; then, for a formula, one column headed with its name; for a report, each column under its title. In these headings each space becomes _ and there is no unit. The rows go newest first. A row in which every value is empty is left out when one of the meters has no stored interval in it, so a formula row marked

INCOMPLETE on the screen can be missing from the file; an empty value in a row that is written is an empty cell. With the total column, Total is the last column.

With a tariff, the zone totals follow the rows, as in the file of a meter.

Formulas and reports can also be the source of an automatic export; see [Exports](#).

Deleting a formula or report

Delete asks for confirmation and then deletes the formula or report. A formula that a report uses cannot be deleted: its **Delete** button is off with the tip **Used by a report**. A formula or report that is the source of an automatic export cannot be deleted either; the page says how many exports use it and names up to three of them by number and target.

WARNING

A deleted formula or report cannot be restored. The meters and their profiles are not changed.

11 Schedules

A schedule reads a list of meters by itself at the times you set: the load profile, the registers, or only what is missing from the stored profile. You find the page **Schedules** under **Operate** in the menu. The page is in the menu only when your licence includes schedules and meters are read.

Every signed-in user sees the list. An operator or an administrator can start a schedule at once with **Run now**. Only an administrator sees **Add schedule**, **Edit** and **Delete** and can change a schedule.

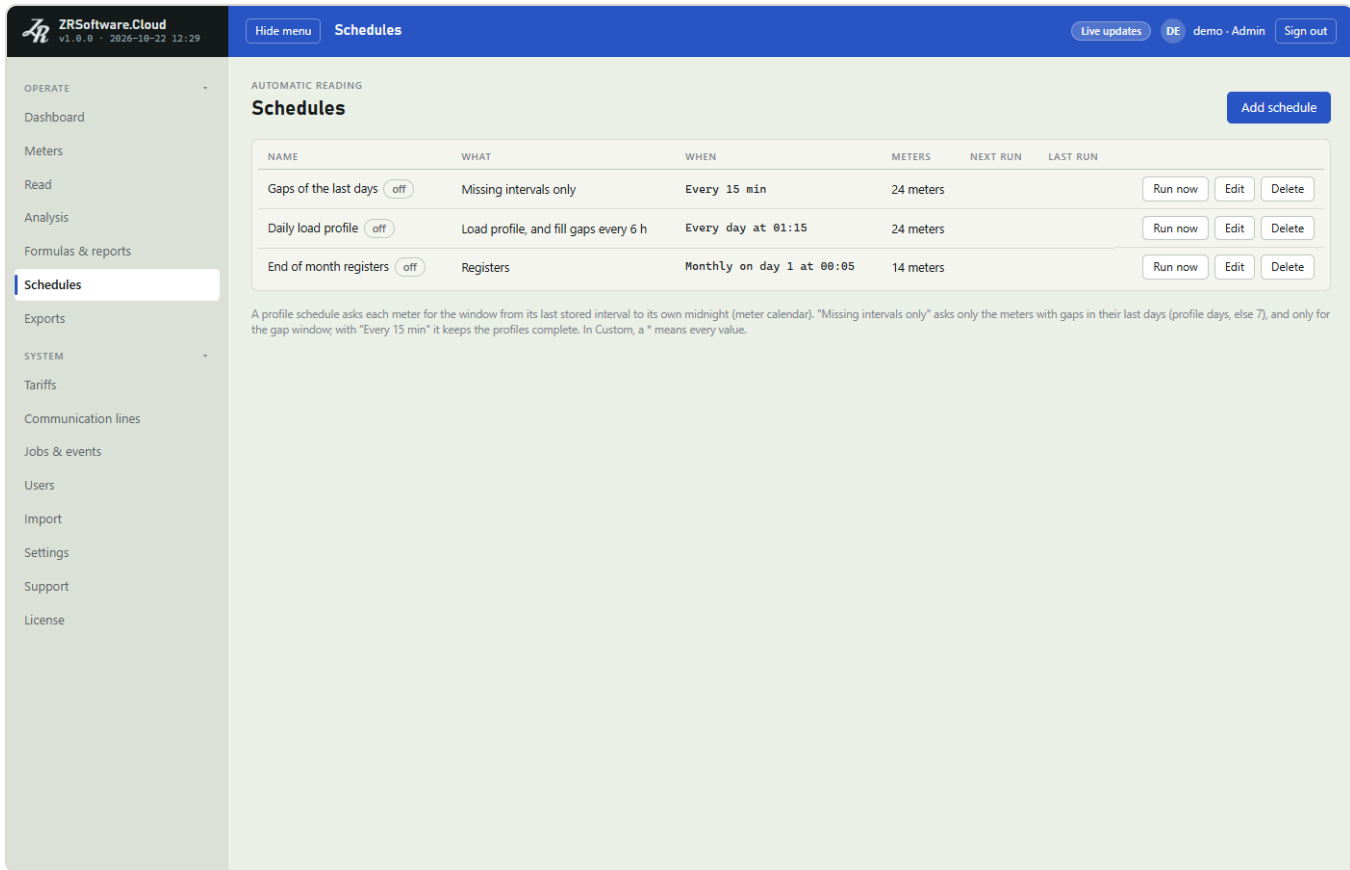


Figure 11.1 The Schedules page with sample schedules, all off, and the Run now, Edit and Delete buttons.

The schedule list

Column What it shows

Name	The name of the schedule. A schedule that is turned off carries the chip off .
What	What the schedule reads (see the next section). For a load profile with gap filling it also shows how many hours apart the gaps are filled.
When	The pattern in words, for example every 5 min, every day at a time, or monthly on a day. A custom pattern shows its four fields as month / day / hour / minute.

Column What it shows

Meters	The type and serial number of each meter of the schedule; with more than six, only their number.
Next run	The next time the schedule runs. It is empty while the schedule is turned off.
Last run	The time of the last run and the jobs it queued: how many are done, how many did not finish (failed, interrupted or cancelled) and how many are still open (queued or running). A meter that still has a job from an earlier run is skipped. A run that skipped every meter shows nothing done and nothing open, even while those earlier jobs still run; the event log then has a warning from the source Scheduler that says how many meters were skipped.

With no schedule yet, the list shows **No schedule yet**.

While the top bar shows **Live updates**, the list updates by itself each time a job is queued or finishes.

A new schedule that [Import](#) takes over from ZR Software 7 comes in turned off, so that the meters are not read twice while ZR Software 7 still reads them. Edit it and tick **On** when the automatic reading of ZR Software 7 has stopped.

Meters of a ZR Software 7 schedule whose kind and time fields match a schedule that is already here are added to that schedule instead, and if it is on, they are read from its next run. A schedule set to **Every 5 min** or **Every 15 min** never takes in such meters: ZR Software 7 has no such pattern.

What a schedule reads

Choice	What each run does
Load profile	Reads each meter's load profile from the day of its last stored interval, however long ago that was, up to the coming midnight of the meter's own calendar.
Registers	Reads each meter's register values.
Load profile, and fill gaps	Reads the load profile as above. In addition, on the first run and then each time the hours in Fill gaps every (hours) have passed, it also asks each meter again for the intervals missing before its last stored interval.
Missing intervals only	Looks at the last days up to now in each meter's calendar and reads only the windows of the missing intervals. A meter with no gap is not read at all.
Missing days of the previous month	Looks at the previous month in each meter's calendar and reads each day that has fewer intervals than a full day (96 for a 15-minute profile), one job per day.

Missing intervals that lie close together are read in one window, from the first to the last of them. Gaps more than 6 hours apart are read as separate windows, one job each, so that the stored intervals between them are not read again.

You choose what a schedule reads and when it runs independently. For example, **Every 15 min** with **Missing intervals only** keeps the profiles complete without reading whole days again. For **Missing intervals only** and for the gap filling, the program looks back as many days as **Profile days** says, or 7 days when that box is empty.

A day or an interval that a successful profile read already covered, after it had closed in the meter's calendar, is not asked for again, even if the meter did not deliver it: the meter has given all it keeps for that time. After a read that failed, found no data or was cancelled, it is asked for again at the next run.

The meter's calendar is the PC clock corrected by the meter's clock difference from its last registers reading, or the PC clock itself while no successful registers reading of the meter is stored. When no successful registers reading of the last 7 days is stored, a job of a **Load profile** schedule (also with gap filling) first reads the registers to learn the meter's clock; the job then shows "registers read first for the meter's clock". That registers reading is kept as a reading of its own. If it fails, the job fails too, with a message that starts with "the meter's clock is not known".

When a meter has no stored interval yet, the first load profile read goes back **Profile days** days. When that box is empty, the number of days depends on the pattern, and the empty box shows it in grey, for example "empty: 60 days":

Pattern	Days read back the first time
Every 5 min	30
Every 15 min	30
Every hour	30
Every day at a time	60
Monthly on day and a time	365

For **Missing intervals only** and for **Load profile, and fill gaps** the empty box shows "empty: the last 7 days", the look-back of the gaps. For **Load profile, and fill gaps** the first load profile read of a meter still goes back the number of days of the pattern from the table above. For **Registers** and **Missing days of the previous month** the box shows that it is not used.

Adding or editing a schedule

- Click **Add schedule**, or **Edit** in the row of a schedule.
- Type a **Name** (required).

- 3. Choose in **What** what the schedule reads. For **Load profile, and fill gaps**, set **Fill gaps every (hours)** (1 to 168; a new schedule offers 6).
- 4. Choose a pattern under **When** and fill in its time fields (see below).
- 5. If needed, set **Profile days** and **Attempts**.
- 5. Choose the meters under **Meters**.
- 7. Leave **On** ticked for the schedule to run, and click **Save**.

A new schedule starts as a load profile read every day at 01:15, with 2 attempts, turned on.

If the service refuses the schedule, the form stays open and shows the reason under the fields. **Cancel** closes the form without saving.

Edit schedule

NAME

Daily load profile

WHAT

Load profile

WHEN

Every 5 min

Every 15 min

Every hour

Every day at...

Monthly on day...

Custom (month / day / hour / minute)

HOUR

1

MINUTE

15

PROFILE DAYS

empty: 68 days

ATTEMPTS

2

Profile days: how far back a meter with no stored profile is read the first time (1 = the last day); later runs go on from the last stored interval. "Missing intervals only" and the gap fill look this many days back for gaps.

☒ On

METERS

Search location, serial, type, gro

Every type

Every line

Every group

24 of 24 chosen - 24 shown

Select all shown (24)

Clear

From Excel (serials)...

☒ Demo - Main incomer (sample values) · Itron (Actaris) 90000001

☒ Demo - Feeder 1 (sample values) · EMH 90000002

☒ Demo - Feeder 2 (sample values) · Landis & Gyr (DLMS) 90000003

☒ Demo - Feeder 3 (sample values) · Iskra (DLMS) 90000004

☒ Demo - Feeder 4 (sample values) · Itron (Actaris) 90000005

☒ Demo - Feeder 5 (sample values) · EMH 90000006

☒ Demo - Feeder 6 (sample values) · Landis & Gyr (DLMS) 90000007

☒ Demo - Feeder 7 (sample values) · Iskra (DLMS) 90000008

☒ Demo - Feeder 8 (sample values) · Itron (Actaris) 90000009

Save

Cancel

Figure 11.2 The Edit schedule form of a sample schedule: what to read, when, the profile days with their default and the meters it reads.

Field	What it does
Profile days	1 to 366. How far back the first load profile read of a meter goes, and how far back the missing intervals are looked for. Empty: the first read goes back the number of days of the pattern, and the missing intervals are looked for in the last 7 days (see above). Clear the box and save to go back to these values.

Field	What it does
Attempts	1 to 5. How many times one job tries the meter, 3 seconds apart. Only a read that may work next time is tried again: no answer, a checksum error or another error such as a line that cannot be opened. A refused password is not tried again. All attempts together stay within the 15 minutes a job may take.
Meters	The meters to read. The list offers only active meters that are not virtual; you can narrow it by search, type, line and group, or paste serial numbers from Excel (see Meters and groups). When the program has virtual meters, a note under the list says "Virtual meters are not read, so they are not on this list."
On	Clear it to stop the schedule without losing it.

Choosing when it runs

Pattern	Fields you fill in	When it runs
Every 5 min	None	At :00, :05, :10 and so on, every five minutes of every hour.
Every 15 min	None	At :00, :15, :30 and :45 of every hour.
Every hour	Minute	Every hour at that minute. Type a number: a * there makes the schedule run every minute.
Every day at	Hour, Minute	Every day at that time.
Monthly on day	Day, Hour, Minute	Every month on that day at that time.
Custom (month / day / hour / minute)	Month, Day, Hour, Minute	At every time that matches all four fields.

In **Custom (month / day / hour / minute)** each field is a number or *, and * means every value: month 1 to 12, day 1 to 31, hour 0 to 23, minute 0 to 59. A date that never occurs, such as day 30 of month 2, is refused with "this month never has that day". Times are the PC's local time.

With **Monthly on day** and a day that a month does not have (for example 31), the schedule does not run in that month.

When a schedule runs

Schedules are run by the Windows service ZRSoftware, not by the browser: they run while the service runs, whether or not a page is open. The service looks for due schedules every 15 seconds.

If the PC or the service was off at a planned time, the missed run is made once, as soon as the service runs again, while the licence allows it. Several missed runs are not made one after the other: after the catch-up run the schedule goes on with its next planned time.

A job that is running when the service stops is closed as cancelled, and its message ends with "cancelled: the service stopped". A job the service could not close is shown as interrupted when the service starts again. Jobs that were still queued are queued again in their order when the service starts (see [Jobs & events](#)).

When the trial or the licence has ended, the licence message says "Meters are not read and automatic exports do not run." Then, and whenever else the licence does not let the program read meters (see [License](#)), the page **Schedules** leaves the menu and no schedule runs. On a page that was still open, **Run now** is refused with "the licence does not include Schedules", also when the licence includes schedules: the reason is that meters are not read now. The schedules themselves stay as they are and run again at their next planned time once meters are read again.

While the licence does not allow reading, or does not include schedules, a due run is skipped and not saved up for later: it is not made later, also when the licence allows reading again. The event log then gets a warning from the source Schedule that names the schedule and the reason.

Virtual meters count toward the meter limit too. When more meters are registered than the licence allows, the meters registered first are read, as many as the limit, virtual meters among them; a virtual meter is never read, and its place does not go to another meter. A schedule does not queue its other meters, and its row in the event log is then a warning that says how many meters were not read and why: archive a meter or ask for a larger licence (see [License](#)).

Run now runs the schedule at once, also when it is turned off, and the page says how many jobs it queued. Run now does not move the planned times. It counts as the last run in **Last run**, and for **Load profile, and fill gaps** the hours until the next gap filling count from the last run that filled the gaps, also when that was Run now.

The order of reads on a line

Each communication line has its own queue: the meters of one line are read one after the other, never two at the same time. Different lines are read at the same time, up to four lines at once.

A schedule queues its meters in the order they were added to the program. Jobs on a line run in the order they were queued; a read you start by hand on the **Read** page waits behind the jobs already queued on that line.

A meter that still has a queued or running job from the same schedule is not queued again by that schedule. With a short pattern such as **Every 5 min** on a long line this keeps the queue from growing.

One job may take at most 15 minutes; after that it is stopped and shown as cancelled, and its message says that it timed out.

NOTE

Each job that runs to its end writes a row to the event log. Each run of a schedule writes one more; a schedule set to **Every 5 min** or **Every 15 min** writes it only for the first run of each hour and for every run that queued nothing, skipped a meter or left meters unread because of the licence. With such a pattern and many meters the event log still reaches its limit of 100 000 rows within weeks, and the oldest rows are then deleted (see [Jobs & events](#)).

Deleting a schedule**WARNING**

Delete asks for confirmation and then removes the schedule with its list of meters; it cannot be undone. Its jobs that are still queued or running are cancelled. The jobs it queued before stay in **Jobs & events** with their history, and the event log notes who deleted the schedule and how many jobs were cancelled. To stop a schedule without losing it, edit it and clear **On**.

12 Exports

An export writes a file by itself at the times you set: the load profile or the billing values of a meter, or the result of a formula or a custom report, for a period such as yesterday or last month. The file goes into a folder, is sent by e-mail or is uploaded to an FTP server. You find the page **Exports** under **Operate** in the menu; it is there only when your licence includes exports.

Every signed-in user sees the list and the past runs. An operator or an administrator can start an export at once with **Run now**. Only an administrator sees **Add export**, **Edit** and **Delete**.

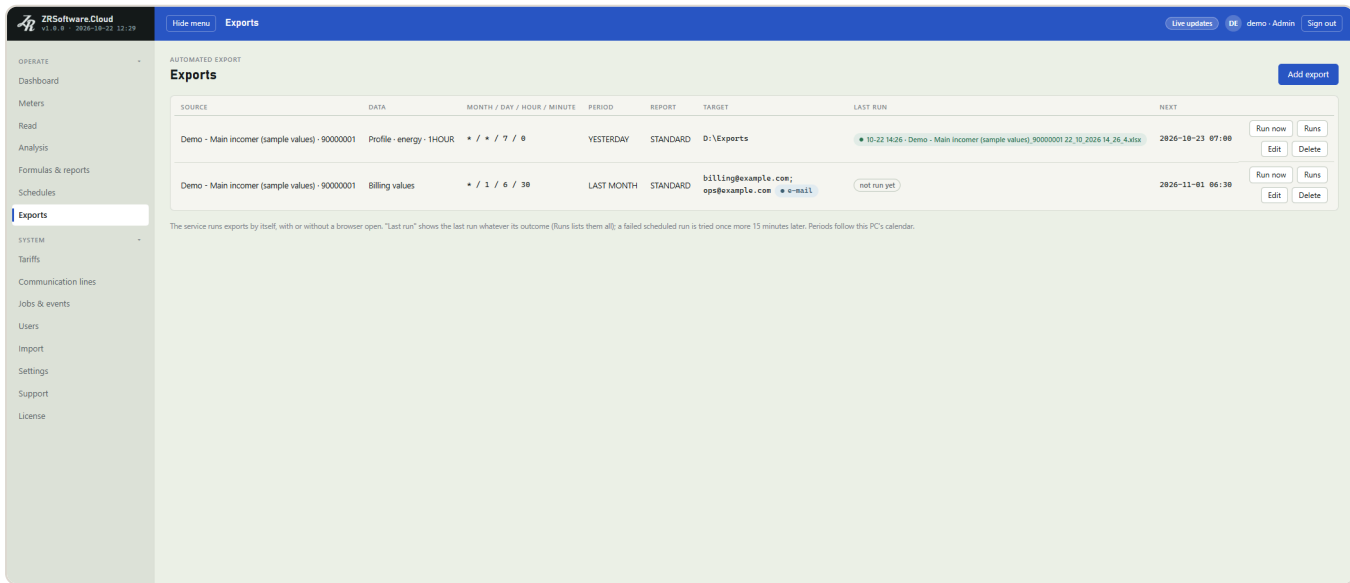


Figure 12.1 The Exports page with sample exports: one to a folder that has run, and one by e-mail that has not run yet.

The export list

Column	What it shows
Source	The meter (location and serial number), formula or report. A formula or report carries a chip with its kind; an export that is turned off carries off .
Data	Billing values, or the profile with its unit and step, and the extra channels when chosen.
Month / day / hour / minute	The four time fields of the export.
Period	The days the file covers.
Report	The file kind, and the tariff when one is chosen.
Target	The folder; the recipients with the chip e-mail ; or the folder on the FTP server with the chip FTP (empty for the folder of the FTP settings itself).

Column	What it shows
Last run	The time and the result of the last run, whatever it was: the file name, or the error of a run that did not succeed. Before the first run it shows not run yet .
Next	The next planned run; after a failed scheduled run the time of the retry instead. Empty while the export is turned off.

With no export yet, the list shows **No export yet**.

An export that [Import](#) takes over from ZR Software 7 comes in turned off, so that reports are not sent twice while ZR Software 7 still sends them. Edit it and tick **On** when the automated export of ZR Software 7 has stopped.

Adding or editing an export

1. Click **Add export**, or **Edit** in the row of an export.
2. Choose the **Source**: a meter, a formula or a report. **Find a meter**, **Line** and **Group** above it narrow the list of meters.
3. Choose **Data**, **Unit** and **Step**, then the **Period** and, if you want zone totals, a **Tariff (optional)**.
4. Fill in the time fields **Month**, **Day**, **Hour** and **Minute**.
5. Choose the **Report** kind and the **Target**, and fill in the folder, the recipients or the folder on the FTP server.
5. Leave **On** ticked for the export to run, and click **Save**.

A new export starts as the energy profile in 1-hour steps of yesterday, as an xlsx file into a folder, every day at 07:00.

Formulas and reports are offered as a source, and tariffs in **Tariff (optional)**, only when your licence includes them.

If the service refuses the export, the form stays open and shows the reason under the fields. **Cancel** closes the form without saving.

Add export

FIND A METER

Location, serial, type, group

LINE

Every line

GROUP

Every group

SOURCE

Demo - Main incomer (sample values) - Itron (Actaris) 90000001

DATA

Profile

UNIT

Energy

STEP

1HOUR

PERIOD

YESTERDAY

TARIFF (OPTIONAL)

Three-rate (sample)

MONTH

*

DAY

*

HOUR

7

MINUTE

0

REPORT

STANDARD (xlsx)

TARGET

File

FOLDER

D:\Exports

EXTRA PROFILE CHANNELS AFTER THE STANDARD COLUMNS

☐ All extra channels, also ones that appear later

☐ 1-1:31.27.0 A

☐ 1-1:32.27.0 V

☐ 1-1:52.27.0 V

☐ 1-1:72.27.0 V

☒ On

A * in a field means every value. PRN, A+, R+ is for a meter's energy profile. A folder is tried with a test file when you save; an e-mail goes with the Mail card in Settings and the file stays in the service's Exports folder for 90 days. An FTP upload uses the FTP card in Settings and keeps the file in the Exports folder too.

Save

Cancel

Figure 12.2 The Add export form with a sample meter as the source, profile data written as a file to a folder, and the extra profile channels to choose.

Field	What it does
Data	Profile or Billing values . Billing values come from a meter only, not from a formula or report.
Unit	Energy or Power , for a profile.
Step	15MIN, 30MIN, 1HOUR or 1DAY: the length of one row of a profile.
Tariff (optional)	Adds the totals of the tariff zones to a profile file (see Tariffs). Only with STANDARD (xlsx) .
Extra profile channels after the standard columns	For a meter's profile as xlsx: extra channels such as voltage or current, ticked one by one, or All extra channels, also ones that appear later . None are ticked in a new export.

Periods

The period is counted in the PC's calendar on the day the export runs. Each period runs from midnight to midnight:

Period	Days in the file
TODAY	Today.
YESTERDAY	Yesterday.
LAST 2 DAYS	Yesterday and today.
LAST 7 DAYS	The last six days and today.
LAST WEEK	Monday to Sunday of the previous week.
LAST MONTH	The whole previous month.
THIS MONTH	From the first of this month to today.
LAST 15th TO THIS 15th	From the 15th of the previous month to the 14th of this month. Run before the 15th, the file also covers days still to come.

The **Runs** table shows each run's period as its two ends: the values after the first midnight and up to the last one.

File kinds and names

Report	What the file holds	File name
STANDARD (xlsx)	An Excel file: the profile rows of the period (with the zone totals when a tariff is chosen), or the billing values of the period.	For a meter its location and serial number, for a formula or report its name, then the date and time of the run, for example: Main_90000001 16_10_2026 7_0_0.xlsx
PRN_A+_R+	A text file with a header and, per row of the chosen Step that has values, its time with the active import energy (A+) and the reactive import energy (R+), for a meter's energy profile only.	The serial number and the date, for example: 90000001 2026-10-16.prn

WARNING

A file with the same name is written over. A PRN file has the date only in its name, so a second run of the same export on the same day replaces the first file. Two exports of the same meter that write into the same folder can also replace each other's PRN file. On the FTP server, too, a file of the same name in the same folder is replaced.

Writing to a folder

With the target **File**, type in **Folder** a full path on this PC, such as D:\Exports, or a shared folder, such as \\server\share\folder. When you save, the service writes a small test file

there and deletes it again. If it cannot, the export is not saved and the form says why, starting with "the service cannot write to" and the folder.

The file is written by the Windows service, which runs under its own account NT SERVICE\ZRSOFTWARE, not under your Windows account: the folder must allow the service's account to write. A folder that does not exist yet is created.

The program never deletes files from an export's own folder, unless that folder is the Exports folder of the service's data folder or a folder inside it (see the next section).

Sending by e-mail

With the target **E-mail**, type the addresses in **Recipients (; between)**, with ; or , between them, at most 20. Before you can save such an export, an administrator must set the mail server and the sender address under **Settings**, card **Mail**; otherwise the form says "set the mail server and the From address in the Mail card in Settings first".

The file goes as an attachment, with the subject from the mail settings and the fixed text "Sent via ZR Software - Mail Client". A copy stays in the Exports folder of the service's data folder, C:\ProgramData\REDZ\ZR Software\Exports, in a folder of its own named after the export's number, and is deleted there after 90 days, the next time an export runs.

Only the service, Windows itself and programs started with administrator rights can open the data folder; other Windows users of the PC cannot. To give users these files, choose a target folder they can open.

If the mail server does not accept the e-mail, the run counts as failed even though the file was written, and its error starts with "mail:".

Uploading to an FTP server

With the target **FTP server**, type in **Folder on the FTP server (under its root)** a folder below the **Folder on the server** of the FTP settings, for example daily/main, or leave it empty to use that folder itself. Letters, digits, spaces and / _ . - are allowed. Before you can save such an export, an administrator must set the server and the user name under **Settings**, card **FTP** (see [Settings](#)); otherwise the form says "set the FTP server and user in the FTP card in Settings first". The folder is not tried when you save; a folder that does not exist yet on the server is created at the first upload.

Every export with this target uses the one server of the card **FTP**: changing the card changes where all of them upload. When you change the server, the port or the type there without typing the password, the stored password is removed; type the password for the new server on the card, or the uploads cannot sign in.

The file is first written to the Exports folder of the service's data folder, as for e-mail, and is deleted there after 90 days. It is then uploaded with the same name, using the settings of the card **FTP**: under a temporary name ending in .part first; its size on the server is

compared with the file, and only then is it renamed. If the sizes differ, the run fails and a file of that name already on the server stays as it was.

When a file of that name is already on the server, the earlier file first gets a temporary name ending in `.old`; the new file then takes the name, and the `.old` file is deleted. If the new file cannot take the name, the earlier file gets its name back. An SFTP server that can replace a file in one step does it in one step instead.

WARNING

When an upload fails, the service tries to delete the `.part` file on the server. A file ending in `.part` can stay on the server when the upload or the check after it fails. A file ending in `.old` that stays on the server is the earlier file of that name: it stays when it could not get its name back or could not be deleted, and also when the time limit ran out during the renaming. The program does not look for such files on the server later; delete them there if you do not need them. When no file of that name is on the server, the `.old` file is the earlier file: give it its name back or run the export again before you delete anything.

If the upload fails, the run counts as failed even though the file was written, and its error starts with "ftp:" followed by the reason (see [Troubleshooting](#)). As for any failed scheduled run, it is tried once more 15 minutes later. In the **Runs** table the result of a run that tried the upload carries ftp uploaded or ftp failed.

Mail settings

The card **Mail** on the page **Settings** is shown to administrators only, and only when your licence includes exports. The full list of its fields is in [Settings](#); in short:

- **SMTP server** and **Port** (587 when nothing is saved yet).
- **Security: STARTTLS** (the default; the card pairs it with port 587), **SSL/TLS (465)** or **None**. Choosing one does not change the **Port** box. The server's certificate is checked; **None** sends the password without encryption.
- **User name** and **Password** of the mail account.
- **From address**: when it is empty, the user name is used if it is an e-mail address.
- **Subject** of the e-mails.

The password is only written, never shown again. The service seals it with Windows on this PC. The **Password** box shows only whether one is stored and whether this PC can open it; leave the box empty to keep the stored password, type a new one to replace it, or, when one is stored, click **Remove password**. **Remove password** removes only the password; what you typed in the other boxes without saving is not saved. A password stored on another PC (for example in a copied database) cannot be opened here and must be typed again.

NOTE

During a REDZ support session, REDZ support can add, change, run and delete exports, also those sent by e-mail; each such change leaves a row in **Jobs & events** (see [Jobs & events](#)). It can also change the **FTP** card in **Settings**, and with it the server that every FTP export uploads to. It cannot change the mail settings, and it cannot send a test e-mail from the card **Mail**; only an import of a ZR Software 7 database during the session, also a copy that REDZ support uploads, can still set that database's mail server, with user name and password, when none is set here and the licence includes exports.

Test e-mail

1. Save the mail settings first: the test uses the saved settings.
2. Type an address in **Send a test e-mail to** and click **Send test e-mail**.
3. Look in that mailbox, also in the spam folder.

When the mail server accepts the test e-mail, the card says so and reminds you that delivery is not confirmed: the program only knows that the server took it. When it fails, the card shows "Not sent:" and the reason as the server or the connection gave it, for example a sign-in or TLS error. Each test is also written to the event log. The text of the test e-mail names this PC.

When an export runs

Exports are run by the Windows service ZRSoftware, whether or not a browser is open. The four time fields work as in a custom schedule: each is a number or *, and * means every value (see [Schedules](#)). The service looks for due exports every 15 seconds.

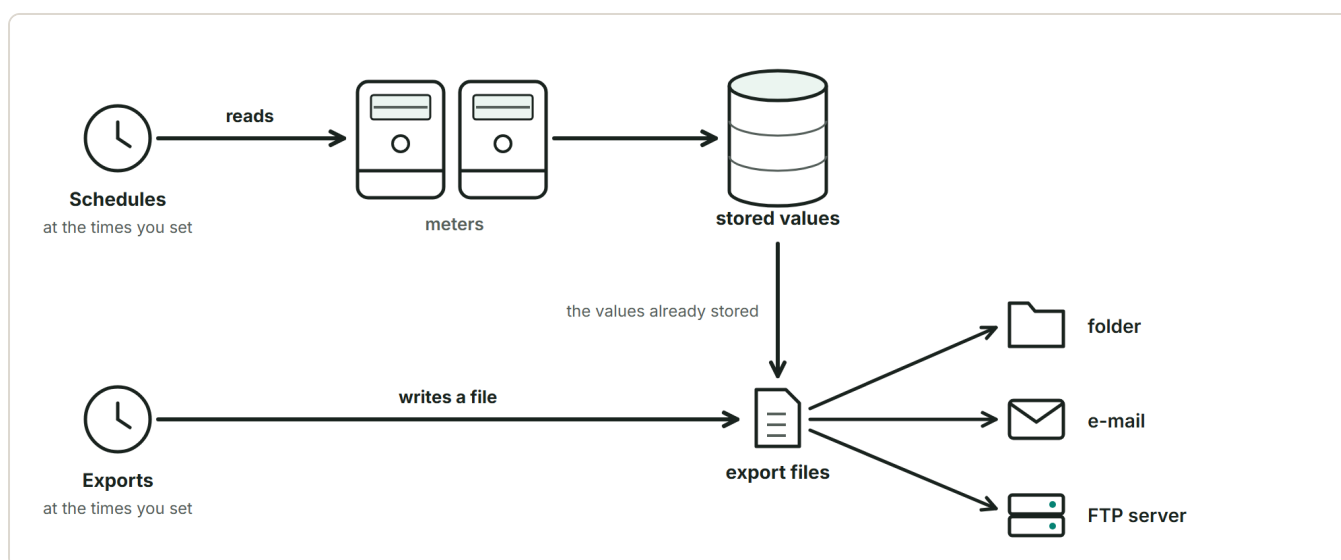


Figure 12.3 Schedules read the meters and store the values; exports run at their own times and write their files from the values already stored, into a folder, by e-mail or to an FTP server.

If the PC or the service was off at a planned time, the missed run is made once when the service runs again, while the licence allows it; the period is then counted from that day.

A scheduled run that fails is tried once more 15 minutes later; the **Next** column shows the time of that retry. If the retry fails too, the export waits for its next planned time. The retry counts the period from its own day, so a retry after midnight writes the period of the new day.

When the trial or the licence has ended, the licence message says "Meters are not read and automatic exports do not run." Then, and whenever else the licence does not let the program read meters (see [License](#)), the page **Exports** stays, but scheduled runs and retries are skipped and not made later, and the event log gets a warning from the source Export. While the licence does not include exports, the scheduled runs are skipped in the same way, with the same warning; the page **Exports** is then not in the menu. While only reading is not allowed, **Run now** still works: it writes the file from the values already stored.

Run now runs the export at once and waits for it. The page then says how many rows were written to which file and whether the e-mail was sent or the file uploaded to the FTP server, or shows the error. Run now does not change the next planned time.

Past runs and errors

Runs opens the past runs of an export under the list, the newest first (the last 50). Click it again to close them.

Column	What it shows
At	When the run was made.
How	Schedule, Retry or Manual (Run now).
Result	Ok, Failed or Skipped, with the e-mail or FTP result and the error when there is one.
Rows	The number of rows written.
File	The full path of the file.

An export of a formula or a report also needs that part of the licence: when the licence does not include formulas, an export of a formula is skipped with "the licence does not include formulas", and an export of a report likewise with "the licence does not include reports", also with **Run now**.

A run is skipped when its source no longer exists or its meter is archived. Every run, also a skipped or failed one, is written to the event log with the source Export; e-mail addresses appear there shortened, so the log does not list who received what (see [Jobs & events](#)).

Deleting an export

WARNING

Delete asks for confirmation, says that this cannot be undone, and then removes the export together with its past runs. The event log notes who deleted it; the rows its runs wrote to the event log stay. Files it wrote are not deleted with it, also not on the FTP server; copies of e-mailed or uploaded files in the Exports folder are still deleted after 90 days, like every file there. To stop an export without losing it, edit it and clear **On**.

13 Jobs & events

Every meter read is a job: a read you start on the **Read** page, a read a schedule queues, a read of missing intervals from the analysis. The page **Jobs & events** under **System** in the menu lists these jobs and the program's event log. Every signed-in user can open it.

Above the title the page counts the open jobs (queued or running). The tabs **Jobs** and **Event log** switch between the two lists.

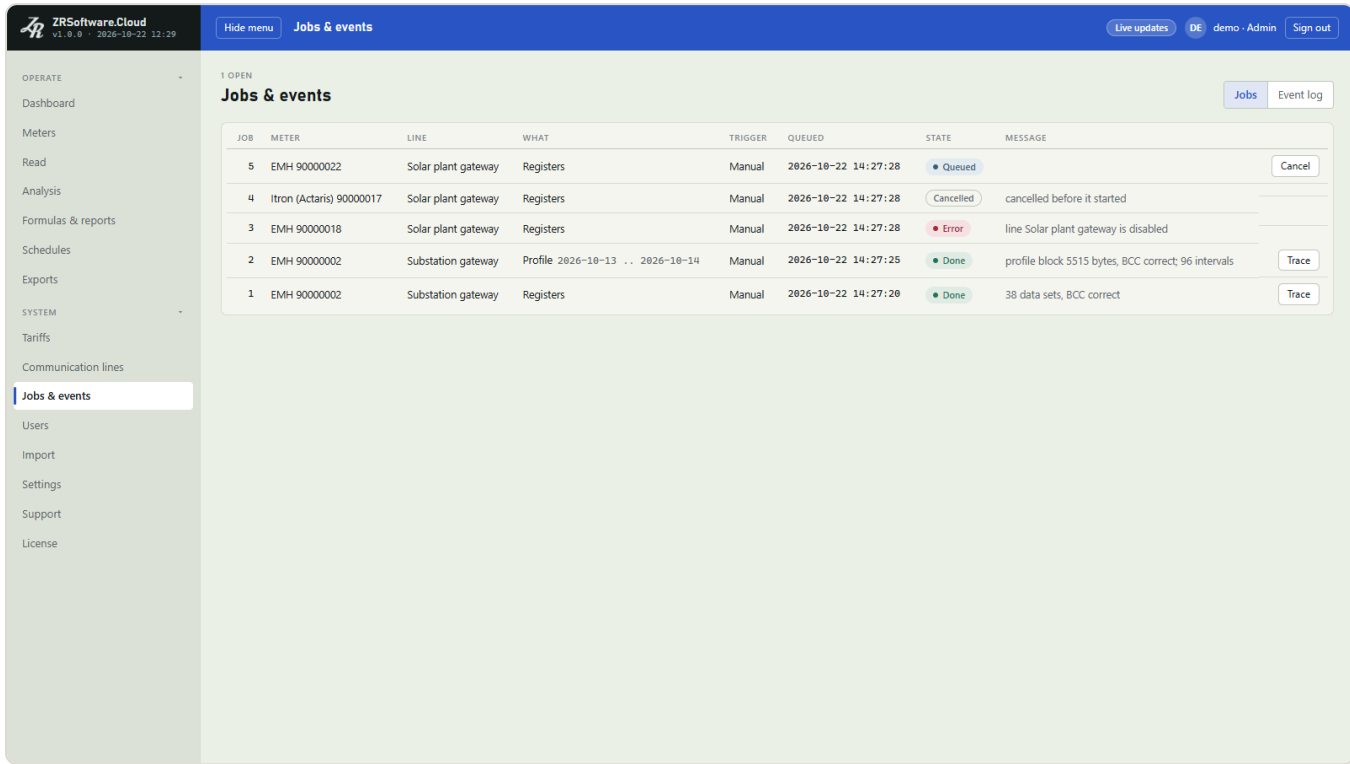


Figure 13.1 The Jobs tab with sample jobs in different states and the count of open jobs above the title.

The job list

The list shows the newest 500 jobs, the newest first.

Column	What it shows
Job	The job number.
Meter	The meter type and serial number.
Line	The communication line the job uses.
What	Registers or Profile; for a profile also the dates of the start and the end of its window, for the load profile of a schedule once the job has started. A window that ends at midnight shows the day after its last day as its end.

Column	What it shows
Trigger	Who started it: Manual (a read started by hand), Schedule, MissingMonth (a schedule reading missing days of the previous month), MissingIntervals (missing intervals, from a schedule or from the analysis) or FillGaps (the gap filling of a schedule).
Queued	When the job was queued, in local time.
State	The state of the job (see below).
Message	While the job runs, what it is doing; afterwards the result or the error.

With no job yet, the list shows **No job yet**.

While the top bar shows **Live updates**, the list updates by itself: each time a job is queued, starts or finishes. While it shows **Not live**, the job list does not update by itself.

Job states

State	Meaning
Queued	Waiting on its line's queue.
Running	The job has started: the line is being opened or the meter is being read.
Done	The read succeeded and its values are stored.
Failed	The read did not succeed. Instead of the word Failed, the chip shows the reason (see the next table).
Cancelled	The job was stopped before it finished. Its message ends with the reason: "cancelled" when a user cancelled it, "cancelled: the service stopped" when the service stopped while it ran, or that it timed out after the time a job may take (15 minutes). A queued job that was cancelled shows "cancelled before it started".
Interrupted	The service ended without closing the job. When the service starts again, the job gets the message "the service stopped while this job was running".

Chip of a failed job	Meaning
No answer	The meter did not answer.
Bad checksum	The meter's answer arrived damaged.
Login failed	The meter refused the password, no password is stored for a meter that needs one, or the stored password cannot be opened on this PC.
No data	The meter answered the load profile request with an error: it holds no records for the window asked, or it does not accept the request.

Chip of a failed job	Meaning
Not supported	The program does not read this meter type or this kind of read, or the meter's record lacks what the read needs (for example an address).
Error	Any other error, for example a line that cannot be opened, or a meter that the licence does not let the program read; the message gives the reason.

Jobs that were still queued when the service stopped are queued again, in their order, when it starts.

A job from a schedule may try the meter more than once (see [Schedules](#)); the message then says which attempt it was and what the attempt before it gave.

When a schedule is deleted, its queued and running jobs are cancelled; its other jobs stay in the list.

Cancelling a job

An operator or an administrator sees **Cancel** in the row of a queued or running job. A queued job is cancelled at once and never reaches the meter. A running job is stopped by closing its line. If the job finished in the meantime, the page shows "the job is not queued or running".

NOTE

Cancelling a job of a schedule does not change the schedule: its next run comes at the planned time.

The trace of a job

When a job has stored a reading together with the bytes exchanged with the meter, an operator or an administrator sees **Trace** in its row. It opens those bytes as they were stored. The note above them says what the trace leaves out: for a DLMS meter the sign-in request is not recorded and the meter's authentication value is masked; Landis & Gyr DLMS meters are read without a password, so their sign-in is recorded in full.

Save as .txt saves the trace as a text file named after the meter, the job number and the time it was queued (in UTC); **Close** closes it.

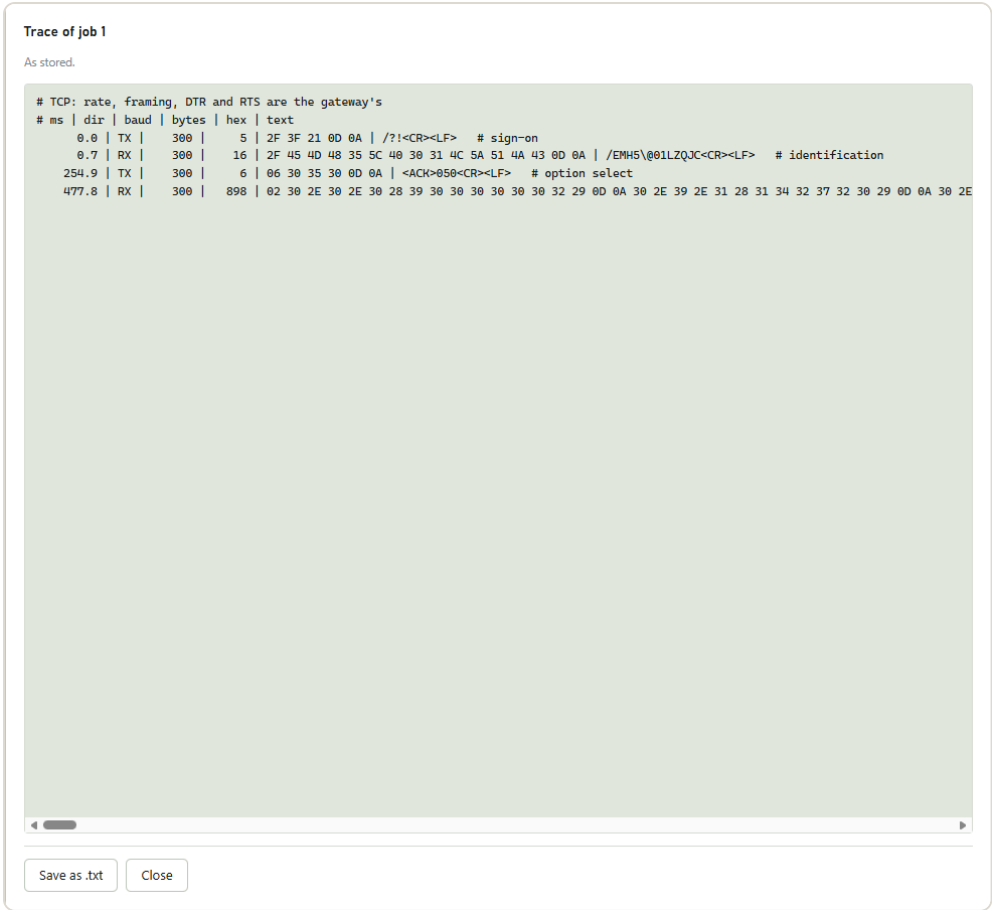


Figure 13.2 The trace of a job that read a sample meter, with Save as .txt and Close.

The event log

The tab **Event log** lists what the program did and noticed: finished jobs, schedule runs, exports, successful sign-ins, users locked after wrong passwords, password changes, users added and changed, changed settings, imports, deleted schedules, exports and lines, REDZ support sessions and what REDZ support changed or took, a **Check now** for updates that failed, downloaded updates and updates handed over to be installed, and licence events. The newest come first.

Column	What it shows
Time	When it happened, in local time.
Level	Info, Warning or Error.
Source	The part of the program that wrote the row.
Meter	The meter it is about, when there is one.
Text	What happened.

The tab shows 200 rows at a time; **Older events** at the bottom adds the next 200. While only the newest 200 rows are shown, the open tab looks for new rows every 15 seconds

while the browser shows it. After **Older events** it stops looking, so the older rows stay; change a filter to go back to the newest rows.

WARNING

The event log keeps one year and at most 100 000 rows. Older rows are deleted once a day and cannot be brought back; save them with **CSV** if you need them longer. A CSV file holds the newest 50 000 rows that match the filters. There is no date filter: to save more, save one file at a time per meter or per source.

REDZ support in the event log

During a REDZ support session, Jobs & events gets a row with the source REDZ support for each change REDZ support makes or tries to make, and for each file or reading trace it takes: what was done, on which page, and the answer. A change that was refused or failed is a warning. What was typed, for example a password, is not in the row. Pages that REDZ support only looks at leave no row.

A file is, for example, the Excel file of an analysis, the CSV of the event log or a support bundle. When REDZ support saves the chart as a picture or prints a page, the program tells the service and Jobs & events gets a row. A reading trace is what **Trace** opens; saving it with **Save as .txt** adds no second row. A few requests that only check or test something leave a row as well, for example the preview of an import, a check of the licence or for updates, or a test of the FTP connection; while a licence request waits and REDZ support has the License page open, the page asks about it every 30 seconds and each time leaves a row.

The row names the page and the item, for example Meters and the meter's number, and ends with done, refused or failed and the session number. A request to one of the few settings that are closed to REDZ support, such as the support session or its own password, is refused and named only as "a closed setting". Other refused changes, for example of the mail settings, name their page like any other row.

The start and the end of each session are rows from the same source: who asked for the session and until when, who ended it early, that REDZ or the licence server ended it, or that its time ran out. If REDZ's connection does not accept this program during a session, a warning from the same source says "REDZ support could not connect; ask REDZ". When REDZ support signs in, a row from the source Auth names the session number; a refused sign-in of REDZ support is a warning from the source Auth (see [Support](#)).

To see them all, choose REDZ support in **Source**; the sign-ins of REDZ support are under Auth. The chat with REDZ during a session is not written to the event log (see [Support](#)).

Updates in the event log

An admin, or REDZ support during a support session, can download and install an update. Each download or install on the page **Settings**, card **Updates**, gives the event log a row

from the source Update: that the update was downloaded and checked against the signed list, that it was handed over to be installed, or, as a warning, why it was refused. A **Check now** that fails is a warning from the source Update with the reason; a check that succeeds leaves no row. The program's own daily check leaves no row in the event log, also when it fails. The updates are described in [Settings](#).

Filtering the events

Filter	What it does
Find	Shows the rows whose text contains what you type. Capital and small letters count the same, also for the Turkish letters, and the letter i with or without a dot counts as one letter. The characters *, ? and square brackets are searched as they are.
Level	All, or one level.
Source	All, or one of the sources that appear in the log, for example Engine for the reads, Scheduler for the runs of schedules, Schedule for skipped schedule runs, Export, Auth for sign-ins, locks, password changes and changes to users (a user added, a role changed, a user turned on or off, a password reset), each with who made it and never with the password; a change that is refused leaves no such row. REDZ support for support sessions and what was changed or taken in them, Update for updates, and Settings.
Meter	All, or the rows of one meter.

The list follows the filters as you change them. When no row matches, it shows **No event matches**.

CSV saves the rows that match the filters (at most 50 000) as a file for Excel, with ; between the columns. The file has the time twice: in UTC and in the local time of this PC, as the page shows it.

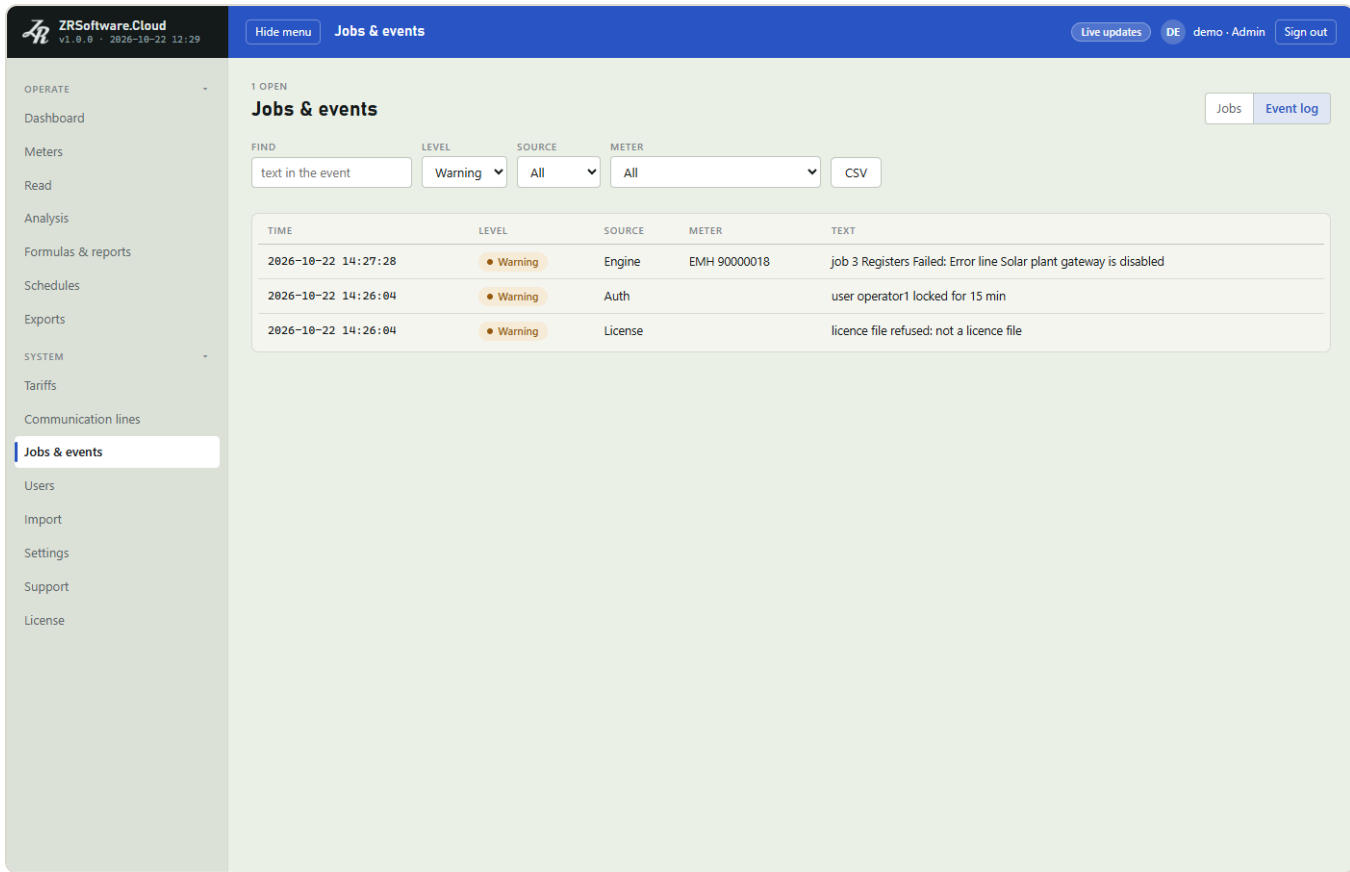


Figure 13.3 The Event log tab filtered to warnings, with sample events and the CSV button.

14 Import

The **Import** page brings lists from files into the program: meters, schedules and exports from an Excel or CSV file, and the whole database of ZR Software 7. The page is in the System menu for administrators, and only when the licence includes the Import feature; see [License](#).

When the trial or the licence ends, or meters are not read for another licence reason, the **Import** page leaves the menu and the program refuses imports until meters are read again.

Four tabs at the top choose what you import: **Meters**, **Schedules** and **Exports** read an Excel file, **Old database** reads a ZR Software 7 database.

Importing from an Excel file

The **Import** page reads Excel 97-2003 (.xls), .xlsx and .csv files of at most 2 MB and 2 000 rows. It reads the first sheet of an Excel file. The file type is taken from the file's contents, not from its name.

1. Choose the tab of the list: **Meters**, **Schedules** or **Exports**.
2. Under **File**, choose the file. The program reads it and shows what each row would do. Nothing is saved yet.
3. Read the notes above the table and check the table. The **Result** column shows "new", "update", "unchanged", "skip" or "error" for each row, with the reason.
4. Click **Import**. The button shows how many rows it will save. It is available only when no row has an error and at least one row is new or changed.

If the file cannot be saved as it is, a red banner says why as soon as you choose it: how many rows have an error, that every row is already there, or that the new meters do not fit the meter limit of the licence and how many meters it allows.

NOTE

For an export row with a folder, the preview already writes and removes a test file in a folder that exists. A folder that does not exist yet is made and tried only when you click **Import**; if the service cannot write there, nothing is saved and the page shows why.

When the rows are saved, a green banner shows how many rows were new, updated and already there.

WARNING

If any row has an error, nothing from the file is saved. Fix the rows marked "error" in the file and choose the file again. When the file is saved, all of its rows are saved together, in one step. An import cannot be undone from this page: change or archive the records on their own pages.

If no row is new or changed, the **Import** button stays unavailable and nothing is saved.

Imported schedules and exports come in off

A schedule the import makes, and every export it adds, is saved switched off, so that the meters are not read and the reports are not sent twice while ZR Software 7 still does it. The notes above the table say so. The lists show such a schedule or export with an "off" chip; see [Schedules](#) and [Exports](#).

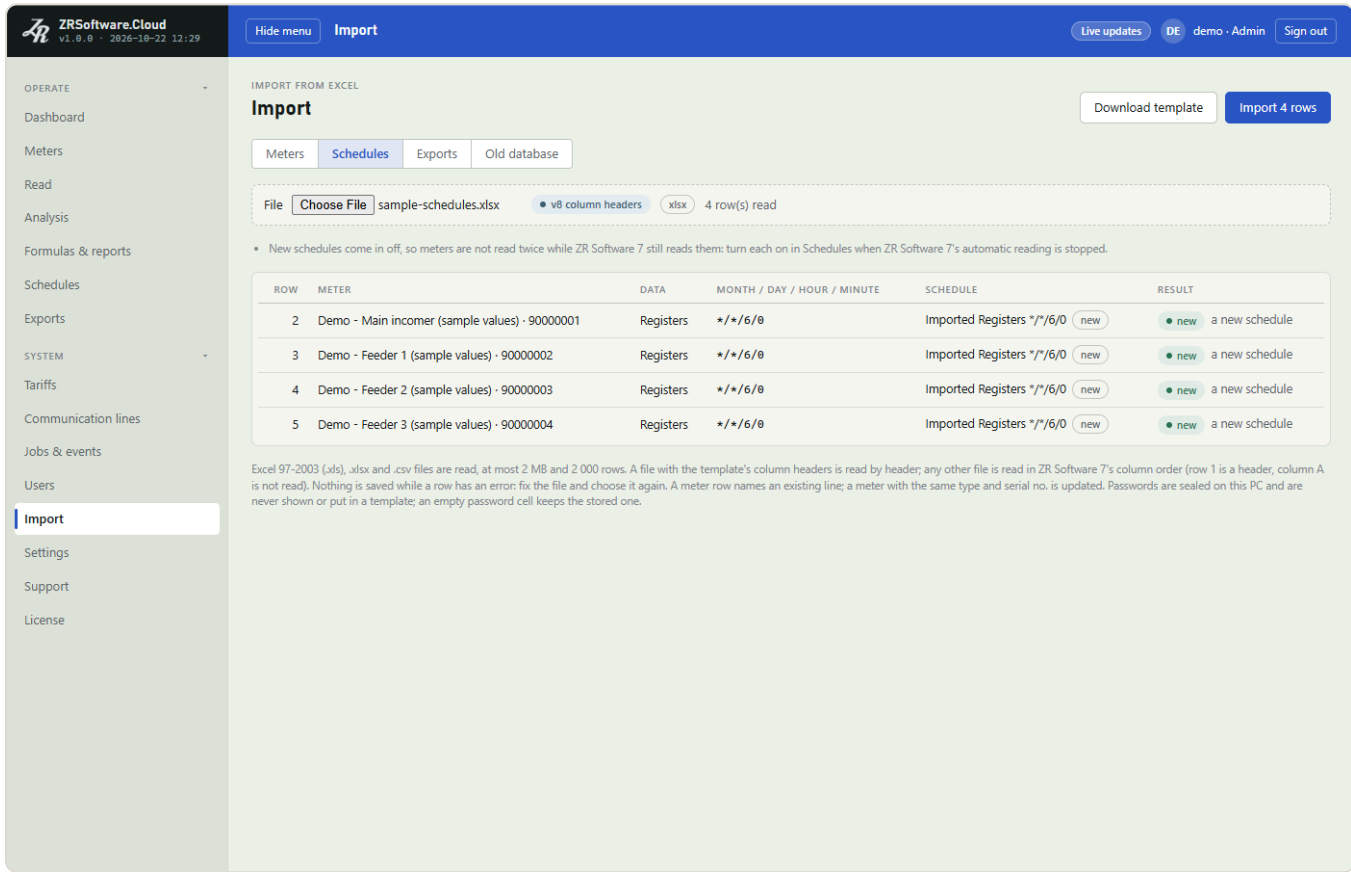


Figure 14.1 The Schedules tab after choosing a sample file: the note above the table says that the new schedule comes in off. Sample values.

NOTE

Meters added to a schedule that already exists keep that schedule's setting: if it is on, it reads them from its next run, and the notes above the table say so. A schedule set to **Every 5 min** or **Every 15 min** is never joined: a row of the file makes or joins a schedule with its own month / day / hour / minute pattern.

1. Stop the automated readings and automated exports of ZR Software 7 for the same meters.
2. On the **Schedules** and **Exports** pages, click **Edit** in the row of each imported schedule or export, tick **On** and click **Save**.

The two column layouts

The program reads a file in one of two layouts and shows which one it used next to the file name: **v8 column headers** or **ZR Software 7 column order**.

- v8 column headers: row 1 holds the column names of the template. The columns can be in any order and the case of the names does not matter. A meters file needs at least the columns Type, Serial no. and Line.
- ZR Software 7 column order: any other file is read in the column order of ZR Software 7. Row 1 is a header and is not read, and column A is not read. A note above the table lists what each column means.

Download template saves an .xlsx file with the template's column headers for the open tab. The template is filled with the list that is stored now (active meters, schedules, exports), so you can change it in Excel and import it again. Only meter rows update stored records: a changed schedule or export row is added as a new one and the old one stays; change or delete it on the **Schedules** or **Exports** page. Meter passwords are never written to the template.

NOTE

Empty rows in the file are skipped. The row numbers in the table are the row numbers of the file.

Meter rows

A meter row must name a line that already exists on the **Communication lines** page. In the template layout this is the line's name; in the ZR Software 7 column order it is the COM port or the IP address and port. The Excel import never adds a line: a row whose line is not there is an error.

- A meter with the same type and serial no. as a stored meter updates that meter. The message lists what changes.
- A row equal to the stored meter is "unchanged".
- A row for an archived meter, a second row for the same meter in the file, or a row that matches two stored meters is an error.

The **Password** column of the table shows only whether the file gives a password. Passwords are sealed on this PC and are never shown. An empty password cell keeps the stored password.

New meters must fit the meter limit of the licence. If they do not, nothing is saved; the red banner says how many meters the licence allows.

Schedule and export rows

A schedule row names a meter by its serial no., or by "#" and the meter's id when two active meters have the same serial no. Rows with the same data and the same month / day / hour / minute pattern join one schedule: an existing schedule with that pattern, or a new one named after the data and the pattern. A meter that is already in that schedule is skipped.

An export row names its source (a meter, or in the template layout also a formula or a report by name) and, if it uses one, a tariff by name. A row equal to a stored export, or to an earlier row of the file, is skipped.

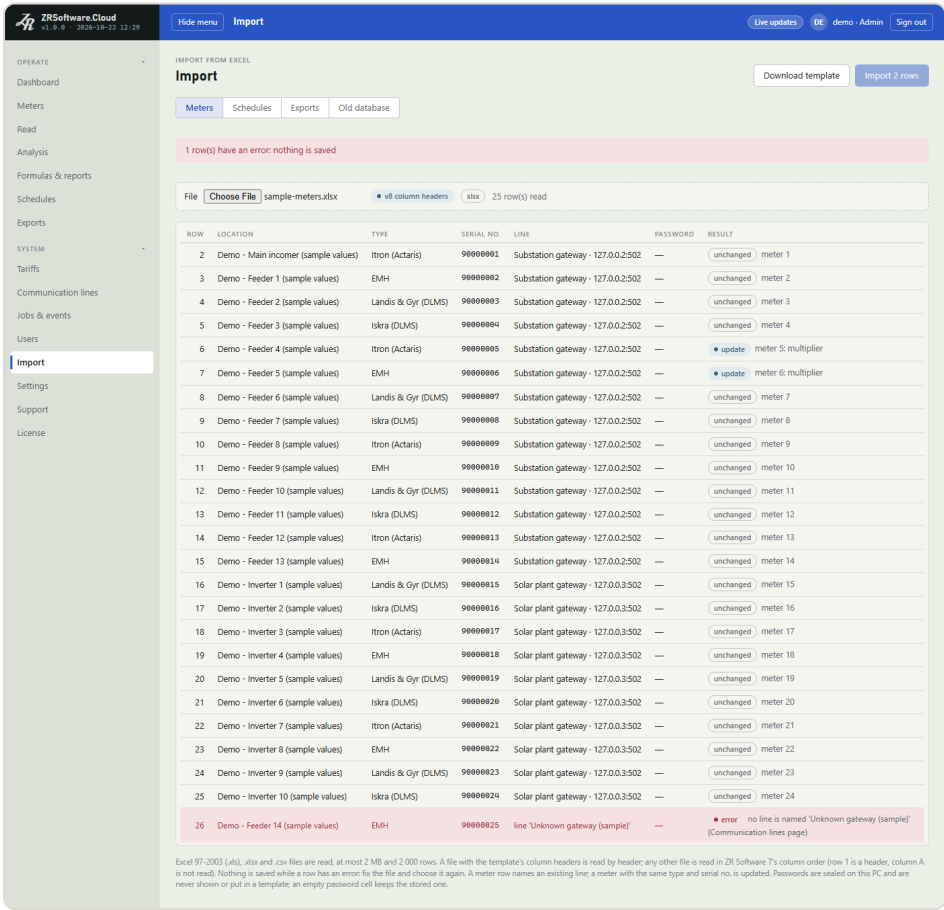


Figure 14.2 The Meters tab of the Import page after choosing a sample meters file, before importing: each row shows its result, one row has an error, and the banner above says that nothing is saved.

Importing a ZR Software 7 database

The **Old database** tab reads the database file of ZR Software 7 (zrs.s3db) and brings its meters, readings and lists into this program in one step; a row that does not fit is skipped with its reason. It is meant for moving from ZR Software 7 to this program on the same PC or on a new one.

1. Open the **Old database** tab. If the program finds the old database on this PC, its path is already in **File on this PC**, and the card's title line says whether setup recorded it or it was found in the usual ZR Software 7 folder. Otherwise type the full path of the file.
2. Or, under **Or upload a copy**, choose a copy of the file, for example one brought from the old PC. An uploaded file can be at most 512 MB. The check starts by itself when you choose it.
3. Click **Check (no changes)**. The program does the whole import and then discards it, so the counts in the table are those of the import. Nothing is saved in the program's database; as in the Excel preview, an export folder that exists is tried with a test file, and one that does not exist yet is made and tried only at **Import**.
4. Read the table and the notes above it. Then click **Import**. The button is available after a check that found something to import.

The table has one row for each part of the old database, with the columns **Old table**, **Rows**, **Imported**, **Already there**, **Skipped** and **Why skipped**.

After the import the page says "Imported. Rows that did not fit are listed with the reason."

WARNING

An old database import cannot be undone from this page: change or archive the records it added on their own pages.

What the old database import brings

Part of the old database	What happens
Meters	Imported with their settings. A line that does not exist yet is added; a meter whose line this PC does not allow is skipped. Meter passwords are sealed on this PC.
Tariffs	Imported with their zones; a tariff whose zones cannot be taken over is skipped with the reason.
Formulas	Imported when each term can be matched to an imported meter and channel; otherwise skipped with the reason. The notes show each imported formula.
Custom reports	Imported with the columns that can be imported; a column that cannot is listed in the notes.
Mail settings	Imported when no mail server is set in this program yet, with its password; a mail server set here is kept.
Automated readings	Imported as schedules, by the same rules as the Excel import. A new schedule comes in off.

Part of the old database	What happens
Automated data exports	Imported as exports, by the same rules as the Excel import, switched off. An export of a tariff is skipped.
Load profile	Imported. Values are divided by the meter's multiplier, because the old program stored them multiplied. Voltages and currents of the old load profile are not imported.
Billing values	Imported as readings of the meter.
Read queue and log	Not imported. They are counted in the table as skipped.

The licence decides some parts: tariffs come in only when the licence includes **Analysis and tariffs**, formulas only with **Formulas**, custom reports only with **Custom reports**, schedules only with **Schedules**, and the mail settings and exports only with **Exports and e-mail**. A part the licence leaves out is not imported: the table shows it as not in the licence, and a note above the table says that the licence does not include it. Meters, the load profile and the billing values come in with every licence.

NOTE

Unlike the Excel import, the old database tab does not show a note that the schedules and exports came in off. Turn them on as described above once ZR Software 7 no longer reads and exports.

A meter of an unknown type, a meter on a GSM modem, or a meter whose line is not allowed here is skipped with the reason. Unlike the Excel import, a row that does not fit does not stop the old database import: it is skipped and the rest is imported.

The licence's meter limit is the exception: the new meters must fit it all together. If they do not, nothing is imported and the page says how many meters the licence allows. The note below the table says so too.

The old database is not changed

The program first copies the old database into the Import folder of its own data folder and reads only that copy, read-only. The old program and its file are not changed.

The copy is deleted when the check or the import is done, whatever its outcome.

A file that is not a SQLite database, or a SQLite database without the meters table of ZR Software 7, is refused and nothing is imported.

Importing the old database again

Running the import again adds nothing twice. Records that are already there are counted in **Already there**:

- A meter with the same type and serial no. is already there. It is not changed: settings changed in ZR Software 7 since the first import are not taken over, as the note below the table says, but its new readings join the stored meter. Change its settings on the **Meters** page.
- A tariff, formula or report with the same name and the same content is already there. One with the same name and other content is imported under a new name that ends in "(old database)"; the notes name it.
- Load profile intervals and billing values that are already stored are kept as they are.

NOTE

When setup found a ZR Software 7 database, the first start steps include an **Old database** step that shows this tab; see [Installation and first start](#).

Importing during a REDZ support session

While a REDZ support session runs (see [Support](#)), REDZ support can use this page as an administrator does, and both imports work as they do for you: the passwords in an Excel file and the meter passwords of a ZR Software 7 database are saved. REDZ support cannot change or test the mail settings; only an import of a ZR Software 7 database during the session, also a copy that REDZ support uploads, can still set that database's mail server, with user name and password, when none is set here and the licence includes **Exports and e-mail**.

15 Users

The **Users** page lists the people who sign in to the program and gives each one a role. Only administrators see the page; it is in the System menu.

The licence does not limit the number of users. Give each person their own user, with the role they need, so that one person can be disabled alone and the event list shows who signed in.

Roles

There are three roles: Viewer, Operator and Admin. Each role can do everything the role before it can do.

Role	What the user can do
Viewer	Opens the pages and reads the stored data: meters, readings, analysis, jobs and events, the licence status. Changes their own password.
Operator	Also starts and cancels meter reads, reads missing load profile intervals, opens the trace of a reading, runs a schedule or an export at once, and types, imports or removes the load profile values of a virtual meter.
Admin	Also defines lines, meters, groups, meter passwords, schedules, exports, tariffs, formulas and reports, and deletes all of them except meters, which are archived and brought back instead; manages users; imports; manages the licence; makes the support bundle; changes the Settings cards (limits, mail, FTP) and the first start steps; installs updates.

The pages **Users**, **Import** and **Support** are in the menu for administrators only.

NOTE

The program on this PC checks the role for every action, not only the pages in the browser: an action the role does not allow is refused.

	Viewer	Operator	Admin
Opens the pages and reads the stored data	✓	✓	✓
Changes their own password	✓	✓	✓
Starts and cancels meter reads	—	✓	✓
Reads missing load profile intervals	—	✓	✓
Opens the trace of a reading	—	✓	✓
Runs a schedule or an export at once	—	✓	✓
Types, imports or removes the load profile values of a virtual meter	—	✓	✓
Defines lines, meters, groups, meter passwords, schedules, exports, tariffs, formulas and reports	—	—	✓
Manages users; imports; manages the licence; makes the support bundle	—	—	✓
Changes the Settings cards (limits, mail, FTP) and the first start steps	—	—	✓
Installs updates	—	—	✓

Each role can do everything the role before it can do.

Figure 15.1 What each role can do; each role can do everything the role before it can do.

The user list

The table shows each user's **User name**, **Role**, **State** and **Last sign-in**. Your own user is marked **you**. The state is one of these:

State	Meaning
Active	The user can sign in.
Must set password	The user has a one-time password, from an administrator or, for admin, the one made at the first start, and chooses their own at the next sign-in.
Locked	Five wrong passwords in a row, at sign-in or on My password , locked the user for 15 minutes.
Disabled	An administrator turned the user off. The user cannot sign in.

NOTE

REDZ support's own user (see [Support](#)) is never in this list, cannot be changed here and does not count as one of your administrators. During a support session REDZ support can add users, Admins too, change their role, turn them on or off and reset a password, but not the password of the last enabled Admin. REDZ support types the one-time password. A user whose password is reset is signed out and must sign in with that one-time password, so ask REDZ for it; a user added this way signs in like any other user, sets an own password at the first sign-in, and stays after the session ends. REDZ support cannot change its own account.

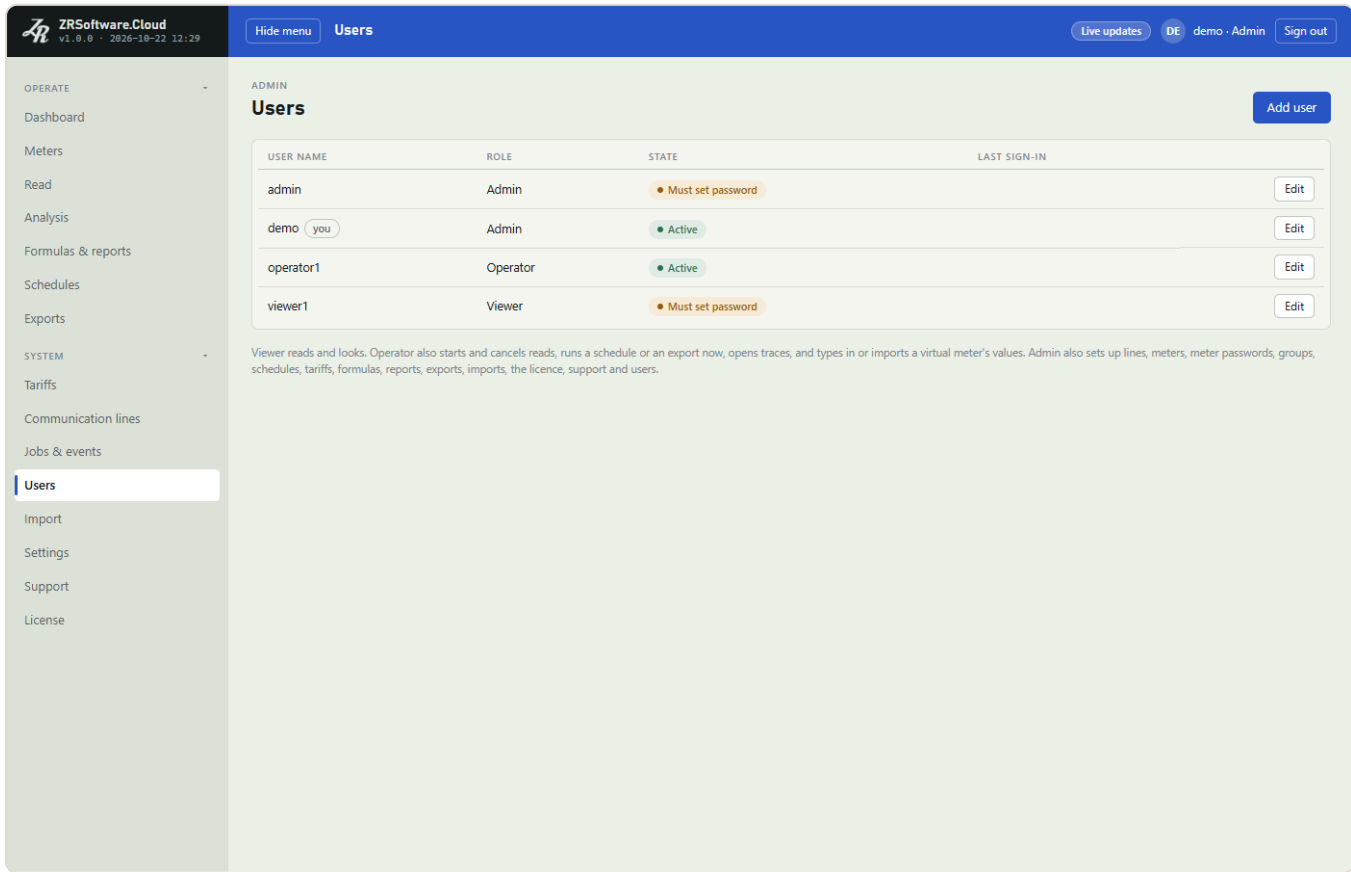


Figure 15.2 The Users page with sample users and their roles and states, and the note on what each role may do.

Adding a user

1. Click **Add user**.
2. Type the **User name**: 3 to 40 characters: the letters A to Z without accents, digits, dots, underscores or hyphens. Upper and lower case count as the same name. The name cannot be changed later.
3. Choose the **Role**. A new user starts as **Viewer**.
4. Type a **One-time password**: at least 10 characters and not the user name.
5. Click **Save**.

A new user is always enabled. Give the one-time password to the user. At the first sign-in the program asks the user to choose their own password; see the next section.

The screenshot displays the 'Users' management section of the ZRSoftware.Cloud application. On the left is a sidebar with navigation options: OPERATE (Dashboard, Meters, Read, Analysis, Formulas & reports, Schedules, Exports) and SYSTEM (Tariffs, Communication lines, Jobs & events, Users, Import, Settings, Support, License). The main area is titled 'Users' and contains a table of existing users:

USER NAME	ROLE	STATE
admin	Admin	Must set password
demo	Admin	Active
operator1	Operator	Active

Below the table, a description states: 'Viewer reads and looks. Operator also starts and cancels reads, runs a schedule or an export now, opens traces, and types in or imports a view schedules, tariffs, formulas, reports, exports, imports, the licence, support and users.'

On the right, the 'Add user' panel is visible, containing the following fields:

- USER NAME:** A text input field containing 'viewer1'.
- ROLE:** A dropdown menu with 'Viewer' selected.
- ONE-TIME PASSWORD:** A masked text input field (represented by dots).

A note below the password field reads: 'At least 10 characters. The user replaces it at the first sign-in; their sessions end when it is set.'

At the bottom right of the panel are 'Save' and 'Cancel' buttons.

Figure 15.3 The Add user panel with a sample user name, the Viewer role and a one-time password.

Changing a user

Click **Edit** in the user's row. You can change the role and **Enabled**, and give a new one-time password.

- **New one-time password:** leave it empty to keep the password. A password you type here is one-time again: the user chooses their own at the next sign-in. It also unlocks a locked user.
- **Enabled:** clear it to stop the user from signing in. Users cannot be deleted; a user who leaves is disabled.
- When you change the role, disable the user or set a new one-time password, the user's open sessions end at once.

The program keeps at least one enabled administrator of your own. It refuses with "the last enabled admin cannot lose the Admin role" or "the last enabled admin cannot be disabled".

User changes in the event list

Adding a user, changing a role, turning a user on or off and giving a new one-time password each write an event with the source Auth to **Jobs & events**: which user, what changed (the role before and after, on or off), and the user name of the administrator who made the change. The password itself is not written. A change the program refuses writes no such event (see [Jobs & events](#)).

Passwords and sign-in

A password has at least 10 characters and is not the user name.

1. The user signs in with the one-time password on the **Sign in** page.
2. The program shows **Set your password**.
3. The user types the new password in **New password** and again in **New password again**. It must differ from the one-time password.
4. The user clicks **Save and sign in** and is signed in.

For an existing user name, after a wrong password the sign-in page says how many attempts are left. After five wrong passwords in a row the user is locked for 15 minutes; the page says how many minutes are left, and the lock is written to the event list. An administrator can end the lock at once by giving a new one-time password.

NOTE

Every user changes their own password on the page **My password**, opened from the user name at the top right (see [Signing in and the window](#)). A one-time password from an administrator is needed only when the user has forgotten the password.

16 Settings

The **Settings** page is in the **System** group of the menu. Every user can open it and sees the cards **Reactive ratio limits** and **Appearance**. Administrators also see **Updates** and **First start**, and **Mail** and **FTP** when the licence includes exports (see [License](#)). Each card is saved on its own.

When meters are not read, for example after the trial or the licence has ended, the cards stay as they are: **Mail** and **FTP** stay for the exports you start yourself, while automatic exports do not run (see [License](#)).

Your own password is changed on the page **My password**, which opens from your user name at the top right (see [Signing in and the window](#)).

Reactive ratio limits

A meter whose reactive ratio since the last end of billing is above a limit is marked on the Meters page, on the Dashboard and on its detail page. The card has two limits, in percent. The defaults are the marks of the gauges of ZR Software 7:

Box	Default	Meaning
Inductive limit, Ri / A (%)	15	Inductive reactive energy against active energy.
Capacitive limit, Rc / A (%)	10	Capacitive reactive energy against active energy.

Type a value from 0.1 to 1000 in each box and click **Save**. The card shows **Saved**, and the change is written to the event list (see [Jobs & events](#)).

Every user sees the limits. Only an admin can change them; other users see the note "Only an admin changes these."

Appearance

Choose **Light** or **Dark** for the colours of the pages. The choice applies at once and is kept in this browser only; another browser keeps its own choice. Without a choice the pages are light.

Mail

The **Mail** card holds the mail server that automated exports use to send their files by e-mail (see [Exports](#)). Only an admin sees it, and only when the licence includes exports.

Box	What to enter
SMTP server	The host name or address of the mail server, without spaces.

Box	What to enter
Port	1 to 65535. The default is 587.
Security	STARTTLS (the default; the card pairs it with port 587), SSL/TLS (465) or None . Choosing one does not change the Port box.
User name	The account on the mail server. A name written as domain\user signs in with that domain.
Password	The password of that account.
From address	The sender address. When it is empty, the user name is used if it is an e-mail address.
Subject	The subject of the export e-mails; the test e-mail has its own subject.

With **None** the password goes to the server without encryption; the program uses it only when you choose it. With the other two the server's certificate is checked.

Click **Save**. The password is never shown again: the password box only says whether a password is stored. Leave the box empty to keep the stored password, or type a new one to replace it. **Remove password** deletes only the stored password; the other boxes go back to their saved values. Every save is written to the event list.

The password is sealed with Windows on this PC; a copy of the database on another PC cannot read it. The database is in the data folder. Only the service, Windows itself and programs started with administrator rights can open the data folder; other Windows users of the PC cannot (see [Installation and first start](#)). If the database was moved from another PC, the password box says so; type the password again and save.

To check the settings, type an address in **Send a test e-mail to** and click **Send test e-mail**. The test uses the saved settings, so save first. Several addresses are separated by ; or , (at most 20). When the mail server accepts the e-mail, the page says so; that does not prove delivery, so look in the inbox and in the spam folder. When the server refuses, the page shows "Not sent:" with the reason.

FTP

The **FTP** card holds the server to which automated exports upload their files (see [Exports](#)). Like the **Mail** card, only an admin sees it, and only when the licence includes exports.

Box	What to enter
Server	The host name or address of the server, without ftp:// and without spaces.
Port	1 to 65535. Choosing a Type sets it to 21, or to 22 for SFTP ; change it after choosing the type if your server uses another port.

Box	What to enter
Type	FTPS (explicit TLS) (the default), SFTP or FTP (not encrypted) .
Folder on the server	The folder for the files, for example /meter-data. The program always uses it as a path that starts at /, and an empty box means /. Which folder / is depends on the server: ask its administrator which folder the account may write. Letters, digits, spaces and / _ . - are allowed; a \ is turned into /, and .. is refused.
User name	The account on the server. It is required: without a user name the FTP server counts as not set.
Password	The password of that account. With SFTP the program signs in with this password only, not with a key file.
Passive mode (usual behind a router or firewall)	Ticked by default. Not shown for SFTP .

With **FTPS (explicit TLS)** the connection is encrypted and the server's certificate is checked: Windows on this PC must accept it, which means it comes from an issuer Windows trusts and is made for the server's name; otherwise the connection is refused and nothing is sent. The card has no way to accept a certificate that Windows does not accept. With **SFTP** the server's key must be trusted first (see below).

WARNING

FTP (not encrypted) sends the password and the files in clear text; the program uses it only when you choose it. Choose it only on a network you trust.

Click **Save**; the card shows **Saved**. As on the Mail card, the password is never shown again: the password box only says whether a password is stored and whether this PC can read it. Leave the box empty to keep the stored password, or type a new one to replace it. The card has no button that removes the stored password. The password is sealed with Windows on this PC; a copy of the database on another PC cannot read it, and the password box then says so: type the password again and save. Every save is written to the event list.

When you save another **Server**, **Port** or **Type** and leave the password box empty, the stored password is removed, so the password of the old server never goes to the new one. The card then says "Saved. The stored password was removed because the server, port or type changed: enter the password for this server." Type the password of the new server in the same save to keep the card ready.

Test connection uses the saved settings, so save first; the button can be clicked once a server is saved. The service connects, writes a small text file whose name starts with .zrs-test- into the **Folder on the server**, creating that folder if it does not exist yet, checks its

size and deletes it again. When that works, the card shows "Connected: a test file was written and removed". Otherwise it shows "Not connected:" and the reason (see [Troubleshooting](#)). Each test is written to the event list.

Every file, also the test file, is uploaded under a temporary name ending in .part first; its size on the server is compared with the file, and only then is it renamed. When a file of that name is already on the server, the earlier file first gets a temporary name ending in .old; the new file then takes the name, and the .old file is deleted. If the new file cannot take the name, the earlier file gets its name back. An SFTP server that can replace a file in one step does it in one step instead. When the upload, the size check or the rename fails, the test or the run fails.

WARNING

When an upload fails, the service tries to delete the .part file on the server. A file ending in .part can stay on the server when the upload or the check after it fails. A file ending in .old that stays on the server is the earlier file of that name: it stays when it could not get its name back or could not be deleted, and also when the time limit ran out during the renaming. When no file of that name is on the server, the .old file is the earlier file: give it its name back or run the export again before you delete anything. The program does not look for such files on the server later.

A test whose last step, deleting the test file, fails leaves that file there.

With **SFTP**, the service sends files only to a server whose key you have trusted on this card:

1. Choose **SFTP**, fill in the other boxes and click **Save**. The line **Trusted server key** says "none yet (shown by the connection test)".
2. Click **Test connection**. The first test uploads no file: it shows "Not connected: the server's key is not trusted yet: check it and trust it in the FTP card in Settings", and under it the key the server showed, a text that starts with SHA256:.
3. Compare that key with the one the server's administrator gives you. Only when they are the same, click **Trust this key**. The card shows "Server key trusted: test again".
4. Click **Test connection** again.

From then on the service sends files to this server only while it shows the same key. If the key changes, the test and every export run fail with "the server's key changed: it is not the trusted one (nothing was sent)". **Test connection** then shows the new key with **Trust this key**; trust it only after the server's administrator has confirmed the change. Saving another server, another port or another type forgets the trusted key, and the key has to be trusted again. Trusting a key is written to the event list as a warning.

NOTE

While a REDZ support session runs (see [Support](#)), REDZ support works with the rights of an Admin. It cannot change or test the mail settings, its own account or the support session. On this page that means: REDZ support sees the **Mail** card but cannot save it, remove its password or send a test e-mail; it can change the **FTP** card, trust a server key and use the **Updates** card. An import during the session writes the meter passwords of a ZR Software 7 database or of an Excel file; only an import of a ZR Software 7 database during the session, also a copy that REDZ support uploads, can still set that database's mail server, with user name and password, when none is set here and the licence includes exports. Each change REDZ support makes or tries to make is a row in Jobs & events with the source REDZ support. Requests that only check or test leave such a row too, for example a check for updates or a test of the FTP connection.

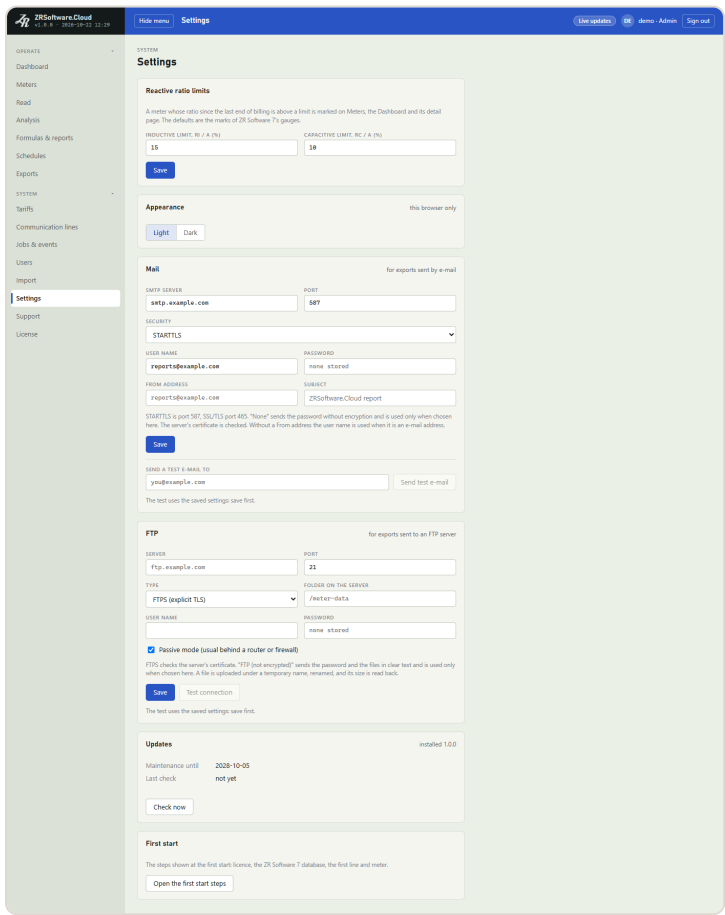


Figure 16.1 The Settings page with sample mail server values; no mail password is stored.

Updates

The **Updates** card is shown to administrators. Its title line shows the installed version. The card tells whether a newer version of ZRSoftware.Cloud is out and installs it when you ask. The list of versions comes from the REDZ licence server, the same server the online licence uses (see [Licence](#)), so this PC must be able to reach it.

An admin, or REDZ support during a support session, can download and install an update.

Line	What it shows
Maintenance until	The last day of your licence's maintenance, or no end date when there is no licence with an end of maintenance, also during the trial.
Last check	When the program last asked for the list of versions, or not yet . After a check that failed, the reason follows.
Latest	Only when the last check found a newer version: its number, the day it was released, and whether it is included in your maintenance or came out after your maintenance .
What's new	What that version brings, as REDZ wrote it in the list.

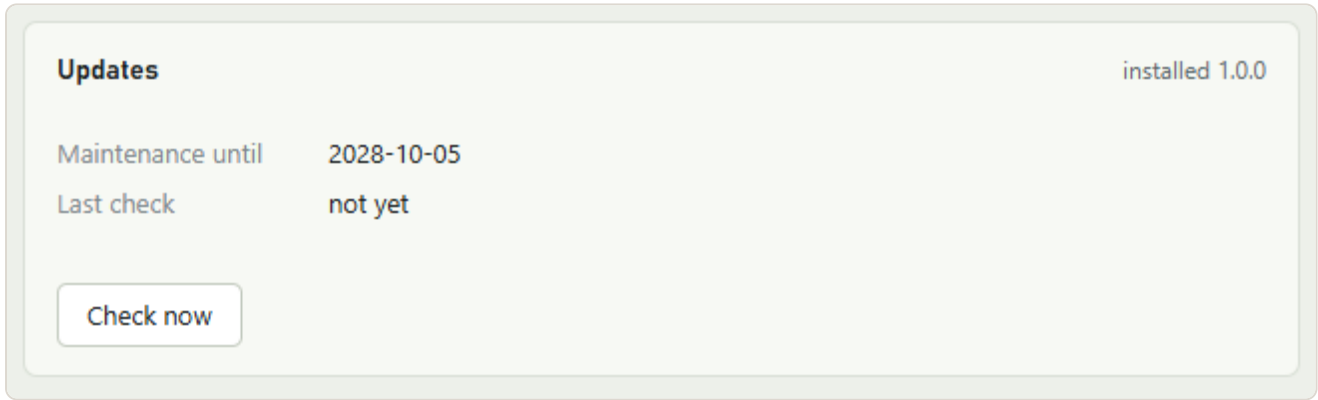


Figure 16.2 The Updates card before the first check (sample values).

Check now fetches the list at once. The program also checks by itself when the last check is a day old or more: it looks five minutes after the service starts and then every hour. A check downloads and installs nothing.

REDZ signs the list. The program accepts it only when the signature matches a key built into the installed version, so a list that did not come from REDZ is refused and nothing changes; **Last check** then says "the update list was refused:" with the reason.

A version released on or before the last day of your maintenance can be installed. A version released after it is shown, but it cannot be installed: the card says so and asks you to contact REDZ. When an earlier newer version is still within your maintenance, the card offers that one instead. Without an end of maintenance (during the trial or after it, without a licence, or with a licence without one) every newer version can be installed. When there is nothing newer, the card says that the installed version is the latest version.

1. When the card offers a version, click **Download** (the button names the version). The service downloads the setup of that version from the licence server and keeps it only when its size and checksum match the signed list; otherwise it deletes the file and the card shows why.

2. Click **Install** (it names the version too). The card then says that the updater starts the setup of that version within 5 minutes, that the service stops for about a minute, that a backup is made first, and that the previous version comes back by itself if the new one does not start.
3. Within 5 minutes the update task of Windows (see [Installation and first start](#)) checks the downloaded setup against the signed list once more and runs it without pages. The setup upgrades the program in the steps described in [Installation and first start](#): it stops the service, copies the database, and starts the old version again if the new one does not answer.

The card then shows the time and the last result of the updater: that it started the setup, or why it refused to. The steps of the upgrade itself are in setup.log in the data folder. An update installed from the Updates card runs the setup without its pages; what it reports is in setup.log. The card does not say whether the upgrade itself worked: look at the installed version in the title line, and at setup.log.

When the updater refused to start the downloaded setup, the card shows why in the last result and offers **Download** again for the same version; **Install** is offered again once that version is downloaded again.

After an update, click **Check now**: until the next check the card still shows what the last check offered.

Every download and every install request is written to Jobs & events with the source Update, also when it is refused (see [Jobs & events](#)). A **Check now** that fails is written there too, as a warning with the source Update that starts "update check failed:" and gives the reason. A check that works, and the program's own check, leave no row of the source Update.

Message	What to do
"no update list has been published yet"	REDZ has not published a version list. Nothing to install; check again later.
"check for updates first"	Click Check now , then Download .
"download the update first"	Click Download before Install .
"the licence server could not be reached" with a reason	This PC cannot reach the REDZ licence server at the moment, or, after Download , the file could not be written on this PC. Check the PC's internet connection, then click Check now or Download again (see Troubleshooting).

First start steps

The card **First start** is shown to administrators. **Open the first start steps** opens the steps of the first start again (see [Installation and first start](#)).

17 License

The **License** page shows the licence of this PC. Everyone who signs in sees the status; only administrators see the cards that request, activate, load, move or remove a licence.

During the trial, when meters are not read because of the licence, after maintenance has ended, and in the seven days of reading described under **Withdrawn** below, a strip at the top of every other page shows the licence message and a **License** link to this page. The strip is red when meters are not read, and amber otherwise.

The status

The **Status** card shows the state of the licence, the program's message about it and these facts:

Line	What it shows
Licence, Customer	The licence number and the customer, when a licence is loaded.
Valid until	The last day of the licence or the trial and the days left, or No end date for a licence without an end date. Without a licence or trial it shows a dash. A licence ends at the end of that day by the PC clock.
Meters	The number of active meters and the licence's meter limit, or "no limit".
Features	The parts of the program the licence includes, or All features . While meters are not read, only the parts that stay open then.
Maintenance until	The last day of maintenance, marked "ended" after that day.
Machine ID	A short code of this PC and how many of its three parts the program could read. On a virtual PC a virtual PC chip follows it.
Last check-in	When the program last asked the REDZ licence server about this licence, and the answer; for a licence file made for a PC without internet, that it is not checked online.
State	Meaning
Trial	The trial runs. Meters are read; every feature is open and there is no meter limit.
Licensed	A licence for this PC is loaded and valid.
Trial ended	The trial is over and no licence is loaded. Meters are not read.
Ended	The licence's last day has passed. Meters are not read.
Another PC	The licence is for another PC. Meters are not read once the trial is over.

State	Meaning
Clock behind	Without a licence once the trial has begun on this PC, or with a licence that has an end date: the PC clock is more than 24 hours behind a time the program has already seen. Meters are not read; see The check-in below. The program also counts the time it has been running, so setting the clock back by less than 24 hours again and again adds up.
Version after maintenance	This version of the program was built after the maintenance of the licence ended. Meters are not read; install a version released by the last day of maintenance, or ask REDZ to extend the maintenance.
Withdrawn	The seven days of reading after one of the licence server's answers or the long time without it (see The check-in below) have passed, or the licence server said that this virtual PC is a copy, which stops reading at once. Meters are not read.
No licence	There is no licence and no trial on this PC. Meters are not read.

On a physical PC a licence stays valid while at least two of its machine parts still match this PC: two of the three, or both when only two could be read. A licence needs at least two machine parts. On a PC where the program can read only one, the licence server refuses a key or a request and says to contact REDZ, and a licence file that knows fewer than two parts counts as one for another PC. On a virtual PC every part must match (see below).

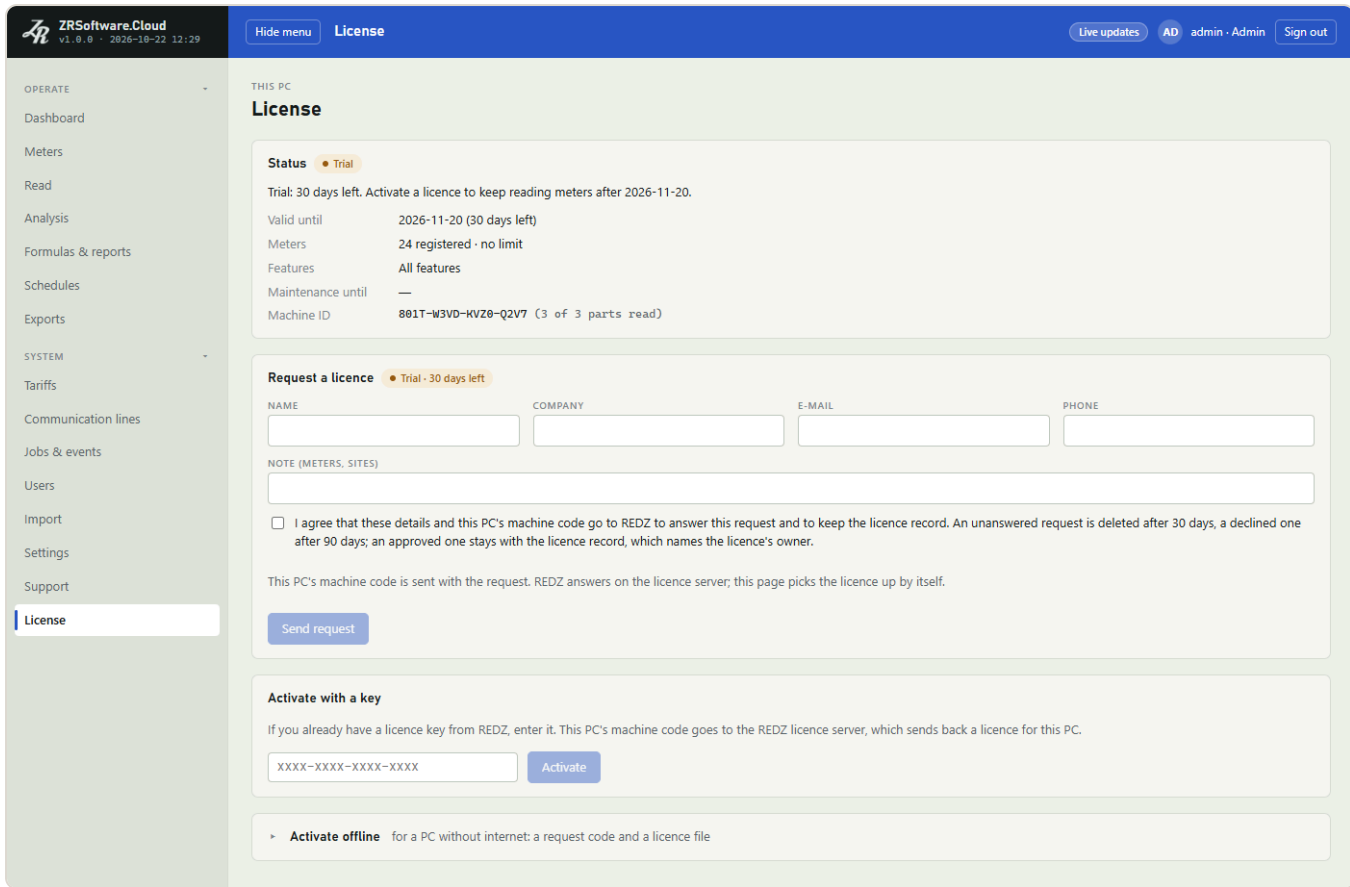


Figure 17.1 The License page during the trial with sample meters: the Status card in the Trial state, the Request a licence and Activate with a key cards, and Activate offline folded.

The trial

The program runs as a trial for 30 days, counting the day it first ran on this PC. During the trial every feature is open and there is no meter limit. The message shows the days left and the last day.

The 30 days count from that first day even when a licence is loaded from the start. Removing or moving the licence therefore does not start a new trial: without a licence, meters are read only while those 30 days still run.

The first day of the trial is kept so that removing the data folder or a part of it does not start a new trial. A data folder copied from another PC does not bring a new trial.

Ways to get a licence

A licence works only on the PC it was made for. A licence key can be in use on as many PCs at the same time as REDZ set for that licence, one unless REDZ set more. There are three ways to get a licence, all on this page:

- **Request a licence:** send your details to REDZ over the internet; the licence arrives by itself once REDZ approves it.

- **Activate with a key:** enter a licence key you already have from REDZ.
- **Activate offline:** for a PC without internet, exchange a request code for a licence file.

The first two need this PC to reach the REDZ licence server. Setup sets its address, so on an installed program without a licence both cards are on the page and **Activate offline** is folded below them; click its title to open it.

Requesting a licence

The **Request a licence** card is there while no licence is loaded. During the trial its title shows the days left.

1. Fill in **Name**, **Company** and **E-mail**. **Phone** and **Note (meters, sites)** are optional; use the note to tell REDZ how many meters and which sites the licence is for.
2. Read the agreement below the boxes and tick it. It says that the details and this PC's machine code go to REDZ to answer the request and keep the licence record, how long REDZ keeps an unanswered or a declined request, and that an approved request stays with the licence record.
3. Click **Send request**. It is available once the agreement is ticked and the name, company and e-mail are filled in.

An approved request, with the details in it, stays on the licence server with the licence record, as the agreement says. A withdrawn request is deleted at once; unanswered and declined requests are deleted after the times the agreement names.

The request carries the details you typed, this PC's machine code and the program version. The machine code holds only codes made from the parts of this PC, never their serial numbers.

REDZ sees the request on its licence server and approves it with the terms of your licence, or declines it, with a note if REDZ writes one.

After sending, the card shows the request number, the time it was sent, your contact details and a chip that says it waits for REDZ.

- The page asks the licence server about the request every 30 seconds while it is open, and the program asks every 15 minutes without the page. **Check now** on the card asks at once.
- When REDZ approves, the licence loads by itself and the card goes away. If the page is open at that moment, a green banner names the licence received from REDZ; the event log has a line in any case.
- **Change the contact details** opens the boxes again while the request waits. **Save the contact details** corrects them on the licence server. The **Note (meters, sites)** box opens empty, and what it holds when you save replaces the note sent with the request: type the

note again. **Cancel** closes the boxes without sending anything, but the card goes on showing what you typed until the page is opened again.

- **Withdraw the request** deletes the request on the licence server, and the form shows again.

Request ZRS-R-2026-0001

Sent - waiting for REDZ

Sent Oct 22, 2026, 2:28 PM. This page checks every 30 seconds while it is open; the service checks every 15 minutes. The licence loads by itself once REDZ approves. A new request can be sent only after this one is answered, withdrawn or deleted (after 30 days).

Name	Sample Contact
Company	Demo Company (sample)
E-mail	demo@example.com
Phone	+90 000 000 00 00

Check now

Change the contact details

Withdraw the request

Figure 17.2 A sample licence request waiting for REDZ: its number, the time it was sent, the contact details and the three buttons.

NOTE

This PC can have one request waiting at a time. A new one can be sent after it is answered, withdrawn, or deleted by the licence server after 30 days.

If REDZ declines the request, or the licence server no longer has it, an amber banner on the card says so, with REDZ's note if there is one. Click **OK** to clear it and send a new request.

What goes wrong with a request, for example when the licence server cannot be reached, is shown in red at the top right of the card itself.

Request a licence

Trial - 30 days left

NAME	COMPANY	E-MAIL	PHONE
Sample Contact	Demo Company (sample)	demo@example.com	

NOTE (METERS, SITES)

☒ I agree that these details and this PC's machine code go to REDZ to answer this request and to keep the licence record. An unanswered request is deleted after 30 days, a declined one after 90 days; an approved one stays with the licence record, which names the licence's owner.

This PC's machine code is sent with the request. REDZ answers on the licence server; this page picks the licence up by itself.

Send request

Figure 17.3 The Request a licence card filled in with sample contact details and the agreement ticked, before Send request.

Activating with a key

1. In **Activate with a key**, type the licence key: 16 letters and digits in four groups.
2. Click **Activate**. The key, this PC's machine code and the program version go to the REDZ licence server, which sends back a licence for this PC.

A green banner names the licence activated online. If the server refuses, a red banner at the top of the page says why, for example: the key is not known, the licence was withdrawn or has ended, or it is in use on another PC and must be moved from there first.

The licence file

Without internet on this PC, you get the licence as a file from REDZ or from the partner you bought the program from, in exchange for this PC's request code.

1. On the **License** page, open **Activate offline** (click its title if it is closed).
2. Send the request code to REDZ or to your partner: click **Copy request code** and paste it into your message, or take a photo of the QR code next to it.
3. REDZ or your partner sends back a licence file, license.zrl.
4. Click **Load licence file** and choose the file.

When the file is accepted, a green banner names the licence number and the status changes at once. The program keeps the file as license.zrl in its data folder.

NOTE

Loading a licence file, or activating one online, replaces the licence in use: the new licence is written over license.zrl.

The program refuses a licence file and says why when:

- the file is not a licence file ("not a licence file");
- the file was changed after REDZ made it ("the signature does not match");
- the licence was made with a key this version of the program does not know;
- the licence is for another PC; the message says how many of the machine parts match, or why the licence fits no PC;
- the licence was removed from this PC before; ask REDZ or your partner for a new one;
- the file is larger than 64 KB;
- this PC is a virtual PC, which takes its licence online only (see below).

A licence file made for a PC without internet is not checked with the licence server; **Last check-in** says so.

The check-in

With a licence activated online or received through a request, the program checks in with the REDZ licence server once a week, and on a virtual PC once a day. The check-in sends the licence number, this PC's machine code, the program version and the number of active meters, and also the check-in counter the licence server gave this PC last. When the server cannot be reached, the program tries again after six hours; it also checks in every six hours while meters are not read and during the seven days of reading described below.

Only the REDZ licence server's own answer to this check-in counts; any other answer is taken as "the licence server could not be reached".

The licence server keeps each check-in with the licence record: its time, the program version and the number of meters. It keeps them with no time limit. With each check-in it also keeps, with no time limit, the record of this PC's seat: a code made from parts of the PC, the last version and the number of meters.

Administrators can check in at once with **Check now** under the facts of the **Status** card.

If the PC clock was set forward and then put right, the state becomes **Clock behind** and meters are not read. With a licence that is checked online, a good check-in puts it right. Otherwise contact REDZ. A clock that was set back and is then put right does not stop the reading.

When the licence server says that the licence was withdrawn or moved, or that it does not know it on this PC, the program goes on reading meters for seven days and then stops (the state **Withdrawn**); a copy of a virtual PC stops at once. On a physical PC the same seven days follow when the licence server says that this PC checked in with an old counter: a copy of this PC, a second installation on it, or one put back from a backup. From that answer on, the licence server gives the same answer to every check-in of this PC's licence, also to the installation that was there first, until REDZ accepts the PC again; activating the licence again does not change it.

The message on the **Status** card and the strip at the top of the other pages then say so and until when meters are read; go by that message. The seven days count from the day the licence server gives for that change, or else from its first such answer. Contact REDZ. When the server later answers that the licence is fine again, the seven days are cancelled.

An online licence also needs the licence server now and then. If this PC has not reached it for more than 60 days, on a virtual PC for more than 7 days, the message and the strip say so and the seven days of reading begin, counted from the day that time ran out. As the message says, "let this PC reach the licence server (a good check-in reads meters again), or contact REDZ." A licence file made for a PC without internet is not counted this way.

Virtual PCs

When the firmware of this PC names a virtual machine maker, the program treats it as a virtual PC and shows the **virtual PC** chip next to the **Machine ID**. On a virtual PC:

- the licence is activated online only, with a key or a request; a licence file is refused and **Activate offline** says so. A licence file that reaches the data folder another way is not used either: the message begins "The licence file was not accepted: on a virtual PC the licence is activated online";
- a licence made for a physical PC does not fit: the message says "it was made for a physical PC and this is a virtual PC";

- the licence fits only while every part of the virtual PC still matches, a fourth part that tells virtual PCs apart included;
- the program checks in every day;
- if a copy of the virtual PC, or one put back from a snapshot, checks in, the licence server marks the licence of this virtual PC as copied: from then on it answers "copied" to the original as well as to the copy. From that answer the state is **Withdrawn** and meters are not read, without the seven days; the message on the **Status** card says so. Contact REDZ: when the licence server answers that the licence is fine again, reading starts again;
- if the virtual PC has not reached the licence server for more than seven days, the message and the strip say so and the seven days of reading begin; let the PC reach the internet again: a good check-in reads meters again.

Features and the meter limit

A page whose feature the licence leaves out is not in the menu, and the program refuses its actions.

Feature	Pages
Analysis and tariffs	Analysis, Tariffs ; also the analysis of a formula or a custom report
Formulas, Custom reports	Formulas & reports
Schedules	Schedules
Exports and e-mail	Exports ; on Settings , the cards Mail and FTP are shown only with it
Import	Import
Manual edit	No page of its own: typing in, importing and removing the load profile values of a virtual meter on Analysis . Without it these tools are not on the page, and a note says that the licence does not include Manual edit.

An export of a formula or a custom report needs that feature as well as **Exports and e-mail**; without it the run is skipped and says that the licence does not include it.

The meter limit counts active meters. Virtual meters count toward the meter limit too. When the limit is reached, no meter can be added or brought back from the archive, and the program says how many meters the licence allows; archive a meter or ask REDZ or your partner for a larger licence.

When more meters are registered than the licence allows, the meters registered first are read, as many as the limit, virtual meters among them; a virtual meter is never read, and its place does not go to another meter. The others, for example meters added during the trial,

keep their data but are not read. **Read now** and **Read the missing profile** refuse them with the reason, a schedule counts them as not read in its event log row, which is then a warning, and a job queued for them ends with the same reason. Archive meters, or ask REDZ or your partner for a larger licence.

When the licence ends

When the trial or the licence ends, the PC clock is behind, the version was built after maintenance, the licence is for another PC, or the licence is withdrawn, the program stops reading meters, and schedules and automatic exports stop too; the import and the manual edit tools close as well. Your data stays.

The message on the **License** page and in the strip says so, for example: "Meters are not read and automatic exports do not run."

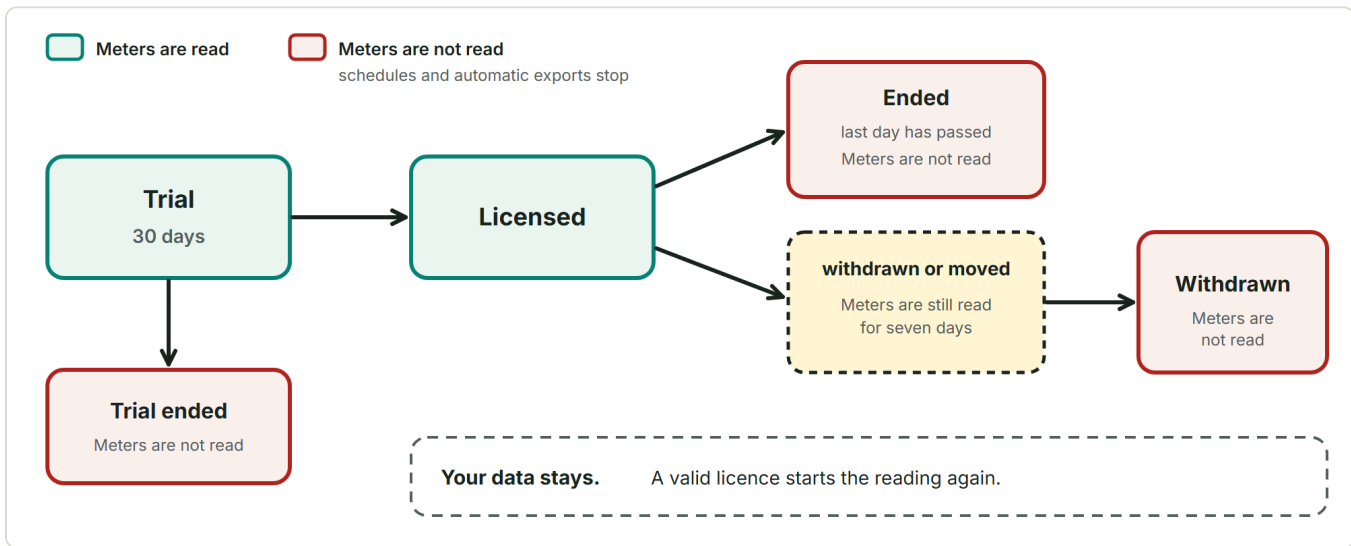


Figure 17.4 The licence states: during the trial and with a valid licence the meters are read; after the trial or the licence ends, or seven days after the licence was withdrawn or moved, they are not read and schedules and automatic exports stop; your data stays.

Stops	Stays open
Reading meters, also reading missing load profile intervals and jobs already queued	The stored data, the meter pages and the analysis
Schedules: the Schedules page leaves the menu	Tariffs, Formulas & reports and their analysis, when the licence includes them
Automatic exports	Running an export at once with Run now
The Import page and the manual edit tools of Analysis	Adding and changing meters and lines

A run of a schedule or an automatic export that was skipped is not made later: the next run is at its next planned time. Each skipped run writes a warning to the event log; see [Jobs & events](#). A valid licence starts the reading again.

NOTE

When maintenance ends, the licence keeps working and meters are still read; the strip at the top shows the message about maintenance. Maintenance decides which updates this PC can install: the **Updates** card offers the newest version released by the last day of maintenance; a later one is named but not installed; see [Settings](#). A version built after maintenance ended, also one installed by hand, does not read meters with this licence: the state is **Version after maintenance**.

Moving the licence to another PC

Before this PC is replaced, move a licence that was activated online, so it can be activated on the new PC.

1. In **Move licence to another PC**, type the licence key.
2. Click **Move licence**, then confirm with "Move", or click "Keep it here" to keep the licence on this PC.
3. The licence leaves this PC and the page shows a **Removal code**. On the new PC, activate the licence with the same key.

NOTE

A licence received through a request comes without a key, so it cannot be moved with this card: ask REDZ for a key, or remove it from this PC (below), which also frees this PC's seat on the licence server.

Removing the licence

Before this PC is replaced, the licence can also be removed from it. This is the way for a licence loaded from a file, so that REDZ or your partner can make a licence for the new PC.

1. In **Remove the licence**, click **Remove licence**.
2. Confirm with **Remove**, or click "Keep it" to keep the licence.
3. The page shows the **Removal code** with a note. Click **Copy removal code** if the note asks you to give the code to REDZ, and give it to REDZ or to your partner.

Before removing, the program asks the REDZ licence server to free this PC's seat. It sends the licence number, this PC's machine code and the licence file loaded here, which the licence server compares with the file it gave this PC. The note on the **Removal code** card says what happened:

- "The licence server freed this PC's seat: the licence can be activated on another PC now. Keep the code for your records." This is the answer for a licence the licence server gave this PC: activated with a key, received through a request, or a licence file REDZ made on its licence server.
- Otherwise the note says that the licence server did not free the seat, and why, for example when it cannot be reached or does not know the licence. The licence is still removed from this PC; give the removal code to REDZ or to your partner.

The event log has a line with the licence number, whether the seat was freed, and the removal code.

WARNING

Removing cannot be undone. The licence file is deleted and the same file cannot be loaded on this PC again. After removing or moving the licence, meters are read only while the 30 days of the trial of this PC still run.

NOTE

During a REDZ support session REDZ support can also do what this page offers administrators, for example load, move or remove the licence; each such change leaves a line in [Jobs & events](#). See [Support](#).

18 Support

The **Support** page is where you get help from REDZ support, or from the partner you bought the program from. It is in the System menu for administrators and has two cards: **Request REDZ support**, and **Diagnostics** with the support bundle.

Requesting REDZ support and sending the bundle to REDZ need this PC to reach REDZ over the internet; setup sets the address. Downloading the bundle works without the internet.

Requesting REDZ support

When REDZ support needs to look at this program, for example at a meter that is not read, ask for it here. REDZ support can then work in this program through REDZ's connection for the time you choose. As the card says: "Nothing on this network is opened, and nothing needs to be set up."

1. Choose how long: 4, 12 or 24 hours. 12 hours is chosen first.
2. Under **What is the problem?**, say what REDZ support should look at. Fill in **Name** and **E-mail**; **Phone** is optional.
3. Read the agreement and tick it. It says: "I agree that REDZ support may reach this program through REDZ's connection for the time chosen, with the details above. Every change REDZ makes and every file or reading trace it takes is in Jobs & events (the pages it only looks at are not); I can end it at any time."
4. Click **Request support**. It is available once the agreement is ticked and the name and e-mail are filled in.

The request sends the time chosen, the problem, your name, e-mail and telephone number, this PC's machine code, the licence number if there is one, and the program version to REDZ.

If REDZ cannot open the connection, or cannot be reached, a red banner on the card says so; try again in a few minutes or call REDZ.

The card then turns into **REDZ support is connected**, with the time it ends and its number. A green banner says until when REDZ support can reach this PC. The card repeats that every change REDZ makes and every file or reading trace it takes is in **Jobs & events**, and that the pages it only looks at are not.

- It ends by itself at that time.
- **End now** ends it; a green banner says "REDZ support ended."
- When REDZ ends it, the program notices within about 70 seconds while this PC reaches the REDZ licence server; if it cannot reach it, the session runs until its time. **End now** here always ends it: the program first tells the licence server, and when that server does not answer, the end can take up to about 40 seconds.

When you or REDZ end the session, the program also removes the details of REDZ's connection that the session brought; the next request brings them again.

If REDZ's connection cannot be made while the session runs, **Jobs & events** gets a warning with the source REDZ support: "REDZ support could not connect; ask REDZ".

While REDZ support is connected

While a REDZ support session runs, every user who signs in sees a small green window at the top right of every page. It says until when REDZ support is connected, and "REDZ is working in the program now." while REDZ support has used the program, or had it open, in the last two minutes.

For an administrator the window opens with a click on its title. Closed, its title offers the chat and **End now**, or says how many new messages from REDZ wait; open, it shows **Chat with REDZ** and **End now**, and its title says **Hide**. When REDZ writes a new message, the window opens by itself. Other users see only the line, without the chat.

The **Support** page says so too: "The chat with REDZ is in the green window at the top right of every page."

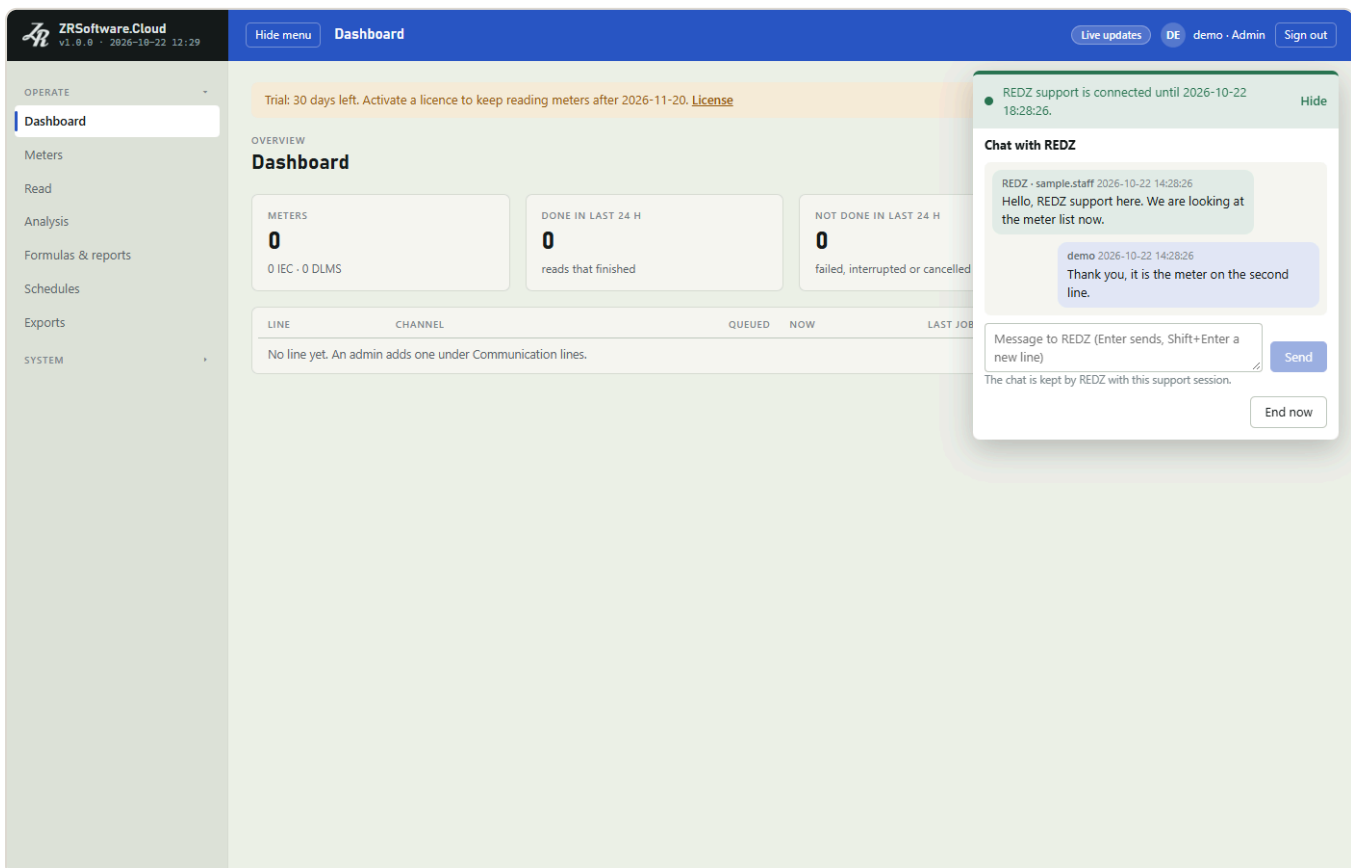


Figure 18.1 The green window at the top right of every page while a REDZ support session runs: a line from REDZ and the admin's answer (sample).

1. Type your message in the box at the bottom of **Chat with REDZ**, at most 2000 characters. Enter sends it; Shift+Enter starts a new line.

2. Or click **Send**.

Each message shows who wrote it and when: your messages carry the user name you signed in with, and REDZ's carry REDZ and the user name of the REDZ staff member. The messages from this program are on the right, REDZ's on the left. While the window is open, it asks for new messages every 5 seconds.

If the licence server cannot be asked for a moment, the window says "REDZ could not be asked just now" with the reason, and tries again.

End now in the window ends the session like the button on the **Support** page. When the session ends, by you, by REDZ or by its time, the green window goes away, and **Jobs & events** has the row that says how it ended.

What REDZ support can do

REDZ support signs in with its own user, which is not in your **Users** list. That user can sign in only while the time runs. When it ends, the user is turned off.

While a REDZ support session runs, REDZ support works with the rights of an Admin. It cannot change or test the mail settings, its own account or the support session; only an import of a ZR Software 7 database during the session, also a copy that REDZ support uploads, can still set that database's mail server, with user name and password, when none is set here and the licence includes **Exports and e-mail**.

REDZ support can add users, Admins too, change their role, turn them on or off and reset a password, but not the password of the last enabled Admin. REDZ support types the one-time password. A user whose password is reset is signed out and must sign in with that one-time password, so ask REDZ for it; a user added this way signs in like any other user, sets an own password at the first sign-in, and stays after the session ends. Each of these changes leaves a row with the source Auth that names REDZ support's user; see [Users](#).

WARNING

Everything else an administrator may do stays open while the time runs, also what cannot be undone: for example loading, moving or removing the licence, changing the **FTP** settings and meter passwords, deleting lines, schedules, exports, tariffs, formulas, reports and groups, removing the values of a virtual meter, adding an export that e-mails data to any address, installing an update, importing, or sending the support bundle. An import during the session works as it does for you: the passwords in an Excel file and the meter passwords of a ZR Software 7 database are saved, and the old database's mail server comes in as said above. End the session with **End now** when the work is done.

What the event log shows

During a REDZ support session, **Jobs & events** gets a row with the source REDZ support for each change REDZ support makes or tries to make, and for each file or reading trace it

takes: what was done, on which page, and the answer. A change that was refused or failed is a warning. What was typed, for example a password, is not in the row. Pages that REDZ support only looks at leave no row.

When REDZ support saves the chart as a picture or prints a page, the program tells the service and Jobs & events gets a row.

A change of REDZ support's own password or of the support session is named "a closed setting"; a refused change of the mail settings or of a user names the page and item like any other row. Requests that only check or test leave such a row too, for example the preview of an import, a check of the licence or for updates, or a test of the FTP connection; while a licence request waits, the License page asks about it every 30 seconds and each time leaves a row. Saving an opened reading trace as a text file leaves no row of its own: opening the trace already did.

Rows with the same source also say when a session starts, with the user who asked for it, and when it ends: ended early by you, ended by REDZ, its time ran out, or it is over on the licence server. A row with the source Auth says when REDZ support signs in through REDZ's connection, with the session number; see [Jobs & events](#). The chat messages are not in **Jobs & events**.

NOTE

Your details and the problem are seen by REDZ staff on the REDZ licence server. The licence server keeps the record of each support session and support bundle (who sent it, contact details, note) with no time limit; a support bundle's file is deleted after 90 days. The chat lines (time, who wrote it - the user name in the program or of the REDZ staff member - and the text) are kept on the licence server with the support session, with no time limit. The program keeps only the lines of the running session while it runs. The chat says so in short: "The chat is kept by REDZ with this support session." The name you type in the first request and the licence number become the name of this PC's connection at REDZ; later requests keep it.

Request REDZ support

REDZ support can reach this program through REDZ's connection for the time you choose. Nothing on this network is opened, and nothing needs to be set up.

4 hours

12 hours

24 hours

What is the problem?

Meter 90000003 is not read (sample)

Name

E-mail

Phone

Sample Contact

demo@example.com

☐ I agree that REDZ support may reach this program through REDZ's connection for the time chosen, with the details above. Every change REDZ makes and every file or reading trace it takes is in Jobs & events (the pages it only looks at are not); I can end it at any time.

Request support

Diagnostics

support bundle

Version

1.0.0 · built 2026-10-22 12:29

Pages

built 2026-10-22 12:14

Data folder

C:\Users\Public\ZRS-Manual-b1b7f7\main

Database

2.7 MB · 24 meters · 4028 intervals · 11 events

Licence

ZR-DEMO-0001 · Licensed · 24 meters · no limit

Last error

none

Figure 18.2 The Request REDZ support card filled with sample details before agreeing, and the top of the Diagnostics card.

Diagnostics

The **Diagnostics** card shows the facts support asks for first:

Line	What it shows
Version	The program's version and build date.
Pages	When the pages in the browser were built.
Data folder	The folder that holds the program's database, logs and licence.
Database	The size of the database and how many meters, profile intervals and events it holds.
Licence	The licence number, its state in the words of the License page, the number of meters and the meter limit.
Last error	The time, source and text of the latest error in the event log, or "none".

What is in the support bundle

Below the facts, the table **In the support bundle** lists every file of the bundle with its **Size** and **What it holds**, before you download or send anything. The list is made the same way as the bundle itself.

File	What it holds
about.json	Version, build, Windows and .NET version, the PC name, the data folder, the database size and counts, the licence (number, customer, partner, state, features, limits, dates, machine ID), the last error, and what setup recorded: the version, the program and data folders, the port, the path of a ZR Software 7 database, the times of install and upgrade, and setup's options.
config.json	Lines, meters, schedules, exports, tariffs, formulas, reports, users and settings, without passwords.
events.csv	The event log of the last 90 days.
jobs.csv	The reading jobs of the last 30 days: meter, kind, state, times, outcome and message.
logs/	The service's daily log files (the program keeps 14 days, at most 50 MB).
setup.log	What setup did: install, upgrade, uninstall.
README.txt	What is in the bundle and what is not.

What stays out

The lists in the bundle are built field by field; only the service log files and setup.log are copied whole. These stay out:

- the database and its backups, and imported old databases;
- passwords in the lists: meter passwords (config.json says only whether a meter has one), the mail password, the FTP password and user passwords;
- keys and tokens: a setting whose name contains password, secret, key, token or hash never goes into the bundle, even when it is not marked secret (the fingerprint of a trusted SFTP server key, which is not secret, is in the event log);
- the licence file;
- meter readings and load profile values.

NOTE

config.json holds meter serial numbers and locations, the addresses of the lines (IP address, COM port), user names, the targets of the exports (folders and e-mail addresses) and the settings that are not secret, among them the mail and FTP servers with their user names, and the port, type and folder of the FTP server. The event log in the bundle also names the FTP server and the fingerprint of a trusted SFTP server key. Support needs them to look at a problem.

Downloading the bundle

1. Click **Download support bundle**.
2. The browser saves the zip as a download. The name has the PC name and the time, for example ZRSoftware_support_OFFICE-PC_20261017-1430.zip; the green banner shows the name.
3. Send the file to REDZ support, or to the partner you bought the program from.

Each download writes a line to the event log with the file name, its size and the user who made it; see [Jobs & events](#).

Sending the bundle to REDZ support

The part **Send to REDZ support** of the **Diagnostics** card, below the download button, sends the same bundle straight to REDZ support.

1. Under **What happened? (optional)**, describe the problem.
2. Fill in **Name**, **E-mail** and, if you like, **Phone**, so REDZ can answer you. The bundle can also be sent without them.
3. Read the agreement and tick it. It lists what the package holds, the mail and FTP server and user names among them, and says that REDZ uses it only to answer this request, keeps it for 90 days and deletes it earlier on request.
4. Click **Send**. It is available only while the agreement is ticked; nothing is sent without it, and it must be ticked again for every bundle.

With the bundle go the licence number, this PC's machine code, the program version, your text and your contact details. A green banner shows the ticket number REDZ gave the bundle, its size and how many days REDZ keeps it, and a line goes to the event log with the ticket and the user who sent it.

REDZ takes a bundle of at most 30 MB. It is kept on the REDZ licence server for 90 days, where REDZ staff can open it, and then deleted. The ticket stays there with its number, your text and your contact details.

If REDZ refuses the bundle, for example when it is larger than 30 MB, or REDZ support cannot be reached, a red banner says so; download the bundle and send it by e-mail

instead.

NOTE

The program remembers the name, e-mail and telephone number you type on this PC and fills them in the next time you request support, send a bundle or request a licence.

Emptying a box does not make the program forget what it remembered; the details stay in the program's data folder on this PC.

19 Troubleshooting

This chapter lists the messages the program itself shows, why they appear and what to do. The service's messages appear in a banner on the page or under a form; the result of a meter read appears on the **Read** page and in the **Message** column of **Jobs & events** (see [Jobs & events](#)). A message that contains a name, a number or a time is described here in words, not quoted.

Signing in

What you see	Why	What to do
"Wrong user name or password", sometimes with the number of attempts left or with the news that the account is now locked	The user name is unknown or the password is wrong. On My password the Current password is wrong.	Type both again. After five wrong passwords in a row the account is locked for 15 minutes (see Signing in and the window).
A message that there were too many wrong passwords, with the minutes to wait, or "The account is locked"	The account is locked after five wrong passwords in a row, also when they were typed as the Current password on My password .	Wait the minutes the message names, at most 15, or ask an admin for a new one-time password (see Users).
"The account is disabled"	An admin has disabled the account.	Ask an admin to enable it on the Users page (see Users).
"The two new passwords are not the same."	New password and New password again differ.	Type the same password in both boxes. Show the password shows what you typed.
"The password must be at least 10 characters"	The new password is too short.	Choose a password of 10 characters or more.
"The password must not be the user name"	The new password is the user name.	Choose another password.
"The new password must differ from the current one"	The new password is the same as the current one, or as the one-time password.	Choose another password.
The sign-in page appears while you work, with "The session has ended. Sign in again."	A session lasts 8 hours. It also ends when an admin changes your role or password or disables the account, and when your password is changed in another sign-in.	Sign in again (see Signing in and the window).

What you see	Why	What to do
"The setup link is used or expired. Sign in as admin with the one-time password."	The setup link of the setup's Finish page works once and for 15 minutes.	Sign in as admin with the one-time password (see Installation and first start and Signing in and the window).

NOTE

On **My password** the same messages of the service start with a small letter, for example "wrong user name or password".

A user who still knows the password changes it on **My password** (click your user name in the top bar). A user who has lost the password gets a new one-time password from an admin (see [Users](#)).

When no admin can sign in, because the admin password is lost, the account admin is disabled, or the account admin is locked and you cannot wait for the 15 minutes of the lock to end, an administrator of the PC gives the account admin a new one-time password:

1. Open Windows PowerShell started as administrator: right-click it and choose Run as administrator.
2. Run the program's file with the switch `--reset-admin-password:` in PowerShell type & `"C:\Program Files\REDZ\ZR Software\ZRS.Service.exe" --reset-admin-password` and press Enter (in a Command Prompt started as administrator the same line without the & at the start).
3. The command shows the user name admin and a new one-time password, and, in lines that start with "Also:", anything else it changed. Its last line names the file admin-initial-password.txt in the data folder, where it also writes the user name and the password.
4. Sign in as admin with that password. The page **Set your password** opens; set your own password (see [Signing in and the window](#)).

NOTE

If PowerShell or the Command Prompt was not started as administrator, the command changes nothing, shows "Run this in a PowerShell (or Command Prompt) started as administrator" and ends with the exit code 5. Close it and open it again with Run as administrator.

The command also enables and unlocks the account admin and ends its open sessions; the old admin password no longer works. The **Event log** on **Jobs & events** keeps a warning that starts with "admin password reset from the command line" and names the Windows account that ran the command.

WARNING

The command always makes the account admin an enabled administrator again: if an admin had disabled it or changed its role, it is enabled and gets the role Admin; the lines "Also:" and the warning in the **Event log** say so. If the account should stay disabled, an admin disables it again on the **Users** page (clear **Enabled**) after signing in with another admin account.

The pages do not open

The pages come from the Windows service of the program, not from files on the desktop. When the browser cannot open <http://127.0.0.1:5080>, check these points in this order:

1. Is the service running? Its name in Windows is ZRSoftware.Cloud (service name ZRSoftware); [Installation and first start](#) lists how it is set up. If it is stopped, start it and open the address again.
2. Is it the right port? If a port other than 5080 was chosen during the setup, the address uses that port. The desktop shortcut ZRSoftware.Cloud, if the setup made one, opens the port the setup used.
3. Is the address typed on this PC? The service answers at 127.0.0.1, the PC itself.
4. If the service stops again by itself, look at the newest file in the folder Logs of the data folder (C:\ProgramData\REDZ\ZR Software when Windows is on drive C). The service writes its warnings and errors there, one file per day, named zrs- and the date. What the setup did is in setup.log in the same data folder. Only the service, Windows itself and programs started with administrator rights can open the data folder; other Windows users of the PC cannot. If the service runs, the support bundle contains these files (see [Support](#)); otherwise send the files themselves to REDZ support, or to the partner you bought the program from; like the bundle, they can hold line addresses.

After a crash, Windows starts the service again after one minute, for the first two crashes; after a third crash it stays stopped until it is started again. The count starts again after a day without a crash (see [Installation and first start](#)).

When the pages are open but the top bar shows **Not live** instead of **Live updates**, the live connection to the service is down; the page then changes only when you act. If it stays **Not live**, check that the service runs, as above.

Reading a meter

A read that fails ends with an outcome such as No answer or Login failed, shown in the job's chip (see [Reading meters](#)), and a message. The messages below are the most common. The **Line log** on the **Read** page, and **Trace** on **Jobs & events**, show what went to the meter and what came back; both are there for operators and administrators.

NOTE

When a read was tried more than once, its message starts with the number of the attempt and ends, in brackets, with what the attempt before gave (see [Jobs & events](#)). The messages below are the part in the middle.

What you see	Why	What to do
A message that the line is disabled (Error), for a read that a schedule or Read the missing profile on Analysis started	The meter's line is switched off. Nothing was sent. The Read page does not start a read on such a line; it shows a banner (see the next table).	An admin ticks On for the line on Communication lines (see Communication lines), or takes the meter out of the schedule.
A message that starts with "cannot open", followed by the COM port or the IP address and port and the reason	The service could not open the line; the reason follows the channel. For a TCP line one reason is that the address did not answer within 5 seconds.	For a TCP line check the IP address and TCP port of the line and that the gateway or modem is switched on. For a serial line check that the COM port is still in the line's list; a port that Windows no longer lists is shown with (not present) .
A message that the port or the host is not allowed on this service	The service is set up with a list of allowed COM ports or networks, and the line is outside it.	Use a port or an address from the list the message names, or ask whoever set up the PC.
A message that starts with "LineBusy" and says the meter is still sending	Before the sign-on the service heard the meter still sending on the line. Nothing was sent.	Read again when the meter has stopped sending. A scheduled read tries again by itself when its Attempts are more than 1.
"The meter did not answer (check the probe alignment and the address)" (No answer)	No identification came back after the IEC sign-on.	On an optical line, check that the probe sits on the meter's optical port. Check also the meter's Physical address and the line (see Meters and groups).
A message that the probe is in a mode that does not make the IEC opening (No answer)	The REDZ BT probe is set to a mode in which it does not open the meter.	Set the probe to IEC auto or command mode, as the message says, and read again.

What you see	Why	What to do
"The meter did not answer the IEC sign-on" (No answer)	The service sent the IEC opening first (an optical line, or a TCP line with the IEC opening box ticked) and the DLMS meter did not answer it.	Check the probe and the line's Interface : an optical line opens the meter first, an electrical line talks DLMS directly; on a TCP line the box IEC opening before DLMS (Landis+Gyr over TCP) decides (see Communication lines).
A message that there was no answer at a server address and that the physical address may be wrong (No answer)	The DLMS meter did not answer at any address the service tried.	Check the meter's Physical address (see Meters and groups).
"the meter record has no HDLC physical address (1..16383)" (Not supported)	The DLMS meter needs an address, and the service has none it can use.	Type the address in the meter's Physical address (see Meters and groups).
"The answer is not an identification message" (No answer)	Something answered the sign-on, but not with a meter identification.	Look at the Line log to see what came back, and check the line and the meter's settings.
"no password is stored for this meter; nothing was sent" (Login failed)	The DLMS meter needs a password and none is stored.	Type the password in the meter's Meter password (see Meters and groups).
"the meter refused the association" (Login failed)	The DLMS meter refused the sign-in (with the stored password, where the meter type uses one).	Where the meter type uses a password, check it and type it again in Meter password . The job does not try a refused sign-in again.

What you see	Why	What to do
A message that the meter refused every password candidate, or that no Itron password could be used because the serial number is not 8 digits (Login failed)	When the registers of an Itron meter are read, the service tries the stored password and, when it is refused, passwords made from the serial number; the meter refused them all. When the serial number is not 8 digits, no password is sent. A password made from the serial number that the meter accepts replaces the stored password, and Jobs & events says so.	Check the meter's Serial no. and Meter password (see Meters and groups).
"the stored password cannot be opened on this machine; enter it again" (Login failed)	The password was stored on another PC, for example in a copied database.	Type the password again in the meter's form (see Meters and groups).
"The data block ended without ETX and BCC" or "BCC does not match; the block is not trusted"; for a load profile "The profile block ended without ETX and BCC" or "BCC does not match; the profile block is not trusted" (Bad checksum)	The meter's answer arrived incomplete or damaged; the values are not stored.	Read again. A scheduled read tries again by itself when its Attempts are more than 1.
"No data block after the option select (speed switch?)" or "No profile block after the request" (No answer)	The meter answered the sign-on but sent no data after it.	Read again. If it keeps coming back, send the trace to REDZ support, or to the partner you bought the program from, as described below.
"The meter answered P.01(ERROR) (no profile in the range, or the request is not accepted)" or "The meter refused the profile request (NAK)" (No data)	The meter holds no load profile for the days asked, or does not accept the request.	Choose days for which the meter keeps a profile.
A message that the meter type is not read through the REDZ BT probe (Not supported)	Only IEC 62056-21 meters are read through the REDZ BT probe. Nothing was sent.	Read a DLMS meter on a line without the probe (see Communication lines).

What you see	Why	What to do
A message that the type, or this kind of read for the type, is not read by the service yet (Not supported)	The program does not read this meter type, or this kind of read for it.	Check the meter's Type (see Appendix: supported meters).
A message that starts with "licence:" (Error)	The job was queued before the licence stopped the reading, or the meter is over the licence's meter limit: the message then says that the licence allows a number of meters, how many are registered and that only that many of the meters registered first are read. Virtual meters count toward the limit too. Under a meter limit, the queued job of a meter that was archived in the meantime also ends so.	See the License page and License . For the meter limit, archive a meter you no longer read, or ask REDZ or your partner for a larger licence.
A message that ends with "timed out after", a number of seconds and "(the longest a job may run)" (Cancelled)	The job ran longer than the service lets one job run, and was stopped there.	Read fewer days of load profile at a time, then read again.
A message that ends with "cancelled: the service stopped" (Cancelled)	The service was stopped while the job ran.	Read the meter again.
"the service stopped while this job was running" (Interrupted)	The service ended while the job ran, before the job was closed.	Read the meter again.

Some reads are refused before they start, and the **Read** page shows the reason in a banner:

What you see	Why	What to do
"That meter is archived or virtual, so it is not read. Choose a meter above."	The page was opened for an archived meter, or for a virtual meter, which has no line.	Choose another meter. An archived meter is read again after an admin restores it; a virtual meter's values are entered or imported (see Meters and groups and Analysis).

What you see	Why	What to do
A banner that the meter's line is turned off, and Read now is unavailable	An admin has switched the line off.	An admin ticks On for the line on Communication lines (see Communication lines).
A banner that the service does not read meters of the meter's type yet, and Read now is unavailable	The program does not read this meter type.	Check the meter's Type (see Appendix: supported meters).
"a profile read needs from < to (meter calendar)"	The To day is not after the From (meter calendar) day.	Choose a To day after the From (meter calendar) day.
"a profile window is at most 31 days"	The load profile days are more than 31 days apart.	Read the days in parts of 31 days or less.
The licence message, for example that the trial has ended	The licence does not allow reading now.	See License and the licence messages below.
A message that the licence allows a number of meters and that only the meters registered first are read	The licence has a meter limit and this meter is not among the meters registered first, as many as the limit. Virtual meters count toward the limit too; a virtual meter among the first takes a place but is not read. Its data stays; it is only not read.	Archive a meter you no longer read, or ask REDZ or your partner for a larger licence (see License).

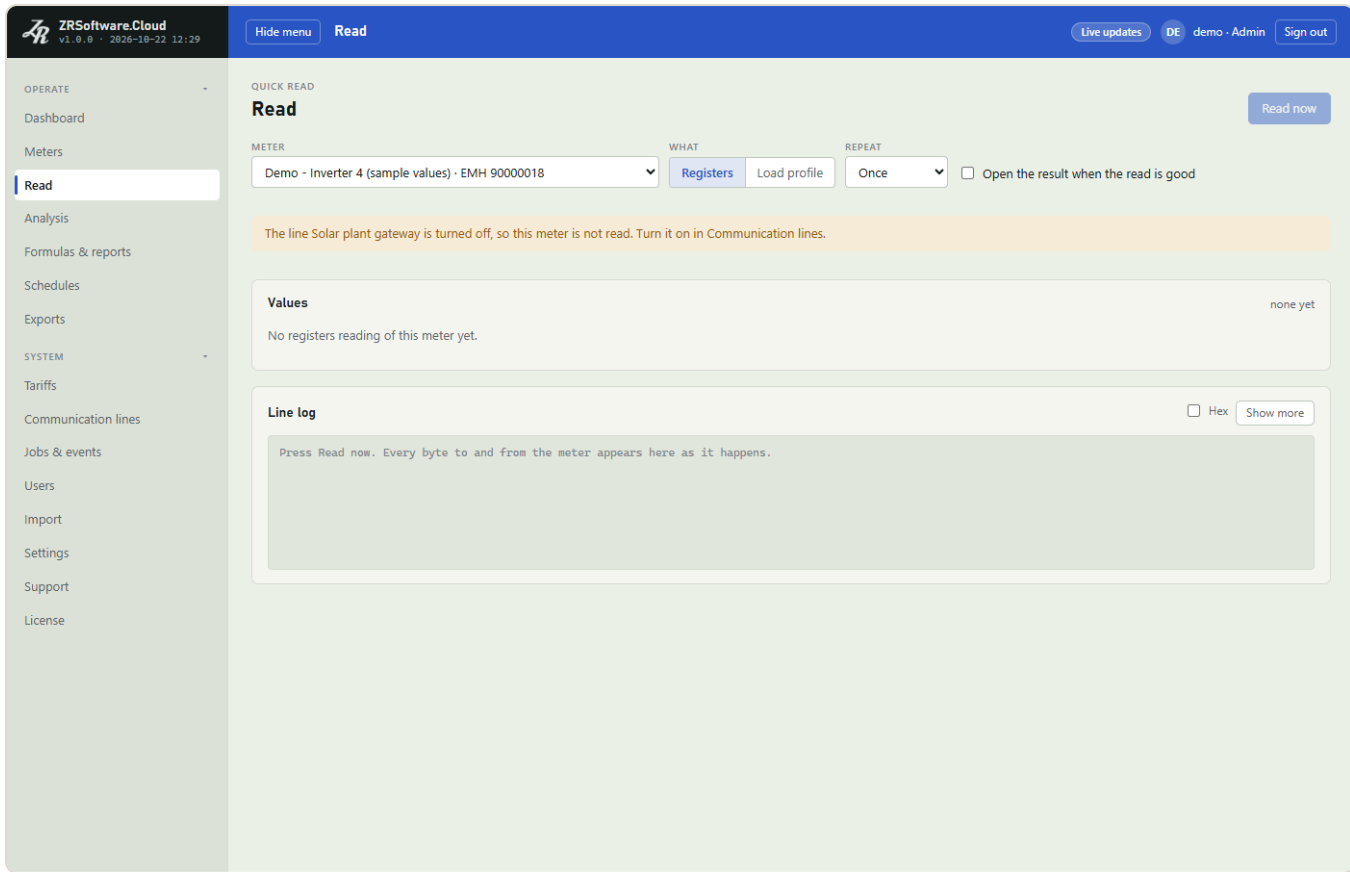


Figure 19.1 The Read page with a sample meter whose line is switched off: Read now is not available and the page says that the line is turned off.

If a message keeps coming back, save the trace of the job with **Save as .txt** on **Jobs & events** and send it, together with the support bundle, to REDZ support or to the partner you bought the program from. The bundle itself does not hold the trace. An admin can also send the bundle straight to REDZ support from the **Diagnostics** card of the **Support** page (see [Support](#)); the saved trace then still goes separately.

Lines and meters

What you see	Why	What to do
After Delete on Communication lines , a message that a number of meters use the line, archived ones included	A line is deleted only when no meter uses it, also no archived meter, which keeps its history.	Move the meters to another line with Move to line on Meters first (tick Show archived to choose the archived ones too), or keep the line and clear its On box (see Communication lines).
After Delete , a message that the line has a job waiting or running	A job of the line is still queued or running.	Delete the line when the job has finished.
Under the meter form, a message that the meter is already on the list, with that meter's location	Another active meter has the same type and serial number.	Open the meter that is already on the list and change it there (see Meters and groups).

What you see	Why	What to do
Under the meter form, "this meter has read values: a read meter does not become virtual (its read values would be open to hand edits). Add a virtual meter instead."	The meter was given the type Virtual, but it has been read; its read values stay as they were read.	Keep the meter's type, and add a new meter of the type Virtual for the values you want to enter (see Meters and groups).
After Restore , a message that the licence allows a number of meters	A restored meter counts against the licence's meter limit again, and the limit is reached.	Archive a meter you no longer read first, or ask REDZ or your partner for a larger licence.

Schedules and exports

What you see	Why	What to do
A schedule does not run; its row has the chip off	The schedule is turned off.	An admin edits it and ticks On (see Schedules).
A schedule or an export brought in by Import does not run; its row has the chip off	New schedules and every export that the import adds come in turned off, so that meters are not read twice and files are not sent twice while ZR Software 7 still does it. The import from an Excel file says so in its notes; the import of the ZR Software 7 database does not.	When ZR Software 7 no longer reads the meters or sends the exports, an admin edits each one and ticks On (see Import).
On the Event log tab of Jobs & events , a warning of the source "Schedule" that a schedule was skipped	The licence does not allow reading, or does not include schedules. The run is not made later.	See License .
A meter of a schedule gets no job	The meter is archived or has no line, or it still has a queued or running job from the same schedule, or, for a schedule that reads only what is missing, nothing is missing, or it is over the licence's meter limit. For a meter whose job is still open, the Event log has a warning of the source "Scheduler" that meters were skipped; for meters over the limit, the warning says how many meters were not read and that the licence reads only the meters registered first.	Check the meter on Meters and the open jobs on Jobs & events . For the meter limit, see License .

What you see	Why	What to do
After Run now on Schedules , "the licence does not include Schedules"	The licence leaves schedules out, or meters are not read now (see the note below the licence table): while meters are not read, the Schedules page leaves the menu, and a page that was still open gives this message also when the licence includes schedules.	See the state on the License page and License .
A job that fails with a message that starts with "the meter's clock is not known"	The registers read made first to learn the meter's clock failed.	Solve the reason given in the brackets of the message, as in the reading table above.
"this month never has that day"	The fields name a date that never occurs, such as day 30 of month 2.	Change the day or the month.
"the folder is required"	An export to a folder has no folder.	Type a folder.
"the folder must be a full path (D:\Exports or \\server\share\folder)"	The folder is not a full path.	Type the full path, with the drive or the server.
A message that the folder is a file, not a folder	The path names an existing file.	Type the path of a folder.
A message that starts with "the service cannot write to" and the folder	The service could not write a test file to the folder, for example because its account has no right to write there or the drive or share cannot be reached; the reason follows.	Give the service's account the right to write there, or choose another folder (see Exports).
"set the mail server and the From address in the Mail card in Settings first", when you save an e-mail export	The mail settings are missing.	An admin fills in the card Mail on Settings .
A run with the result Failed and an error that starts with "mail:"	The file was written, but the e-mail was not sent; the reason follows.	Check the mail settings with Send test e-mail (see Exports).

What you see	Why	What to do
"Not sent:" and a reason, after Send test e-mail	The test e-mail was not sent: a mail setting is missing ("no mail server" or "no From address"), the stored mail password cannot be read on this PC, or the mail server refused it. The reason follows.	An admin checks the server, port, security, user name and password of the card Mail on Settings .
A run with the result Skipped and "the meter is archived" or "the meter does not exist"	The export's meter is archived or was removed.	Edit the export or delete it.
A run with the result Skipped and a message that the formula or report no longer exists	The export's source was deleted.	Edit the export or delete it.
A run with the result Skipped and "the licence does not include formulas" or "the licence does not include reports"	The export's source is a formula or a custom report, and the licence leaves that part of the program out.	Ask REDZ or your partner for a licence with that feature.
On the Event log tab of Jobs & events , a warning of the source "Export" that an export was skipped	The licence does not allow reading, or does not include exports. Run now still works while only reading is stopped.	See License .
A run with the result Failed and another error	Making or writing the file failed; the error gives the reason.	Try Run now after the reason is solved.

FTP

The same reasons appear in two places: after "Not connected:" when an admin clicks **Test connection** on the card **FTP** of **Settings**, and after "ftp:" in a failed run of an export with the target **FTP server**. When a run fails, an admin can repeat the connection with **Test connection** (see [Settings](#)).

What you see	Why	What to do
"the server is a host name or address, without ftp:// and without spaces"	The Server box holds more than a host name or address.	Type only the name or address, for example ftp.example.com, and save again.
"a folder on the server is letters, digits, spaces and / _ . - (no \ and no ..)"	The folder holds another character, or a .. part.	Use only letters, digits, spaces and / _ . - in the folder.
"set the FTP server and user in the FTP card in Settings first", when you save an export with the target FTP server	The card FTP has no saved server or no saved user name.	An admin fills in Server and User name on the card FTP and saves.
"no FTP server: set it in the FTP card in Settings"	The server or the user name is not saved on the card FTP .	Fill in both and click Save .
"the stored FTP password cannot be read on this PC: enter it again in the FTP card in Settings"	The password was stored on another PC, for example in a database moved from there.	Type the password again on the card FTP and save.
A reason that starts with "sign-in:"	The server did not accept the user name or the password, or, with SFTP , the server accepts only key files; the reason follows. After another Server , Port or Type was saved without a password, no password is stored any more.	Check User name and Password , save, and test again.
A reason that starts with "TLS: the server's certificate is not trusted", or another reason after "TLS:"	With FTPS (explicit TLS) the server's certificate is not from an issuer this PC trusts or does not match the server's name, or the encrypted connection could not be made. Nothing was sent.	Use the server name the certificate is made for, or ask the server's administrator about the certificate.

What you see	Why	What to do
"the server's key is not trusted yet: check it and trust it in the FTP card in Settings"	With SFTP , the server's key has not been trusted on this PC yet. Nothing was sent.	Click Test connection on the card FTP ; compare the key it shows with the one from the server's administrator and click Trust this key (see Settings).
"the server's key changed: it is not the trusted one (nothing was sent)"	With SFTP , the server showed a key other than the trusted one.	Ask the server's administrator. Trust the new key with Trust this key , after Test connection shows it, only when the change is confirmed.
A reason that starts with "SSH:" and says that the key exchange negotiation failed	With SFTP , setting up the secure connection with the server failed.	Ask the server's administrator which methods the server allows for the connection.
"no answer within the time limit"	Connecting and uploading together took longer than the service's limit of 90 seconds, for example with a large file on a slow connection.	Check Server , Port and Type , and test again.
A reason that starts with "upload:" or "size check:"	The server took the connection but refused the file, or holds a file of another size than the one sent. The service then tries to delete the .part file on the server.	Ask the server's administrator whether the account may write, rename and delete files in that folder, then run the export again.
Another reason: a technical name, a colon and a text	The connection or the transfer failed for another reason, which the text gives. A refused upload, or a refused rename of the .part file to the file's name, also comes this way; the message names what failed.	Check Server , Port and Type on the card FTP , and test again. If the server refused the file or the rename, ask the server's administrator whether the account may write, rename and delete files in that folder.

NOTE

When an upload fails, the service tries to delete the .part file on the server. A file ending in .part can stay on the server when the upload or the check after it fails. A file ending in .old that stays on the server is the earlier file of that name: it stays when it could not get its name back or could not be deleted, and also when the time limit ran out during the renaming. When no file of that name is on the server, the .old file is the earlier file: give it its name back or run the export again before you delete anything. The program does not look for such files on the server later (see [Exports](#)).

Updates

The **Updates** card on **Settings** is for admins (see [Settings](#)). When a check fails, its reason stands after the time of **Last check**; after **Check now** the **Event log** of **Jobs & events** also gets a warning of the source "Update" that starts with "update check failed:". When a download or an install is refused, the reason appears in a banner on the card, and the **Event log** gets a warning of the source "Update" that starts with "update download refused:" or "update install refused:". What the updater did last is a line on the card, above the buttons.

What you see	Why	What to do
"Updates come from the REDZ licence server; this PC has no address for it.", and Check now is unavailable	The service on this PC has no address of REDZ's licence server; the setup gives it this address.	Ask REDZ support, or the partner you bought the program from.
After Last check , or in a banner after Download , a reason that starts with "the licence server could not be reached"	This PC did not reach REDZ's licence server, or, after Download , the file could not be written on this PC; the reason follows in brackets.	Check the PC's internet connection and click Check now or Download again.
After Last check , "no update list has been published yet"	REDZ's licence server has no list of versions yet.	Nothing; try again later.
A reason that starts with "licence server:" and gives an HTTP number	The licence server answered the check or the download with an error.	Try again later; if it comes back, contact REDZ.
After Last check , a reason that starts with "the update list was refused:"	The list that came from the licence server did not pass the program's check of REDZ's signature, or is not a list for this program. Nothing is offered.	Contact REDZ.
A note that a version was released after your maintenance ended, and the chip "after your maintenance"	The licence's maintenance ended before that version came out, and no newer version than the installed one came out before the end. Download is not offered.	Contact REDZ about the maintenance (see License).
A note that one version is included in your maintenance and a later one came out after it	The later version came out after the licence's maintenance ended. The card offers the included version.	Download and install the included version if you want it, and contact REDZ about the maintenance for the later one (see License).

What you see	Why	What to do
In a banner, "check for updates first" or "download the update first"	The step before was not done, or its file is gone.	Click Check now , then Download , then Install .
In a banner after Download , a reason that starts with "the downloaded setup does not match the signed update list"	The file that arrived is not the one the signed list names. It was deleted; nothing is installed.	Click Download again; if it comes back, contact REDZ.
On the card, above the buttons, a line with a date and time and "update refused:" and a reason	The updater checks the downloaded setup once more before it runs it, and refused it. Nothing was installed.	Click Download again, then Install ; if the line comes back, contact REDZ.
On the card, above the buttons, a line that the setup of a version was started and "see setup.log for the upgrade"	The updater started the setup of the new version. What the setup then did is not on the card.	Look at setup.log in the data folder (see Installation and first start).

REDZ support

While a REDZ support session runs, REDZ support works with the rights of an Admin. It cannot change the mail settings, its own account or the support session, and it cannot reset the password of the last enabled Admin (see [Support](#)).

What you see	Why	What to do
On the Event log tab of Jobs & events , a warning of the source "REDZ support" that names what REDZ support changed, deleted or used and on which page, followed by refused and the session number	The service refused a change REDZ support tried: one that is closed to it, such as the mail settings or the password of the last enabled Admin, or one with a value the service does not take from any user. What was refused is named by its page, for example Settings for the mail settings and Users for a user; a change of REDZ support's own password or of the support session is named only "a closed setting". What was typed, for example a password, is not in the row.	Nothing. If the change is needed, an admin of this PC makes it on this PC.
The same kind of warning, followed by failed and the session number	The change REDZ support tried failed in the service itself.	Tell REDZ support.

What you see	Why	What to do
A warning of the source "REDZ support": "REDZ support could not connect; ask REDZ"	During a REDZ support session, REDZ's connection to this program could not be made.	Ask REDZ, as the message says.
In the green window of the support session, "REDZ could not be asked just now:" and a reason	The program could not get the chat from REDZ just then; the lines already shown stay.	Nothing at first: the window asks again every 5 seconds. If the message stays, check the PC's internet connection.
After Send in the green window, a message that starts with "REDZ support could not be reached"	The program could not reach REDZ just then; the line was not sent.	Check the PC's internet connection and click Send again.
After Send in the green window, a message that the session already has 500 messages	One support session keeps at most 500 chat lines. A line holds at most 2000 characters; the box takes no more.	Call REDZ, as the message says.
After Send , "no REDZ support session is running" or a message that the support session has ended	The session ended, by its time or because you or REDZ ended it, before the line was sent. The line was not sent.	If you still need REDZ, request a new session on the Support page (see Support).

Licence

What you see	Why	What to do
"There is no licence on this PC. Activate one on the License page."	No licence is loaded and no trial runs on this PC. Meters are not read.	Activate a licence on the License page (see License).
A message that the trial ended on a date, followed by "Meters are not read and automatic exports do not run. Your data stays here: open License to activate."	The 30 days of the trial, counted from the program's first start on this PC, are over and no licence is loaded. A data folder copied from another PC does not start a new trial.	Activate a licence (see License).

What you see	Why	What to do
A message that the licence ended on a date and that meters are not read and automatic exports do not run	The licence's last day has passed.	Ask REDZ or your partner for a new licence and activate it.
The state Version after maintenance and a message that this version was built after the maintenance of the licence ended, followed by "Meters are not read and automatic exports do not run."	The installed version of the program was built after the licence's maintenance ended. The licence reads meters only with a version built by the maintenance end; the day of the build is in the program, not taken from the PC clock.	Install a version released by the day the message names, or ask REDZ to extend the maintenance (see License).
A message that the licence is for another PC, with how many machine parts match	The licence was made for another PC, or too many parts of this PC changed.	Ask REDZ or your partner for a licence for this PC (see License).
A message that the licence is for another PC because "it was made for a physical PC and this is a virtual PC"	The licence was made for a physical PC. On a virtual PC only a licence made for that virtual PC is valid.	Ask REDZ for a licence for this PC: on a virtual PC it is activated online (see License).
A message that the licence is for another PC because it knows fewer than 2 machine parts	A licence must be bound to at least two parts of a PC; this licence was made with fewer.	Ask REDZ for a new licence for this PC.
A message that starts with "licence server: this PC gives" and says that a licence needs at least 2 machine parts	The program could read fewer than two machine parts of this PC (Windows, the main board serial, the serial of the system disk, and on a virtual PC its virtual part), so the licence server cannot make a licence for this PC.	Contact REDZ, as the message says.

What you see	Why	What to do
"The PC clock is behind a time this service has already seen. Meters are not read until the clock is right."	The PC clock is more than 24 hours behind a time the program has already seen. Setting the clock back by less than that again and again adds up while the service runs. If the PC clock was set forward and then put right, the state becomes Clock behind and meters are not read. With a licence that is checked online, a good check-in puts it right. Otherwise contact REDZ.	Set the PC's date and time right. If the clock had only been set back, meters are read again once it is right. With a licence that is checked online, the program tries a check-in every 6 hours while meters are not read. If the clock had been set forward during the trial or with a licence file, contact REDZ.
A message that the licence does not include a feature, for example "the licence does not include Exports and e-mail"	The licence leaves out that part of the program; the message names it as the License page does. While meters are not read (see the note below the table), import, manual edits and schedules are left out too and their pages leave the menu; a page that was still open then names the part also when the licence includes it. The analysis of a formula or a custom report also needs Analysis and tariffs.	Ask REDZ or your partner for a licence with that feature, or activate a licence that reads meters.
When you add or restore meters, a message that the licence allows a number of meters and how many are registered	The meter limit is reached. Virtual meters count toward the limit too.	Archive a meter you no longer read, or ask REDZ or your partner for a larger licence.
A message that starts with "the licence server could not be reached"	This PC did not reach REDZ's licence server over the internet; the reason follows in brackets. A check-in whose answer does not carry the licence server's signature for this request is shown on the License page as not reached too.	Check the PC's internet connection and try again. A PC without internet access takes a licence file with Activate offline (see License).
A message that starts with "licence server:"	The licence server refused the request; its reason follows, for example about the licence key.	Check the License key and try again, or ask REDZ.

What you see	Why	What to do
"the licence server does not take this request yet (HTTP 404): it is older than this program. Try again later or contact REDZ."	REDZ's licence server does not know this kind of request yet.	Try again later, or contact REDZ.
After Remove in Remove the licence , a note that the licence server did not free the seat, with the reason in brackets	The licence server was not reached or refused to free this PC's seat. The licence is removed from this PC all the same.	Give the removal code shown with the note to REDZ (see License).
A message that the licence server said on a date that this licence was withdrawn or moved to another PC, or that it does not know it on this PC	At a check-in, REDZ's licence server answered so. When the licence server says that the licence was withdrawn or moved, or that it does not know it on this PC, the program goes on reading meters for seven days and then stops (the state Withdrawn); a copy of a virtual PC stops at once. The seven days count from the day the licence server gives; the message and the strip at the top of the pages say until when meters are read. After them automatic exports do not run either.	Contact REDZ. Your data stays on this PC.
A message that the licence server said this PC checked in with an old counter: "a copy of this PC, a second installation on it, or one put back from a backup"	The licence server saw a check-in from this PC with an older counter than the last one, so it takes this installation as a copy. Meters are read for 7 more days from that day; the message and the strip at the top of the pages say until when. Then the state is Withdrawn . Activating the licence again does not change this answer; only REDZ can.	Contact REDZ. Your data stays on this PC.

What you see	Why	What to do
A message that this PC had not reached the licence server for more than 60 days and that meters are read until a date	A licence activated online is checked with REDZ's licence server; a PC that is not virtual checks in every 7 days. This PC has not reached the server for more than 60 days, so meters are read for 7 more days, counted from the end of the 60 days; then the state is Withdrawn . A licence file that REDZ made for a PC without internet access is not checked online and does not count these days.	Let the PC reach the licence server, for example by opening its internet access. After a good check-in, meters are read again.
"on a virtual PC the licence is activated online (a licence key or a licence request), not from a file: a file cannot tell a copy of this virtual PC from it"	This PC is a virtual machine (the License page marks it virtual PC). A virtual PC does not take a licence file, also not one put into the data folder; the licence message then starts with "The licence file was not accepted:".	Activate the licence with Activate with a key or Request a licence (see License).
On a virtual PC, a message that the licence server said this virtual PC checked in with an old counter	The licence server takes this as a copy of the virtual PC, or as a virtual PC put back from a snapshot. From its first answer the state is Withdrawn : meters are not read and automatic exports do not run.	Contact REDZ to use the licence on this virtual PC again. Your data stays on this PC.
On a virtual PC, a message that this virtual PC had not reached the licence server for more than 7 days and that meters are read until a date	A virtual PC checks in with REDZ's licence server every day, and it has not reached the server for more than 7 days. Meters are read for 7 more days; the message and the strip at the top of the pages say until when. After them the state is Withdrawn , meters are not read and automatic exports do not run.	Let the PC reach REDZ's licence server, for example by opening its internet access. After a good check-in, meters are read again.

NOTE

While meters are not read - there is no licence, the trial or the licence has ended, the licence was withdrawn, is for another PC or does not cover this version, or the clock is behind - automatic exports do not run either. **Analysis**, formulas, custom reports and **Run now** on **Exports** stay open when the licence includes them; import, manual edits and schedules are closed until a licence reads meters again. Your data stays on this PC.

The reasons why a licence file is refused are listed in [License](#).

Import

What you see	Why	What to do
"the file is empty"	The chosen file has no content.	Choose the right file.
"the file is not an Excel (.xls, .xlsx) or CSV file"	The contents of the file are not Excel or CSV, whatever its name.	Save the list from Excel as .xlsx or .csv and choose that file.
"the file is larger than 2 MB"	The file is over the limit.	Split the list into smaller files.
"the CSV file ends inside a quoted field"	A quotation mark in the CSV file is not closed.	Correct the file in Excel and save it again.
Import stays unavailable after you choose the file, and a banner says that rows have an error and nothing is saved, or "nothing to save: every row is already there"	At least one row is marked error, or no row is new or changed.	Correct the rows marked error in the file and choose it again (see Import).
"Line is empty: give the name of a line (Communication lines page)", or a message that no line has that name or uses that port or address	A meter row must name a line that exists; the import never adds a line.	Add the line on Communication lines first, or correct the row (see Communication lines).
"Serial no. is empty" or "Type is empty"	A required cell of the row is empty.	Fill in the cell.
A message that the path is not a file on this PC	The path is not a full path of an existing file.	Type the full path of zrs.s3db.
"the file is not a SQLite database", or a message that the path is not a SQLite database	The file is not a database.	Choose the database file of ZR Software 7, zrs.s3db.
A message that starts with "this is not a ZR Software 7 database"	The file is a database, but not one of ZR Software 7.	Choose the database file of ZR Software 7.

A Appendix: supported meters

The table lists the meter types that have been read on real meters with the program's meter drivers, with the protocol the program uses for each and what was read: the registers (the meter's values) and the load profile.

Meter type	Protocol	Registers	Load profile
EMH	IEC	Yes	Yes
Landis & Gyr (IEC)	IEC	Yes	Yes
Iskra (IEC)	IEC	Yes	No
Itron (Actaris)	DLMS	Yes	Yes
Iskra (DLMS)	DLMS	Yes	Yes
Cewe (Secure Meters)	DLMS	Yes	Yes
Landis & Gyr (DLMS)	DLMS	Yes	Yes

For the load profile of an Iskra meter that also speaks DLMS (such as the MT880), choose the type Iskra (DLMS); it needs the meter's password.

The meter form offers more meter types than the table shows. This manual describes the types in the table and the virtual meter, whose values are typed in or imported (see [Meters and groups](#)).

B Appendix: version history

This appendix lists, for each published version of ZRSOFTWARE.CLOUD, what changed for the people who use it. The version of the program is shown at the top left of the window, under the program's name (not in a very narrow window), on the sign-in page and in the **Diagnostics** card of the **Support** page (see [Support](#)).

Version 1.0.0

The first version of ZRSOFTWARE.CLOUD. It includes:

- reading the meters of Appendix A over optical probes, serial and RS-485 lines and TCP gateways (see [Appendix: supported meters](#) and [Communication lines](#));
- meters and groups, and reading billing values and the load profile on the **Read** page (see [Meters and groups](#) and [Reading meters](#));
- the load profile analysis, tariffs, formulas and custom reports (see [Analysis](#), [Tariffs](#) and [Formulas & reports](#));
- schedules that read meters by themselves, and exports to a folder, by e-mail or to an FTP, FTPS or SFTP server (see [Schedules](#) and [Exports](#));
- the list of reading jobs and the event log (see [Jobs & events](#));
- the import of meters, schedules and exports from Excel or CSV files, and of a whole ZR Software 7 database (see [Import](#));
- users with roles, and the settings of the program (see [Users](#) and [Settings](#));
- updates of the program from REDZ on the **Settings** page (see [Settings](#));
- a 30-day trial and a licence by request, by key or as a file (see [License](#));
- REDZ support for a chosen time, with a green window on every page while it is connected and a chat with REDZ for administrators, and the support bundle (see [Support](#)).