

Revise Quick Start Guide

The quick start guide is provided to help you get the Revise energy monitoring system up and running as quickly as possible.

Installing components

To install components you will need the following system:

- x64 Linux operating system (Ubuntu 14.04 LTS server or Ubuntu 12.04 LTS server should work)
- Minimum of 6 GB RAM
- Minimum of 30 GB hard drive space
- TCP/IP protocol support

Before installing Revise install MySQL 5.x server, MongoDB and Tomcat 6. On Debian/Ubuntu:

```
sudo apt-get install mysql-server mongodb tomcat6
```

Set MySQL root password to 'admin'.

You can download Revise installation file from ftp site <ftp://95.129.195.26>

For downloading and running installation script on Debian/Ubuntu:

```
wget ftp://95.129.195.26/reviseinstall06.tgz
```

```
tar xzf reviseinstall06.tgz
```

```
cd reviseinstall06
```

```
sudo bash reviseinstall.sh
```

The installation script prompts for installing Oracle Java Runtime Environment 6 and Mango M2M.

Skip this if you have these components already installed on your system.

After installation reboot the system, and it should work.

host:8080/mango/ for Mango M2M (default user: admin, password: admin)


host:8080/revise/ for Revise

Setting up Mango M2M


When you log in to Mango M2M you will see the icon bar:



Step 1 : Data Sources

Click on the „**Data Sources**” icon, which is  in the icon bar. After that you will see the „**Data Sources**” table that is empty:



For adding **Modbus Serial Data Source** open the dropdown column and choose the “**Modbus Serial**” option and click on the „**Add**” icon  in the right corner of this table and the **Modbus serial properties** section opens.

You need to enter the **properties** in order to **set up** your **Data Source**:

Name – The name which describes your data source

Update period – determines how often the Modbus equipment is polled for data. For Revise set it to **5 minutes**.


Quantize – will cause the **Data Source** start-up to be delayed so that polling occur at a "rounded" point in time.

Timeout (ms) and Retries – fields will determine the system behaviour in the case of a polling failure.

Port - the physical port for communication with connected devices.

Baud rate, Flow control, Data bits, Stop bits, Parity and Encoding – serial communication settings for connection must comply with the settings in connected devices.

Concurrency – determines how Modbus requests are synchronized. For reliable communication use **Transport** option.

After you have changed all these fields and your **Data Source** is set up correctly you have to **save** it, which is the  icon.

Here's the example of **Modbus Serial Data Source**, which has already been setup:

Modbus serial properties

Name: demo
Export ID (XID): DS_186722
Update period: 5 minute(s)
Quantize:
Timeout (ms): 1000
Retries: 2
Contiguous batches only:
Create slave monitor points:
Max read bit count: 2000
Max read register count: 125
Max write register count: 120
Port: /dev/ttyUSB0
Baud rate: 9600
Flow control in: None
Flow control out: None
Data bits: 8
Stop bits: 1
Parity: Even
Encoding: RTU
Echo: Off
Concurrency: Transport

Event alarm levels

Data source exception: Urgent
Point read exception: Urgent
Point write exception: Urgent

Modbus node scan

Scan for nodes | Cancel
Nodes found: [List]

Modbus read data

Slave id: 1
Register range: Coil status
Offset (0-based): 0
Number of registers: 100
Read data

Point locator test

Slave id: 1
Register range: Coil status
Modbus data type: Binary
Offset (0-based): 0
Bit: 0
Number of registers: 0
Character encoding: ASCII
Read | Add point

Step 2: Adding points to your data source

When you are done with creating your **Data Source**, you can start **adding Metering Points** to your created **Data Source**.

To do so you have to **edit** your newly created **Data Source** by choosing the **edit** icon:

Name	Type	Connection	Status
demo	Modbus Serial	/dev/ttyUSB0	

Page 1 of 1 (1 - 1 of 1 rows)

Now if you want to add new points to your **Data Source** you can use the „**Point locator test**” section, which is on the right.

You have to change following parameters in order to make a working **Metering Point**:

Slave id – is the id with which the Modbus node was configured, it is a number between 1 and 256.

Register range – determines in which of the four ranges the metering value is to be found. Consult the documentation for your Modbus equipment to determine what should be used.

Modbus data type – field reflects the ways in which data can be encoded. Consult the documentation for your Modbus equipment to determine the proper setting.

Offset (0-based) – For choosing the right offset (register address) for your metering point, you also have to consult the documentation for your Modbus equipment.

Here is an example of how this might look like after you are done editing those fields:

Point locator test

Slave id

Register range

Modbus data type

Offset (0-based)

Bit

Number of registers

Character encoding

Result: 0.1

For testing click on the „**Read**” button and if you have put in correct information, you will get reading from the register as the result. All you have to do now is to click on „**Add point**” and down below pops up a new „**Point details**” section, where you can set the name and additional settings to your **Metering Point** and **save it**.

Here is an example:

Points					
Name	Data type	Status	Slave	Range	Offset (0-based)
Boiler	Numeric		22	Holding register	12288

Point details

Point details saved

Name

Export ID (XID)

Slave id

Register range

Modbus data type

Offset (0-based)

Bit


Number of registers




Character encoding

Settable

Multiplier

Additive

After your **Point details** have been set up correctly just click on the **save** icon . The added **Metering Point** it will appear in your „**Points**” list.

Next click again **Data sources**  icon and then „**Show points**” option  in the **Data Sources table**. This will open list of the **Points**. Click on the „**Point properties**”  icon.

Here is the list of properties you should change by your needs:

Point properties – you should choose your **Engineering units**, it has a dropdown column, where you can choose the right measuring unit for your point.

Logging properties – select **All data** option, that means all data will be logged into database.

You can also set up **Purge option**, which determines how long a point's historical values should be kept in the database.

Point properties

Data source: demo

Point name: Boiler

Device name: demo

Engineering units: kilowatt hours

Chart colour:

Logging properties

Logging type: All data

Tolerance: 0

Discard extreme values:

Discard low limit: -1797693

Discard high limit: 1797693

Purge: After 2 year(s)

Default cache size: 1 [Reset cache](#)

Purge now

Purge data older than: 2 year(s)

Purge all data: All data

[Purge now](#)

Text renderer properties

Type: Plain

Suffix:

Chart renderer properties

Type: None


Note: data point logging must be active for charting to occur.

[Save](#) [Disable](#) [Restart](#) [Cancel](#)

If you are done with these options you can click on the **save** button to save your progress.

Step 3: Setting up Point Hierarchy

Next you should move on to the **Point Hierarchy**.

Choose **Point Hierarchy**  icon from the MangoM2M icons bar on the top.

For **Metering Points** to appear in **Revise** you should set up **Point Hierarchy** in Mango M2M.

For the demo on our website the **Point hierarchy** looks like this:

The first folder from the root corresponds to the **Resource name in Revise**. **Metering Points** under **same Resource** should have **similar Engineering units** (kWh, Cubic Meters, etc.) You can group **Metering Points** by adding **subfolders**. Revise will aggregate lower level folders or **Metering Points** in the upper folders of hierarchy. The root folder named **'hide'** and **'discrete'** is not shown in Revise.



Instead of **Resource Metering Points** that are counters you can also use **Discrete Metering Points** in the system (e.g. temperature, energy market price, etc.). Place **Discrete Metering Points** into hierarchy folder named **'discrete'**.



Discrete Metering Points will show up in **Revise** under icon . You can show **Discrete Metering Points** in any charts of **Revise** resource folders as a line.

After making changes in the **Point hierarchy** don't forget to **save** the changes.

Now when everything has been set up we need to **enable Data Source and Metering Points**.

Click **Data Sources**  icon and then „**Show points**” option , in the **data sources table**. This will open list of the **Points**.

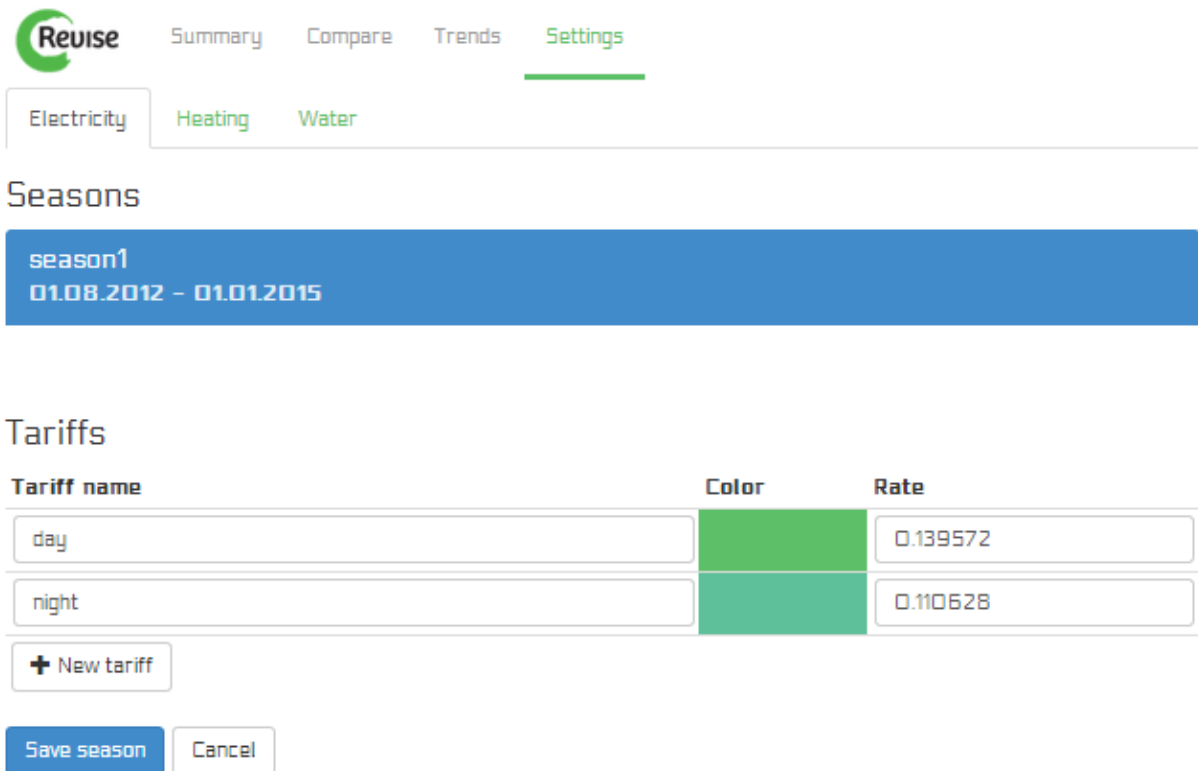
Next you need to change your data source **status** from **disabled**  to **enabled**, just click on the **disabled** icon. You will see that your data source turns to enabled  .

Next is to **enable Metering Points**. To do so simply click on **status off** icon  of the **Metering Point** and it will turn green, which means, that your point is now **enabled**  and ready to measure.

Setting up Revise

If you have everything up and running in **Mango M2M**, you can move on to open and set up **Revise**.

Before metered data will appear in **Revise** charts you need to set up **Tariffs for the Resources**. **Tariffs** are needed for cost calculations. First thing, you need to do, is to click on the **Settings** tab. In there you have to set up the **Seasons and the Tariffs**, for each **Resource**. For **Season**, you have to click on the “**add new season**” button and fill in the period for the tariffs to be valid. In the **Tariffs** section you can set the tariffs that correspond to different times of a day. For example, if you have created an Electricity Resource you can set up 2 different **Tariffs**, one could be daily rate and other for nightly rate. Here is an example of how it could look:



The screenshot shows the Revise interface with the 'Settings' tab selected. Under 'Electricity', 'Heating' and 'Water' are also visible. The 'Seasons' section shows a blue bar for 'season1' with the period '01.08.2012 - 01.01.2015'. Below this, the 'Tariffs' section is displayed as a table with three columns: 'Tariff name', 'Color', and 'Rate'. Two tariffs are listed: 'day' with a rate of 0.139572 and 'night' with a rate of 0.110628. A '+ New tariff' button is located below the table. At the bottom, there are 'Save season' and 'Cancel' buttons.

Tariff name	Color	Rate
day		0.139572
night		0.110628

As you can see, all the **Tariffs** you create, have their own **color**. That comes in handy while filling in the **weekly timetable**, on the right.

In there you can simply click on specific day and time, to mark selected **Tariffs**.

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
0:00	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628
1:00	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628
2:00	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628
3:00	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628
4:00	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628
5:00	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628
6:00	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628	0.110628
7:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
8:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
9:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
10:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
11:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
12:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
13:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
14:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
15:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
16:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
17:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
18:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
19:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
20:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
21:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
22:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628
23:00	0.110628	0.139572	0.139572	0.139572	0.139572	0.139572	0.110628

If you want to choose the whole row or column you can just click on the specific time or day on the edge of the table. After you have filled in **Seasons** and **Tariffs**, and **Weekly timetable** you can click on the **Save season** button.

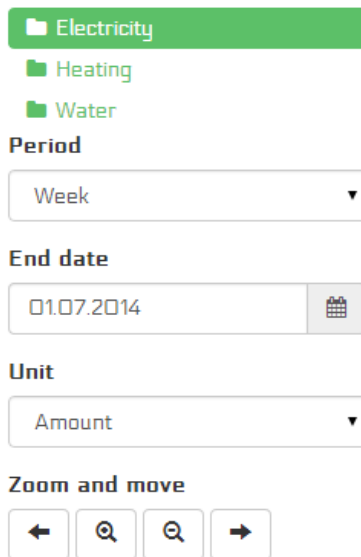
Finally after you have set up **Seasons** and **Tariffs** for all **Resources** just click on the **Recalculate** option in the top right corner of the page. It might take 15 minutes before **data appears** in the **Revise** after **recalculation**. From now on data will be **automatically synchronised** from **Mango M2M** to **Revise**.

Using Revise


Once you have set up your **settings**, you start to get new updated information in **Revise**.

On the left of the **Revise** page is the **Resource Tree** for selecting the data to be shown on the charts. As an example in the demo on our webpage we have set up 3 **Resources**: Electricity, Heating and Water. Each of the **Resources** has its tab in the **settings** page as well to set up related **Tariffs**.


Resources

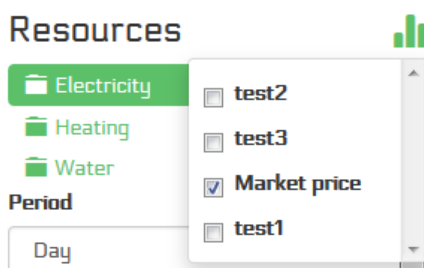


The screenshot shows the 'Resources' settings panel. It features a 'Resource Tree' on the left with three items: 'Electricity' (highlighted with a green bar), 'Heating', and 'Water'. Below the tree are several controls: a 'Period' dropdown menu set to 'Week', an 'End date' field with the value '01.07.2014' and a calendar icon, a 'Unit' dropdown menu set to 'Amount', and a 'Zoom and move' section with four buttons: a left arrow, a magnifying glass with a left arrow, a magnifying glass with a right arrow, and a right arrow.

In the **Resource Tree** you can just click on any of the **Resources** you want and you will see a **graphical chart** about this **Resource** on the right. You can also get more detailed data, when you click on the **folder icon**  on the left of the **Resource name**, this will open the **subfolders** for the **Resource**. You can choose **Period** and the **End Date** for the data to be shown on the chart. By selecting **Unit** as **Amount** or **Cost** you can view data in measured units or in financial terms. **Zoom and move buttons** moves the chart forth and back in time and let you zoom into the time periods.

The data on the chart can be easily **exported into Excel** by clicking on the icon .

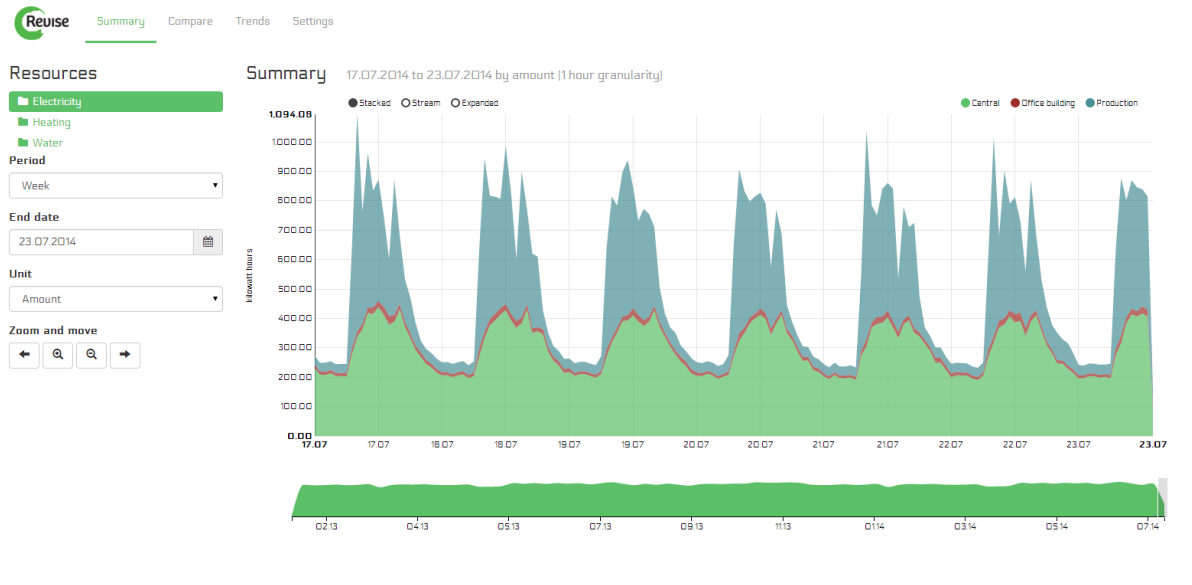
Discrete Metering Points will show up in **Revise** under icon . You can show **Discrete Metering Points** by selecting them for any chart of the resource folder.



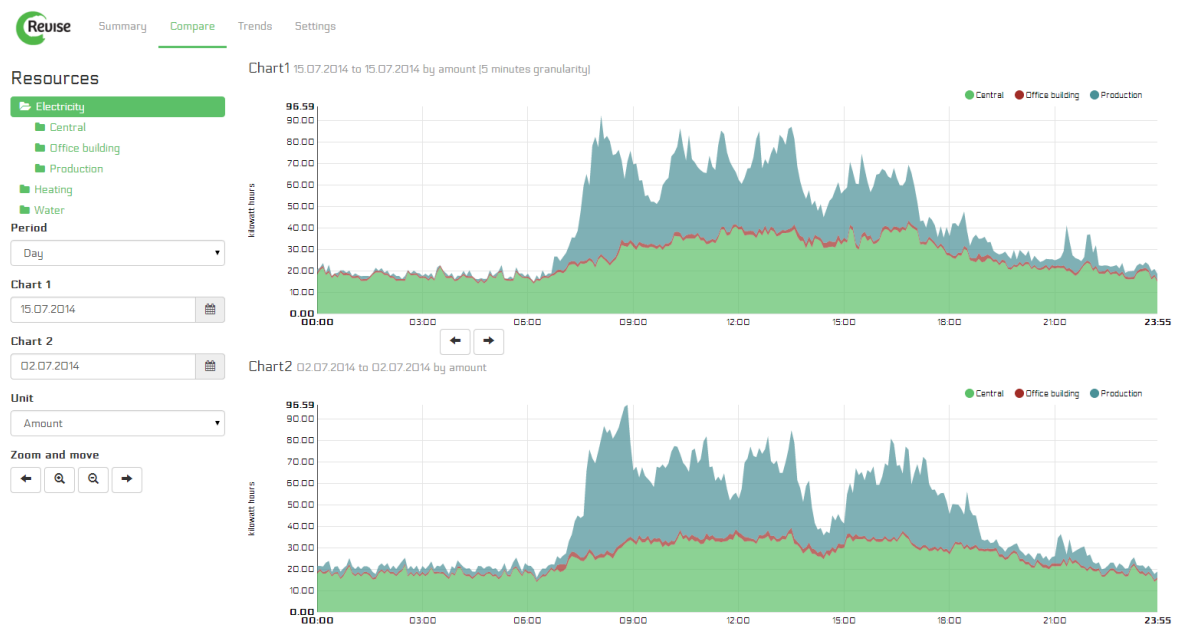
This screenshot shows the 'Resources' settings panel with the 'Discrete Metering Points' menu open. The 'Resource Tree' on the left is the same as in the previous screenshot. The 'Period' dropdown is now set to 'Day'. The 'Discrete Metering Points' menu is a list with four items: 'test2', 'test3', 'Market price', and 'test1'. The 'Market price' item is checked with a blue checkmark.

There are 4 main pages in Revise: **Summary, Compare, Trends and Settings.**

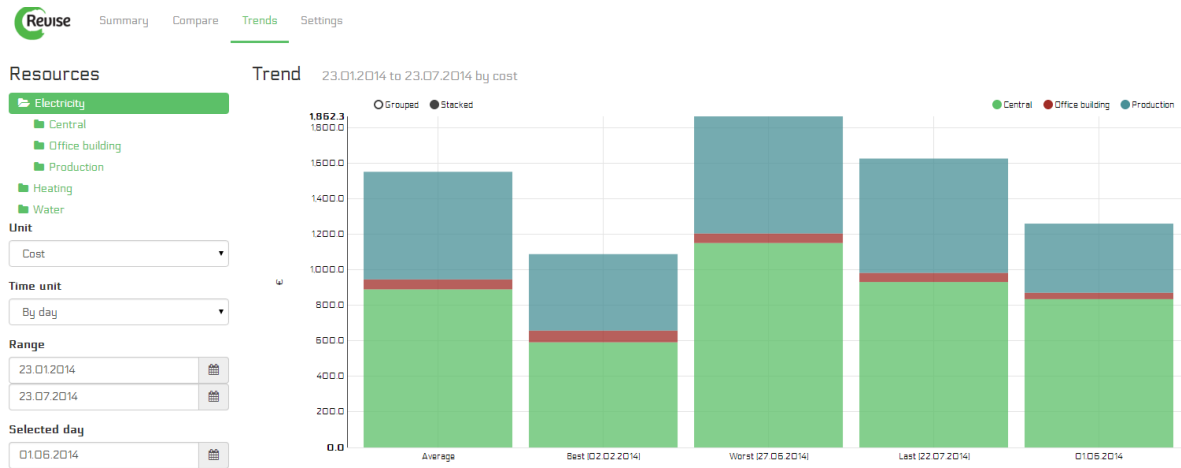
Summary page shows only one resource at a time.



On the Compare page, you can compare the use of the one **Resource** in the two different periods of time. All you have to do is, to choose the **Resource** you want to compare, set the **Period of time** you want to see, set the **End dates** of the charts you are comparing and the **units**, whether you want to compare the **Amount** or **Cost** of the **Resource** for specific period. After you have filled in these fields you will get 2 charts on the right. By mousing over the charts individual **Move buttons** appear for each chart.



The **Trend** page lets you analyse the **average, best and worst uses of Resources** for selected **Time unit** within selected **Time range**, in addition **Last period** and your own freely **Selected period** are shown.



For support please visit our webpage www.enetic.ee.