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# **CrossMet 4.2 Web Interface**



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# CrossMet 4.2 Web Interface

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## Introduction

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The web interface of CrossMet is used to configure and monitor the device and runs directly on the device. The web interface at version 4.2 is served at default HTTPS port 443 on the HOSTNAME server.

```
https://HOSTNAME/
```

To access the website you need to enter login details. No functions are available without authentication. By default, the factory setting includes a single user with the user name “admin” and the password “admin”.

Three roles are supported:

- User - can access all pages in read-only mode
- Operator - can access all pages in read-write mode, except user administration
- Admin - full rights including user administration

The web interface is completely built on top of the CrossMet API. Web interface of CrossMet 4.2 is tied with the [CrossMet API v3](#). This also means that all functions that are accessible from the web interface can also be called remotely directly using the CrossMet API.



## Web modules

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The current web version provides these modules:

- Dashboard
- Settings
- Tools
- Logbook
- Users

### Dashboard

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The Dashboard is a homepage of the web interface and it shows the basic information about the device and the currently measured data if any. The page is automatically refreshed to show the updated data.

### Settings

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The Settings page is further divided into three sections:

- Station
- Sensor
- System

#### Station settings

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The station settings section is further divided into three blocks:

- Station settings
- Date & time settings
- Network settings

In the station setting, you can set the device name, coordinates, time zone and other metadata. Especially the time zone is important since all timestamps are presented in the selected time zone.

Date and time can be set manually. Then the internal timer takes care of the time flow. However, downtimes can cause the time being shifted and thus not correct. It is always better to provide an NTP server that is used for automatic synchronization of the current date and time. The correct time on the device is important for data reporting as well as log storage.

Network setting is used to set the connectivity of the device (IP address etc.).



## Sensor settings

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The sensor settings section is used to configure the sensors which are (or should be) connected to the device. The operator can add, modify and delete the sensors.

The list of sensors shows the overview of the current device configuration. Note that the operator can drag and drop the rows to set the order of sensors on the dashboard. The Connected flag is shown to present the current status of the appropriate sensor. Four values are supported:

- Connected
- Connecting
- Disconnecting
- Disconnected

When adding a new sensor, the device provides a select box with the list of possible sensors which are integrated into the current version of the firmware. When configuring the sensor, the connection protocol is the most important since it defines where the sensor is plugged from the hardware point of view.

The State parameter defines whether the selected sensor is Enabled or Disabled. The operator can disable the sensor for example in case of disconnecting the sensor for calibration or repair. Disabled sensors are internally ignored, not shown on the dashboard and their data is not communicated out of the station.

The parameters recorded for the sensors (e.g. sampling rate, averaging period) are not used for the direct configuration of individual sensors. The configuration usually takes place in the workshop when assembling the station, or remotely using the service software of the sensor manufacturer. Here it is used only for registration and communication out of the station. The operator is responsible for matching the values set inside the sensors and in this configuration.

Each sensor provides a different set of measured values shown in the sensor detail. The operator can invalidate a selected measured quantity in case of erroneous data coming from the sensor. The data are still communicated out of the station, but the Status flag of the value is switched to Invalid.

It is also possible to set the “Display on dashboard” flag for each measured quantity which results in displaying or hiding the value from the dashboard.

## System settings

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Currently, the only setting in this section is related to setting the log store duration. It means how long system logs are stored in the device storage. After this time, older logs are automatically deleted.

## Tools

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The Tools section is available only for users with Operator or Admin roles.



The section provides three blocks:

- Configuration
- Reboot
- Firmware

The configuration of the device can be exported as well as imported. Currently, the only configuration which can be affected by this export/import function is the configuration of sensors.

The Reboot section offers two action buttons: Reboot and Shutdown. Reboot is a lightweight software restart of the whole device. This function is used after changing critical settings. The shutdown command will surprisingly cause the device to shut down. This function can be used, for example, when disassembling the device.

If a newer firmware version is available, it can be uploaded to the device to upgrade it. After the upload of the new firmware version, a reboot is required. After the first reboot, the system performs the upgrade and forces the second reboot. After the second reboot, when the web interface is available again, the device is ready for further use.

## Logbook

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The Logbook section provides access to all logs stored in the system. Note that the logs are available in the list with a 1-minute delay and are deleted from the system after a certain time (see System settings).

Several filters are available to inspect the logs in detail:

- From, To timestamps
- Log level
- Process, Context - their combination describes the specific monitor

The selected set of logs can be exported to a CSV file using the Export button.

## Users

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The Users section allows users with the Admin role to manage user accounts registered in the device.

As described earlier in the Introduction, three user roles are available: User, Operator, and Admin. The factory setting comes with “admin - admin” user account. Only the admins can add and delete users as well as change the roles and passwords of all registered users.

The system checks that there is always at least one user with admin rights. In other words, it is not possible to delete the last admin account.

# Screens

The screenshot displays the CrossMet dashboard for a device at station I/35 Horní Bečva. The interface is divided into several sections:

- Device Information:**
  - DEVICE TYPE:** CrossMet
  - DEVICE NAME:** I/35 Horní Bečva
  - LOAD AVERAGE:** 2.03, 2.00, 1.79
  - DEVICE TIMESTAMP:** 9/30/21 8:47:12 AM
  - UPTIME:** 0 d 14:18:44
  - NTP SERVER:** Synchronized
  - MEMORY:** 103.1 MB available of 243 MB
- Sensors:**
  - BIRAL SWS-200 #93 (8:46:55 AM):**
    - WMO: 4
    - VISIBILITY: 4,250 m
    - VISIBILITY (AVG): 4,240 m
    - PRECIPITATION AMOUNT (AVG): 0.000 mm
  - LUFFT WS100 #1 (8:47:11 AM):**
    - PRECIPITATION TYPE: Unspecified
    - PRECIPITATION INTENSITY: 0.024 mm/h
  - LUFFT WS600 #6 (8:47:13 AM):**
    - DEW POINT: -3.403 °C
    - AIR TEMPERATURE: -21.504 °C
    - ABSOLUTE AIR PRESSURE: 893.819 hPa
    - RELATIVE HUMIDITY: 49.382 %
    - PRECIPITATION TYPE: Unspecified
    - RELATIVE AIR PRESSURE: 893.819 hPa
    - WIND SPEED (AVG): 1.938 m/s
    - PRECIPITATION INTENSITY: 0.113 mm/h
    - WIND DIRECTION (MAX): 89.074 °
    - WIND SPEED (MAX): 0.876 m/s

A sidebar on the left contains navigation options: Dashboard, Settings (Station, Sensor, System), Tools, Logbook, and Users (EN, CS). A 'Reboot required' warning is visible at the bottom of the sidebar. The browser address bar shows 'https://192.168.63.20/dashboard'.

Dashboard

The screenshot shows a web browser window with the URL <https://192.168.63.20/settings/station>. The page title is "Station settings". On the left, there is a sidebar menu with options: Dashboard, Settings (expanded), Station (selected), Sensor, System, Tools, Logbook, and Users. Under Users, there are language options for EN and CS, and the text "Firmware 4.2.0". A red notification icon with the text "Reboot required" is visible at the bottom of the sidebar. The main content area contains a form titled "Station settings" with the following fields:

- DEVICE NAME (Optional): I/35 Horní Bečva
- EXTERNAL ID (Optional): Z002
- ROAD NAME (Optional): I/35
- DIRECTION (Optional): Slovakia
- STATIONING (Optional): 326.9
- FORMAT OF COORDINATES: Decimal degrees
- LATITUDE: 49,417917 (North)
- LONGITUDE: 18,343686 (East)
- ALTITUDE [M] (Optional): 636
- TIME ZONE: Europe/Prague

At the bottom of the form is a blue "Save" button. Below the form are two expandable sections: "Date & time settings" and "Network settings".

## Station settings

**Station settings**

**Date & time settings**

SET BY NTP

DATE TIME  
9/30/2021, 08:48:00

Europe/Prague

ACTIVE NTP SERVICE

NTP SERVERS  
192.168.1.1

NTP STATUS

Status	Remote	Refid	Stratum	When	Delay	Offset	Jitter
Declared	192.168.1.1	195.113.144.201	2	285	0.502	0.066	3.210

Save

Station settings - Date & time

The screenshot shows a web browser window with the address bar displaying "https://192.168.63.20/settings/station". The page title is "Station settings". On the left, there is a navigation menu with the following items: Dashboard, Settings (expanded), Station (selected), Sensor, System, Tools, Logbook, Users, EN | CS, Firmware 4.2.0, and a red warning icon with the text "Reboot required". The main content area is titled "Station settings" and contains several expandable sections: "Station settings" (collapsed), "Date & time settings" (collapsed), and "Network settings" (expanded). The "Network settings" section includes the following fields: "ADDRESS" (192.168.63.20), "GATEWAY" (192.168.63.1), "NETMASK" (255.255.255.0), "DNS SERVERS" (192.168.63.1), "DOMAIN (Optional)", and "SEARCH (Optional)". A "Save" button is located at the bottom of the network settings section.

## Station settings - Network

**Sensor settings**

Buttons: Add new sensor, Expand, Collapse

✚ Biral SWS-200 #93	Connected	Enabled	✕
✚ Lufft WS100 #1	Connected	Enabled	✕
✚ Lufft WS600 #6	Connected	Enabled	✕
✚ Lufft WS200 #2	Connected	Enabled	✕
✚ Lufft IRS31 #5	---	Disabled	✕
✚ Lufft WS400 #4	Connected	Enabled	✕
✚ Lufft IRS31 + 1x ext. temp. #11	Connected	Enabled	✕
✚ Lufft IRS31 + 2x ext. temp. #21	Connected	Enabled	✕

EN | CS  
Firmware 4.2.0  
Reboot required

## Sensor settings

Add new sensor   Expand   Collapse

**Biral SWS-200 #93**   Connected   Enabled

ID: 93  
 NAME: Biral SWS-200  
 STATE: Enabled  
 CONNECTION PROTOCOL: Tcp  
 IP: 127.0.0.1   PORT: 19103  
 MEASUREMENT PERIOD [S] (Optional): 60  
 DESCRIPTION (Optional):  
 NOTE (Optional): Test  
 PLACEMENT (Optional):  
 RELATIVE MOUNT HEIGHT [M] (Optional):  
 FORMAT OF COORDINATES: No format  
 COORDINATES:

MEASURED QUANTITY						
Name	Id	Type	Decimals	Unit	Invalidate	Display on dashboard
WMO	Wmo	Number	-	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Visibility	Visibility	Number	-	m	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Visibility (avg)	VisibilityAvg	Number	-	m	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Precipitation amount (avg)	PrecipitationAmountAvg	Number	3	mm	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Sensor settings - Detail

1/35 Horní Bečva - CrossMet

Nezabezpečeno | https://192.168.63.20/settings/system

**cross**

System settings

Log settings

LOG STORE DURATION [D]

90

Save

Dashboard

Settings ▾

Station

Sensor

System

Tools

Logbook

Users

EN | CS

Firmware 4.2.0

Reboot required

## System settings

The screenshot shows a web browser window with the URL <https://192.168.63.20/tools>. The page title is "Tools". On the left, there is a sidebar with the "cross" logo and a menu containing: Dashboard, Settings (with a dropdown arrow), Station, Sensor, System, Tools, Logbook, and Users. Under "Users", there are language options "EN" and "CS", and the text "Firmware 4.2.0". A red warning icon and the text "Reboot required" are displayed below the language options. The main content area has a heading "Tools" and three expandable panels: "Configuration" (with "Choose file", "Import", and "Export" buttons), "Reboot" (with "Reboot" and "Shutdown" buttons), and "Firmware" (with "Choose file" and "Import" buttons).

## Tools

Browser: I/35 Horní Bečva - CrossMet | <https://192.168.63.20/logbook>

**cross**

**Logbook**

From: 9/29/2021, 08:52:05 To: 9/30/2021, 08:52:05 Choose level

Process // api/v3 Apply Export

Date	Process//Context	Level	Username	Message
9/30/2021 8:46:45 AM	metlog/http/api/v3/log/config/PUT	Verbose	admin	access
9/30/2021 8:46:34 AM	metlog/http/api/v3/system/info/PUT	Verbose	admin	access
9/30/2021 8:46:34 AM	metlog/http/api/v3/system/timezone/current/PUT	Verbose	admin	access
9/30/2021 8:37:16 AM	metlog/http/api/v3/config/order/device/PUT	Verbose	admin	access
9/30/2021 8:36:32 AM	metlog/http/api/v3/config/order/device/PUT	Verbose	admin	access
9/30/2021 8:36:15 AM	metlog/http/api/v3/config/order/device/PUT	Verbose	admin	access
9/30/2021 8:35:29 AM	metlog/http/api/v3/config/order/device/PUT	Verbose	admin	access
9/30/2021 8:33:15 AM	metlog/http/api/v3/log/config/PUT	Verbose	admin	access
9/30/2021 8:28:19 AM	metlog/http/api/v3/auth/user/u/DELETE	Verbose	admin	access
9/30/2021 8:28:15 AM	metlog/http/api/v3/auth/user/o/DELETE	Verbose	admin	access
9/30/2021 8:28:06 AM	metlog/http/api/v3/auth/user/a/DELETE	Verbose	admin	access
9/30/2021 8:18:20 AM	metlog/http/api/v3/system/info/PUT	Verbose	admin	access
9/30/2021 8:18:20 AM	metlog/http/api/v3/system/timezone/current/PUT	Verbose	admin	access
9/29/2021 6:50:06 PM	metlog/http/api/v3/status/sensor-value-group/Meteo/GET	Info	a	Loading data device -> sensor into cache.
9/29/2021 6:28:16 PM	metlog/http/api/v3/system/power/PUT	Verbose	a	access
9/29/2021 6:28:16 PM	metlog/http/api/v3/system/power/PUT	Verbose	a	access
9/29/2021 6:28:20 PM	metlog/http/api/v3/status/sensor-value-group/Meteo/GET	Info	a	Loading data device -> sensor into cache.

Dashboard  
Settings  
Station  
Sensor  
System  
Tools  
Logbook  
Users  
EN | CS  
Firmware 4.2.0  
Reboot required

## Logbook



Browser window showing the 'Users' page of a CrossMet device. The address bar shows 'https://192.168.63.20/users'. The page title is 'Users'. A sidebar on the left contains navigation options: Dashboard, Settings (with a dropdown arrow), Station, Sensor, System, Tools, Logbook, and Users. Below the sidebar, there are language options 'EN' and 'CS', the text 'Firmware 4.2.0', and a red warning icon with the text 'Reboot required'. The main content area features a blue button 'Add new user' and a table with the following data:

Username	Role	Action
admin	Admin	<a href="#">Edit</a>   <a href="#">Delete</a>
operator	Operator	<a href="#">Edit</a>   <a href="#">Delete</a>
user	User	<a href="#">Edit</a>   <a href="#">Delete</a>

## Users