



Eocortex Union
(beta)

www.eocortex.com

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Eocortex Union

Eocortex Union is a platform that provides convenient access from the same point to several **Eocortex** video surveillance systems at the same time. In **Eocortex Union** includes client applications, configuration and system health monitoring tools.

Eocortex Union infrastructure is shown below.

Administrator personal area is a web application that permits to configure **Eocortex Union** and monitor system status.

User area is a web application that provides access to client applications.

Eocortex system: Eocortex server or several interconnected **Eocortex** servers with IP cameras connected to them.

Only systems based on the version 3.5 or higher of **Eocortex** can be connected to **Eocortex Union**.

Connection server is a server through which the system connects to **Eocortex Union**. In a single-server system, the connection server is the only server in that system. In multiserver systems, any of the servers can act as a connection server.

The **Connection server** must be in the same network as **Eocortex Union**.

Access control

Eocortex Union implements multilevel access with local users of **Eocortex** systems and the users of **Eocortex Union**.

The **Eocortex Union** administrator adds new **Eocortex** systems. The rights of such users are limited to a group pre-configured by the administrator on each of the systems.

An **Eocortex Union** user can install several client applications to view cameras of each system simultaneously.

Advantages

Prior to version 3.5, creating large-scale distributed video surveillance systems based on **Eocortex** was associated with a number of limitations and inconveniences:

- If video surveillance was provided by several **Eocortex** systems, each of them had to be administered separately.
- To ensure access of one employee to several systems, it was necessary to add and configure a new user on each of the systems.
- The user had to connect to each of the systems separately.
- Multiserver systems required a stable connection between servers, which was often difficult to achieve in large-scale and geographically distributed systems.
- If the connection between the servers was unstable, transferring the settings of each of the servers took a long time.
- The user could not recover their password without the participation of the administrator.

Eocortex Union solves the above-mentioned issues, eliminating the need to combine all servers into one large-scale multiserver system.

Licensing

To license **Eocortex Union**, it is required to activate the license bound to the software key or the USB key.

Only local keys installed directly on the **Eocortex Union** server are used for licensing **Eocortex Union**. Network keys are not used for **Eocortex Union**.

The **Eocortex Union** licensing key cannot be used to license the **Eocortex** server and vice versa.

Requirements and recommendations

Eocortex Union (Server):

- Operating system: Ubuntu 18.04, 20.04; Debian 9, 10, 11
- Hard drive space: 1 GB
- Processor: 2 GHz
- RAM: 4 GB
- Internet access: required for installing and activating the license

Administrator personal area/User area:

- Browsers: Chrome, Firefox, Edge, Safari, Opera
- Internet: common network with the **Eocortex Union** server

Web client of Eocortex Union:

- Browsers: Chrome, Firefox, Edge, Safari, Opera
- Internet: common network with the **Eocortex Union** server and the servers of the connected **Eocortex** systems

It is recommended to use the latest browser versions.

Getting started

Installing, updating and removing Eocortex Union Installation

To install **Eocortex Union**, download the archive [eocortex-union.tar.gz](https://www.eocortex.com/eocortex-union.tar.gz) from the website and execute the following commands in the console:

```
tar -xf eocortex-union.tar.gz
cd eocortex-union
chmod +x ./install.sh
sudo ./install.sh
```

During the installation process, it will be required to enter the IP address or fully qualified domain name that will be used to access **Eocortex Union**. (Examples: **123.4.56.78**, **union-server.mycompany.com**)

Go to the specified address can after successful completion of the installation.

Update

To update **Eocortex Union**, it is required to download the archive [eocortex-union.tar.gz](https://www.eocortex.com/eocortex-union.tar.gz) with the current version of **Eocortex Union** and repeat the installation steps. In this case, there will be no need to enter the server address.

Removal

To remove **Eocortex Union**, execute the following command:

```
/opt/eocortex-union/service/uninstall.sh
```

Installing a license

In order to install and activate a software key, the user has to obtain an activation code, which looks like **XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX**, where **X** can be hex digit (i.e., 0123456789abcdef). Here's an example of the activation code: **a46a6d3e-17f6-416c-9da2-10cb4b80574e**.

The license software key can't be transferred to any other computer, because it's linked to the computer during the activation process.

It is prohibited to install more than one **Eocortex** software key on the server!

During the installation of a license, it is necessary to provide Internet access for the server on which **Eocortex Union** is deployed. In the future, after successful installation of the license, Internet access will not be required for the key to work.

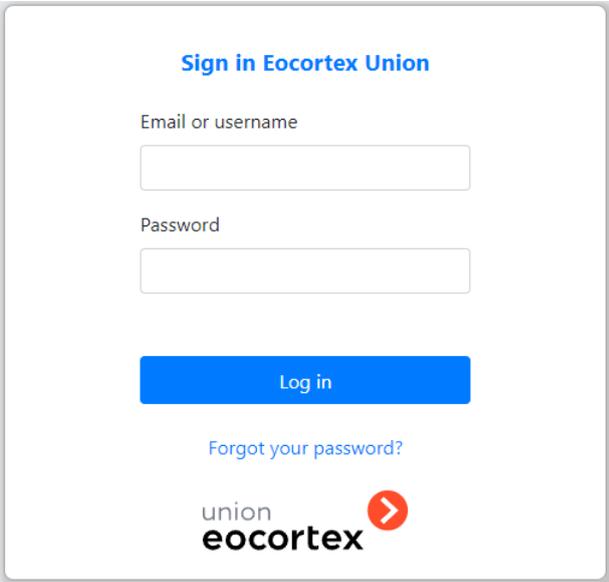
To install the license, follow these steps:

Go to the address **address_union/admin** (e.g., **123.4.56.78/admin** or **union.mycompany.com/admin**).

Enter the administrator credentials in the authorization window.

If this is the first time the installation is being performed and the administrator credentials have not yet been configured, the default values should be used:

- Email or username: root
- Password: (blank)



The image shows a login form titled "Sign in Eocortex Union". It contains two input fields: "Email or username" and "Password". Below the fields is a blue "Log in" button. A link for "Forgot your password?" is located below the button. At the bottom, the "union eocortex" logo is displayed, featuring a red circle with a white right-pointing arrow.

If no license is present on the server, the **License Installation** wizard will open, where it is required to select an installation option: licenses for a software key or for a USB key.

Licence key is not found

Licence key is not found or invalid on server

Select the installation type

Soft-key
Licensing with a software key is done with the key bound to the particular server
To install a license, it will be required to enter an activation code that looks as follows: XXXXXXXX-XXXX-XXXX-XXXXXXXXXXXX

USB-key
Licensing with a USB key is done with the key connected to the particular server

[Back](#) [Next](#)

At the next step, the **Select Key** page with a list of available keys will open. Depending on the installation option, there will be either the software keys previously installed on the server or the USB keys connected to the server. To proceed with the installation, it is required to select a key and click **Next**.

Select key

Select the software key for which the license is to be installed

Key ID	Status
[REDACTED]	Not activated

[Refresh](#) [Enter activation code](#)

[Back](#) [Next](#)

To activate a new key, it is required click the **Enter activation code** button and enter the activation code in the window that opens.

Software key activation code

Enter the activation code and click "Next"

ActivationCode

Attention! After activation of key, it can not be transferred to another computer!

The activation code is provided when the software license is purchased

Back

Next

After selecting a key from the list or after activating a new key, license installation will start. At the end of the installation, a window with the result will open.

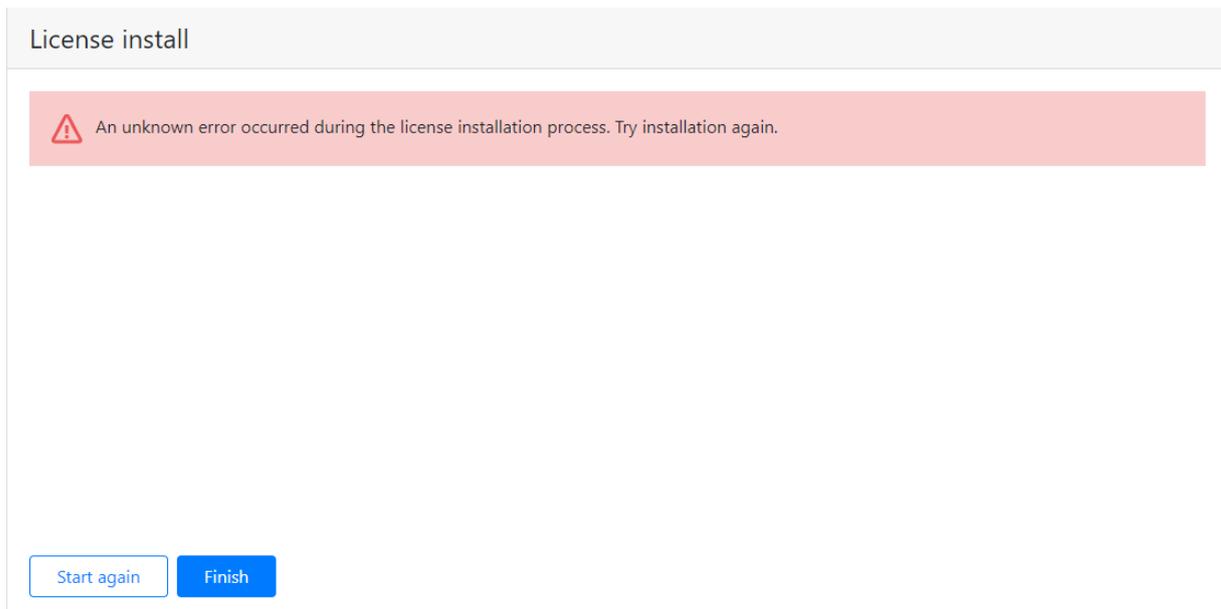
License install

 License installed successfully. Server is being restarted.

Finish

If the activation is successful, after clicking the **Finish** button, the authorization window will open.

In case of an activation error, it is required to eliminate the cause of the error and repeat the license installation.



Possible reasons for installation and activation errors:

- the license is intended for another software product;
- an attempt to enter the activation code for the USB key when activating the software key and vice versa;
- an incorrect activation code has been entered;
- the software key has already been activated on another server.

In case you cannot identify the cause of the error on your own, please contact technical support.

Mandatory settings

When logging into the **Administrator personal area** for the first time, a wizard of initial settings will open. The initial settings must be specified before using **Eocortex Union**.

At the **Administrator personal area settings** step, it is required to specify an email and a password that will be used to enter the **Administrator personal area**.

Settings of administrator's account

Email

If the email has not been set it is impossible to reset the password and receive monitoring notifications

Password

Next

The next step is to configure the SMTP server settings that will be used to send email notifications to administrators and users.

SMTP server settings

Gmail

SMTP server address

Port

587

Use SSL

Email

Username

Password

Save

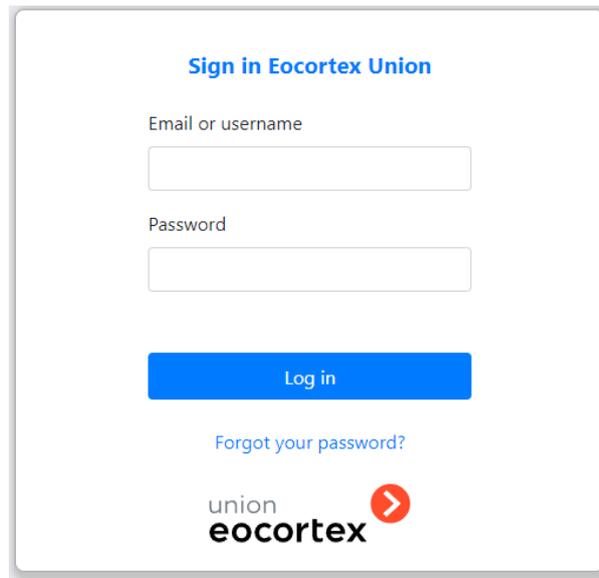
Description of settings:

- **Gmail:** Switch to using the Gmail SMTP server.
- **SMTP Server Address:** an address through which notifications will be sent (e.g. **smtp.gmail.com**).
- **SMTP Server Port:** SMTP port of the server (e.g., **587**).
- **Use SSL** when sending emails.
- **Email:** an address of the email account on behalf of which notifications will be sent.
- **Username** for authentication on the SMTP server.
- **Password** a password for the email account on behalf of which notifications will be sent.

Administering Eocortex Union

Administrator Personal Area

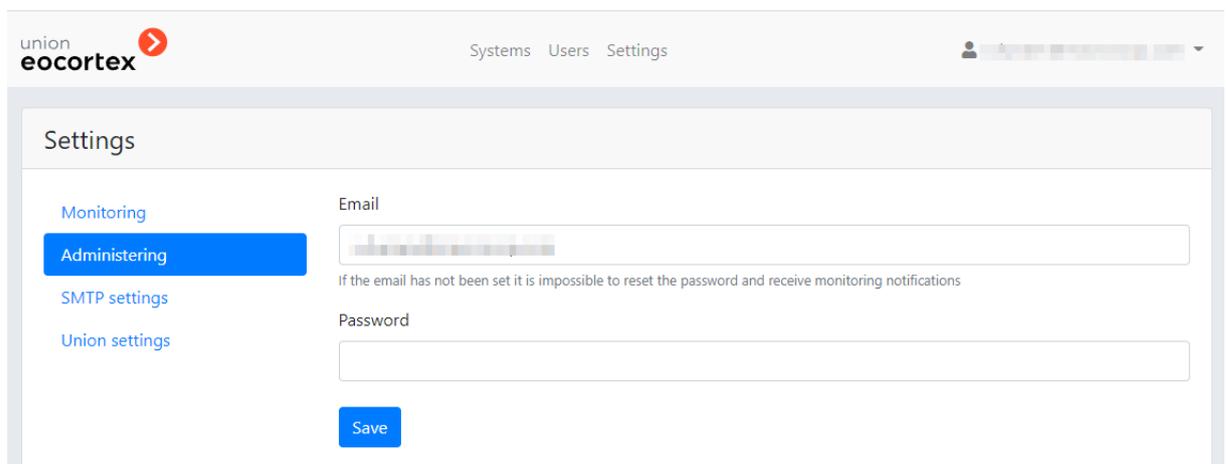
To enter the **Administrator personal area**, go to the address **address_union/admin** (e.g., **123.4.56.78/admin** or **union.mycompany.com/admin**). To log in, to have use the credentials of the **Eocortex Union** administrator.



The image shows a login form titled "Sign in Eocortex Union". It contains two input fields: "Email or username" and "Password". Below the fields is a blue "Log in" button. Underneath the button is a link that says "Forgot your password?". At the bottom of the form is the "union eocortex" logo, which includes a red arrow icon.

Administrator personal area settings

The settings of the administrator's personal area are located on the **Settings** page in the **Administering** tab.



The image shows the "Settings" page in the Eocortex Union administrator interface. The page has a header with the "union eocortex" logo, navigation links for "Systems", "Users", and "Settings", and a user profile dropdown. The main content area is titled "Settings" and contains a sidebar with tabs: "Monitoring", "Administering" (which is highlighted in blue), "SMTP settings", and "Union settings". The "Administering" tab shows fields for "Email" and "Password". The "Email" field has a redacted value and a note below it: "If the email has not been set it is impossible to reset the password and receive monitoring notifications". The "Password" field is empty. A blue "Save" button is located at the bottom of the form.

During the initial deployment of the platform, one **Eocortex Union** administrator is created with the following credentials:

- username: **root**;

- password: blank password;
- Email: blank email.

When setting up the administrator personal area for the first time, it is recommended to change the username and password and enter valid email.

If no administrator email is specified, it will not be possible to reset and recover the password. Also, in this case, the administrator will not receive notifications from the system health monitoring service (if the email of the recipient of monitoring notifications is not specified, all notifications are sent to the administrator).

Resetting administrator's password

To recover the password, it is required to click the button **Forgot your password?** in the authorization form.

Sign in Eocortex Union

Email or username

Password

Log in

[Forgot your password?](#)

union
eocortex 

It is required to specify the administrator's email in the password reset form that opens. Upon clicking the **Reset Password** button, a message with a password reset confirmation code will be sent to the specified email.

Reset password

Email

Reset password

This code must be entered in the password recovery form. A new password must also be entered there.

Systems

Eocortex systems can be connected and set up using **Eocortex Union**.

Only systems based on the version 3.5 or higher of **Eocortex** can be connected to **Eocortex Union**.

To work with the **Eocortex** systems, it is required to go to the Systems tab in the administrator personal area. The tab displays a list of systems connected to **Eocortex Union**.

#	Name	Description	
1	system 1	Connection server address: [REDACTED] Users: 23	[Add] [Gear] [Edit] [Delete]
2	system 2	Connection server address: [REDACTED] Users: 0	[Gear] [Edit] [Delete]

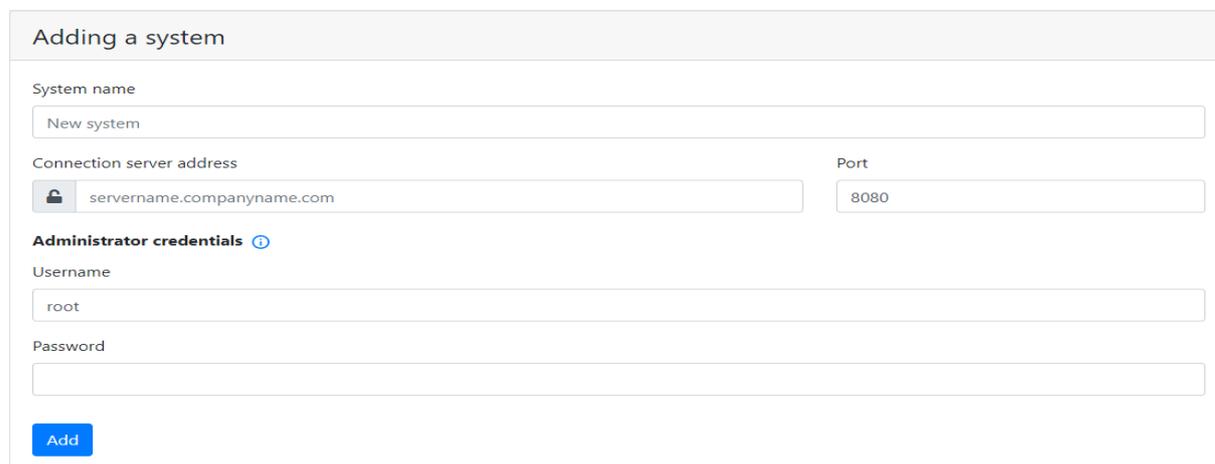
Connecting a system

Before connecting a system, it is required to make sure that **Eocortex Union** and the connection server have Internet access or direct access to each other over the network.

To connect a new **Eocortex** system to **Eocortex Union**, it is required to click the **Add** button on the **Systems** tab in the administrator personal area.

In the **Add system** form that opens, it is required to specify the name of the system to be connected and the parameters for connecting to the connection server of this system. In the future, the name of the system will be displayed in the list of connected systems.

The name is assigned to the system when it is connected to **Eocortex Union** and will only be available to users, administrators and **Eocortex Union** applications.



The screenshot shows a web form titled "Adding a system". It includes the following fields and elements:

- System name:** A text input field containing "New system".
- Connection server address:** A text input field containing "servername.companyname.com" with a lock icon on the left.
- Port:** A text input field containing "8080".
- Administrator credentials:** A section header with a help icon, followed by:
 - Username:** A text input field containing "root".
 - Password:** An empty password input field.
- Add:** A blue button at the bottom left.

The connection server address can be specified both as a domain name (e.g., **vms-srrver.mycompany.com**) and in IPv4 (e.g., **127.0.0.1**) or IPv6 (e.g., **:::1**) formats.

Secure connection to the server via HTTPS is enabled using the

button  located on the left side of the field with the address of the connection server.

If the port has not been set clearly, the port 18080 will be used for a secure connection (HTTPS), and 8080 / for an insecure (HTTP) connection.

The username and password must match the credentials of the administrator of a system being connected.

The administrator must not be added to the system via ActiveDirectory, in which case the addition will fail.

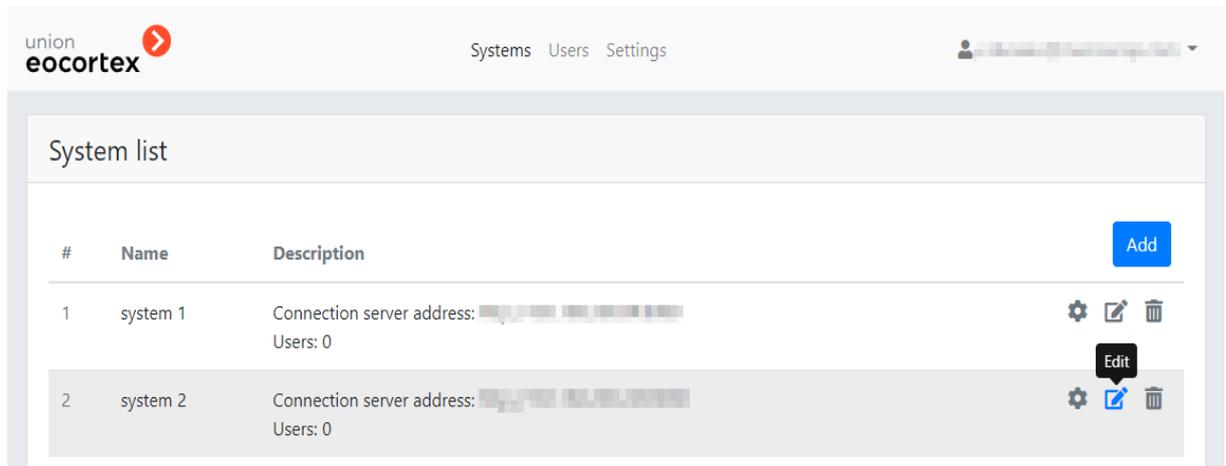
For the systems with an **Enterprise** or an **Ultra** license, the username and password of a user who is a member of the Senior System Administrators group are to be specified.

System modifications

The name and parameters of the connection to the system can be modified

anytime. To do this, it is required to click the **Modify**  button located to the

right of the name of the corresponding system in the list of systems on the **Systems** tab.



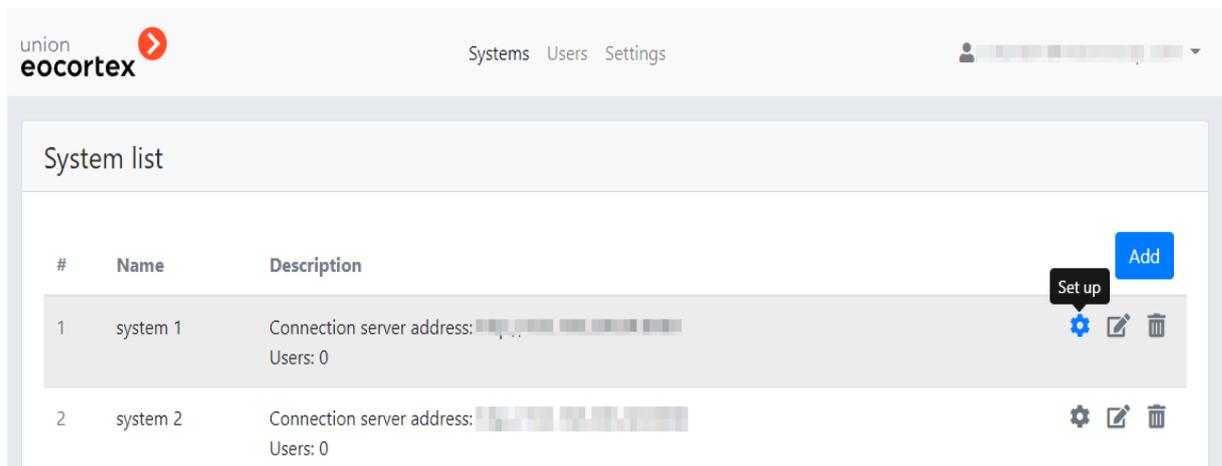
The **System modification** form, similar to the system connection form, will be opened.

To change the system administrator password, it is required to click on the **Change password** button. After that, the **Administrator password** field will become available for editing.

System setup

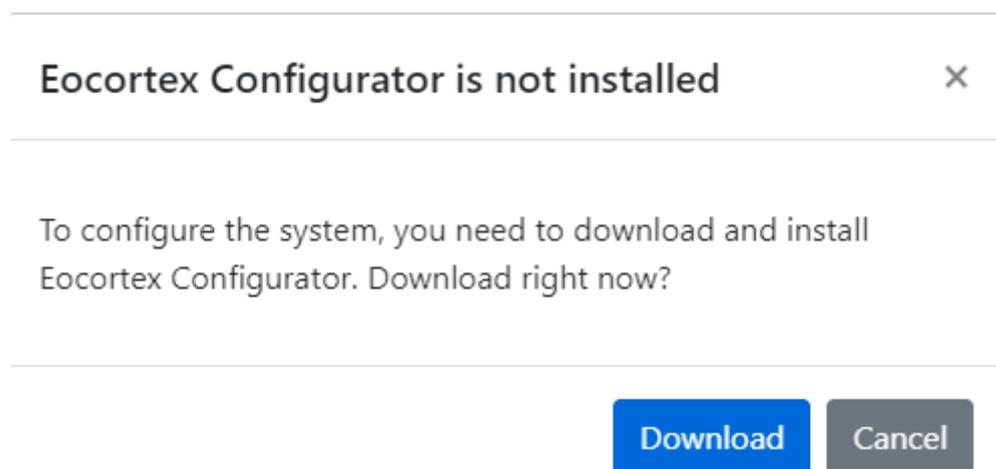
To configure the system, it is required to click on the **Setup**  button located to the right of the name of the system to be configured in the list of systems on the **Systems** tab.

The **Setup**  button is available only when logging into the administrator personal area from a computer with the Windows operating system.



This will launch the **Eocortex Configurator** application that will automatically connect to the selected system.

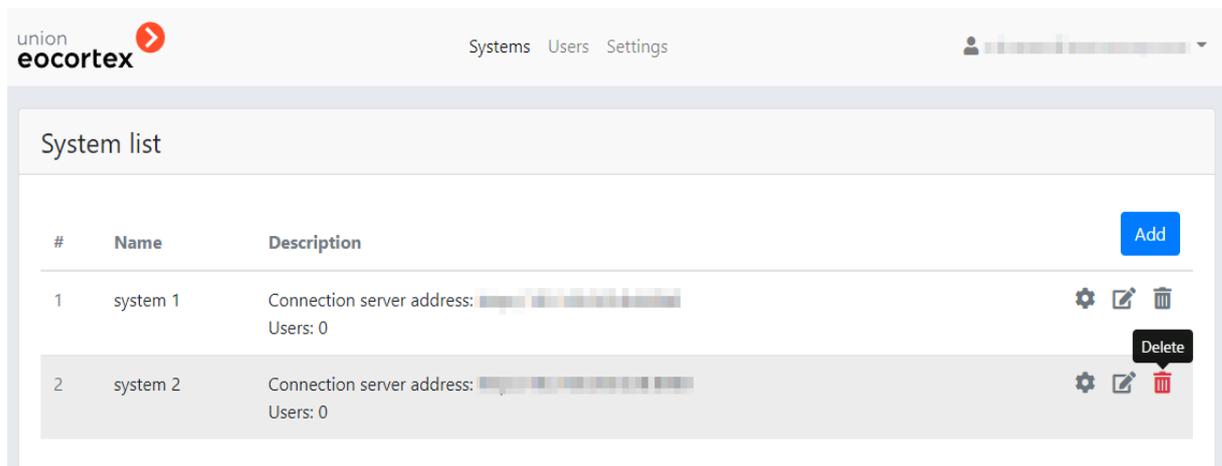
If the **Eocortex Configurator** is not installed on the computer that the administrator used to log into their personal area, a form will open offering to download and install this application.



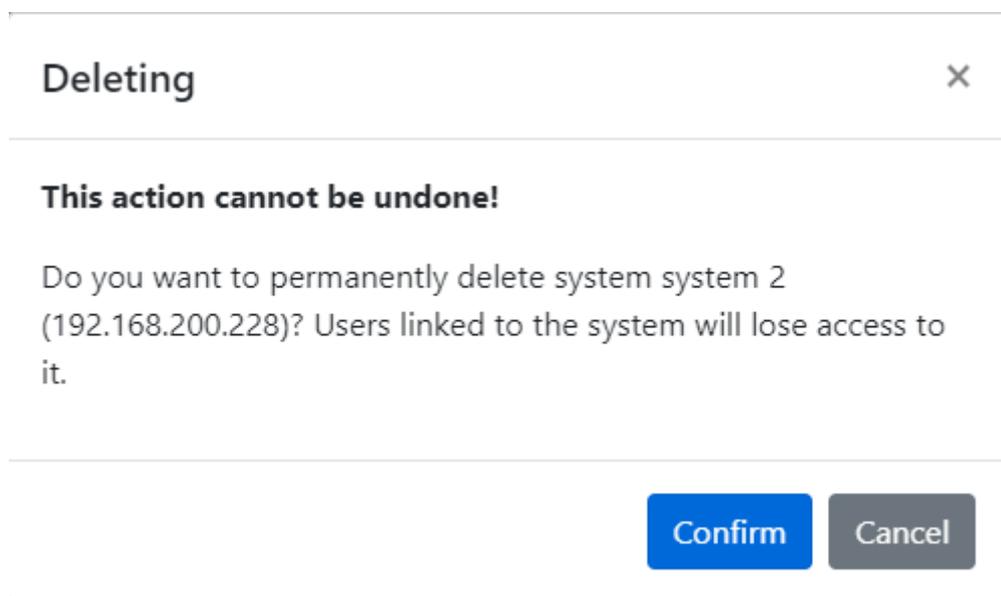
Removing a system

Removing a system from **Eocortex Union** does not stop this system's operation. After such removal, the system will become unavailable for **Eocortex Union** users and will continue to function as an autonomous **Eocortex** system.

To remove a system from **Eocortex Union**, it is required to go to the **Systems** tab and in the list of systems click on the **Remove**  button located to the right of the system to be removed.



The following warning window will open:



After clicking on the **Confirm** button, an attempt will be made to remove the system from **Eocortex Union**.

If, at the time of removal, the system connection server is available for **Eocortex Union**, this system will be safely removed from **Eocortex Union**. In this case, all users bound to the system will lose access to it.

If the system connection server is unavailable for **Eocortex Union** at the time of removal, the following window will open:

Error



System is unavailable

System deletion failed.

Make sure the system has network access or it is in the same local network with Eocortex Union and try again.

Click "Unsafe deletion" to remove the system from Eocortex Union. Attention, Union users attached to the system will not be removed from the system configuration.

Unsafe deletion

Cancel

By clicking on the **Insecure Removal** button, the system will be removed from **Eocortex Union**, but the remote **Eocortex** system will not be informed of such removal. As a result, previously added **Eocortex Union** users may remain in the system configuration.

The unsafe removal may only be used in exceptional cases when it is impossible to restore access to the system. In other situations, it is recommended to restore access to the system connection server and try to remove the system again.

Restriction on unifying the connected system

It is recommended to avoid unifying two systems already connected to **Eocortex Union**, since the information about all **Eocortex Union** users will be removed from the configuration of the system being connected, but in the personal area of the **Eocortex Union** administrator each of these users will be considered bound to the old system.

To avoid this conflict, it is required to remove the system being connected from **Eocortex Union** before unifying.

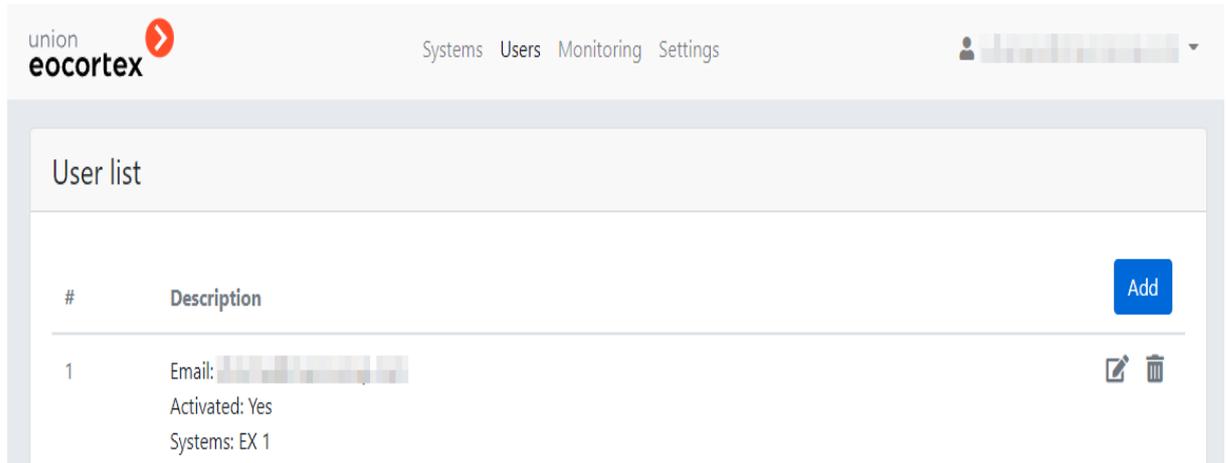
In a situation where two systems have been unified disregarding the recommendations, the old system should be removed from **Eocortex Union** using the unsafe removal.

Users

In **Eocortex Union**, only the **Administrator Personal Area** can be used to manage users in the systems.

Adding a user

To add a **Eocortex Union** user to the system, it is required to click on the **Add** button on the **Users** tab in the **Administrator Personal Area**.



The **Add User** page will open, where it will be required to set the following parameters:

1. An email address of the **Eocortex Union** user.
2. A group whose cameras are available to the user in the system connected to **Eocortex Union** (the system is unavailable or does not respond).
3. A group whose cameras are available to the user in the system connected to **Eocortex Union** (the system is unavailable).

When specifying a group in a system connected to **Eocortex Union**, the user is added to the specified group in the given system and obtains all the rights of this group.

Adding a user

Email

System	Group
EX 1	Group not selected
EX 2	Group not selected

[Add](#)

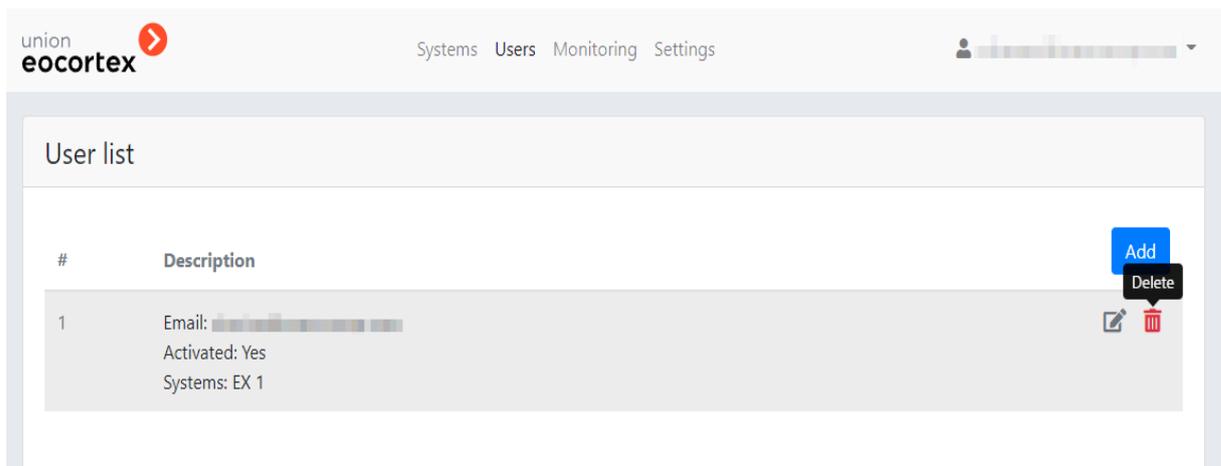
A message to the specified email address with a link to complete the registration will be sent to the added **Eocortex Union** user.

User access control

The rights of user access to the system can be modified. To do this, select the required user on the **Users** tab and click the **Edit**  button. Further, to remove the user from the selected system, select **Group is not selected**.

Removal of a user

To remove a user, select the user on the **Users** tab and click the **Remove**  button.

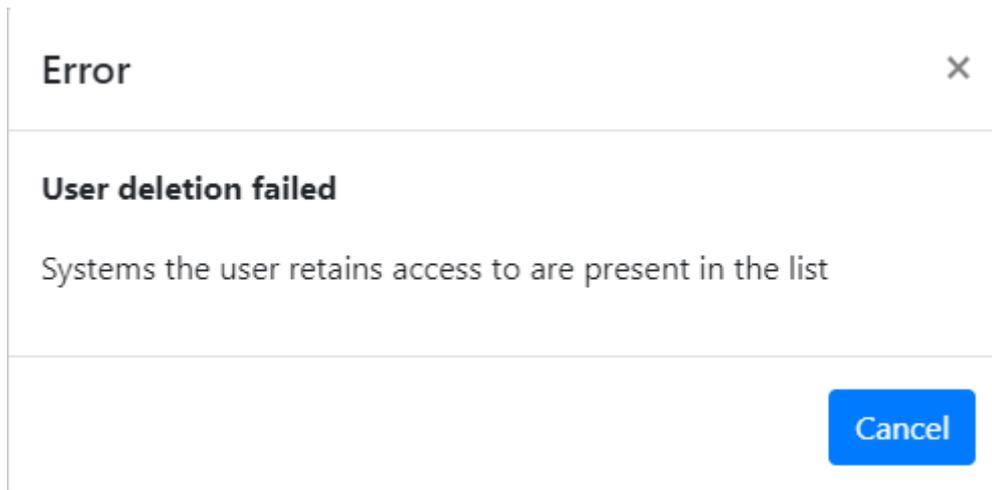


The screenshot shows the Eocortex Union interface. At the top, there is a navigation bar with 'Systems', 'Users', 'Monitoring', and 'Settings'. The 'Users' tab is selected. Below the navigation bar, there is a 'User list' section. The list contains one user with the following details:

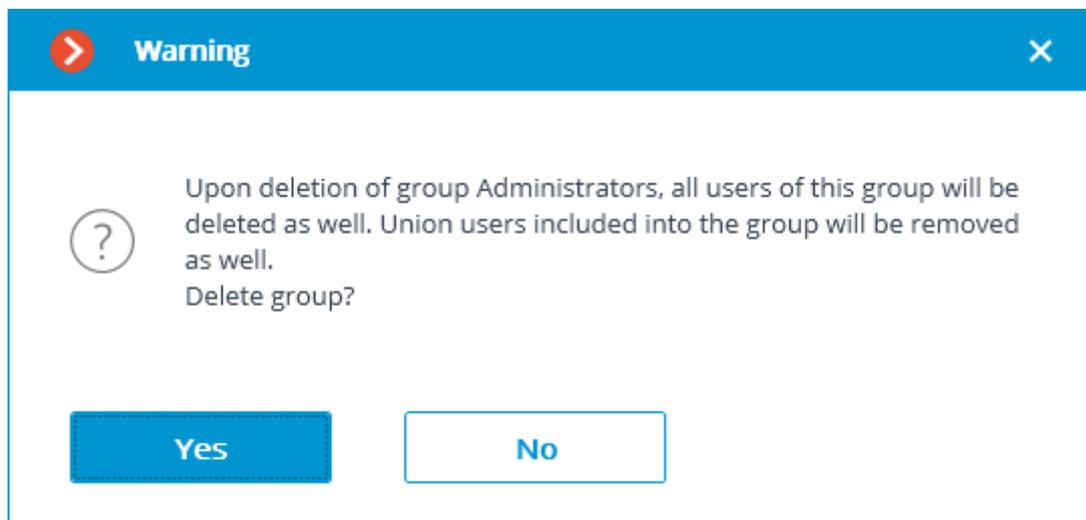
#	Description
1	Email: [redacted] Activated: Yes Systems: EX 1

On the right side of the user list, there are two buttons: 'Add' (blue) and 'Delete' (black with a trash icon). The 'Delete' button is currently active, as indicated by a tooltip.

If it is impossible to remove a user (e.g., in case the system is currently unavailable), the following window is displayed:



Eocortex Union users cannot be edited or removed via **Eocortex Configurator**. However, a user can be removed together with the group. When a group that includes a Union user is deleted, the following window is displayed:



Displaying users in the system

When connecting to a system added to **Eocortex Union** via **Eocortex Configurator**, the list of users will contain Union users who have been granted access to the given system. The information about the Union user will include the corresponding user type:

Information

User name [REDACTED]

Belongs to group Administrators

Date of creation 11/16/2021 5:45:20 PM

Role Junior administrator

User type Union

[Edit](#)

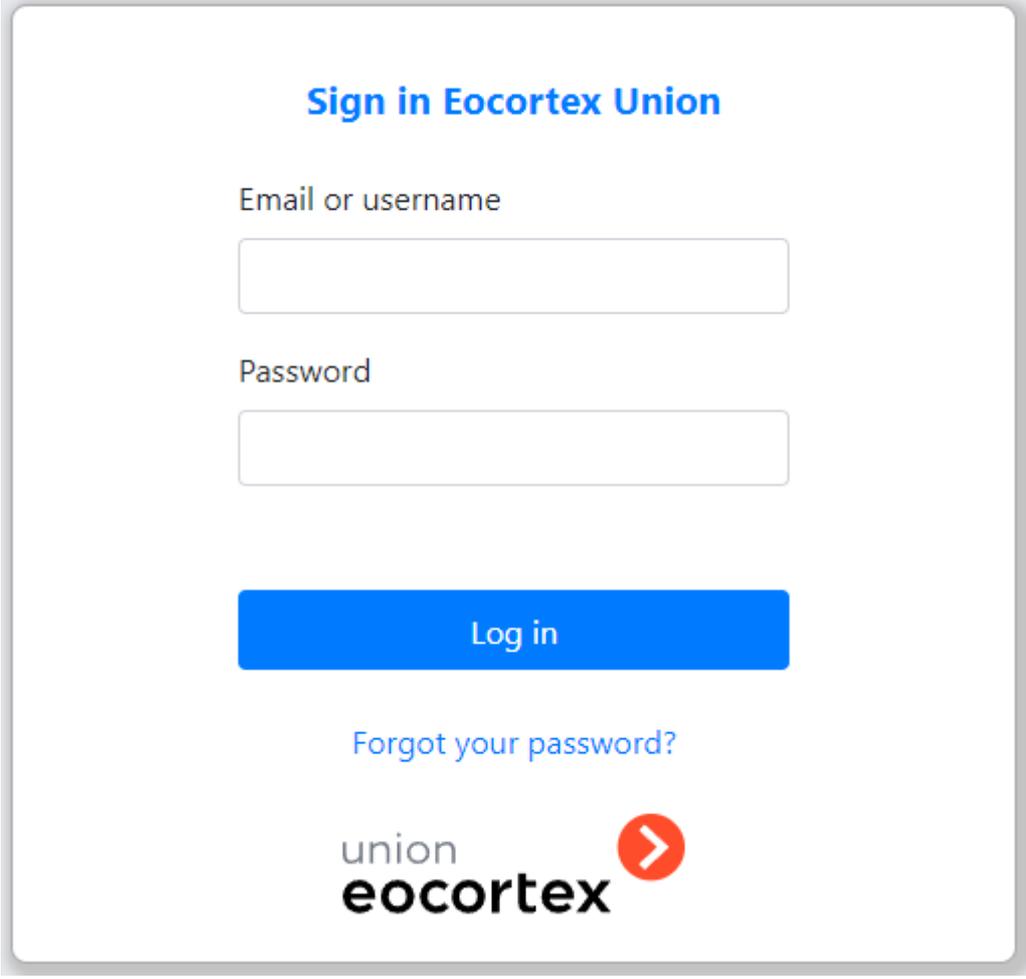
[Delete](#)

Client side of Eocortex Union

The **Eocortex Union client** side includes the Administrator Personal Area and User Area, as well as the **Eocortex Union Web Client** and **Eocortex Union Client**, available in the user area.

User area

The user area is located at the **Eocortex Union** address. To enter the user area, the user must log in.



The image shows a login form for Eocortex Union. At the top, the text "Sign in Eocortex Union" is displayed in blue. Below this, there are two input fields: "Email or username" and "Password". A blue "Log in" button is positioned below the password field. Underneath the button, there is a link that says "Forgot your password?". At the bottom of the form, the logo for "union eocortex" is visible, featuring the word "union" in a smaller font above "eocortex" in a larger, bold font, with a red circle containing a white right-pointing arrow to the right of the text.

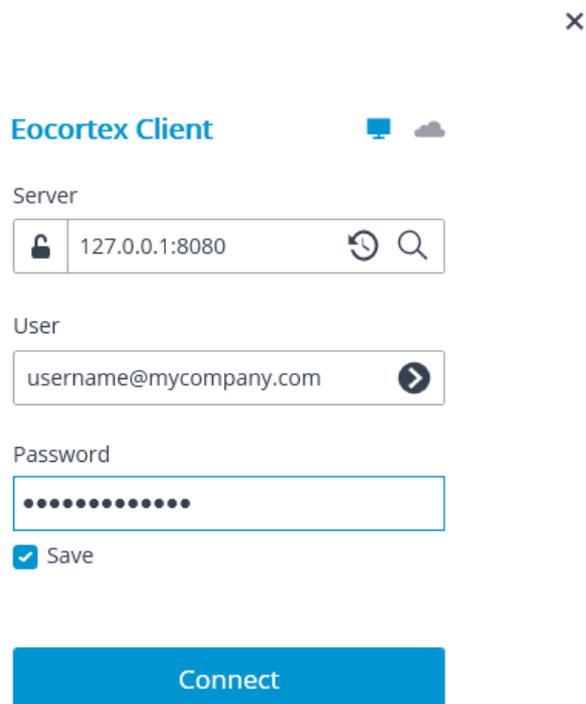
When entering a user area, the user will obtain access to client applications.

The list of client applications available to the user is configured by the **Eocortex Union** administrator.

Work via Eocortex Client

Before starting to work with **Eocortex Union** via the **Eocortex Client** application, it is required to download this application in the user area and install it on the computer.

To connect to **Eocortex Union** from **Eocortex Client** it is required, at the start of the application, to specify the address and port of connection to **Eocortex Union** in the authorization window, as well as the email and password of the Eocortex Union user.



Eocortex Client

Server
127.0.0.1:8080

User
username@mycompany.com

Password
.....

Save

Connect



User rights

Eocortex Union user can use cameras, server views, maps and plans of all systems available to him from **Eocortex Union**.

In each of the systems, the **Eocortex Union** user will have access to only those cameras, server views, maps and plans for which he has been granted rights by the administrators of these systems.

In each of the systems, the user of **Eocortex Union** will have access to only those capabilities of client applications for which he has been granted rights by the administrators of these systems.

If the **Eocortex Union** user has different rights for the same capabilities in the client application in different systems, then the lesser of the rights will be used.

In the **Eocortex Client** application, the video wall, internal chat, password modification, and the right to fetch the **Eocortex Configurator** application are not available for a **Eocortex Union** user.

When working with face recognition and license plate recognition modules, the user of **Eocortex Union** can choose the database to be used.

Event log

The **Event log** displays events from all available systems.

The filter Initiators allows to filter events depending on who initiated them - **Eocortex** users or **Eocortex Union** users.

Face recognition and license plate recognition

When working with face recognition and license plate recognition modules, the **Eocortex Union** user has access to the databases of these modules in all systems. However, it is only possible to work with one of these databases at a time.

The user can select a database in the upper part of the window for working with the database, or in the filter panel on the reports page.

If the database is available for one of the systems only, the selection of the database will be unavailable.

In case one remote database is used for all systems, the choice of database will be available in the **Eocortex Client** application, but it will be the same database.

The rules for creating the database name are as follows: **{system_name}_{server_name}_{database_id (optional)}**.

When a database is selected from the list, all data is updated, and all the filters on the reports page are reset.

Connection in proxy mode

Eocortex Union may have different connection servers for different systems.

When connecting to **Eocortex Union** for the first time, the option **Connection in proxy mode** is enabled by default.

Web Client of Eocortex Union

To launch the **Eocortex Union Web Client** application, it is required to click the button Go to viewing in the user area.

Eocortex Union web client

Online viewing of cameras directly from your browser



[Go to viewing](#)

There are no cameras you have access to

User rights

Eocortex Union user can use cameras, server views, maps and plans of all systems available to him from **Eocortex Union**.

In each of the systems, the **Eocortex Union** user will have access to only those cameras, server views, maps and plans for which he has been granted rights by the administrators of these systems.

In each of the systems, the user of **Eocortex Union** will have access to only those capabilities of client applications for which he has been granted rights by the administrators of these systems.

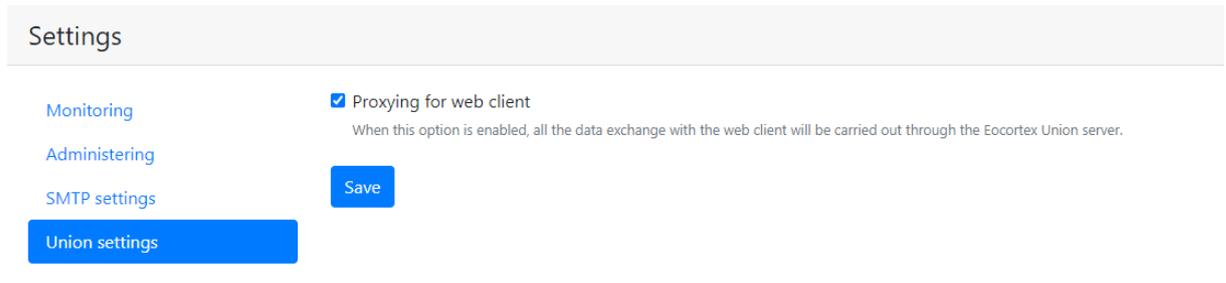
If the **Eocortex Union** user has different rights for the same capabilities in the client application in different systems, then the lesser of the rights will be used.

Configuring Eocortex Union services

The settings of **Eocortex Union** services can be found on the **Settings** page in the administrator personal area.

General Settings of Union

There is only one option in the **Settings** page on the **Union Settings** tab of the administrator personal area: **Proxying for web client**.



The screenshot shows the 'Settings' page with a sidebar on the left containing links for 'Monitoring', 'Administering', 'SMTP settings', and 'Union settings'. The 'Union settings' link is highlighted in blue. In the main content area, the 'Proxying for web client' checkbox is checked. Below it, a note states: 'When this option is enabled, all the data exchange with the web client will be carried out through the Eocortex Union server.' A blue 'Save' button is positioned to the right of the checkbox.

Since systems can be connected to **Eocortex Union** using different protocols (HTTP and HTTPS), and browser protection does not allow HTTP connections to systems using untrusted certificates and HTTPS, the user may encounter issues when working in the **Eocortex Union Web Client** application.

Such problems can be resolved using one of the following methods:

METHOD 1

Connecting all systems to **Eocortex Union** via HTTPS with trusted certificates and connecting using the web client via HTTPS. In this case, the option **Proxying for web client** must be disabled.

This is a safe option.

This solution does not put load on **Eocortex Union**.

METHOD 2

Enabling the option **Proxying for web client**. The way the systems are connected to **Eocortex Union** does not matter.

This is a safe option.

This solution does put load on **Eocortex Union**.

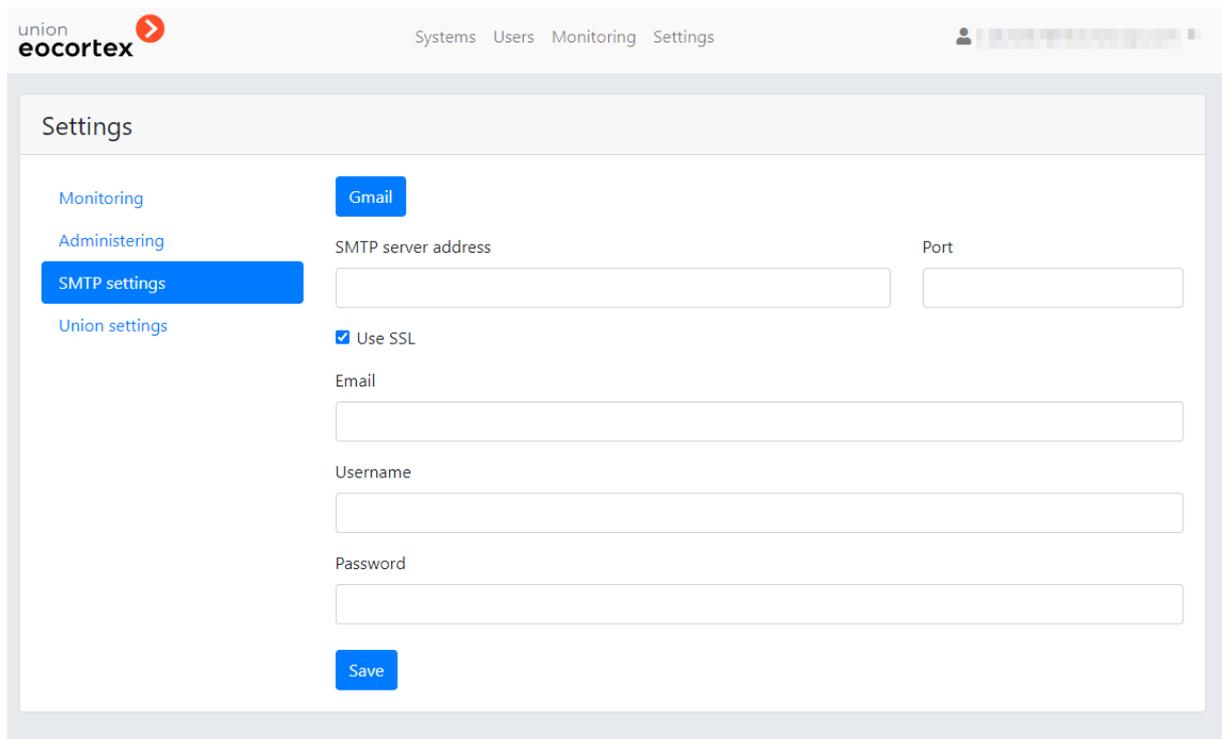
METHOD 3

Connecting all systems to **Eocortex Union** via HTTP and connecting using the web client via HTTP. It does not matter whether the option **Proxying for web client** is enabled or not, since it will not be used.

This option is not safe.

This solution does not put load on **Eocortex Union**.

SMTP server settings



The screenshot shows the 'Settings' page in the Eocortex Union web interface. The 'SMTP settings' tab is selected. The page includes a 'Gmail' button, a 'Use SSL' checkbox (checked), and input fields for 'SMTP server address', 'Port', 'Email', 'Username', and 'Password'. A 'Save' button is located at the bottom.

Description of settings:

- **Gmail:** Switch to using the Gmail SMTP server.
- **SMTP Server Address:** an address through which notifications will be sent (e.g. **smtp.gmail.com**).
- **SMTP Server Port:** SMTP port of the server (e.g., **587**).
- **Use SSL** when sending emails.
- **Email:** an address of the email account on behalf of which notifications will be sent.
- **Username** for authentication on the SMTP server.
- **Password** a password for the email account on behalf of which notifications will be sent.

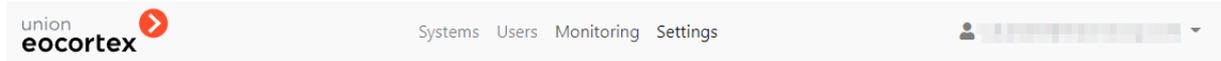
Eocortex System Health Monitoring

Eocortex System Health Monitoring is installed automatically together with **Eocortex Union**.

Eocortex System Health Monitoring is available for **Enterprise** and **Ultra** licenses only.

After installing **Eocortex Union** the **Eocortex System Health Monitoring** service will be available at **{address-union}: 8191**.

Eocortex System Health Monitoring is available from the administrator personal area on the **Eocortex System Health Monitoring** page.

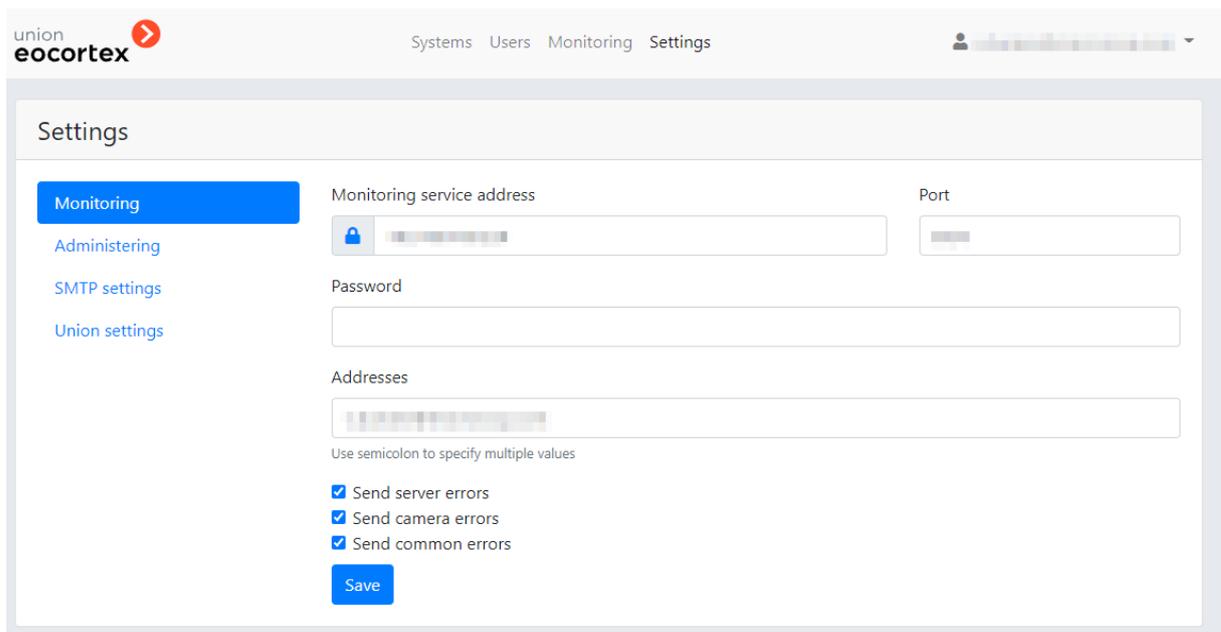


In systems connected to **Eocortex Union**, **Eocortex System Health Monitoring** is automatically enabled with **Eocortex Union** settings.

If the system being connected already has its own settings for **Eocortex System Health Monitoring**, then, when connected to **Eocortex Union**, a prompt to change them to the settings common for all the connected systems will appear. In case of failure, the **Eocortex System Health Monitoring** service of this system will not be connected to **Eocortex Union** and will remain with its own settings.

Connection and configuration of Eocortex System Health Monitoring

Configuring **Eocortex System Health Monitoring**, as well as connecting the **Eocortex System Health Monitoring** service to **Eocortex Union** deployed on another server, is carried out in the administrator personal area, on the **Settings** page of the **Eocortex System Health Monitoring** settings tab.



Settings:

- **Monitoring service address** (by default, **address_union**).
- **Port** (by default, 8891).
- **Password** (by default, blank).
- **List of recipients** to whom all monitoring notifications will be sent (by default, the notifications are sent to the **Eocortex Union**, administrator, if their email is indicated).
- **Error notifications:**
 - **Send server errors**
 - **Send camera errors**
 - **Send general errors**

Using own SMTP server

To use own SMTP server, in addition to changing the settings in the administrator personal area, it is possible to create or edit the file **MailSettings.json** in the folder **/opt/macroscope-union/service/Setting** folder of the **Eocortex Union** service.

Contents of the file:

```
{
  "MainSettings": {
    "ServerAddress": "SMTP server address", ← string
    "ServerPort": SMTP server port, ← numeral
    "SenderName": "name of sender", ← string
    "Email": "email for sending messages", ← string
    "UserName": "name of SMTP server user", ← string
    "Password": "password of SMTP server user", ← string
    "SslConnection": true ← boolean
  }
}
```

Example of using the Postfix SMTP server (with default settings):

```
{
  "MainSettings": {
    "ServerAddress": "127.0.0.1",
    "ServerPort": 25,
    "SenderName": "Eocortex Union",
    "Email": "noreply@union.eocortex.com",
    "UserName": "",
    "Password": "",
    "SslConnection": false
  }
}
```

Example of using Google SMTP server:

```
{
  "MainSettings": {
    "ServerAddress": "smtp.google.com",
    "ServerPort": 587,
    "SenderName": "Eocortex Union",
```

```
"Email": "union.eocortex@gmail.com",
"UserName": "union.eocortex@gmail.com",
"Password": "qwerty123"
"SslConnection": true
}
}
```

The fields **Email** and **UserName** may or may not match, depending on the settings of the SMTP server.

Eocortex Union network settings

By default, **Eocortex Union** service has a number of following restrictions on interaction with other services connected to **Eocortex Union**, including **Eocortex** servers and **Eocortex System Health Monitoring** service:

- maximum request execution time (RequestTimeoutInSecodns): 3 seconds
- number of repeated attempts to execute requests (MaxRetryCount): 3
- waiting time between repeated execution of requests (RetryTimeoutInSeconds): 1 second.

To change these settings, it is required to modify the value of the parameter **HttpConnectionSettings** in the file **appsettings.json**.

```
{
...
"HttpConnectionSettings": {
  "MaxRetryCount": 3, ← numeral
  "RetryTimeoutInSeconds": 1, ← numeral
  "RequestTimeoutInSeconds": 3, ← numeral
}
...
}
```

Should the requests to the server connected to **Eocortex Union** take longer than the specified time, **Eocortex Union**, based on the current settings, will consider the system to be unavailable. To avoid this, it is required to modify the parameters; first of all, **RequestTimeoutInSeconds**, increasing the timeout of the response from the connected system.

Changing Eocortex Union port

By default, **Eocortex Union** uses the following ports:

- 80: http (nginx);
- 443: https (nginx);
- 5000: http (eocortex-union).

It is possible to change these ports

To change ports 80 and 443, it is required to do the following:

1. Open the service configuration file in nginx: **/etc/nginx/sites-available/eocortex-union.conf**
2. Change the ports in the following strings:

```
listen 80;  
listen 443 ssl;
```

3. Restart nginx:

```
systemctl restart nginx
```

To change the port 5000, it is required to do the following:

1. Open the file of the service **/etc/systemd/system/eocortex-union.service**
2. Add the flag **--urls=http://0.0.0.0:5001/**, where 5001 is the new port, to the key **ExecStart=** and to its value. The resulting string should look as follows:

```
ExecStart=/usr/bin/dotnet /opt/eocortex-  
union/service/UnionService.dll --  
--urls=http://0.0.0.0:5001/
```

3. Restart the service **systemctl daemon**

```
systemctl daemon-reload
```

4. Restart the service **eocortex-union**

```
systemctl restart eocortex-union
```

5. Open the configuration file of the service in **nginx/etc/nginx/sites-available/eocortex-union.conf**
6. Specify the desired port in the block **>location /api** in the string **proxy_pass http://localhost:5000;** The resulting string should look as follows:

```
location /api {  
    proxy_pass http://localhost:5001;
```

7. Restart **nginx**

```
systemctl restart nginx
```

PostgreSQL password change

By default, when installing **Eocortex Union** for PostgreSQL, a password that can be viewed in the configuration file of the **eocortex-union** service `/opt/eocortex-union/service/appsettings.json` generated. The password is located in the **Password=** parameter in the following string:

```
"ConnectionStrings": {  
  "DbConnection":  
    "Host=127.0.0.1;Port=5432;Database=union_db;Username=union_user;Password=80b8eb0a-  
cc2e-499c-a500-d695eb3a0b6b;"  
}
```

To change the password, it is required to do the following:

1. Enter the console as the user **postgres**:

```
cd /  
su postgres
```

2. Change the password, specifying a new password instead of newpassword

```
psql -c "ALTER USER union_user WITH PASSWORD 'newpassword';"
```

3. Change the password in the configuration file of the service `/opt/eocortex-union/service/appsettings.json`. Specify a new password in the value **Password=**:

```
"ConnectionStrings": {  
  "DbConnection":  
    "Host=127.0.0.1;Port=5432;Database=union_db;Username=union_user;Password=newpassword;"  
  "  
}
```

4. Restart the service `eocortex-union`:

```
systemctl restart eocortex-union
```

Installing own SSL certificate

By default, a self-signed SSL certificate is generated when installing **Eocortex Union**. To replace it with own SSL certificate, it is required to proceed as follows:

1. Open the service configuration file in nginx `/etc/nginx/sites-available/eocortex-union.conf`;
2. Find the following lines and change the paths to the files of own SSL certificates and a private key:

```
ssl_certificate /etc/ssl/certs/eocortex-union.cert.pem;  
ssl_certificate_key /etc/ssl/private/eocortex-union.key.pem;
```

3. Restart nginx:

```
systemctl restart nginx
```

The certificate and the key must be changed in two places, for configuring the eocortex-union SSL service and for configuring the monitoring server located on port 8191 by default.

Domain name change

To change the address or domain of the server that were entered during installation, it is required to do the following:

1. Open the service configuration file `/opt/eocortex-union/service/appsettings.json`;
2. Find the key `HostUrl` and modify its value:

```
"HostUrl": "https://union.com"
```

3. Restart the service `eocortex-union`:

```
systemctl restart eocortex-union
```