OMNI Platform 1.9.3
User Guide

Contents

1. Installation

Get Access to OMNI Platform

To get started with OMNI Platform, you will need the following:

- User email and password. You can find this data in Platform configuration file settings.env in variables PLATFORM_DEFAULT_PASSWORD and PLATFORM_DEFAULT_EMAIL respectively.
- URL of deployed server. Domain for Platform deployment is set in file settings.env in variable DOMAIN. As a result, you can get access to OMNI Platform via URL: http://platform.$DOMAIN. To deploy OMNI Platform, follow Administrator Guide.
- Windows or Linux OC
- USB-camera connected to your PC or access to the IP-camera you need to install OMNI Agent.

To get access to the Platform follow the URL of the deployed server in your web browser and enter user email and password. As a result, you will be redirected to the home page of the web interface.

Install and Activate OMNI Agent

To start collecting data from your camera, you need to install and run OMNI Agent. Before installation make sure that your PC meets the following requirements:

Supported OS:

- Windows 10 (64-bit)
- Ubuntu 20.04 (64-bit)

Hardware Requirements:

Minimum:

- CPU: 4 x 2GHz with AVX support
- RAM: 1GB
- HDD: 2.5GB

Recommended:

- CPU: 4 x 3.1 GHz with AVX support
- RAM: 2GB
- HDD: 2.5+GB

Specified requirements correspond to 1 video stream in 1080p (Full HD) and 5 persons in the frame at the same time (database size up to 50K faces).

Notes:

1. If you use Windows, you might need to install [Microsoft Visual C++ Redistributable for Visual Studio](#) before installing OMNI Agent.
2. If you use Linux, you need to set up the execution permission for the installer before running.To set up the execution permission to the installer, follow these steps:

- Go to the directory, where OMNI Agent installer is downloaded to, and click the right button on the installation file.
- Open Properties, go to the Permission tab, and check Allow execute checkbox.

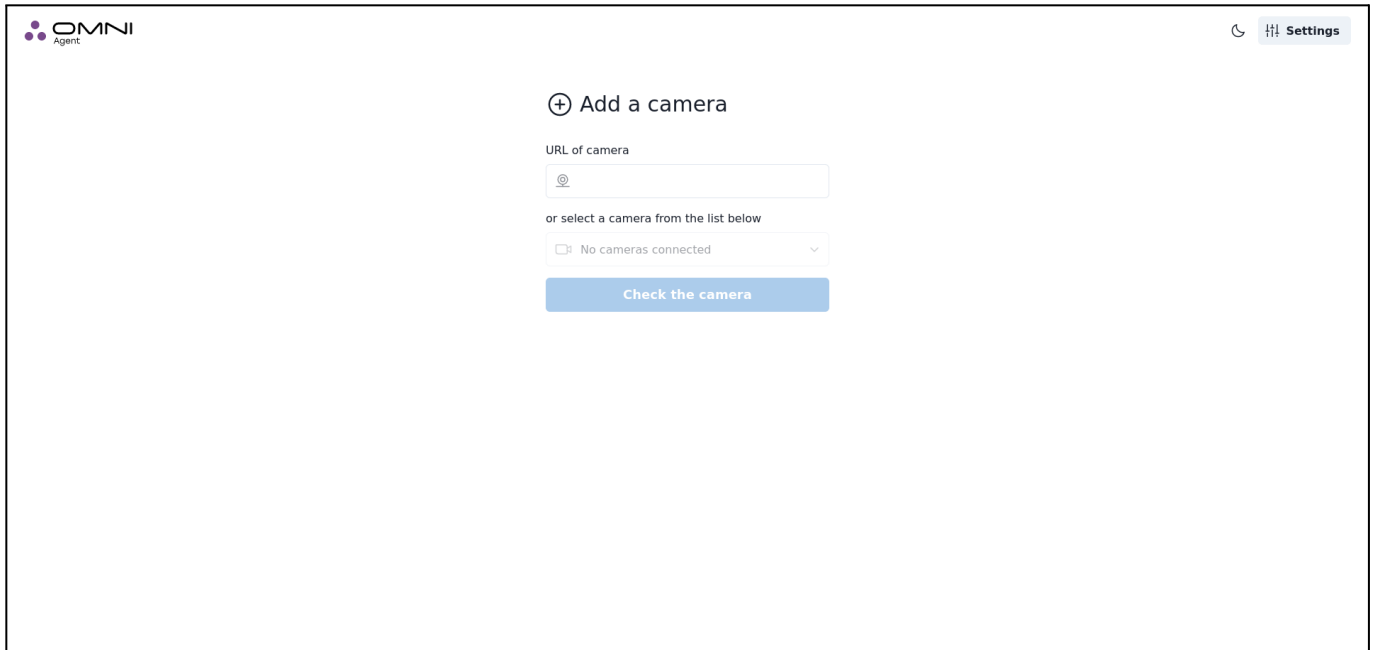To install and activate OMNI Agent, follow the instructions below:

1. Launch OMNI Agent setup program from the distribution kit and follow the installation wizard's instructions
2. Once the downloading is completed, run OMNI Agent. At the web page enter the URL of the deployed server (self-hosted) and click on *Next* button.
3. Sign in to OMNI Agent using user email and password of your OMNI Platform account.
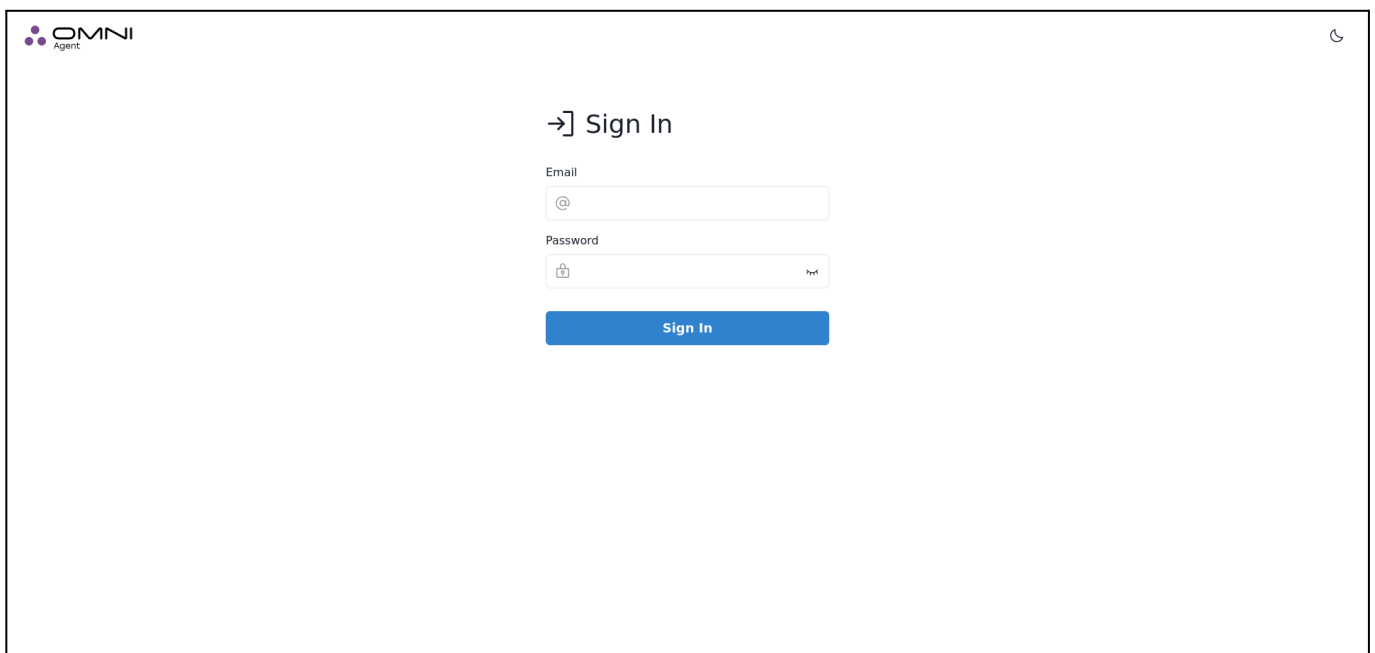
4. Add an IP or USB camera:

- To use an IP camera, enter the camera URL.
- To use a USB camera, connect the camera to your PC and select it from the list of connected cameras.

To apply settings, click on *Check the camera* button. As a result, the camera checking page will appear in your web browser.


5. At the camera checking page you can see the video from the camera and the information about the detected persons (their gender, age, emotions, etc.). The detected faces and silhouettes can be highlighted as follows:

- *Red circle:* a face is detected but the person attention is none
- *White circle:* both a face and the person attention are detected
- *Dotted circle:* image quality is insufficient or head rotation angle is not applicable for proper detection
- *Green circle:* a face is detected and recognized but the person attention is not registered
- *Orange circle:* a face is detected and recognized and the person attention is registered
- *Green bounding box:* a human silhouette is detected and has an ID
- *Red bounding box:* a human silhouette is detected, but an ID is not assigned yet
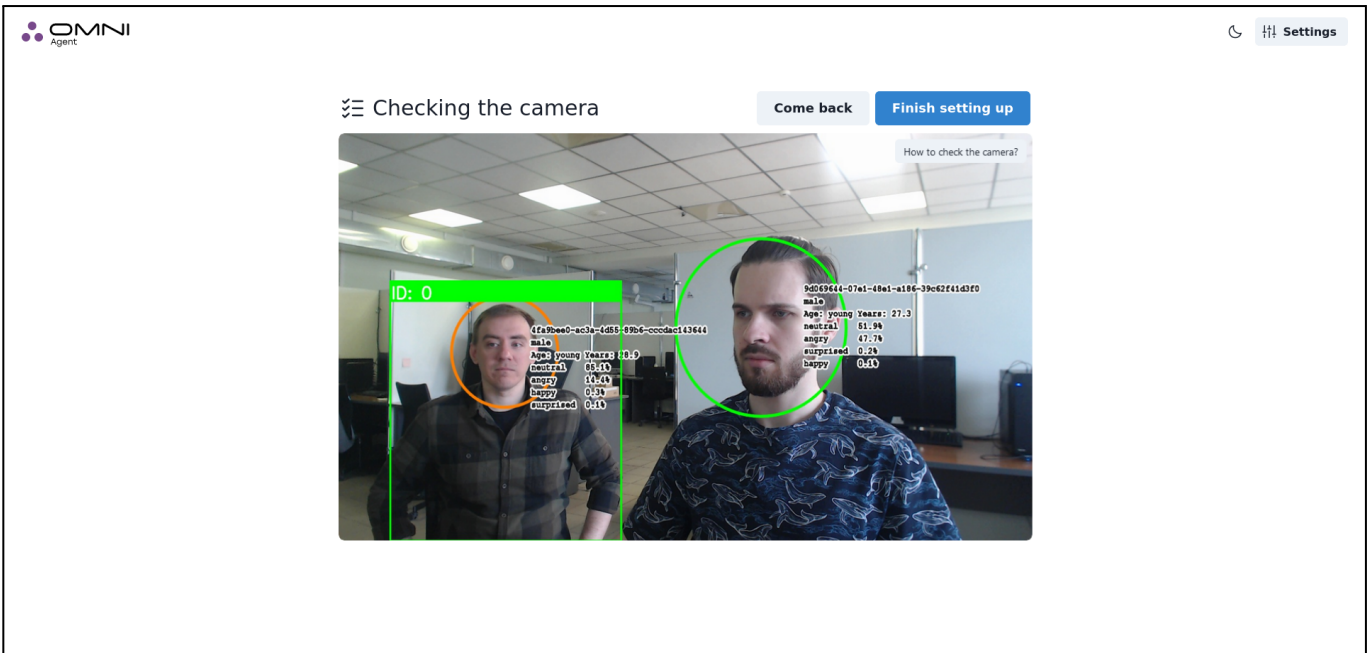
6. To save the camera settings, click on the Finish *setting up* button. As a result, you'll see OMNI Agent status page.
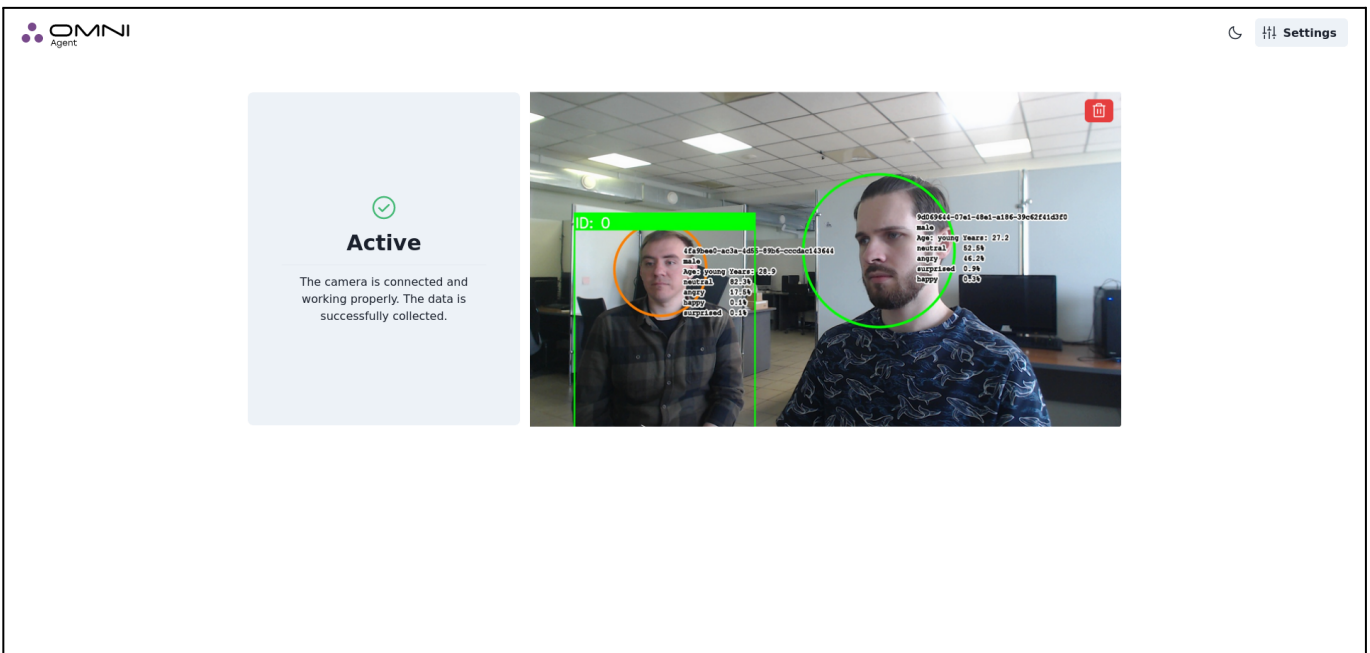
Note: To protect the personal data, OMNI Platform has the anonymous mode enabled by default. In the anonymous mode, face images aren't stored at OMNI Platform to ensure personal data protection and exclude a possibility of person recognition outside the system. To enable/disable the anonymous mode, click on *Settings* icon at OMNI Agent status page and select an appropriate option in the opened tab.

2. Web Interface Settings

Language Selection

By default, the web interface supports English and Russian languages. To change the language, just set the appropriate one in your web browser.

Theme Selection

Web interface has a light theme enabled by default. You can change the theme by clicking the *Theme* icon at the top right side of the web interface.
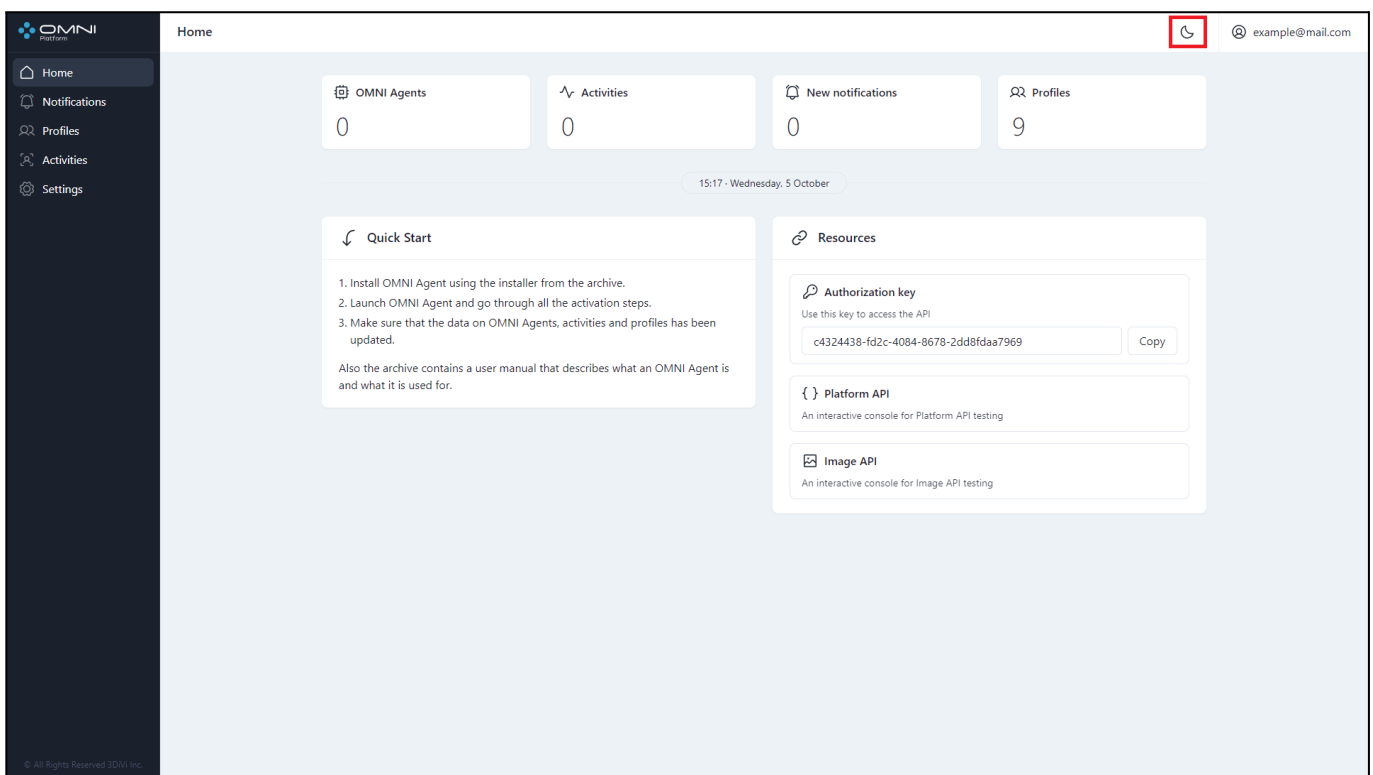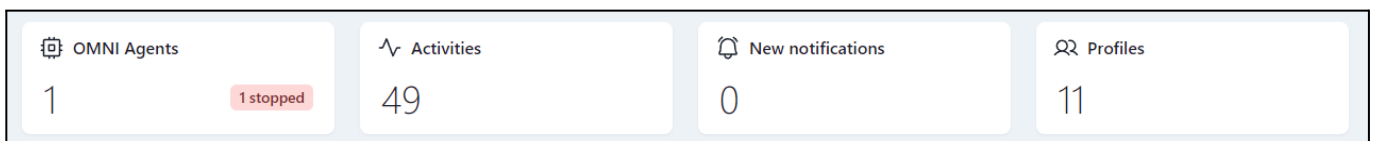
3. Home Page

Home page displays the main system parameters and functionality.
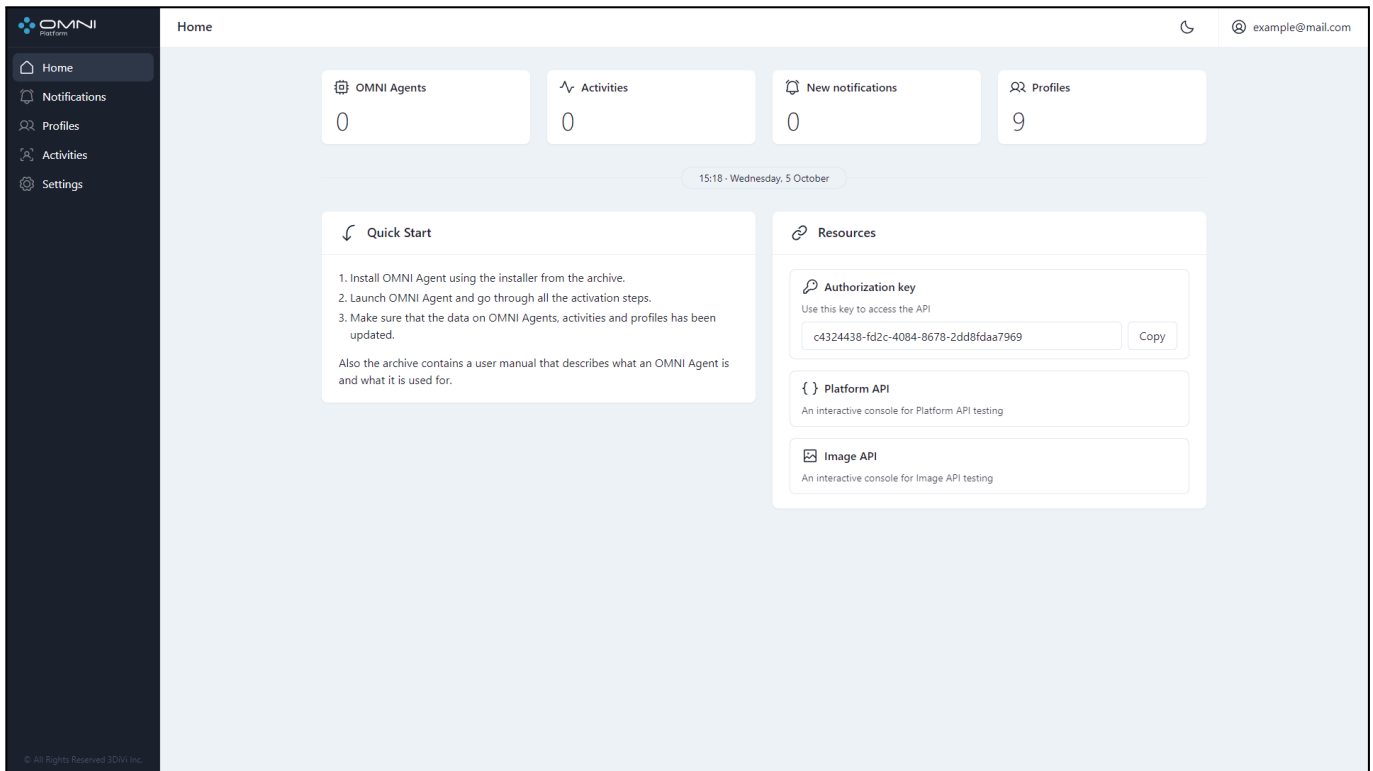
Quick View Panels

Home page contains a set of quick view panels to monitor the main system objects and get access to them via web interface. These panels include OMNI Agents, Activities, New Notifications and Profiles.

OMNI Agents

The OMNI Agents panel shows the number of created OMNI Agents and their statuses such as active or stopped. For more details about agents, click on this panel to move to OMNI Agents section where you can create and configure agents.

Activities

Activities panel displays the total number of activities collected by OMNI Agents. To view the information about activities, click on this panel to move to the Activities page.

New Notifications
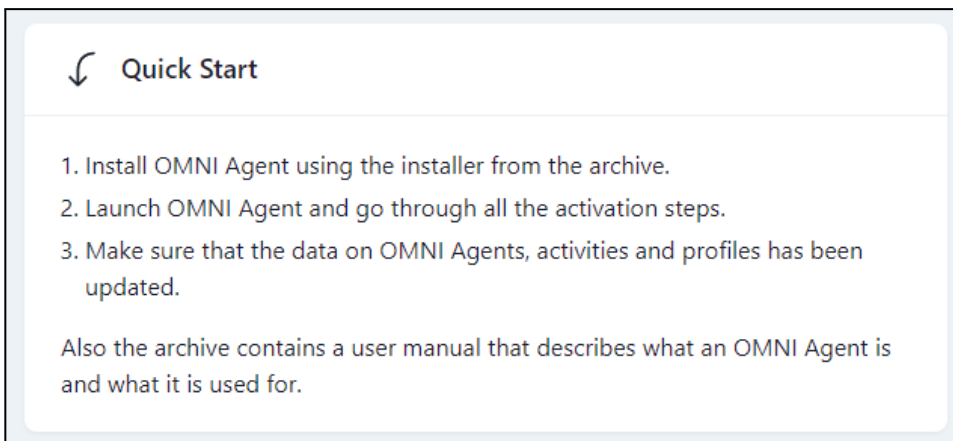
This panel shows the number of new notifications sent by OMNI Agents and received within the system. To view the list of new notifications with metadata, click on this panel to move to Notifications page.

Profiles

Profiles panel displays the number of profiles created in the database. Clicking this panel will redirect you to the Profiles page where you can create/remove and configure Profiles.

Quick Start Panel

Quick Start Panel contains step-by-step instructions on how to connect OMNI Agent and get started with the Platform. Before starting with the instructions, make sure that OMNI Platform is already deployed on your server, otherwise follow the Administrator Guide for deployment.
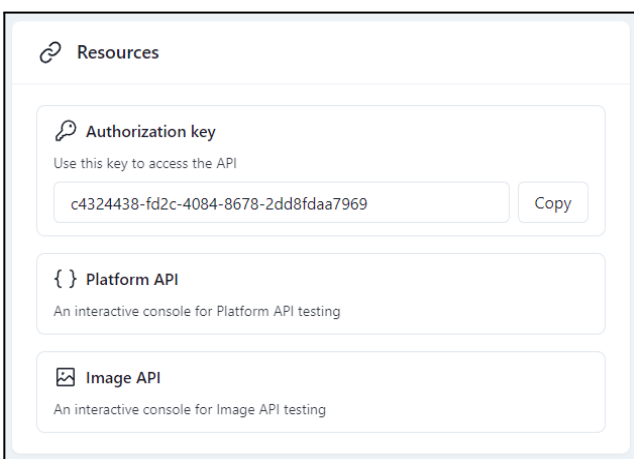
Resources Panel

Resources panel provides instant access to special platforms for Platform API testing. To test API without special platforms, you need to get an access token (authorization key) and add it to HTTP request header, as in the example { TOKEN: 168922*** }.

4. Profiles

Profile is an object that contains metadata about a person, person's photo (avatar), activity and the main sample - a biometric template used for detection. The main sample is used by an agent to check for a profile in the database, and by a server - to determine a profile which the new activities should be attached to. In case the sample from the new activity has better quality than the current main sample, the main sample can be replaced by the system.

Create Profiles

The profiles are created in several ways:

- Manually

To create a profile manually, just upload a person's photo (avatar). The uploaded image will be used as the initial main sample. All the rest fields are optional to fill in.

- Automatically

When OMNI Agent creates the activity for a person detected for the first time and not included to the database, a profile for this person is auto-generated by the system. In this case, the system creates a partially filled profile, which contains the main sample, activity and such metadata as gender and age,determined automatically when creating the activity.

Create a Single Profile

To create a profile manually, do the following:

1. Open Profiles page via Profiles sidebar item in web interface or using Profiles panel at home page. At the page, click *Create a Profile* button.
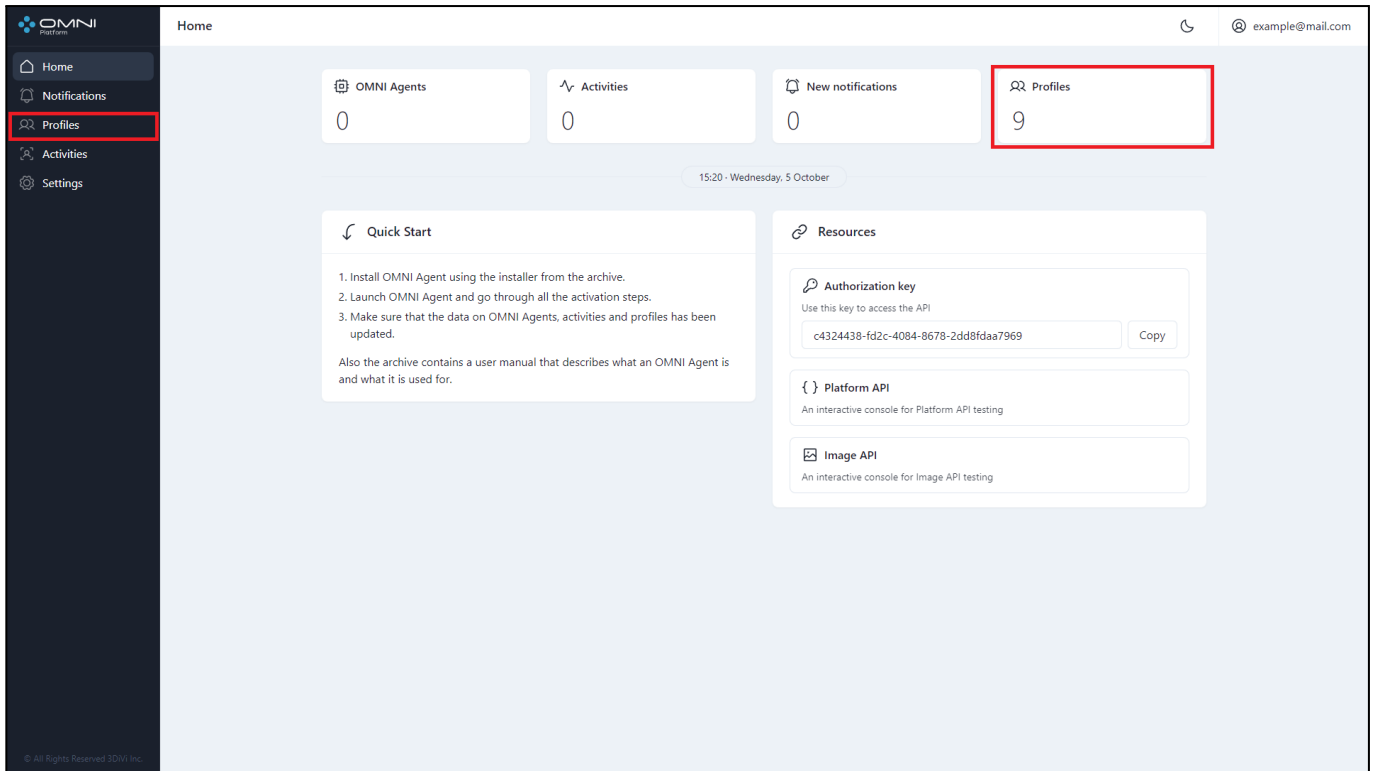
2. Fill in profile data at the opened window. Here you need to upload a profile avatar, as the main sample, used for identification, is created based on this uploaded image. Avatar image should meet the following requirements:

- The image is of good quality, clear, without shadows, bright illumination and glare.
- The image contains only one face.
- The image is full-face.
- The face in the image is in a vertical position.
- We recommend that you do not upload images with a large face inclination angle.
- Facial expression is neutral.
- The eyes of the person in the image are open
- The image size is no more than 6mb.
- Image format is jpg, png, and bmp.
- Image height and width do not exceed 4032 pixels

When the avatar is uploaded, click the Create button.
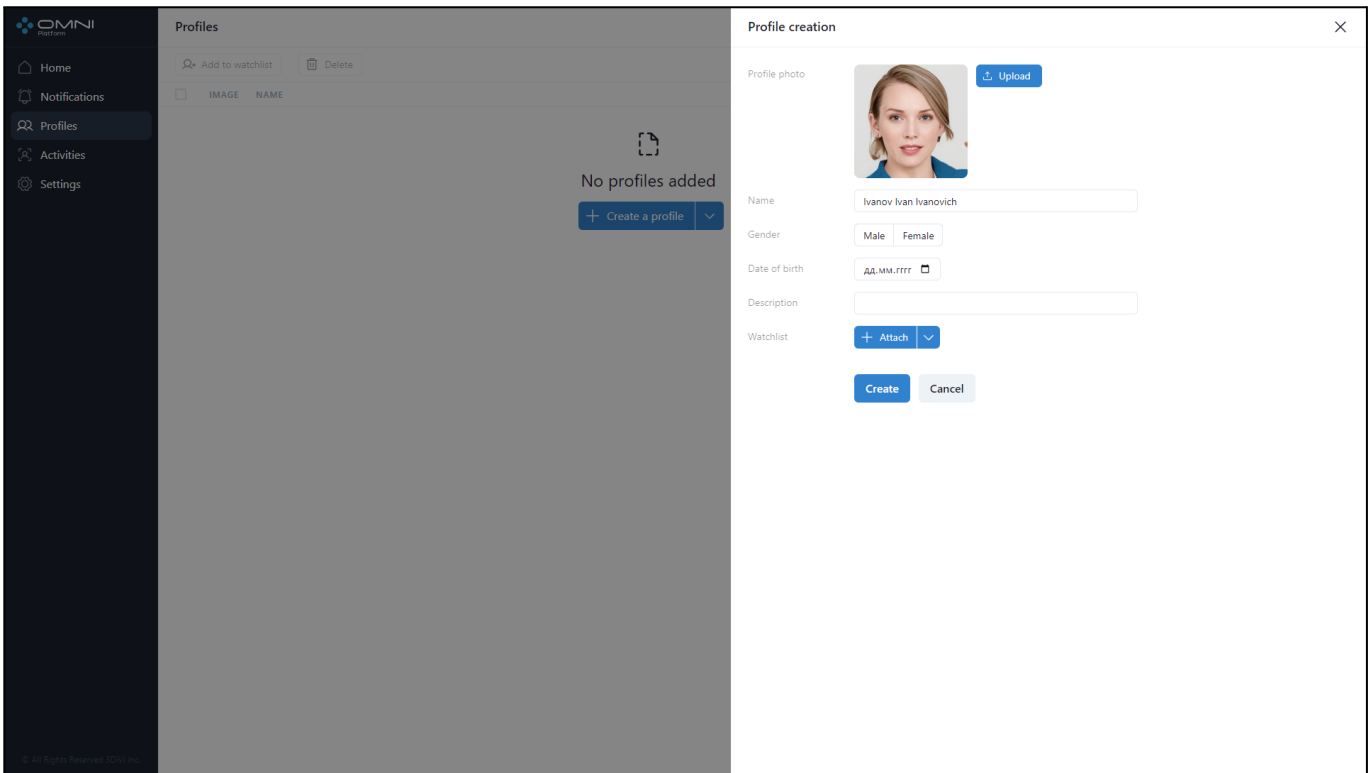
3. As a result, a profile will be created in the database.
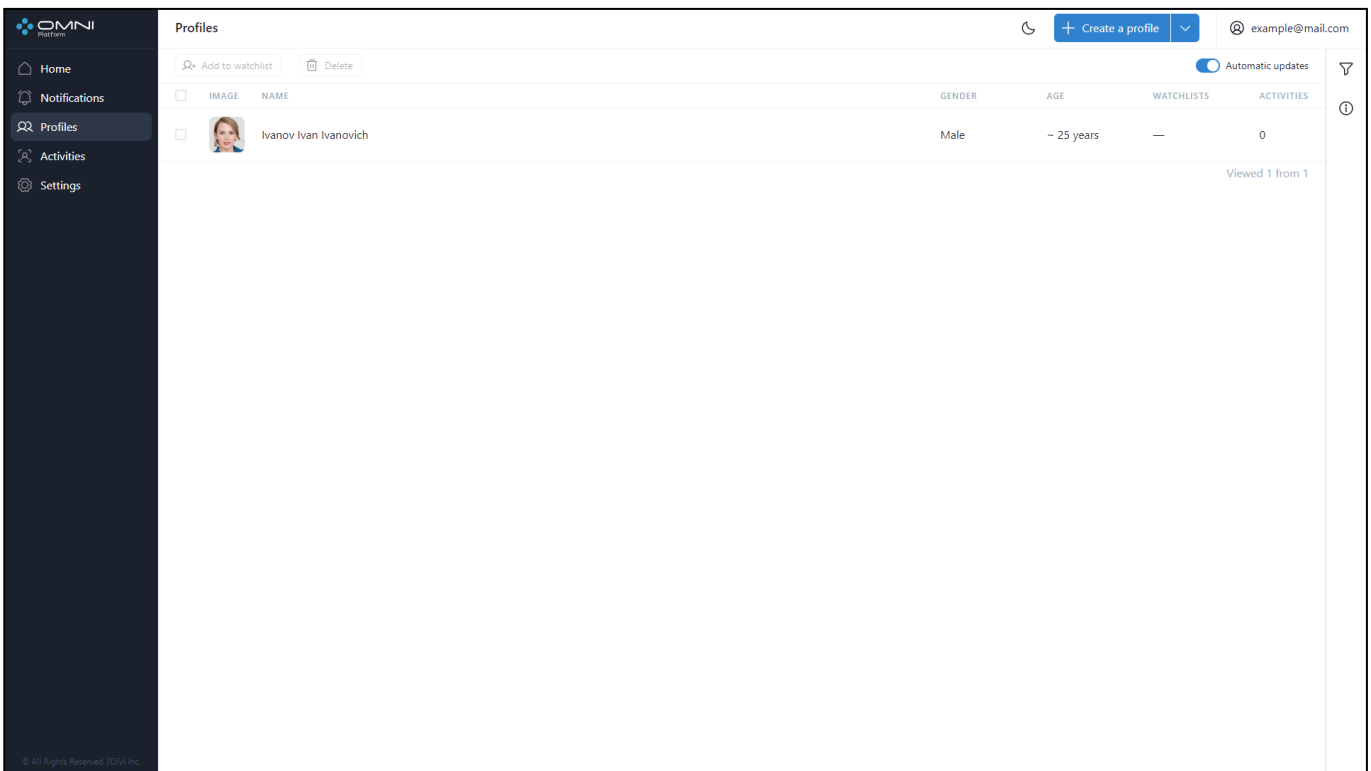
Create Multiple Profiles

To create up to 25 profiles at once, do the following:

1. Open Profiles page via Profiles sidebar item in web interface or using Profiles quick-view panel at home page.
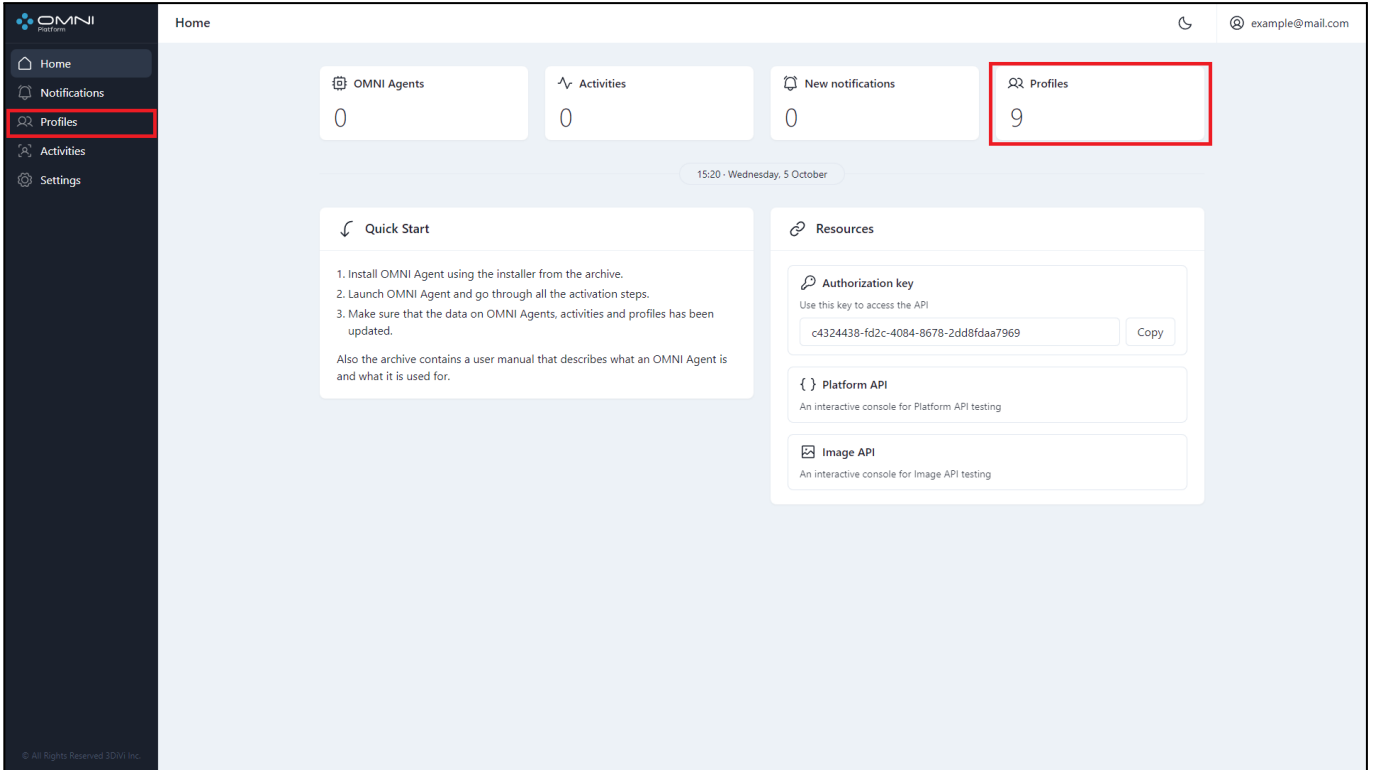
2. At the page click *Create several profiles* option of *Create a Profile* button.
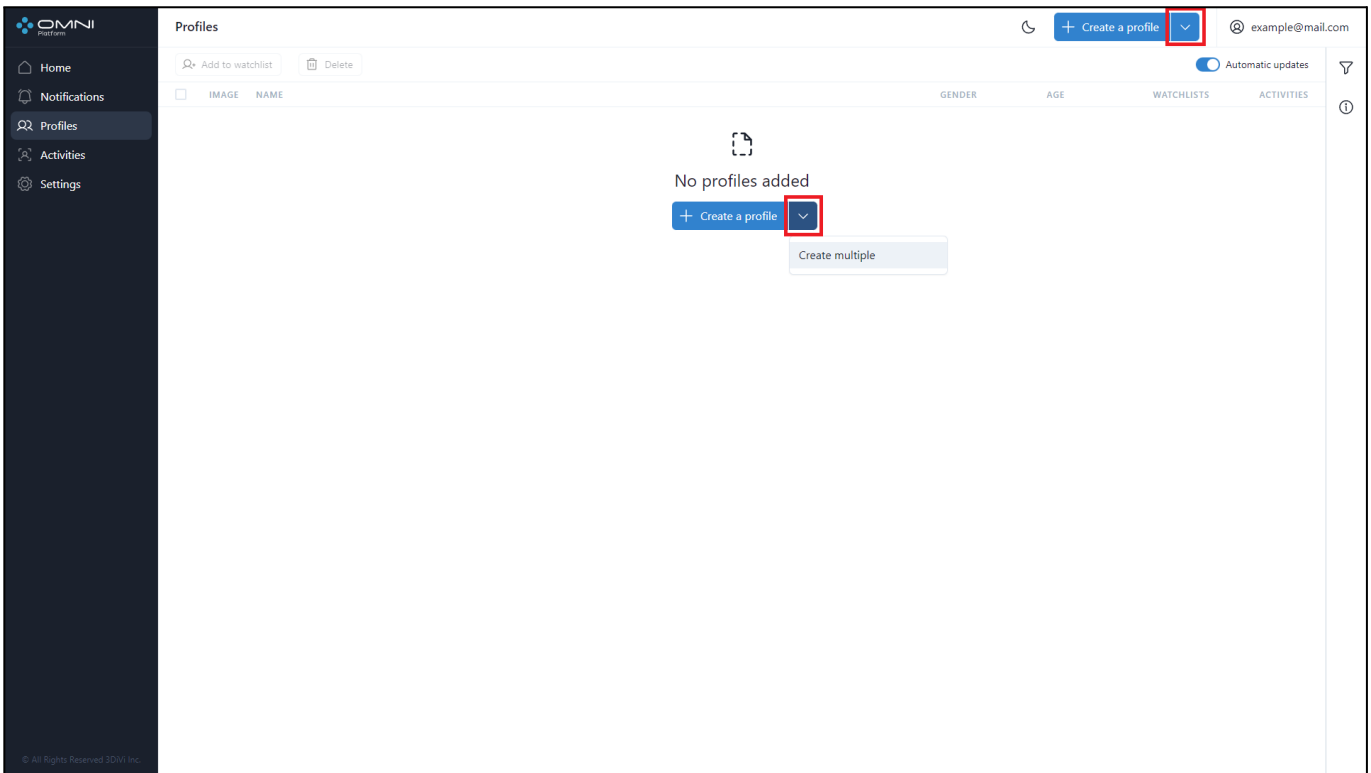
3. Drag-and-drop several images or select files via system file manager. The image requirements are the same as for creating a single profile.
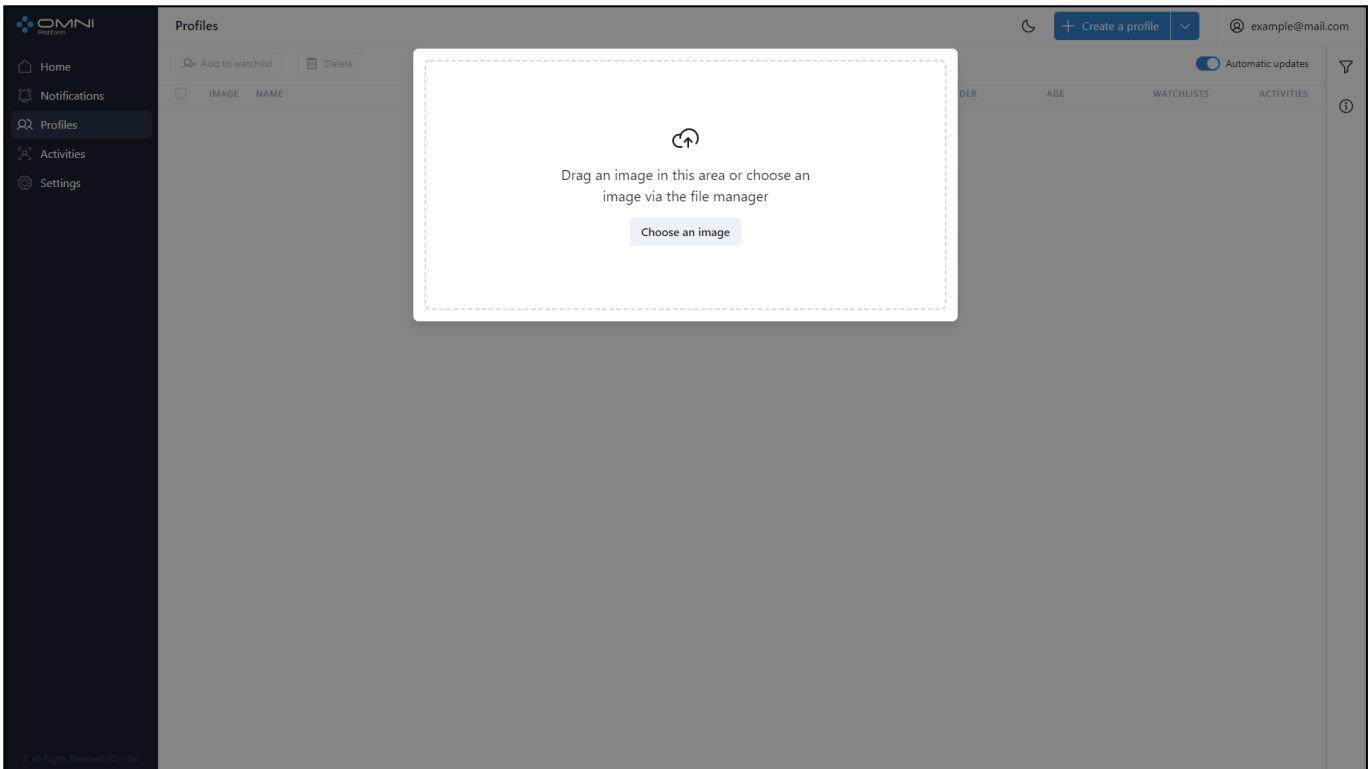
4. As a result, profile creation will start. Note that profiles are created in several steps:

- The uploaded image is checked for the above-mentioned image requirements.
- The uploaded image is checked for duplication.
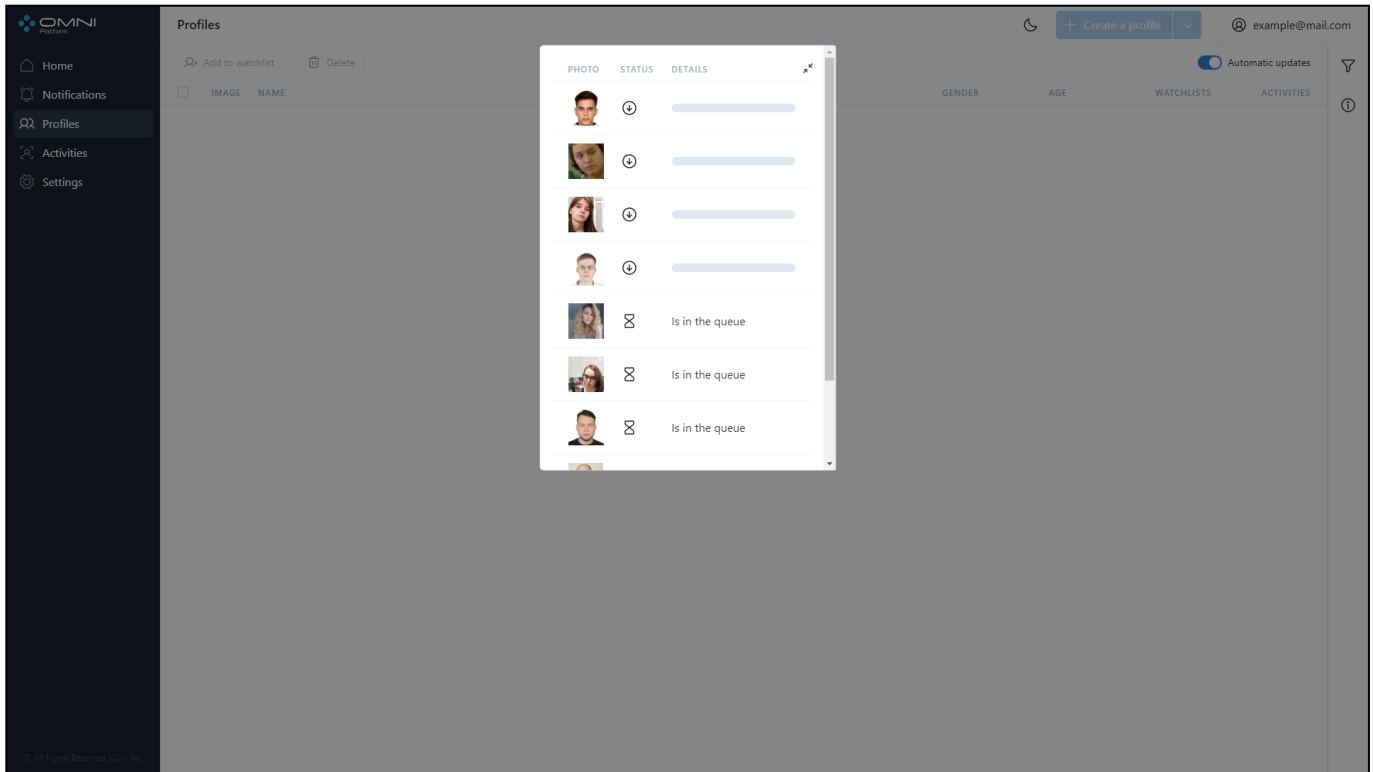
If the image passes a check, you'll see the message that a new profile is successfully created, otherwise the system will show an error note.
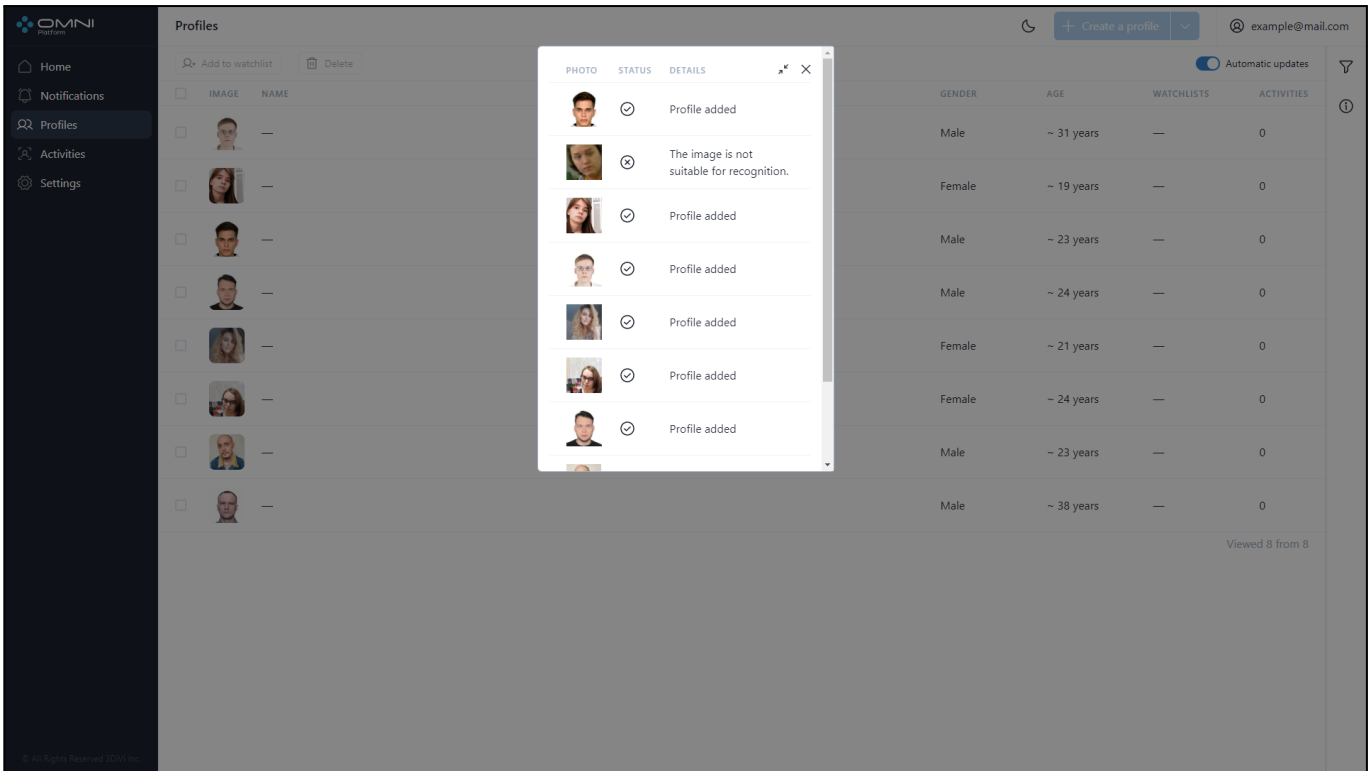
Note: To create profiles from your dataset images you can use a special script, included into the Platform distribution kit. The script accepts a file that contains paths to dataset images, and then sends requests to the Platform to create profiles from these images.

View Profiles

To view profiles, do the following:

1. Open Profiles page that displays a table with profiles created in the database.
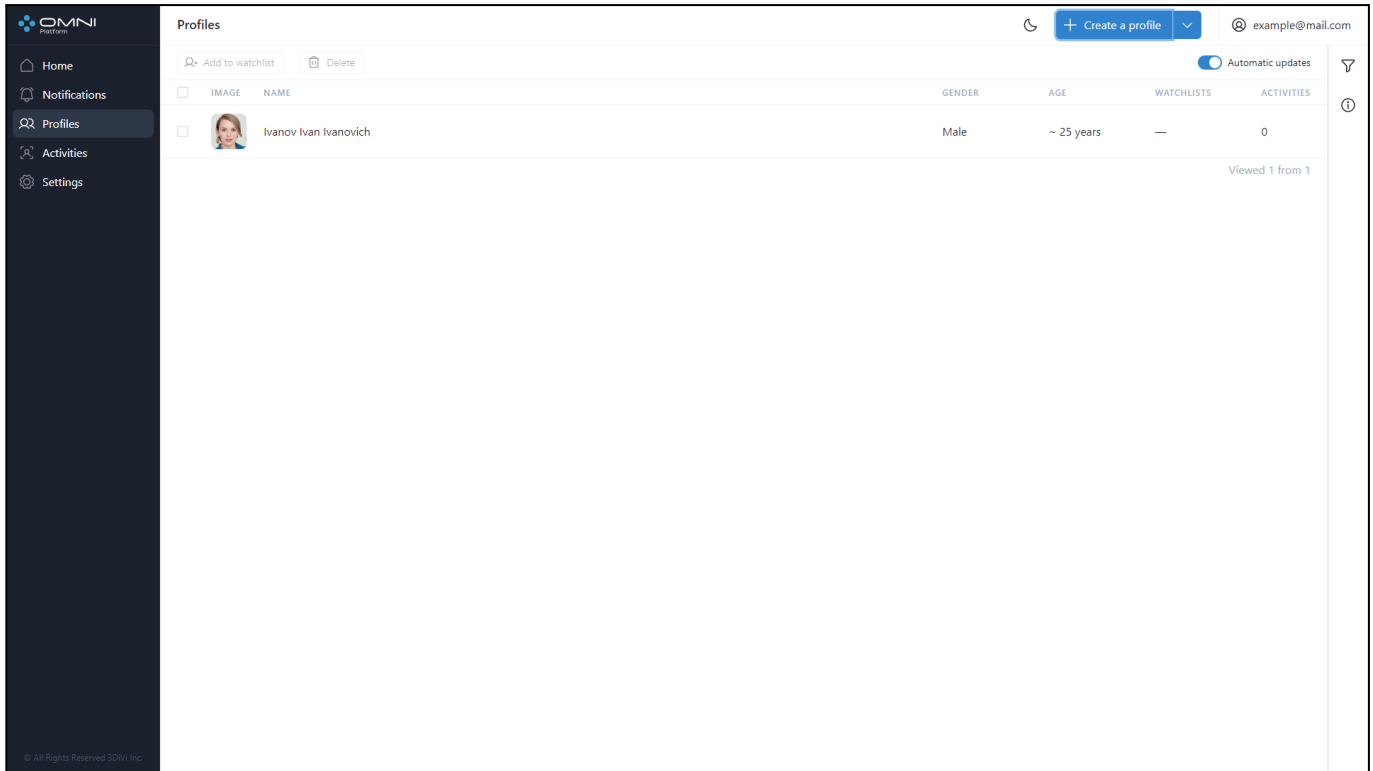
2. To view detailed profile information, click the table line to open a profile card. The card contains profile description, watchlists the profile is added to, activities, creation date, last modification date and button with shortened profile ID. To see the full ID, just hover over this button. If you click it, the ID will be copied to the clipboard.
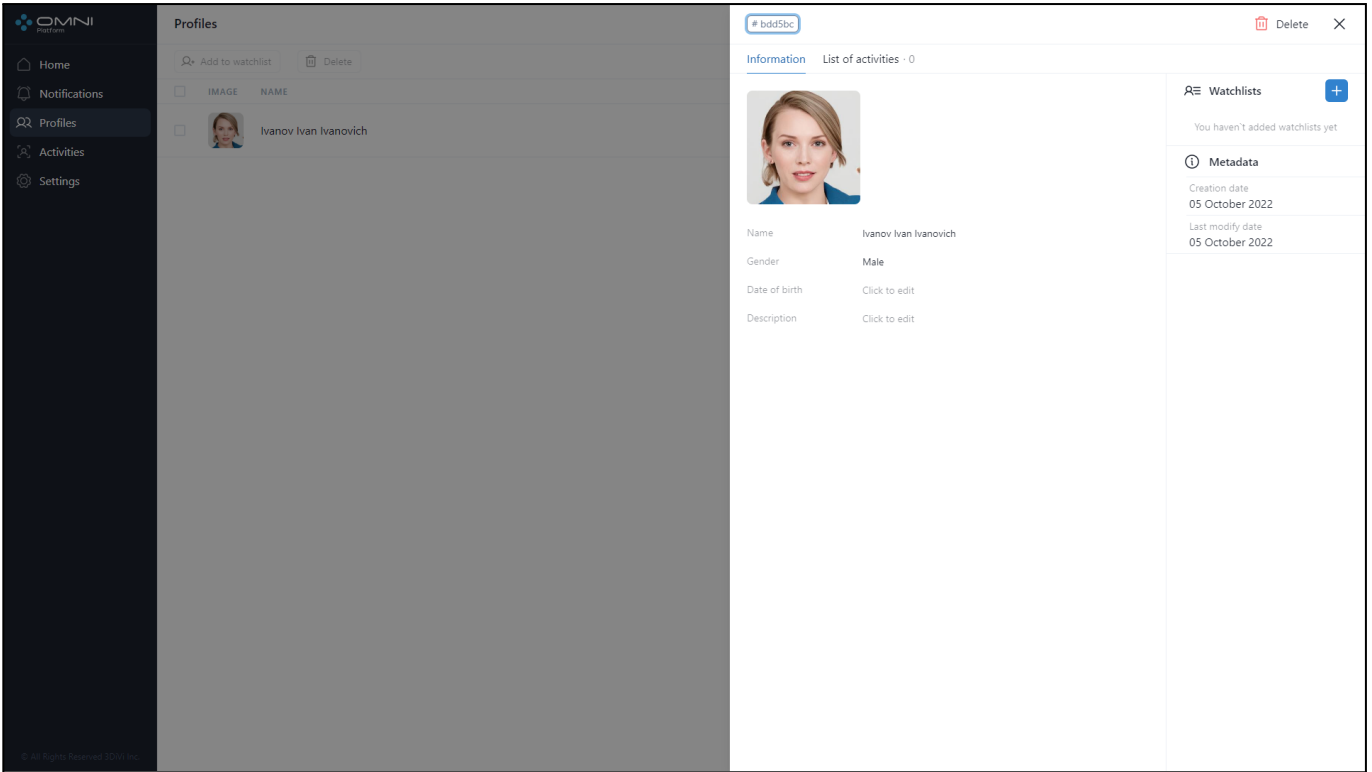
Edit Profiles

1. Open a profile card by clicking the table line:
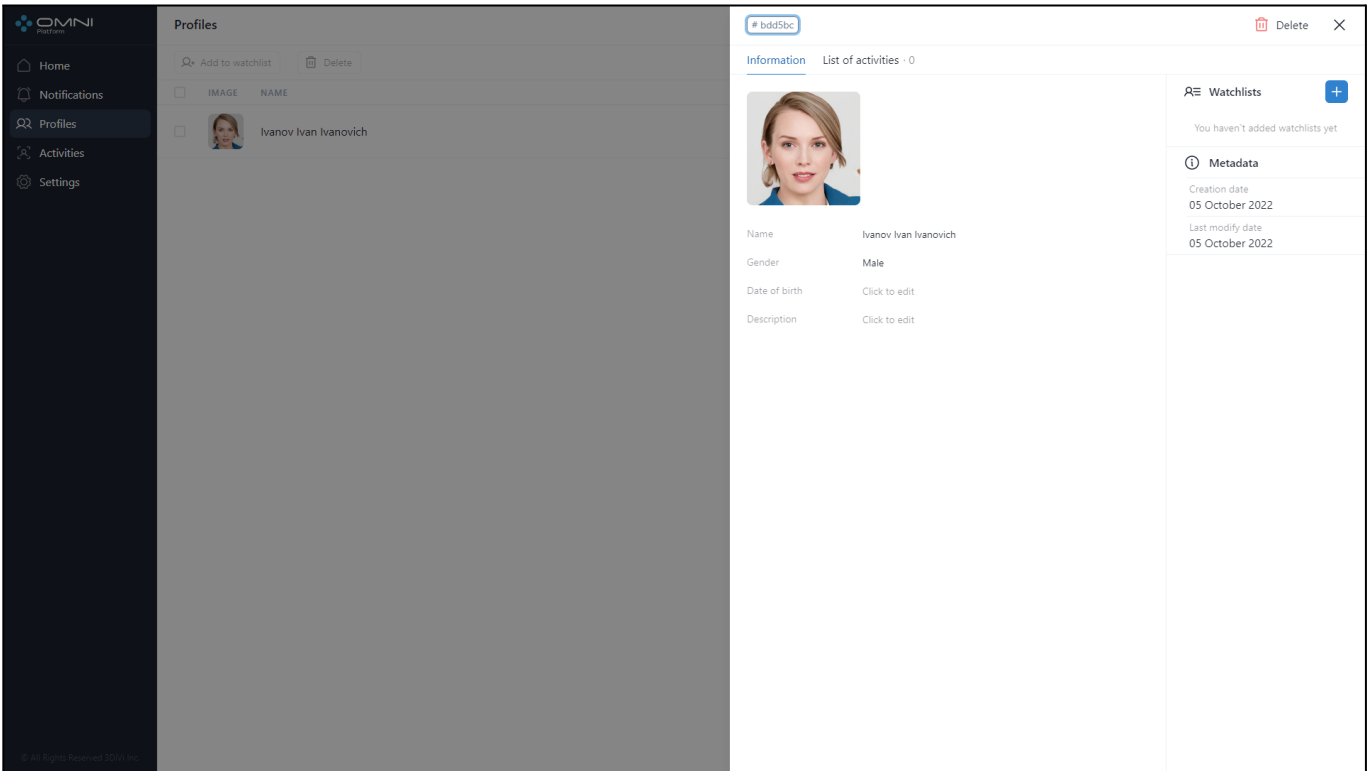
2. You can change the following fields in the card: avatar, name, gender, date of birth and description. Also, via the card you can add/remove a profile from the watchlist. To interact with

watchlists, you can also use the Watchlists section. After data is changed, click the Save button. As a result, profile data will be changed.
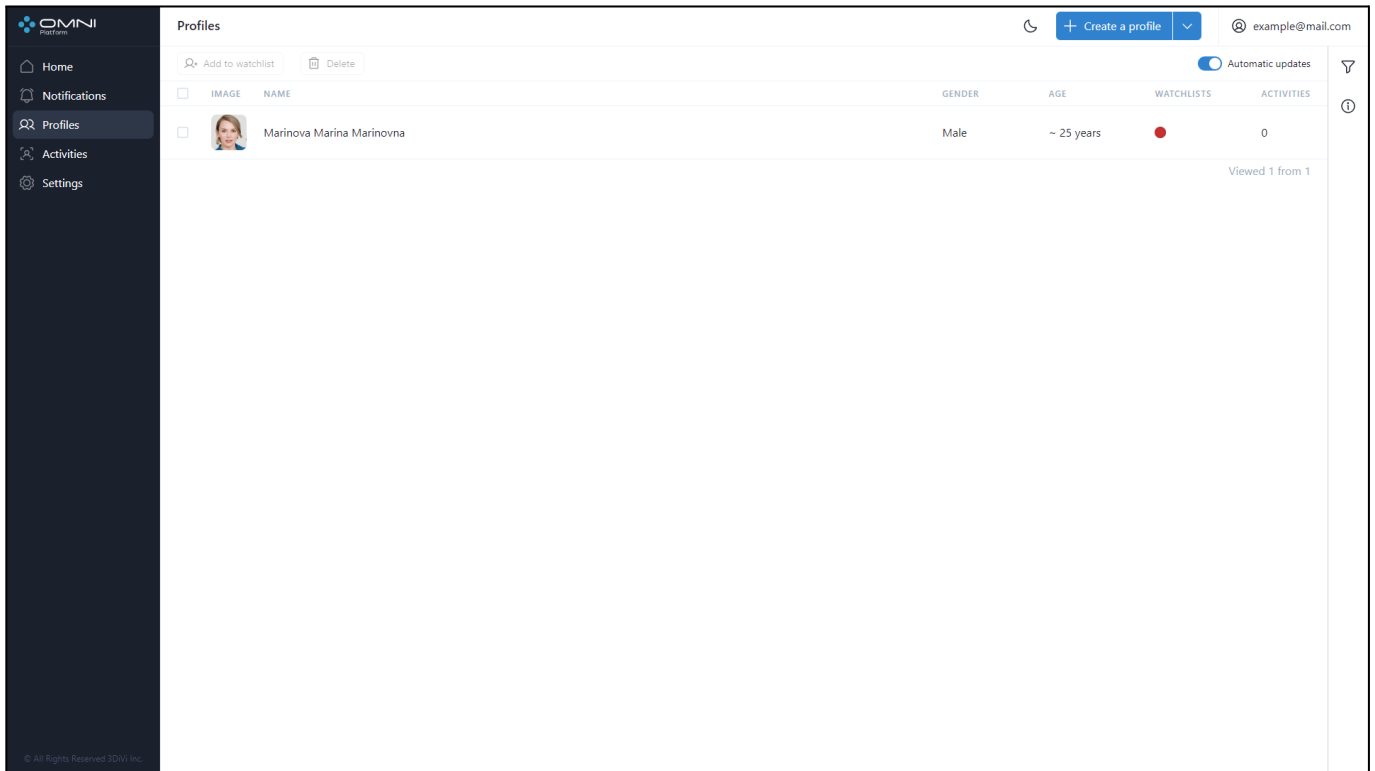
Delete Profiles

To delete profiles, do the following:

1. Open a profile card by clicking the table line and click the Delete button at the top right side of the page.
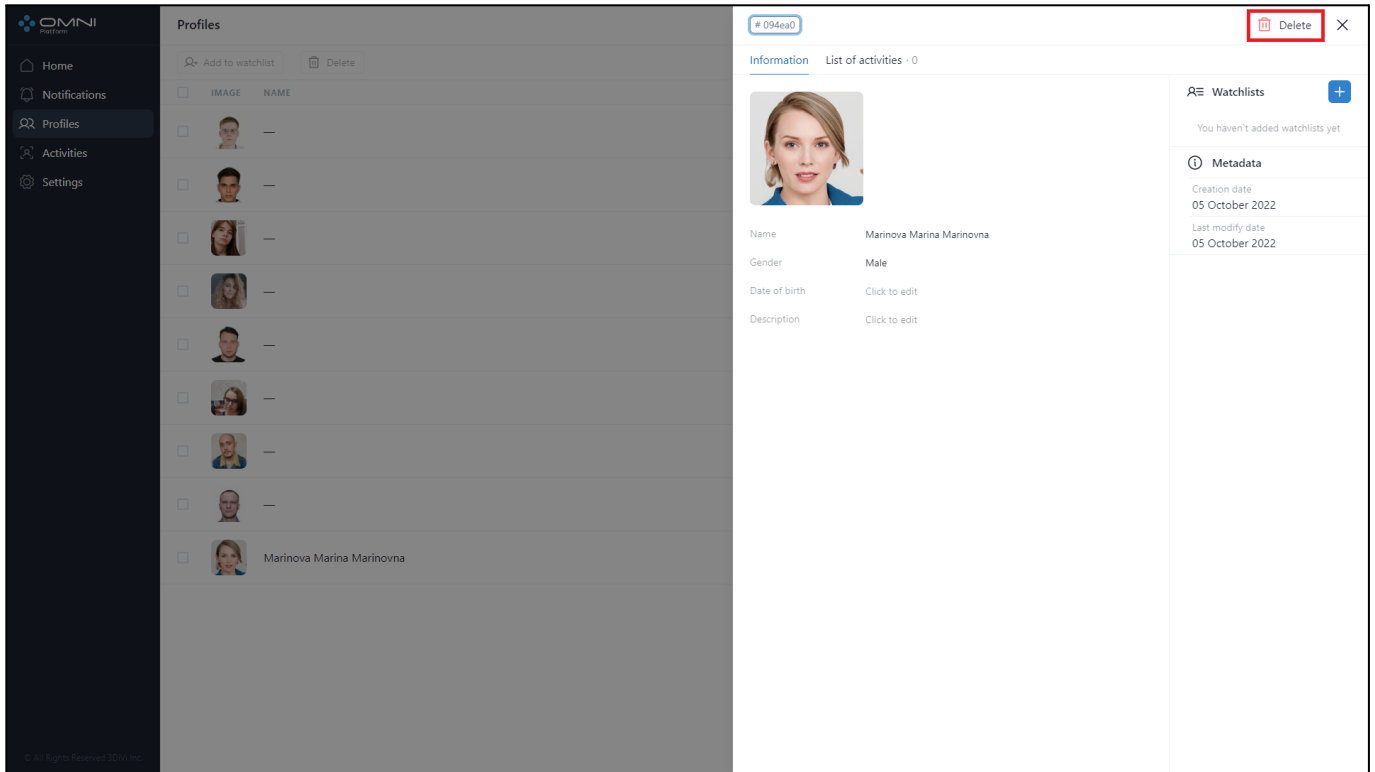
2. Click *Delete* in the delete confirmation message.
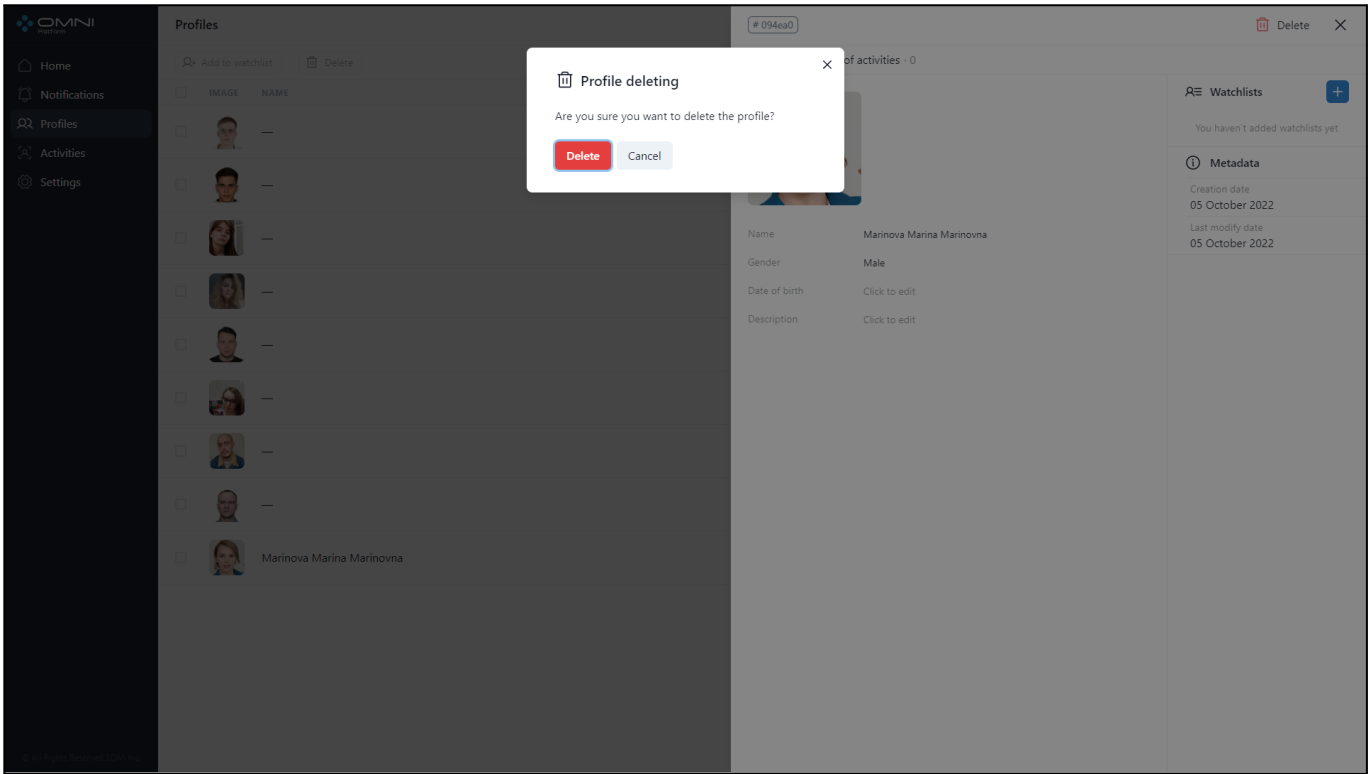
3. As a result, the profile is deleted from the database.
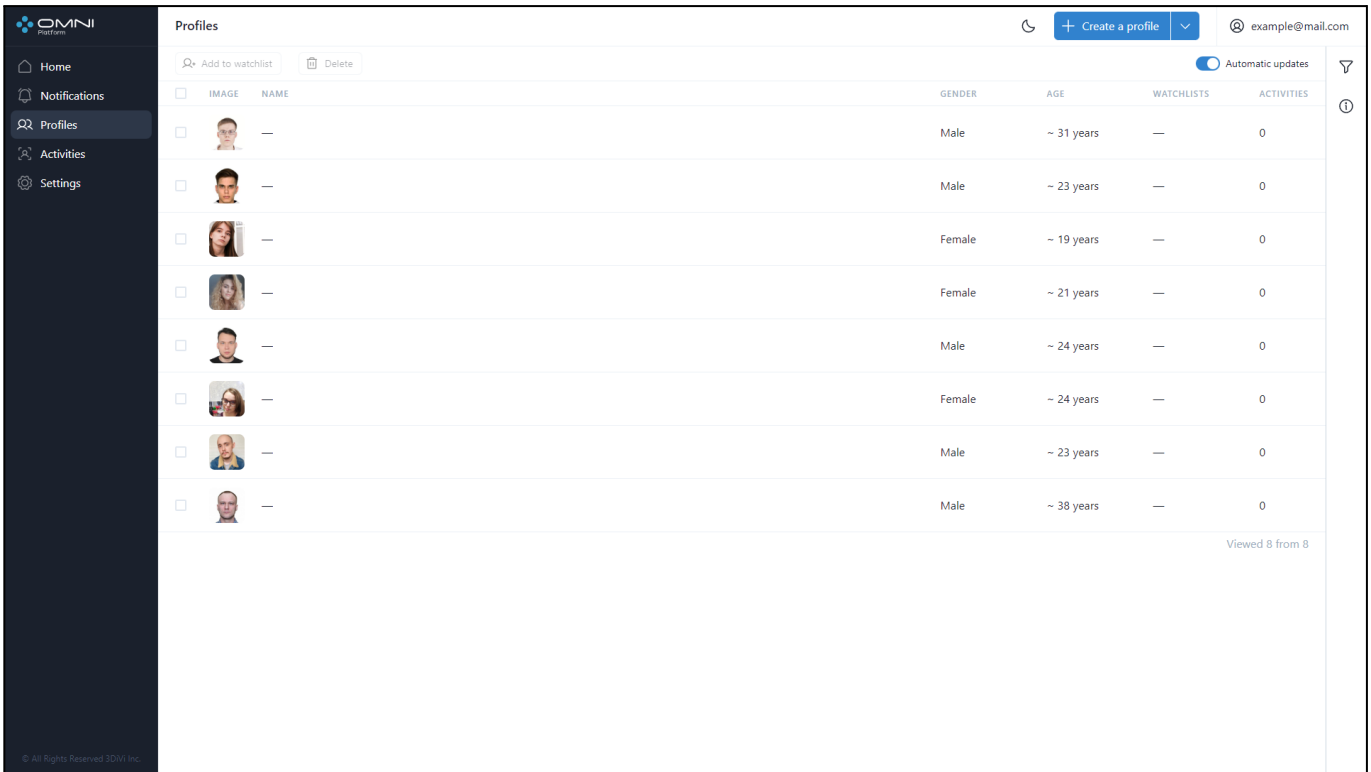
Automatic Update

When multiple OMNI Agents work simultaneously, new objects are created too often and hinder interactions with already existing ones. In this case you can disable automatic data update.

To disable automatic update, click a toggle button in the table header.
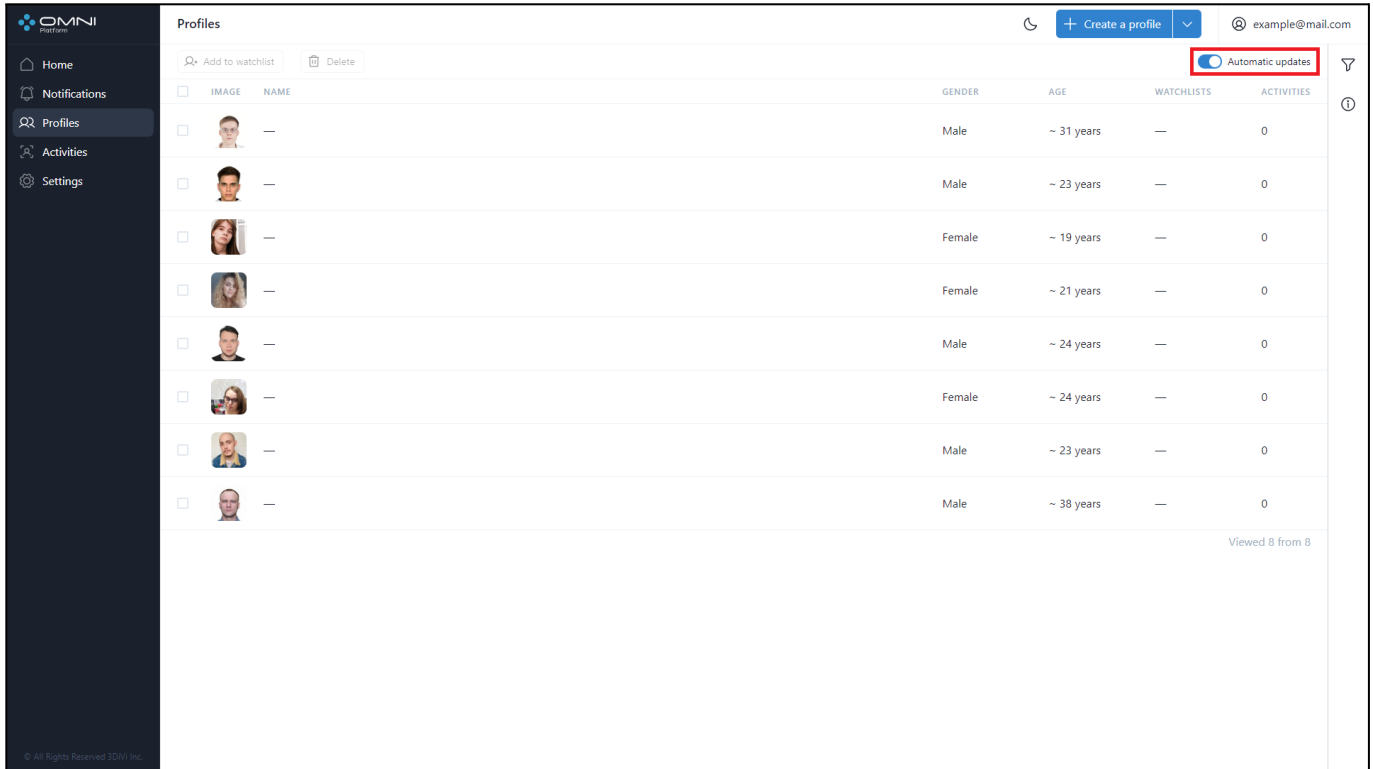
After automatic update is disabled, you'll see an icon with a counter that displays a number of new profiles created from the time automatic update was stopped.
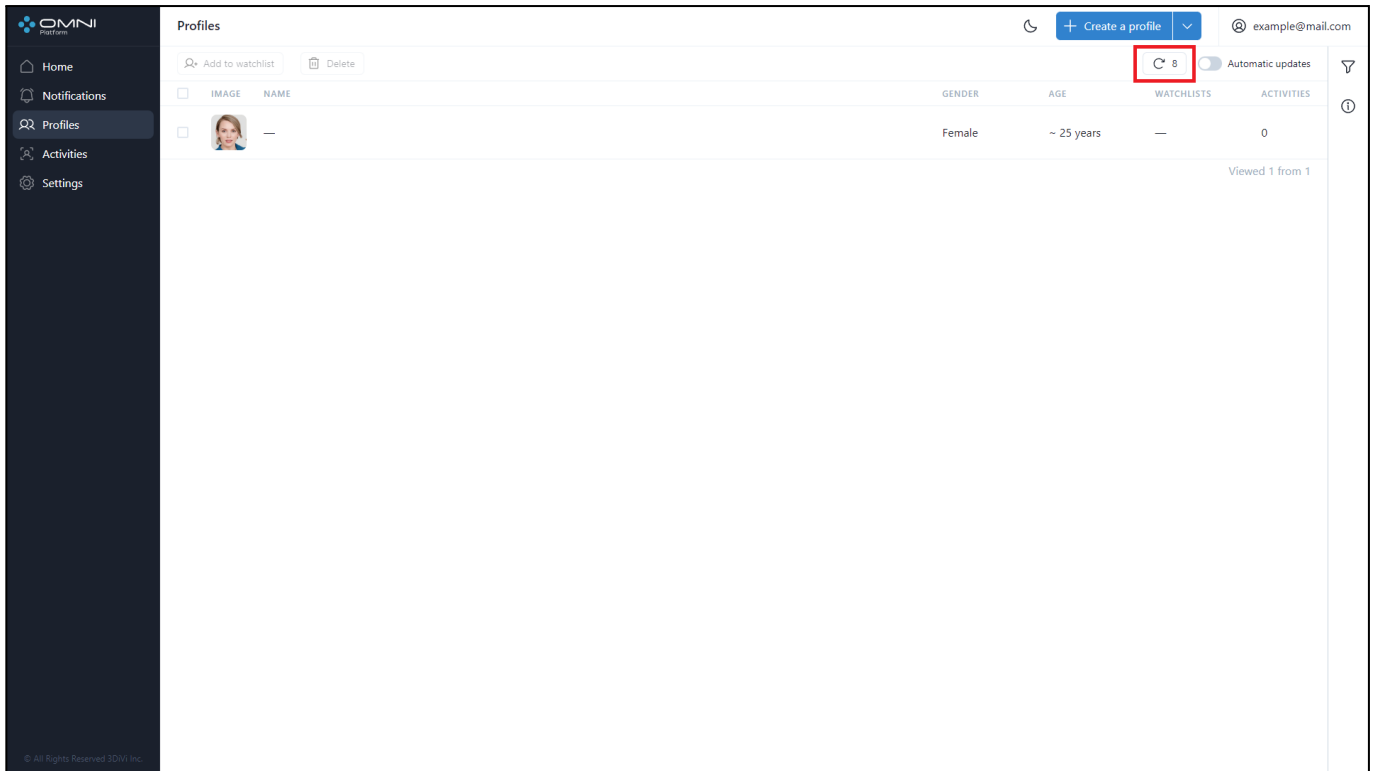
Click this icon and the system will upload all new data.
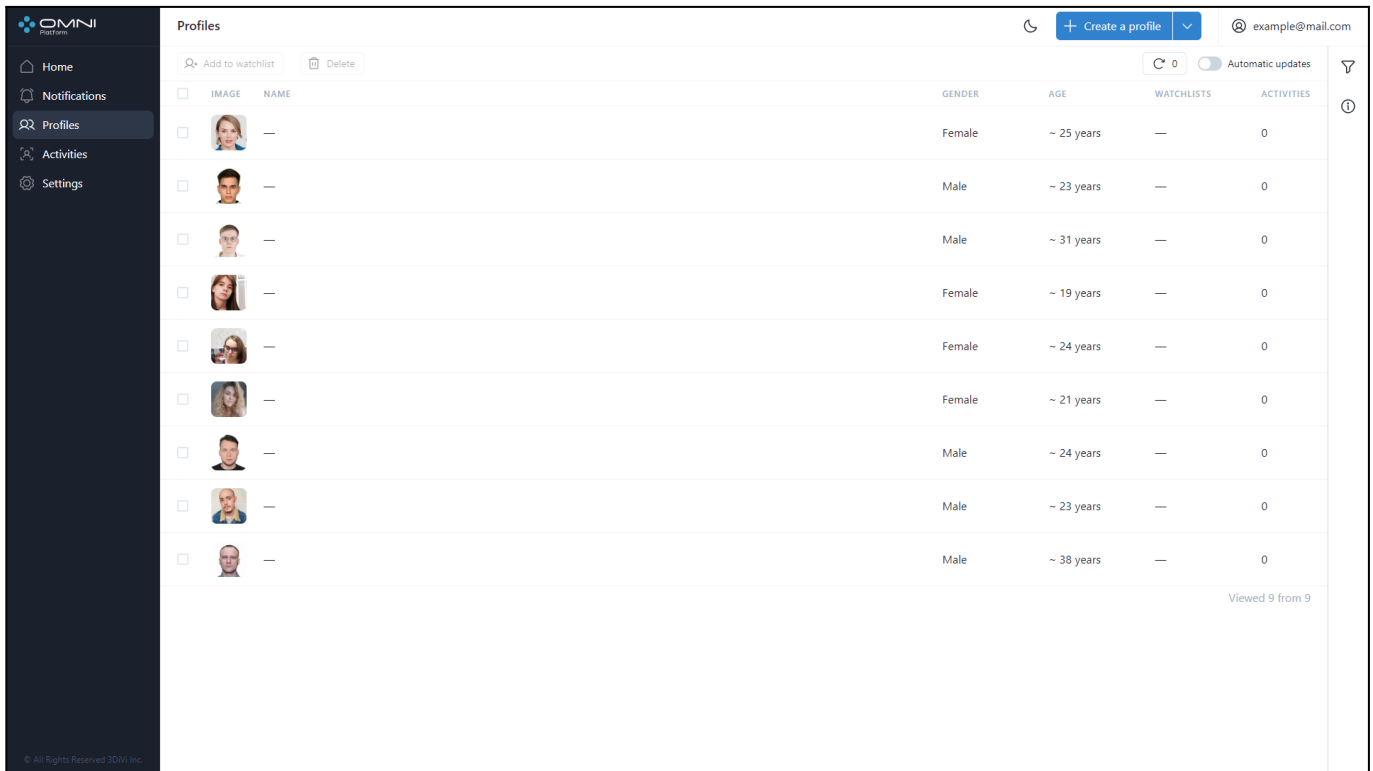
Automatic update can be enabled by clicking a toggle button or just by updating the page.

Add/Delete Multiple Profiles

The system contains the functionality to reduce routine operations with multiple profiles:

- Deleting multiple profiles from the database
- Adding multiple profiles to watchlists

To add/delete multiple profiles, do the following:

1. At the Profiles page choose profiles to add or delete. To choose all the profiles on the page, put a tick in a checkbox in the table header.
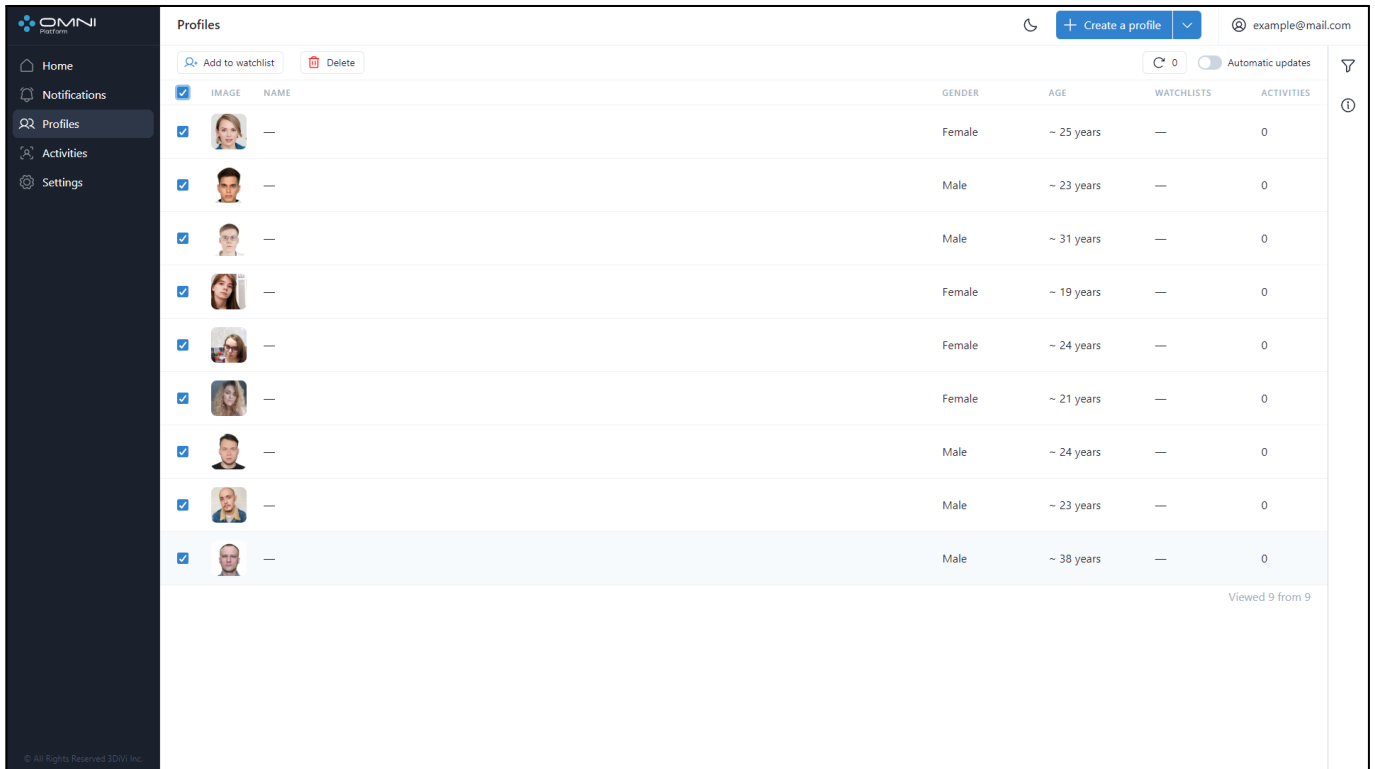
2. Choose a watchlist where to add profiles to, and, as a result, all selected profiles will be added to this watchlist.
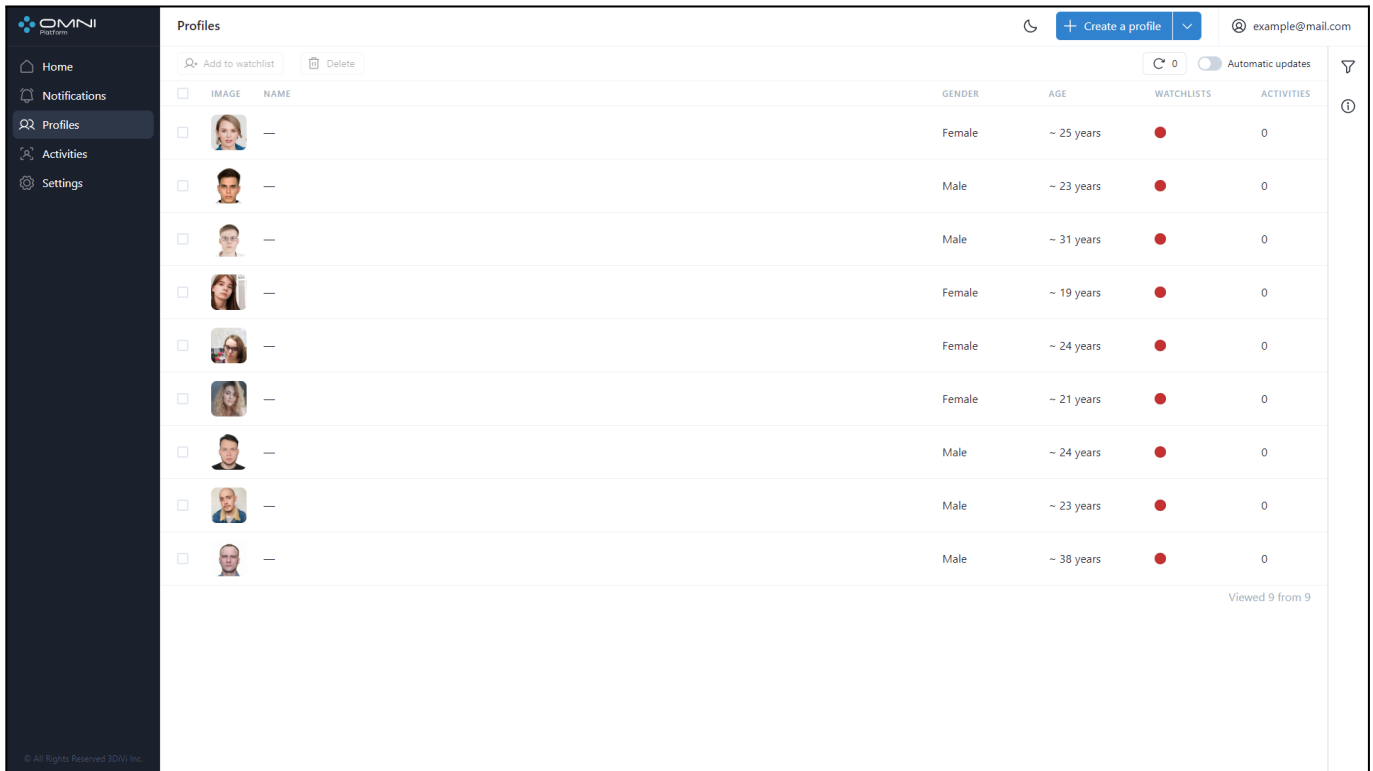
Deleting profiles from the database works the same.

Note that when deleting several persons, the deleting process will start up without confirmation after you click the Delete button.

Filtering and Sorting

The system contains a list of filters and sorting options. Profiles are filtered by the following parameters:

- Avatar presence
- Profile IDs
- Age
- Name
- Description
- Watchlists
- Gender

Sorting options are the following:

- Creation date
- Last modification date
- Name
- Age
- Gender

- Watchlist name

To configure filters, click the Filtering icon at the top right side of the web interface under the Account button.
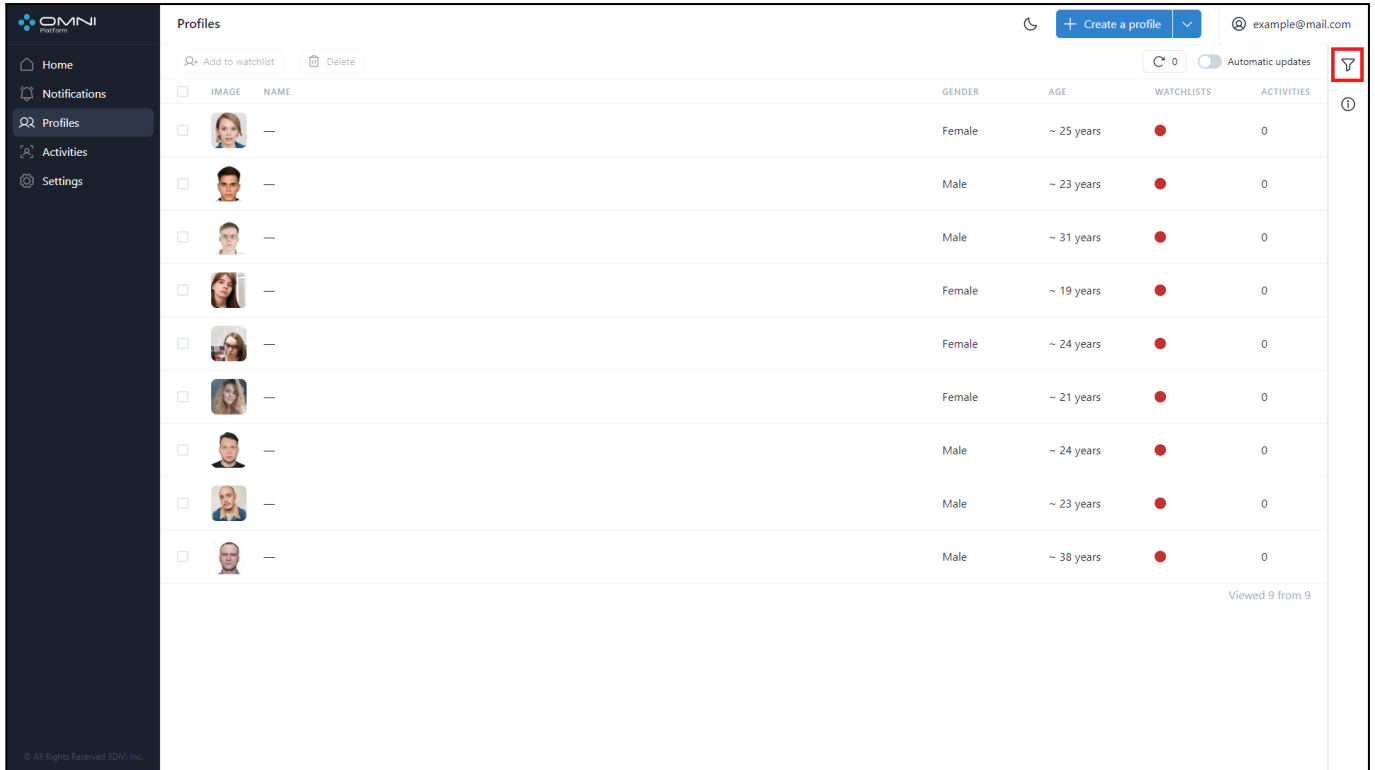
Fill in the appropriate fields in the opened tab. IDs can be copied from object cards.
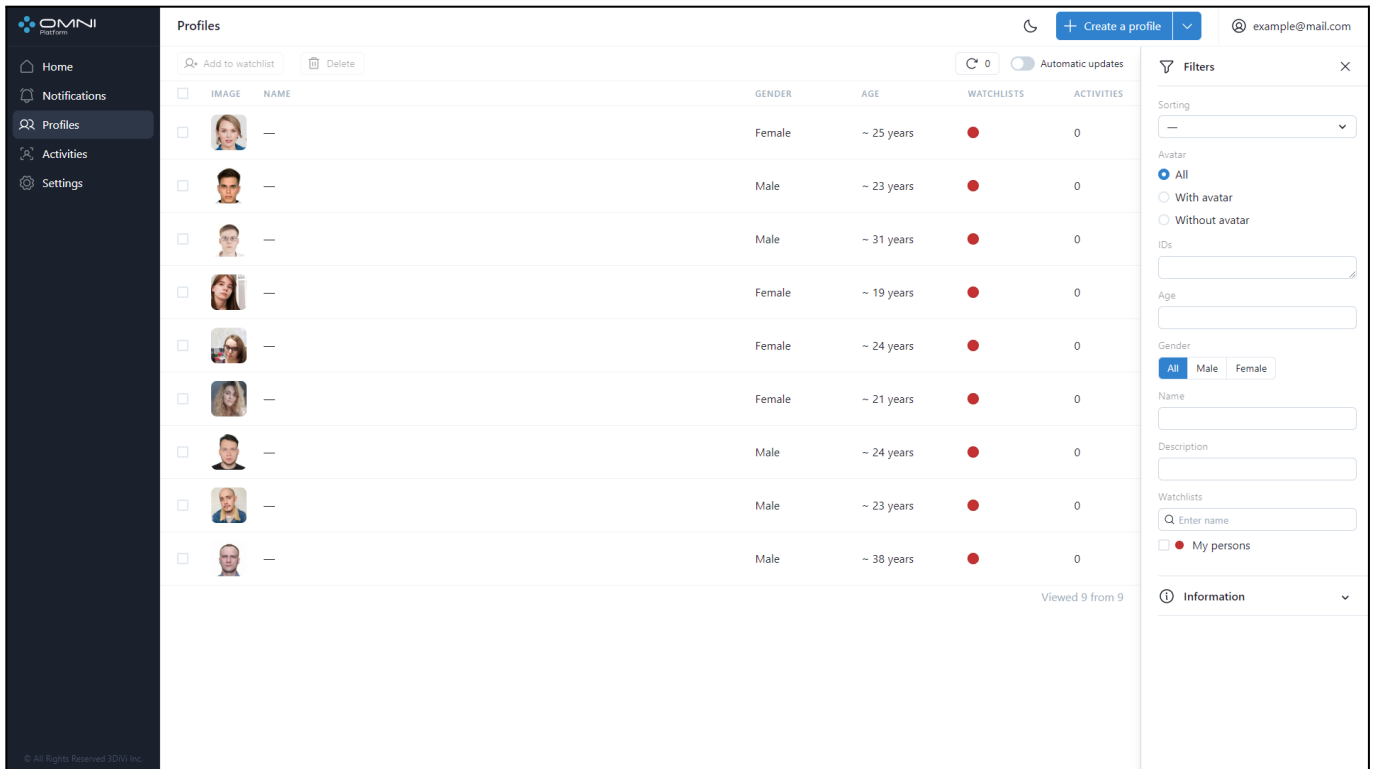
5. Watchlists

Watchlist is an object used for profile grouping and receiving notifications. It contains a number of profile IDs, watchlist metadata and attached trigger. If the detected activity belongs to a profile from this watchlist, the system enables this attached trigger with the condition to create and send a notification.

Create Watchlists

When creating an account, the system automatically creates *My persons* watchlist with a pre-created and attached trigger. Just add a profile to this watchlist and receive notifications within the system without additional settings.

To create a watchlist, do the following:

1. Go to Settings page, choose Watchlists section and click *Create a Watchlist* button.
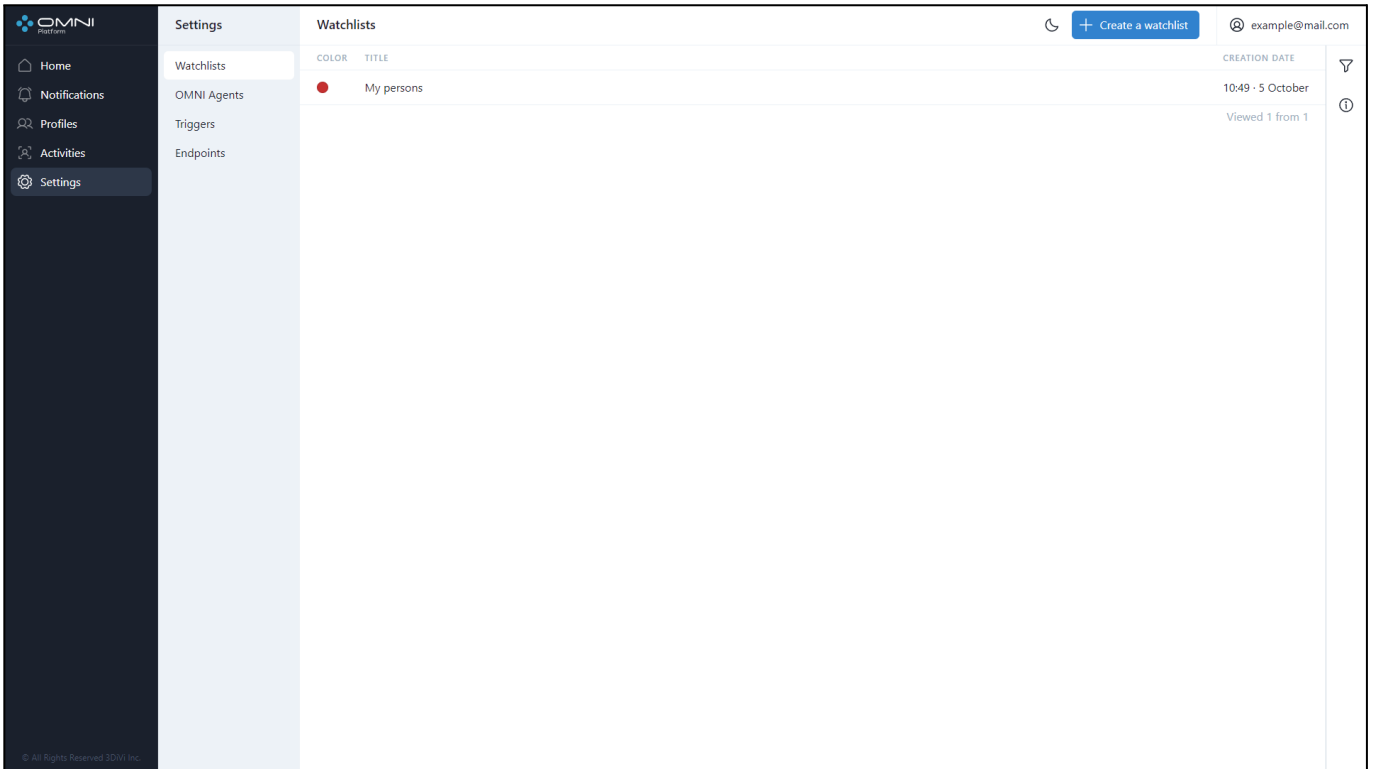
2. Fill in the watchlist name, select a color and click *Save* button.
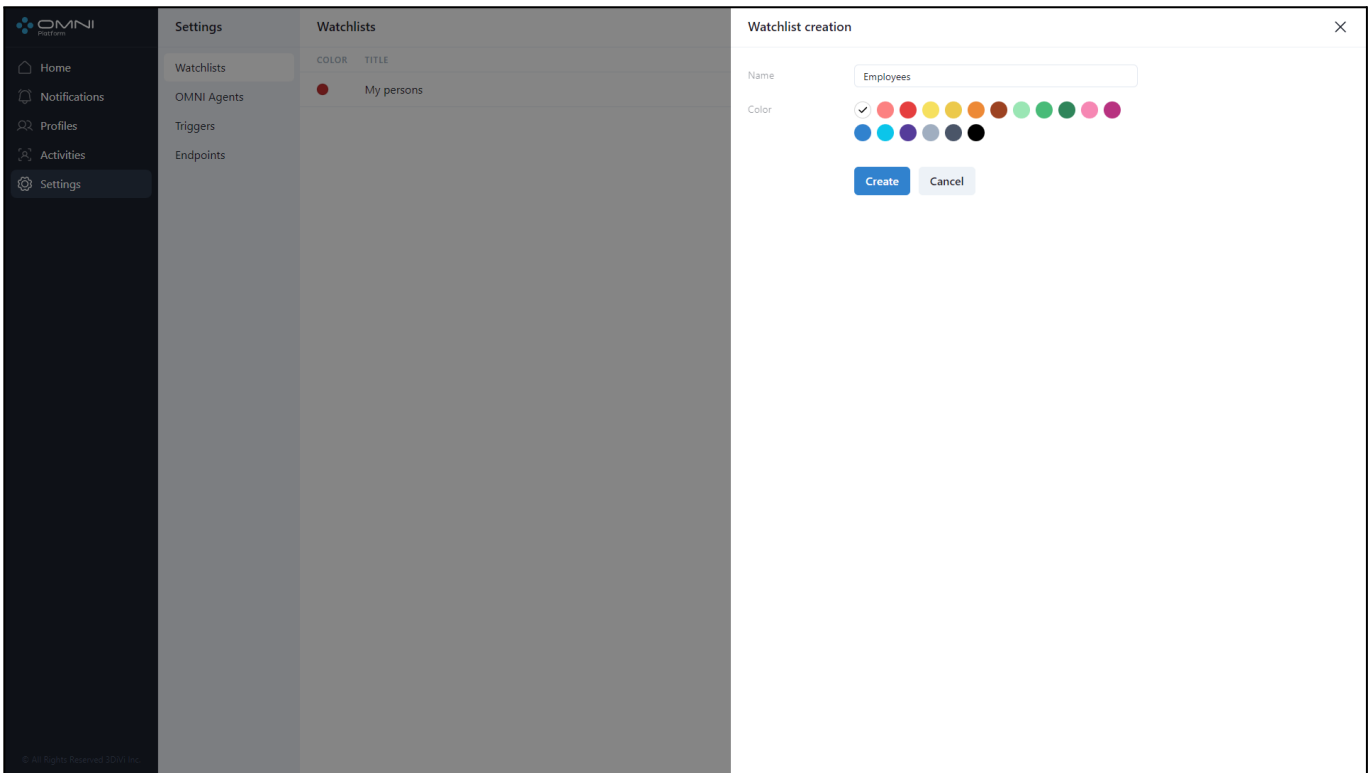
3. As a result, a new watchlist is created.
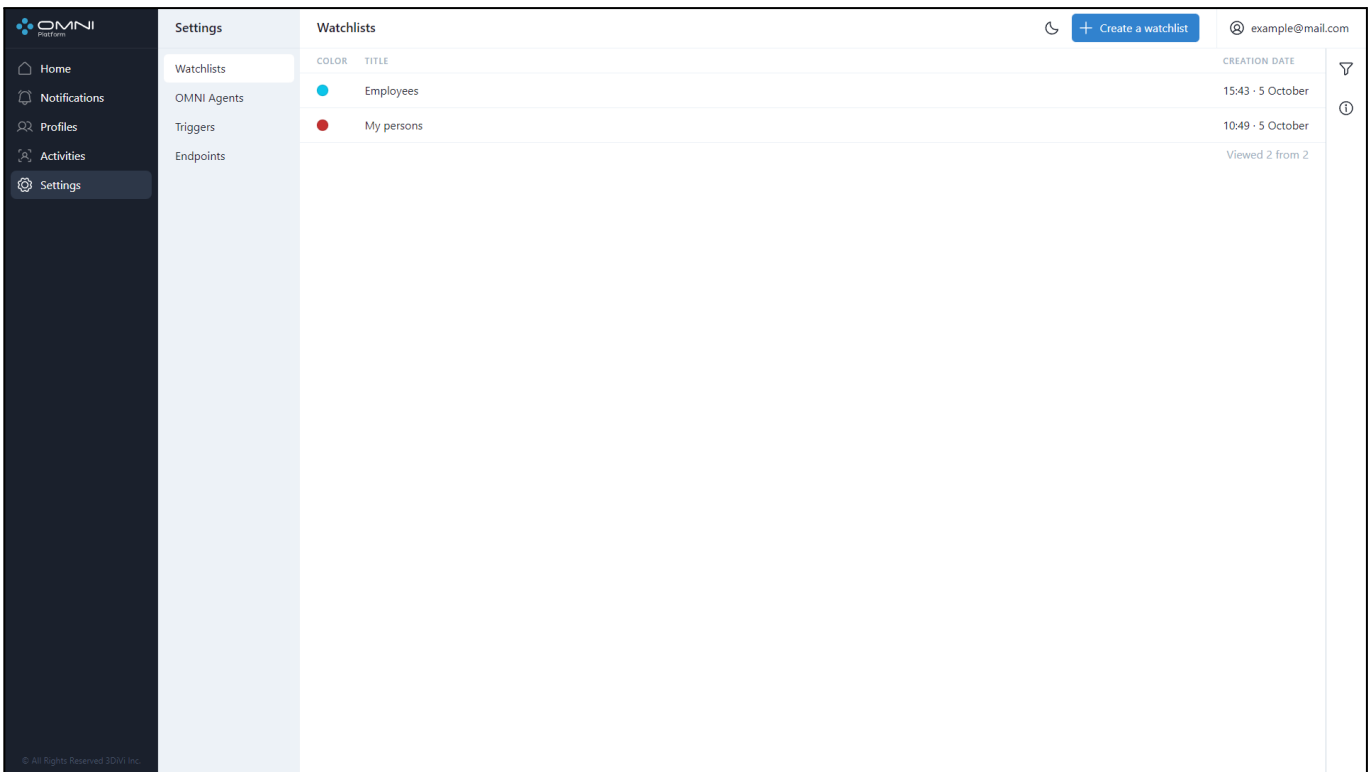
Note: to receive notifications on this watchlist, you need to create a trigger and attach it to the watchlist. Trigger can be attached to the watchlist when editing the watchlist or creating the

trigger. To learn how to create a trigger and attach it to the watchlist, see the Triggers section of the User Guide.

View Watchlists

To view the existing watchlists, do the following:

1. Go to the Settings page and select the Watchlists section. The page displays a table with the watchlists currently existing in the database. On the first visit you'll see *My persons* watchlist, created by default when the account is created.

2. To view detailed information, click on a row in the table to open the watchlist card. The card displays a watchlist name, color, creation date, last modification date and a button with a shortened ID. To see the full ID, just hover over this button. If you click the button, the watchlist ID will be copied to the clipboard.
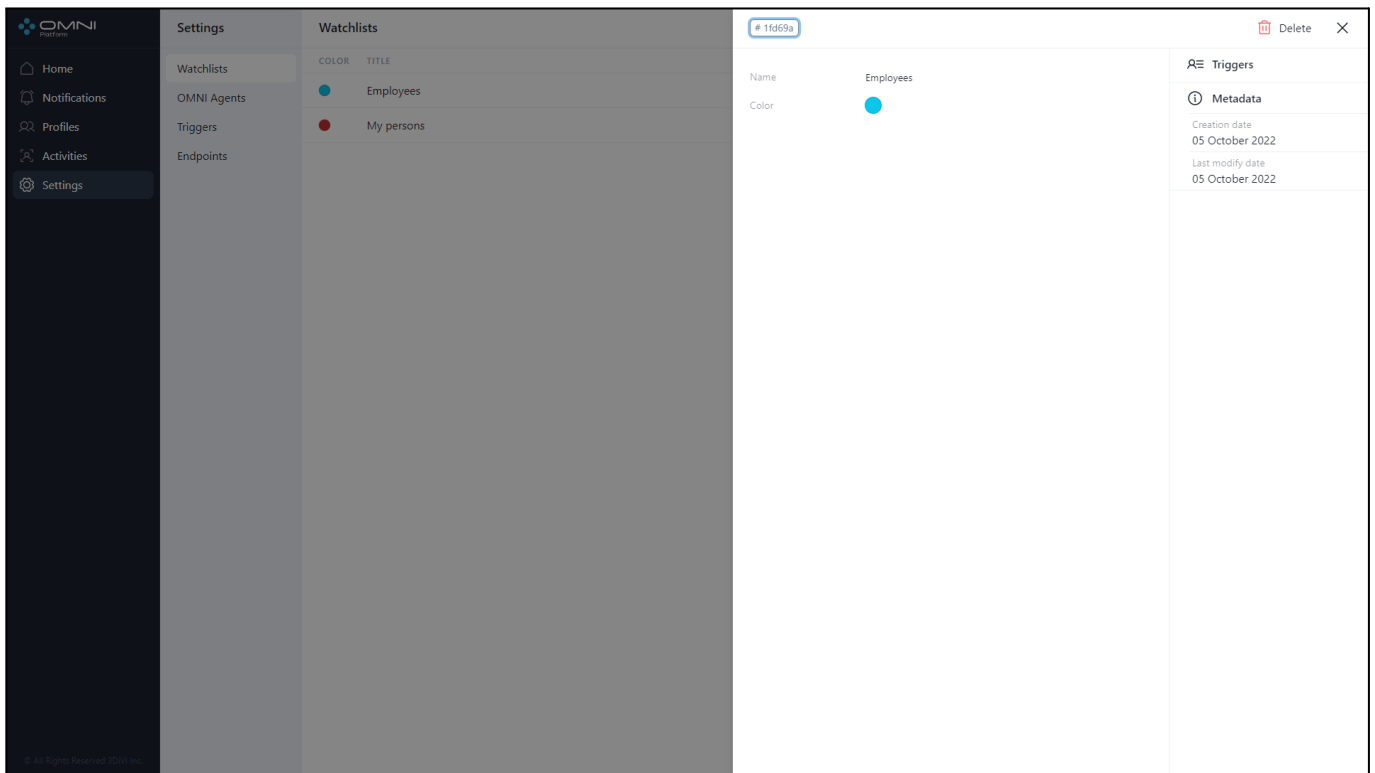
Edit Watchlists

To edit watchlists, do the following:

1. Open a watchlist card by clicking a table row of this watchlist.
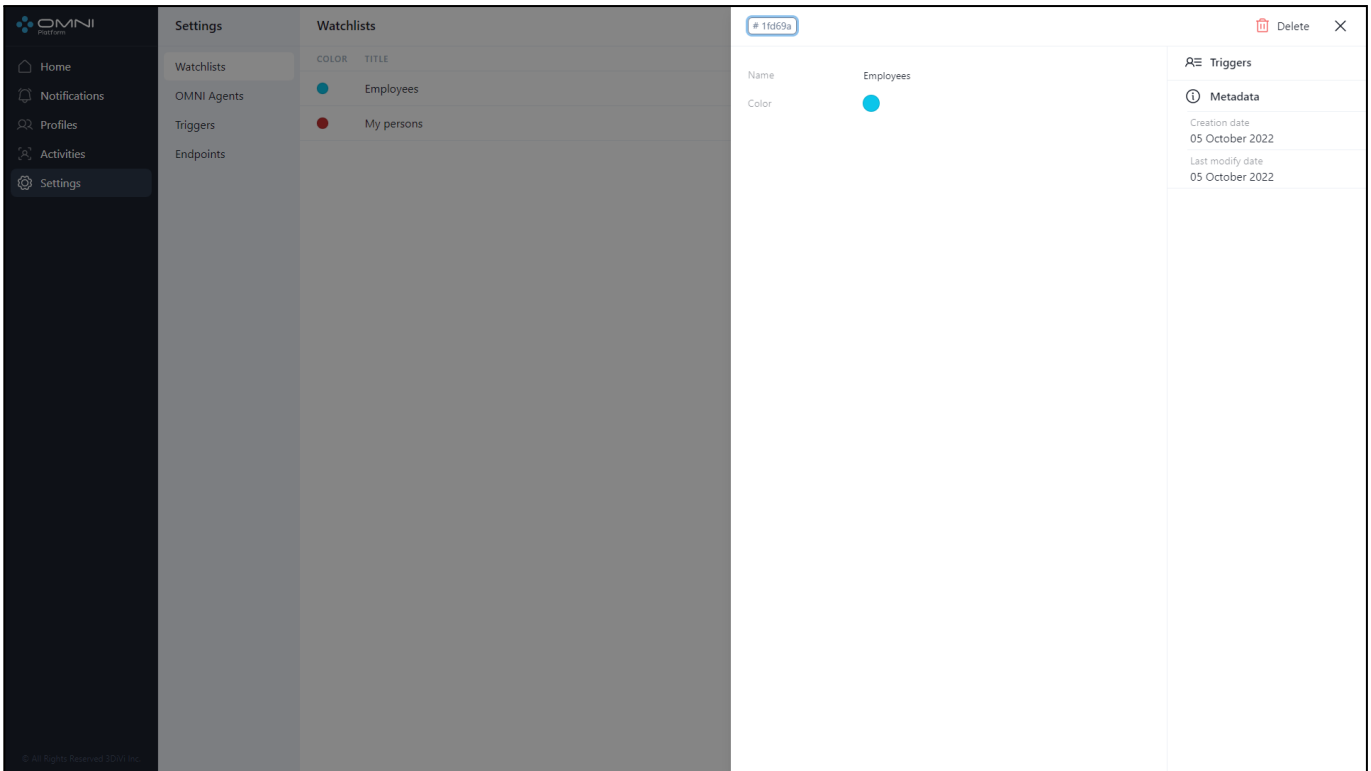
2. In the card you can change name, color and remove a trigger. The removed trigger will be deleted from the database. To change color or name click on the appropriate fields. To configure triggers, move to the Triggers section of the Settings page. After changes, click the Save button.
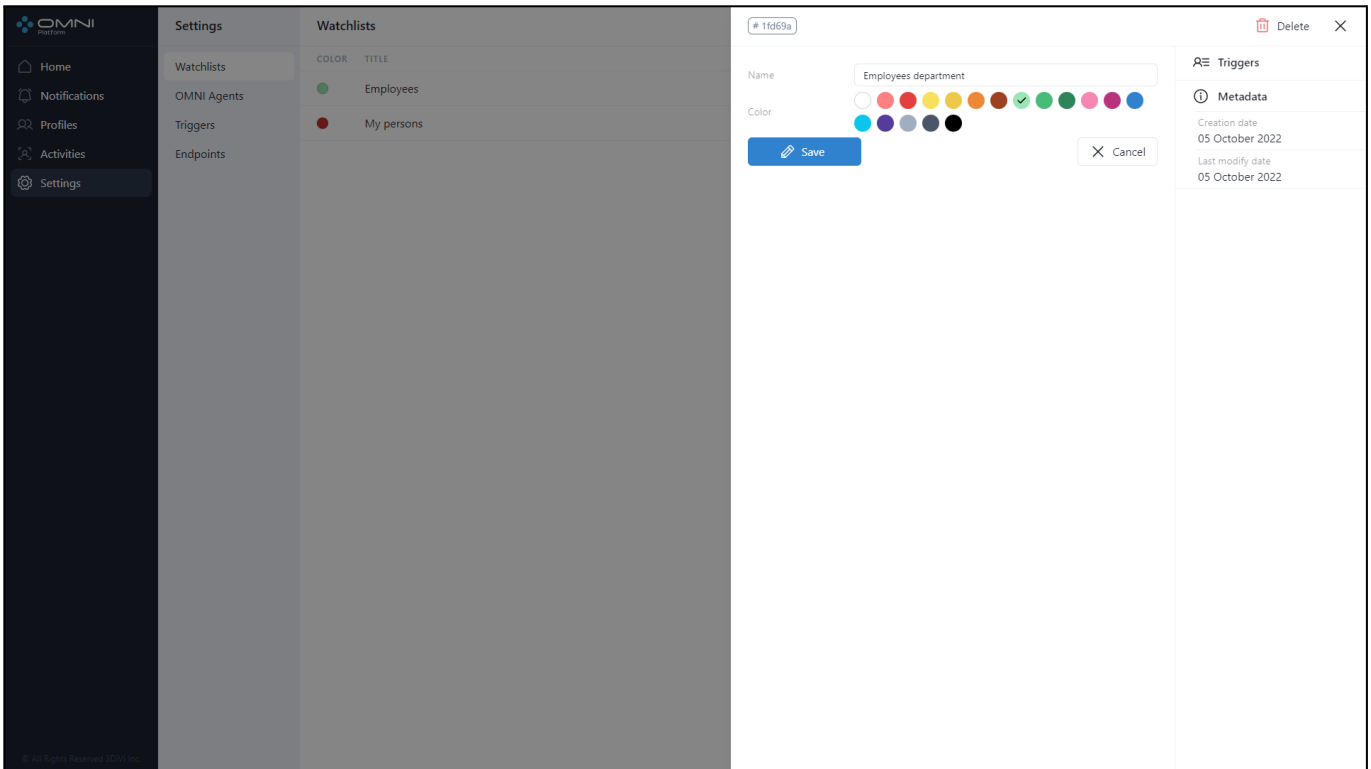
3. As a result, a watchlist changed name, color and got a trigger attached.
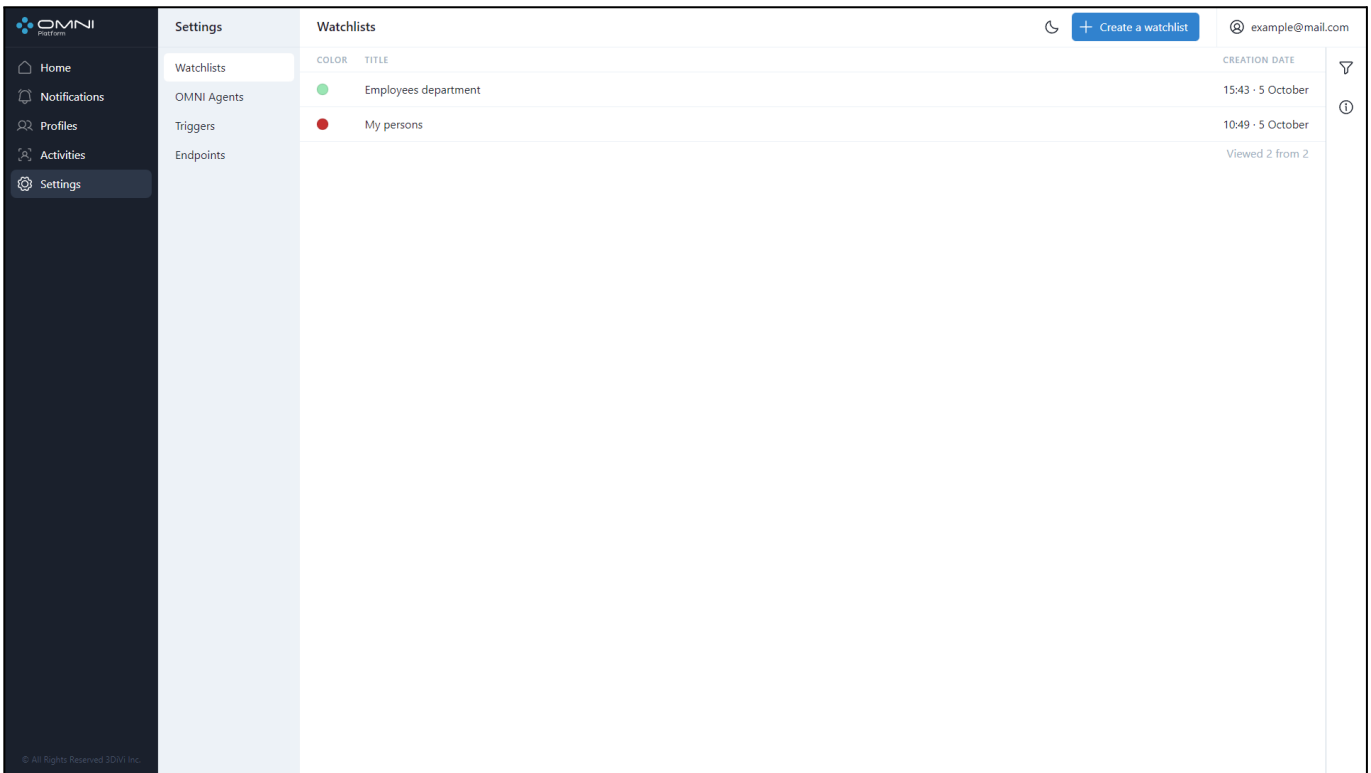
Delete Watchlists

To delete a watchlist, do the following:

1. Open a watchlist card by clicking a table row of this watchlist and click the Delete button at the top right side of the web interface.
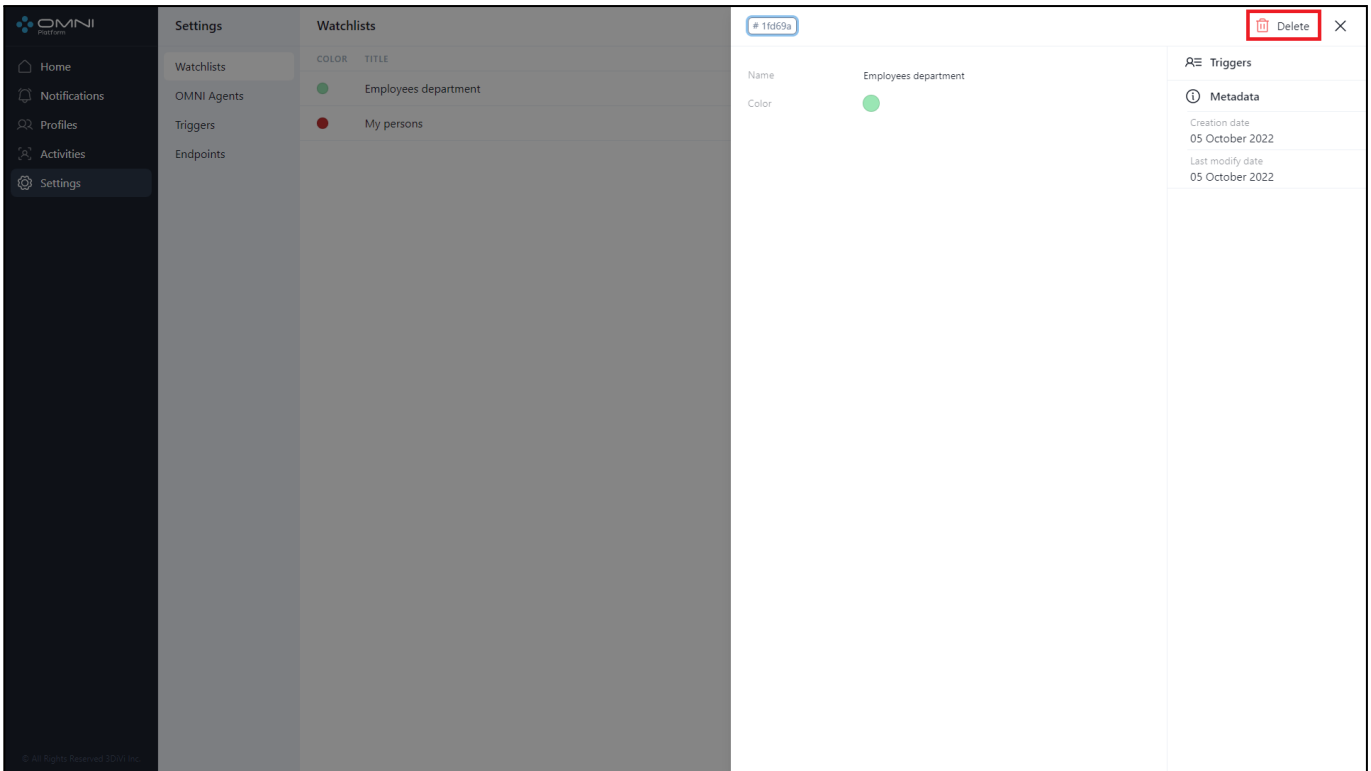
2. Confirm the deletion.
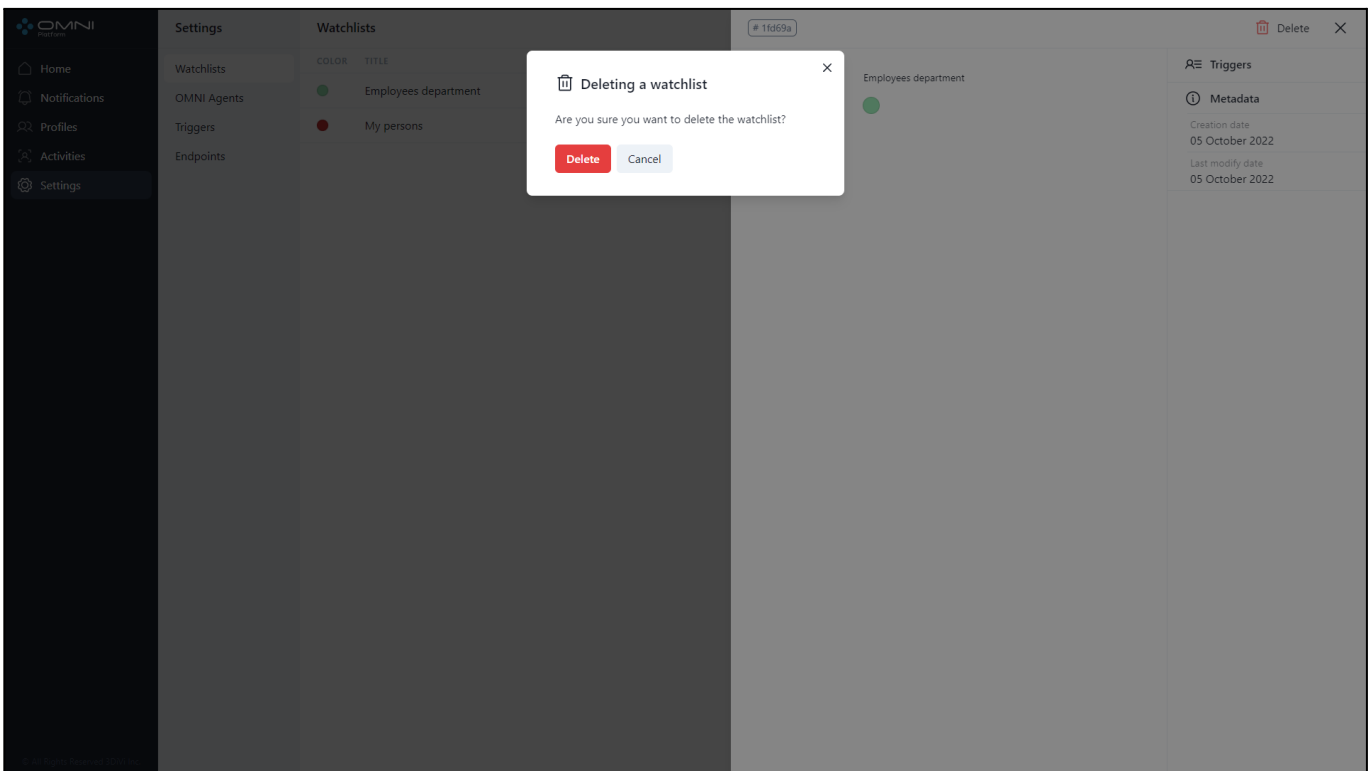
3. As a result, a watchlist is deleted from the database.
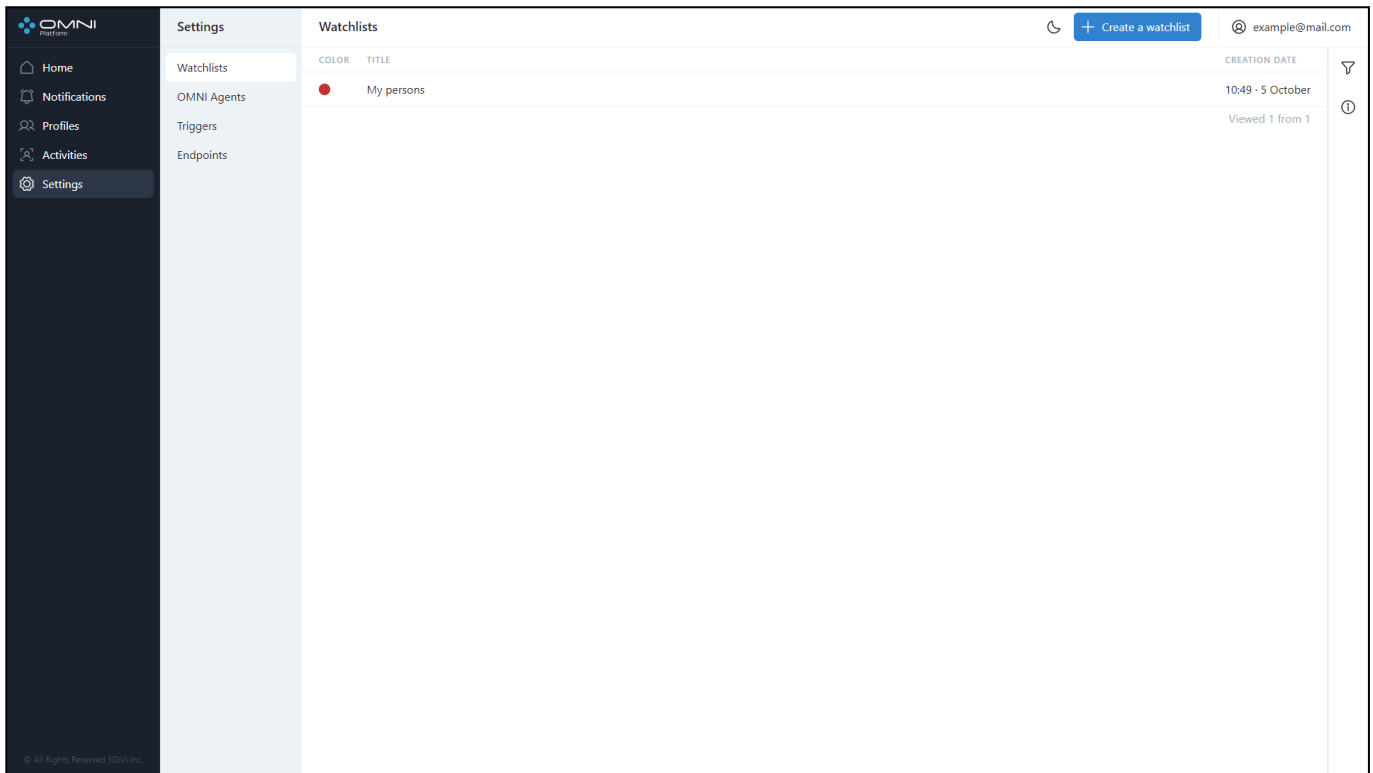
Filtering

The system contains a list of filters for watchlist searching. Watchlists are filtered by the following parameters:

- Watchlist IDs
- Name
- Profile ID (for the profiles added to the watchlists)
- Color

To configure filters, click the Filtering icon at the top right side of web-interface under *Account* button.
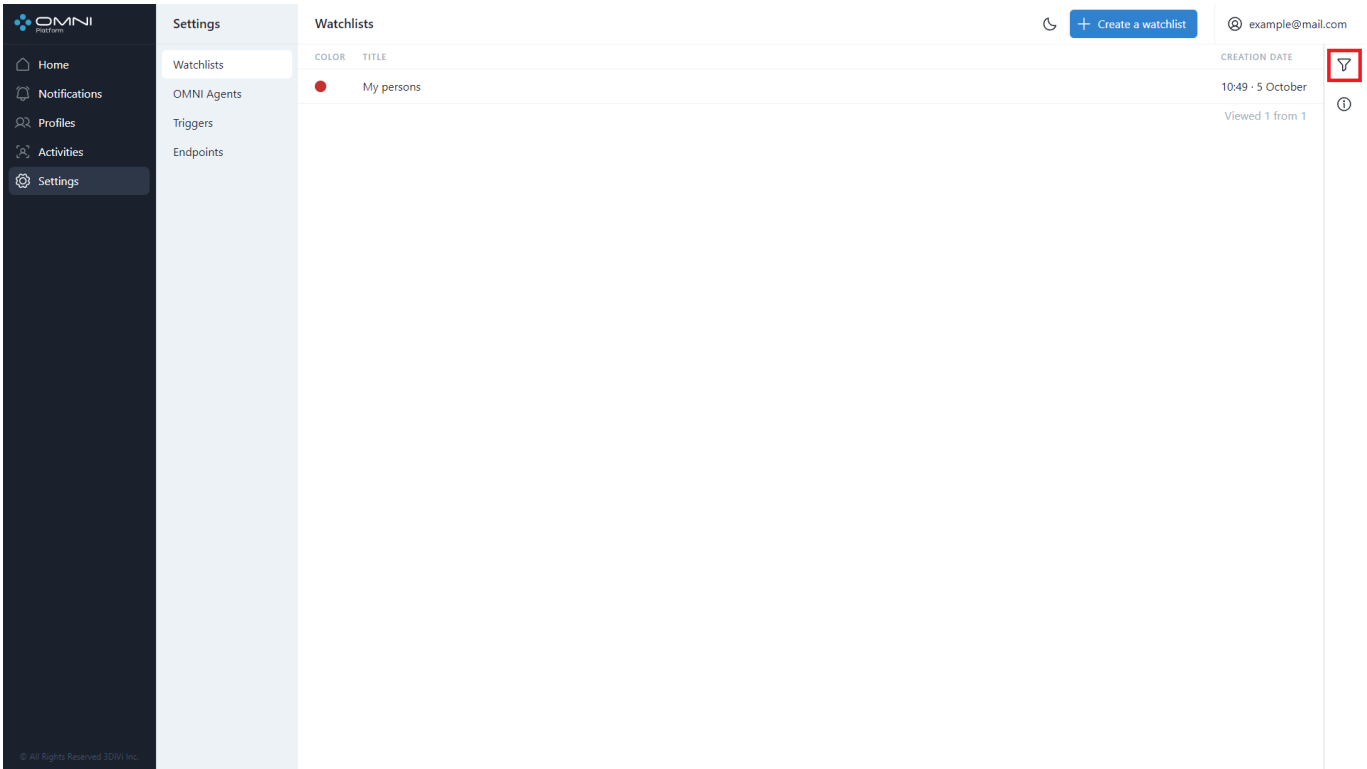
Fill in the appropriate fields in the opened tab. IDs can be copied from object cards.
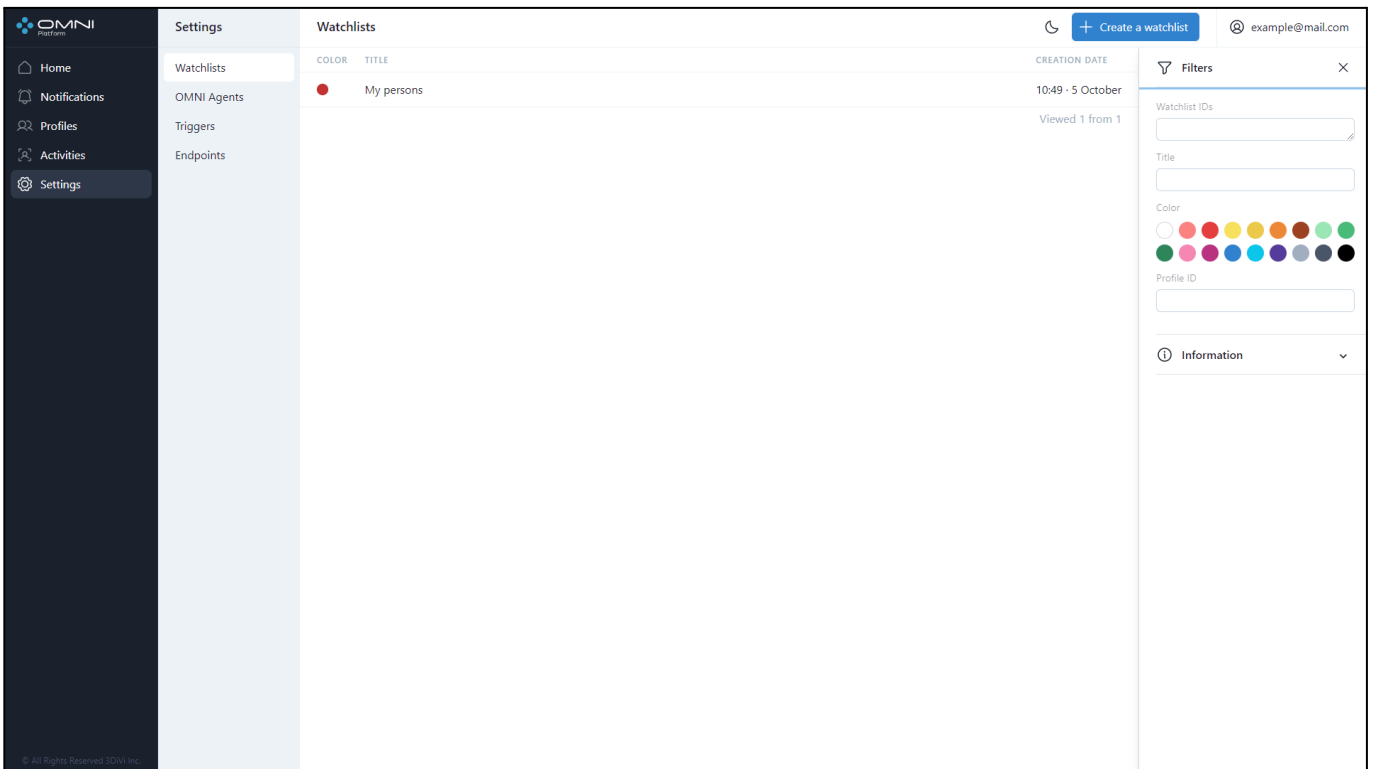
6. Triggers

Trigger is an object needed to create and send a notification to endpoints if the activity data satisfies the trigger condition. Trigger contains a trigger condition, a set of endpoints, and ID of the watchlist it is attached to.

Create Triggers

When creating an account, the system automatically creates a trigger for *My persons* watchlist with an endpoint attached. You can view this trigger at the Triggers section of the Settings page. To create a trigger, do the following:

1. Open Settings page, select Triggers section and click on *Create a Trigger* button.
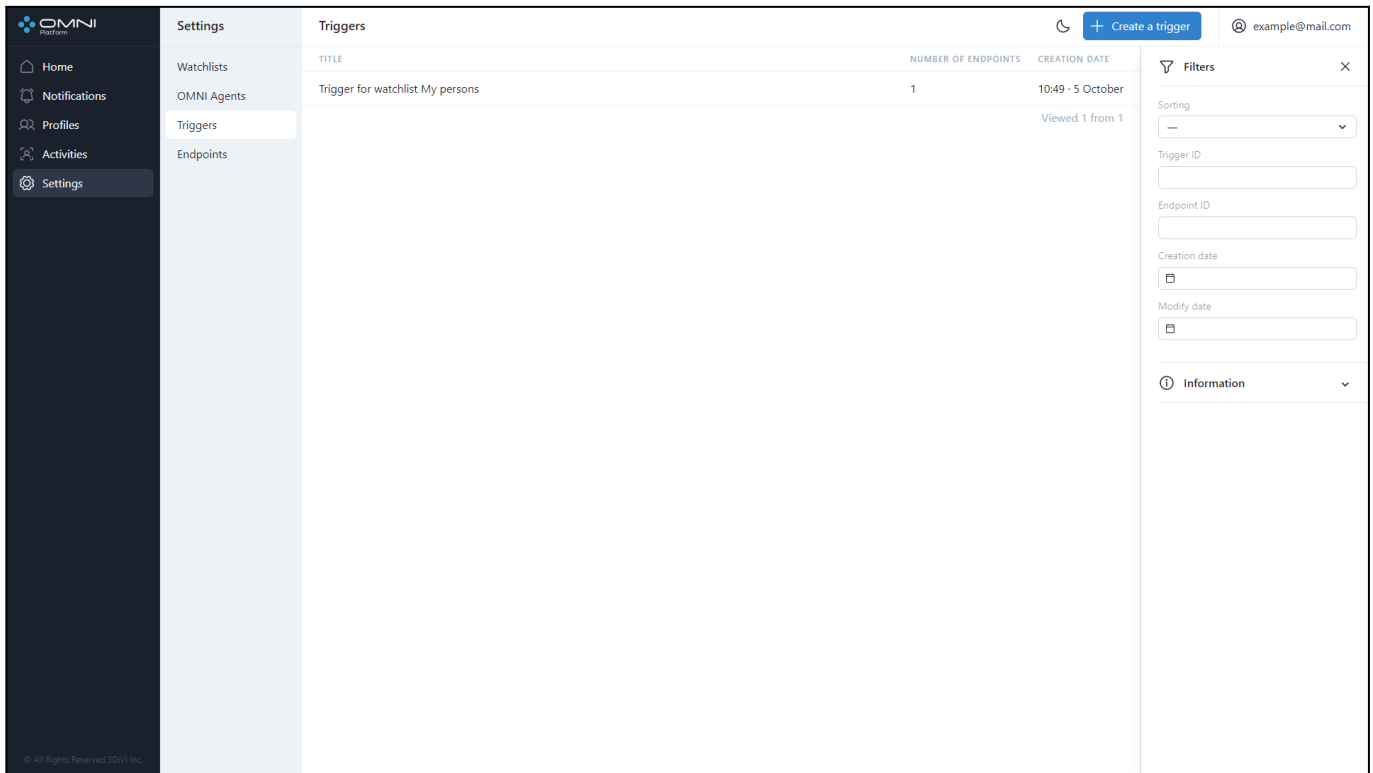
2. Fill in a trigger name, then select a watchlist and attach endpoints.
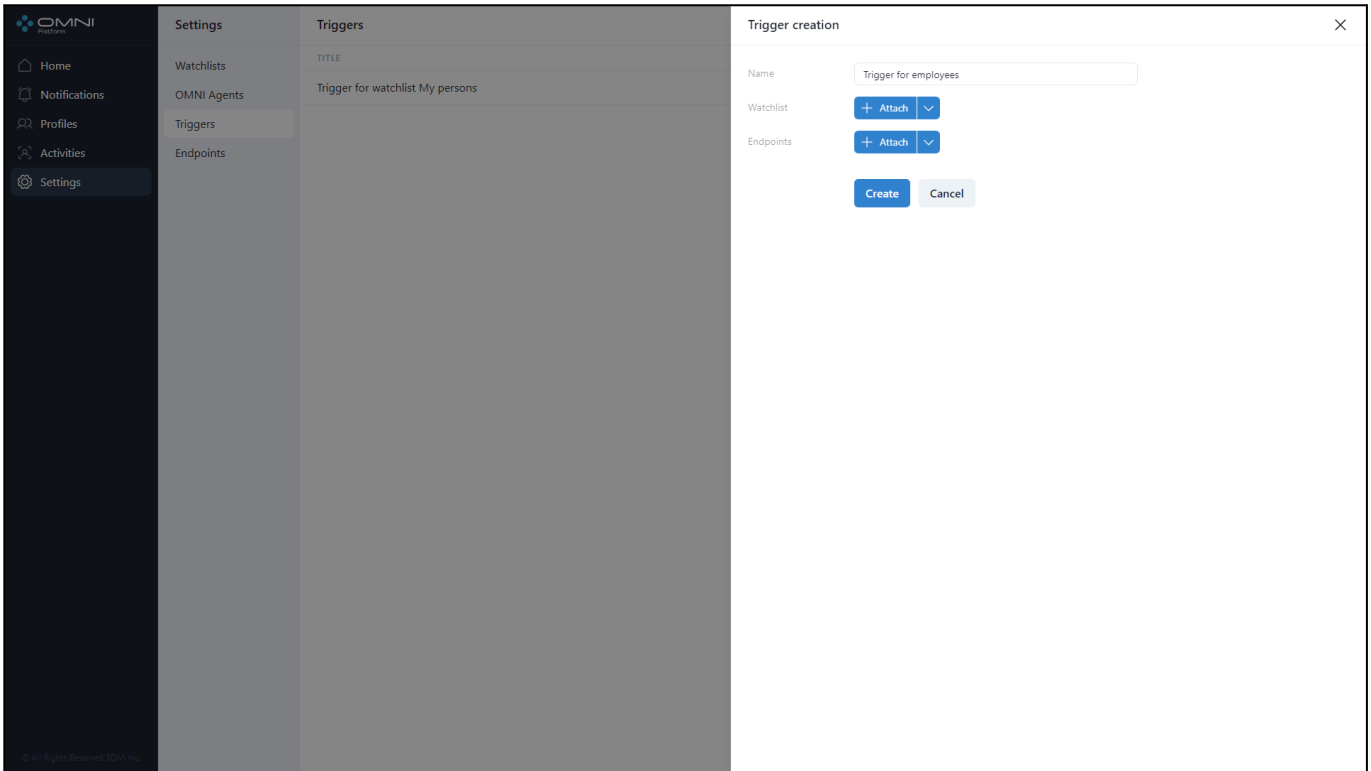
To select a watchlist, click *Attach* button.
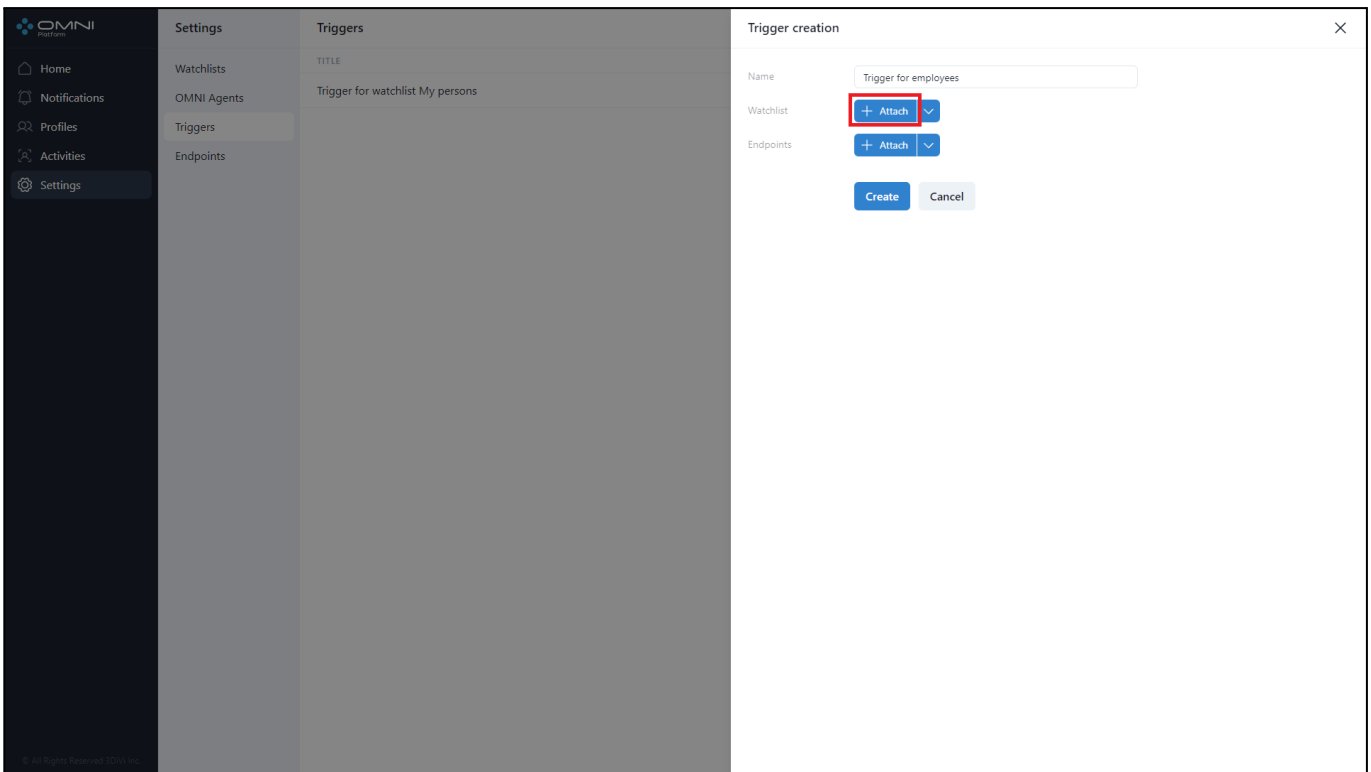
As a result, you'll see a list of previously created watchlists. Select the required watchlist and click *Add* button.
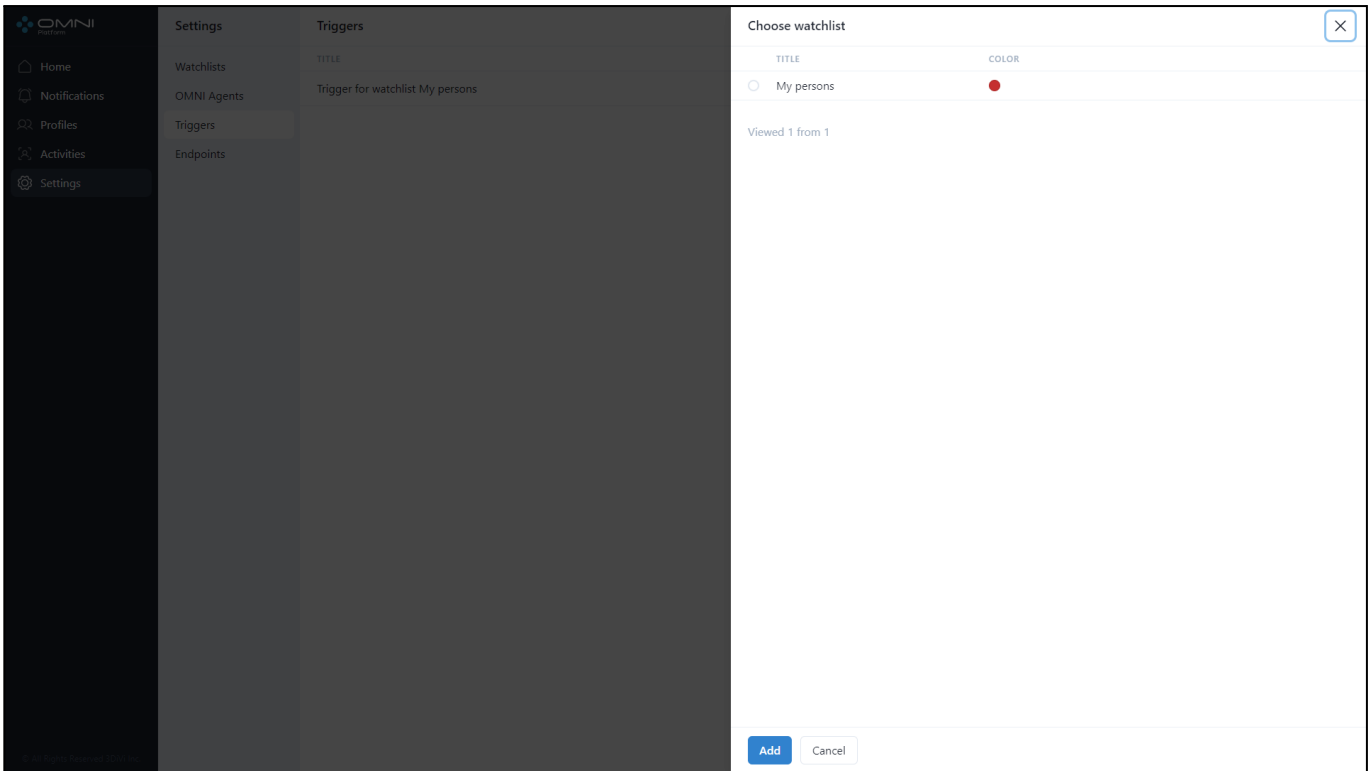
This watchlist will be attached to the created trigger.
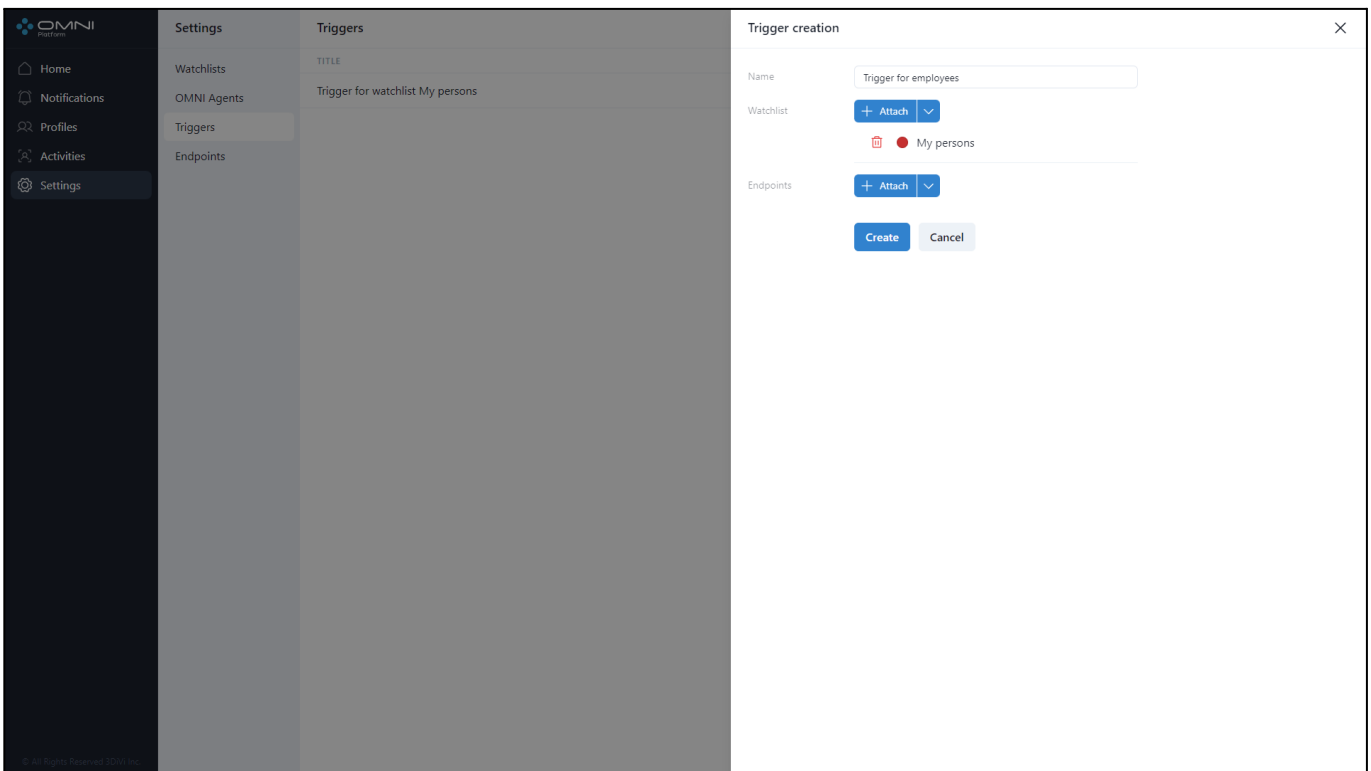
You can also create a watchlist by clicking *Create a Watchlist* option from the dropdown menu. You'll be redirected to *Create a watchlist* form. Once created, the watchlist will be attached to the trigger.
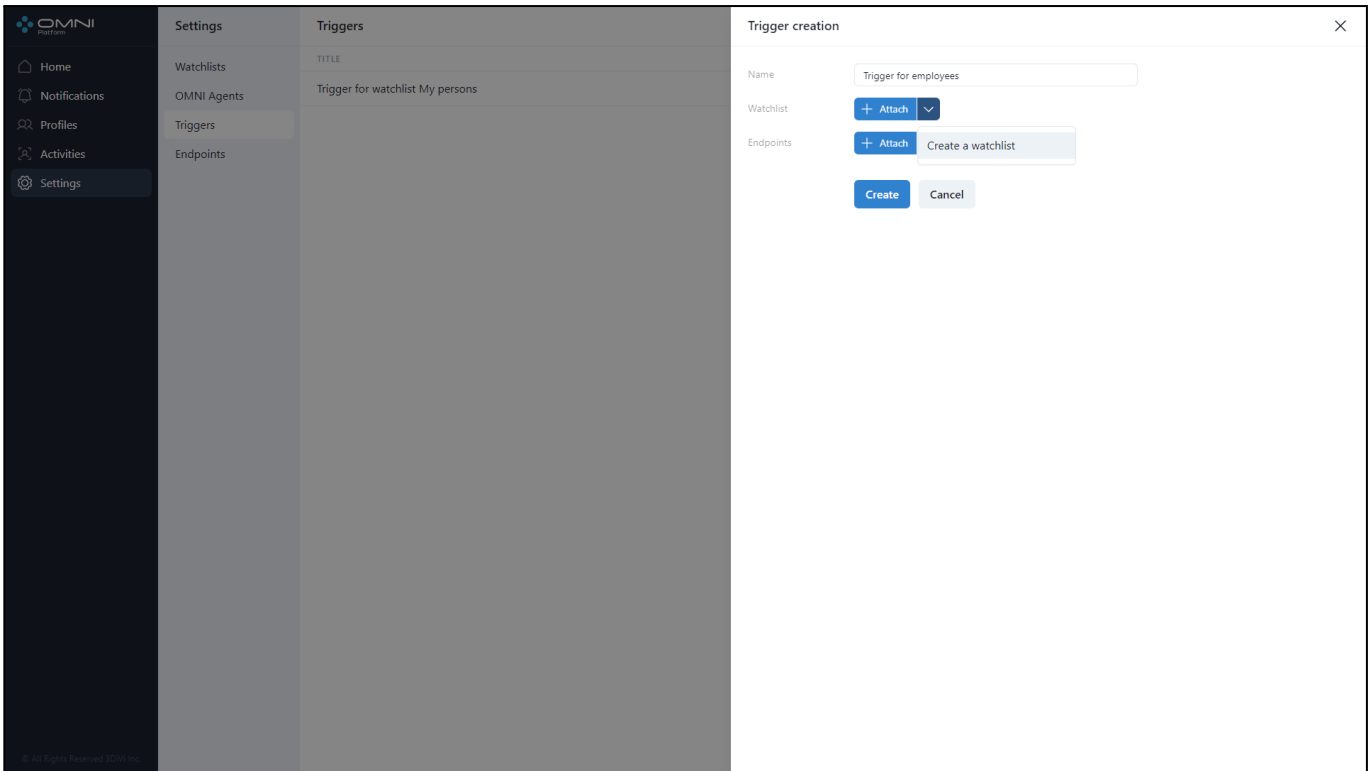
The endpoints are attached the same way. After all fields are filled in, click the Create button.
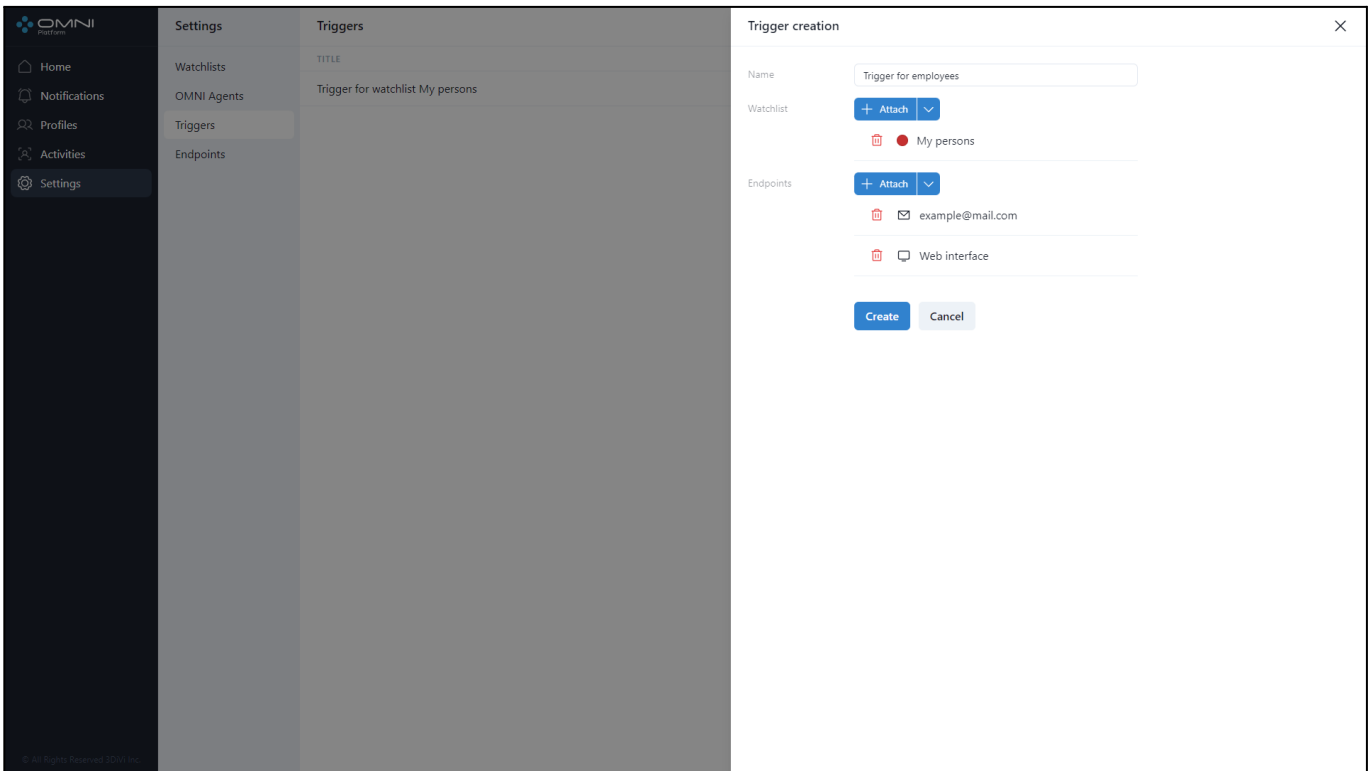
3. As a result, the system creates a trigger..
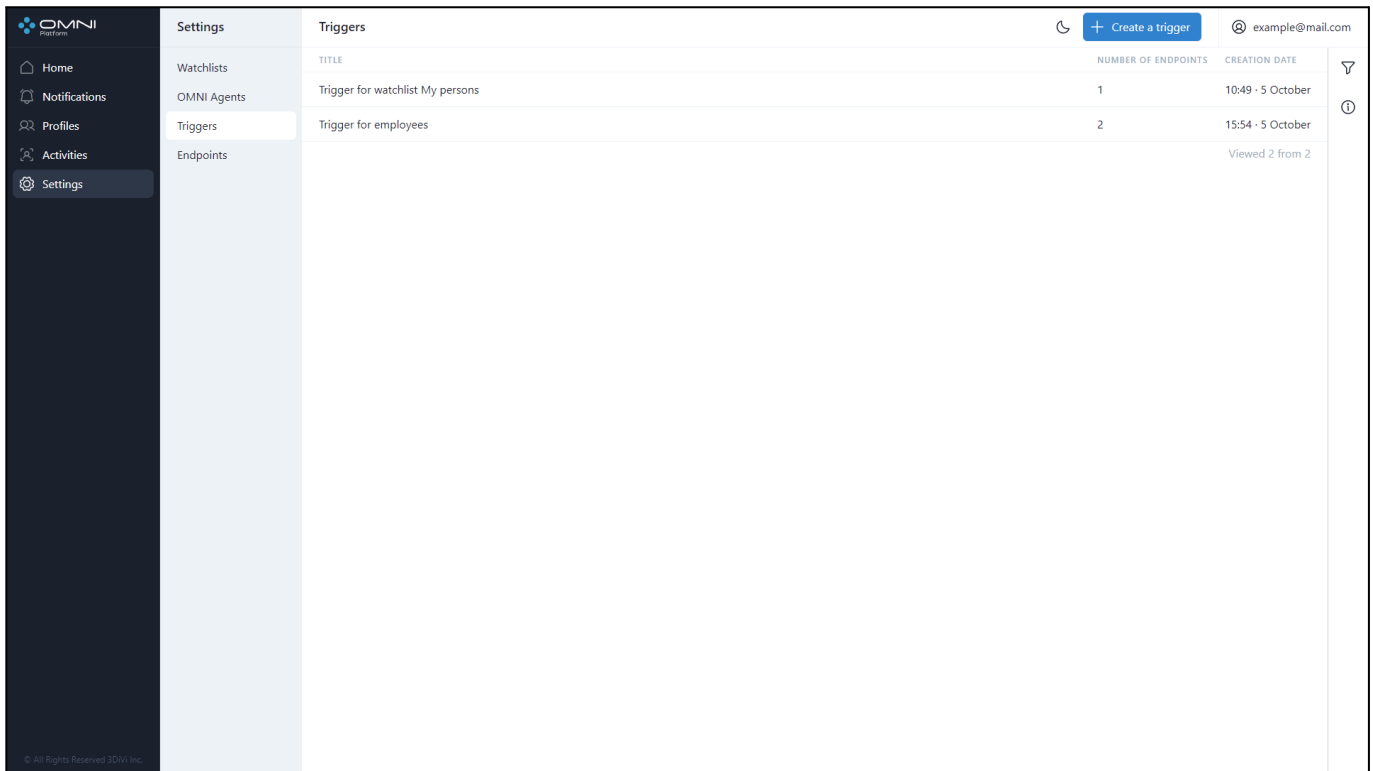
Note that a trigger without endpoints can create notifications, but they will be available for viewing only at Notifications page. In this case no pop-up, mail or webhook notifications will be supported.

View Triggers

1. Go to the Settings page and select the Triggers section. The page displays a table with the triggers currently existing in the database. On the first visit you'll see *My persons* trigger, created by default when the account is created.
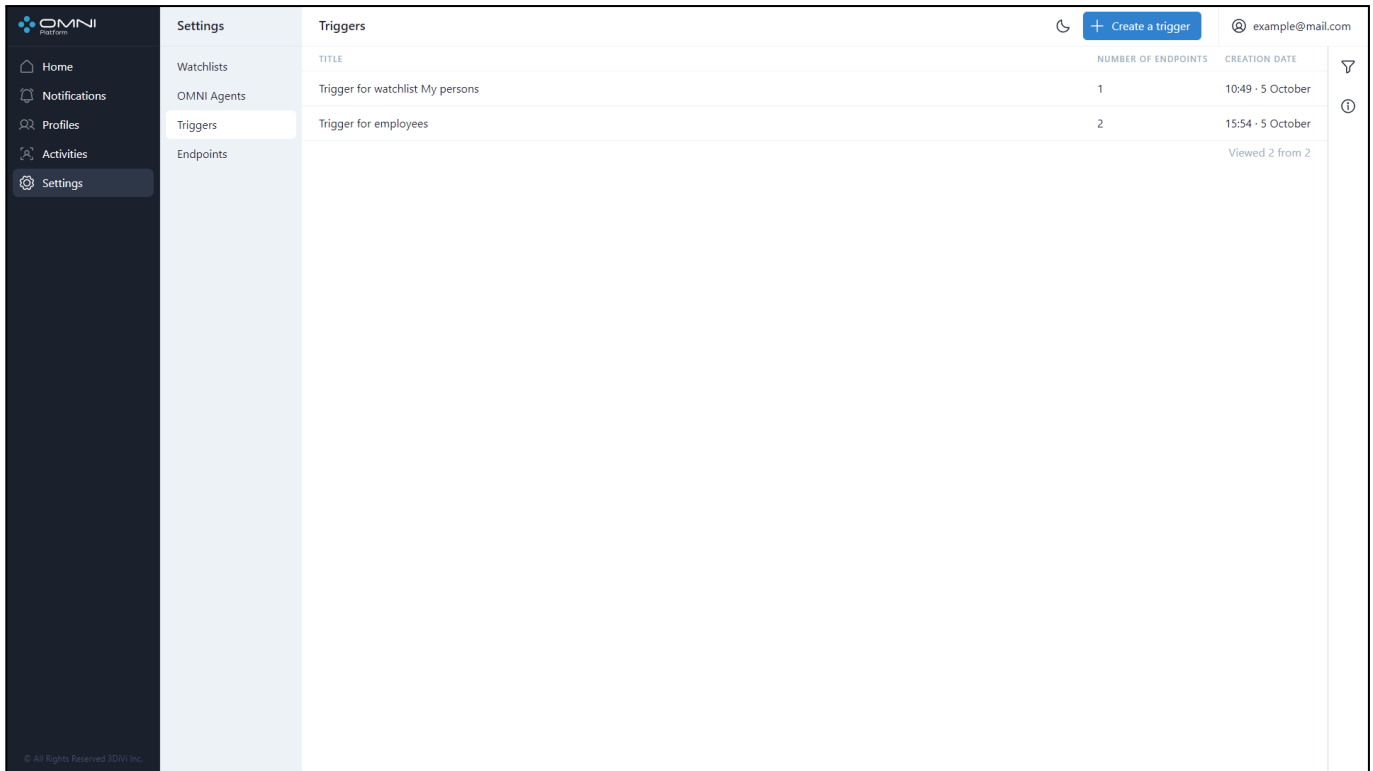
2. To view detailed information, click on a row in the table to open the trigger card. The card displays attached endpoints, creation date, last modification date, and a button with a shortened ID. To see the full ID, just hover over this button. If you click the button, the watchlist ID will be copied to the clipboard.
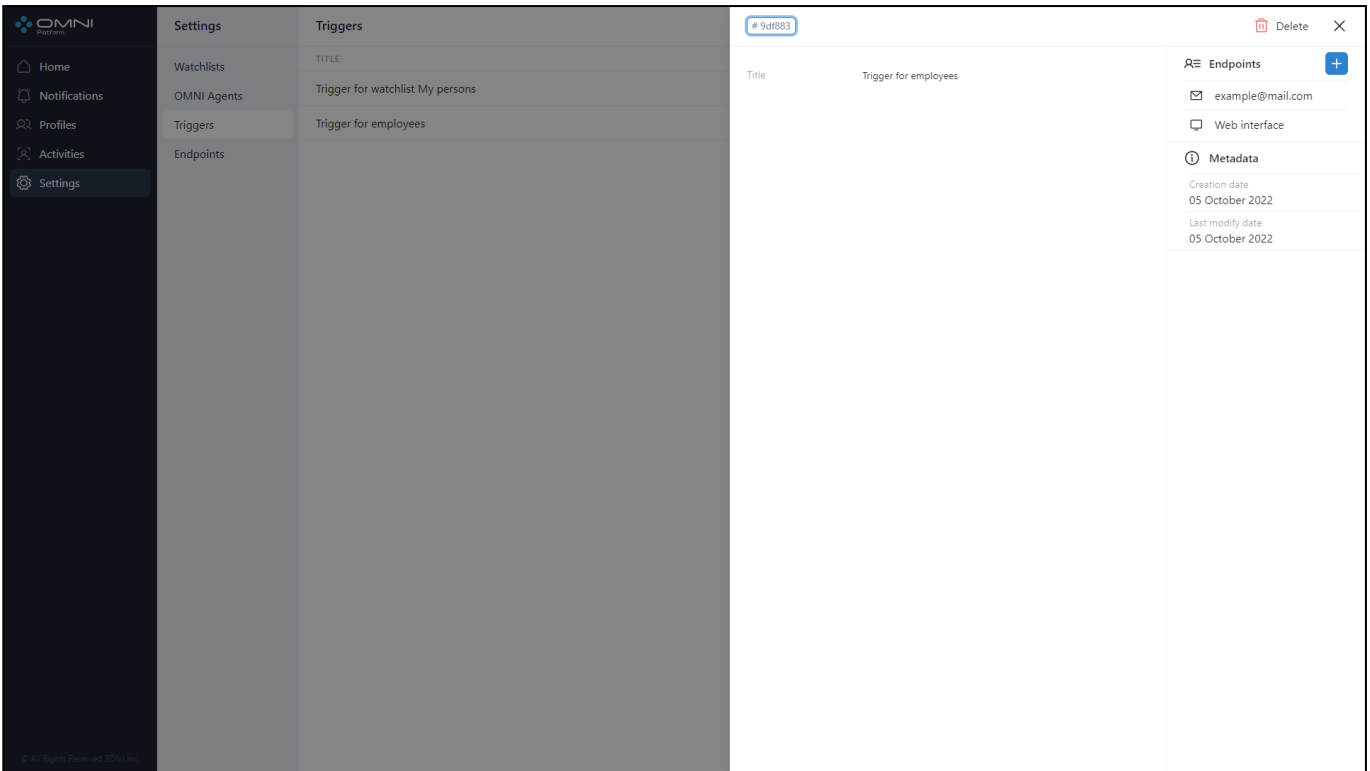
Edit Triggers

To edit triggers, do the following:

1. Click on a table row in the Triggers section to open the trigger card.
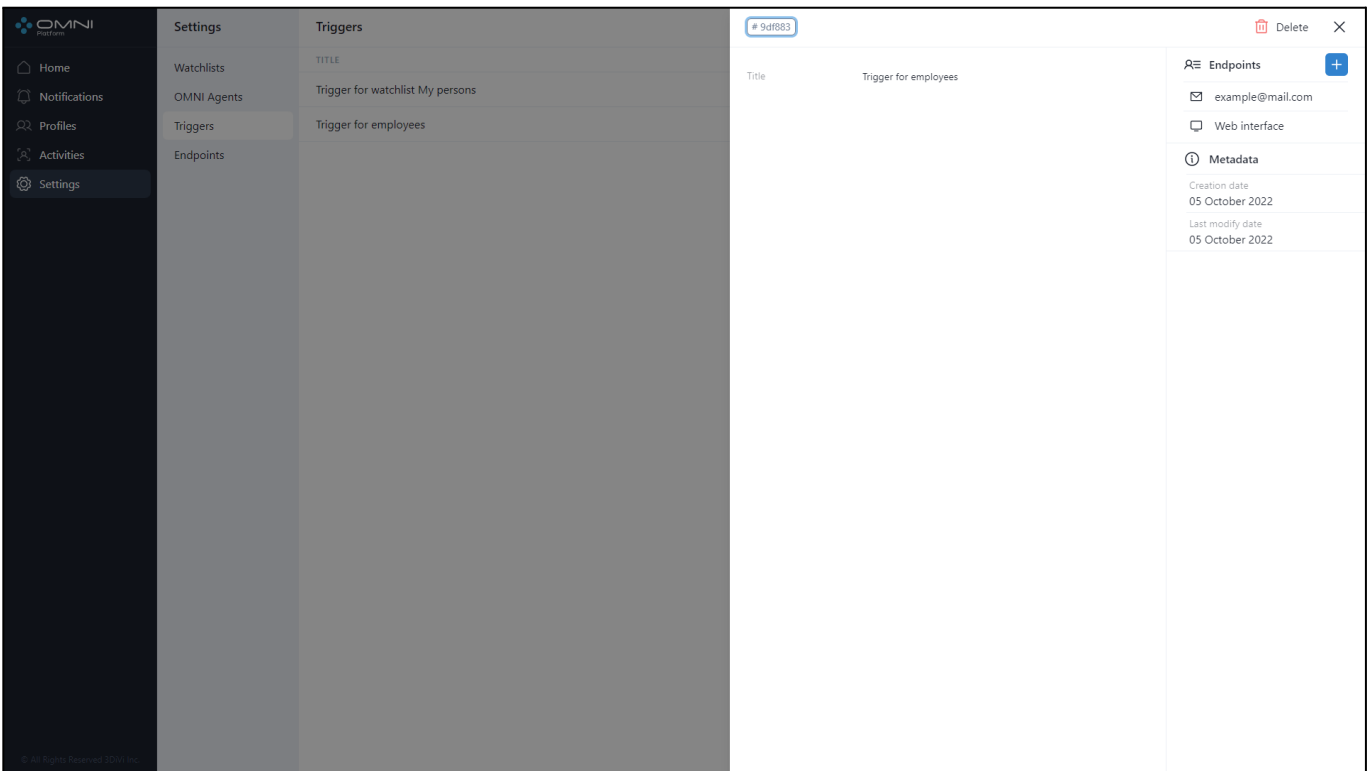
2. In the card you can change the trigger name and attach/remove endpoints. To change the name, just click on the appropriate field. To interact with endpoints, use the endpoints section. After editing click the save button. To attach/remove an endpoint, click on + button. Before this make sure that you have at least 1 endpoint created. To learn how to create an endpoint, follow the Endpoints section of this User Guide. After changes, click the Save button.
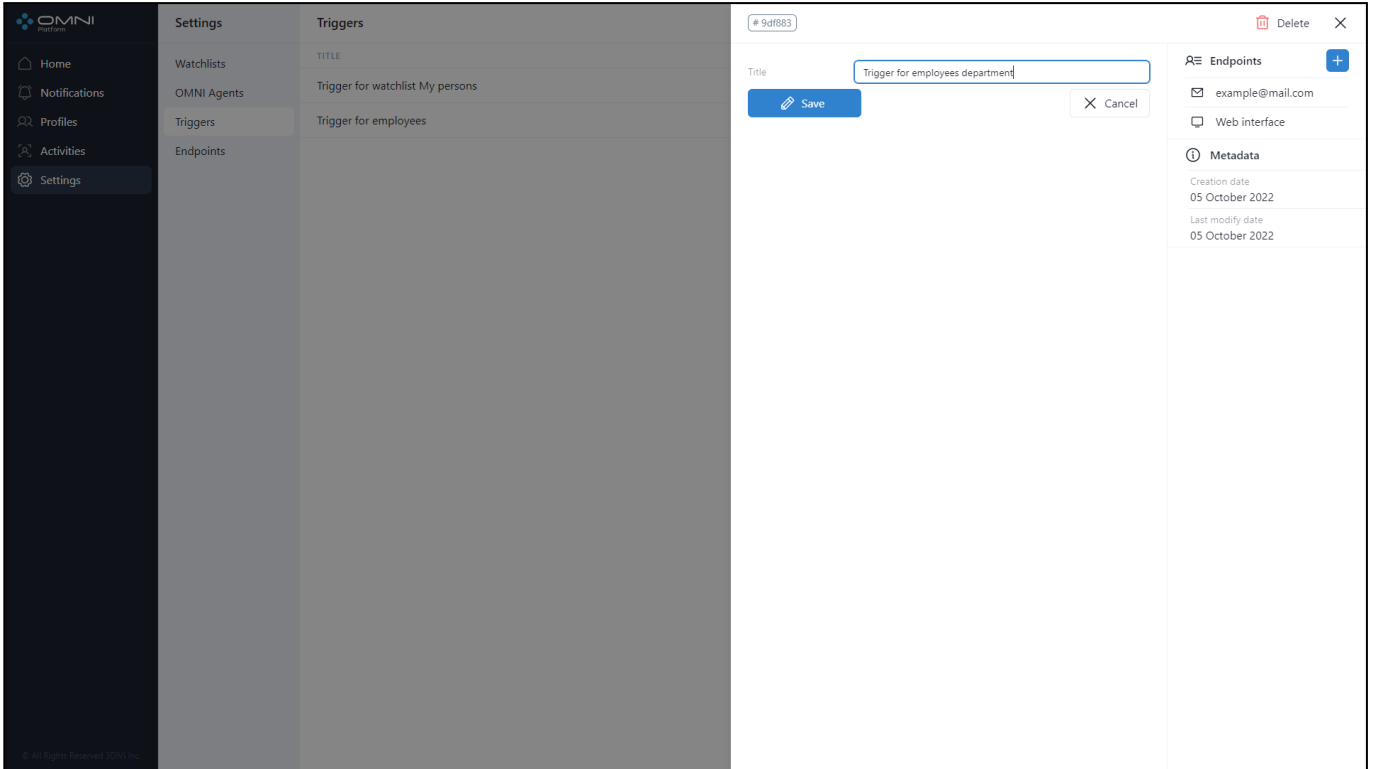
3. As a result, a trigger contains 2 endpoints.

Delete Triggers

To delete a trigger, do the following:

1. Open a trigger card by clicking the appropriate row in the Triggers table and click the Delete button at the top right side of the web interface.
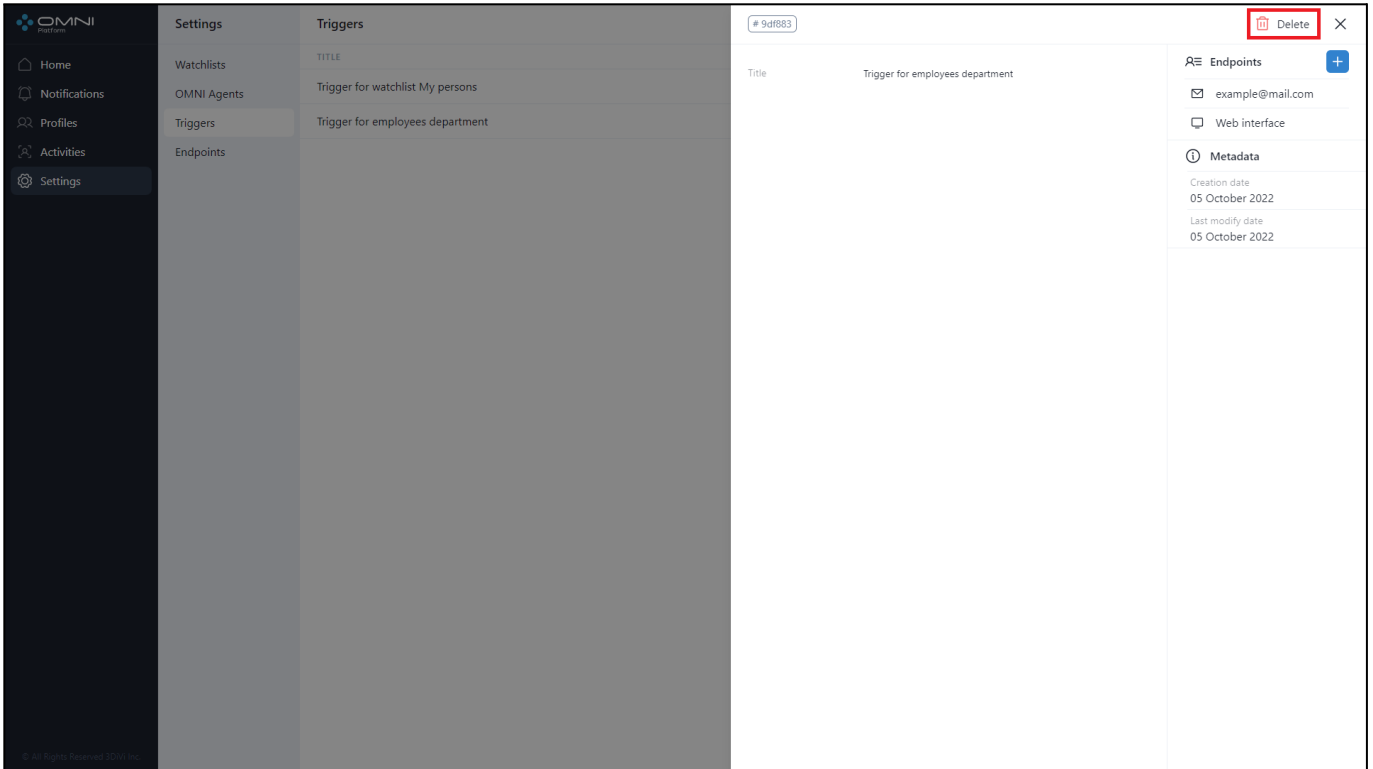
2. Confirm the deletion.
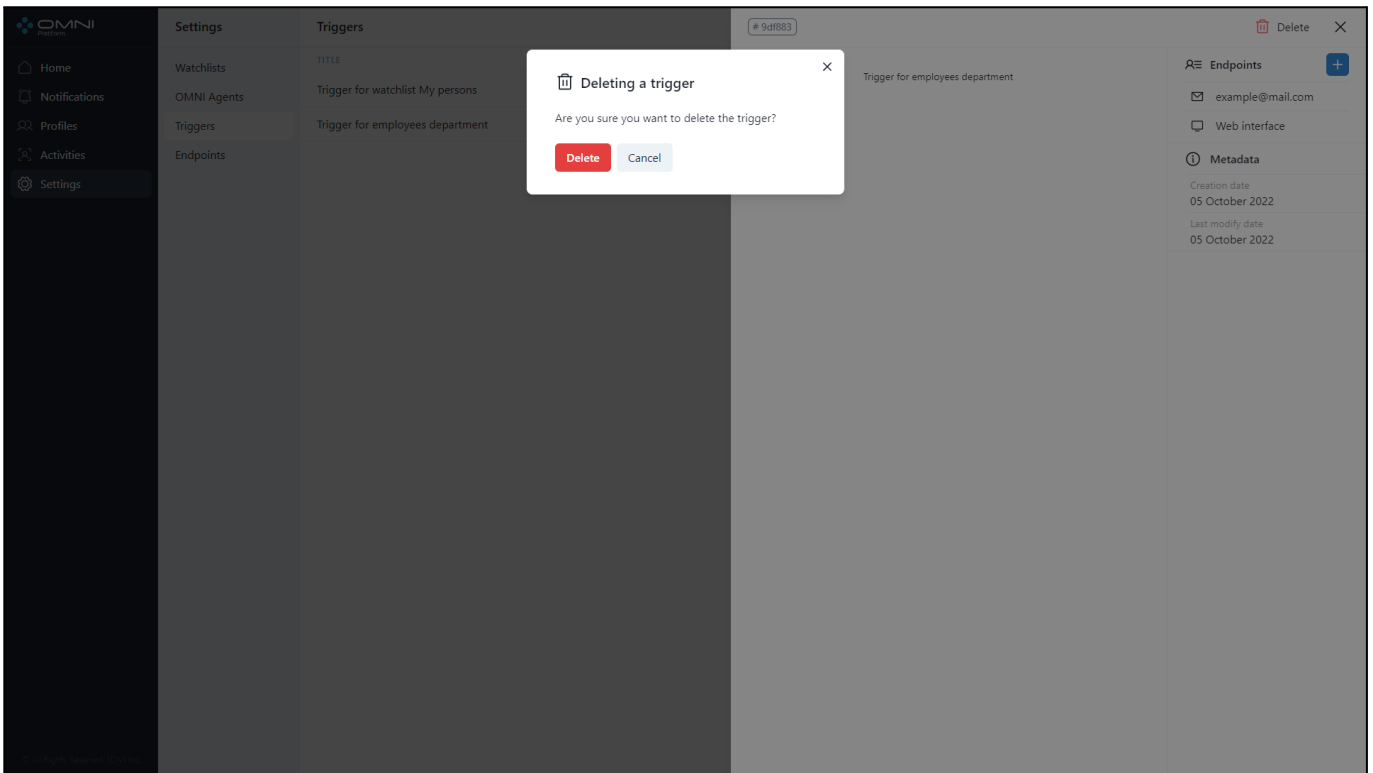
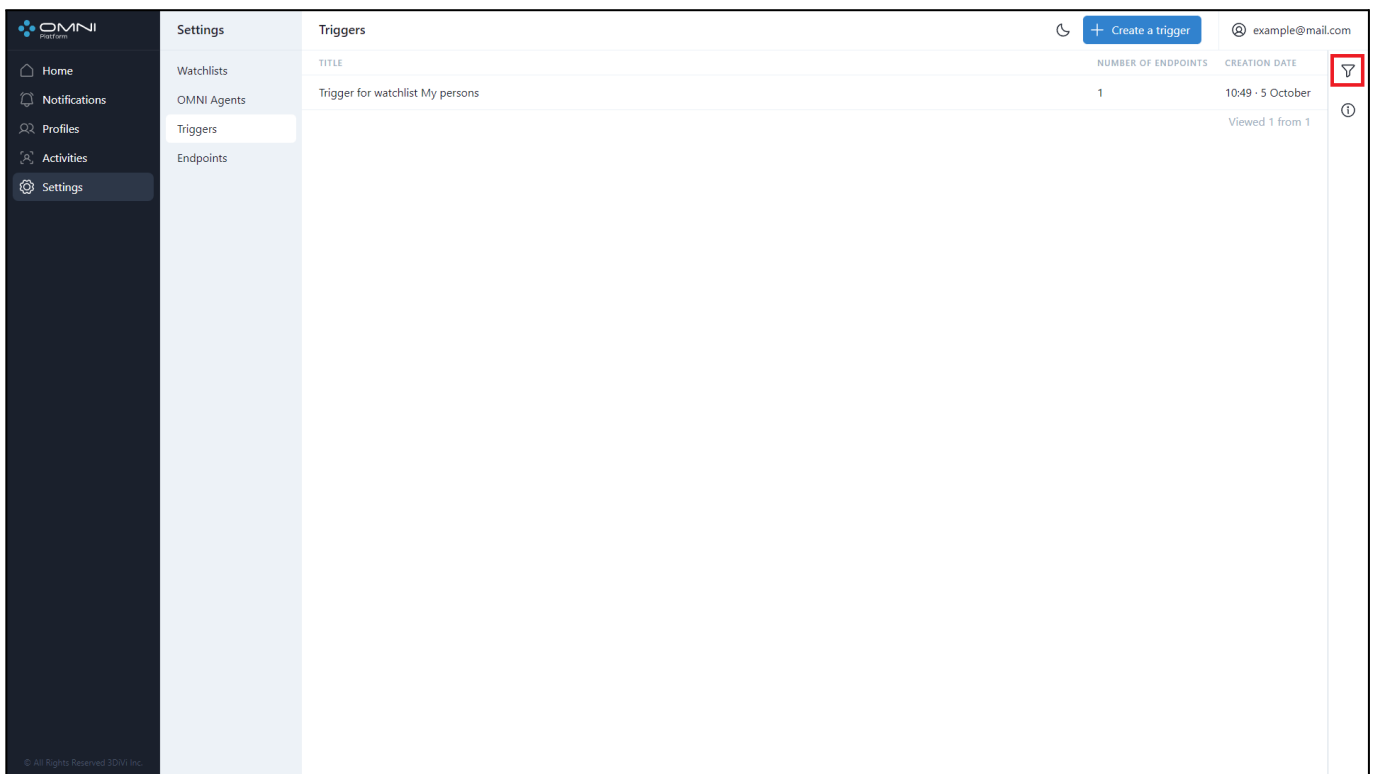3. As a result, a trigger is deleted from the database.
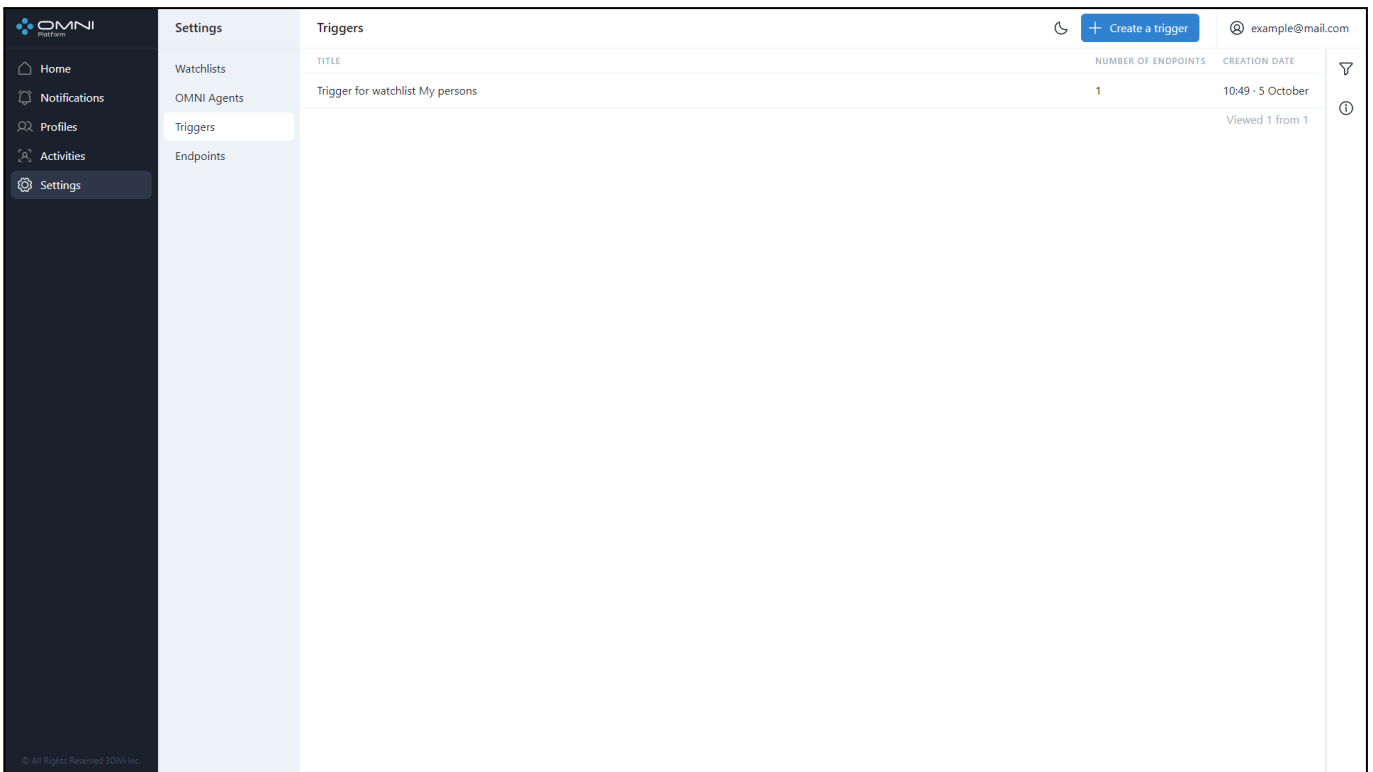
Filtering

The system contains a list of filters and sorting options for trigger searching. Triggers are filtered by the following parameters:

- Endpoint ID
- Trigger ID
- Creation date
- Last modification date

Triggers are sorted by the following parameters:

- Creation date
- Last modification date
- Name

To configure filters, click the Filtering icon at the top right side of web-interface under *Account* button.

Fill in the appropriate fields in the opened tab. IDs can be copied from object cards.

7. Endpoints

Endpoint is an object that contains data about the point where notifications are sent to. To send notifications, you need to attach an endpoint to the trigger.
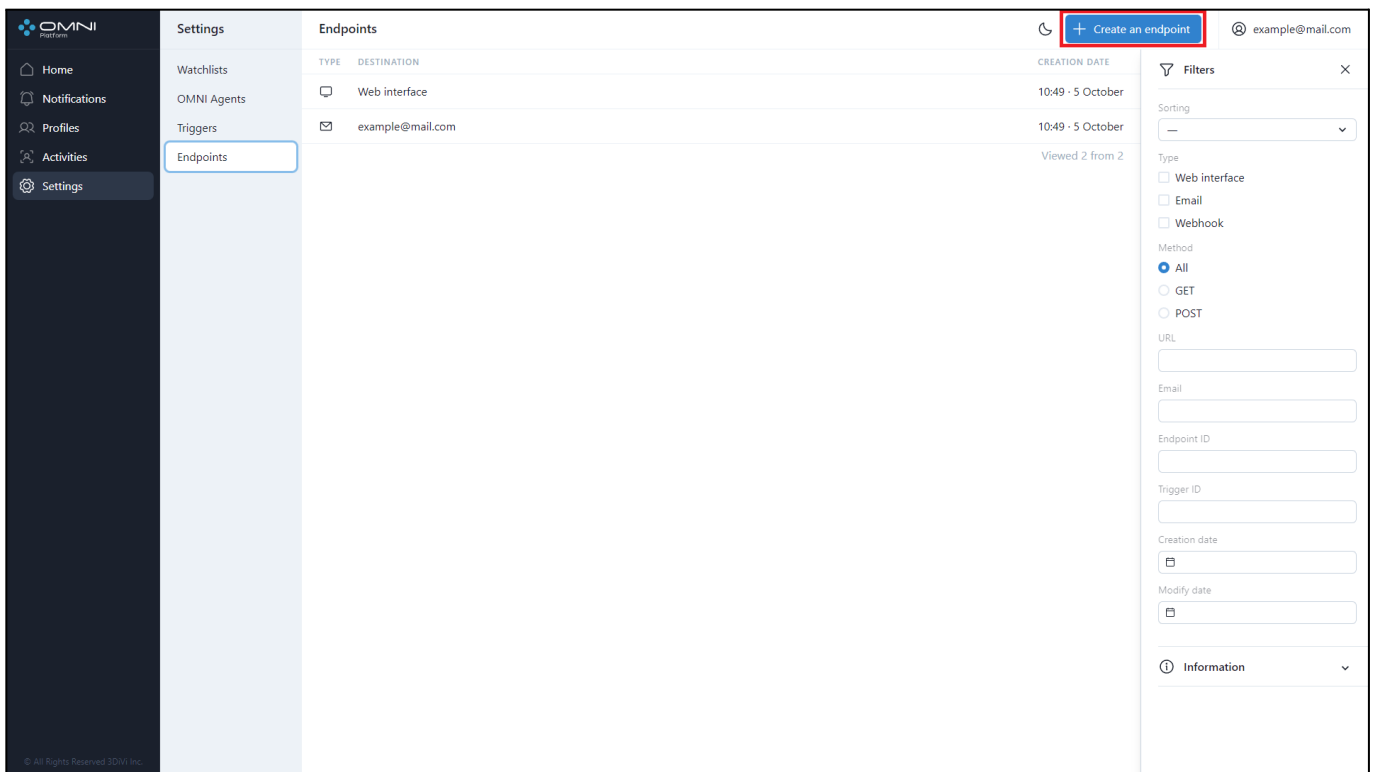
Types of Endpoints

- Web interface - notifications shown in web browser
- Email - notifications sent to email address
- Webhook - notifications sent via webhook

Create Endpoints

When creating an account, the system automatically creates one web interface endpoint and one email endpoint. Email address used to create an endpoint is the address specified for signing up. You can add additional endpoints such as email or webhook, but the web interface endpoint is created by default and remains the only one endpoint of this type.
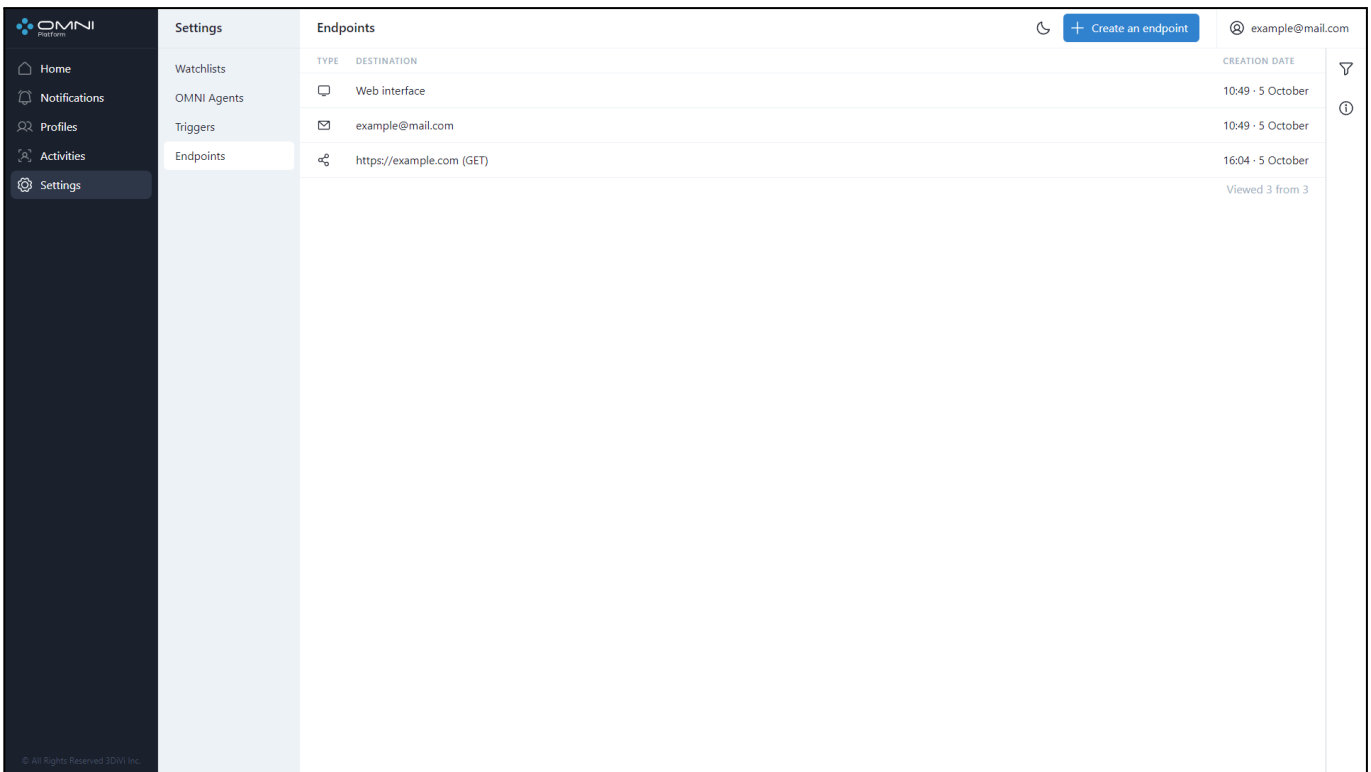
To create an endpoint, do the following:

1. Go to Settings page, select Endpoints section and click on Create an Endpoint button.

2. Select the type of endpoint, fill in all information fields and click on the Create button.
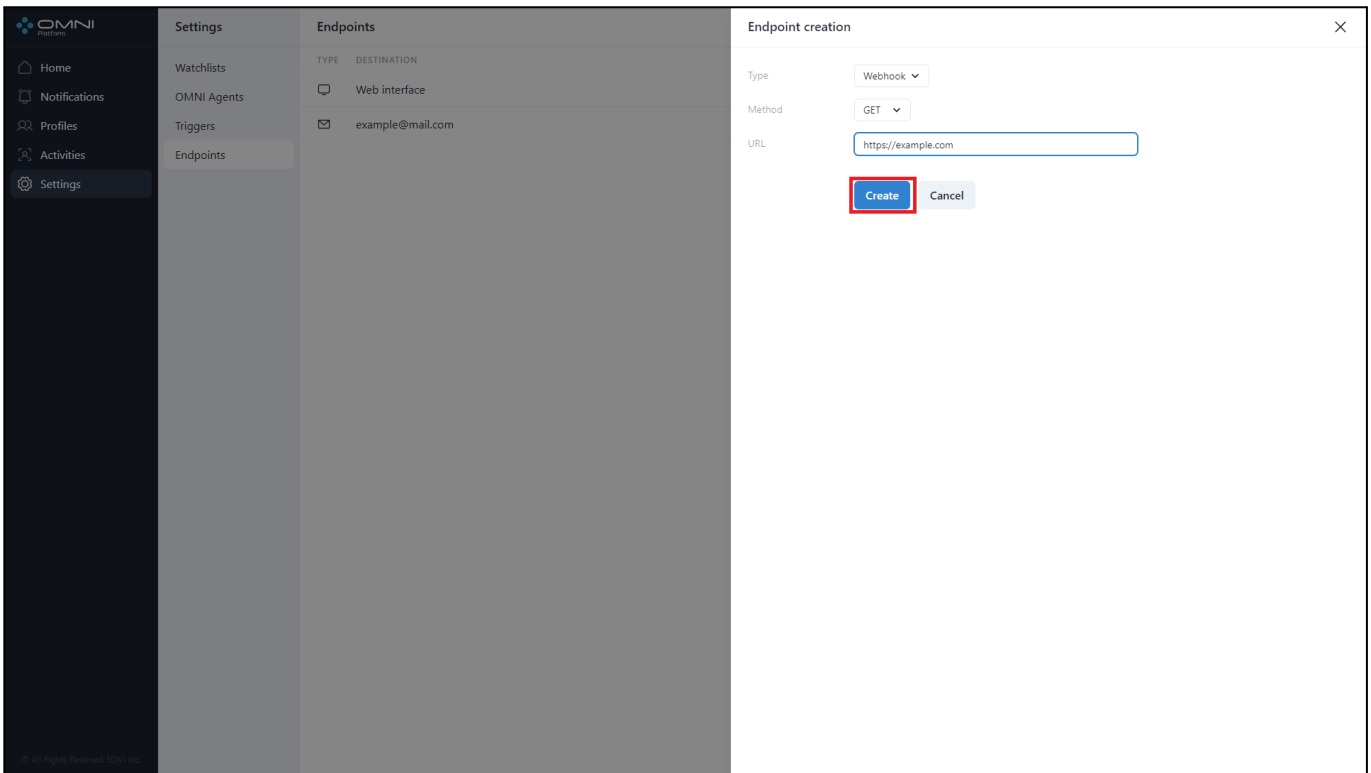
3. As a result, the system created an endpoint of webhook type.


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View Endpoints

To view existing endpoints, do the following:

1. Go to the Settings page and select the Endpoints section. The page displays a table with the endpoints currently existing in the database. On the first visit you'll see two endpoints (web interface endpoint and email endpoint that uses your account email address), created by default when the account is created.
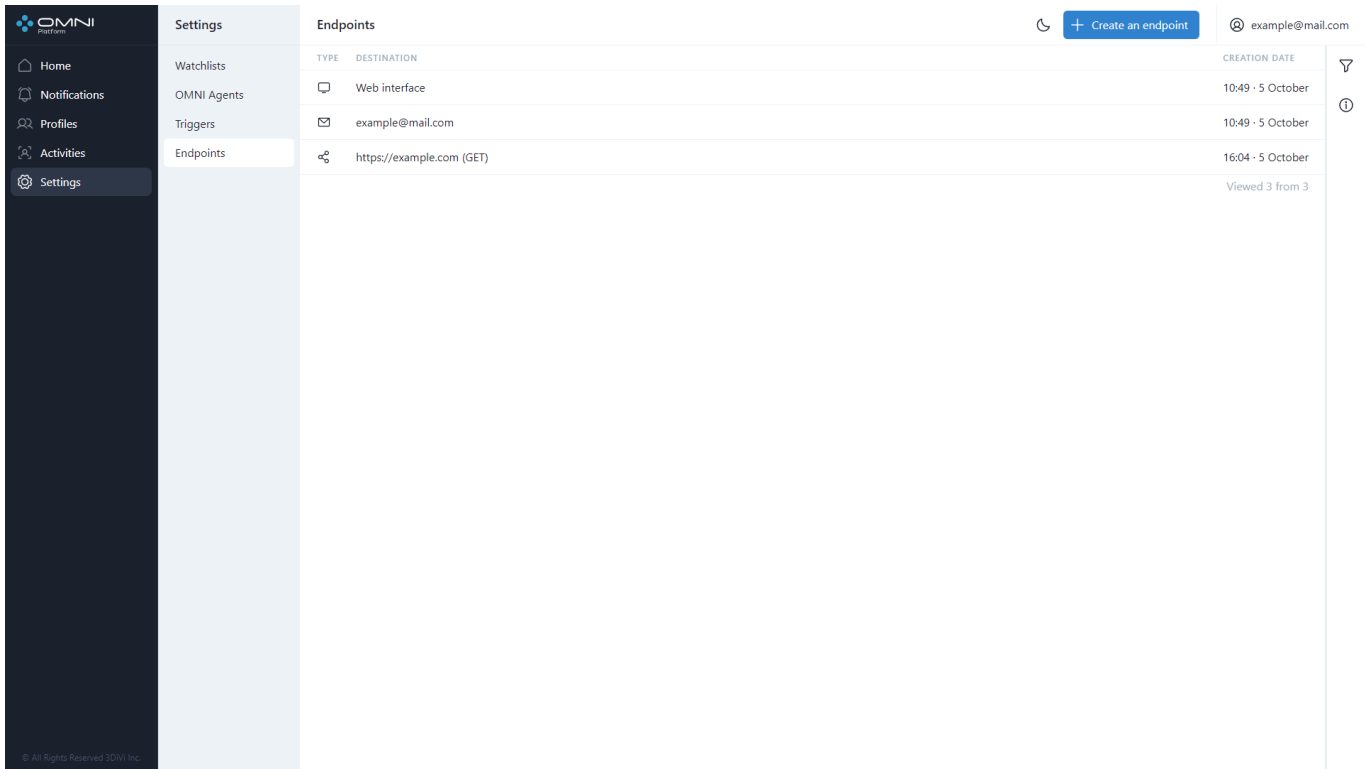

2. To view detailed information, click on a row in the table to open the endpoint card. The card displays creation date, last modification date, and a button with a shortened ID. To see the full ID, just hover over this button. If you click the button, the watchlist ID will be copied to the clipboard.
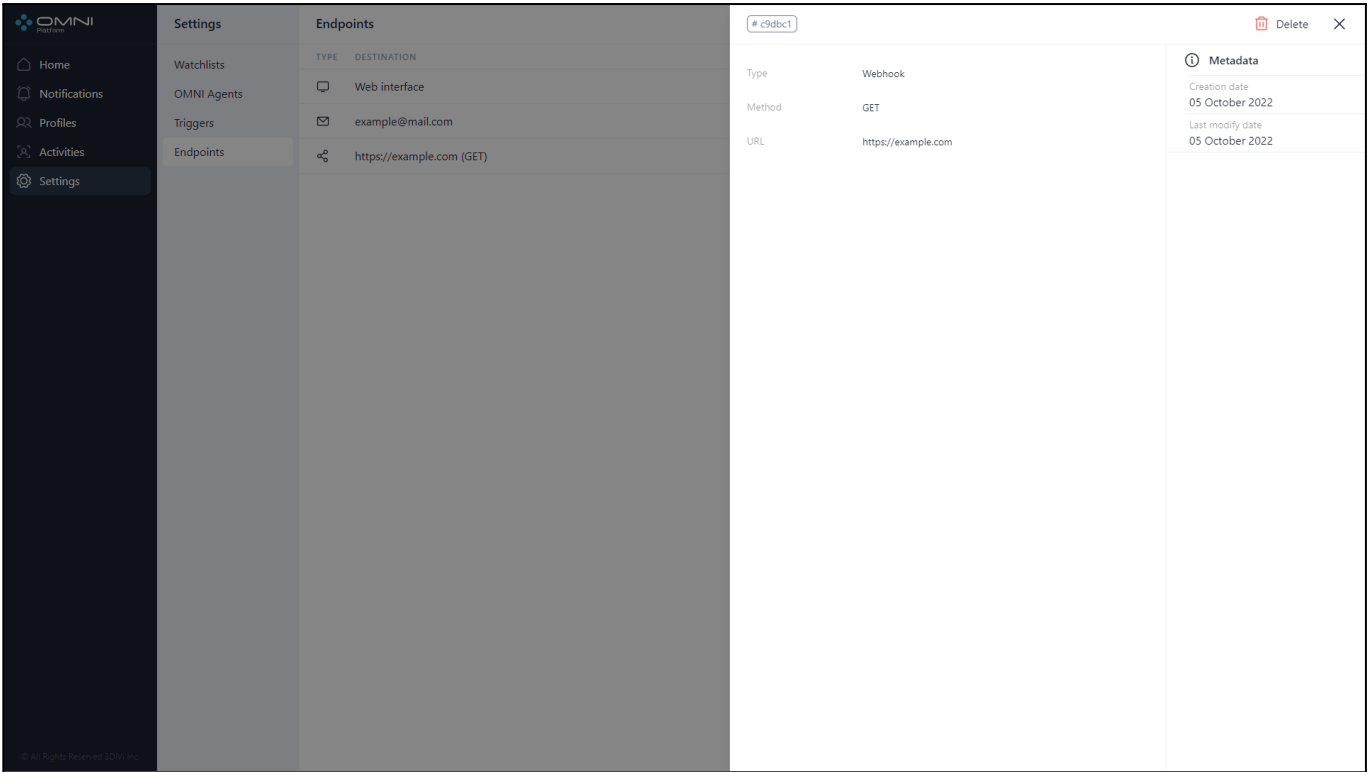
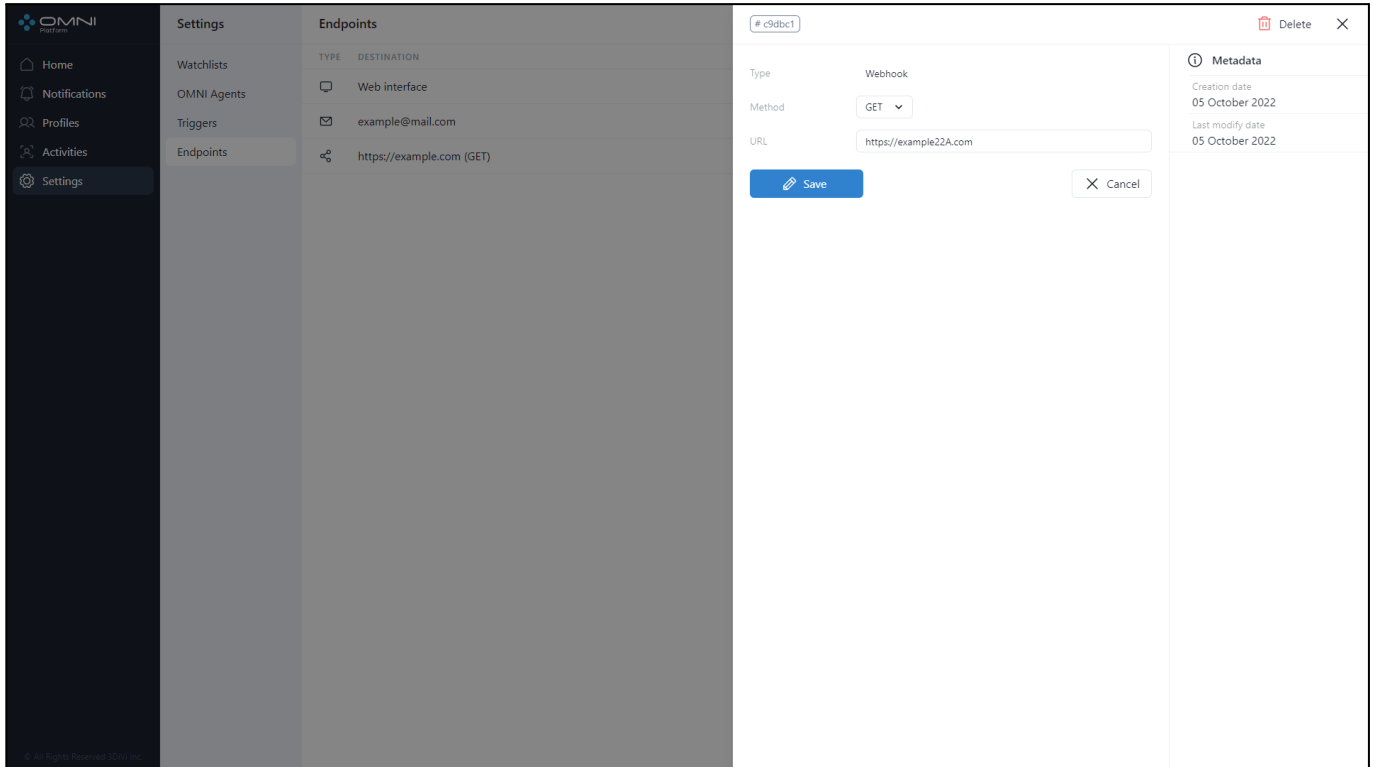# Edit Endpoints

To edit endpoint data, do the following:

1. Click on a table row in the Endpoints section to open the endpoint card.
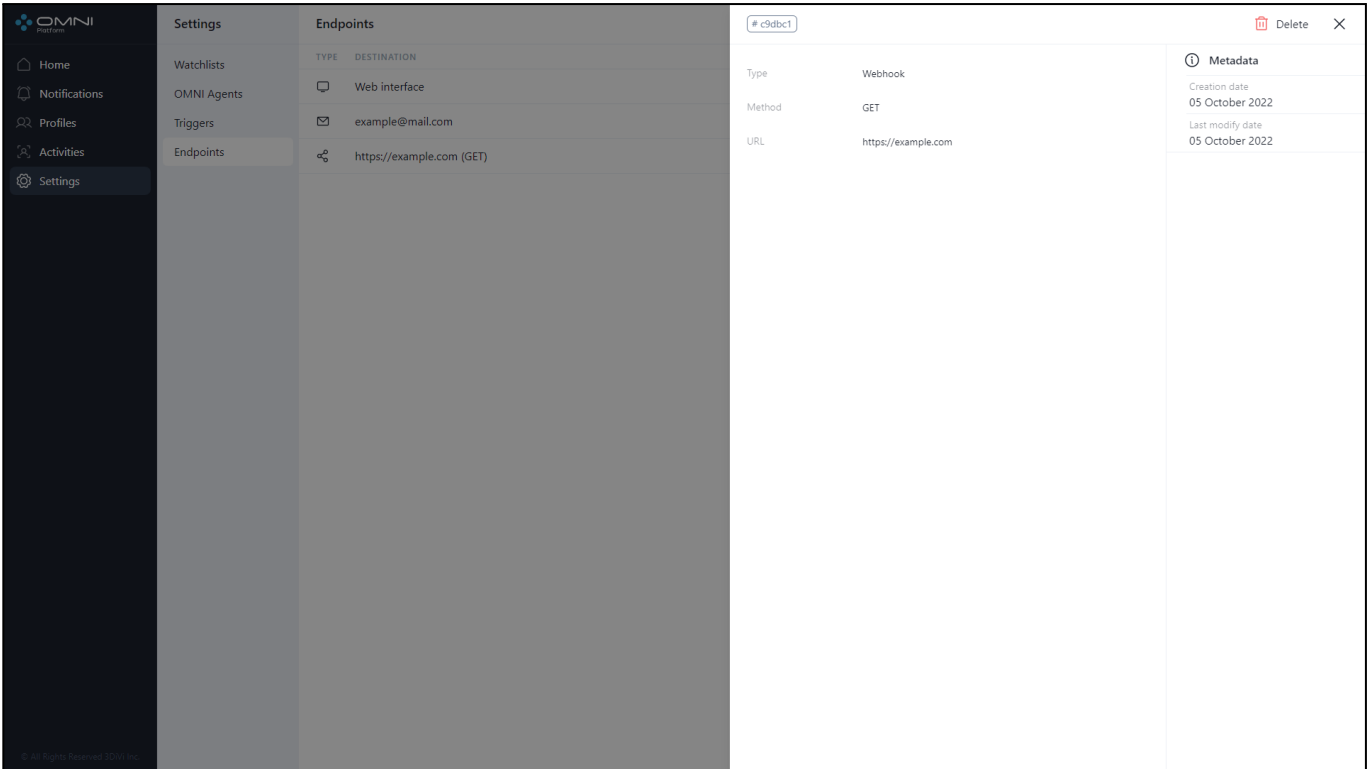
2.Depending on endpoint type change the following data:

- For email endpoint - Email address

- For webhook endpoint - URL and method

- For web-interface endpoint - no fields for editing are found

After that, click *Save* button

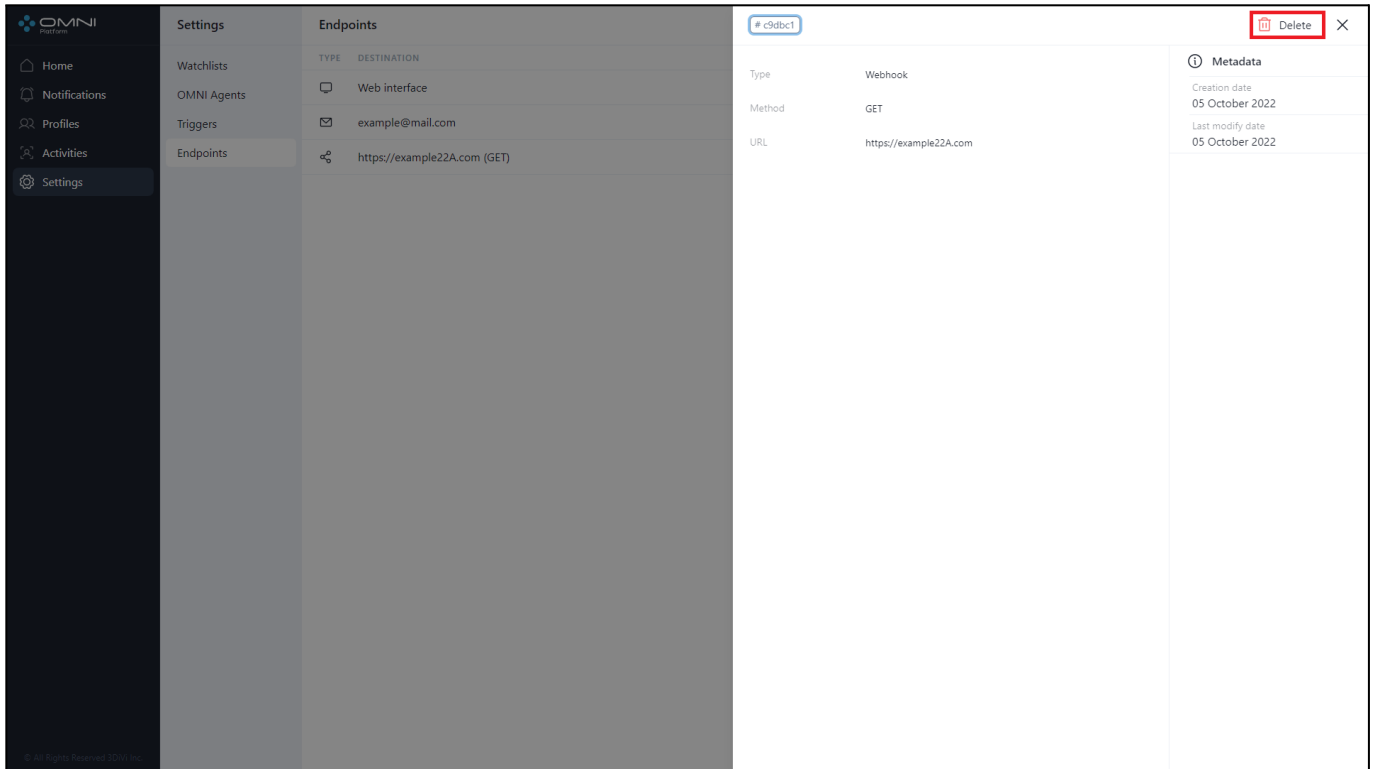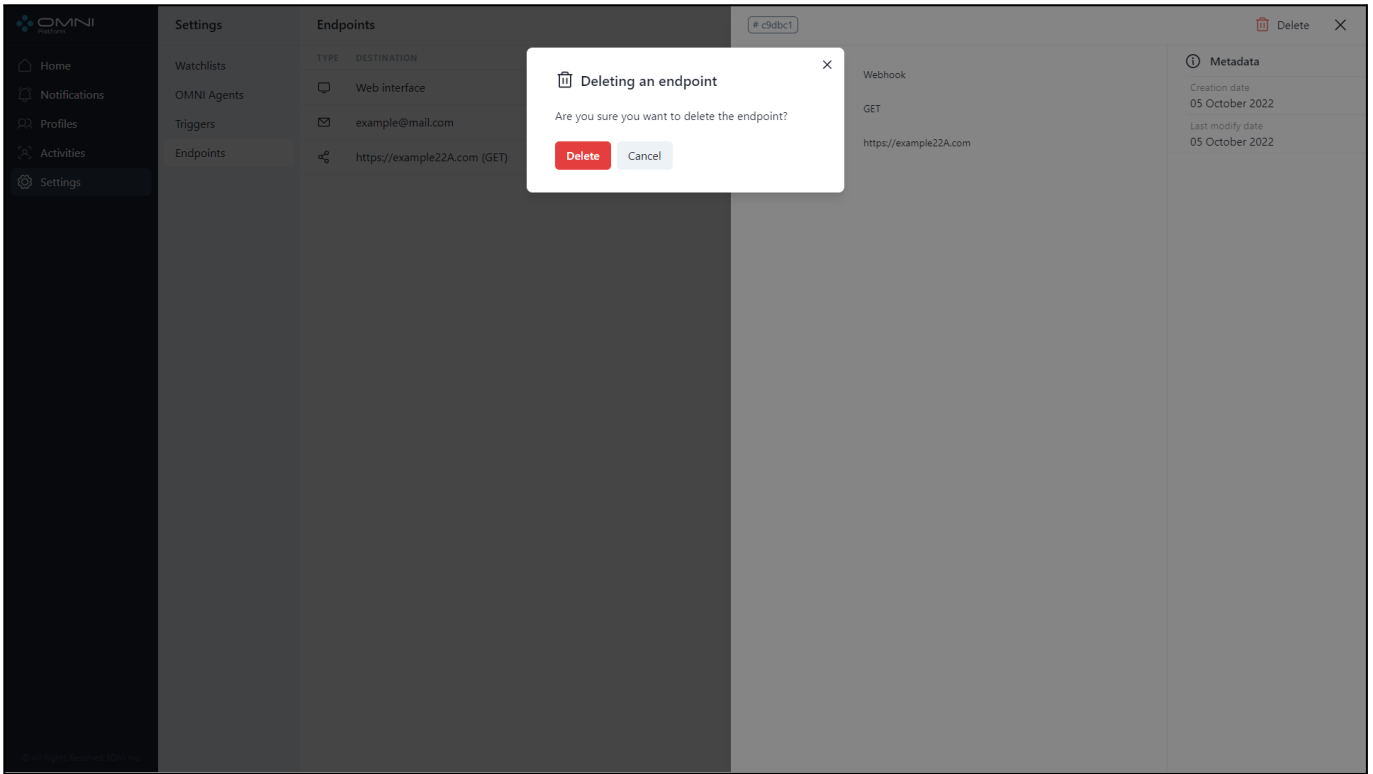3. As a result, the email address for the endpoint is changed.

Delete Endpoints

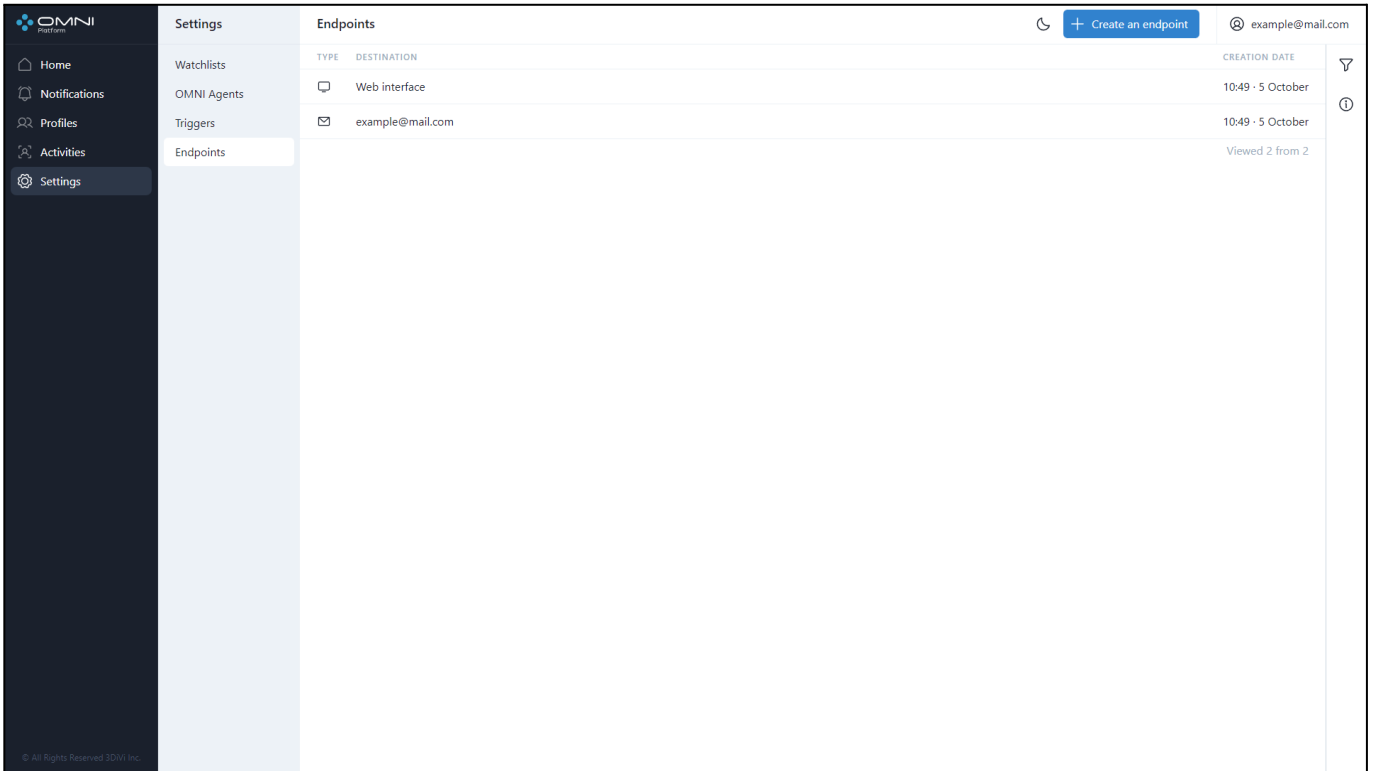To delete an endpoint, do the following:

1. Open an endpoint card by clicking the appropriate row in the Endpoints table and click the Delete button at the top right side of the web interface.

2. Confirm the deletion.

3. As a result, an endpoint is removed from the database.

Filtering and Sorting

The system contains a list of filters and sorting options for endpoint searching. Endpoints are filtered by the following parameters:
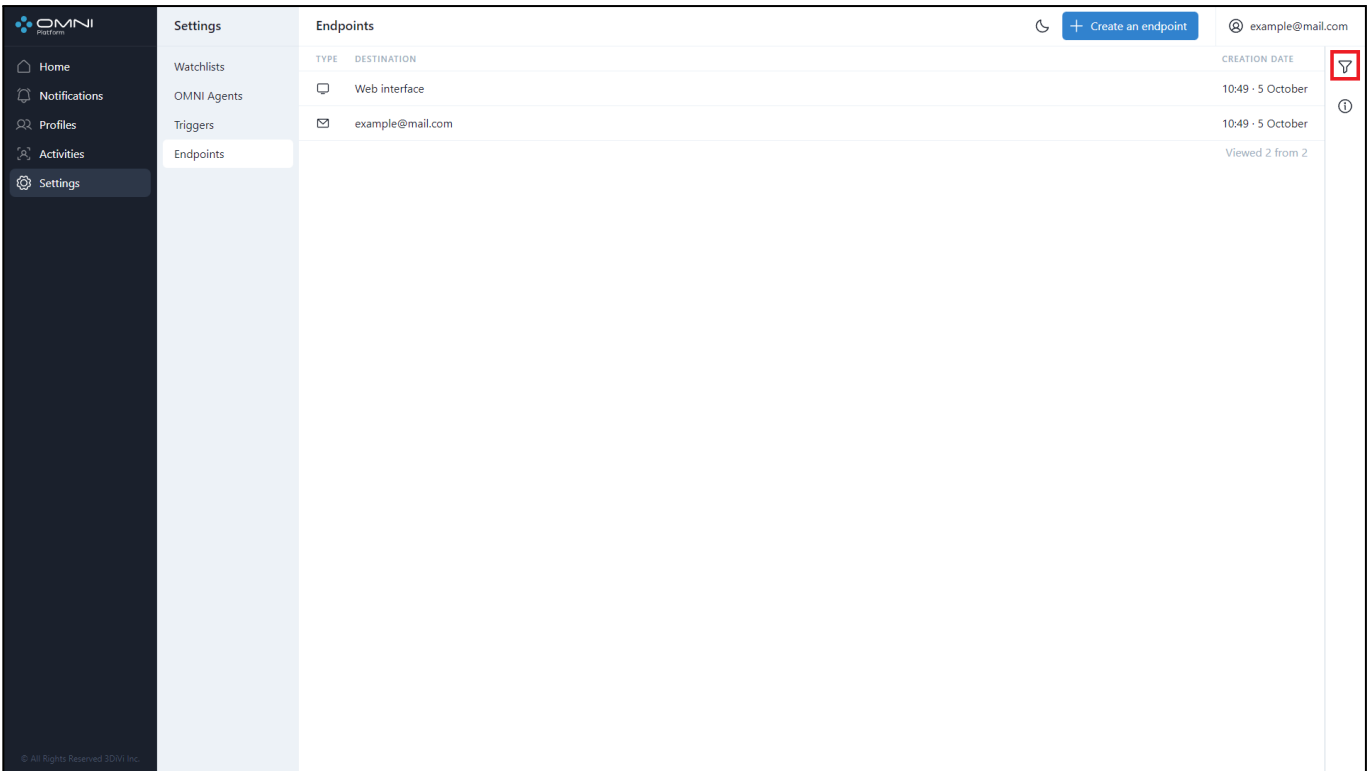
- Endpoint type
- Webhook method
- Email address
- URL
- Endpoint ID
- Trigger ID
- Creation date
- Last modification date

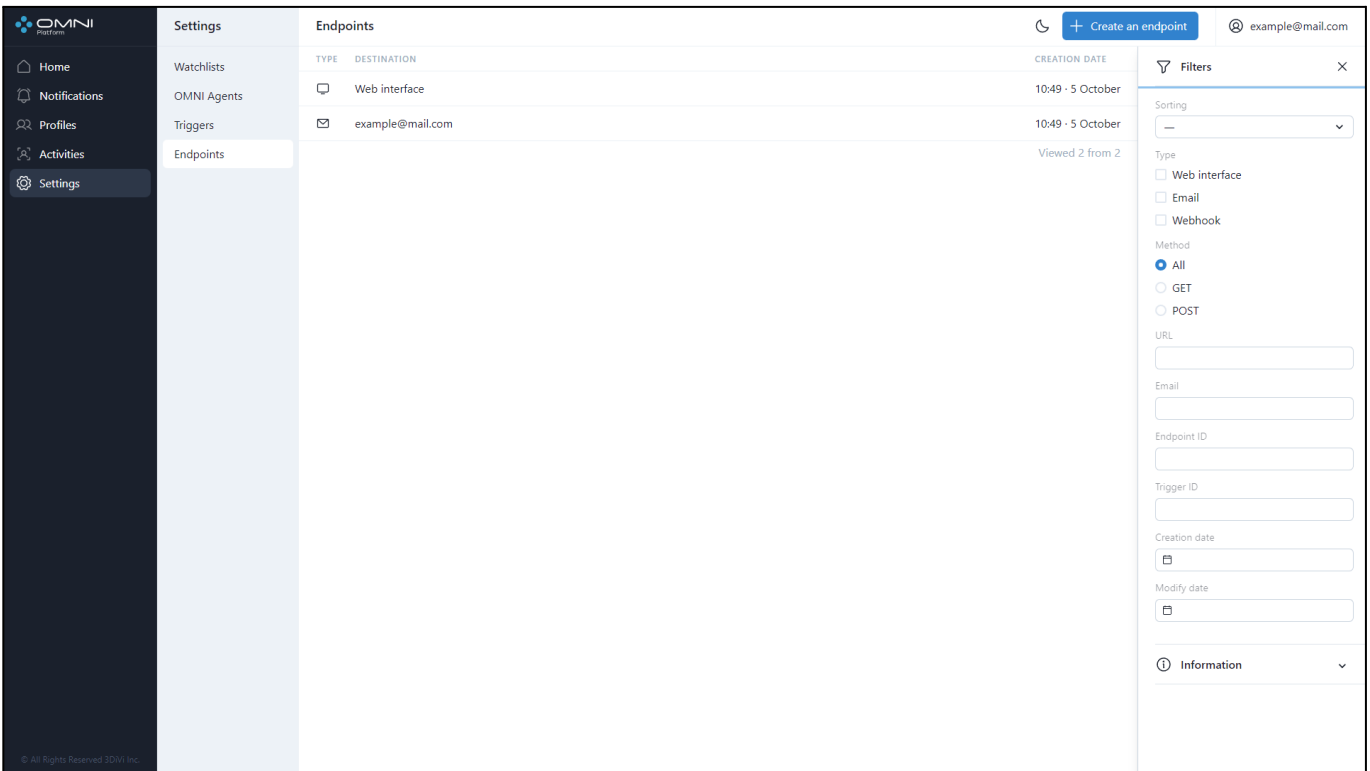Endpoints are sorted by the following parameters:

- Creation date
- Last modification date
- URL
- Email
- Type
- Method

To configure filters, click the Filtering icon at the top right side of web interface under *Account* button.

Fill in the appropriate fields in the opened tab. IDs can be copied from object cards.
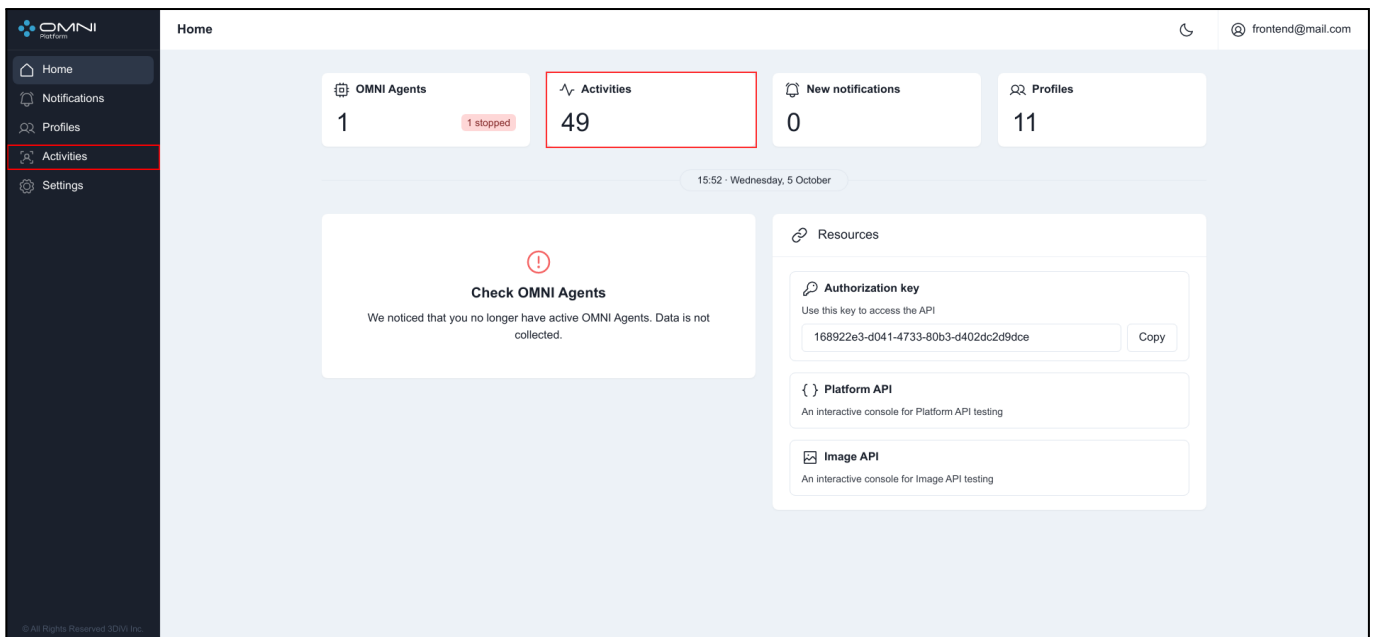
8. Activities

Activity is an object created when a person is detected by OMNI Agent. When a person appears in the frame, OMNI Agent takes a photo, checks it for quality, identifies the person and collects activity data. After that, the agent checks the activity sample and the main samples for similarity of the biometric template.

If the similarity result is equal to or higher than the threshold value (99%) for a particular profile, the activity is sent to the Platform with this profile ID and added to this profile.

If the similarity result for all profiles in the database is lower than the threshold value, the activity is sent to the Platform without profile data and then a new profile is created.

View Activities

1. To view the existing activities, open Activities page via web interface sidebar menu or through Activities quick view panel on the main page.

2 The page displays a table with the activities existing in the database.
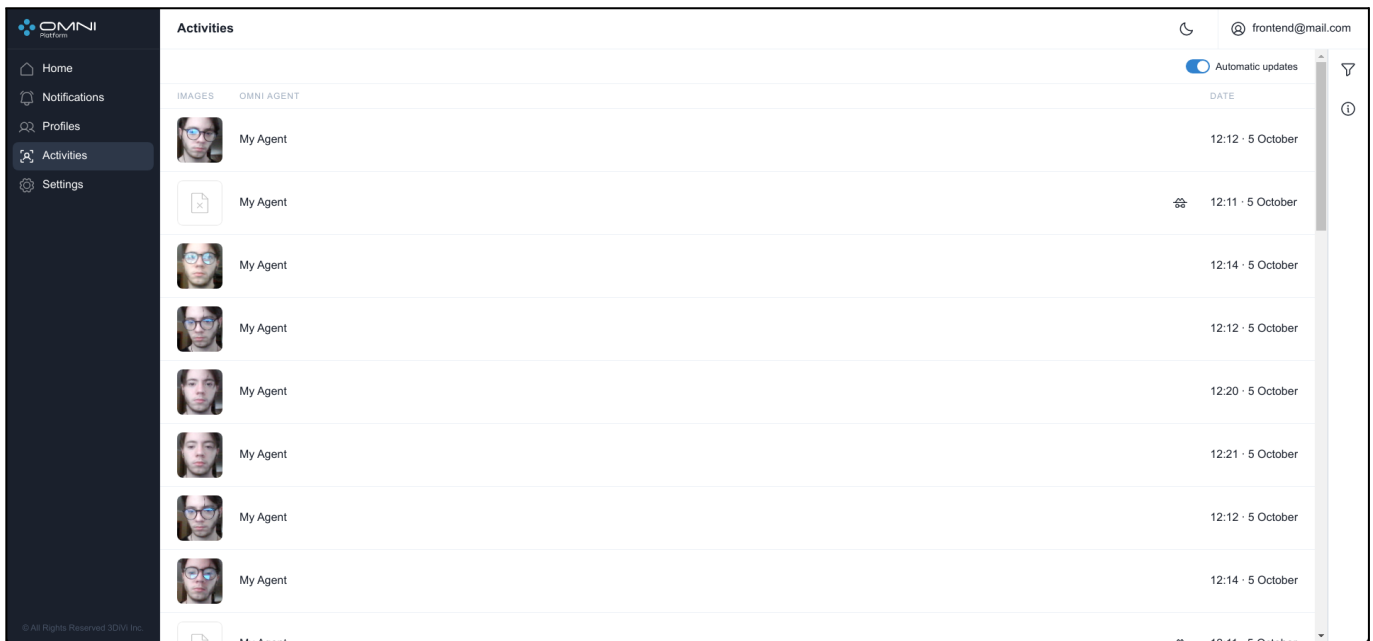
Anonymous Activities

In the anonymous mode OMNI Agent processes not the images themselves, but digital representations of faces, which excludes identification of a person outside the system and ensures the protection of personal data.

If a person is detected by OMNI Agent with enabled anonymous mode, the activity table will not contain a photo of this person, but a special icon instead. Hovering over it will show a hint that this activity is anonymous.

Activity status

On the activity page, when you hover over the icon, you can view the status for each specific activity. Each activity can have one of three statuses: PROGRESS - a person is in the frame and the activity is not completed; FINALIZED - the person left the frame, the activity is completed; FAILED - there is no information about the update or termination of activity from the agent. It happens when connection with the agent fails for more than 30 seconds.
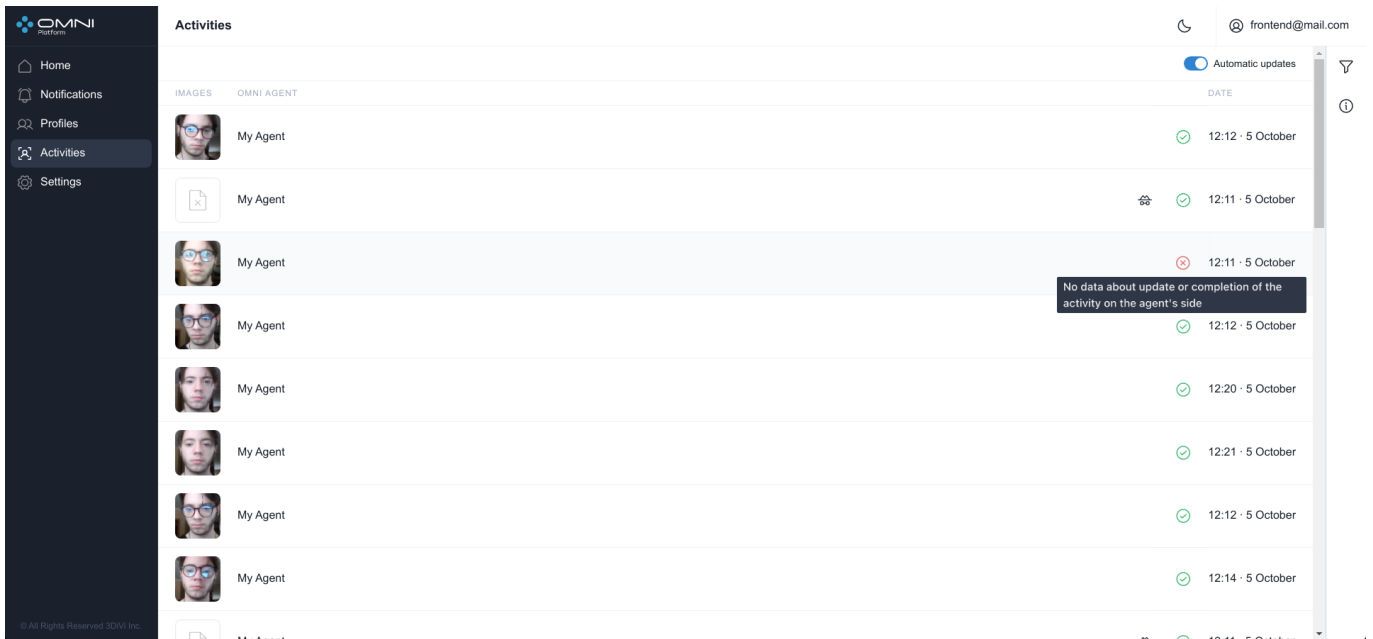
Activity Completed: The person is out of the frame.
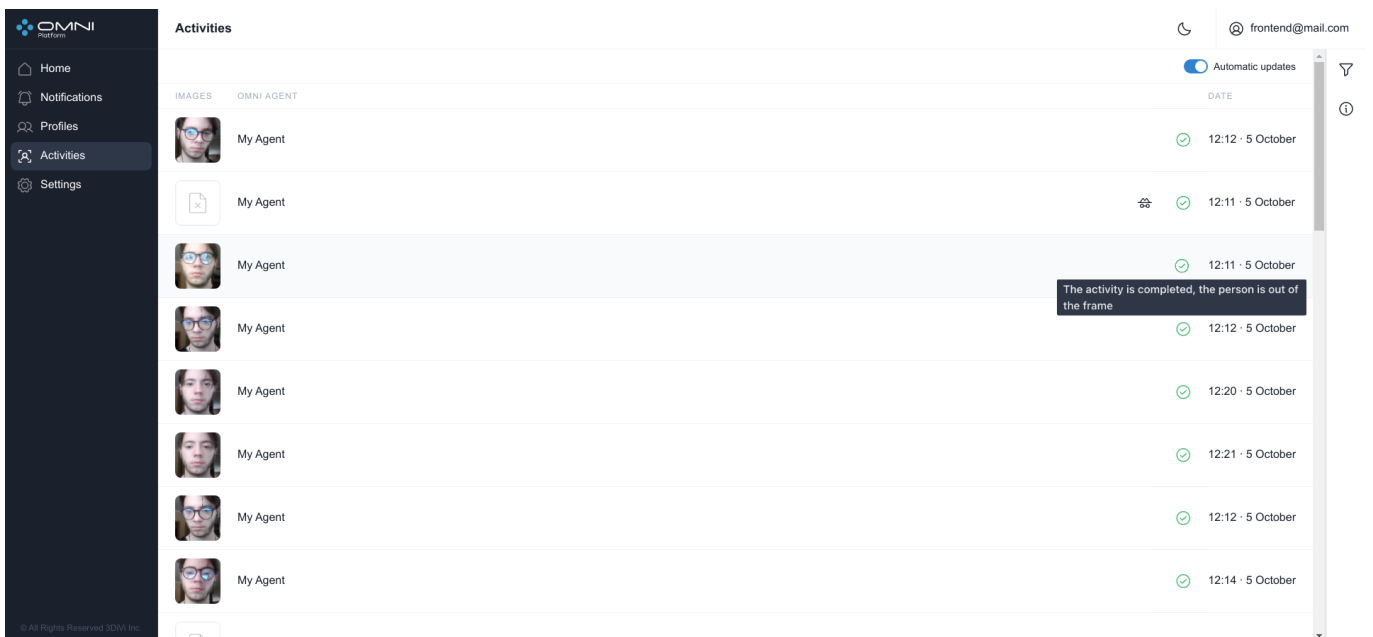
Activity not completed: The person is in the frame.
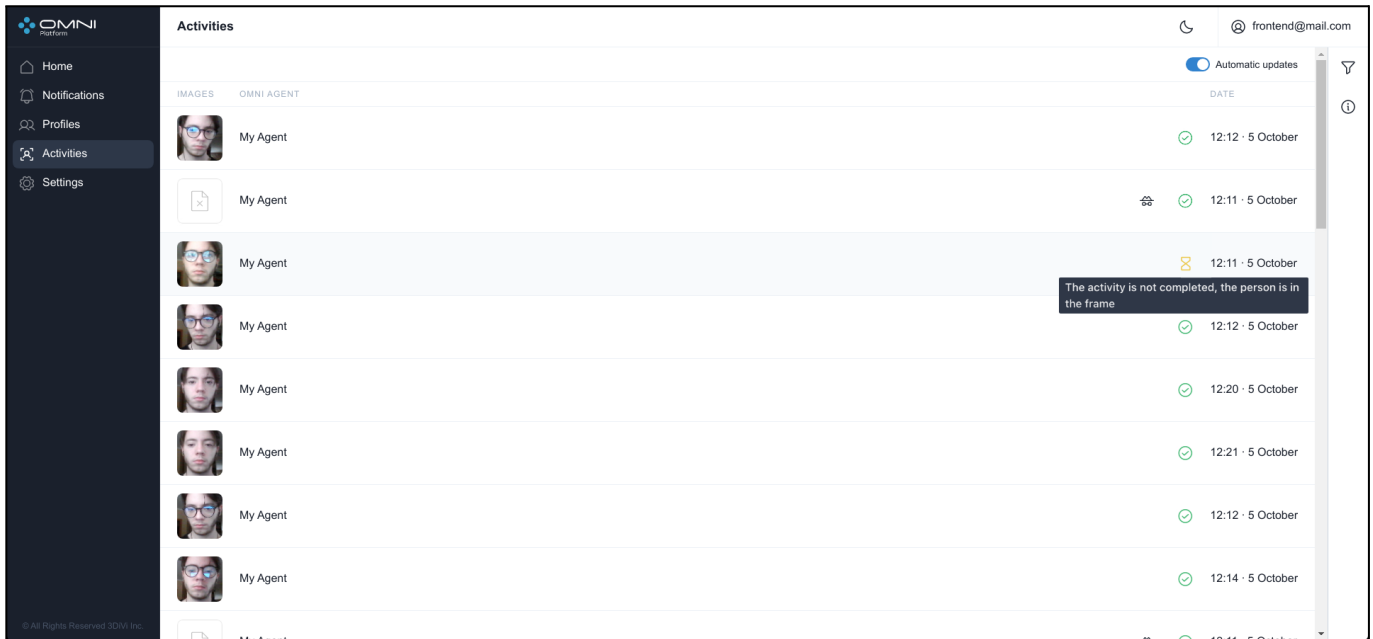
No data about update or completion of activity from the agent.
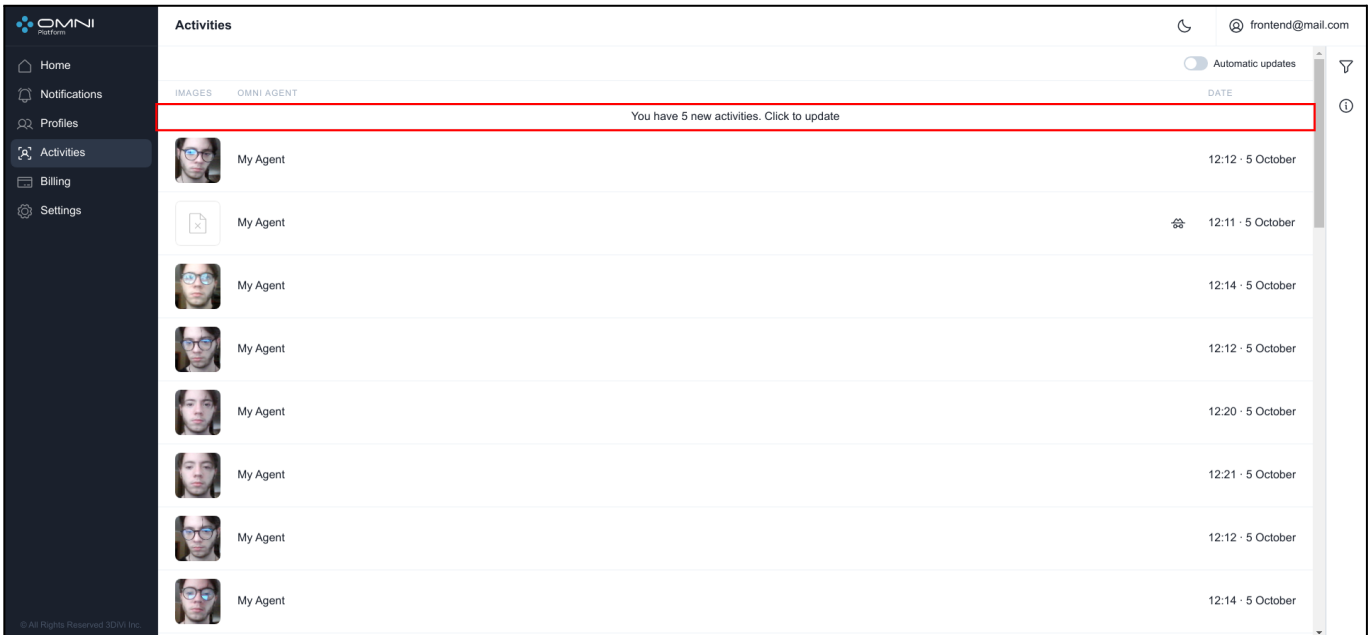

Automatic Update

When multiple OMNI Agents work simultaneously, new objects can be created by the system too often, so they can hinder interactions with previously created objects. In this case you can disable automatic data update.
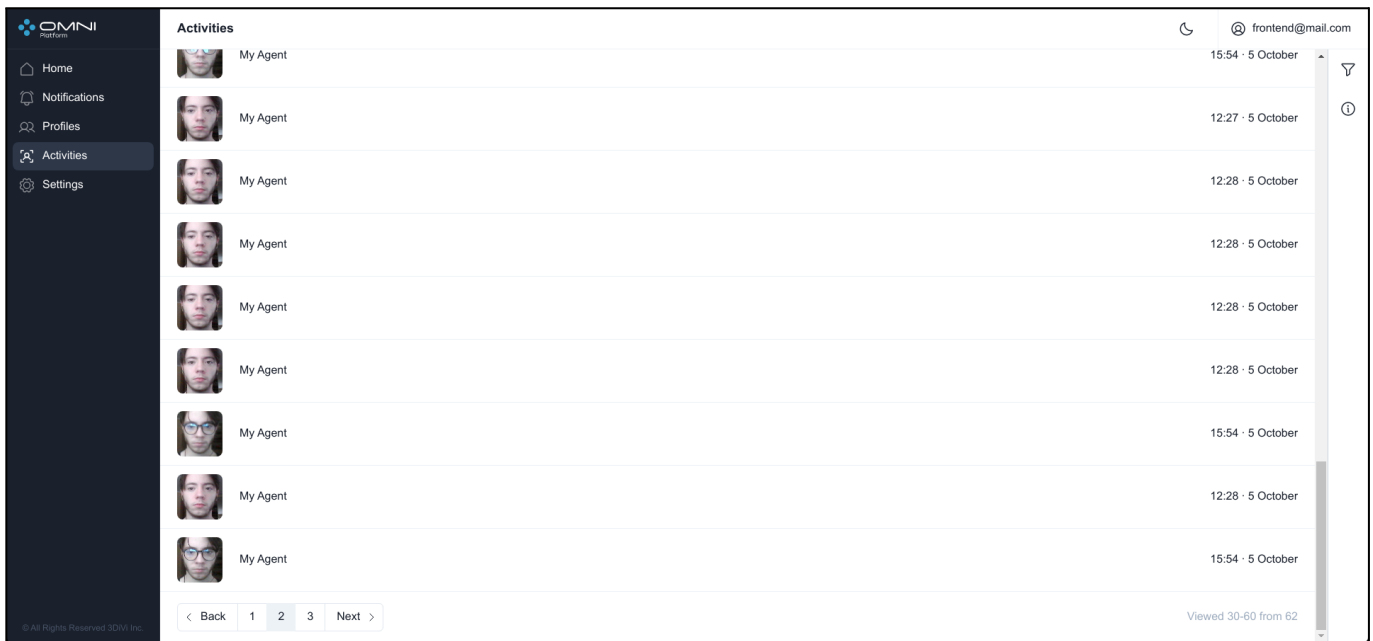
To disable automatic update, click the toggle button in the header of Activities table.
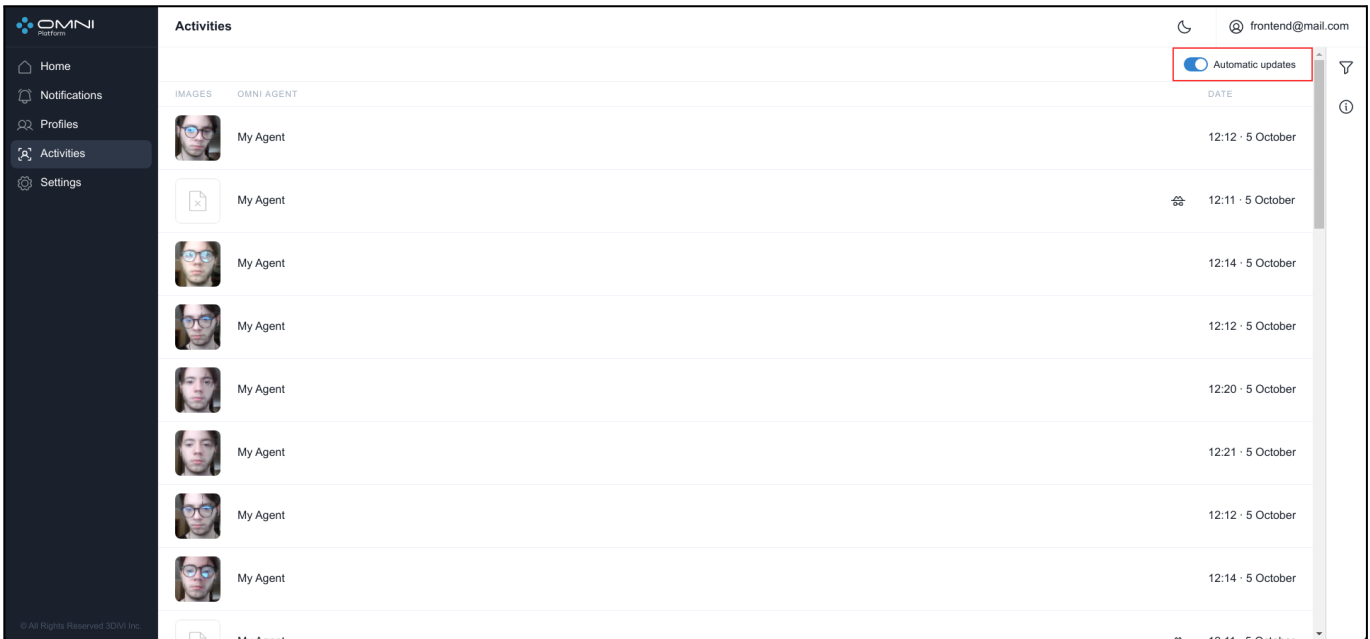
When new activities appear with automatic update disabled, a button with a counter of activities, appeared since automatic update was stopped, will be under the heading of the *Activities* table.

Click this icon and the system will upload all new data.

Automatic update can be enabled by clicking a toggle button or just by updating the page.

Filtering

The system contains a list of filters and sorting options for activity searching. Activities are filtered by the following parameters:

- Profile ID
- Creation date
- Last update date

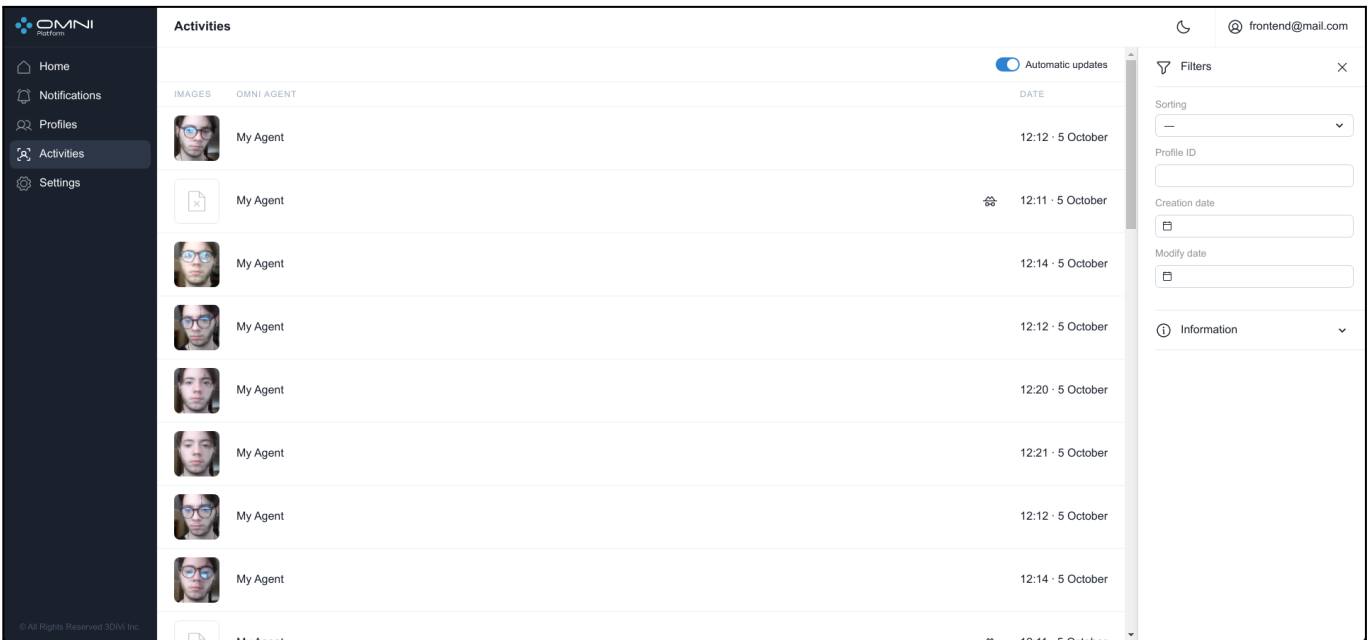Activities are sorted by the following parameters:

- Creation date
- Last update date

To configure filters, click the Filtering icon at the top right side of web interface under *Account* button.

Fill in the appropriate fields in the opened tab. IDs can be copied from object cards.

9. Notifications

Notification is an object used to notify the user about activities related to profiles that have been added to watchlists.

Get Notifications

Notification is automatically generated when the system receives activity that satisfies the trigger condition. For a certain watchlist this condition is as follows: the biometric data of received activity match the biometric data of a profile from this watchlist.

To provide auto-generation of notifications, follow the instructions below:

- Create a profile and a watchlist
- Add the profile to the created watchlist
- Attach a trigger to the watchlist
- Attach an endpoint to the trigger

As a result, when a person from this watchlist is detected by OMNI Agent, you'll receive an instant notification on this event.


If a notification is generated, but you don't receive pop-up, email or webhook notifications, make sure that a trigger has an endpoint attached.
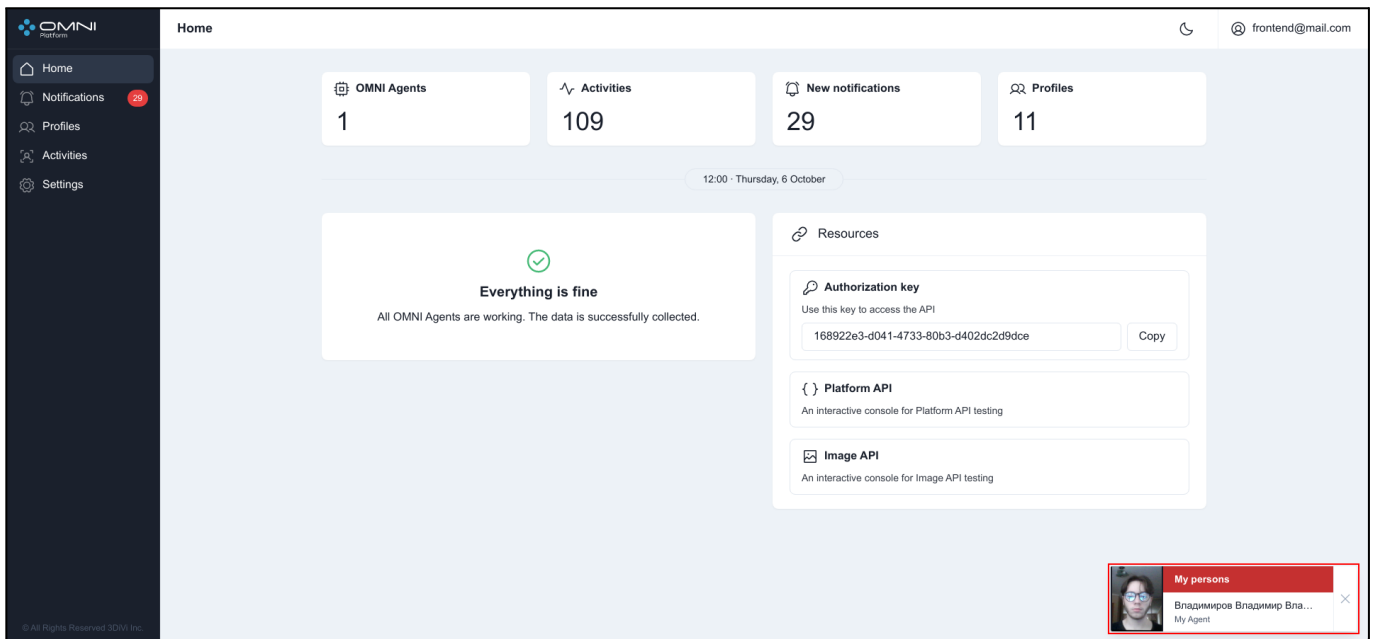
Pop-Up Notifications

Pop-up notification is a pop-up window at the lower right side of the web interface that shows brief information about the notification: photo (or profile avatar if the agent was in anonymous mode), profile name, agent name and watchlist.This notification lasts for 30 seconds, then disappears. By clicking on the pop-up notification itself, you'll be redirected to the Notifications page. No pop-up notifications will be displayed at the Notifications page.

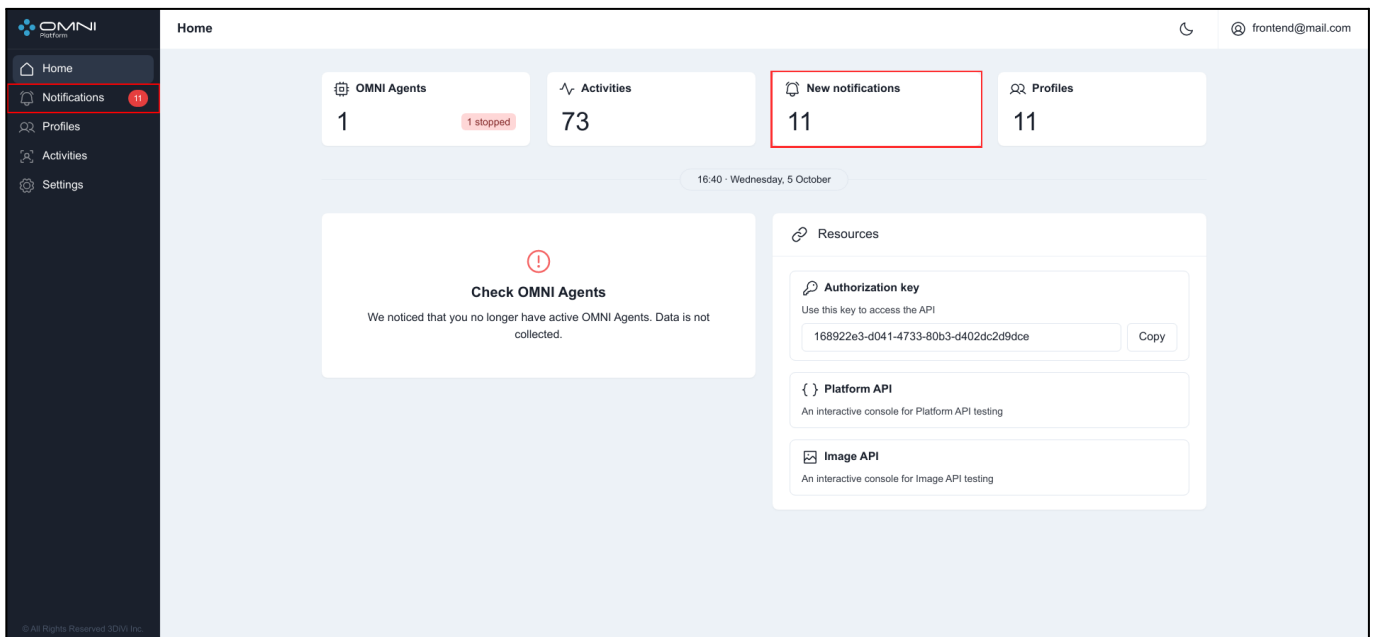Pop-up notifications when the agent is in the anonymous mode:
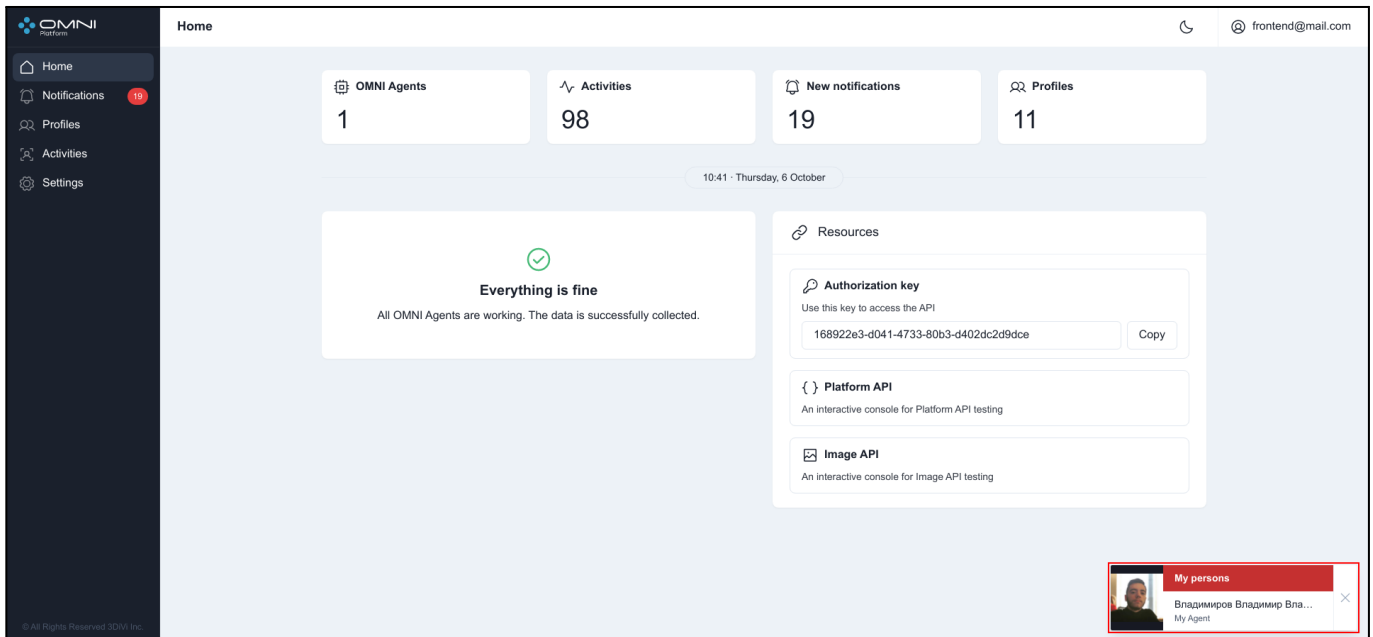
Pop-up notifications when the agent isn't in the anonymous mode:

View Notifications

To view the existing activities, open Notifications page via web interface sidebar menu or through New Notifications quick view panel at home page.


Web interface displays notifications in two ways: table view and tile view. To switch the view, just click on the View button at the top right side of the Notifications page. The active *View* button will be highlighted in blue.

Click the table view button and notifications will be displayed as a table:
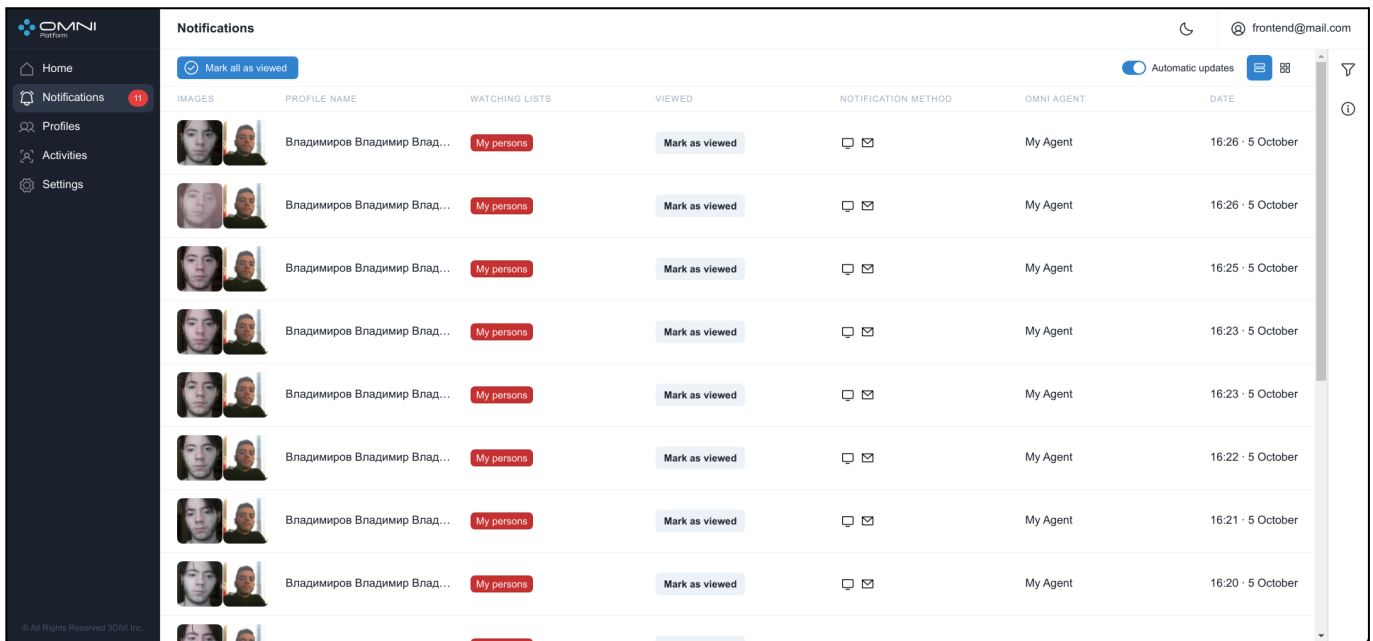
Click the tile view button and notifications will be displayed as tiles:
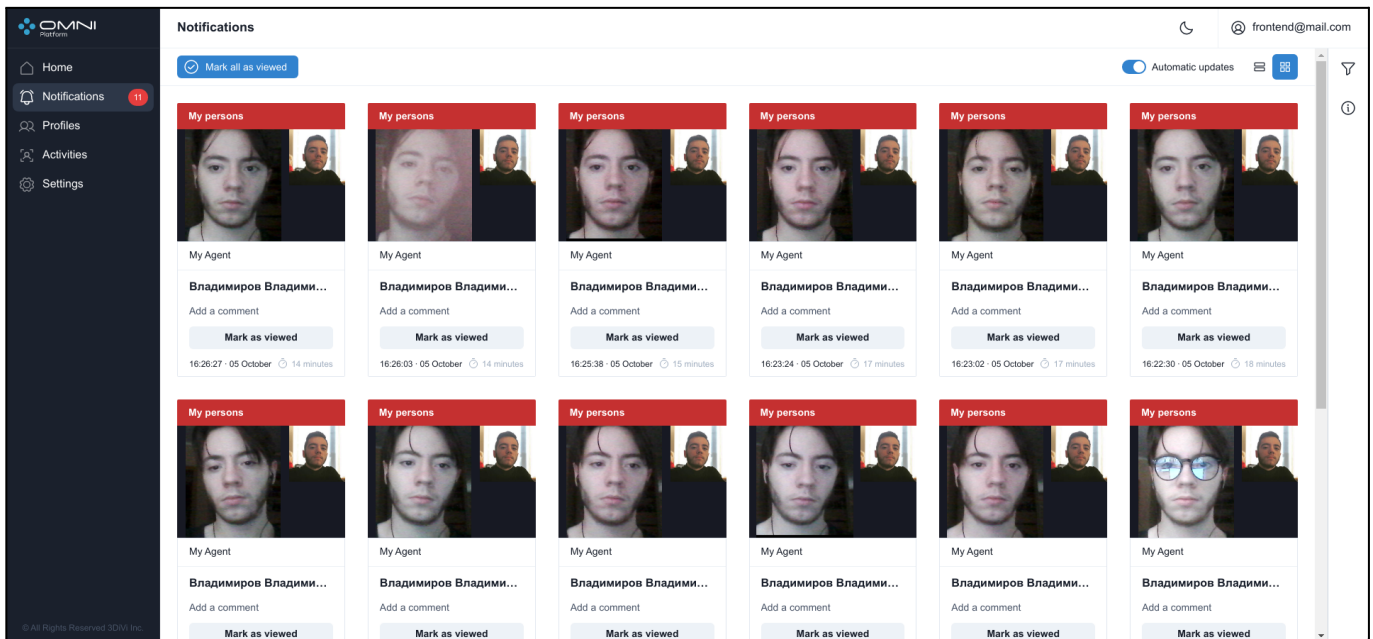

Displayed notification data:

- Images of body and face taken from the activity and profile avatar. The images of body and face from the activity are shown if the images of sufficient quality are taken. The possible reasons for image missing: OMNI Agent works in the anonymous mode or the person's face or body did not get into the frame.
- Watchlist name

- Agent name

- Description (only for tile view). Allows to add or edit a profile description.

- Icons of endpoints where the notification was sent to (only for table view).

- Button to mark notifications as read

- Creation date

Automatic Update

When multiple OMNI Agents work simultaneously, new objects can be created by the system too often, so they can hinder interactions with previously created objects. In this case you can disable automatic data update.
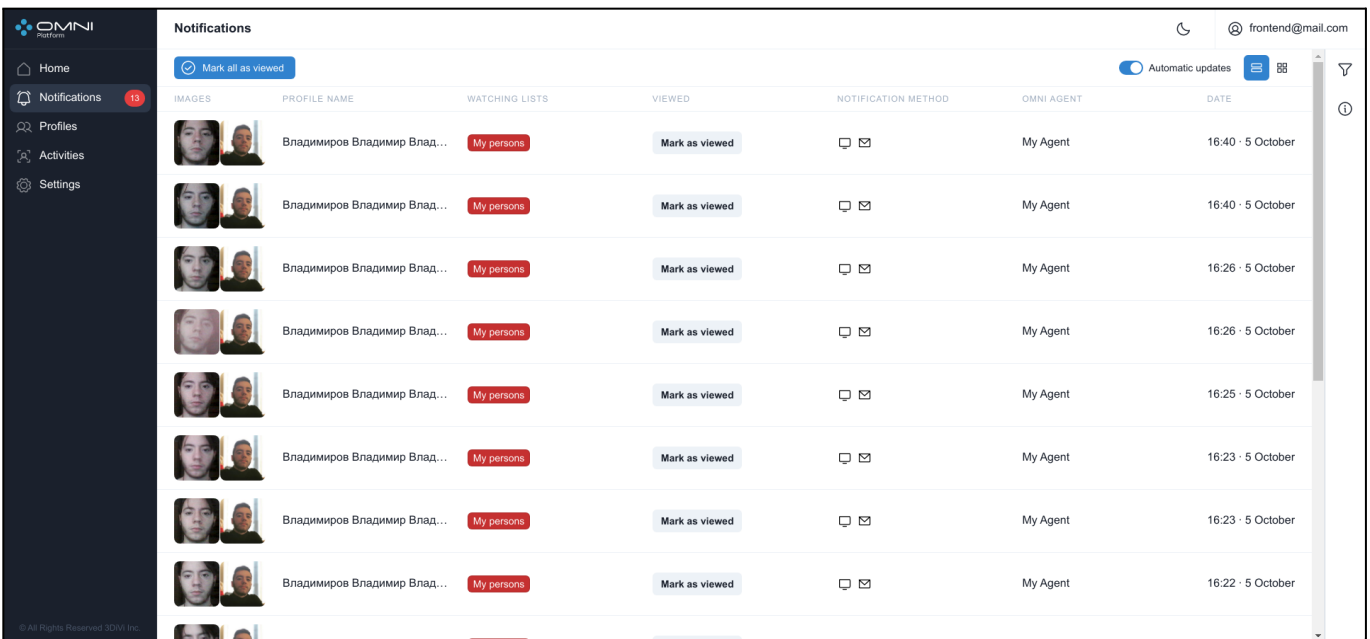
To disable automatic update, click the toggle button in the header of Notifications page.
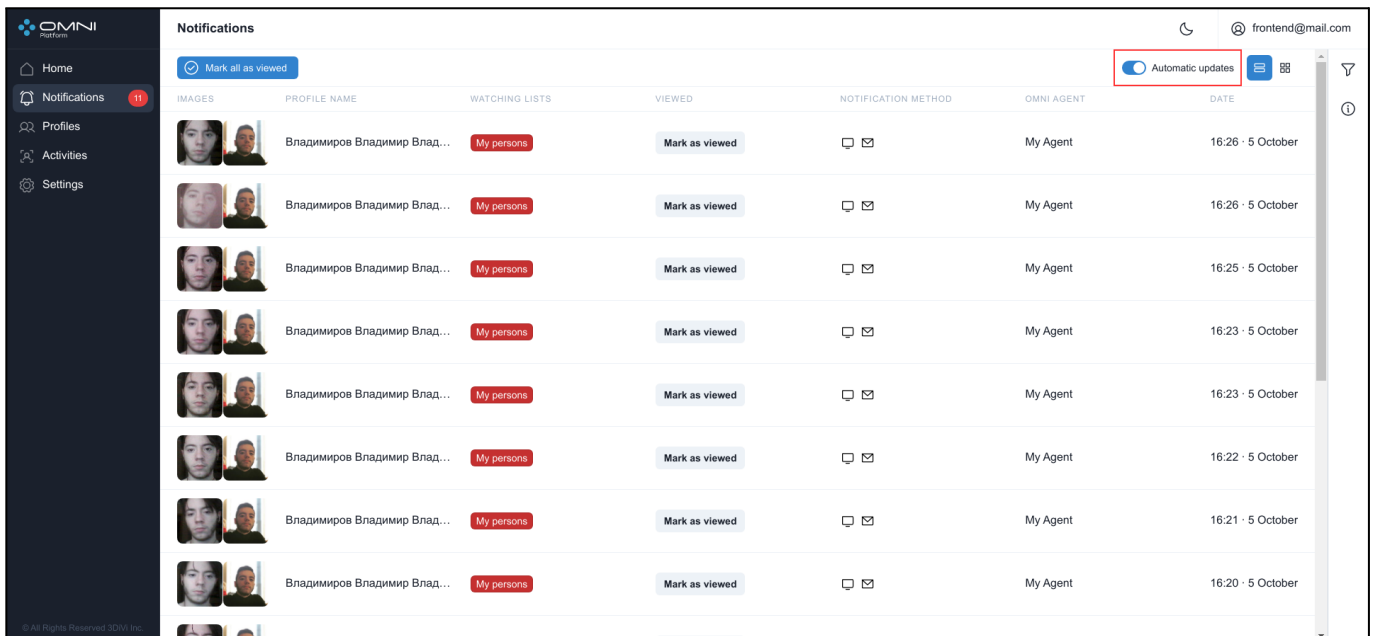
When new notifications are received with automatic update disabled, a button with a counter of notifications, created since automatic update was stopped, will appear under the heading of the Notifications table.
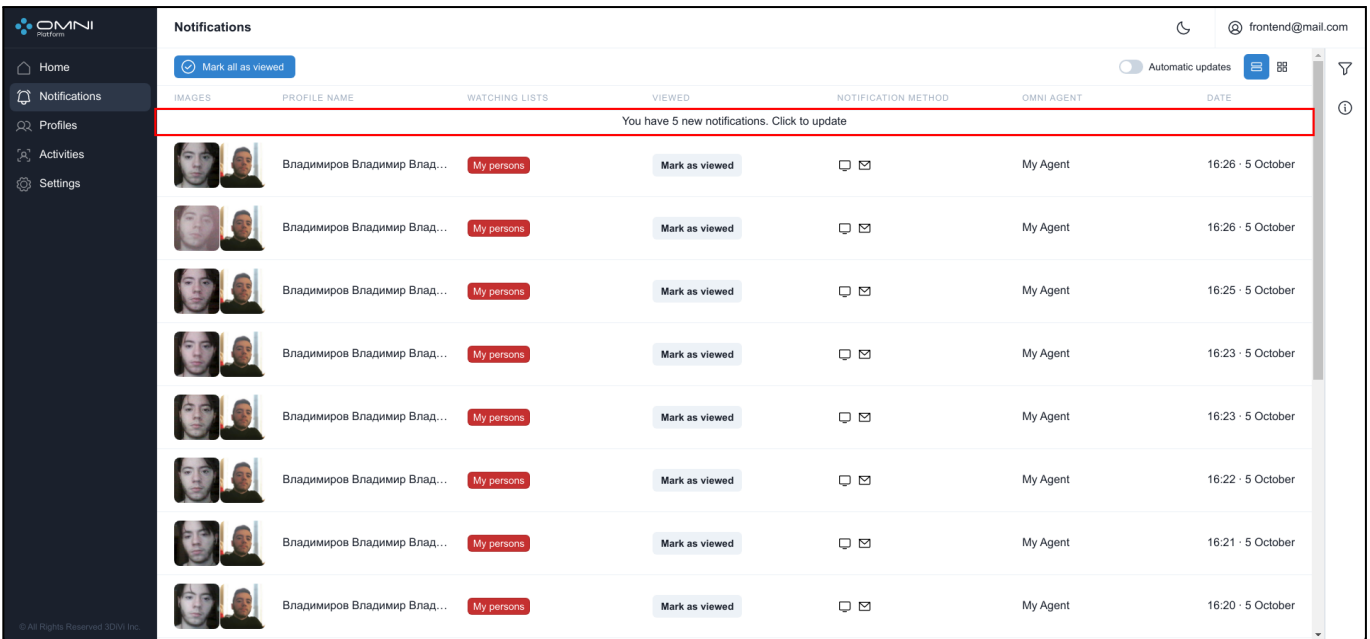
Click this icon and the system will upload all new data.

Automatic update can be enabled by clicking a toggle button or just by updating the page.

Filtering and Sorting

The system contains a list of filters and sorting options for notification searching. Notifications are filtered by the following parameters:
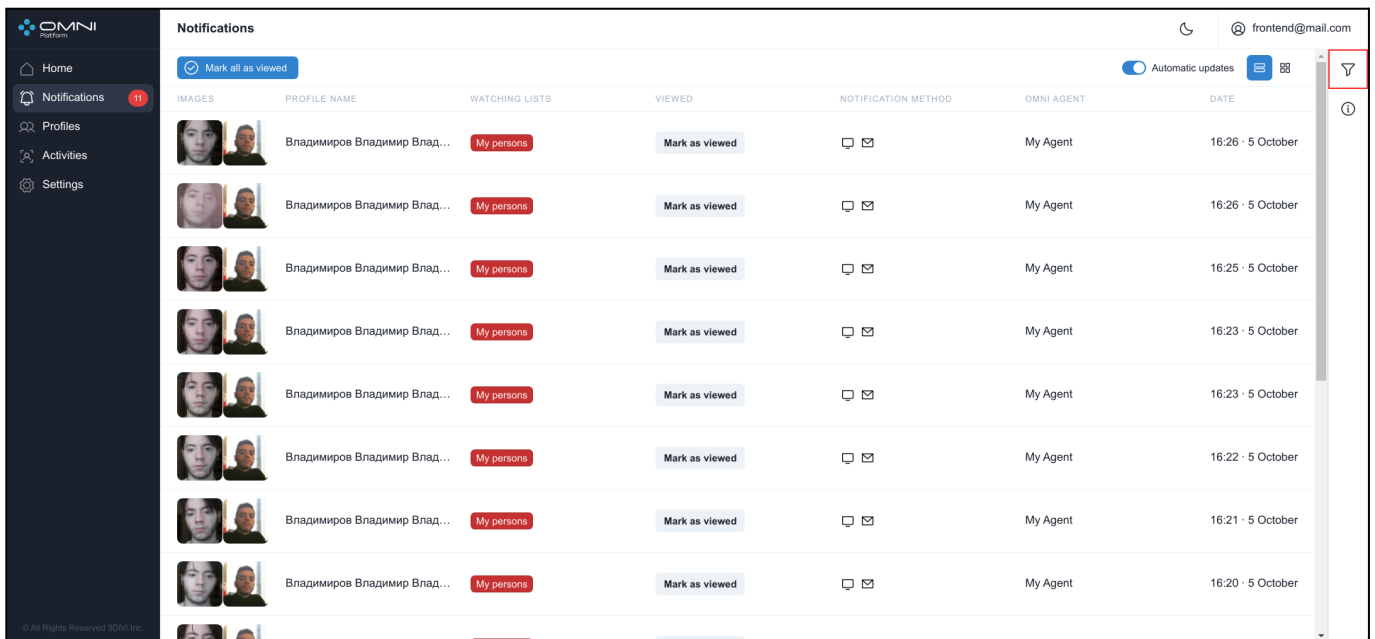
- Notification activity
- Endpoints
- Notification status
- Notification ID
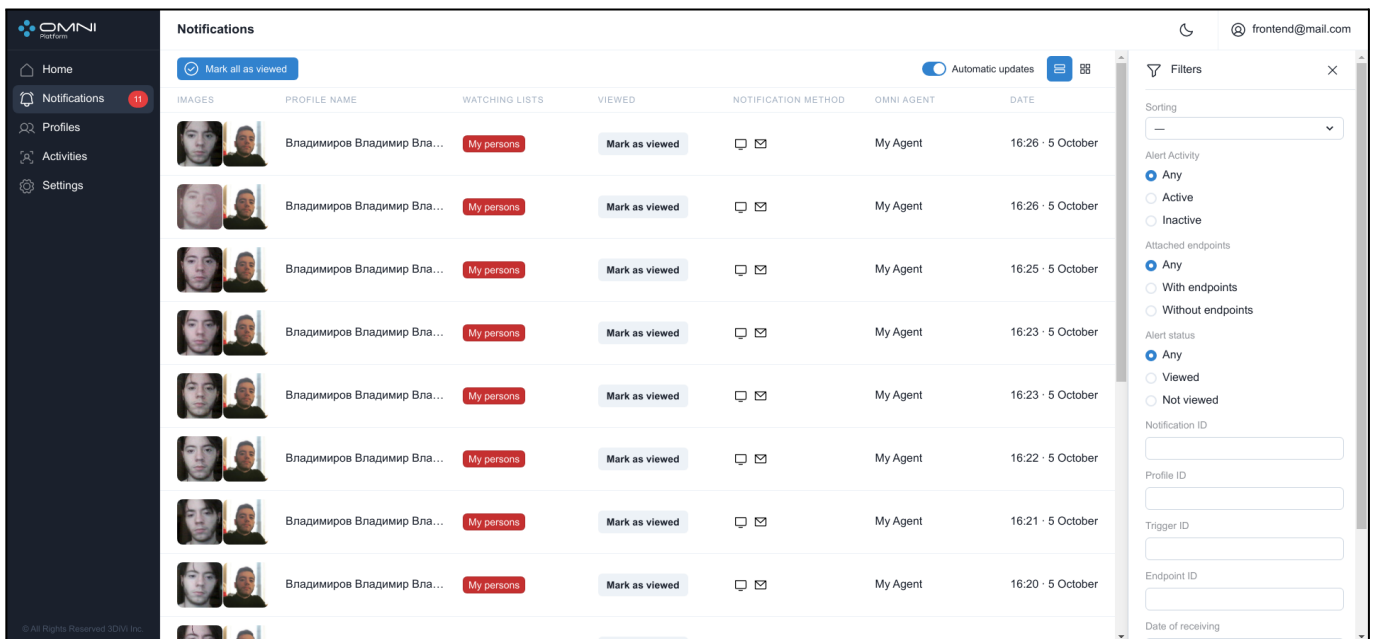- Trigger ID

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- Endpoint ID
- Creation date
- Modification date

Notifications are sorted by the following parameters:

- Creation date
- Modification date

To configure filters, click the Filtering icon at the top right side of the web interface under the Account button.

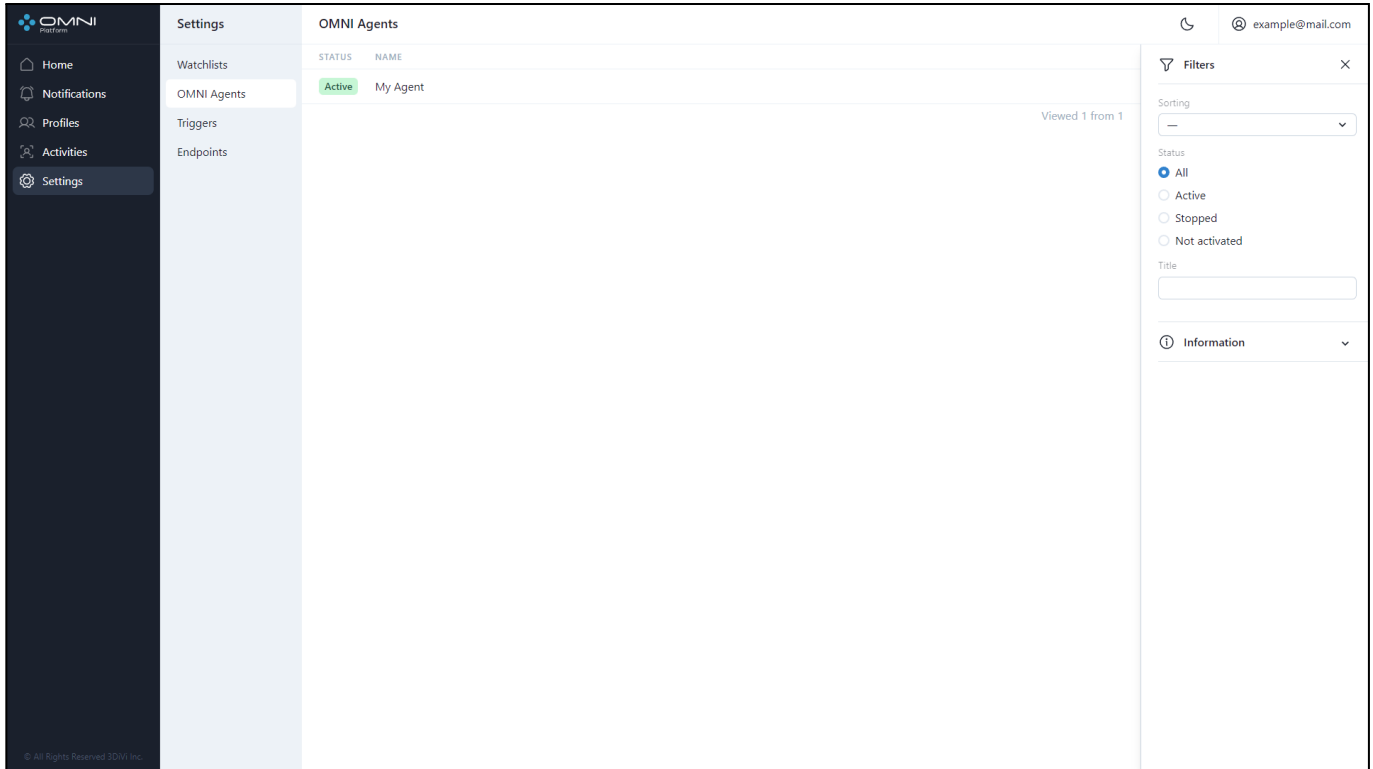Fill in the appropriate fields in the opened tab. IDs can be copied from object cards.

10. Agents

Agent is an object used to display OMNI Agent data: current status, name, creation date and last update date.

Create Agent

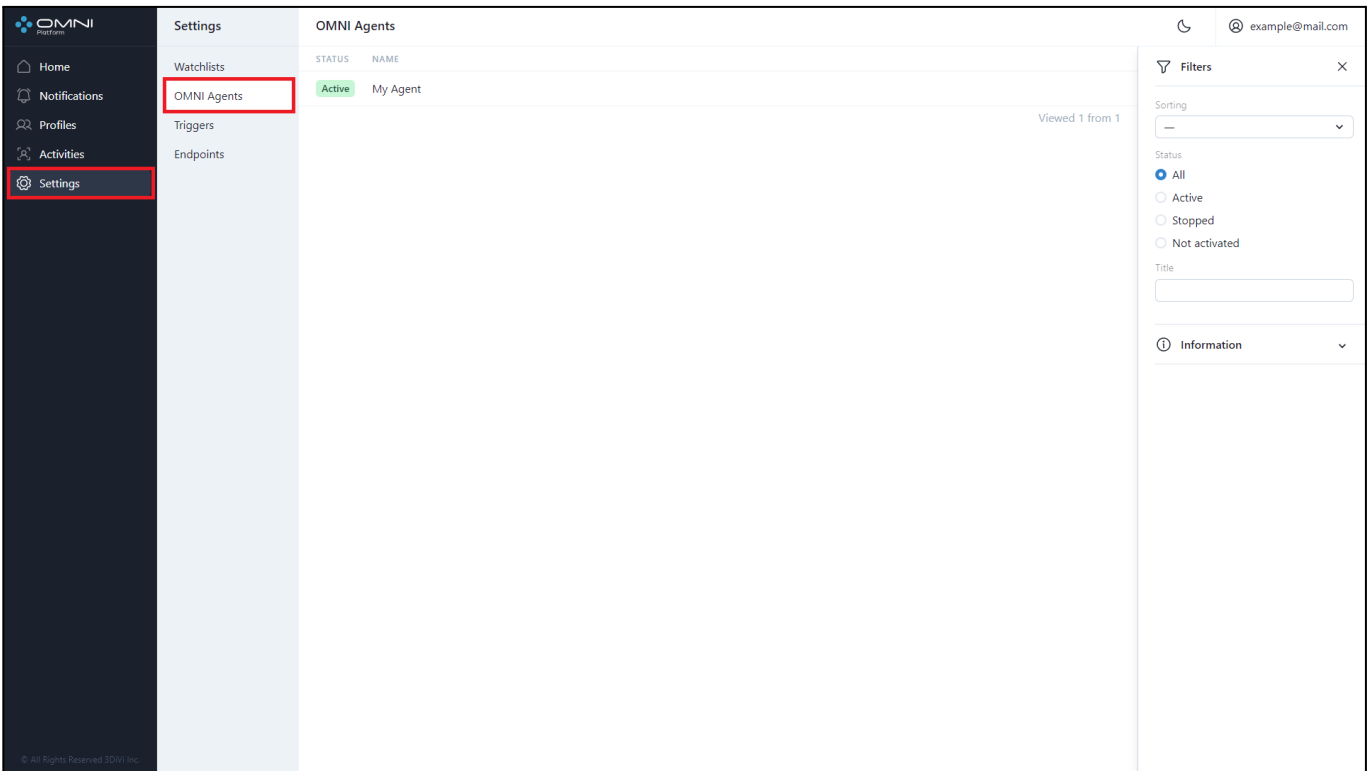Agent object is created automatically after installation and login to OMNI Agent.

View Agents

To view existing agents, do the following:

1. Open Agents section via Agents quick view panel on the home page.
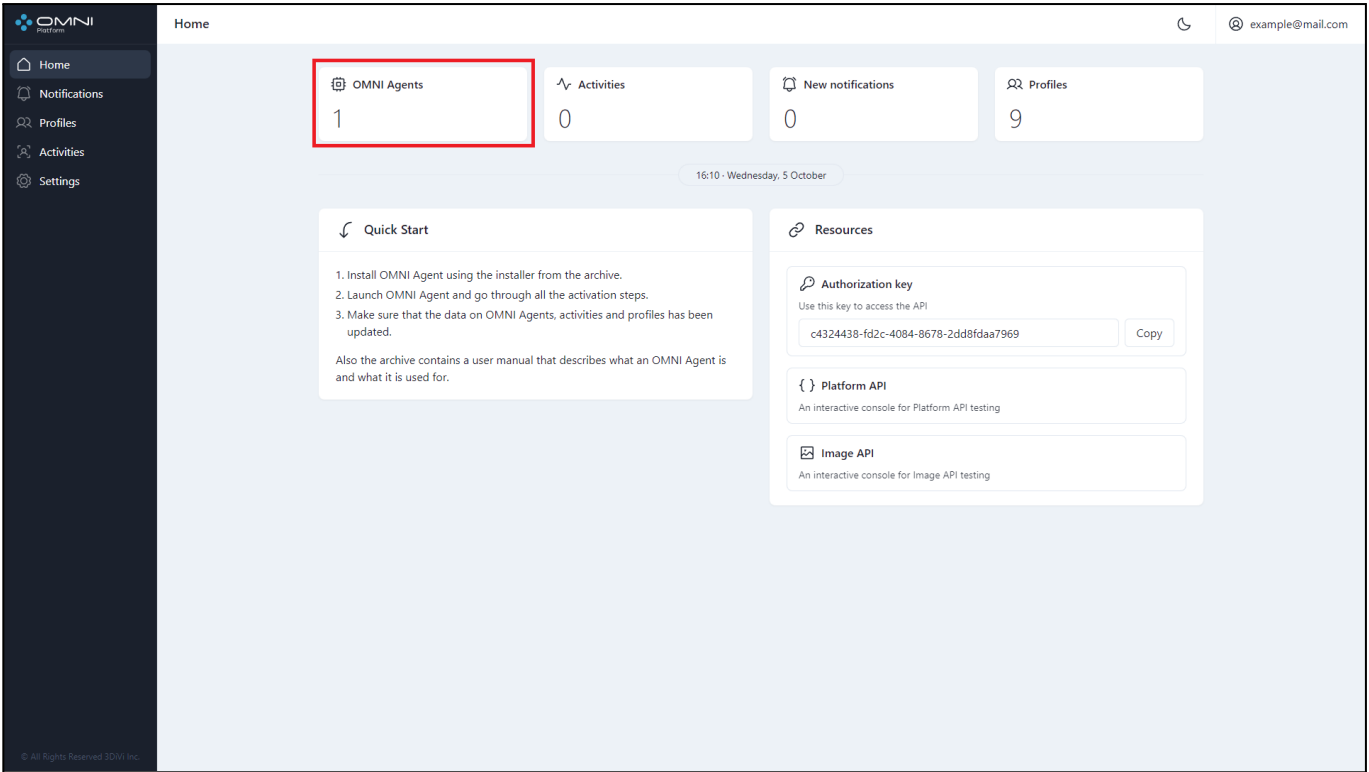
Or through Settings section.

2. The opened page displays a table with created agents. To view detailed information on the agent, click on a row in the table to open the agent card. The card displays the name, creation date, last modification date, and a button with a shortened ID. To see the full ID,

just hover over this button. If you click the button, the watchlist ID will be copied to the clipboard.
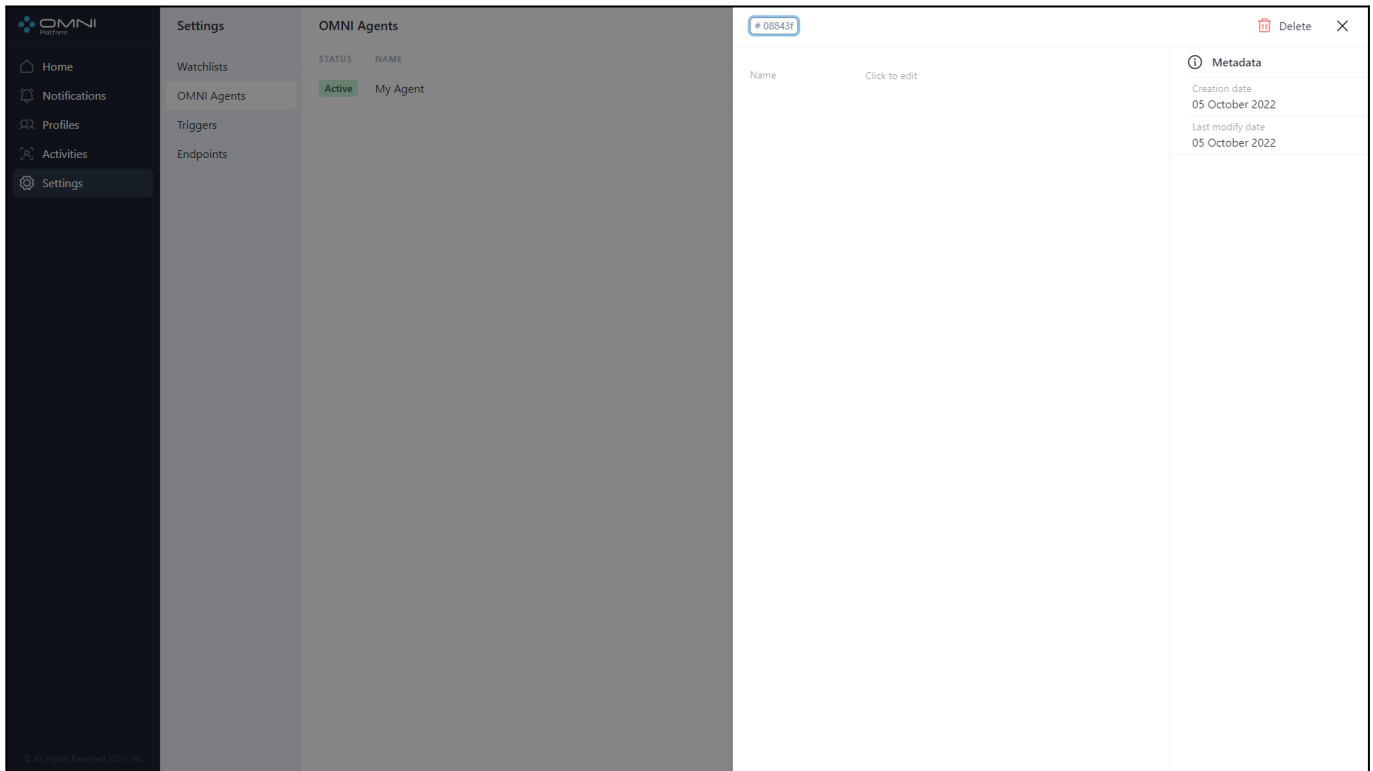
Agent status (active/stopped) can be viewed for each created agent at the Agents section. If some agents are stopped and data from cameras is not collected, you'll see a special *Warning* panel at the home page of the web interface.
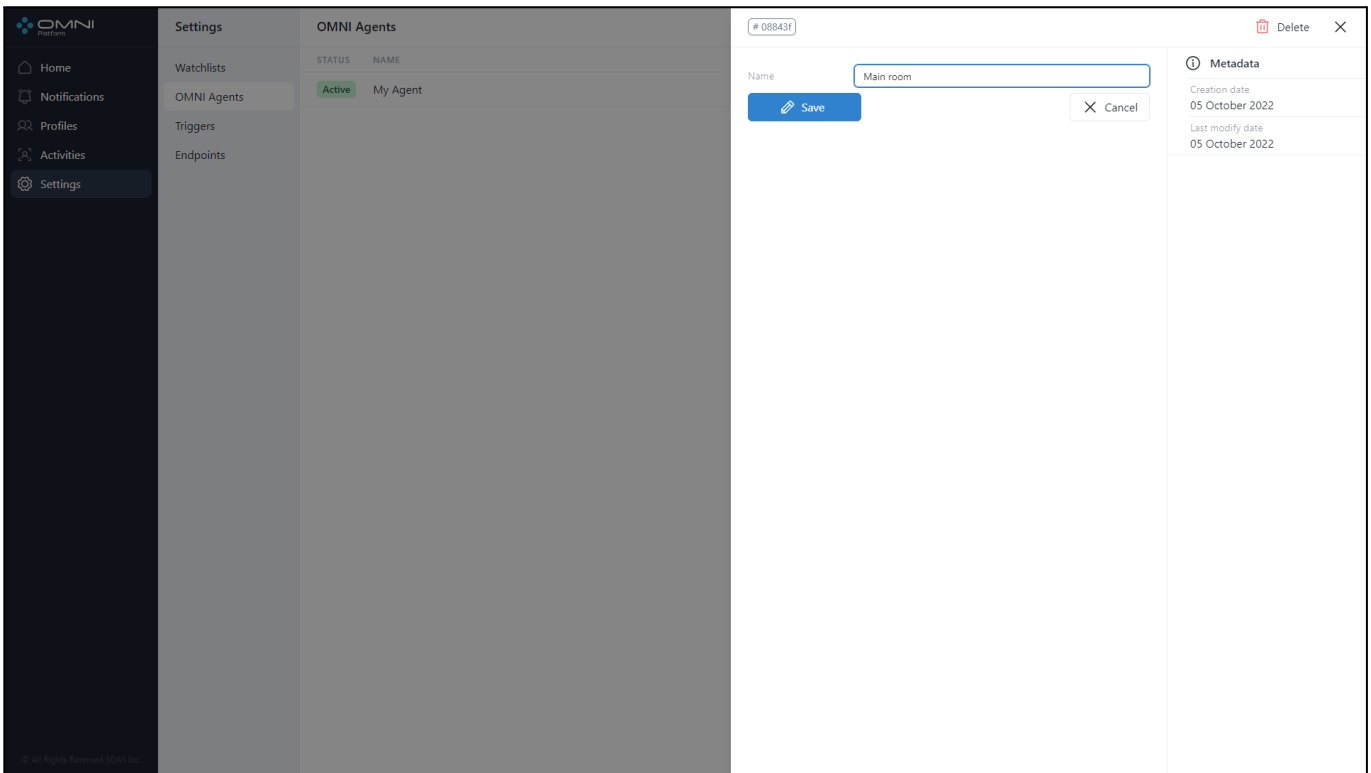
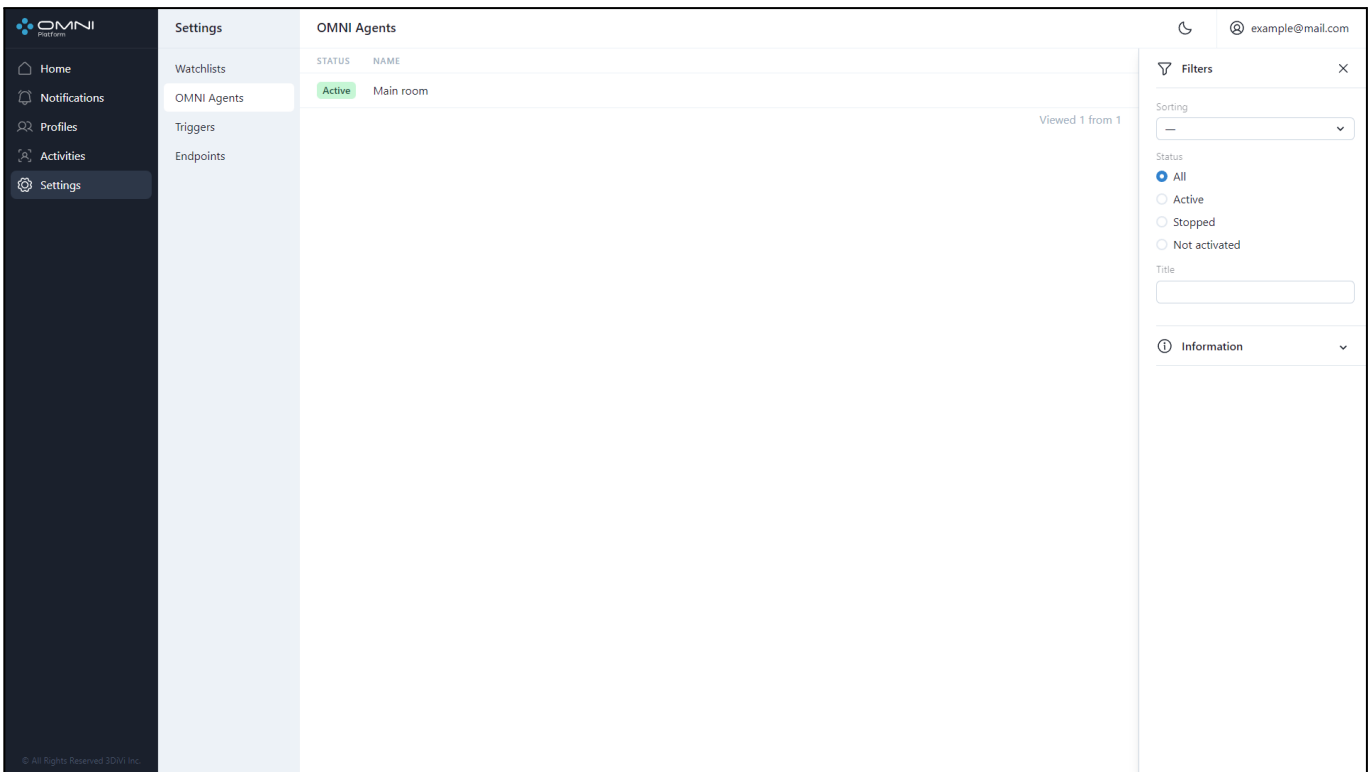# Edit Agents

To edit an agent, do the following:

1. Click on a table row to open an agent card.
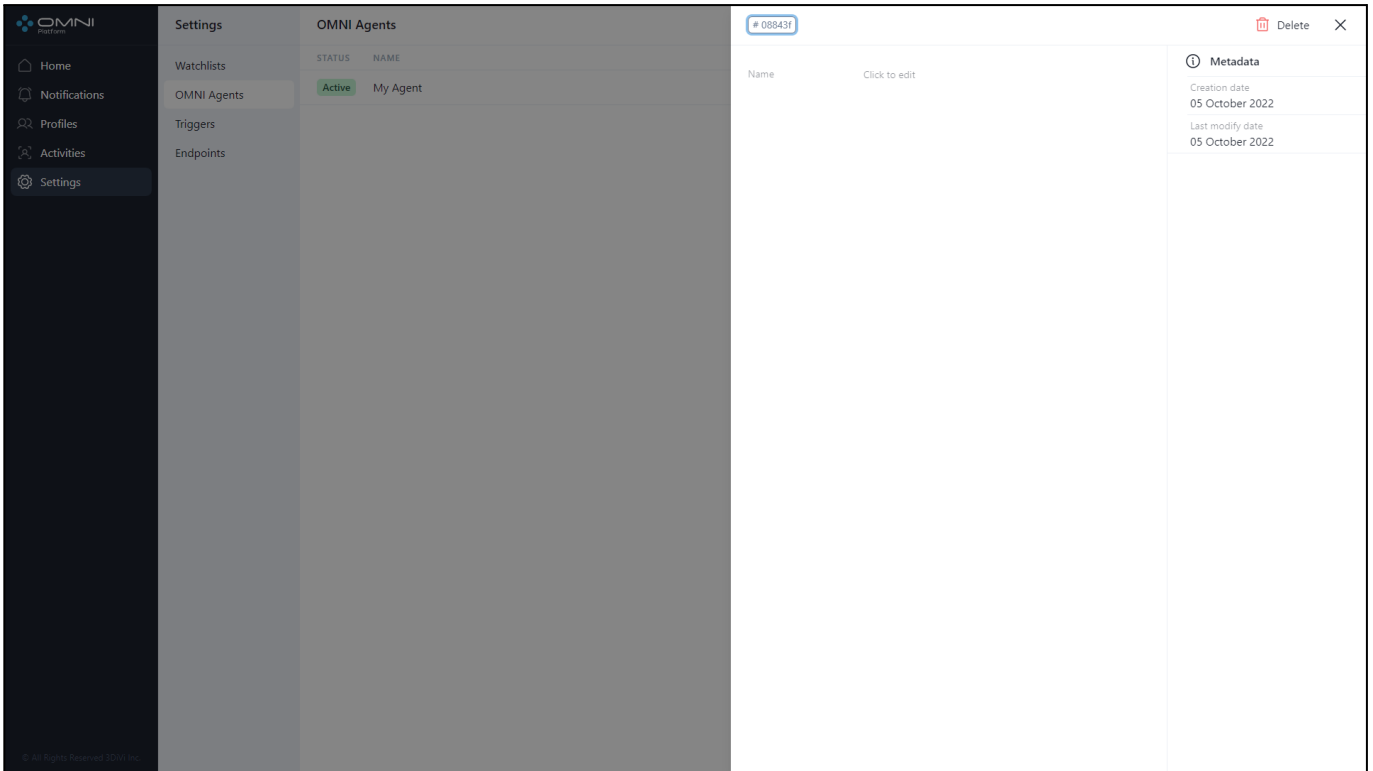
2. To change the agent name, click on the appropriate field. After click *Save* button.
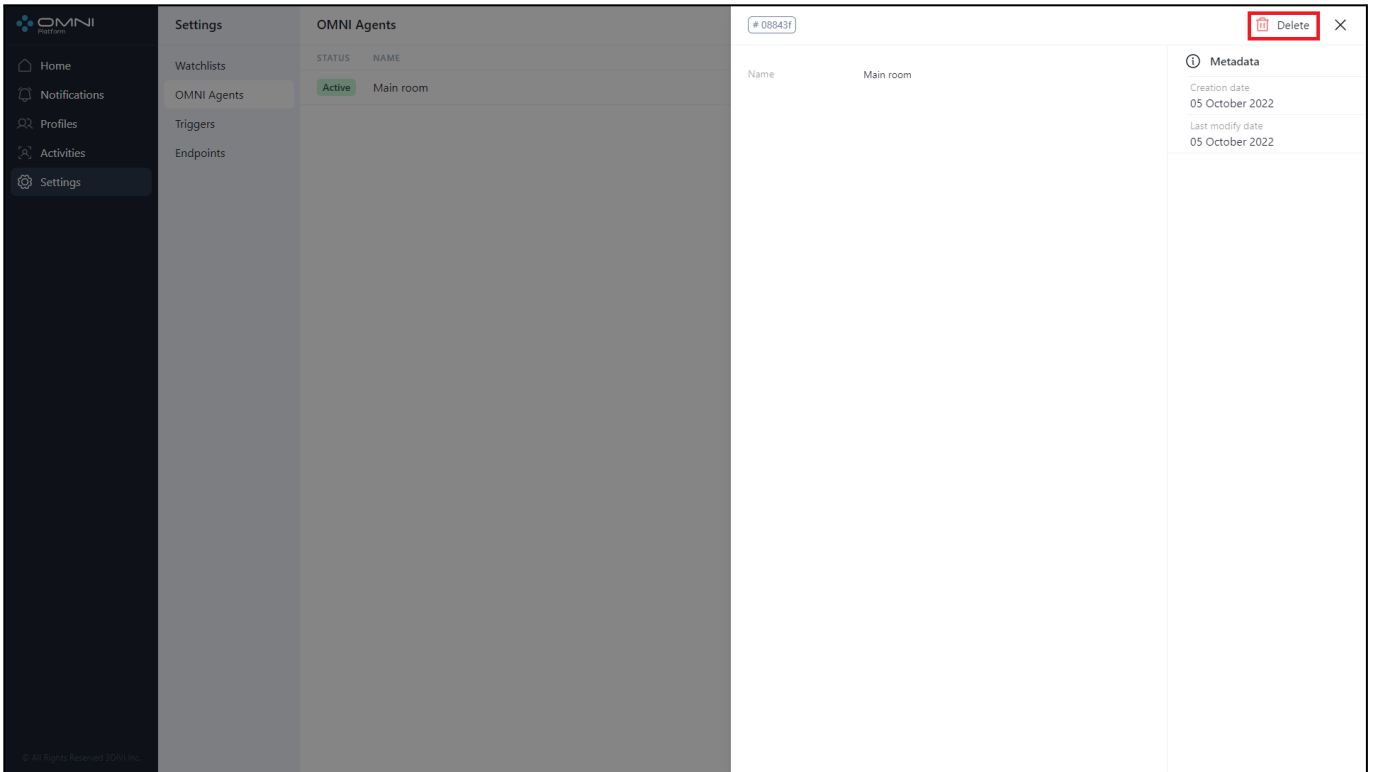
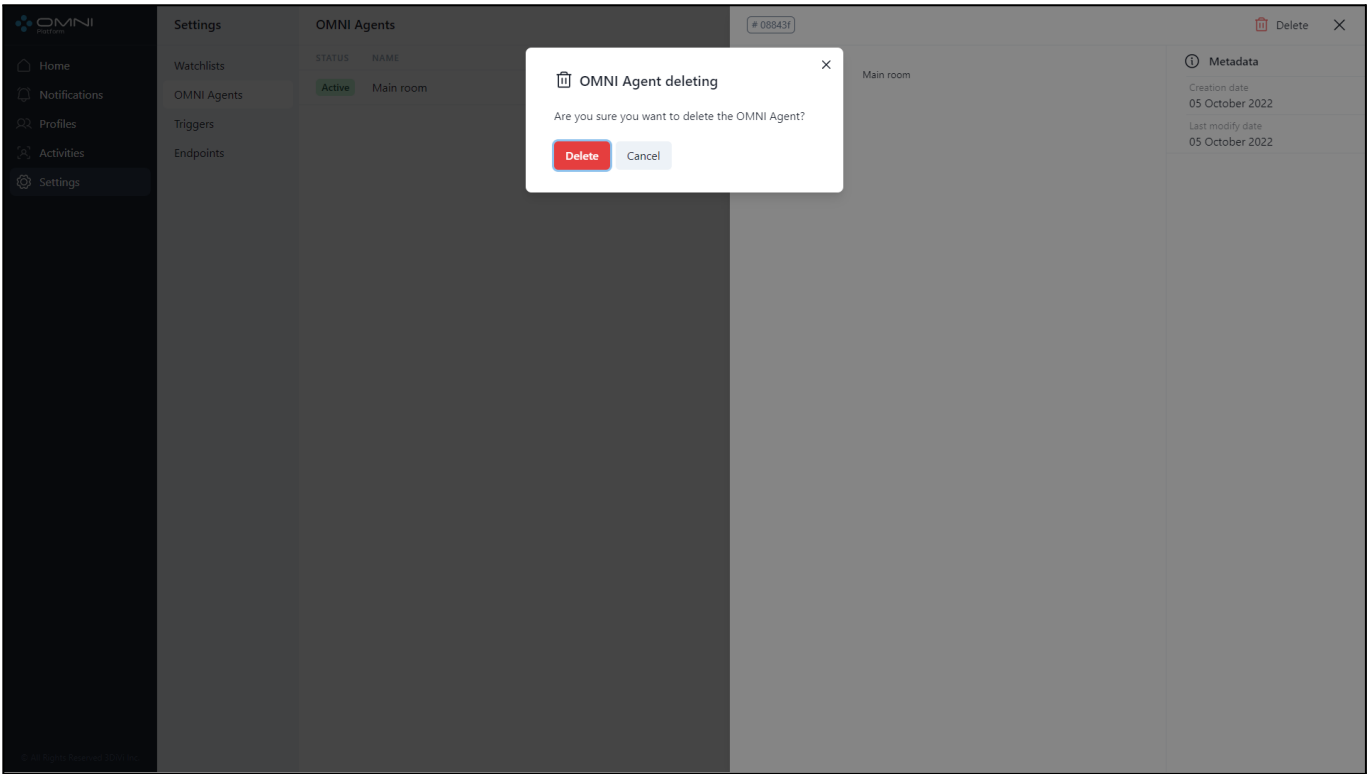

3. As a result, agent data has changed.
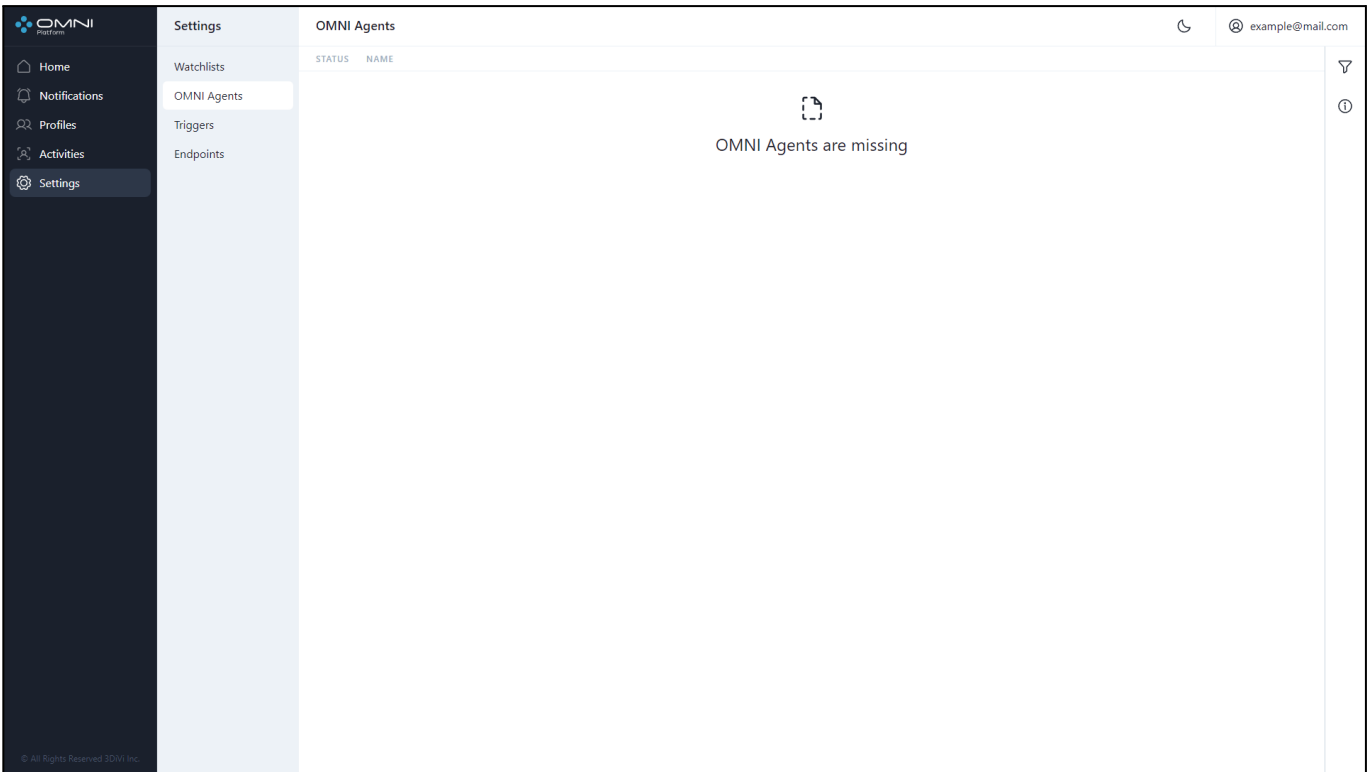
Delete Agents

To delete an agent, do the following:

1. Open the agent card by clicking on the table row and click on the Delete button at the top right side of the web interface.

2. Confirm the deletion.

3. As a result, the agent is deleted from the database.
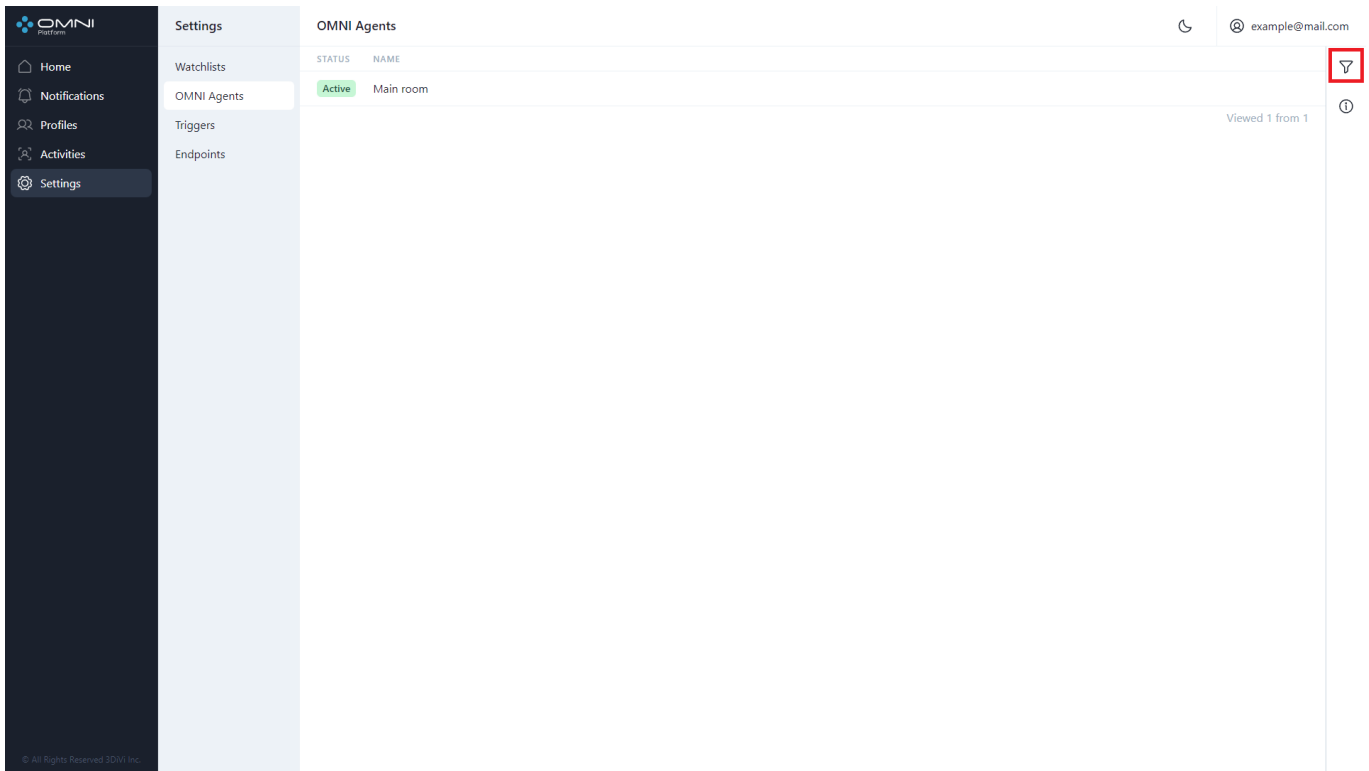
Filtering and Sorting

The system contains a list of filters and sorting options for Agent searching. Agents are filtered by the following parameters:

- Status
- Name

Agents are sorted by the following parameters:

- Creation date
- Modification date
- Name

To configure filters, click the Filtering icon at the top right side of the web interface under the Account button.

Fill in the appropriate fields in the opened tab. IDs can be copied from object cards.