Introduction

Email address validation connector for Creatio lets you verify any email in your contact list. Ensuring you only use valid emails is vital for email marketing. Sending out campaigns to invalid emails, blocked emails or spam traps may significantly reduce your delivery rate. If it gets too low, mail servers may blacklist your address.

The add-on uses the standard business process logic, so you can easily customize it to fit your business needs.

This guide covers the application's basic logic and briefly describes the business process flow and functionality.

The add-on's current version is integrated with SendGrid's email validator. You can find SendGrid's official manual [here](#).

Initial setup

The add-on supports both Marketplace and file installation options. You can access them on the System designer's [Installed applications] page (Fig. 1, Fig.2). We recommend logging out of Creatio and logging back in after the installation.

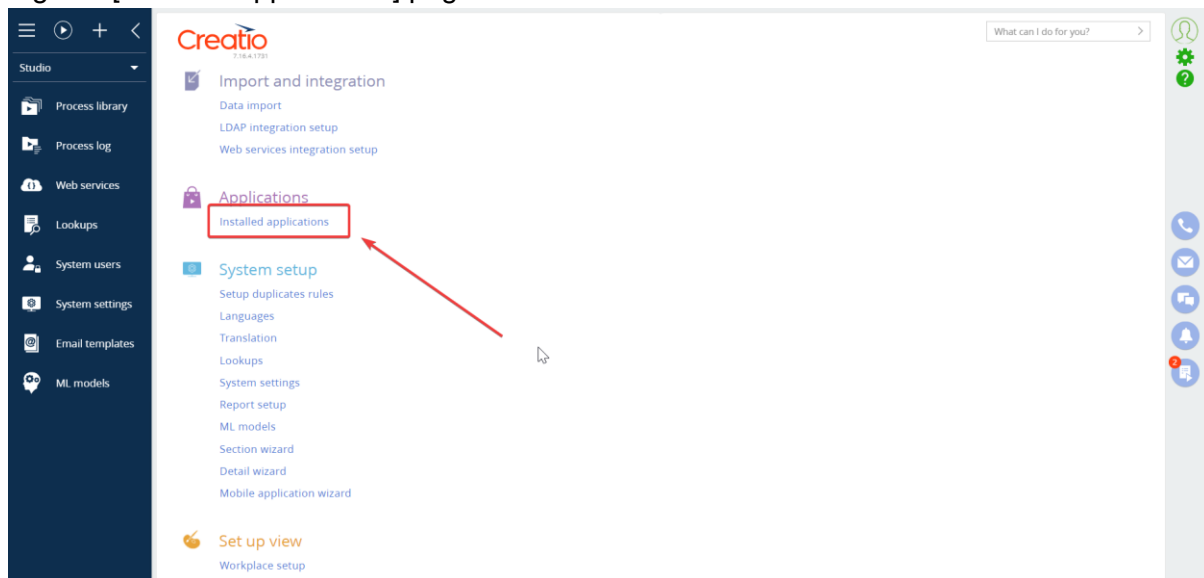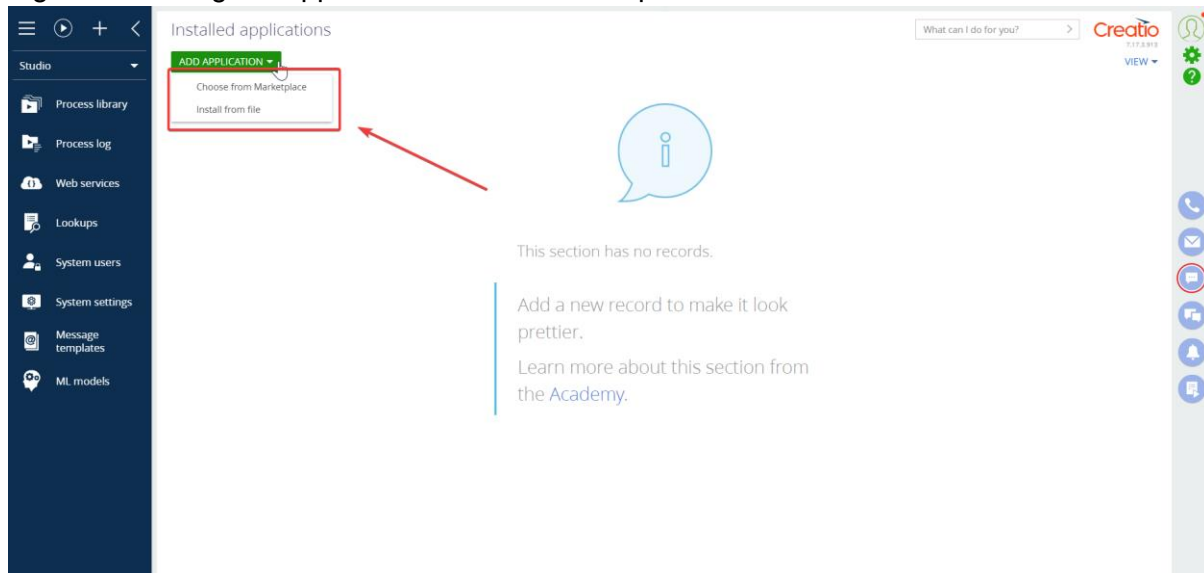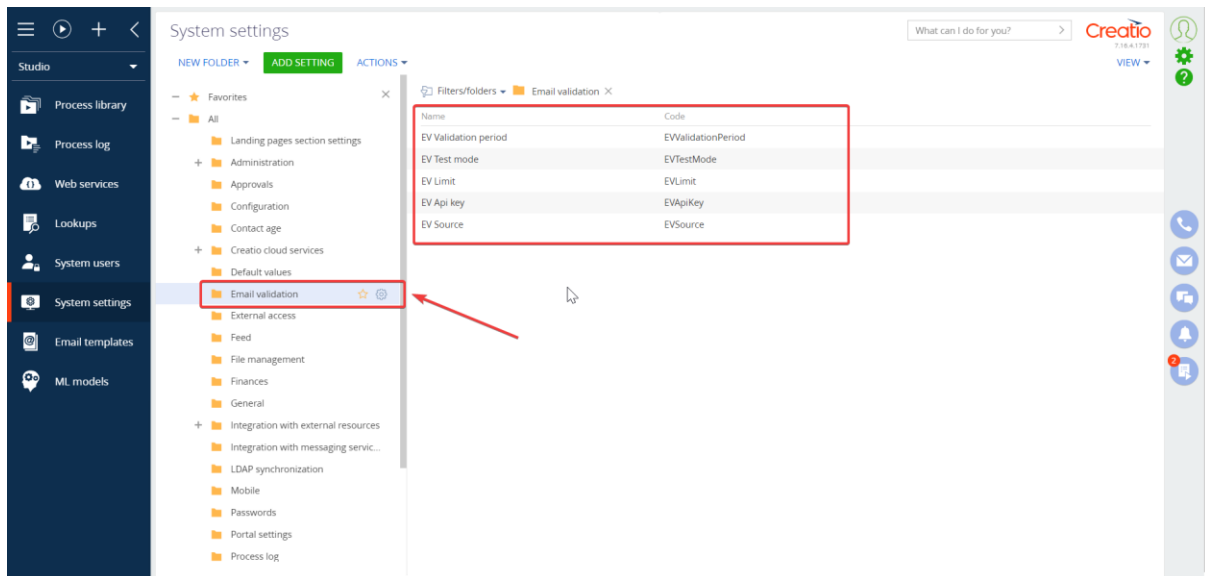Fig. 1 – [Installed applications] page

Fig. 2 – Installing the application from the Marketplace or from the file

You also need to perform further setup in System designer —> [System settings] —> [Email validation] folder (Fig. 3).

Fig. 3 – Email validation system settings

[EV source] – this setting is optional. You can use it to filter requests on the service provider's [Validation] page (Fig. 9). Request filtering is useful if you have unique add-on instances among several Creatio installations. Setting unique values for each instance will help you balance the validation flow.

[EV source] is set to CreatioEmailValidator by default but you can change it to any value.

Fig. 9 – Filtering on the service provider's [Validation] page
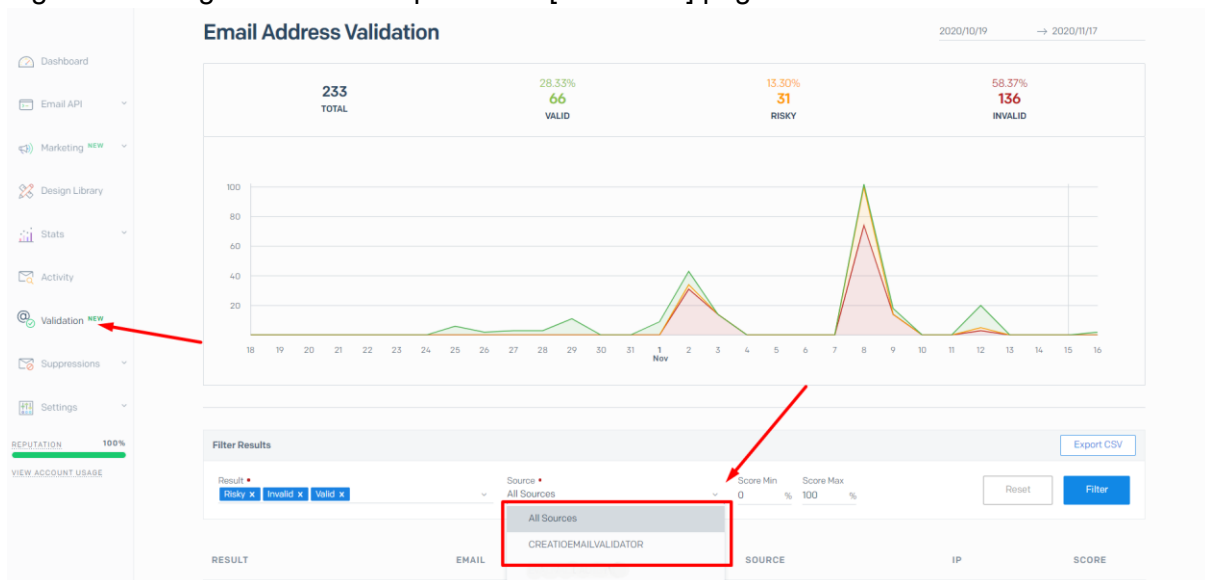
[EV Validation period] – sets the validation's relevancy period, in days. People may change, hand over, delete or even sell their emails, so it's important to re-validate your contact list every once in a while.

The default value is [180]. If an email you have already validated within this time frame ends up in a new validation list, the add-on will mark it as [Previously validated]. The application considers those emails valid and does not send them to the service provider.

[EV Limit] – a monthly quota for emails verified with the service provider. This option is useful for keeping your budget in check as you pay per each email the service provider validates.

If you reach this limit mid-validation, the validation will stop automatically.
If you would rather keep the quantity unlimited, set the [EV Limit] value to [0]. The default value is [0] as well.

[EV Test mode] – when active, the application will not send the validation requests to the service provider. The add-on marks any email address processed in this mode as [Test mode]. Test mode is disabled by default. We only recommend using it for debugging.

[EV API key] – a unique identifier that lets the add-on communicate with the service provider. You need to generate your own email validation API key on SendGrid's end if you do not have it yet. Key generation requires an active SendGrid account.
Keep in mind that you need to generate an email validation API key regardless of your bulk email provider in Creatio Marketing. Email validation API key and bulk email API key are independent from each other.
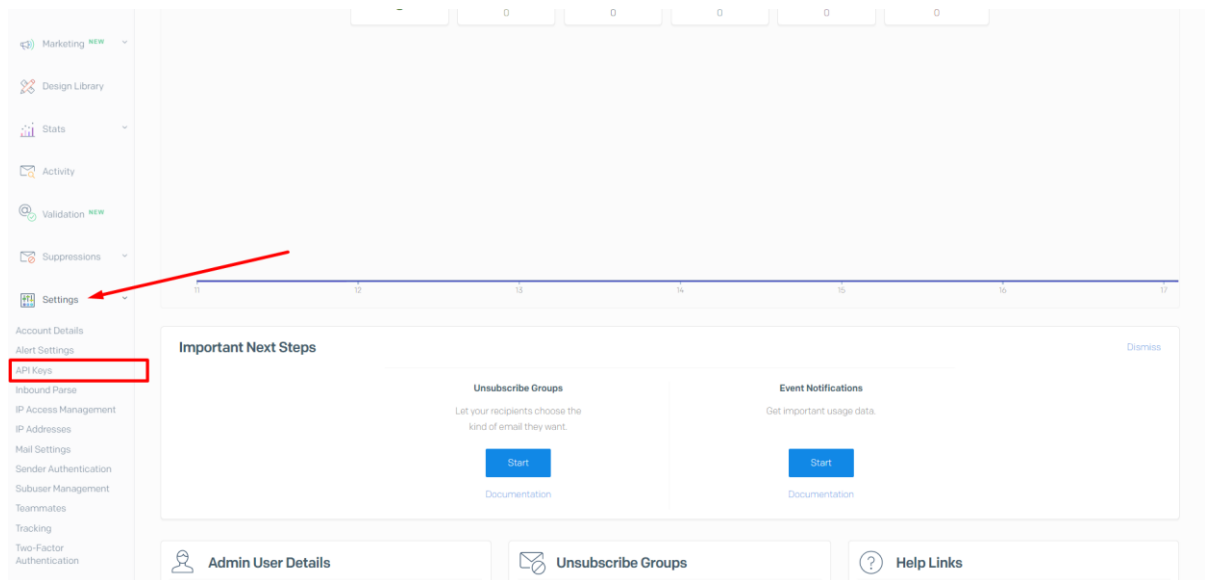
To generate the email validation API key:
1. Select one of SendGrid's plans and sign up for an account by following this link.
2. Go to your SendGrid dashboard (Fig. 4).
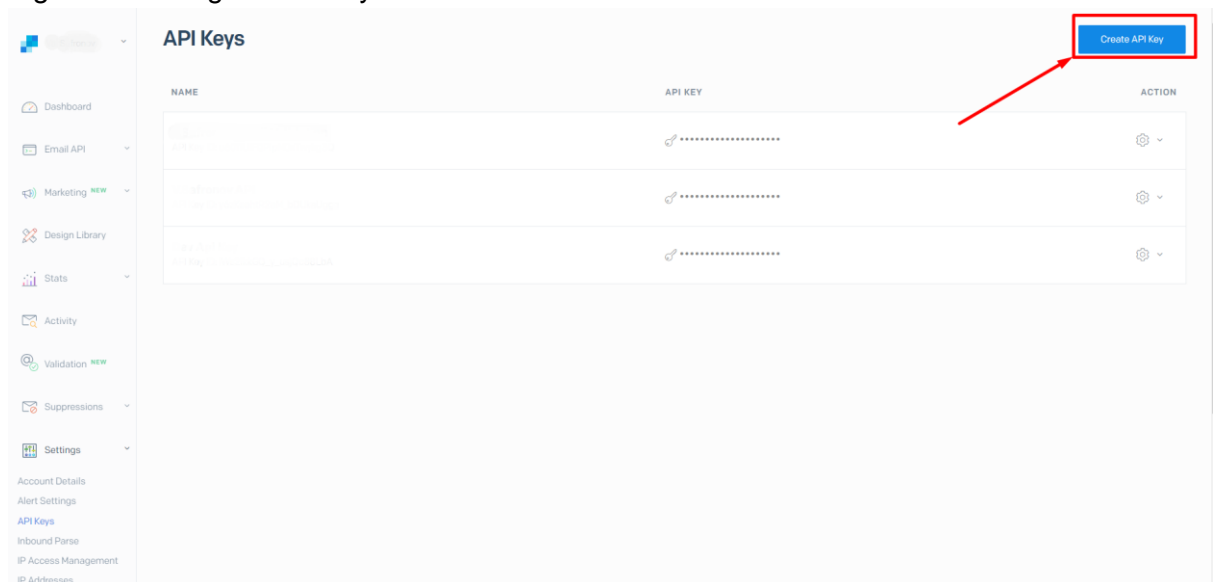
Fig. 4 – SendGrid dashboard
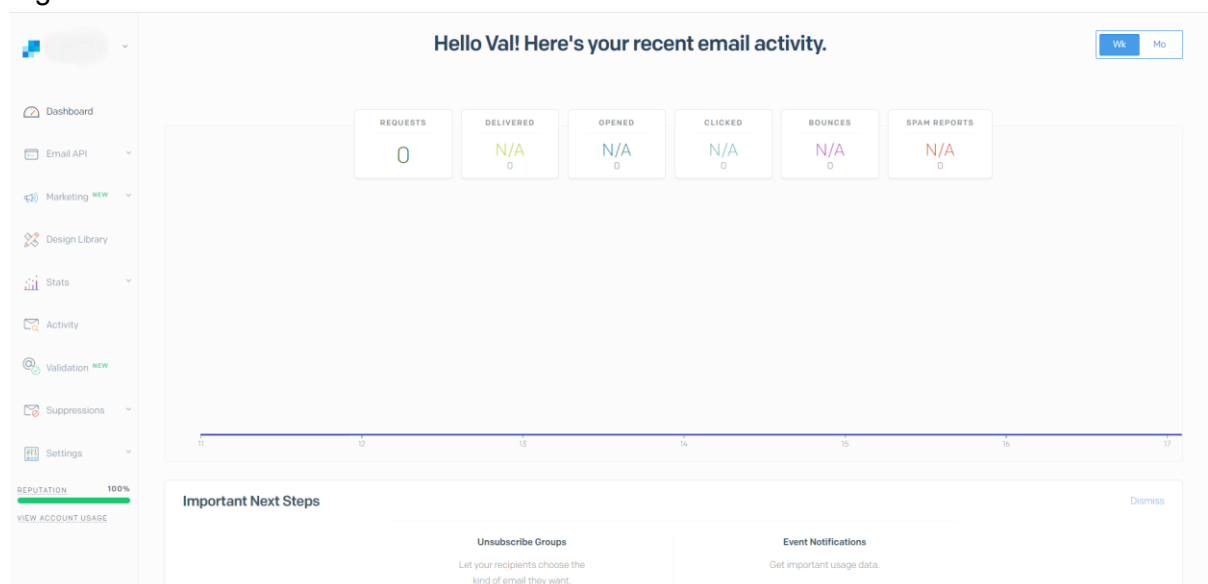
3. Go to [Settings] —> [API keys] (Fig. 5).

Fig. 5 – [Settings] page in the SendGrid dashboard

4.   Click [Create API Key] (Fig. 6).

Fig. 6 – Creating an API key in the SendGrid dashboard

5.   Name your API key and set its permissions to [Email Address Validation Access] (Fig. 7).

Fig. 7 – API key settings in the SendGrid dashboard

Create API Key

API Key Name •

API Key Permissions• ⓘ

○ Full Access
Allows the API key to access GET, PATCH, PUT, DELETE, and POST endpoints for all parts of your account, excluding billing and Email Address Validation.

○ Restricted Access
Customize levels of access for all parts of your account, excluding billing and Email Address Validation.

○ Billing Access
Allows the API key to access billing endpoints for the account. (This is especially useful for Enterprise or Partner customers looking for more advanced account management.)

● Email Address Validation Access
Allow access to Email Address Validation and the Real-Time Validation API. Learn More

Access Details   No Access   Read Access   Full Access

Reporting ⓘ

6.   Move the [Validation] slider to Full Access (Fig. 8).

Fig. 8 – API key settings in the SendGrid dashboard

API Key Permissions•

Full Access

Allows the API key to access GET, PATCH, PUT, DELETE, and POST endpoints for all parts of your account, excluding billing and Email Address Validation.

Restricted Access

Customize levels of access for all parts of your account, excluding billing and Email Address Validation.

Billing Access

Allows the API key to access billing endpoints for the account. (This is especially useful for Enterprise or Partner customers looking for more advanced account management.)

Email Address Validation Access

Allow access to Email Address Validation and the Real-Time Validation API. Learn More

Access Details   No Access   Read Access   Full Access

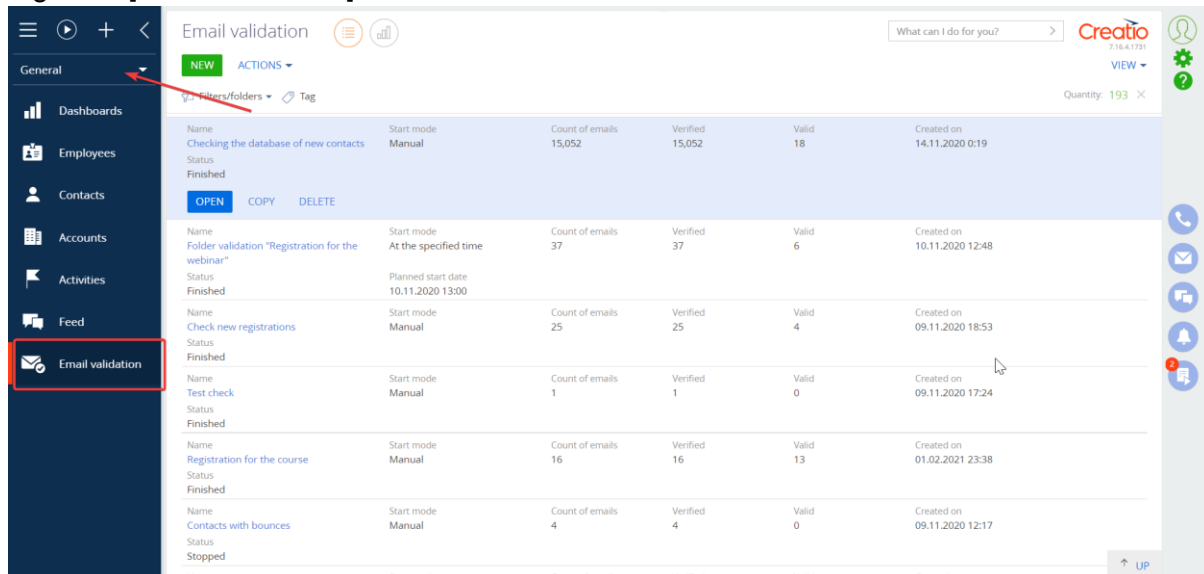Reporting ⓘ

Validation ⓘ

Cancel   Create & View

7. Click [Create & View]. For security reasons, this is the only time you can view the key in its entirety.

8. Copy your API key and paste it to a secure area.

Validating emails

Make sure you filled in the [EV limit] and [EV API key] system settings. If you did, you can start validating your contact list by going to [General] —> [Email Validation] (Fig. 10).
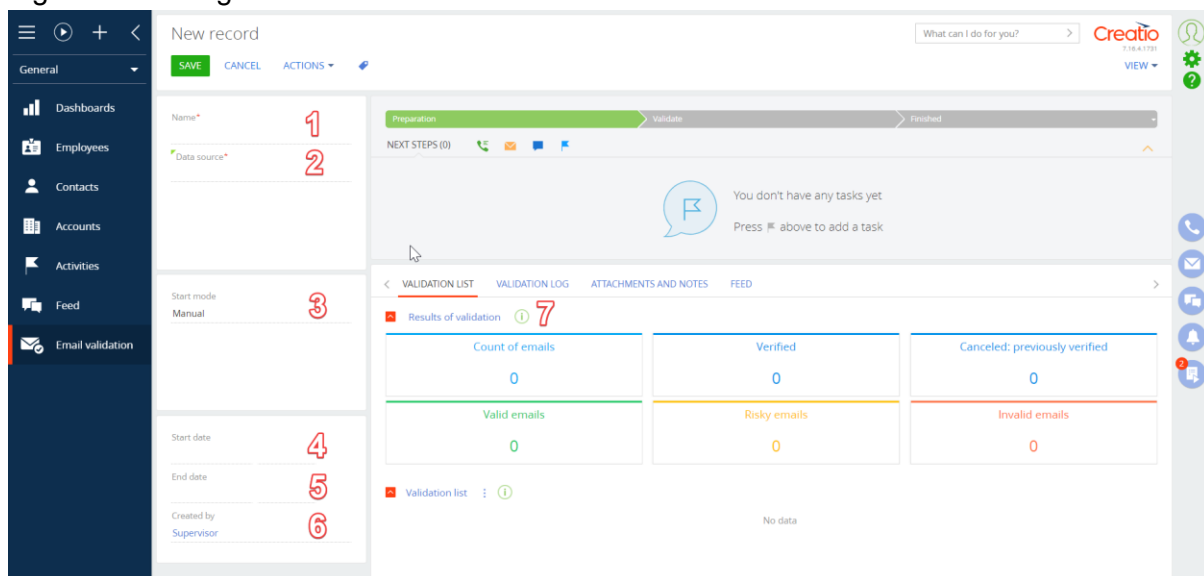
Fig. 10 – [Email Validation] section

To create a new validation record, click [New] and fill in the details (Fig. 11).

Fig. 11 - Creating a new record

[1] – The new record's name
[2] – Data source. The add-on can take the information either from contact folders (Fig. 12, Fig. 13) in the [Contacts] section or an Excel *.xlsx file (Fig. 14).

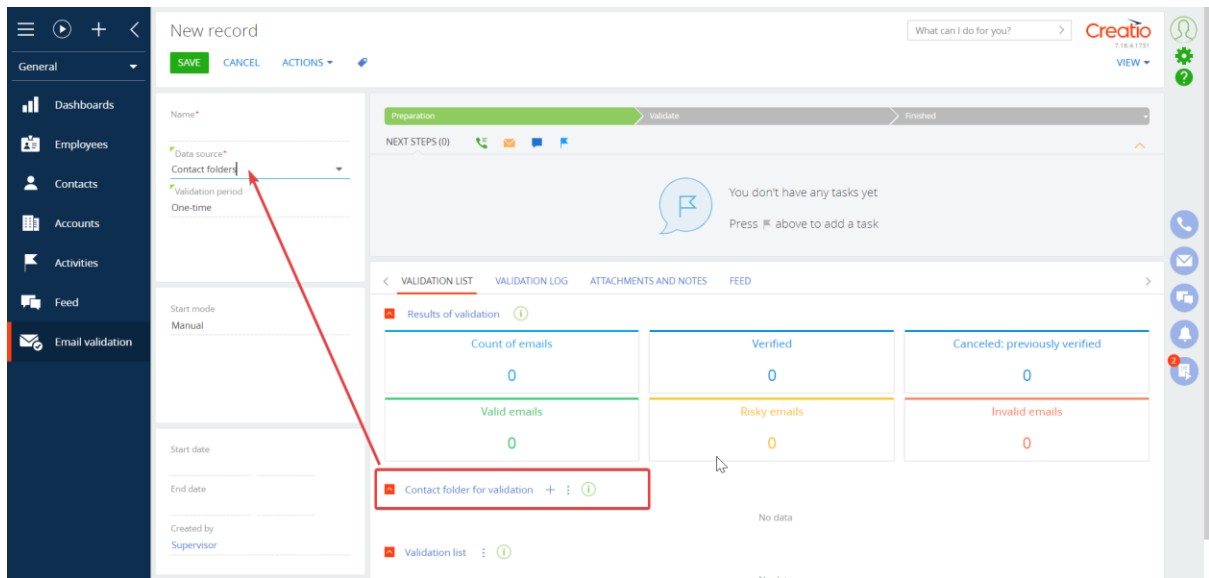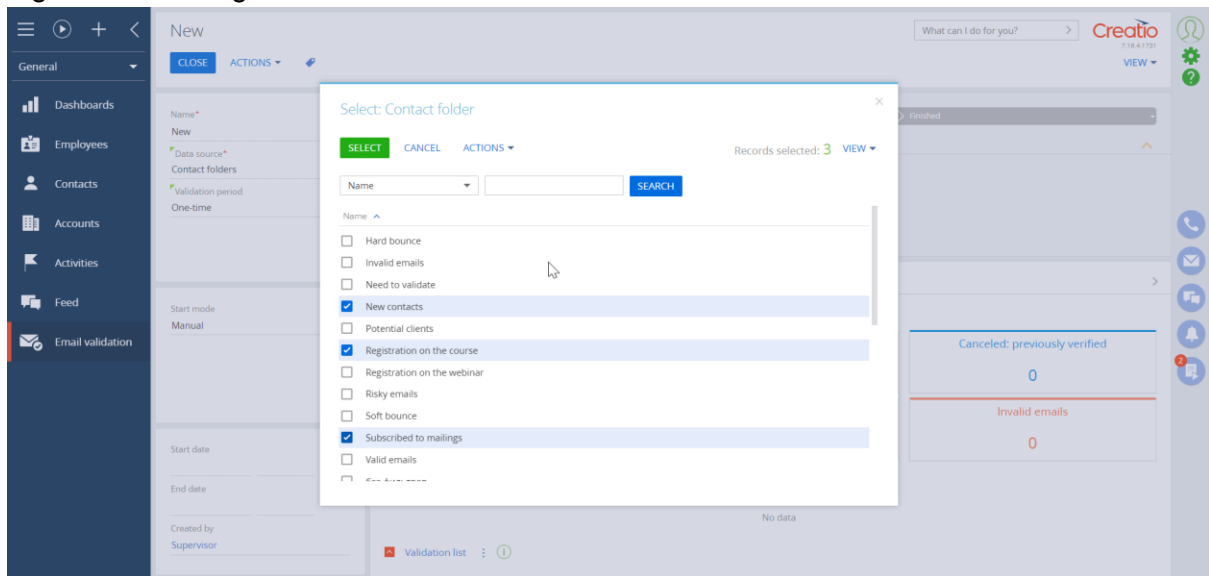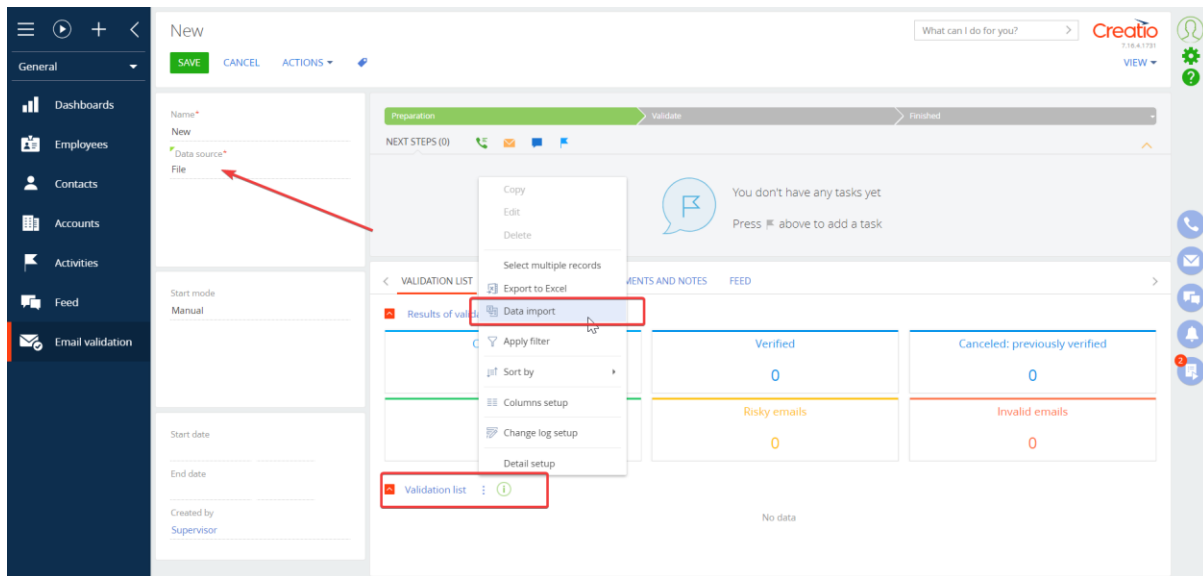Fig. 12 – [Contact folders for validation] detail

Fig. 13 – Selecting contact folders

If you import the emails from a file, you will need to connect them to the contacts in Creatio. You can do it by adding a column with Creatio contact data, such as Id or Full name, to the spreadsheet.

Fig. 14 – Importing email addresses from a file.

[3] – You can start the validation manually or schedule it for a specific time.

The [Manual] start mode is selected by default. It has four statuses and three stages: [Preparation], [Validate], [Finished] or [Stopped] (Fig. 15). The validation itself starts once you change the record's status to [Validate]. The add-on automatically changes the status to [Finished] or [Stopped] once the validation ends. The former means the validation was successful, the latter means you reached the monthly limit mid-validation or any other errors occurred.

Fig. 15 – Starting the validation manually
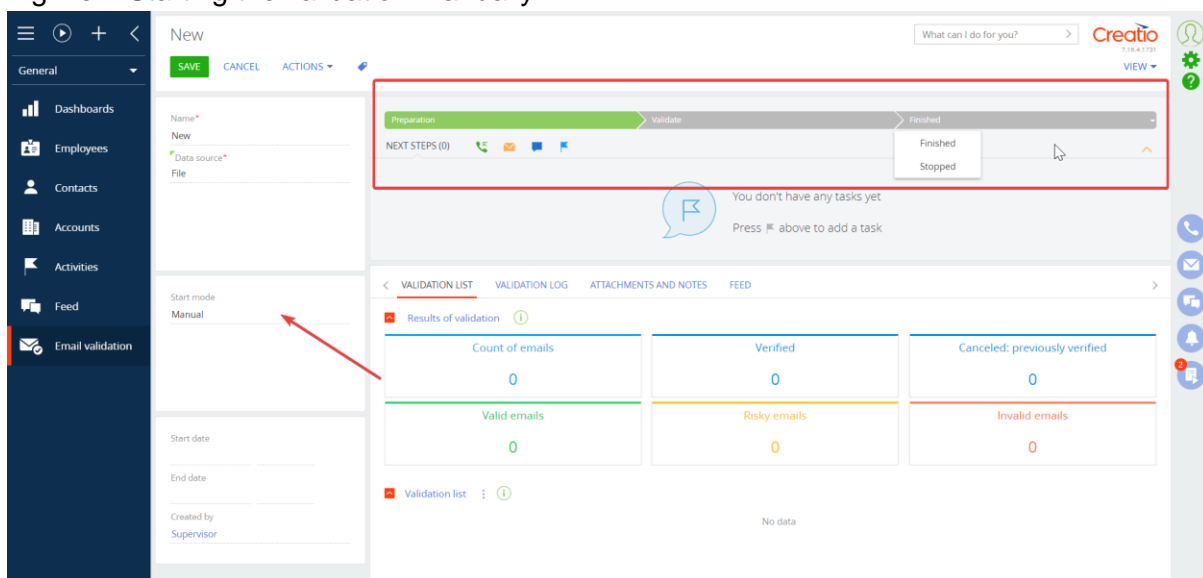
You need to set the validation state to [At the specified time] and specify the start date to schedule the validation. The scheduled start mode has five statuses and four stages: [Preparation], [Schedule validation], [Validation], [Finished] or [Cancelled] (Fig. 16).
If you need to validate a large number of emails, we recommend scheduling the validation outside of working hours to avoid business process bottlenecks.
Fig. 16 – Scheduling the validation
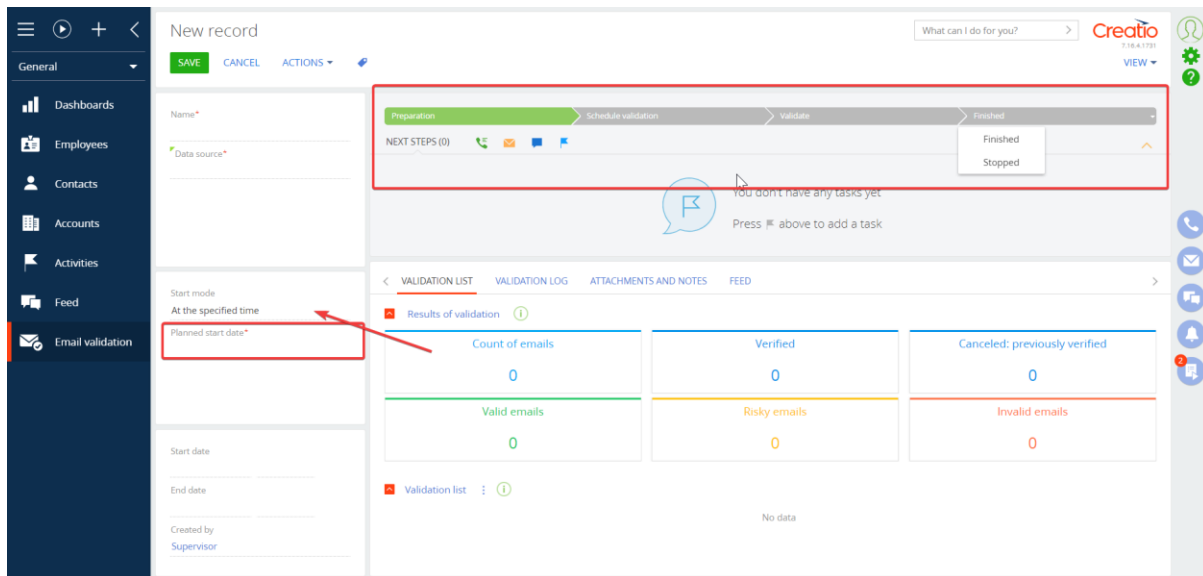
[4] – The validation's start date. The application populates this field automatically when the validation starts.

[5] – The validation's end date. The application populates this field automatically when the validation ends.

[6] – The validation's author. The application populates this field automatically when a user creates a new validation record.

[7] – Validation results:

a. Count of emails – how many emails the application processed during the validation.

b. Verified – how many emails the application verified with the service provider. The add-on marks them as [New validation].

c. Cancelled: previously verified – the number of emails the application did not send to the service provider because it has already verified them recently. [EV Validation period] system setting determines the exact time frame. The add-on marks them as [Previously validated].

d. Valid emails – how many emails were marked as [Valid].

e. Risky emails – how many emails were marked as [Risky].

f. Invalid emails – how many emails were marked as [Invalid].

[Validation log] tab displays major validation events. It is useful for debugging (Fig. 17).

Fig. 17 – Validation event log
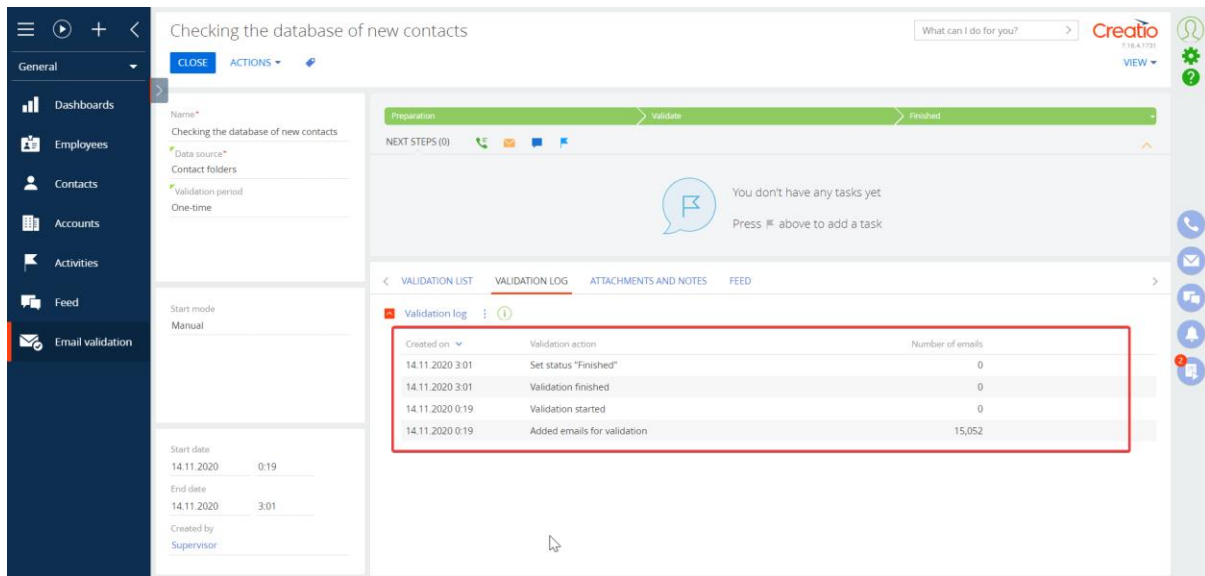
If you set the data source to [Contact folders], you can either validate the emails once or set up recurring validation (Fig. 18).

Fig. 18 – [Recurring validation] period settings for [Contact folders] data source
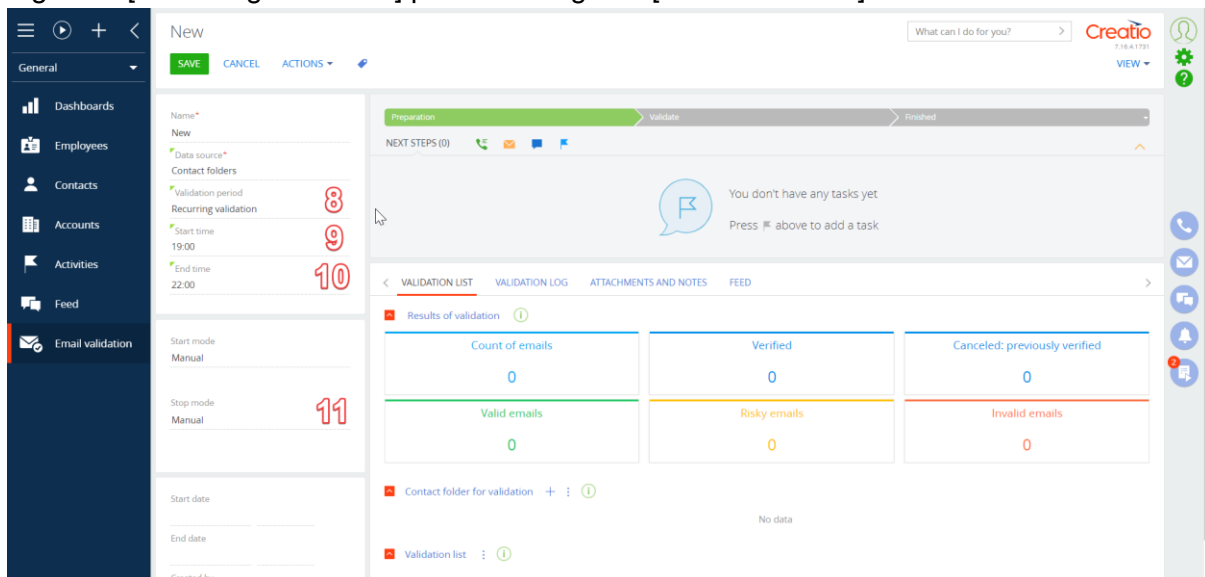
[8] – Validation period.

[One-time] – the application reads the folder data and populates the [Validation list] detail once at the start of the validation.

[Recurring validation] – the application reads the folder data daily. If there are any contacts it has not yet verified, it will add them to the list and start a new validation.

Fig. 19 - Validation period

[9], **[10]** – Recurring validation's daily start and end time.

[11] – Recurring validation's stop mode. You can either stop the validation manually or have the application stop automatically on a specific date.

Validation results

If you would like to take a closer look at the validation's results, you can access them on these pages in their entirety:

- [Email validation history] detail in [Contacts] section's [History] tab (Fig. 20);
- [Validation list] detail in [Email validation] section (Fig. 21);
- [EV List with status] lookup (Fig. 22).

Fig. 20 – [Email validation history] detail in the [Contacts] section

Fig. 21 – [Validation list] detail in [Email validation] section

Fig. 22 – [EV List with status] lookup

The most important variables are as follows:
[Verdict] – can be [Valid], [Risky] or [Invalid]. The verdict depends on all the other variables.

[Score] – this number between 0 and 1 represents the probability that the email address is valid, expressed as a percentage. So, for example, a score of 0.96 can be interpreted as a 96% chance that the email is valid. If you want more granular control than the general categories of the [Verdict] field, you can set a threshold based on that score.

[Domain has valid address syntax] – if set to [Yes], the email is formatted correctly. For example, it has @ in the middle and a top-level domain after it.

[Domain has MX or a record] – if set to [No], the email's domain is not connected to any mail service. If set to [Yes], the email domain has email configuration records. Note that this does not guarantee the email's validity by itself.

[Domain is suspected disposable address] – if set to [Yes], the email's domain looks like it belongs to a disposable email service. Disposable emails expire after a short while.

[Local part is suspected role address] – If set to [Yes], the local part (the username before @) looks like a group email address, such as "hr" or "admin".

[Additional has known bounces] – if set to [Yes], one of your bulk emails sent through your SendGrid account bounced from this address earlier.

[Additional has suspected bounces] – if set to [Yes], the service provider's machine learning model suspects the letters to this email will bounce.

You can also use the validation results for advanced filtering in [Contact] section. To set the filters up:
1. Click [General] —> [Contacts] —> [Filters/folders] —> [Switch to advanced mode] —> [Add condition].

2. Link the [Email validation history (by column Contact)] object and select the column [Quantity] (Fig. 23).
3. Set the condition for [Email validation history] object to [exists] (Fig. 24).
4. Link the object [EV List with status] under the newly-created condition and select the columns to use as filters (Fig. 25).

Fig. 23 – Linking the [Email validation history (by column Contact)] object
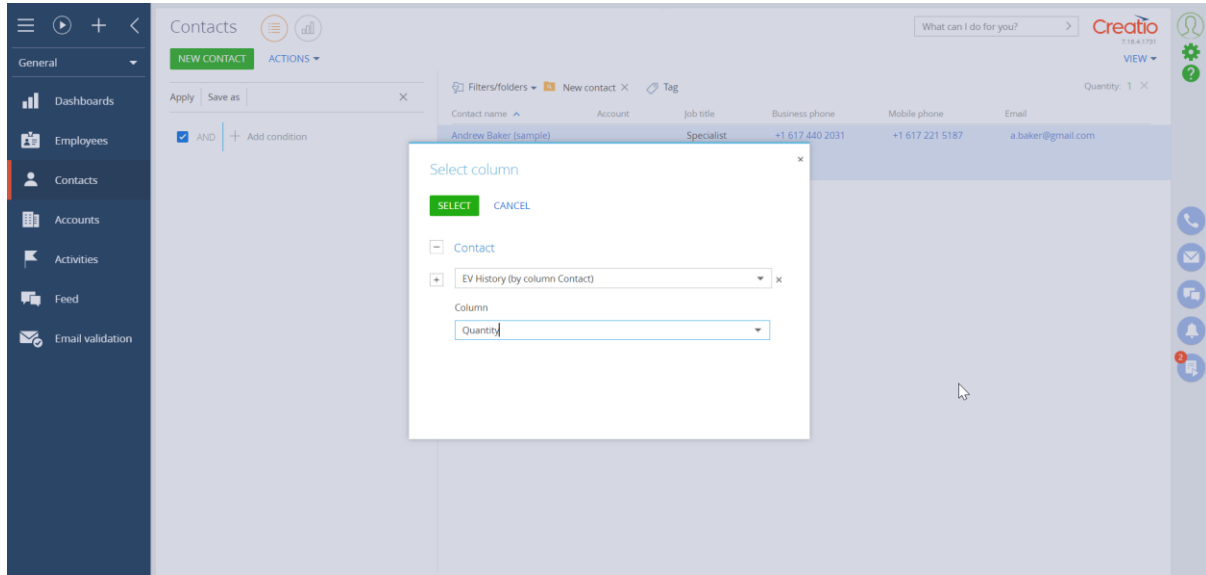
Fig. 24 – Setting the condition to [exists]
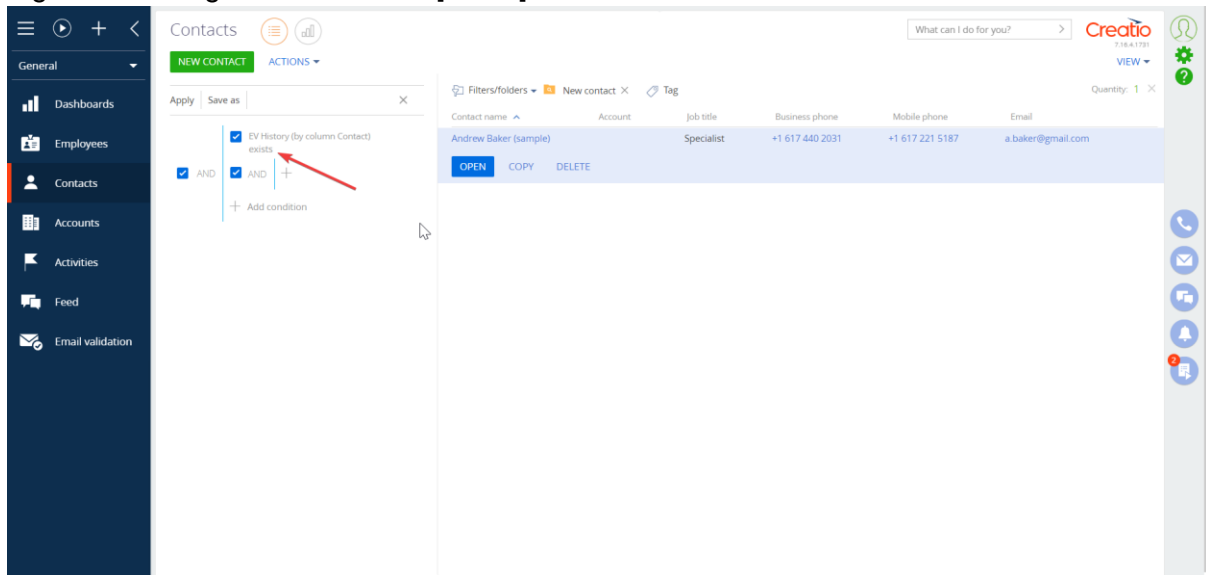
Fig. 25 – Linking the [List with status] object
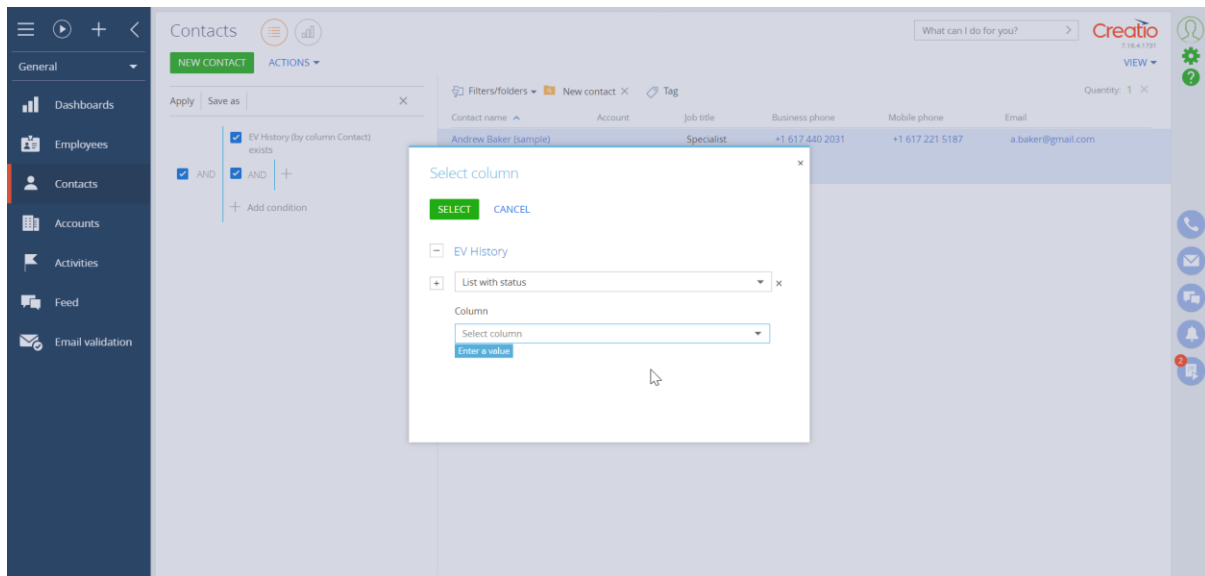
Creatio sends bulk emails to the main contact email. As such, if you are working with bulk emails, only the main address is relevant. You can add a filter by the main contact email to accommodate for that.

1. Click [General] —> [Contacts] —> [Filters/folders] —> [Switch to advanced mode] —> [Add condition].
2. Link the [Contact communication options (by column Contact)] object and select the column [Quantity].
3. Set the condition for [Contact communication options (by column Contact)] object to [exists].
4. Link [Email from contact card (main)] under the newly-created condition.

Fig. 26 – Setting up filters by the main email
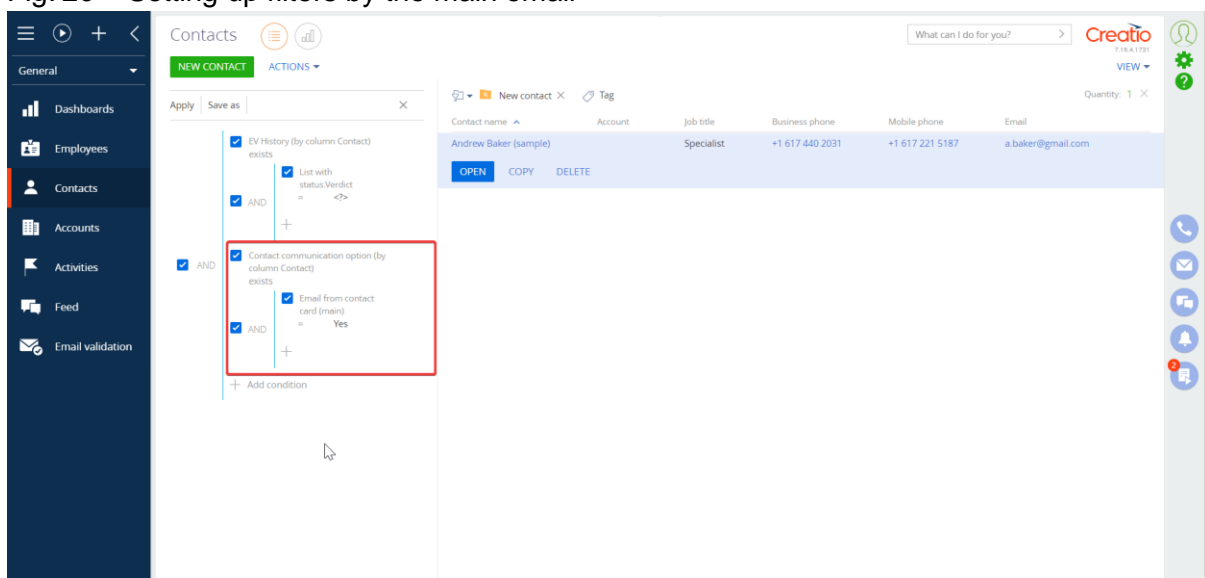
Analytics

[Email validation] section has several preconfigured dashboard widgets. To access them, go to the [Dashboards] view (Fig. 27).

Fig. 27 – Dashboards in the [Email validation] section
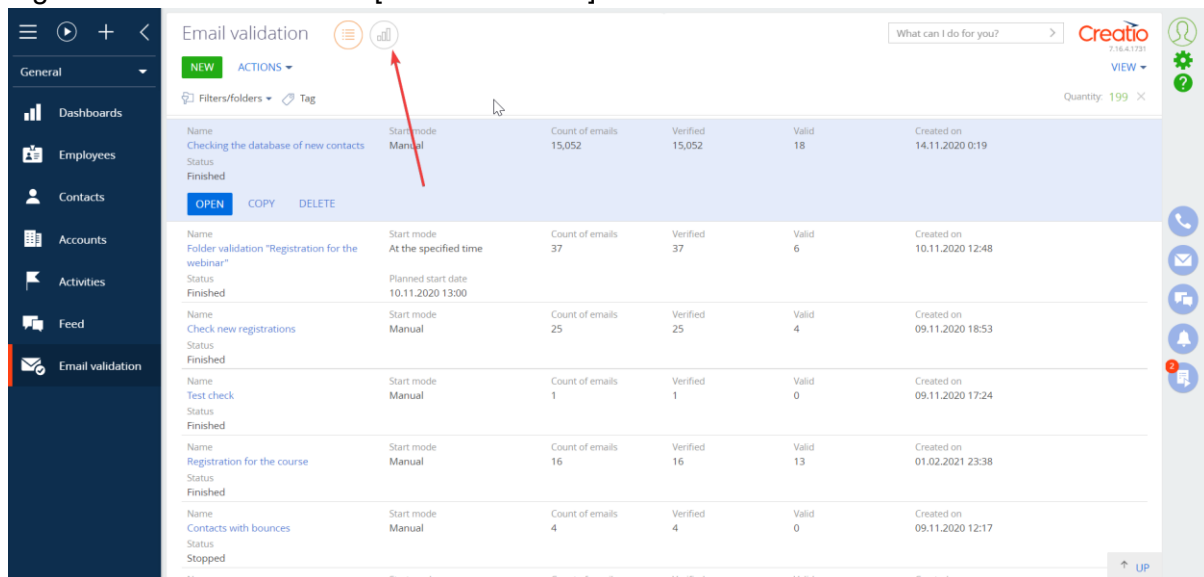
The [Validation results] tab displays pie charts with [Verdict] values for current month and for all the time (Fig. 28).

Fig. 28 – [Validation results] dashboard tab
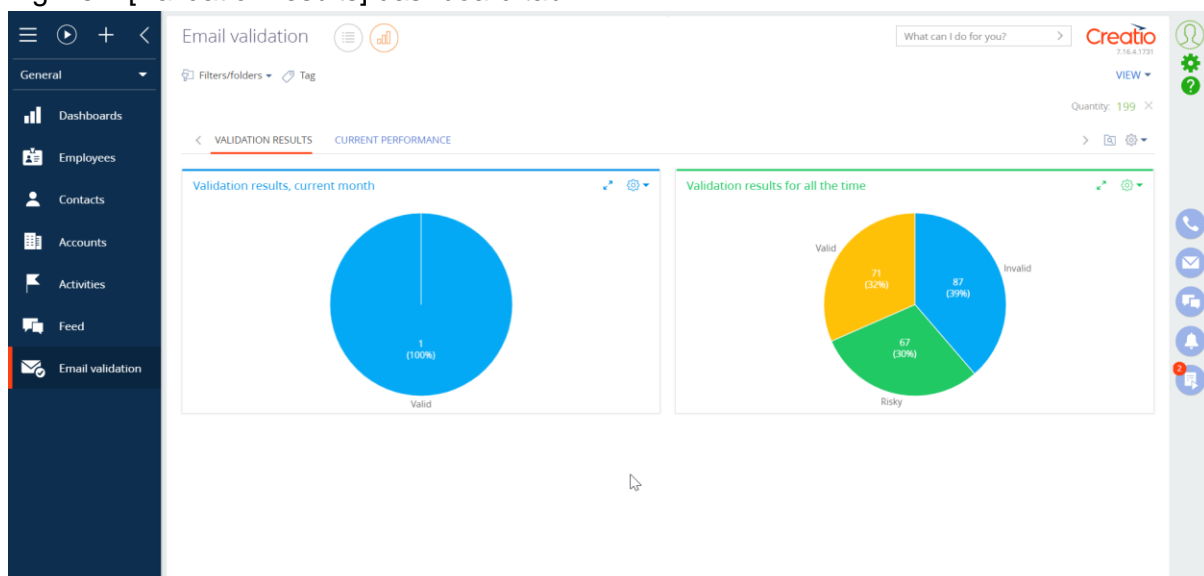
The [Current performance] tab displays several metrics (Fig. 29):
[Monthly validation limit] - the [EV Limit] system setting's value.
[Validations this month] - how many emails the service provider validated this month.
[Remaining validations this month] - the remainder between [Monthly validation limit] and [Validations this month]. Keep in mind that this value will be negative if the monthly validation limit is set to [0] (unlimited).

[Contacts with unverified emails] – how many main contact emails the add-on has not yet validated.

[Total validated emails] – the lifetime number of unique validations. This metric can count a single email several times if the application had to re-validate it[13].

Fig. 29 – [Current performance] dashboard tab
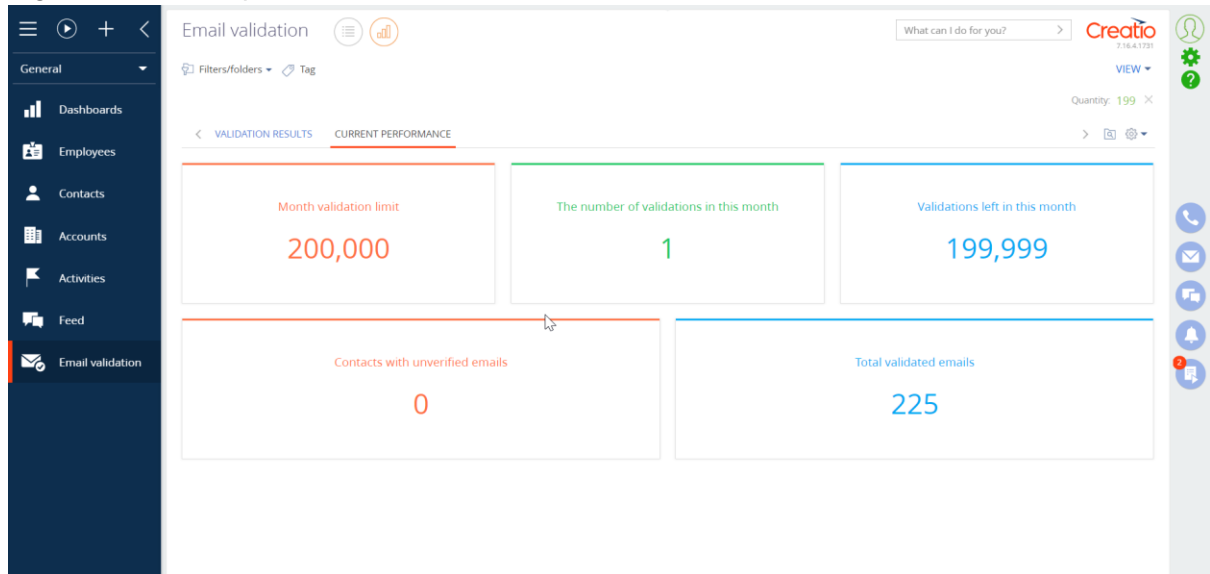
Business process logic

The add-on's internal logic uses business processes. This greatly streamlines its customization.

This manual lists each business process's key functions. It also highlights the most important process elements to help you tailor the add-on to your business needs faster.

[Folder validation] – starts the validation for [Contact folders] data source. It supports both static and dynamic folders. Contact reading and importing logic is set up within [EV Insert Contacts from Folders] User task element (Fig. 30).

The process only adds unique contacts to the [Validation list] detail. For instance, if the contact belongs to two folders and you select both of them as a data source, the process will only add the contact once.

If all the conditions for validation start are met, the process will throw [StartWorkerManager] signal that launches the [Worker Manager] business process.
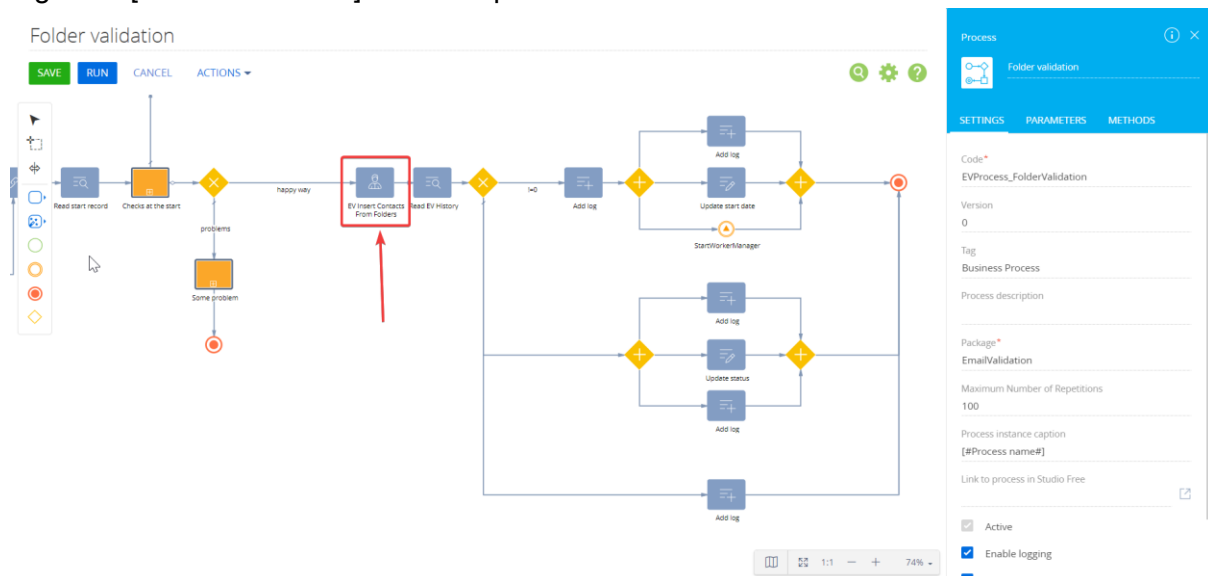
Fig. 30 – [Folder validation] business process

[File or section validation] – starts the validation for [File] data source.

If all the conditions for validation start are met, the process will throw [StartWorkerManager] signal that launches the [Worker Manager] business process.

[Worker Manager] – runs [Worker] processes when the validation starts. Validation takes place in one thread, so the condition (Fig.31) counts the number of already running [Worker] instances. If the number of already running is equal to or greater than 1, the new [Worker] processes will not be started.

Fig. 31 – [Worker Manager] business process
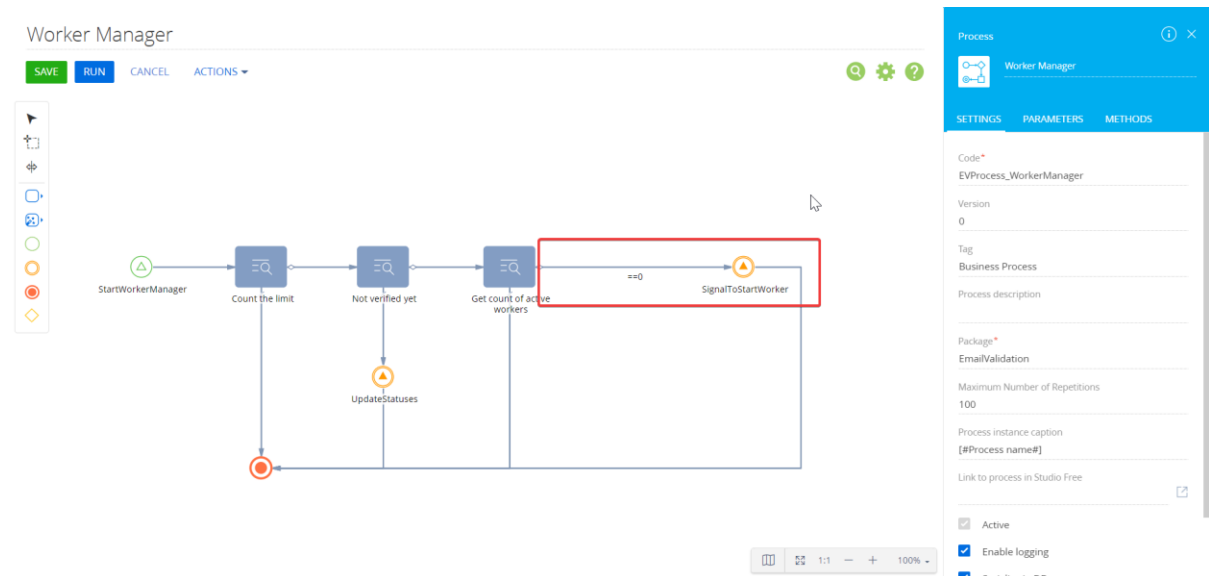
[Worker] – handles the actual email validation logic. It sends requests to the service provider and adds the responses to the database.

These elements are particularly important:

[MethodSendGridEmailValidation] - Call web service element (Fig. 32) sends the validation request to the service provider and receives the response. There are three variables in the request: email validation API key, the email itself and the [EV Source] system setting. The process adds the variables from the response to [List with status] lookup.

If necessary, you can copy this element to other business processes.

Fig. 32 – Call web service element in the [Worker] process
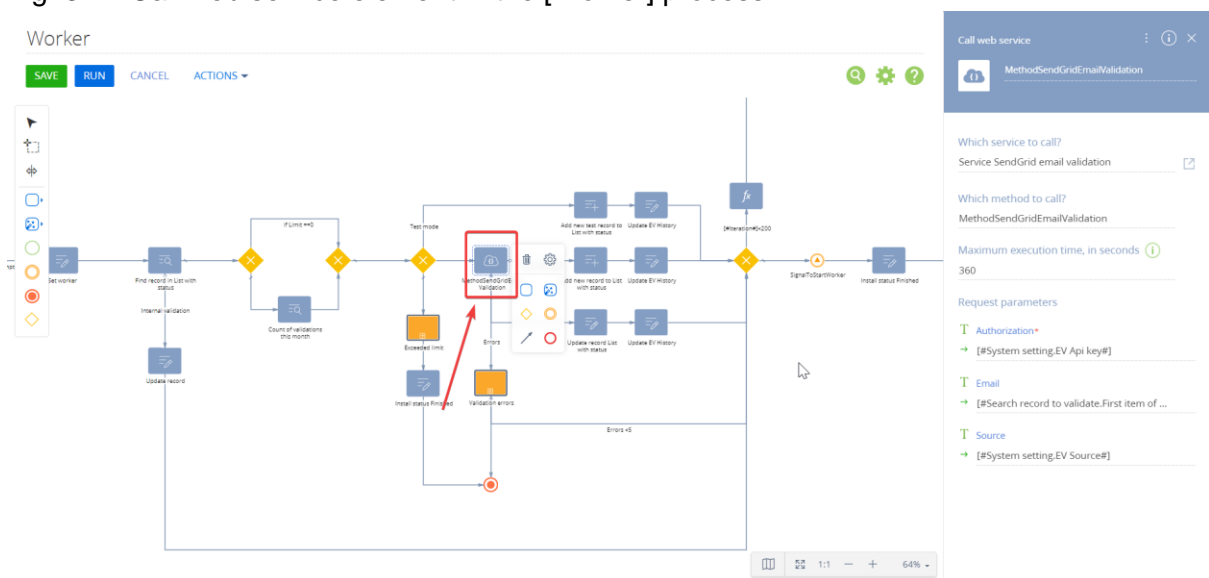
[Worker] business process is structured as a loop. Since the service provider's API can only process a single email in a single request, the process validates a single email in a single loop. A conditional flow limits the loop count (Fig. 33). The limit is [200] by default. If the process reaches the limit, it will throw a signal to launch a new [Worker] process instance, carrying on with the validation. Keep in mind that the conditional flow's limit has a higher priority than the [Maximum Number of Repetitions] process setting.

Fig. 33 – Conditional flow that limits the loop count in the [Worker] process
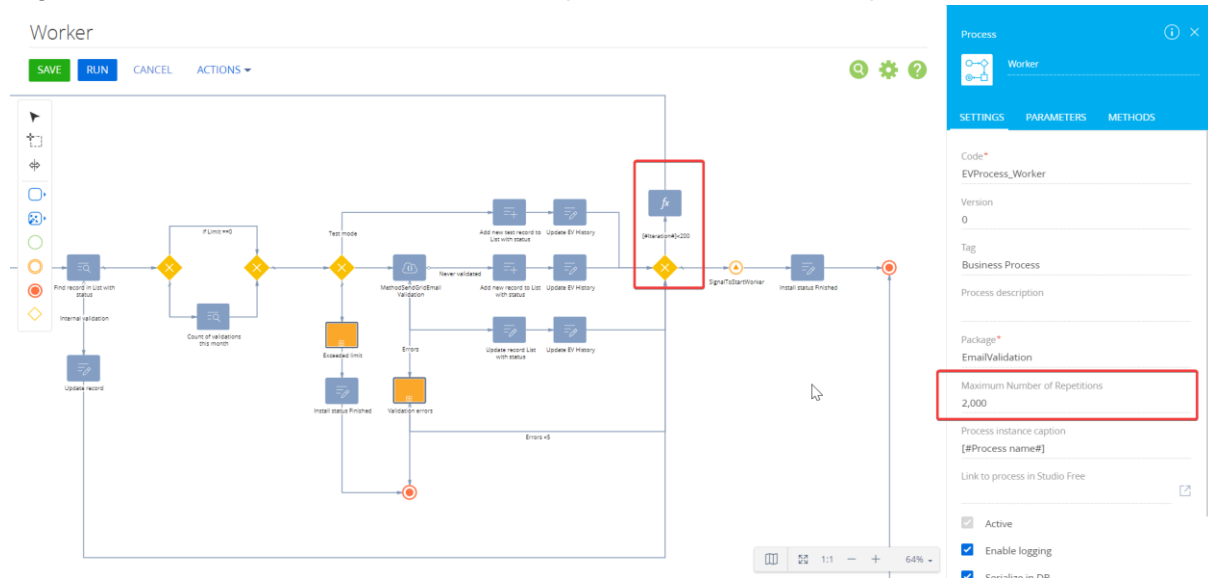
[Updating statuses] – sets the validation's status to [Finished]. [Worker] or [Worker Manager] activate this process if the add-on successfully checks the entire email list.

[Sending notifications] – notifies the user that the validation's status changed to [Finished]. The relevant validation's business case runs it automatically.

[Start every hour and check start/stop mode] – checks whether there are any validations scheduled to start/stop in the coming hour. This includes validations with [Recurring validation] period. If there are relevant validations, the process runs one of the corresponding sub-processes: [Sub process Start at specified time], [Sub process Stop at specified time], [Sub process Start at period], [Sub process End at period].
By default, the process runs hourly. It also runs when you create a new validation with [Schedule validation] status or [Recurring validation] period.
This process supports record collections and passes a unique Id to every sub-process. If there are several relevant validations, it will launch several unique sub-processes.

[Sub process Start at specified time] – [Start every hour and check start/stop mode] runs this sub-process for scheduled validations. The sub-process changes the status to [Validation] at the specified time. The validation's business case runs the corresponding validation process once the status changes.
The [Are there any running processes?] Read data element (Fig. 34) checks for other active instances of this sub-process, preventing process redundancy. The element reads data from the add-on's own process log in the [EV Process log] table.

Fig. 34 – [Are there any running processes?] Read data element in the [Sub process Start at specified time] sub-process
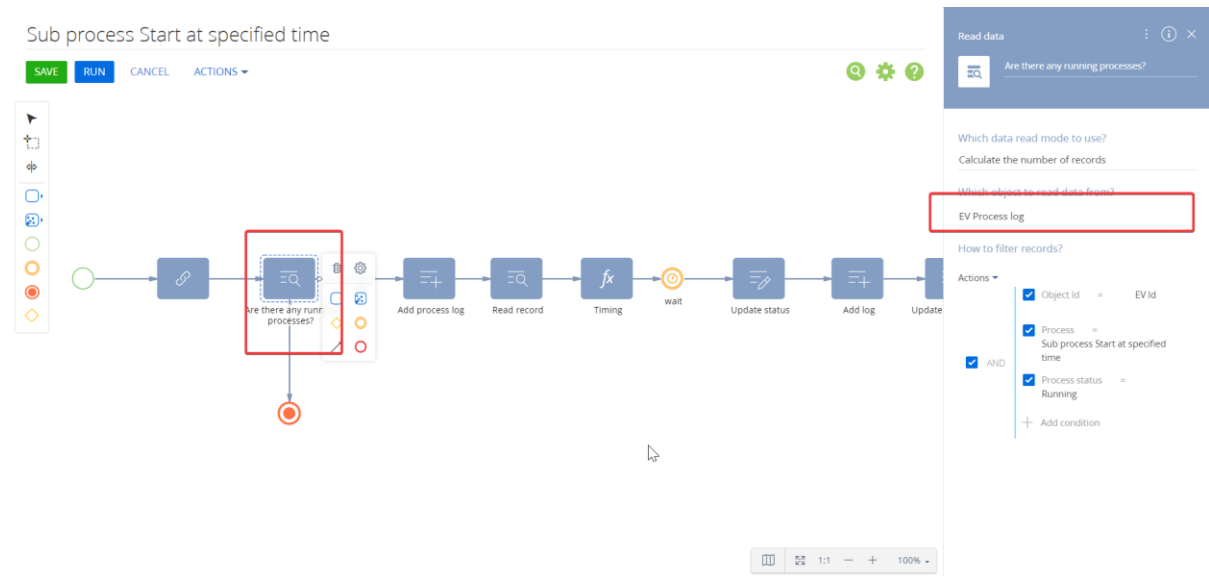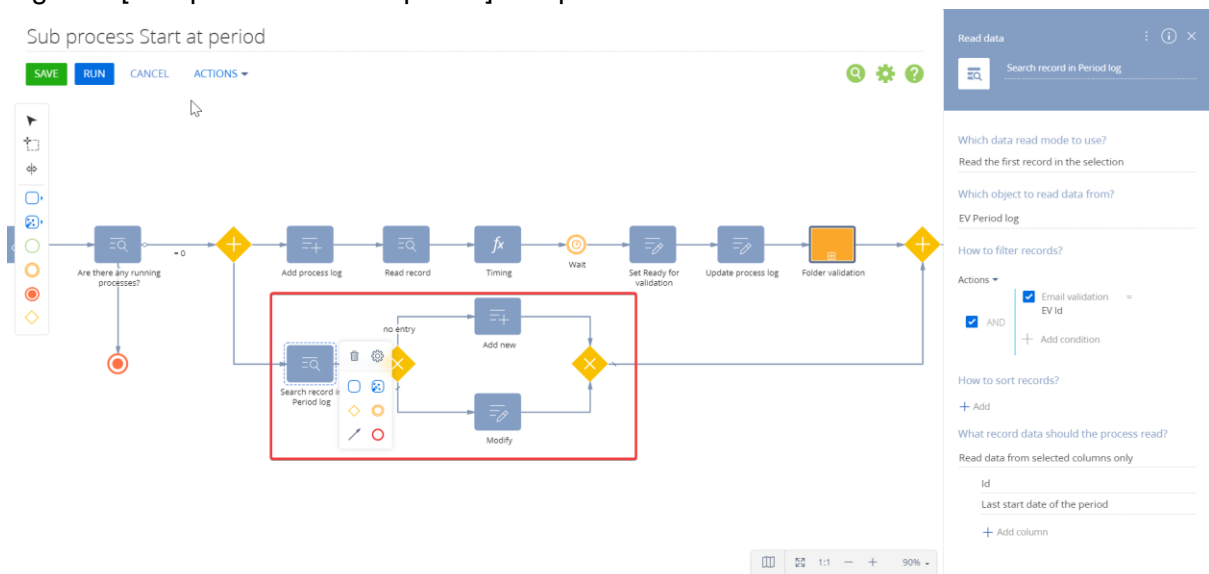
[Sub process Stop at specified time] – works similarly to [Sub process Start at specified time] but stops the validation at the corresponding time by changing its status to [Finished].

[Sub process Start at period] – [Start every hour and check start/stop mode] runs this sub-process for recurring validations. The sub-process reviews the validation's start date (the Start time column's value) and marks it as [Ready for validation]. This, in turn, runs the [Folder validation] process.
[Sub process Start at period] also writes data to the [Last start date of the period] column in the [EV Period log] table (Fig. 35).

Fig.35 – [Sub process Start at period] sub-process

[Sub process Stop at period] – works similarly to [Sub process Start at period] but stops the validation at the corresponding time (the [End time] column's value) and marks the record as [Not ready for validation].
[Checks at the start] – this is a sub-process [Folder validation] and [File or section validation] run. It checks:

- The number of emails the service provider validated this month.
- The number of selected contact folders (if they are the data source) or email addresses (if a file is the data source).
- The [EV Api key] system setting's value.

It passes the results to the parent process. Should any of the values block the validation, the parent process will run [Some problem] sub-process.

[Some problem] – this is a sub-process [Folder validation] and [File or section validation] run. It notifies the user that the add-on cannot start the validation. If necessary, the sub-process also changes the validation's status to [Stopped].

[EmailValidationAPIKey is empty] – this is a sub-process [Checks at the start] runs. The sub-process notifies the user that they need to fill in the [EV API key] system setting and changes the validation's status to [Preparation].

[Exceeded limit] – this is a sub-process [Worker] runs. It starts if the [Worker] process reaches the monthly email quota mid-validation. The purpose of the process is to send a notification that the limit has been reached and set the [Stopped] status to the entry in the [Email Validations] section.

[Unlock record] – this is a sub-process [Start every hour and check start/stop mode] runs. It starts if one or more [Worker] processes freeze and terminates them. By default, any [Worker] process running for more than 60 minutes is considered frozen.
The sub-process also unlocks the emails the frozen processes started but have not finished validating.

[Validation errors] – this is a sub-process [Worker] runs. It runs if the validation request sent to the service provider responds with a 400, 401, 403, 404 or 500 status. The sub-process also marks the corresponding email as [Validation error]. If five validation errors occur in any number of [Worker] processes, the validation will stop.