Release notes v6.0.1

Important! Create a backup copy of your projects and connector repositories before updating to the new version. Projects saved in the new version can't be opened in versions earlier than **6.0**. Also, if your organization uses EasyMorph Server, please:

- Upgrade EasyMorph Desktop instances that have version 5.9.8.15 or older to the latest build of version 5.9.8.
- Upgrade Server to version 6.0, then upgrade Desktops to the same version.

A few words from the creators of EasyMorph

This release is the first production-ready version of EasyMorph in its 6th generation (i.e., version 6.x.x). It's basically, the same version 6.0, but more thoroughly tested, more polished, and with a few new features added.

As of this release, EasyMorph Hub can be used as a modern, data-centric alternative to SharePoint. Explorer boards can now have a Files section which allows teams to share files and use them for automations. So if you're looking for better ways to organize daily work of your teams, check out what Explorer can offer you (Explorer is available in all Hub editions except Basic).

Upgrading from previous versions

Please read this document to the end, including the Release Notes for version 6.0 that follow the Release Notes for version 6.0.1. There are a few breaking and non-breaking changes and some of them may require your attention.

If you're updating a production, business-critical installation of EasyMorph Server (Hub), we recommend performing a test installation first on a separate machine. A trial key for the test installation can be requested at **sales@easymorph.com**. Test the following:

- Logging into the Hub from the EasyMorph Hub Monitor utility (rescue login)
- If you're using external identity providers such as Active Directory or Entra ID:
    - Configure these providers in the Hub and try user authentication via these IDP
- If you're using additional non-default workers:
    - Configure one or more non-default workers
    - If you're using mapped drives, try mapping a network drive to a non-default worker
- Configure a Server Link in a Desktop version 5.x and try connecting to the Hub. Make sure the Desktop uses a Server-hosted repository (not a local file-based one).
    - You should be able to retrieve and use connectors in Desktop, but not edit or create them

If something doesn't work as expected, please don't hesitate to contact **support@easymorph.com**.

If your Hub configuration uses a non-default location of the System folder (i.e. not "C:\ProgramData\EasyMorph Server"), **you will need to manually copy** certain files and folders before updating to the new version. Please see this Community post how to do it.

Breaking changes

- Reorganized and consolidated System folder. Previously, some of the Hub's (Server's) data was permanently stored in "C:\ProgramData\EasyMorph Server" (the default System folder) and didn't move even if the location of the System folder was changed in the Hub settings.

  In version 6, we've consolidated all Hub system data in one location, the System folder. It can now be moved to another drive without leaving anything in "C:\ProgramData\EasyMorph Server".

- All the messages sent by the "Send email" action using a Microsoft Exchange or Microsoft Exchange Online connector are now stored in the "Sent" folder (previously, only messages with attachments were stored).
- For security reasons, scripts (JavaScript) are no longer supported in the user-provided HTML content on EasyMorph Hub. This also include the auto-generated documentation and the Pages feature.
- DateTime and Timestamp values with fractional seconds are imported with greater precision by some of the actions (previously, fractional seconds were rounded to 3 decimal places by those actions). Examples of such actions: Import SPSS file, Import SAS file.
- When importing a floating-point number that doesn't fit into the range of fixed-point numbers in EasyMorph, the numbers in the generated error message can contain 1 or 2 more fractional digits.
- Regular Expressions that include the "\w" character class can match a wider range of characters than in previous version which may potentially lead to more matches in rare cases.
- Oracle native connector no longer supports setting up the TNS_ADMIN variable through the Windows Registry.
- The Microsoft SharePoint connector and SharePoint actions have been migrated from the obsolete CSOM API to the SharePoint REST API. While EasyMorph should theoretically continue to work with SharePoint 2013, doing so requires having the latest SharePoint updates installed, the REST API turned on, and possibly other additional changes to the configuration. We have not verified the exact configuration because support for SharePoint Server 2013 ended on April 11, 2023. If you are still using this SharePoint version, we recommend installing EasyMorph Desktop 6.0.1 on a non-production computer to verify that your SharePoint connectors and workflows continue to work.

What's new

New parameter type "Column selector"

To improve usability of custom actions, we've added a new parameter type "Column selector". This parameter offers a list of columns of the current dataset for selection of one or multiple columns.

The parameter type behaves like the basic parameter (text or number) in all other cases.

New "Azure AI" connector

We've added a dedicated connector to work with Azure AI. The connector can be used in the "Ask AI" action.

Changes in existing connectors

The **EasyMorph Hub** connector now supports using Hub user accounts for authentication.

Changes in existing actions

The **Catalog command** action has a got a new command "Update asset description" which allows setting programmatically both short and long descriptions of an asset.

The actions that operate with remote file locations such as "Amazon S3 command" or "Google Drive command" have got the option to include files in subfolders in the "List files" command.

The **Update SharePoint List** action now fails if attempting to update a multiple-choice column with illegal values.

What's new in Desktop

Python tasks in Launcher

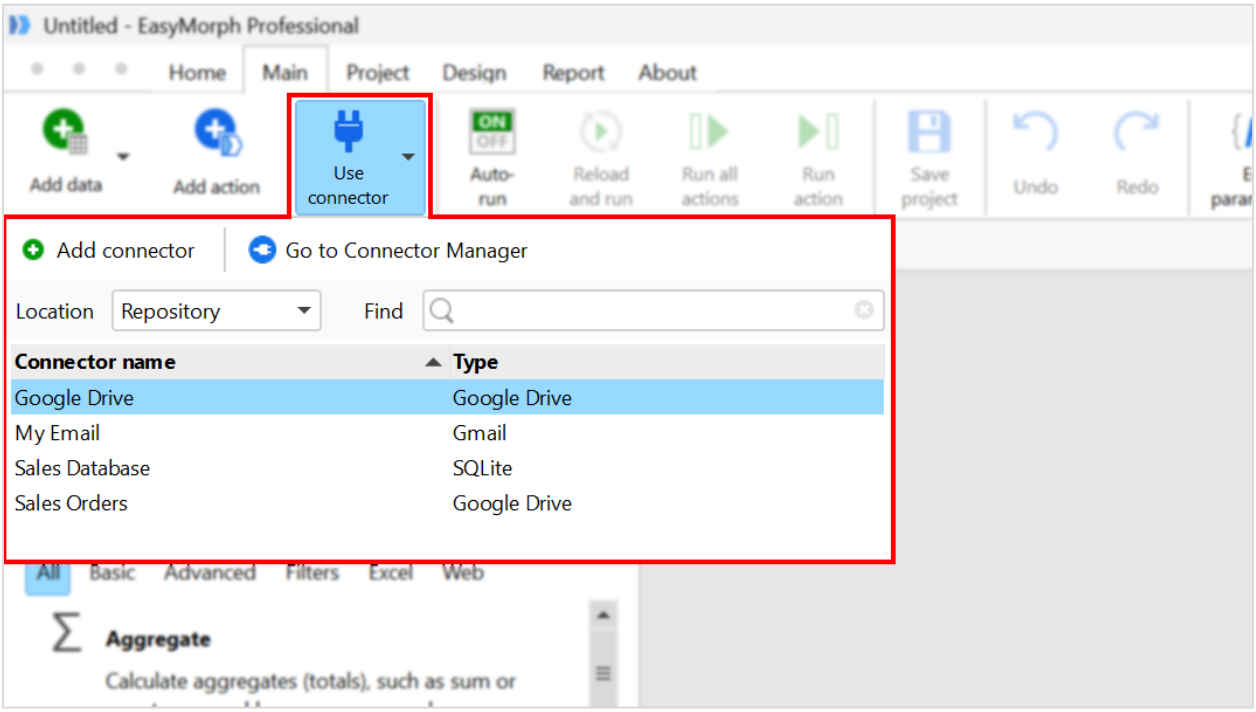
Python scripts are now first-class citizens in the Launcher. You can create tasks that run directly a Python script without using an EasyMorph workflow.

With the support for Python in the Launcher, you can:

- Quickly run Python scripts with a single button click from an application in the system tray
- Schedule Python scripts to run at specific times or days of week
- Run parameterized Python scripts, enter parameters before starting a script
- Use Python scripts to retrieve and display lists and datasets

- Use parameterized Python scripts for quick automations using Launcher task commands

The "Use connector" button



Screenshot 1: The "Use connector" button.

The new "Use connector" button simplifies adding automation actions that use a connector. When the button is clicked, the user is offered with a list of connectors. When a connector is selected, the application shows a list of connector's capabilities (operations) and the action required to perform the necessary operation.

Miscellaneous

- The "Start a workflow" tab has been removed from the Start screen.
- The Start screen has been renamed to Home.
- You can now search in workflow tables by using the shortcuts Ctrl+F and Ctrl+G without switching to Analysis View.
- Undo/redo is now supported for chart editing in workflows
- You can now drag .zip and .py files right into the application.

What's new in Hub (formerly, Server)

The new "Files" section in Explorer boards

Explorer boards now support the "Files" section (or multiple sections of this type) that allow users browse, upload, and download files in the specified local (i.e. in Public folder) folder or remote location (e.g. SharePoint, or SFTP folder).

The new "Files" section effectively makes boards a modern and compelling alternative to SharePoint sites which are frequently used for file sharing.

New feature "Connectors"

The new space feature "Connectors" adds a sidebar menu item that opens a list of connectors in the space. It's also possible to find all the Hub objects, such as tasks or assets, that use the connector.

Links to related assets

All Catalog assets now display a button for quick opening/launching related assets, if such related assets are configured in the asset settings.

It makes it possible, for instance, to quickly navigate from a metric to a dataset with a detailed break down, or from a BI dashboard to a workflow that refreshes data in that dashboard, or from a dataset to an internal wiki page that describes the dataset in more details.

Improvements for Issues

The "Issues" board section has got numerous improvements:

- A full-screen mode
- Search and filtering (only available in the full-screen mode)
- Issue assignee and due date can now be changed right in the list of issues

Better support for "State" assets

The assets of the "State" type, can now be created right in the Hub and added to boards in a "Metrics and states" section.

Miscellaneous

- The space selector in the sidebar now has a search field
- The Gateway connection page received a button to reset Gateway settings and disconnect from it.
- Hub now sends an email if an issue was assigned to a user. The user must have an email address specified in the Hub in order to receive emails about issue assignments.

- Metrics and states can now be reordered by dragging them in a “Metrics and states” section of a board.
- Assets now support parameters of the “File upload” type so the users can upload files from their computers to be processed by assets

Release notes v6.0

THIS VERSION IS FOR EVALUATION ONLY. DON'T USE IT IN PRODUCTION.

For a production-ready release, wait until version 6.0.1 becomes available.

Important! Create a backup copy of your projects and connector repositories before updating to the new version. Projects saved in the new version can't be opened in versions earlier than **6.0**. Also, if your organization uses EasyMorph Server, please:

- Upgrade EasyMorph Desktop instances that have version 5.9.8.15 or older to the latest build of version 5.9.8.
- Upgrade Server to version 6.0, then upgrade Desktops to the same version.

A few words from the creators of EasyMorph

EasyMorph has undergone a series of deep improvements, both in terms of the underlying technology and capabilities (more on that below). Given the broad scale of changes, we're releasing version 6 as a **non-production** version, effectively a pubic beta intended for evaluation, testing, and collecting feedback. Don't use it in production environments yet. In about 1 month after its release, we will be releasing a production-ready version 6.0.1 that will contain cumulative bugfixes and a few minor new features. Meanwhile, version 6.0 will be updated every few days, so if something in it didn't work or was missing, try updating it later.

If you would like to test and evaluate the new version, we recommend making a separate installation of EasyMorph (not next to your production system) and requesting a trial key by sending the digital signature to sales@easymorph.com as explained here: https://easymorph.com/signature.html

The most fundamental change in EasyMorph is the migration from the .NET 4.8 to the .NET 8 framework (the runtime that runs the application). It makes EasyMorph more secure, approximately 30% faster, and ready for further updates of the .NET framework (including more performance improvements). The migration also narrows the (still existing) gap that separates us from a Linux version.

In terms of features and capabilities, the three most significant changes are:

- EasyMorph Server has been renamed to EasyMorph Hub. The new name reflects better what the Server has become – a central point for data automation, retrieval, and collaboration.
- The new user interface (UI) of EasyMorph Hub – better looking, faster, and more polished.
- Custom actions – the ability to use Catalog assets as workflow steps in EasyMorph projects. Now you can create and share with your colleagues actions that, for instance, import data from exotic

or legacy systems, apply advanced statistical and geospatial calculations, integrate AI, or perform organization-specific data validation. The possibilities are limitless!

Breaking changes

The new version introduces a number of breaking changes. We did our best to reduce their number to a minimum, however many of them are inevitable due the changes in the underlying .NET framework on which EasyMorph is based. Besides that, some of the breaking changes are bugfixes for bugs existed in the older version.

The breaking changes include:

- Timestamps with fractional seconds are no longer rounded to 1 millisecond
- Disabled actions that run arbitrary code no longer fail the workflow when the space settings prohibit running arbitrary code
- The countwords() function and a few other text functions now allow a non-text first argument
- Email messages where the whole body is an attachment are no longer ignored

The list of breaking changes will be updated with more changes.

What's new

Improved performance

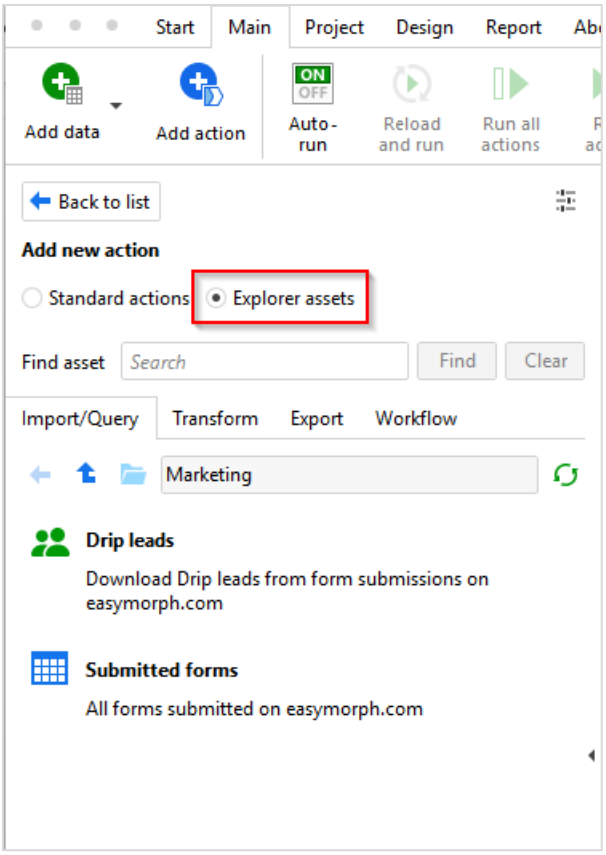
All EasyMorph products now run up to 30% faster. Besides that:

- The maximum number of rows per table has been doubled from 536 million rows to 1.073 billion rows (or 1,073,741,823 rows exactly).
- The "Import from Excel" action now runs 2-3 times faster and consumes less memory

Custom actions

EasyMorph workflows can now include certain Catalog assets as *custom actions*. They can be dragged and dropped into workflows, just like regular actions. Just like regular actions, they can import, transform, and export data, or perform external operations, such as sending notifications, creating tickets, or triggering operations in another system.

A list of such assets becomes available in the "Add action" side panel when Desktop is linked to Hub and the current space has Explorer enabled (see below).



Screenshot 2: Catalog assets as custom actions.

Note that custom actions are space-specific because they are assets from the space's Catalog. If the workflow is executed in another space and that space doesn't have assets with the same names, it will fail.

Using Catalog assets as custom actions brings the power of data preparation and automation in EasyMorph to a whole new level. Here is just a few things that can be wrapped as custom actions and used in workflows by any team member:

- Imports from any system or application that are not natively supported by EasyMorph – legacy applications, internal tools, and cloud apps.
- Organization-specific data validation rules
- Advanced statistical and geospatial calculations
- Application of AI and ML algorithms
- Organization-specific lookups and transformations

To make it more powerful, those custom actions can use Python scripts under the hood, using our excellent Python integration. It means the vast capabilities of the Python ecosystem can be wrapped as user-friendly re-usable custom actions which can be used by non-technical users with zero effort.

Catalog assets that can be used in workflows are grouped into four categories, very similar to the regular actions:

Category	Asset types	Requires input dataset?	Returns a dataset?
Input/query	Computed dataset Pre-computed dataset Dataset from query	No	Yes
Transform	Transformer	Yes	Yes
Export	Exporter	Yes	No
Workflow	Workflow	No	No

Keep in mind, that unlike regular actions, assets are always executed on the Hub, even if the workflow runs in Desktop (or CLW). It means that full datasets can be passed between Desktop and Hub and back during workflow execution if it includes custom actions. In case of large datasets, this can slow down workflow execution.

Custom actions can't have two inputs (like in the "Merge" action).

New asset types

We've added three new asset types. As of version 6.0, they can only be created and configured in Desktop. The new types include:

The **"State"** asset type is like Metric but for text. Can be used for displaying a short text label, e.g. a state of a process, a deadline, or the name of the leading salesperson. The text labels can be colored based on rules. Like Metrics, States are real-time, i.e. they update immediately as soon as the underlying Shared Memory value has changed.

The **"Transformer"** asset type is intended first and foremost for custom actions (transformations). "Transformers" run a workflow that receives a dataset and returns a (transformed) dataset. The workflow in an "Transformer" asset must have the "Input" action and a result table.

The **"Exporter"** asset type is can be used for custom (export) actions. "Exporters" run a workflow that receives a dataset and presumably exports it into an external system without returning a table. The workflow in an "Exporter" asset must have the "Input" action. A result table is not required and even if it's defined in the workflow, it's ignored.

Changes in existing actions

The **"EasyMorph Hub Command" action** has got a new command – "List connectors".

The **"Concatenate text" action** has got a new mode –"Concatenate columns". In this mode, the action concatenates selected columns.

Changes in existing functions

The **encode()** function has got a new mode – “xml”. In this mode, it does XML escaping.

Temporarily enabling/disabling actions

To meet a longtime feature demand, we’ve added the ability to *temporarily* enable/disable actions. A temporarily disabled (enabled) action remains disabled (enabled) until the project is closed. The temporary state isn’t saved in the project.

Now when debugging workflows and exploring data, you can temporarily disable/enable actions without risking to forget to enable/disable them back before saving and closing the project.

Downloading Power BI reports as PDF

Power BI reports (regular and paginated) can now be downloaded as files in different formats, including PDF. This is done with the help of the respective new command of the “Power BI command” action.

What’s new in Desktop

Support for custom actions

When Desktop is linked to Hub and the current space has Explorer enabled, it becomes possible to browse Catalog assets right from the “Add data” sidebar and add them as custom workflow actions. Only the assets that can be added as workflow steps are shown. Other asset types (e.g. Metrics) are not displayed.

Miscellaneous

- EasyMorph Desktop has got a new installer with a slightly different look and icons
- Hub Link (previously, Server Link) now allows authenticating using Entra ID
- In action settings, lists of columns and lists of cell values have got more controls – e.g. it’s now possible filter only selected values and paste values to select
- EasyMorph Desktop has got a splash screen that is shown on application start
- In Analysis View, context menus for table columns, cells, series, columns in cross tables have got various new commands for convenience. Also, double-clicking a metric now brings up its settings.
- The action context menu has got a new command – “Clone” that clones the action.

What’s new in Hub

EasyMorph Server renamed to EasyMorph Hub

EasyMorph Hub is the new name of EasyMorph Server. The name Hub is used in the UI. Technical names, such as process names or error messages may still use the name Server.

Limited compatibility with older Desktops

EasyMorph Desktop in versions below 6.0 can still work with EasyMorph Hub v6.0 for most operations, such as opening workflows and running them. However this compatibility is limited and temporary. Here is list of what doesn't work in older Desktops when they are linked to Hub v6.0:

- Creating, editing, deleting connectors is not possible (using connectors is still possible)
- Getting real-time workflow statuses from the Hub is not possible (e.g. getting statuses of running asset computations)

Note that this capability is also time-limited and is intended to allow our customers time to update their old Desktops without interrupting daily workflows. This limited backward compatibility will be removed in EasyMorph versions released after March 2027, so you have time until then to update old Desktops.

New user interface (UI)

The UI of the Hub remains functionally unchanged except for a few minor improvements. The UI is still work in progress and will get minor updates throughout the application.

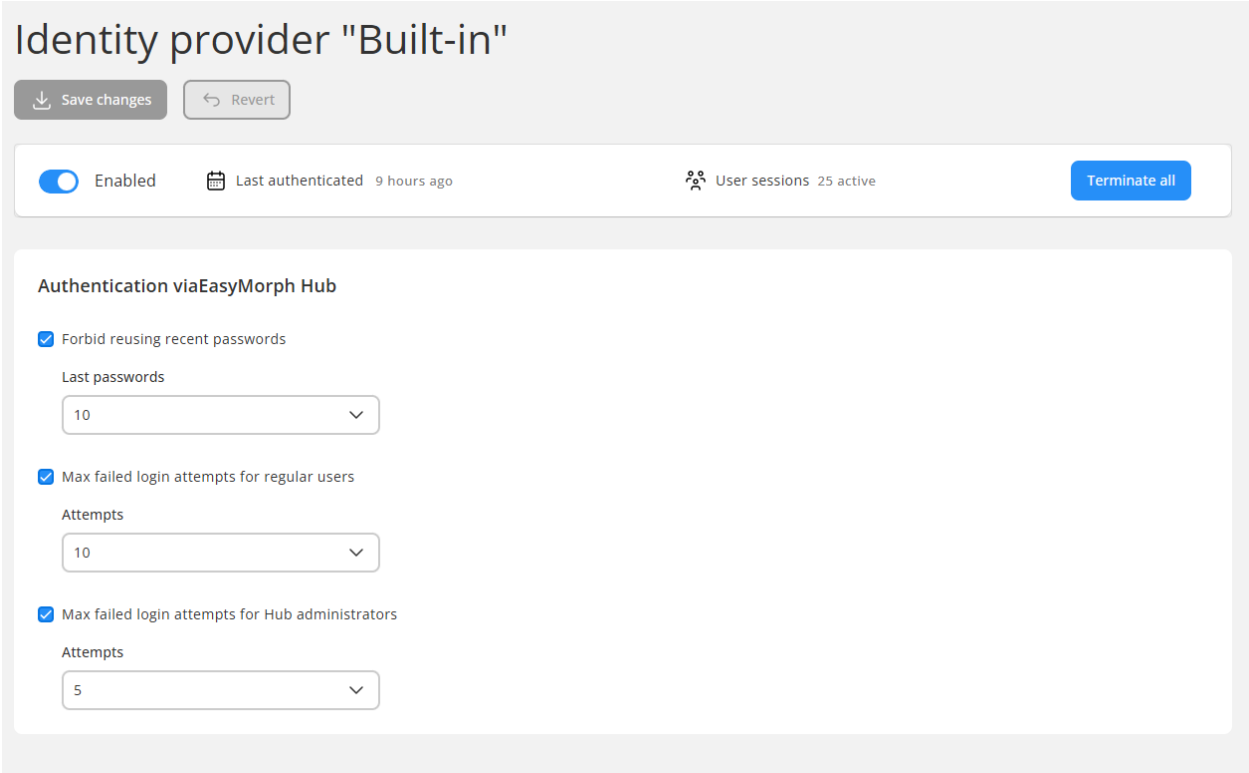
New Task triggers

Three new Task triggers have been added:

- The "SharePoint folder changed" trigger fires when a file is added or modified in the specified SharePoint Online folder. This trigger requires a Gateway connection.
- The "SharePoint list changed" trigger fires when a row is added, modified, or deleted in the specified SharePoint Online list. This trigger requires a Gateway connection.
- The "Web response changed" is a versatile trigger that periodically sends HTTP requests to the specified URL and fires when a response changes or was not received at all.

Internal IDP configuration

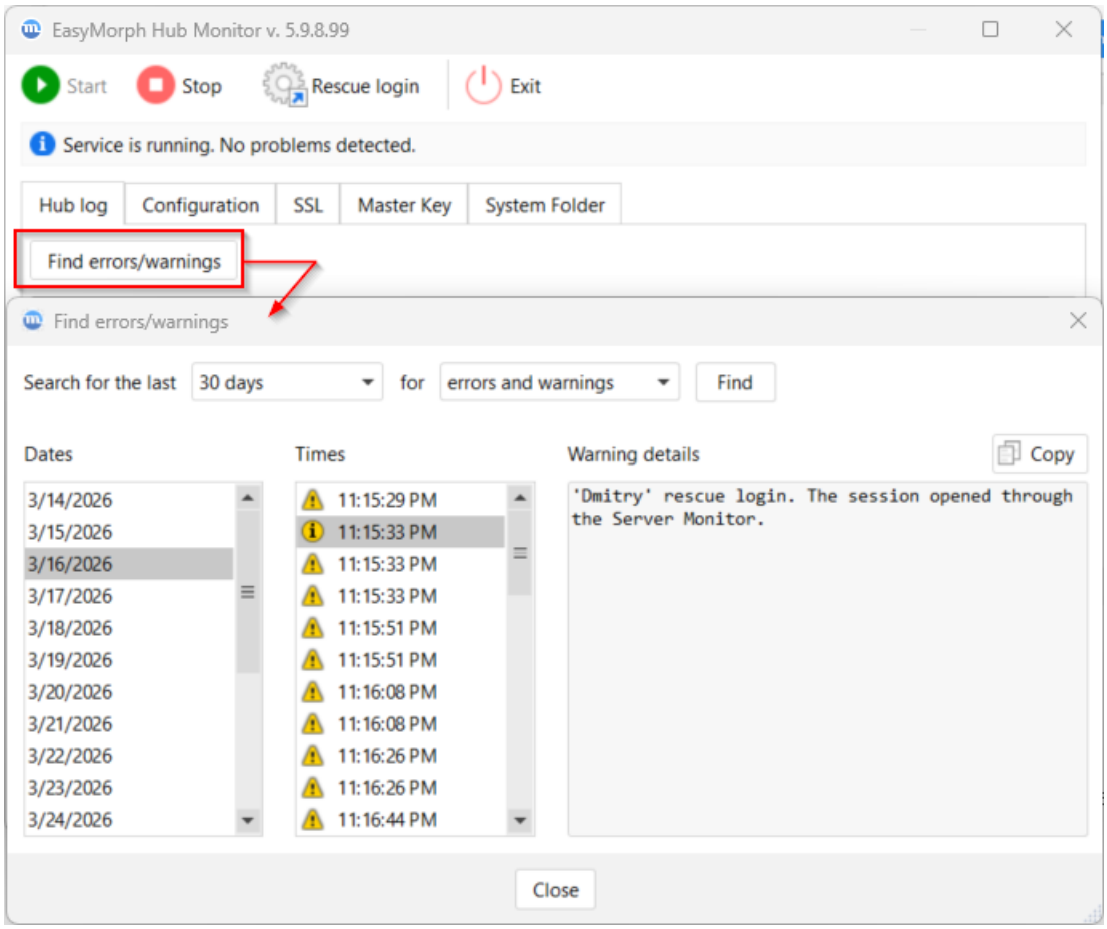
The built-in identity provider (Hub accounts) has got a few configurable settings and is now shown in the list together with external IDPs. It is now possible to prevent password re-use and limit the number of unsuccessful login attempts.



Screenshot 3: Settings of the built-in IDP.

Hub Monitor: Log search

To simplify finding errors and warnings in logs, we've added a dedicated search function in the Hub Monitor utility.



Screenshot 4: Search for errors and warnings in Hub logs.

Miscellaneous

- EasyMorph Hub has got a new installer with a slightly different look and icons
- Catalog directories are now called *collections*.
- The System directory setting has moved to the Hub Monitor utility (previously, Server Monitor)
- Custom themes are deprecated. Instead, it will be possible to customize the page header (logo and text) and the homepage in the Hub settings in v6.0.1.
- The Tasks list has got (back) the compact view mode.
- The “File uploads” parameters are now supported in computed Catalog assets.
- If an issue was assigned to a user, the Hub now sends an email notification to the user.
- Using JavaScript is no longer allowed in the auto-generated documentation.

Previous release notes

Link: [Release notes for v5.9.8]