Release notes for version 3.9.3

A few words from the developers of EasyMorph

The main headliner of this release is EasyMorph Launcher – a reincarnation of EasyMorph Scheduler that was released two years ago. The reason we didn't call the new version Scheduler 2.0 but Launcher is that scheduling, while surely useful, might be not its the most interesting function. We see the Launcher as the next step towards our goal of making your work smarter (and life easier) via data-aware automation. With EasyMorph Desktop, our focus has been on convenient *designing* of workflows. With the Launcher, we make it convenient to *use* them.

EasyMorph Launcher is intended to be a hub for all your automated work routines, big or small. Now you can keep them in one place and trigger with a single click. Do you send the same Excel report to the same group of colleagues every day? One click and the Launcher does it for you. Do you need to perform a usual data quality check for the files that your colleague just put on a network folder? One click and the Launcher not just does it for you, it also *shows* you the result of this check.

Yes, that's a new thing – the Launcher can display a particular table from a project it just ran. This means that you can design workflows and make the Launcher not only *do* something for you, but also *tell* you something. How many orders have been placed today? One click and you know the answer. What are the errors in the log files since yesterday? Click to see them. Sometimes, all you want to know is just a couple numbers or a few words. It may be not worth designing a fancy dashboard and publishing it on a corporate web-portal.

We at EasyMorph use the Launcher internally to run tests, update our website, build and publish online new versions of our software and sometimes even for simple tasks like cleaning up the Downloads folder.

All in all, EasyMorph Launcher is your personal assistant that can do tedious work for you as well as answer some frequent questions.

Another big novelty in this release is our first (but surely not last) cloud API data connector – Google Sheets. It's the first from many cloud data connectors we've planned for 2019. As always, if you think EasyMorph should have a particular connector or transformation please feel free to make yourself heard and make a feature request on the [EasyMorph Community forum](#).

What's new

EasyMorph Launcher

The Launcher is a utility that is installed together with EasyMorph Desktop. It starts on Windows start, sits in the system tray, and allows running EasyMorph projects on schedule or manually, without opening EasyMorph Desktop. Features include:

- Scheduling (only available in the Professional edition)
- Task parameters
- Prompting parameters on task start
- Task cancellation
- Display of a result table, saving the result table into a supported file format
- Real-time logs
- Real-time messages from the "Status" action
- New "Continuous" schedule
- Rich error messages as in EasyMorph Desktop
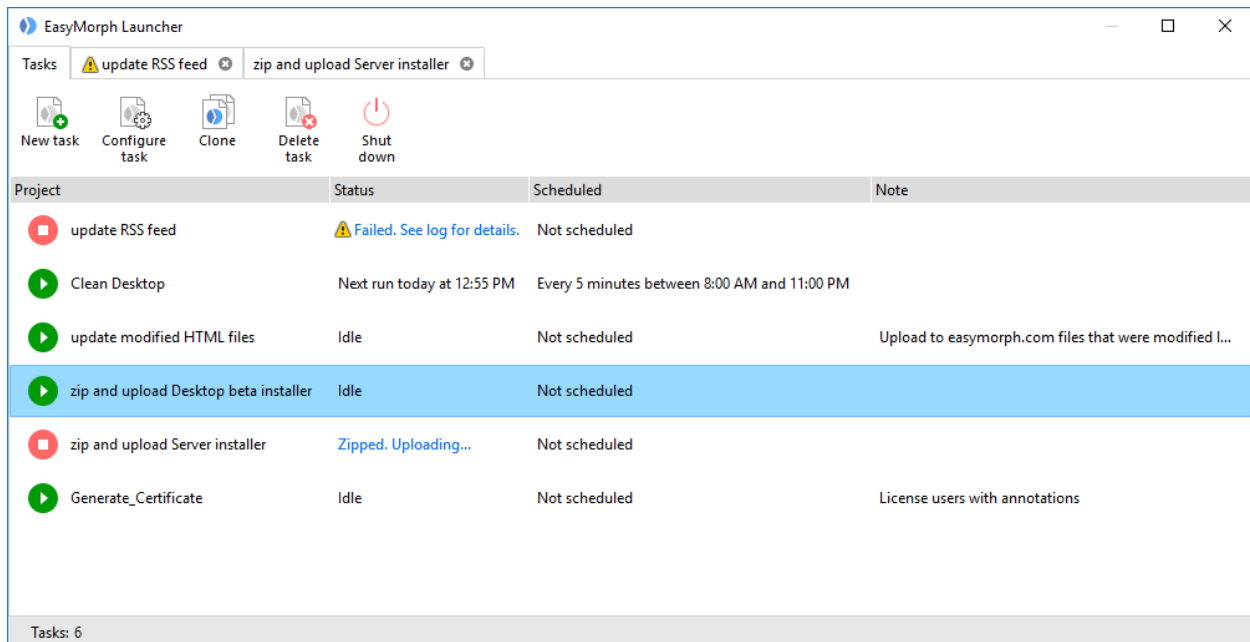
Screenshot 1: EasyMorph Launcher.

New actions

The **Import Google Sheets** action loads data from a specified sheet or range of a Google Sheets document.

The **Export to XML** action exports data into XML files. The files can be created either in a row-based or column-based layout.

New functions

localtime(utc_timestamp) – converts a UTC date/time into a local date/time. Example:

`localtime(date('2019-01-01', 'yyyy-MM-dd'))` returns a timestamp that corresponds to December 31st, 2018 19:00 for the Eastern Standard Time zone (UTC-05:00).

utctime(local_timestamp) – converts a local date/time into a UTC date/time. Example:

`utctime(date('2019-01-01', 'yyyy-MM-dd'))` returns a timestamp that corresponds to January 1st, 2019 05:00 for the Eastern Standard Time zone (UTC-05:00).

New connectors

The **Google Drive** connector is required for the "Import from Google Sheets" action.

The **Tableau Online** connector is supported in all actions that work with Tableau and can be used for publishing datasets to and triggering refresh extracts on Tableau Online.

Changes in existing actions

The **Convert Data Type** action now has a new command – "Empty to text or number". It allows converting cells with empty values or empty text to specified text or number in all or selected columns at once.

The **Send Email** action now allows specifying recipients using the Bcc field (blind carbon copy).

The **Create List** action now automatically appends the newly created column. This behavior allows creating a dataset with several columns by placing several "Create List" actions one after another.

Miscellaneous (Desktop)

- Conditionally derived tables now have a new icon that indicates successful condition
- The parameter selection list in action properties now shows the parameter type and current value
- The 1st action in table can be moved/copied as any other action
- When a file is loaded through the "Add data" menu the table is automatically named after the file instead of generic name "Table"
- EasyMorph dataset files (.dset) now have a dedicated file icon
- The "Add data" menu now has a new command – "Fetch from cloud" which currently has only the "Import Google Sheets" command

Release notes for version 3.9.2

What's new

Overview

Here is what we were focused on while developing version 3.9.2, and a few announcements:

- Continuing improving ETL capabilities of EasyMorph by adding explicit column-to-field mapping in the "Export to database" action;
- Starting a new long term initiative with the goal of making EasyMorph a better tool for data analysis. In this release, we're adding a full-screen table view mode. It will receive powerful data profiling and analysis features in future versions released during 2019;
- Making EasyMorph more data-centric and thus more convenient for everyday work of a data analyst. In this version we've made adding new data simpler. In the next major release a lightweight data catalog with searchable table and column metadata will be added;
- Simplified retrieval of datasets published to EasyMorph Server. The "Receive from Server" command in the new "Add data" menu makes receiving even large datasets from Server faster and more convenient than working with text files and spreadsheets stored locally;
- Expanding connectivity required for work automation. In this version we're adding the "Amazon Command" action that can transfer files and folders to/from Amazon S3 buckets;
- Better security for EasyMorph Server by adding spaces that use Windows Identity and Active Directory for user authentication. In the next major release it will be possible to use Server-hosted connector repositories on Desktops, instead of shared repo files. This will provide a better control over access to external connectors.

Amazon Command

The **Amazon Command** action is intended to automate common operations with Amazon AWS. Currently, the following commands for AWS S3 are implemented:

- List files
- Download file
- Download folder
- Upload file
- Upload folder (supports wildcard filtering, recursive subfolders)
- Delete file

In particular, uploading files to Amazon S3 can be used for fast bulk export of large datasets into Amazon Redshift or any other AWS-hosted database. In this case the sequence of actions would be: export to a CSV file, upload the file into Amazon S3, run custom SQL command for bulk loading (see your database guide how to perform bulk loading from a local file).

The Amazon Command action is not available in the free edition of EasyMorph.

Amazon S3 connector

An Amazon S3 connector is required for the Amazon Command action. The access key ID and secret key can be obtained from your Amazon AWS portal.

Note that EasyMorph automatically cleans up temporary file parts in bucket that were created by failed uploads (if any) older than 7 days. This is done in order to prevent accumulation of temporary file parts that may appear when using unreliable network connections. Such parts can lead to increased storage use and thus extra charges from Amazon. The automatic clean up can be disabled in the connector settings. However, it is recommended to keep it on unless you are aware of other applications that explicitly require preserving temporary and incomplete / broken upload parts older than one week.

Explicit column-to-field mapping

Previously, when exporting a table into a database using the "Export to database" action it was necessary to rename columns in EasyMorph exactly after the target database table fields. It wasn't convenient, especially for wide tables with many columns. With this release, a new "Explicit" mapping mode is available which allows mapping columns in EasyMorph to fields in the target database table even if their names don't match.

Note that the drop-down list used for picking a field has a search box and can also be filtered by field data type. This makes finding a field in a wide table easier.

The explicit column-to-field mapping mode is not available in the free edition.

Screenshot 2: Explicit column-to-field mapping.

fromunixtime(unix_timestamp) – converts a Unix timestamp (number of seconds since 1970) to the number date format used in EasyMorph (and Excel). Example:

> `fromunixtime(1095379200)` returns 38247 which corresponds to 2004-Sept-17.

Miscellaneous

- The "Append" action is now more memory-efficient when appending large datasets.

What's new in EasyMorph Desktop

Menu "Add data"

To simplify importing data into EasyMorph we've added the "Add data" menu to the Start screen and to the "Main" toolbar. This menu unifies various ways how data can be loaded into EasyMorph: querying a database, loading one or multiple files, fetching a dataset from EasyMorph Server, generating, and finally, pasting data from Clipboard.
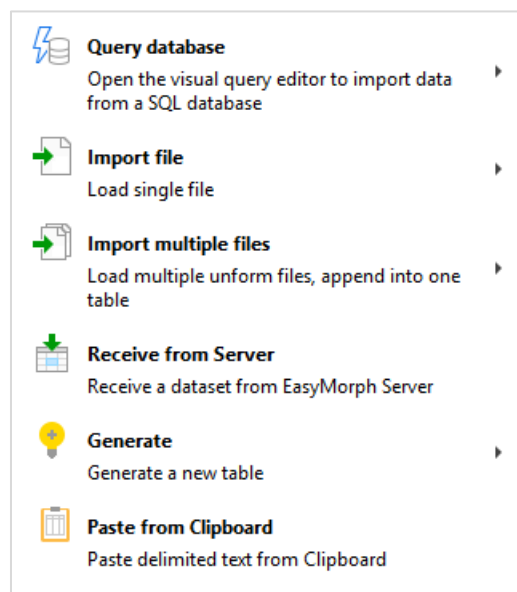
Screenshot 3: "Add data" menu on the Start screen.

Note that this menu is can also be opened by pressing **Ctrl + T**.

Maximized dataset view

Starting from this release double-clicking the table title bar produces a different effect. Instead of minimizing/restoring a table (i.e. hiding/showing the datagrid) as it was in previous versions, it

maximizes the table and switches into the new full-table view introduced in this release. In this view you can:

- Perform full-table search for text (contains / starts with /ends with /regexp), numbers (equals / greater than / less than), and empty values (empty value / empty text / whitespace).
- Go to specified row
- Find column by name
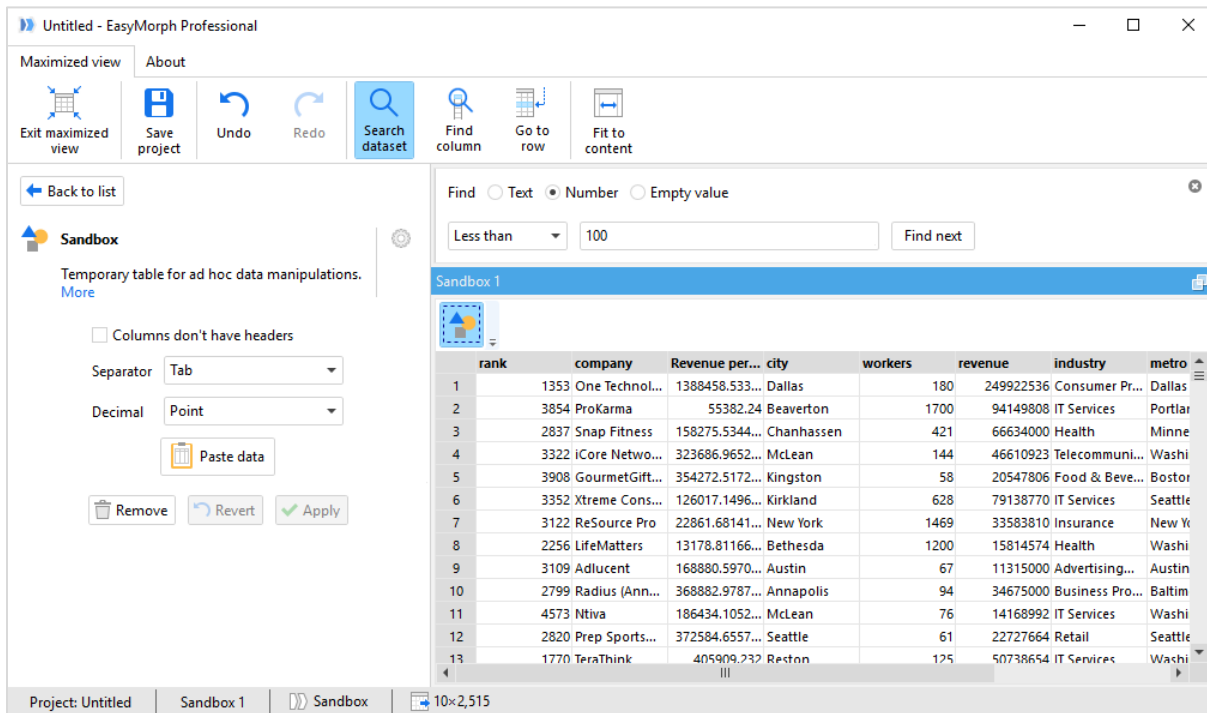
Screenshot 4: Maximized dataset view.

Besides that, the regular table and action editing and column profiling capabilities remain:

- Adding / editing / removing actions
- Column profiling and filtering (performed as usually, by double-clicking the column header)
- Column/cell context menu and operations

Latest news on the Start screen

The Start screen now contains a feed with recent news from EasyMorph. It may include hints & tips, links to helpful articles, product and company news, notable Community posts. The newsfeed is also available as a regular RSS feed which can be added to any RSS reader by this link: https://easymorph.com/feed.rss.

Privacy note: currently, the newsfeed can't be disabled which means that EasyMorph will make a web-request to obtain *feed.rss* from our web-site on each launch. This will cause your external IP address to be recorded in logs of the web-server that runs website *easymorph.com*. We at EasyMorph don't analyze, share or do anything else with these records. If you prefer to stay entirely invisible to

EasyMorph, please don't update to this version and wait until the ability to disable the newsfeed is introduced in one of the future versions (it will surely be).

Miscellaneous

- A visual non-intrusive notification is shown on the Start screen if your license expires in 14 days or less.
- The Server Link now supports Server spaces with Active Directory authentication.

What's new in EasyMorph Server

Authentication via Active Directory in spaces

The ability for more granular user access control was one of the most demanded features for EasyMorph Server. In this release, we're introducing a new authentication mode for spaces – "Windows Authentication". When a space uses Windows Authentication, only users with accounts that exist in specified Active Directory domain can be added to space users. Therefore, each space with Windows Authentication enforced has a list of users and groups from Active Directory who have access to the space. Adding/removing users and groups to/from a space is done in the space security settings.

Screenshot 5: Configuring users and groups of a space.

Note that in order to use the Windows Authentication mode a valid connection to Active Directory service must be configured on the Server Settings page.

The Windows Authentication mode is only available in EasyMorph Server Enterprise edition.

Prompting parameters on task start

A new task option "Prompt parameters on each manual task start" has been added. When the option is enabled, task parameters can be edited right before starting the task. The edited parameter values only apply to one task run session and are not saved in task properties. This option makes possible running the same task with different parameters without editing task properties every time. It can be used in the "Lock task" access mode.
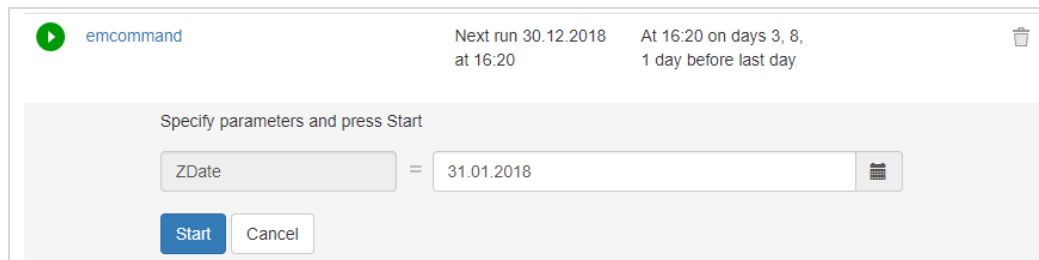
Screenshot 6: Prompting a parameter on task start.

New SSL configuration process

Now, SSL encryption certificates are obtained from the secure system vault in Windows instead of loading from a file. As in previous versions, SSL encryption configuration can be done using the EasyMorph Server Monitor which now provides means for adding SSL certificates into the secure system vault. When updating a previous version of Server installation that was configured to use SSL encryption using a certificate, the certificate will be automatically added to the vault by the Server installer so no action is required.

Miscellaneous

- Server installer and Server Monitor now explicitly specify a port in Windows Firewall rules
- Space security settings have been moved to a separate tab under Space settings.
- The Server Administrator Guide has been expanded with security recommendations for Server installations hosted in public clouds

Release notes for version 3.9.1

What's new
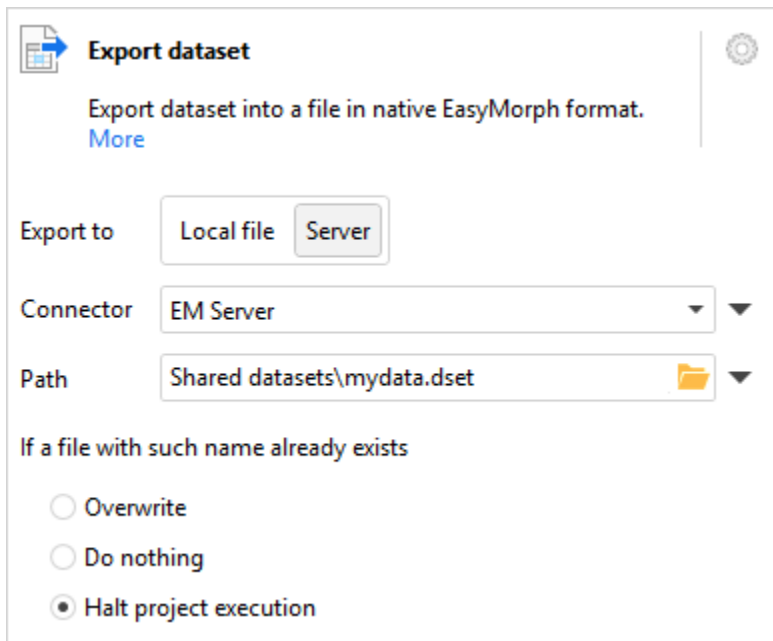
Overview

With this release we're starting a major long-term development effort which goal is to make EasyMorph Server a convenient hub for collaboration on datasets as well as easy-to-use dataset storage that will eventually become a sort of light-weight database for non-technical users.

We've also added the ability to specify native database data types for creating database tables – a long awaited feature for advanced users.

Exporting/importing datasets to/from EasyMorph Server

The "Export dataset" action now allows publishing datasets directly to EasyMorph Server. In a similar fashion, the "Import dataset" action can be used to retrieve a dataset from Server. The dataset format (.dset) is a compact, compressed representation of data in a form native to EasyMorph. Therefore publishing datasets to, and retrieving datasets from EasyMorph Server to a local machine is a very fast operation even when performed over a network. This makes it convenient to store datasets on Server, rather than on local machine. Publishing projects to Server also becomes more convenient, because there is no need to use calculated parameters for file locations. Also, it's easier to share projects with other users when datasets are stored on Server because there is no need to send data files with a project as they are always stored on Server.

Screenshot 7: Exporting dataset to Server.

Screenshot 8: Importing dataset from Server.

Advanced data types for creating database tables

Until now, a database table could only be created with fields of three generic data types: Number, Text and Date. Under the hood, these data types would be replaced with pre-defined database field types depending on the target database system.

From now on, it's possible to specify a field type using data types native to the target database. Note that this feature is not available in the free edition.

Screenshot 9: Advanced data types for table creation.

The "Other SQL" dialect

With EasyMorph it's still possible to connect to an ODBC data source and send custom SQL queries even when the data source's SQL dialect is not supported by EasyMorph's visual query builder. To simplify working with such sources, we've added a new SQL dialect type for ODBC connectors – "Other SQL". Visual query builder is not available for ODBC connectors with this dialect. However it's still possible to write custom SQL. Use the "Other SQL" dialect whenever you need to connect to data sources with ODBC drivers such as Google BigQuery or Teradata.
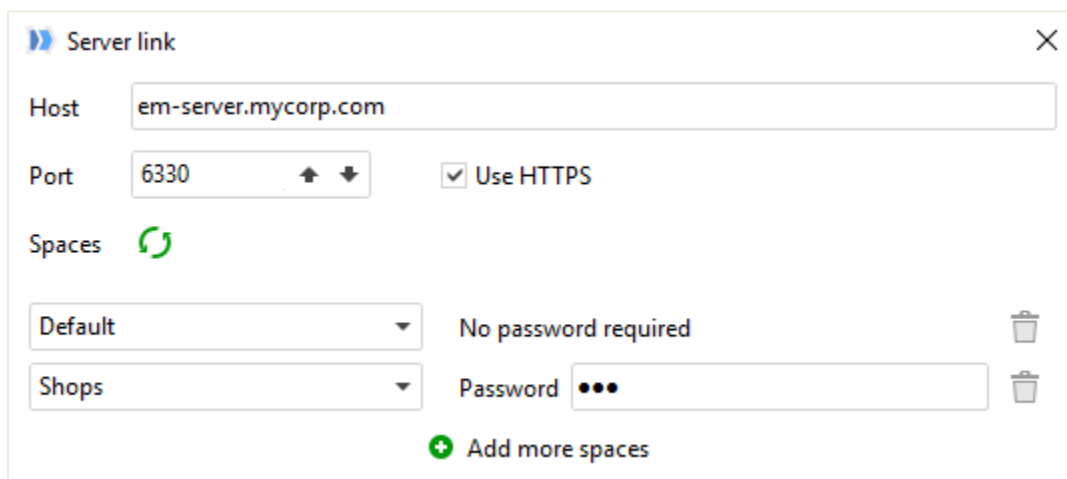
What's new in EasyMorph Desktop

Server Link

Server Link is the default connection to Server from Desktop. It's project-independent and can be set up on the Start page of the application. When configured, it can be used for:

- publishing projects to Server (dialog "Publish to Server")
- opening projects from Server (button "Open from Server" on the Start screen)
- publishing datasets to Server (command "Send to Server" in the action right-click menu)
- loading datasets from Server (command "Receive from Server" in the workspace right-click menu)

Multiple spaces of a Server can be specified in Server Link configuration.

Screenshot 10: Server Link configuration.

Server Link makes it easier to use Server for collaboration. Datasets can be shared and consumed by users in a few clicks. To publish a dataset on Server, right-click the desired action which result you would like to publish, and choose "Send to Server".
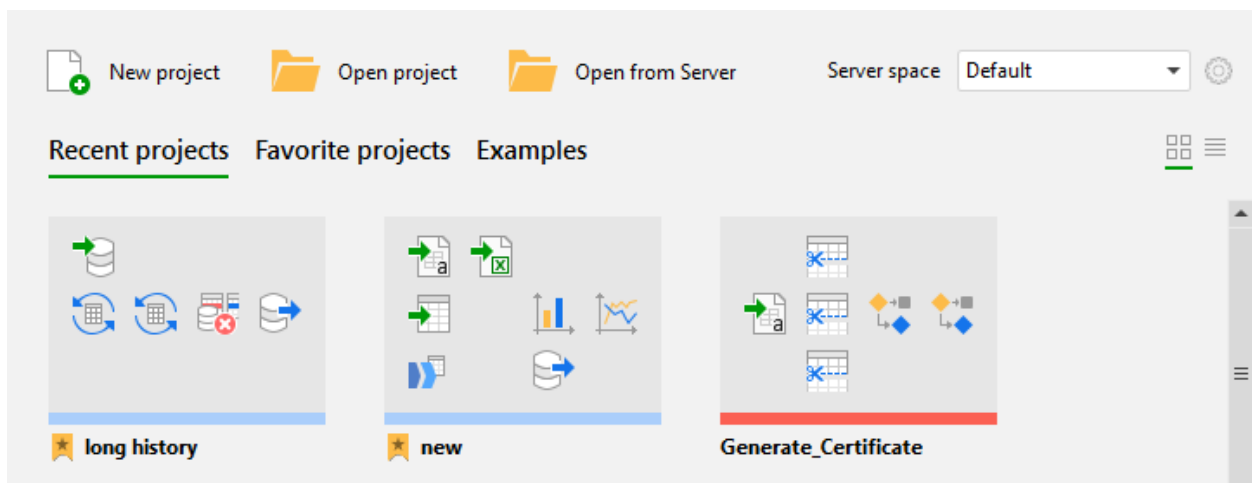
Right-click the workspace and choose "Receive from Server" to obtain a dataset from Server.
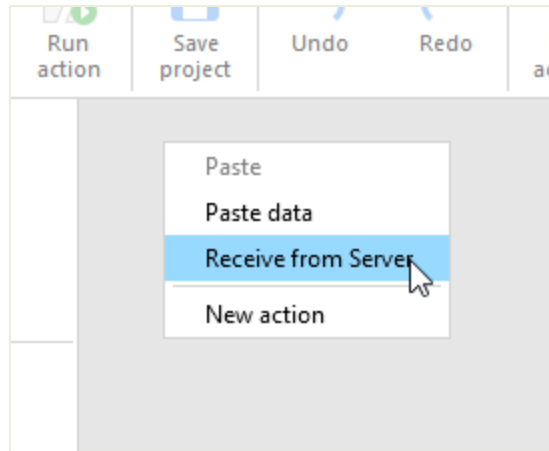
Screenshot 11: Receiving dataset from Server.

Project thumbnails and Thumbnail Editor

Thumbnail view has been added in addition to the list view of projects on the Start screen. It shows projects as thumbnails.

Screenshot 12: Thumbnail view.

Project thumbnails can be created and edited using the Thumbnail Editor available in the "Project" menu. Future versions of EasyMorph will add the ability to automatically generate thumbnails.
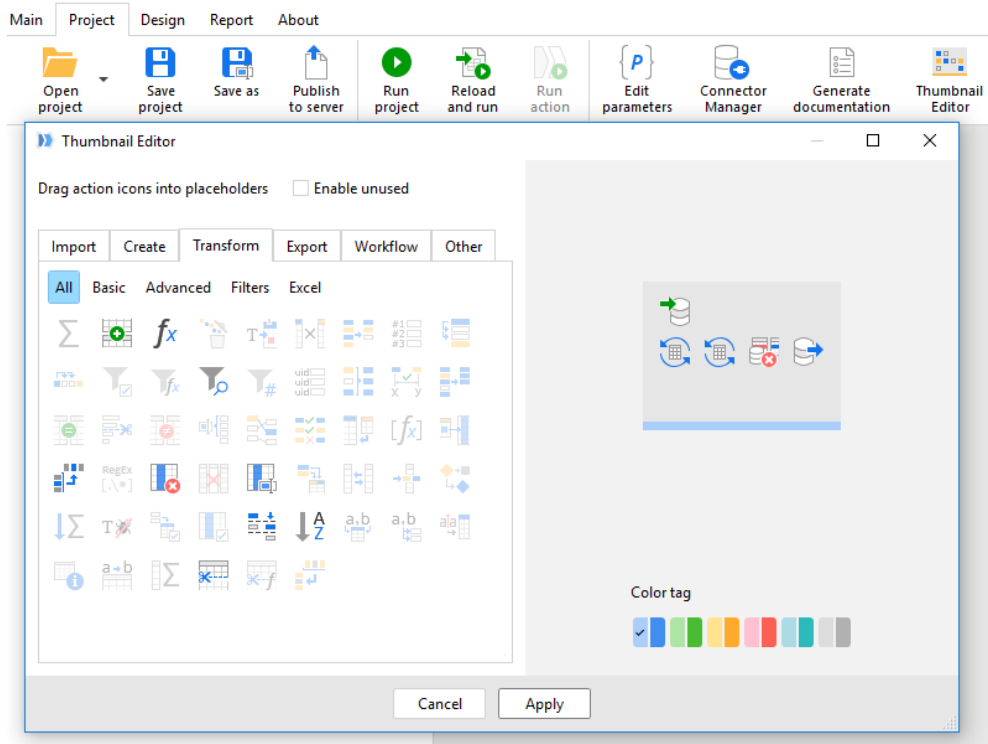
Screenshot 13: Thumbnail editor.

Miscellaneous

- PDF reports now automatically skip a page with report objects that don't contain any data.
- Action "Calculate" in the action right-click menu has been renamed to "Run action" and is now always enabled.
- Now the Start screen by default shows recently used database connectors instead of recently saved queries.
- The "Send to file" command in the action right-click menu now contains 3 new options: Tableau (.tde), Qlik (.qvd), and Dataset (.dset).
- The column profiler now shows the total sum of all numbers in the selected column.

What's new in EasyMorph Server

Low memory warning

Now, when a task starts but less than 10% of RAM is available to EasyMorph Server it writes a warning into the server log.

Update to .NET 4.6.2

The Server now requires .NET framework version 4.6.2 or above. If you keep your Windows updated no action is required as .NET 4.6.2 (or later) most likely has been already installed on your computer.

Release notes for version 3.9

Important! Create a backup copy of your projects and connector repositories before updating to the new version. Projects saved in version 3.9.x can't be opened in earlier versions.

What's new

Fetching emails with attachments

With the help of the "Fetch email" action it is now possible to retrieve email messages and their attachments from Microsoft Exchange and email servers that support the IMAP protocol. The action produces a table with a list of attributes such as sender, received date/time, subject, etc. for each email message. If the action is instructed to fetch attachments then for each attachment the table will have a file name and path to the folder where the attachment has been saved. Later, the attachments can be loaded using either the new "Load file list" mode in import actions (described below), or using iterations.
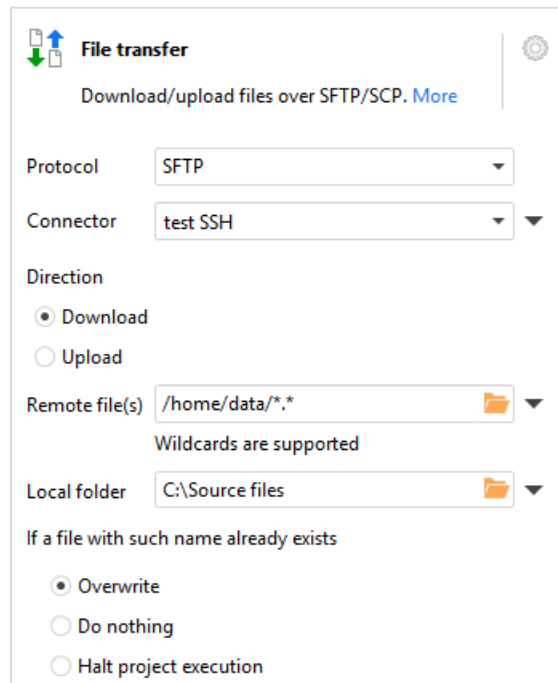
Screenshot 14: The "Fetch email" action.

A typical workflow that fetches email attachments and loads them in EasyMorph would be as follows:

1. Use the "Fetch email" action to retrieve email messages and save their attachments into a designated folder. The action produces a table with message attributes and paths to folder(s) with attachments.
2. Filter messages/attachments based on their attributes, if necessary.
3. Use an import action in the "Load list of files" mode (described below) to load retrieved attachments into EasyMorph.
4. Use the "Clean folder" command of the "File command" action in order to purge attachments. In some scenarios, this step may come before fetching emails.

SFTP/SCP file transfer

EasyMorph now has a built-in SFTP/SCP client that allows downloading and uploading files from/to a remote computer over an SSH connection. A typical use case would be collecting source data from a remote computer, or publishing transformation results to a remote server.


Screenshot 15: The "File transfer" action.

Loading a list of files without iterations

All import actions now have a new mode – "Load list of files". In this mode the list of file paths to load is obtained from a column in the input dataset (i.e. the output of previous action). This mode allows loading multiple files at once without using iterations. It can be helpful in cases when uniform files are

located in different folders, or need to be filtered using a complex condition based, for instance, on file size or file creation date. In most typical cases, an initial list of files would be generated using the "List of files" action or the "Fetch email" action.
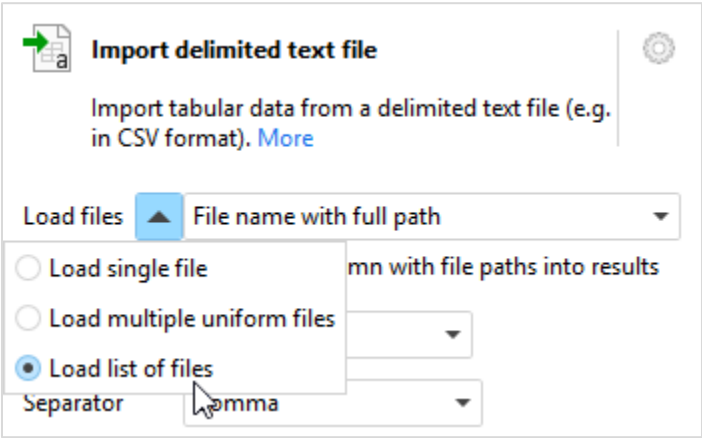

Screenshot 16: The "Load list of files" mode.

SSH Command

The **SSH Command** action allows executing one or multiple commands on a remote computer over an SSH connection. The commands can be composed using project parameters. The output of commands can be captured in EasyMorph.

A typical use case for "SSH Command" would be triggering a process on remote server and later fetching files (using the "File transfer" action) that were produced by that process.
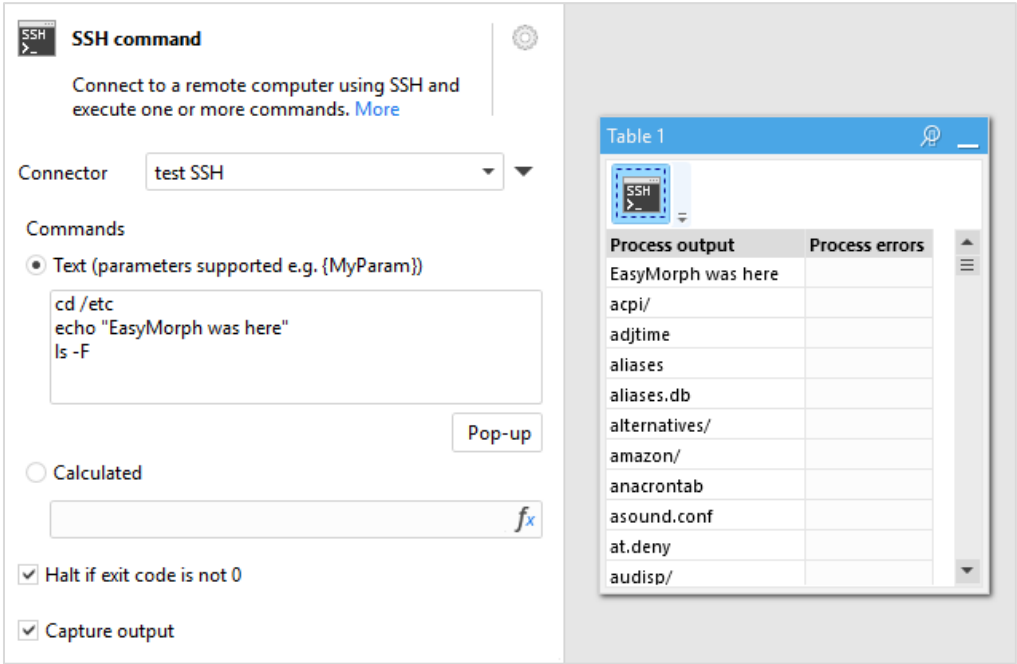
Screenshot 17: SSH Command.

Native data format

The native data file format stores data in a form that is very close to internal data representation in the EasyMorph's in-memory engine. Therefore, saving a dataset into a file and reading a dataset from a file doesn't have performance overhead such as data conversion or compression/decompression, and therefore is very fast.

The **Export dataset** action saves an EasyMorph dataset into a file in the native format.

The **Import dataset** action loads an EasyMorph dataset from a file.

Changes to existing actions

The **File Command** action now has a few new commands to deal with folders and zip archives:

- Create folder
- Delete folder
- Zip file
- Zip folder

Also the "Clean folder" command now allows removing subfolders or cleaning them recursively.

The **Send email** action now doesn't fail if the message body contains a missing parameter. This is done in order to enable embedded CSS stylesheets in HTML messages.

New functions

weekdayname(date_as_number) – returns the abbreviated name of day. Example:

weekdayname(#2018-08-22) returns "Wed".

New limits of the free edition

The limits for actions and iterations in the free edition have been reduced to 24 actions per project (including iterated projects) and 24 iterations. The free edition now allows using the "Input" action.

Connectors

This version introduces a new connector type – "SSH connection". The connector can be used in two actions: **File Transfer** and **SSH Command**. It can use authentication with a key pair. The private key should be in the Open SSH format (for keys generated with PuttyGen see instructions here).

The email connector has been extended with options for configuring IMAP.

Miscellaneous

- The minimal version of .NET Framework required for EasyMorph is now 4.6.2.
- Database drivers and Tableau SDK have been updated to the latest versions.

What's new in EasyMorph Desktop

Editing operations with multiple actions

Now it is possible to copy, paste, move to another/new table, or delete multiple actions at once. To select multiple actions, *click* the first action then *Shift+click* the last action. After selecting multiple actions, right-click for context menu, or drag them to another location.

New Start screen

The Start screen has been significantly redesigned to simplify onboarding experience for new users and dealing with many projects for existing users. A trial license key can be requested right from the Start screen. Also license key configuration has been moved from the About menu to the Start screen.
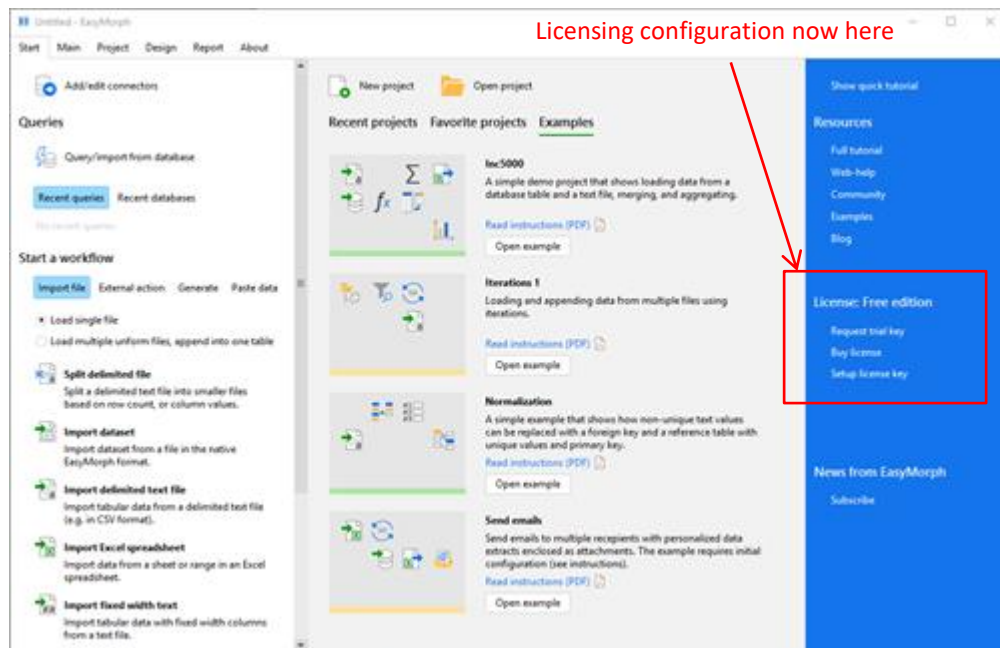
Screenshot 18: New Start screen.

Miscellaneous

- On the first launch EasyMorph now shows a wizard to help configure licensing (e.g. request a trial key) and subscribe to news and updates.

What's new in EasyMorph Server

Monthly Schedule

EasyMorph Server now allows scheduling tasks using a monthly schedule. Days of execution can be defined in one of the two ways:

- As one or more month days (1, 2, .., Last day, 1 day before last day, 2 days before last day).
- As one or more week days (Sun, Mon, …) for one or more weeks (First, Second, …, Last).

Screenshot 19: Monthly schedule