
Momotor LTI Documentation

Release 2017.8

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Nov 01, 2018

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MOMOTOR LTI PROVIDER FOR CANVAS

Momotor can be used for automated evaluation of student submissions for assignments.

Momotor Engine is the system that can process these submissions using a recipe and configuration. The Momotor LTI Provider integrates the Momotor Engine with LTI Consumers like Canvas.

In Canvas the terms 'app', 'page' and 'plugin' are used interchangeably to refer to LTI Providers. In the rest of the LTI Provider for Canvas documentation we will use the term app to refer to the Momotor LTI Provider.

1.1 Enabling the Momotor app for a course

Enabling the app for a course is done by adding it to the course navigation. In Canvas, the course navigator is configured from *Course* → *Settings* → *Navigation*:

2MOMO1 > Settings

Home Course details Sections **Navigation** Apps Feature Options

Account

Dashboard

Courses

Calendar

Inbox

Home

Announcements

Assignments

Discussions

Grades

People

Pages

Files

Syllabus

Outcomes

Quizzes

Modules

Settings

Drag and drop items to reorder them in the course navigation.

Home	⚙️ ▾
Announcements	⚙️ ▾
Assignments	⚙️ ▾
Discussions	⚙️ ▾
Grades	⚙️ ▾
People	⚙️ ▾
Pages	⚙️ ▾
Files	⚙️ ▾
Syllabus	⚙️ ▾
Outcomes	⚙️ ▾
Quizzes	⚙️ ▾
Modules	⚙️ ▾

Drag items here to hide them from students.
Disabling most pages will cause students who visit those pages to be redirected to the course home page.

Momotor <i>Page disabled. Won't appear in navigation</i>	⚙️ ▾
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Save

By default, the Momotor tab is hidden. To make it visible, click the drop-down arrow at the end of the Momotor tab and click *enable* or drag the Momotor tab to the top section.

The Momotor tab can be positioned anywhere in the navigator, but since Momotor is related to the assignments, we advise to put it directly beneath the Assignments tab.

Home Course details Sections **Navigation** Apps Feature Options

Announcements

Assignments Drag and drop items to reorder them in the course navigation.

Discussions

Home	⚙️ ▾
Announcements	⚙️ ▾
Assignments	⚙️ ▾
Momotor	⚙️ ▾
Discussions	⚙️ ▾
Grades	⚙️ ▾

Grades

People

Pages

Files

Syllabus

Save the changes to the navigator. The Momotor section should now be available in the navigator.

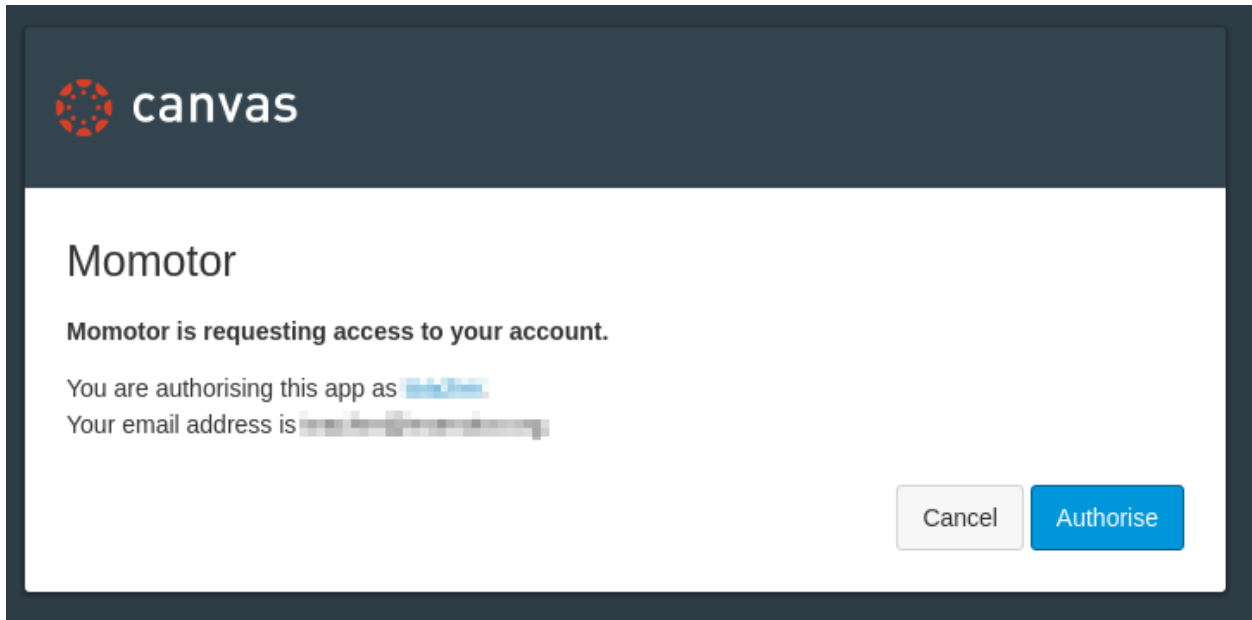
1.1.1 Disabling the Momotor app

The app can be removed from the navigation by moving the Momotor tab in the course navigator to the hidden section.

This will only remove the app from the navigator making it impossible to access, but existing configuration and results will not be deleted and processing of submissions for configured assignments will remain active.

1.2 Authorising the Momotor app

In order to process the assignments, the app needs access to the course data in Canvas. The first time you select the Momotor tab in the navigator to open the app, it will ask for authorisation to access your Canvas account. Click *Authorise* to continue.



Students will need to authorise the app as well when they want to review the results of their submissions in Momotor. However, for the processing of submissions only the teacher's access is needed. Student submissions will be processed even if they have not authorised the app.

1.2.1 Revoking Momotor app authorisation

Without a teacher's access to Canvas, the app will not be able to function. If however you want to revoke the app's authorisation, you can do so from your Canvas profile settings. Momotor will be listed as an approved integration. To remove the authorisation, click the trash can icon after the app name.

1.3 User roles

Teachers and **Course Designers** can *add and edit* Momotor assignment configurations.

Only **Teachers** can *publish* or unpublish the results and *upload scores* to Canvas.

Teachers and **(Grading) Teaching Assistants (TA)** can *review* the results for the submissions by all students. They review all the results whether the assignment has been published or not.

Students can only see the published results for their own submissions and the submissions made for a homework group they are member of.

1.4 Configuring assignments

The Momotor app extends upon the assignments configured in Canvas. In order to enable Momotor processing for submissions a Canvas assignment must first be *created*. This assignment must have a submission type of *Online* with only the *File uploads* option enabled.

Submission type

▼
Online

Online Entry Options

Text entry

Website URL

File Uploads

Restrict upload file types

File upload types can optionally be restricted. Group assignments are supported too.

Once the assignment has been created in Canvas, additional configuration is required for the Momotor processing. This can be configured from within the app by Teachers and Course Designers.

Select the Momotor section in the course navigator. When there are assignments available that have not yet been configured for Momotor processing an *Add Assignment* button will be available on the top-right of the page.

- Home
- Account
- Dashboard
- Courses
- Calendar
- Inbox

☰ 2MOMO1

- Home
- Announcements
- Assignments
- Momotor
- Discussions
- Grades
- People
- Pages
- Files
- Syllabus
- Outcomes
- Quizzes
- Modules
- Settings

Momotor + Add assignment

No assignments have been configured for use with Momotor at this time.

To configure an assignment for use with Momotor, create one or more Canvas assignments of type *Online - File uploads* and click + Add assignment to configure the Momotor recipe and configuration for each assignment.







If you do not plan to use Momotor in your course, please disable it by navigating to 'Settings > Navigation'.

For more information about Momotor, please visit the [project page](#).

Momotor LTI provider - the successor of peach³
Developed at the Computer Science department of Eindhoven University of Technology

Clicking the *Add Assignment* button opens the assignment configuration:

Momotor assignment configuration

Assignment	Select... 	
Processing	▶ Process submissions 	
Recipe	 No file uploaded	 Select
Configuration	 No file uploaded	 Select

From the first drop-down field select the assignment to configure, and select and upload the Momotor *recipe and configuration* files for the assignment. The processing option is described *later*, for normal use it should remain at the default value of *Process submissions*.

As soon as the configuration is saved, Momotor is ready to process submissions from students. If students already submitted files before the Momotor processing is configured for the first time, Momotor will start processing the existing submissions immediately.

1.4.1 Recipes and configuration files

In order to process assignment submissions, Momotor recipe and configuration files are required. The format of these recipe and configuration files is explained in the [Momotor Engine](#) documentation.

Note: If you have a package from Momotor's predecessors peach³ / daemon2, you can convert this package into a Momotor recipe using the [online conversion service](#).

1.4.2 Editing assignment configuration



Editing the configuration for an assignment is done by clicking the pencil icon on the assignments list, or selecting the 'Configure assignment' option from the management menu on the [assignment result overview](#).

1.4.3 Publishing processing results

Just as assignments in Canvas can be published or unpublished, the Momotor processing results can also be published or unpublished.

Students can only see the results for published assignments. Teachers and teaching assistants can always see the results, even of unpublished assignments.

Teachers (but not Course Designers) can toggle the publishing state by clicking the publish icon on the assignments list:

Icon	State
	Results published
	Results not published

1.4.4 Processing mode: Pausing and re-evaluation

Sometimes there is an unforeseen issue with a Momotor recipe. This is where the *processing* option is used. If a recipe is broken and processing is pointless until the recipe has been repaired, the processing can be paused by selecting the *Pause processing* mode in the processing drop-down on the assignment configuration screen.

When a new recipe is uploaded for an existing configuration, only new submission will be processed with that recipe by default. To have Momotor process all existing submissions, select the *Re-evaluate all submissions* processing mode.

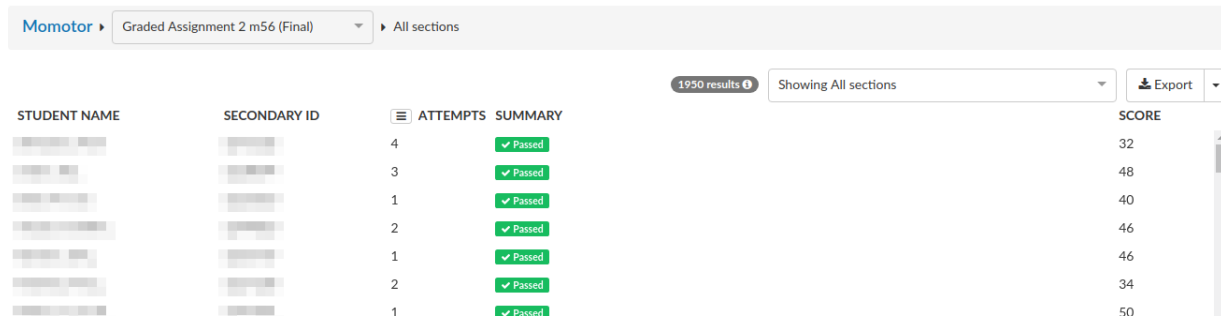
To have Momotor process submissions that have not been processed with the most recent recipe or configuration, select the *Re-evaluate submissions processed with older recipe or config* mode.

It is also possible to manually re-evaluate a few selected submissions, this is useful when an issue with a recipe only affects a small number of submissions. Select the *Re-evaluate selected submissions* processing mode and select the submissions to re-evaluate.

The selected processing mode will be activated when the changes are saved.

1.5 Viewing results

To view the results of the processing of an assignment, click on the assignment in the assignments list. This will open the assignment result summary:

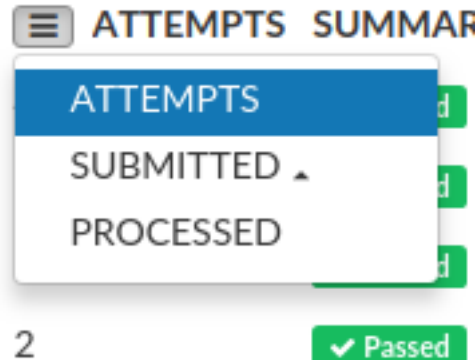


STUDENT NAME	SECONDARY ID	ATTEMPTS	SUMMARY	SCORE
[REDACTED]	[REDACTED]	4	✓ Passed	32
[REDACTED]	[REDACTED]	3	✓ Passed	48
[REDACTED]	[REDACTED]	1	✓ Passed	40
[REDACTED]	[REDACTED]	2	✓ Passed	46
[REDACTED]	[REDACTED]	1	✓ Passed	46
[REDACTED]	[REDACTED]	2	✓ Passed	34
[REDACTED]	[REDACTED]	1	✓ Passed	50

Each row in this list is the result of the Momotor processing of the latest submission attempt of the students. Only students that have submitted files for the selected assignment will be shown.

The first two columns indicate the student.

The third column can show three types of data: the number of submission attempts, the time of submission or the time of processing of the submission. The small menu button can be used to select the type of data shown in this column:



The *summary* column shows the current state of the submission, this consists of a state label and, if relevant, more information about that state.

Label	Meaning
<i>Post-poned</i>	The processing for this assignment has been <i>paused</i> . When processing is resumed this submission will be added to the queue.
<i>Queued</i>	The submission is queued for processing. Processing should commence soon.
<i>Pro-cessing</i>	The submission is currently being processed by Momotor.
<i>Passed</i>	The recipe returned a <i>pass</i> result.
<i>Failed</i>	The recipe returned a <i>fail</i> result.
<i>Recipe error</i>	The recipe had an <i>error</i> while processing the submission. This special state is only shown to reviewers as it indicates an error with the configuration, not the submission.

The *score* column lists the score as produced by the recipe.

The labels in the column headers can be clicked to sort the list on the contents of that column. When result states change or when new submissions are received, this list will update automatically.

The *Showing...* drop-down can be used to limit the results shown to a single Canvas section.

The *Export* button can be used to *export the data* shown to a CSV (Comma-separated values) file or upload scores to Canvas.

The *results* summary widget left of the *Showing...* drop-down indicates the total number of results in the current view. Use the mouse to hover over the widget to get a count of submissions in various states:



The drop-down in the navigation bar on the top of the page can be used to quickly switch to another assignment or return to the main page.

1.5.1 Result details

To view individual student's result details, click a result row. This will open the result details view:

The exact content and meaning of the details depends on the recipe.

By default the most recent submission attempt is shown, but by using the attempts drop-down in the navigation bar on the top of the page earlier attempts can be selected. Only attempts that were processed by Momotor are shown.

The other drop-downs in the navigation bar can be used to quickly switch between assignments and users.

To return to the summary page click the label between the assignment and user containing the section name in the the navigation bar on the top of the page, or use the browser's back button.

1.5.2 Student view

For published assignments, students see views similar to the teacher's views as described above, but only for their own submissions and - in case of an assignment with group submissions - the submissions for the group they are member of. The main view contains a list of assignments they submitted for and the summary and score columns. The detail view is mostly identical to the detail view of teachers, but (depending on the recipe setup) might hide some information that is labelled as secret, and only the most recent attempt is shown.

1.6 Exporting data

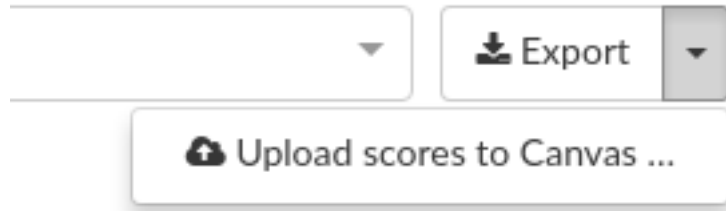
1.6.1 Export to CSV

STUDENT NAME	SECONDARY ID	ATTEMPTS	SUMMARY	SCORE
[Redacted]	[Redacted]	4	Passed	32
[Redacted]	[Redacted]	3	Passed	48
[Redacted]	[Redacted]	1	Passed	40
[Redacted]	[Redacted]	2	Passed	46
[Redacted]	[Redacted]	1	Passed	46
[Redacted]	[Redacted]	2	Passed	34
[Redacted]	[Redacted]	1	Passed	50

On the top of the assignments results overview page is an *Export* button. A CSV file will be generated and offered for download. This CSV file contains the results as visible for the submissions for the currently selected section(s).

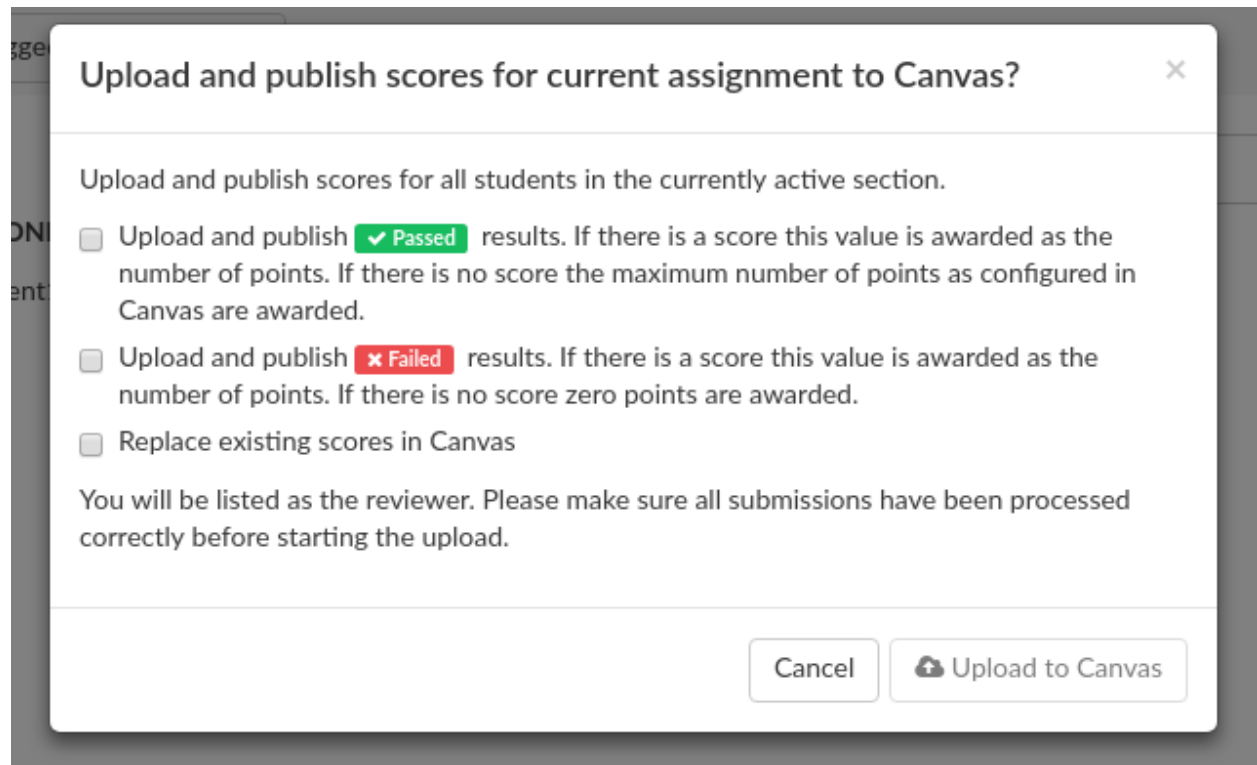
1.6.2 Uploading scores to Canvas

Only teachers are able to upload scores to Canvas



The *Export* button on the results overview page contains a dropdown menu. Click the small downward pointing triangle section of the button to open the menu.

Click the *Upload scores to Canvas...* option to open the score upload form:



Only the scores for the currently selected sections(s) will be uploaded.

It is possible to only upload scores for accepted or failed submissions, or both. Use the first two checkboxes on the upload form to choose exactly which scores to upload. At least one of these checkboxes must be selected to continue.

The last checkbox indicates whether submission for which a score is already available in Canvas should be uploaded again.

Click the *Upload to Canvas* button to initiate the upload. The upload will commence immediately and will run in the background, there are no progress updates.

It might take a short while for the scores to actually show up in Canvas.

1.7 FAQ

I have created an assignment in Canvas, but it does not show up in Momotor. Momotor can only process assignments of the *Online - File upload* submission type. It will not allow you to configure any other type of assignment. It is also not possible to configure assignments after the assignment has been locked in Canvas or the course has ended.

How will Momotor handle group assignments? All group members will be able to view the results of submissions as if it was their own submission.

How long will a submission remain in the Queued or Processing states? This depends on the current load of the system. For complex recipes, processing might take a long time.

Can students re-submit their work, for example if there was some compilation error? Yes, Momotor will process new submissions in the same way.

When students re-submit some files Canvas appends a numerical suffix. Will these files still work with Momotor? Momotor strips numerical suffixes from file names before processing the files. Note that it cannot differentiate between suffixes added by Canvas or by the users themselves, both will be stripped.

1.8 Release notes

Release notes have been published since the 2017.11 release. These notes contain the most important changes and fixes visible to end-users.

1.8.1 Release 2018.11

Released on November 1, 2018

- *CSV export* now includes submission timestamps
- Updated external dependencies
- Internal optimizations

1.8.2 Release 2018.8

Released on August 20, 2018

- Updated external dependencies
- Internal optimizations

Fixes

- Better browser compatibility (most notably IE11)

1.8.3 Release 2018.4

Released on April 17, 2018

New features

- Teachers and assistants can now review the results of earlier attempts. See *Result details*
- A column has been added to the result overview for teachers and assistants. The type of data in this column can be chosen, it can show the number of attempts, time of submission, or time when processing the submission finished. See *Viewing results*
- A summary has been added to the result overview, showing the total number of results in the view, number of passed and failed submissions and number submissions in intermediate states like processing and queued. See *Viewing results*
- A new reevaluation processing mode has been added: ‘Re-evaluate submissions processed with older recipe or config’. See *Processing mode: Pausing and re-evaluation*

Fixes

- Fixed issues with non-latest Firefox browser
- Stability and efficiency fixes

1.8.4 Release 2018.1

Released on January 23, 2018

New features

- Results, including scores, can be uploaded to Canvas. See *Uploading scores to Canvas*
- Selected section and sorting order are now remembered between sessions.
- Result detail view now has more information about the status of the submission. The status is now also updated in real-time.

Fixes

- Client-side UI updated to latest libraries, various small UI tweaks and issues fixed
- User selection has been re-enabled in the result detail view.

1.8.5 Release 2017.11

Released on November 6, 2017

New features

- Added support for *Canvas sections*. When a course uses sections, the *results overview* can now be filtered on those selections. A reviewer can only see the results in the sections they are authenticated for.
- When a Momotor recipe has an internal failure (eg. an exception in one of the steps), this is now indicated on the *results overview* and result detail pages. This information is only shown to reviewers.

Fixes

- Filename suffix removal removed too much in very specific cases
- Submission files with non-ASCII characters were not correctly handled
- There were some issues with the processing of submissions when there were jobs queued when a new recipe was uploaded, or a re-evaluation was requested
- Results with extremely large reports would fail due to the XML parser rejecting large XML nodes

Other changes

The default Java version when using `daemon2 compatible packages` has been changed to Java 9. This affects all assignments that are configured using the `config_java.xml` configuration file. Use `config_java8.xml` to target Java 8.

- search