

Simulation in Cameo Collaborator for Teamwork Cloud

Cameo Collaborator for Teamwork Cloud has a user interface that allows you to simulate a project directly in the Cameo Collaborator document published from that project.

Preparing projects for simulation in Cameo Collaborator for Teamwork Cloud

To simulate a project in Cameo Collaborator, it has to meet the following criteria:

- The project must have an Instance Table with the instance you want to execute because simulation in Cameo Collaborator is only possible using Instance Tables.
- For simulation results to be saved, you need to specify the **Result Location** property of a Simulation Configuration. The value of the **Result Location** property should be the instance in which you want to save simulation results.
- The executable model should not require any user input because Cameo Collaborator does not support UI. This means that simulation needs to be performed fully automatically.
- The executable model must end automatically without any user input.

For more information about preparing projects for simulation in Cameo Collaborator for Teamwork Cloud, analyze the example below. It explains how to modify the *SpacecraftMassRollup.mdzip* sample, which you can find in the `<modeling_tool_installation_directory>\samples\simulation` directory.

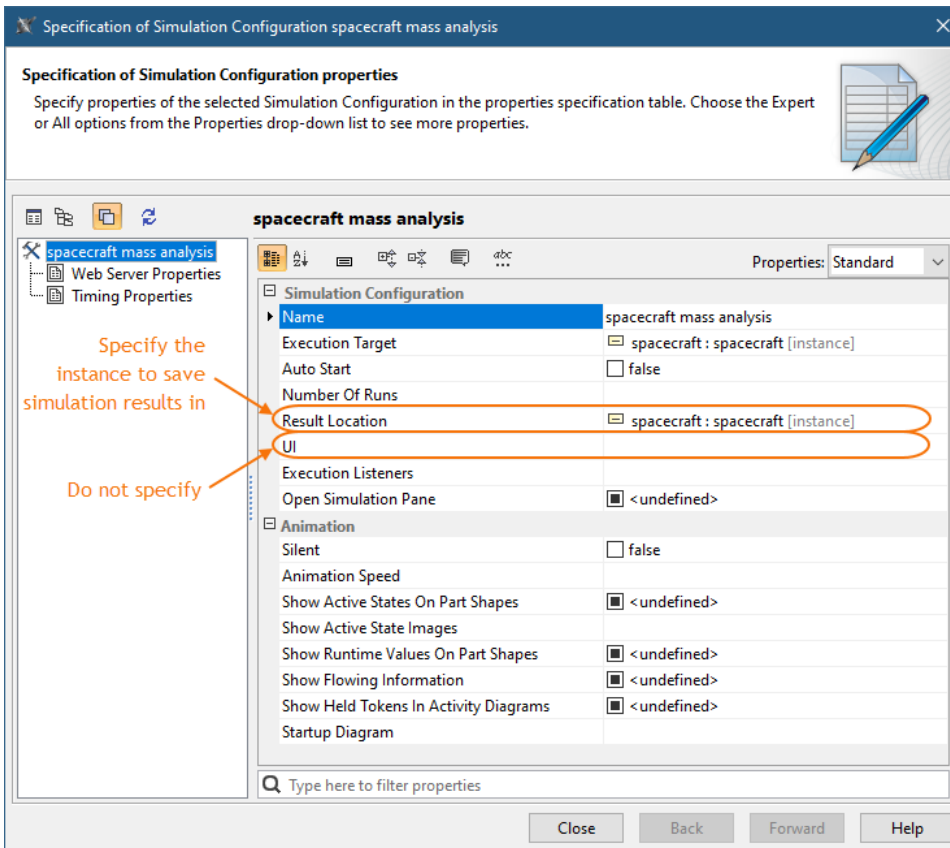
To prepare the *SpacecraftMassRollup.mdzip* sample for simulation in Cameo Collaborator for Teamwork Cloud

1. Go to the `<modeling_tool_installation_directory>\samples\simulation` directory and open the *SpacecraftMassRollup.mdzip* sample.
2. Create an Instance Table with the instance you want to execute. Let's say you want to execute the *spacecraft* Instance Specification. In this case, the project already has an Instance Table with that instance, so you do not need to do anything.

The screenshot displays the Cameo Collaborator interface. The top pane shows the 'package sim config [@ Config]' window with several configuration panels. The 'spacecraft mass analysis with WebServer' panel includes properties like 'UI = Mass Rollup Table', 'autoStart = false', 'autostartActiveObjects = true', 'constraintFailureAsBreakpoint = false', 'executionTarget = spacecraft', 'fireValueChangeEvent = true', 'resultLocation = spacecraft', 'silent = false', and 'startWebServer = true'. The 'spacecraft mass analysis' panel has similar properties. The 'SelectPropertiesConfig' panels show inputs and outputs for the spacecraft model. The bottom pane shows the 'Instance Table' window with a table of instances. An orange arrow points to the 'spacecraft' instance in the table, labeled 'Instance to be executed'. Another orange arrow points to the 'Instance Table' tab, labeled 'Instance Table'.

#	Name	ma	me	mr	margin
1	spacecraft	130 kg	95 kg	15 kg	35 kg
2	propulsion	80 kg	68 kg	7 kg	12 kg
3	tank	44 kg	38 kg	44 kg	6 kg
4	thrustor	29 kg	30 kg	29 kg	-1 kg
5	telecom	35 kg	27 kg	5 kg	8 kg
6	antenna	20 kg	19 kg	20 kg	1 kg
7	amplifier	10 kg	8 kg	10 kg	2 kg

3. Open the Specification window of the *spacecraft mass analysis* Simulation Configuration and specify the **Result Location** property. Its value should be the instance in which you want to save simulation results. Let's say you want to save the results in the same *spacecraft* instance which you intend to execute.
4. In the same window, make sure the **UI** property is not specified because simulation should not require any user input. If the **UI** is specified, it will be ignored.



5. Make sure the executable model with behaviors ends automatically without any user input.



Tip

The easiest way to check whether the executable model ends without user input is to run it in a modeling tool.

6. Save and [add the project to Teamwork Cloud](#) (if the project is local).
7. [Publish the project to Cameo Collaborator for Teamwork Cloud](#).


Now you can open the Cameo Collaborator document and simulate the model on the web.

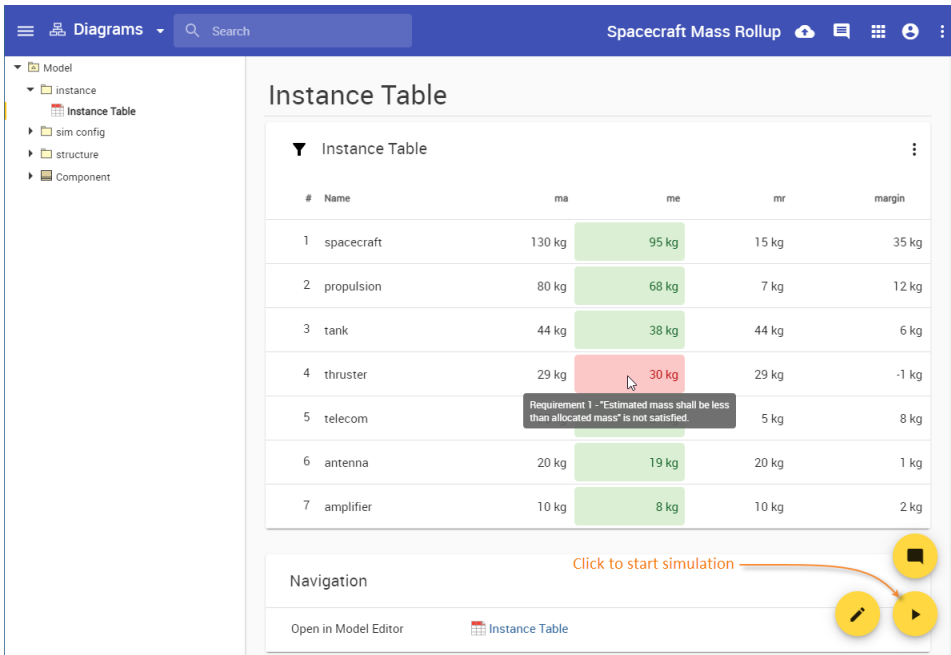
Simulating projects in Cameo Collaborator for Teamwork Cloud

Once you publish your project to Cameo Collaborator for Teamwork Cloud, you can simulate it in a Cameo Collaborator document, as described below.

To simulate a project in Cameo Collaborator for Teamwork Cloud

1. [Open the Cameo Collaborator document](#) published from the project you want to simulate.
2. Navigate to the Instance Table with the instance you intend to simulate.

3. Click  on the bottom right corner of the screen.



The screenshot shows the 'Spacecraft Mass Rollup' application. On the left is a tree view with 'Model' expanded, showing 'instance', 'Instance Table', 'sim config', 'structure', and 'Component'. The main area displays the 'Instance Table' with the following data:


#	Name	ma	me	mr	margin
1	spacecraft	130 kg	95 kg	15 kg	35 kg
2	propulsion	80 kg	68 kg	7 kg	12 kg
3	tank	44 kg	38 kg	44 kg	6 kg
4	thruster	29 kg	30 kg	29 kg	-1 kg
5	telecom	20 kg	19 kg	5 kg	8 kg
6	antenna	20 kg	19 kg	20 kg	1 kg
7	amplifier	10 kg	8 kg	10 kg	2 kg

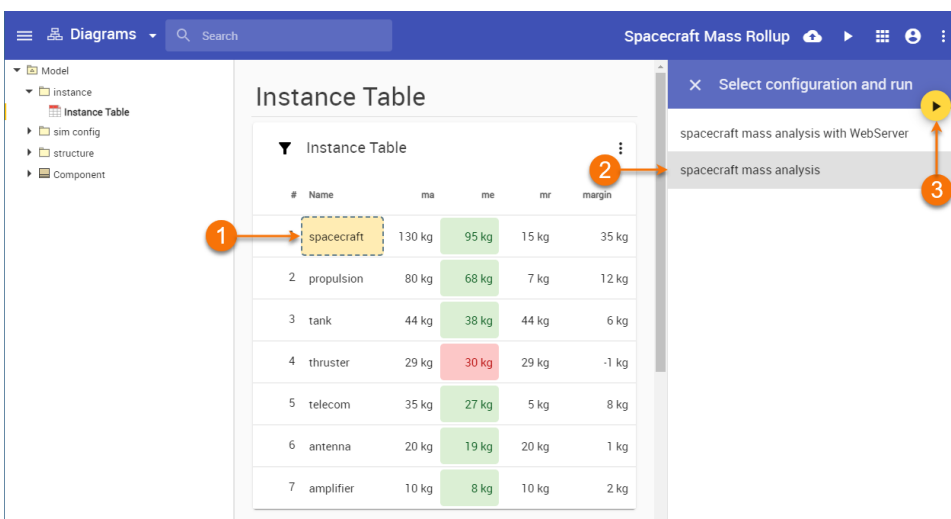
A tooltip for the 'thruster' row (me: 30 kg) reads: 'Requirement 1 - "Estimated mass shall be less than allocated mass" is not satisfied.' Below the table is a 'Navigation' section with 'Open in Model Editor' and 'Instance Table' buttons. On the right, there are three circular icons: a square, a play button, and a stop button. An orange arrow points from the text 'Click to start simulation' to the play button icon.



Requirement or Constraint verification

As you can see in the figure above, the Instance Table cells are highlighted in green or red according to Requirement or Constraint verification results. To see the tooltip with Requirement or Constraint text, hover the mouse pointer over a highlighted cell.

4. In the Instance table, select the instance you want to execute.
5. When the **Select configuration and run** pane opens on the right side of the screen, select the Simulation Configuration you want to run.
6. Click  on the top right corner of the pane.



The screenshot shows the 'Spacecraft Mass Rollup' application with the 'Instance Table' and the 'Select configuration and run' pane open on the right. The 'Instance Table' is the same as in the previous screenshot. The 'Select configuration and run' pane has a title bar with a close button and a play button. It contains two entries: 'spacecraft mass analysis with WebServer' and 'spacecraft mass analysis'. Numbered callouts are present: '1' points to the 'spacecraft' row in the table, '2' points to the 'spacecraft mass analysis' entry in the pane, and '3' points to the play button in the pane's title bar.

7. Wait until the simulation is complete and the simulation results are displayed in the updated document.

**Note**

- When you simulate a project in Cameo Collaborator for Teamwork Cloud, a new project version is created with the following commit message: Simulation WebApp: '<Simulation Config Name>' execution results.
- If the simulation runs longer than 1 min, the right-side panel is closed and you can work with the document as usual while the simulation continues to run in the background. When the simulation is completed, you get a notification with the link to the document location where the simulated instance was selected.