

2024x Version News

Magic Model Analyst

Released on: November 10, 2023

In this release, Magic Model Analyst introduces a number of powerful functionalities. The new product version allows you to run server-side simulation with modified Simulation Configuration properties and even employ a virtual Simulation Configuration without modifying the Teamwork Cloud project. The product also enables live unit conversion to simplify model analysis and reduce the likelihood of errors. Beyond these enhancements, you can customize the Histogram appearance, control the simulation termination logic with the help of a new Auto Terminate property, and benefit from other smaller improvements.

Server-Side Simulation

- [Modifying Simulation Configuration Properties](#)
- [DSLS License Server Support](#)

Live Unit Conversion for Runtime Objects

[Histogram Improvements](#)

Auto-Terminating Simulation Configurations

[Other Improvements](#)

Server-Side Simulation

Modifying Simulation Configuration Properties

Now, you can run server-side simulations with modified properties of a Simulation Configuration without having to change the Teamwork Cloud project. This approach provides a more convenient method to modify simulation properties without a modeling tool. It's even feasible to run a simulation without explicitly specifying a Simulation Configuration; instead, a virtual Simulation Configuration can be employed. This gives you the possibility to quickly choose a different execution target and define its simulation properties.

Request body

application/json

Specify a set of simulation options with values that will override the initial simulation options.
Specify a set of input parameters with values to be provided for the simulation.
Specify a set of output parameters to be obtained after the simulation. If no output parameters are specified, all initialized values are returned.

Example Value | Schema

```
{
  "inputs": {},
  "outputs": [],
  "simconfig": {
    "ALLOW_CONCURRENT_ALLOCATED_ACTIVITIES": true,
    "AUTOMATIC_PARAMETRIC_RECALCULATION": true,
    "AUTO_CONVERT_UNITS": true,
    "AUTO_CREATE_FUML_OBJECT_OF_OUTPUT_PIN": true,
    "AUTO_START": true,
    "AUTO_START_ACTIVE_OPTIONS": true,
    "AUTO_TERMINATE": true,
    "CLOCK_RATIO": 1,
    "CLONE_REFERENCES": true,
    "COMPLETION_EVENTS_AND_TRANSITIONS": true,
    "CONSTRAINT_FAILURE_AS_BREAKPOINT": true,
    "DECIMAL_PLACES": 4,
    "DEFAULT_LANGUAGE": "JavaScript Rhino",
    "DURATION_SIMULATION_MODE": "MIN",
    "ENDTIME": 0,
    "ENGINES_PRIORITY": "[on] fUML Engine\n[on] Interaction Engine\n[on] SCXML Engine",
    "INITIALIZE_NUMERICAL_VALUE": false,
    "INITIALIZE_REFERENCES": true,
    "NUMBER_OF_RUNS": 0,
    "NUMBER_OF_STEPS": 0,
    "PASS_CALLER_CONTEXT": true,
    "RECORD_TIMESTAMP": false,
    "REMEMBER_FAILURE_STATUS": true,
    "RESULT_LOCATION": "Results",
```

The REST API request body with the 'simconfig' parameter which allows specifying simulation properties.

```
# Import **simconfig** for autocompletion
from pyST import simconfig as sc
```

```
simOptions = {
  "simconfig":
    {
      sc.AUTO_START: False,
      sc.
    }
}
```

i	ALLOW_CONCURRENT_ALLOCATED_ACTIVITIES	instance
i	AUTO_CONVERT_UNITS	instance
i	AUTO_CREATE_FUML_OBJECT_OF_OUTPUT_PIN	instance
i	AUTO_START	instance
i	AUTO_START_ACTIVE_OPTIONS	instance
i	AUTO_TERMINATE	instance
i	AUTOMATIC_PARAMETRIC_RECALCULATION	instance
i	CAPTURE_TIMESTAMP	instance
i	CLOCK_RATIO	instance
i	CLONE_REFERENCES	instance

Enabling the autocompletion option for the simulation using Jupyter Notebook.

[Learn more about modifying Simulation Configuration properties using REST API >>](#)

[Learn more about modifying Simulation Configuration properties using Jupyter Notebook >>](#)

DSLS Licensing Server Support

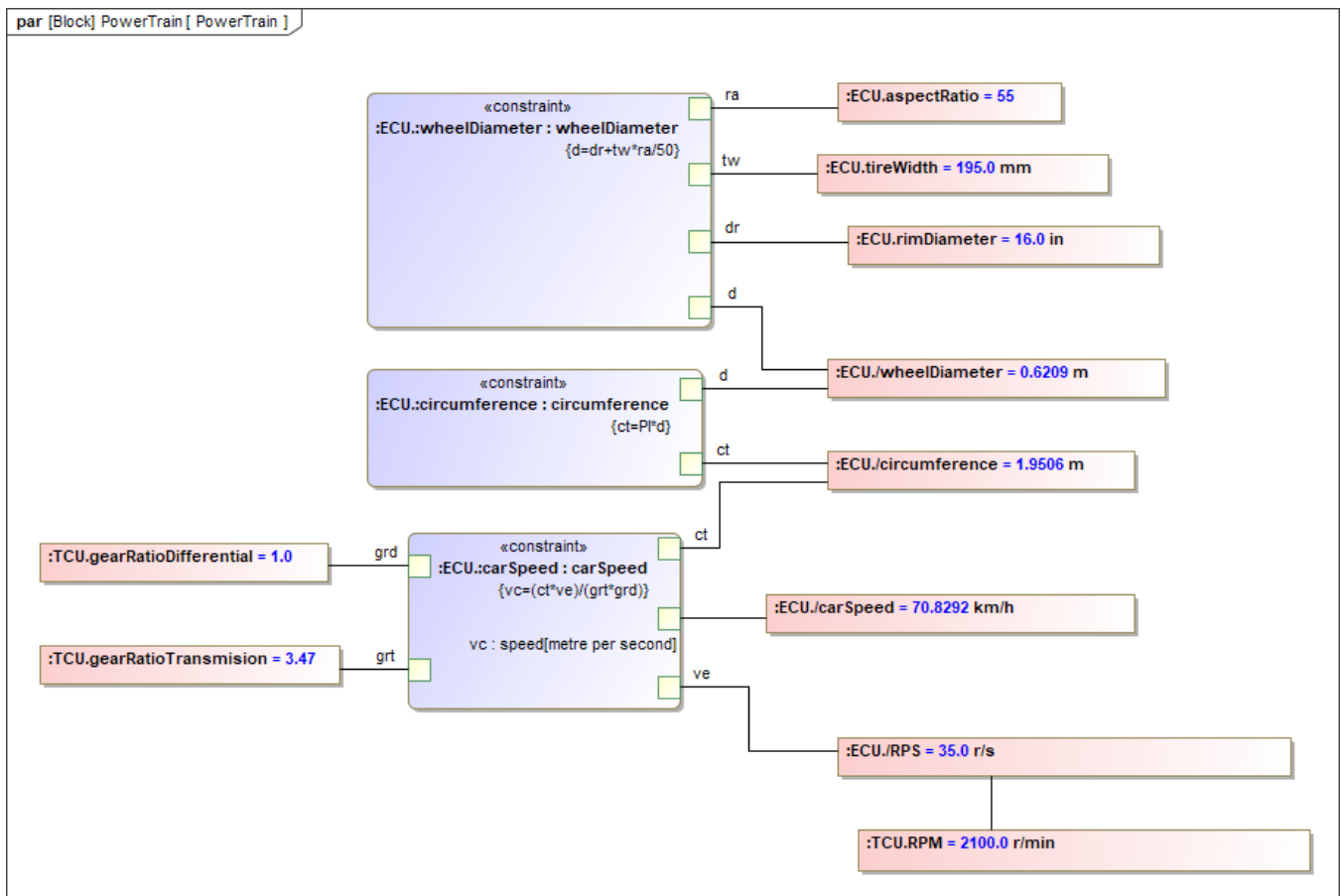
From version 2024x, in addition to FlexNet, server-side simulation supports the DSLS licensing server.

[Learn more about DSLS licensing >>](#)

[Back to top](#)

Live Unit Conversion for Runtime Objects

Magic Model Analyst 2024x introduces live unit conversion for simulation runtime objects. When Value Properties are connected using a Binding Connector, their runtime values will be automatically converted if they have compatible Value Types (like grams and kilograms). This feature simplifies model analysis, especially when combining elements from various sources, and reduces the possibility of errors.



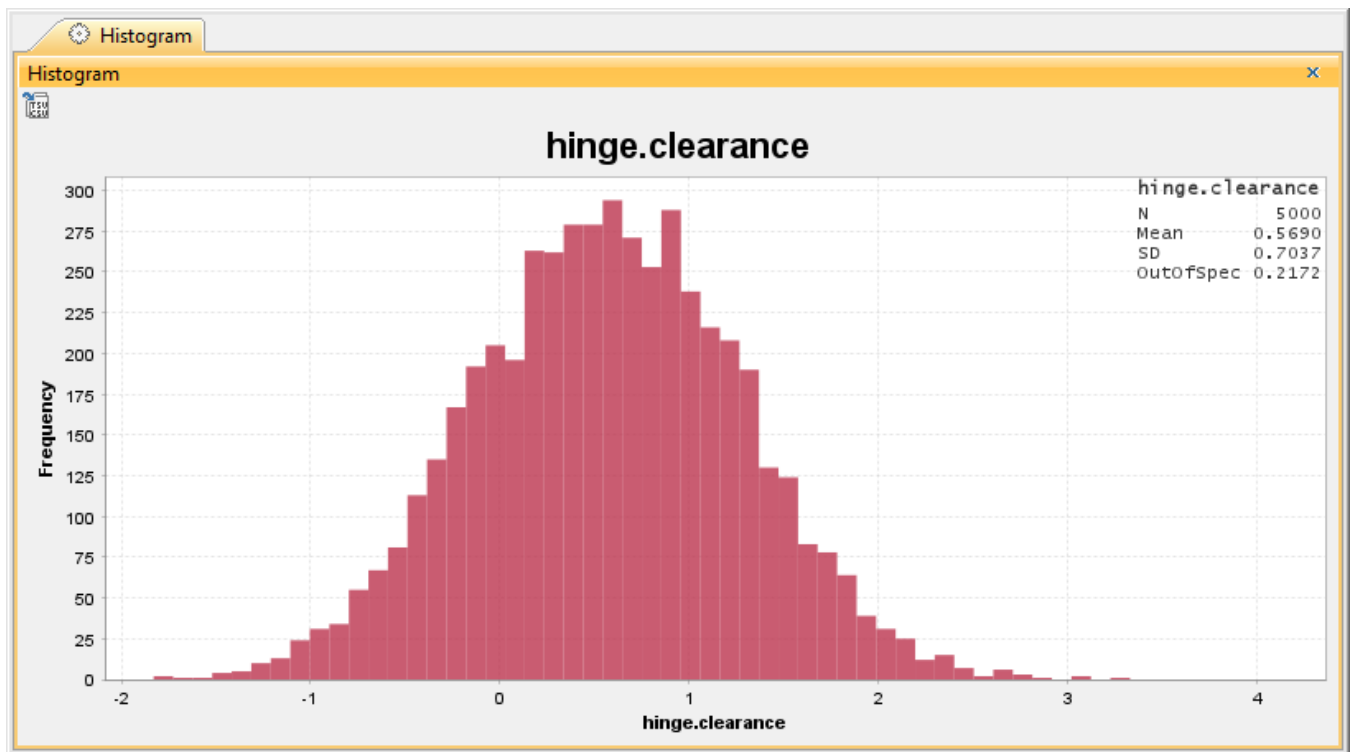
A Parametric Diagram with runtime values of Value Properties being automatically converted according to their Value Types during simulation.

[Learn more about unit conversion for runtime objects >>](#)

[Back to top](#)

Histogram Improvements

We're happy to present a new functionality that will allow you to tailor the Histogram appearance. With this improvement, you can define a custom number of data bins in which the results will be distributed and achieve the desired Histogram shape and precision. Furthermore, the edge of the last data bin will now match the maximum value of the value array, ensuring accurate representation.

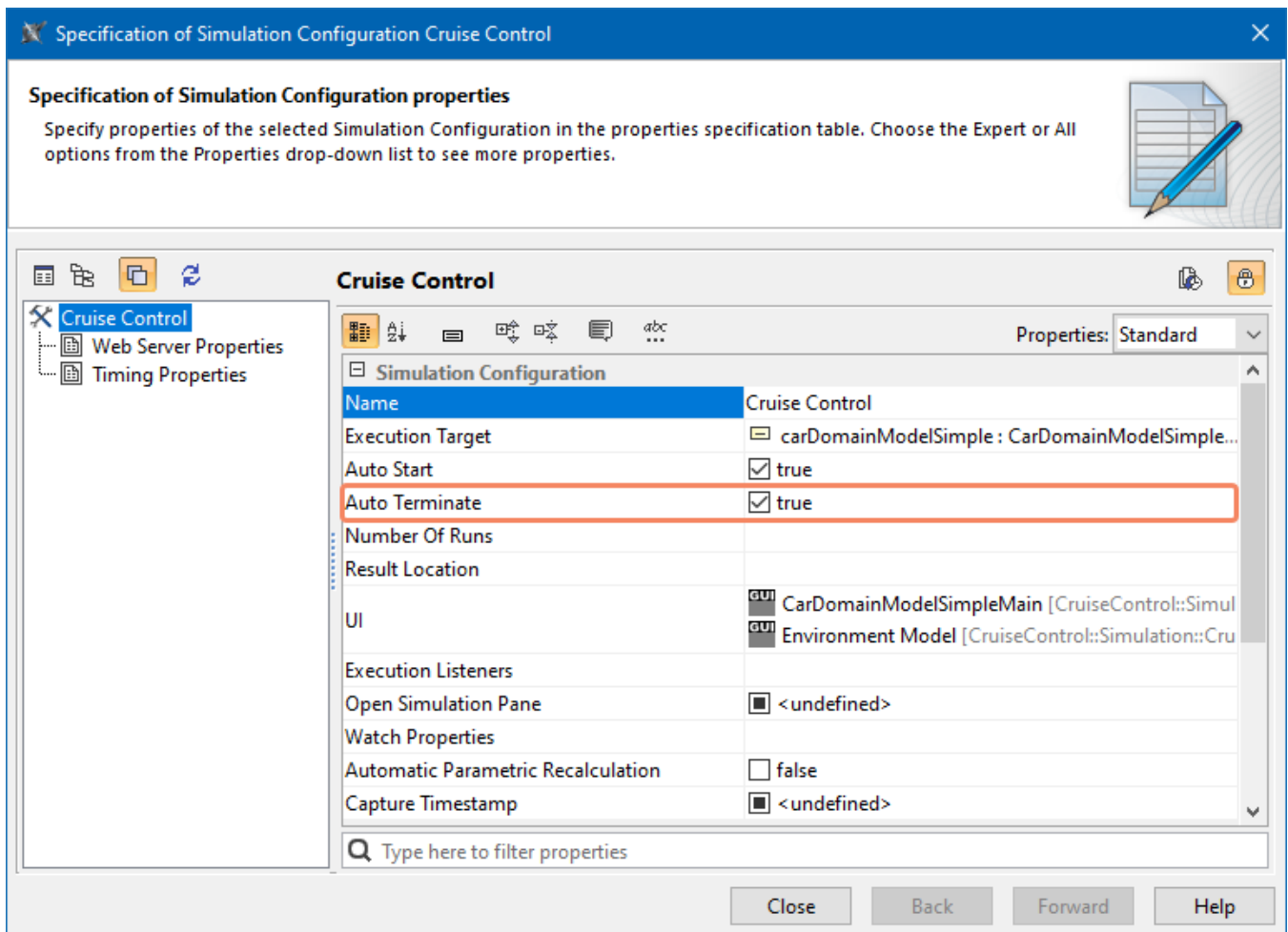


A sample Histogram with the custom number of data bins. Here, the **Number Of Bins** property is set to 50.

[Learn more about working with Histograms >>](#)

Auto-Terminating Simulation Configurations

Simulation Configurations now have a new **Auto Terminate** property, allowing you to manage the simulation termination logic. If you set this property to *true*, the simulation is terminated when it completes or after the initialization phase if it does not start automatically. When the property is set to *false*, the simulation continues to run without termination, hanging at the end or after the initialization phase if it does not start automatically.



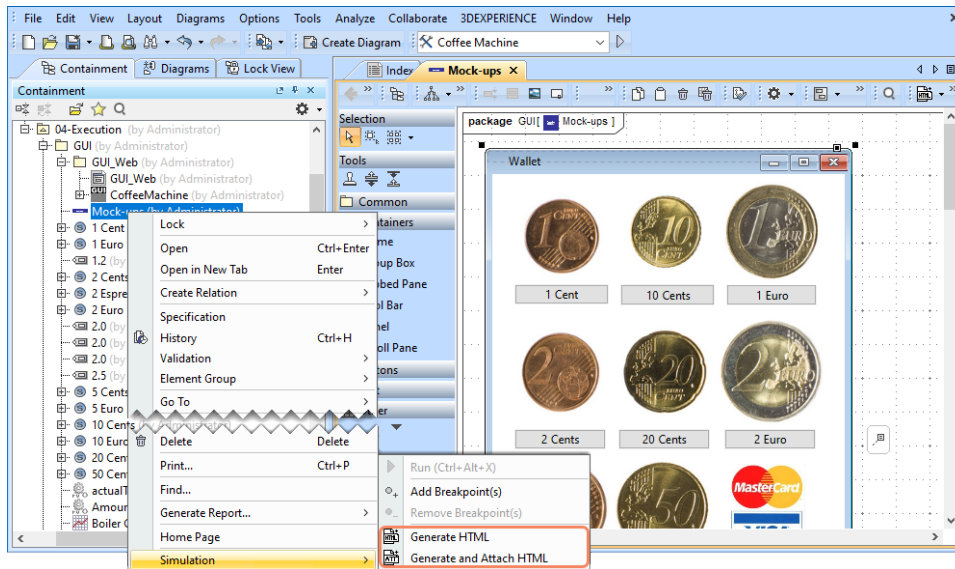
A new **Auto Terminate** property of a Simulation Configuration.

[Learn more about Simulation Configuration properties >>](#)

[Back to top](#)

Other Improvements

- Generating HTML has become easier, thanks to the availability of the **Generate HTML** and **Generate and Attach HTML** actions in new, convenient locations. These actions can now be accessed from the context menu of a User Interface Modeling Diagram or a UI element in the Containment tree. Additionally, you can invoke the actions by right-clicking a property symbol, provided its type is a Widget.



- The simulation now considers the **Decimal Places** project option.
- The *Parametric Execution Profile* has been eliminated. The constraints for parametric execution have been moved to the *Simulation Profile*.

[Back to top](#)

Documentation

- [Magic Model Analyst 2024x](#)

News of earlier versions

- [Magic Model Analyst 2022x Refresh2](#)
- [Magic Model Analyst 2022x Refresh1](#)
- [Magic Model Analyst 2022x](#)
- [Magic Model Analyst 2021x Refresh2](#)
- [Magic Model Analyst 2021x Refresh1](#)
- [Magic Model Analyst 2021x](#)