

Creating and registering a new SimulationExecutionListener

A *SimulationExecutionListener* Class is a listener for Events that will be activated during execution of a model. All available Events are listed below.

- An execution is started.
- An element is activated.
- An element is deactivated.
- A signal event is triggered.
- An operation is called.
- A behavior is called.
- A runtime object is created.
- An execution is terminated.

```
public class SimulationExecutionListener {
    void executionStarted(SimulationExecution execution);
    void elementActivated(Element element, Collection<?> values);
    void elementDeactivated(Element element, Collection<?> values);
    void eventTriggered(SignalInstance signal);
    void operationCalled(Operation operation, ParameterValueList pvl, Object_ caller, Object_
target, boolean isSynchronous);
    void behaviorCalled(Behavior behavior, ParameterValueList pvl, Object_ caller, Object_ target,
boolean isSynchronous);
    void objectCreated(Object_ sender, Object_ object);
    void valueChange(StructuredValue context, FeatureValue feature, Object oldValue, Object
newValue);
    void executionTerminated(SimulationExecution execution);
    void configLoaded(Element config);
    void busyStatusChange(StructuredValue context, Object oldValue, Object newValue);
}
```

Once you have created the execution listener, you can register it to a list of global execution listeners.

To register a new execution listener to a global list, type the following code

```
SimulationManager.registerSimulationExecutionListener(listener); //listener is an instance of
SimulationExecutionListener.
```

All registered listeners will be cleared and removed automatically when the execution is terminated.



Note

ExecutionAdapter and *ExecutionListener* are not valid in Magic Model Analyst 19.0 and in later versions.

All open APIs below are used by the Simulation Dashboard plugin and can be added for particular purposes.

Open API	Function
beforeObjectDestroyed(Object_ object)	Works with an object-destroying Listener when added into SimulationExecutionListener.
objectStateActivated(StructuredValue context, State newState)	Works with a State activation Listener when added into SimulationExecutionListener.
SimulationExecutionListener.contextInitialized(SimulationExecution execution)	Gets an Event when objects have been initialized but not started the execution yet.

SimulationHelper.findFeatureValue(Object_ runtimeContext, List<Property> propertyPath, Property target) : List<FeatureValue>	Gets featureValue objects that match the given nested property path.
SimulationHelper.getAvailableSignals(StructuredValue target, ExecutionEngine engine)	Retrieves available Signals from the specified structured value.
SimulationHelper.getConfigElement(SimulationExecution execution)	Gets a Config element.
SimulationHelper.isFeatureValueInvalid(FeatureValue featureValue, int index)	Checks the validity of FeatureValue.
SimulationManager.getContext(SimulationSession session) : Object_	Gets the execution context.
SimulationManager.registerSimulationExecutionListener (SimulationExecutionListener listener, SimulationExecution execution)	Registers SimulationExecutionListener dynamically during the execution.
SimulationManager.unregisterSimulationExecutionListener (SimulationExecutionListener listener)	Unregisters SimulationExecutionListener.
SimulationManager.unregisterSimulationExecutionListener (SimulationExecutionListener listener, SimulationExecution execution)	