## RuleMSX Documentation ExecutionAgent

When the application has completed the configuration of all the main elements (Rules, RuleConditions, Evaluators, Action, Executors, etc.), one or more rulesets can be executed.  
  
This involves taking a DataSet and asking the RuleSet to be executed against that DataSet: -  
  
 myRuleSet.Execute(dataSet\_1);  
  
If this is the first time this RuleSet has been executed, a new ExecutionAgent will be created for the RuleSet. If the RuleSet already has an ExecutionAgent, it will be reused. The specified DataSet is then passed to the RuleSet's ExecutionAgent: -  
  
 executionAgent = new ExecutionAgent(myRuleSet, dataSet\_1);  
  
or  
  
 executionAgent.AddDataSet(dataSet\_1);  
  
Each ExecutionAgent has a DataSetQueue. Adding a DataSet to an ExecutionAgent simply adds the DataSet reference into the DataSetQueue. This is used to ensure that new DataSets are only ingested at the correct time, and not at the mid-point of a cycle.

A new ExecutionAgent will create a new internal thread that will operate a WorkingSetAgent. This WorkingSetAgent is the main loop that controls execution of the rules and actions for a RuleSet, and it continues to run until stopped by an external request (a call to the stop() method).   
  
Each cycle of the WorkingSetAgent begins with ingesting any DataSets in the ExecutionAgent's DataSetQueue. This is the process of creating a WorkingRule for each Rule in the RuleSet and the specified DataSet.