Esper JMX

Runtime management for the Esper CEP engine

Esper JMX
What it is

- Server building blocks
  - Server side JMX enablement: Esper server plugin behavior, single jar file
  - Exposes CEP Engine, Statements, Named Windows, Listeners and runtime metrics as JMX managed objects for standardized remote access
- Java Management Extensions (JMX)
  - A set of industry defined standards and API (Java Specification)
  - To enable runtime management of Java based middleware from external tools – similar to SNMP
- No proprietary vendor lockin
  - No code change in your Esper applications
  - The API is fully standardized if you access remotely to managed objects

    import javax.management.;*
  - Esper JMX is JMX / JSR-3 / JSR-160 compliant
- Very large set of knowledge sources available

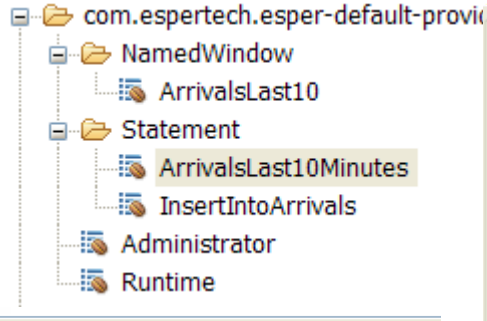
Esper JMX
What it does

- Exposes Esper key components as JMX managed objects
  - Get an exact view on the event processing logic deployed
  - Enables secured, standardized remote access
- Ensure interoperability with existing tools and infrastructure

Concept	Managed Object	Capabilities
Engine instance	*AdministratorMBean* *RuntimeMBean*	Add/remove/start/stop statements Stream/Statement dependency Runtime performance metrics Perform ad-hoc queries
Statements	*StatementMBean*	EPL Statement details Add/remove listeners
Named Windows	*NamedWindowMBean*	Window details
Listeners	*ListenerMBean*	Manage listeners

Sample Esper JMX use cases
Runtime management for the Esper CEP server

- CEP Engine discovery
- Deployment automation
- Runtime management

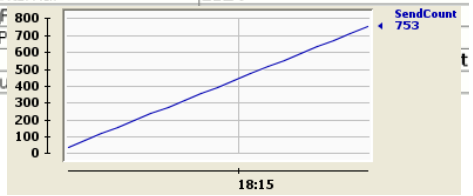


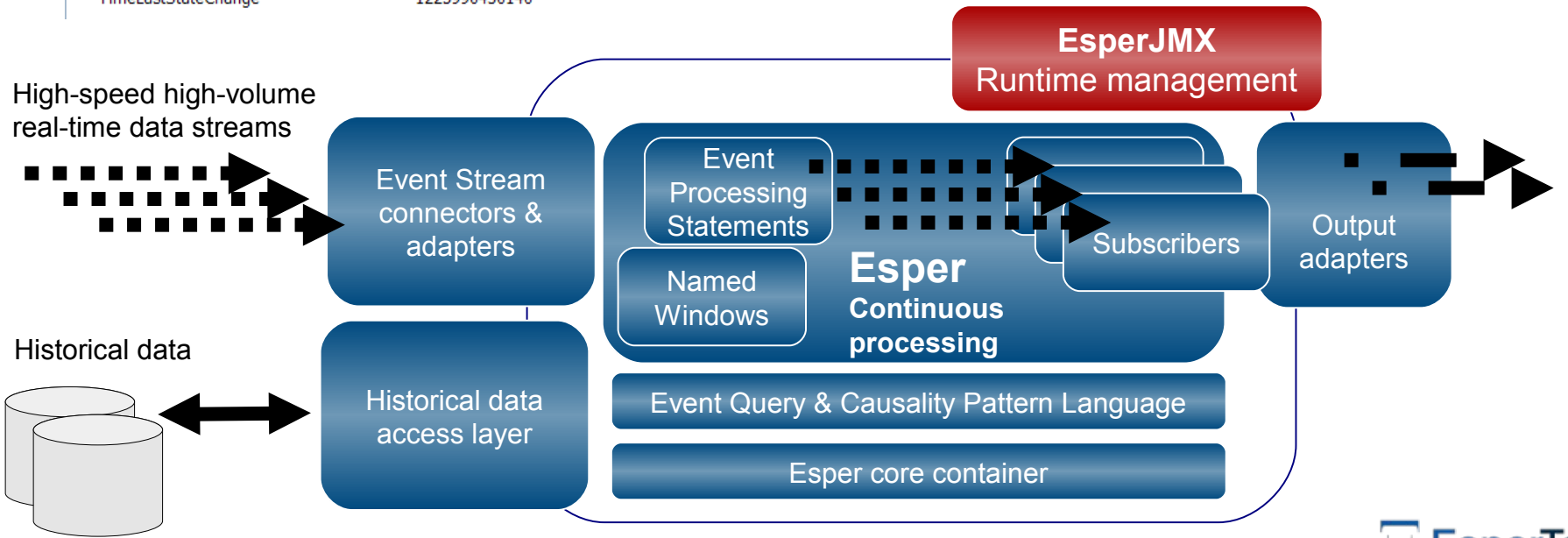
Attributes | Operations | Notifications

Attribute	Value
EventType	String[4][]
Listeners	javax.management.ObjectName[0]
Name	ArrivalsLast10Minutes
Pattern	false
State	STARTED
Subscriber	null
Text	create window ArrivalsLast10.win:time(10 min) as select * from TrainArrivesEvent
TimeLastStateChange	1225990430140

Attribute values

Name	Value
ElapsedSecondsSinceLastReset	103
EmittedAverageThroughputPerSecond	0
EmittedReceivedPercentage	0
EvaluatedAvgPerSecond	19
FurthestTimeHandle	1224386892031
NamedWindowDescriptors	[[Ljava.lang.Object;@e99ce5
NamedWindowNames	java.lang.String[1]
NumEventsEmitted	0
NumEventsEvaluated	2048
NumEventsRoutedExternal	0
NumEventsRoutedInternal	1024
RoutedExternalAvgF	
RoutedInternalAvgP	
RuntimeStats	
ScheduleHandleCou	





EsperTech

Esper JMX
Configuration

- Full control on ports, security, connectors, managed objects etc
- Esper (server) must add Esper JMX plugin
  - With XML configuration

```
<esper-configuration>
  <plugin-loader name="EsperJMX"
        class-name="com.espertech.esper.jmx.client.EsperJMXPlugin">
</plugin-loader>
</esper-configuration>
```

  - With code

```
JMXEndpointConfiguration jmxConfig = new JMXEndpointConfiguration();
ConnectorConfigPlatform platformConfig = new ConnectorConfigPlatform();
jmxConfig.setConnectorConfiguration(platformConfig);
JMXEndpoint endpoint = new JMXEndpoint(engine, jmxConfig);
endpoint.start();
```

Thank you

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