Yammer metrics tutorial with JMX to gather metrics

Posted on October 29, 2014 by Arulkumaran Kumaraswamipillai — No Comments ↓

Note: Yammer metrics has now moved to **metrics-core**.

from com.yammer.metrics:metrics-core:2.2.0 (NOT supported anymore) **to** com.codahale.metrics:metrics-core:3.0.*

from com.codahale.metrics:metrics-core:3.0.* **to** io.dropwizard.metrics:metrics-core:3.1.* since 2014.

When you are running long term applications like web applications, batch jobs, or stand-alone status update jobs, it is good to know some statistics about them, like number of requests served or request duration. You can also gather more generic information like the state of your internal

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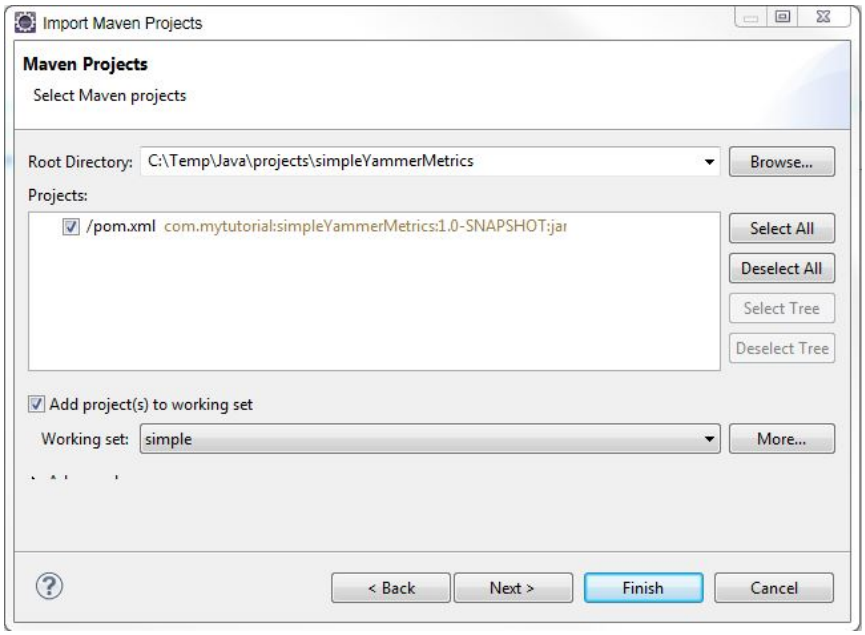
collections, how many times some portion of code is being executed, or health checks like database availability, or any kind of connection to an external system.

All this kind of instrumentation can be achieved by using native JMX or using a modular project like yammer Metrics. Metrics provides a powerful way to measure the behaviour of your critical components and reporting them to a variety of systems like, JConsole, System Console, Ganglia, Graphite, CSV, or making them available through a web services as JSON data.

Step 1: Create a new Maven based Java project.

```
1 mvn archetype:generate -DgroupId=com.mytutorial -
```

Step 2: Import it into eclipse via File –> Import –> Maven –> “Existing Maven Projects”



Step 3: It should look like as shown below after completing the steps below.

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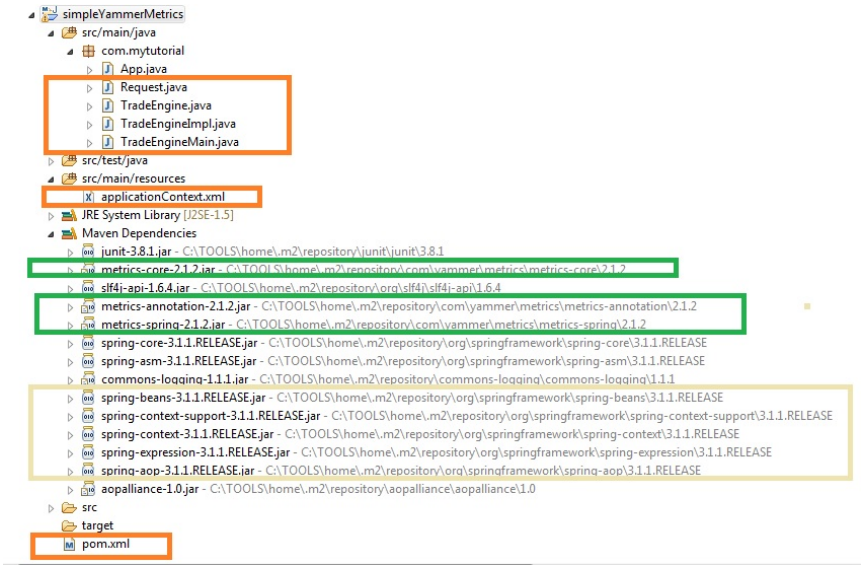


Step 4: Update the pom.xml file as shown below

```
<project xmlns="http://maven.apache.org/POM/4.0.
  xsi:schemaLocation="http://maven.apache.org/PO
  <modelVersion>4.0.0</modelVersion>
  <groupId>com.mytutorial</groupId>
  <artifactId>simpleYammerMetrics</artifactId>
  <packaging>jar</packaging>
  <version>1.0-SNAPSHOT</version>
  <name>simpleYammerMetrics</name>
  <url>http://maven.apache.org</url>
  <dependencies>
    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>3.8.1</version>
      <scope>test</scope>
    </dependency>

    <!-- Yammer metrics dependencies-->
    <dependency>
      <groupId>com.yammer.metrics</groupId>
      <artifactId>metrics-core</artifactId>
      <version>2.1.2</version>
    </dependency>
    <dependency>
      <groupId>com.yammer.metrics</groupId>
      <artifactId>metrics-annotation</artifactId
      <version>2.1.2</version>
    </dependency>

    <dependency>
      <groupId>com.yammer.metrics</groupId>
      <artifactId>metrics-spring</artifactId>
      <version>2.1.2</version>
    </dependency>


  </dependencies>
</project>
```


- Memory Managemen
- Performance (13)
- QoS (8)
- Scalability (4)
- SDLC (6)
- Security (13)
- Transaction Managen

Step 5: The dummy Request class.

```
1 package com.mytutorial;
2
3 public class Request {
4
5 }
```

Step 6: The dummy trading engine interface.

```
1 package com.mytutorial;
2
3 public interface TradeEngine {
4
5     abstract void execute(Request... requests);
6 }
```

Step 7: The dummy trading engine implementation with yammer annotations to gather metrics.

```
1  package com.mytutorial;
2
3  import java.util.concurrent.atomic.AtomicInteger
4
5  import com.yammer.metrics.annotation.ExceptionMe
6  import com.yammer.metrics.annotation.Gauge;
7  import com.yammer.metrics.annotation.Timed;
8
9  public class TradeEngineImpl implements TradeEng
10
11   @Gauge
12   private final AtomicInteger currentRequests =
13
14
15   @Timed
16   @ExceptionMetered
17   public void execute(Request... requests) {
18     executingRequests(requests.length);
19     try {
20       Thread.sleep(2000); //just to emulate some
21     } catch (InterruptedException e) {
22       // TODO Auto-generated catch block
23       e.printStackTrace();
24     }
25   }
26
27   private void executingRequests(int count) {
28     this.currentRequests.addAndGet(count);
29   }
30
31
32 }
```

Step 8: The spring context file to wire up Yammer and Java class defined above.

src/amin/resources/applicationContext.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/sch
    xmlns:aop="http://www.springframework.org/sc
    xmlns:metrics="http://www.yammer.com/schema/
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
    xsi:schemaLocation="http://www.springframewo
                        http://www.springframewo
                        http://www.yammer.com/sc



    <metrics:metrics-registry id="trade-metrics"
    <metrics:health-check-registry id="trade-hea
    <metrics:annotation-driven metrics-registry=
    <metrics:jmx-reporter metrics-registry="trad
    <bean id="tradeEngine" class="com.mytutorial


</beans>

```

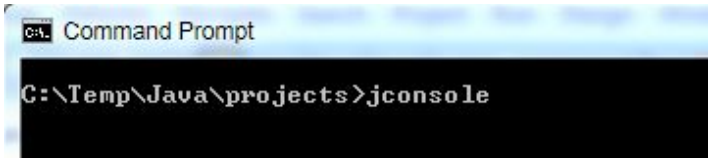
Step 8: The main class that starts the trading engine and fires requests every 5 seconds in a continuos loop.

```
package com.mytutorial;

import org.springframework.context.ApplicationCo
import org.springframework.context.support.Class

public class TradeEngineMain {

  public static void main(String[] args) {

    ApplicationContext context = new ClassPathXm
        new String[] { "applicationContext.xml"

    TradeEngine tradeEngine = (TradeEngine) cont

    try {
      while (true) {
        Request[] requests = new Request[2];
        requests[0] = new Request();
        requests[1] = new Request();
        tradeEngine.execute(requests);

        Thread.sleep(5000);
      }
    } catch (InterruptedException e) {
      e.printStackTrace();
    }
```

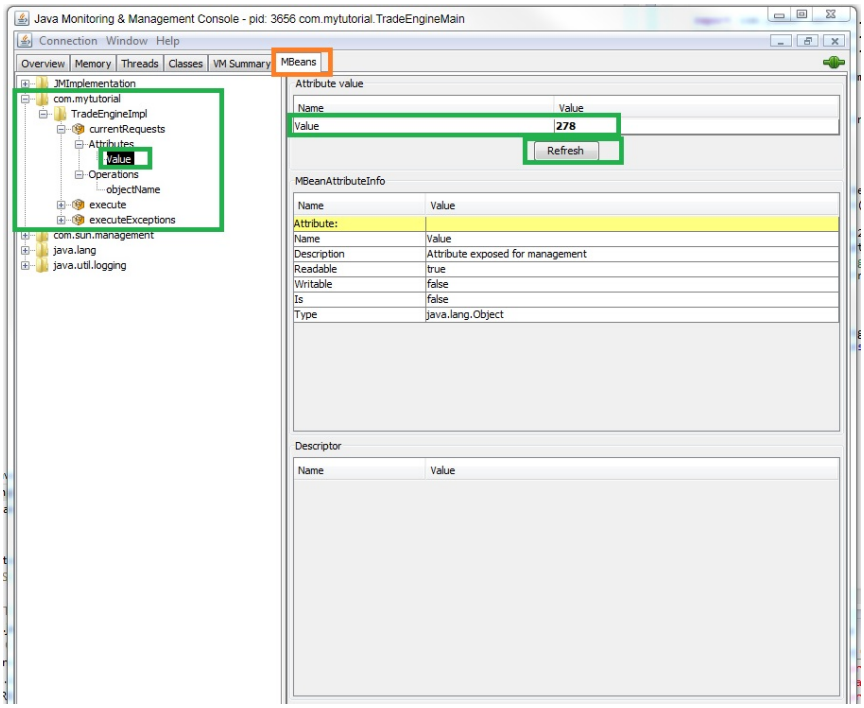
```
27
28    }
29
30 }
```

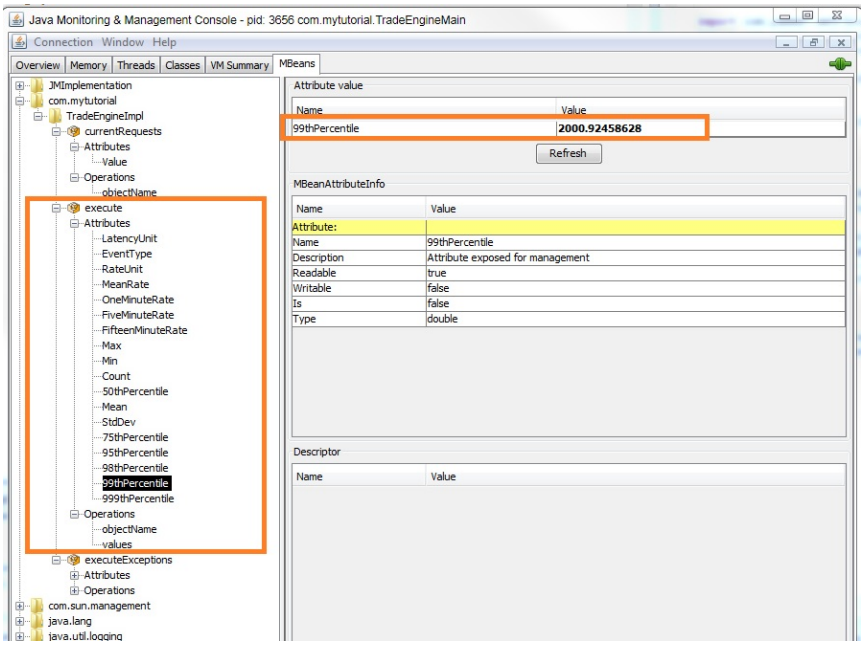
Step 9: Run the "**TradeEngineMain**", which starts the trading engine in a continous loop.

Step 10: Whilst the engine is running, from a DOS prompt invoke the JMX window by typing "jconsole". You can type "jps" to find the process id of the trading engine that is running.



Step 11: You can see the metrics in the jconsole JMX window as shown below. Yammer supports more outputs including RESTful web service to report stats.





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