Monitoring Kafka with Prometheus

WeCanDoNow HandsOn Lab - by Saravanan Sundaramoorthy

Download JMX Exporter

A process for exposing JMX Beans via HTTP for Prometheus consumption

```
wget https://www.dropbox.com/s/k9mfl4qs6hakprv/jmx_prometheus_javaagent-0.11.0.jar
```

Download Example Kafka Config

https://github.com/prometheus/jmx_exporter/blob/master/example_configs/kafka-2_0_0.yml

```
wget https://www.dropbox.com/s/idmqmrlwamlxpu0/kafka-2_0_0.yml
```

Start ZooKeeper

```
cd ~/kafka
bin/zookeeper-server-start.sh config/zookeeper.properties

echo "ruok" | nc localhost 2181 ; echo
```

```
imok
```

Set `KAFKA_OPTS`

```
export KAFKA_OPTS=-javaagent:/home/admatic/jmx_prometheus_javaagent-0.11.0.jar=8080:/home/admatic/kafka-2_0_0.yml
```

Start Kafka

```
cd ~/kafka
bin/kafka-server-start.sh -daemon config/server.properties
```

```
netstat -pant | grep ":9092"
```

```
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
tcp6       0      0 :::9092                 :::*                    LISTEN
2858/java
tcp6       0      0 127.0.0.1:36788         127.0.1.1:9092
ESTABLISHED 2858/java
tcp6       0      0 127.0.1.1:9092          127.0.0.1:36788
ESTABLISHED 2858/java
```

Verify JMX Exporter

```
curl http://localhost:8080/metrics | grep kafka
```

```
...
...
...
# HELP kafka_controller_controllereventmanager_eventqueuetimems_count
Attribute exposed for management
(kafka.controller<type=ControllerEventManager, name=EventQueueTimeMs>
<>Count)
# TYPE kafka_controller_controllereventmanager_eventqueuetimems_count
counter
kafka_controller_controllereventmanager_eventqueuetimems_count 6.0
# HELP kafka_log_log_logstartoffset Attribute exposed for management
(kafka.log<type=Log, name=LogStartOffset, topic=ack-test-topic,
partition=3><>Value)
# TYPE kafka_log_log_logstartoffset gauge
kafka_log_log_logstartoffset{topic="ack-test-topic",partition="3",} 0.0
kafka_log_log_logstartoffset{topic="ack-test-topic",partition="1",} 0.0
kafka_log_log_logstartoffset{topic="ack-test-topic",partition="4",} 0.0
kafka_log_log_logstartoffset{topic="ack-test-topic",partition="0",} 0.0
kafka_log_log_logstartoffset{topic="ack-test-topic",partition="2",} 0.0
# HELP kafka_server_brokertopicmetrics_bytesin_total Attribute exposed for
management (kafka.server<type=BrokerTopicMetrics, name=BytesInPerSec>
<>Count)
# TYPE kafka_server_brokertopicmetrics_bytesin_total counter
kafka_server_brokertopicmetrics_bytesin_total 0.0
# HELP kafka_controller_controllerchannelmanager_totalqueuesize Attribute
exposed for management (kafka.controller<type=ControllerChannelManager,
name=TotalQueueSize><>Value)
# TYPE kafka_controller_controllerchannelmanager_totalqueuesize gauge
kafka_controller_controllerchannelmanager_totalqueuesize 0.0
# HELP
kafka_controller_controllerstats_manualleaderbalancerateandtimems_count
```

```
Attribute exposed for management (kafka.controller<type=ControllerStats, name=ManualLeaderBalanceRateAndTimeMs><>Count)
# TYPE kafka_controller_controllerstats_manualleaderbalancerateandtimems_count counter
kafka_controller_controllerstats_manualleaderbalancerateandtimems_count 1.0
# HELP kafka_server_brokertopicmetrics_fetchmessageconversions_total Attribute exposed for management (kafka.server<type=BrokerTopicMetrics, name=FetchMessageConversionsPerSec><>Count)
# TYPE kafka_server_brokertopicmetrics_fetchmessageconversions_total counter
kafka_server_brokertopicmetrics_fetchmessageconversions_total 0.0
```

Set-up Prometheus

```
wget https://www.dropbox.com/s/6bp849mt0j3bvn0/prometheus-2.7.2.linux-amd64.tar.gz
tar -xzf prometheus-2.7.2.linux-amd64.tar.gz
cd prometheus-2.7.2.linux-amd64/
```

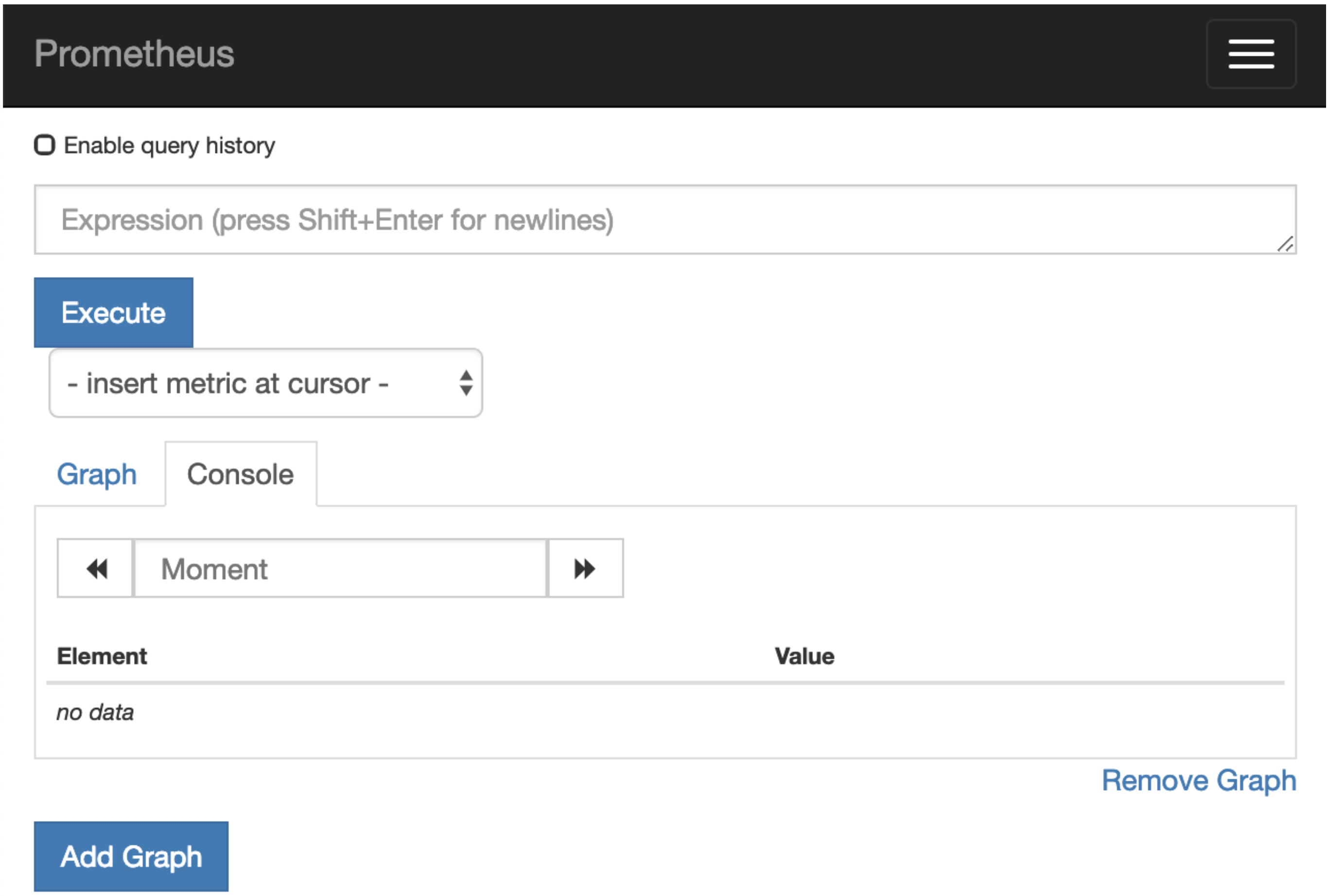
```
cat << EOF > prometheus.yml
global:
  scrape_interval: 10s # Set the scrape interval to every 10 seconds. Default is every 1 minute.
  evaluation_interval: 10s # Evaluate rules every 10 seconds. The default is every 1 minute.

scrape_configs:
  - job_name: "kafka"
    static_configs:
      - targets: ["localhost:8080"]
EOF
```

```
./prometheus
```

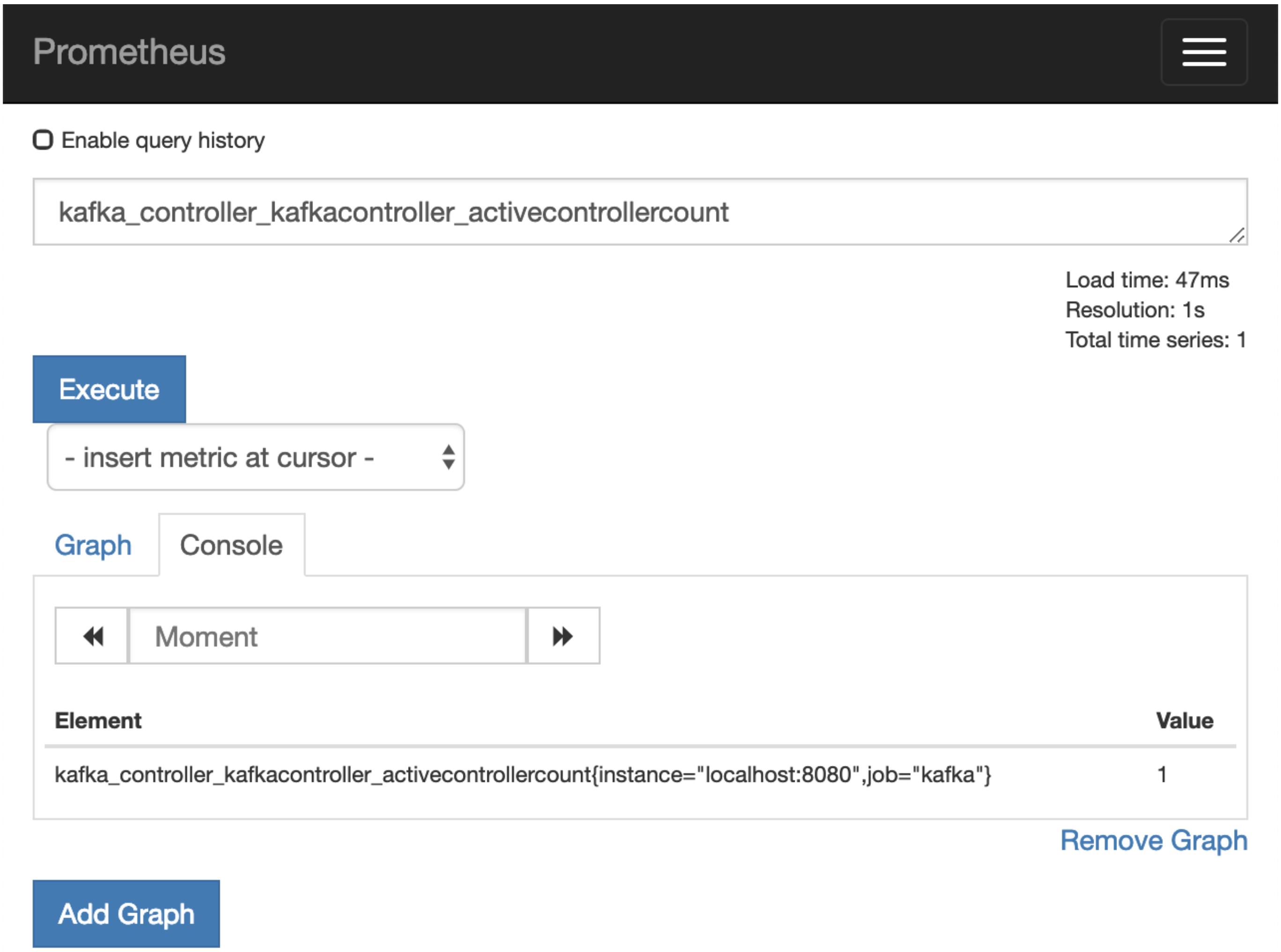
```
curl localhost:9090
```

```
<a href="/graph">Found</a>.
```

Go to http://localhost:9090



Element	Value
no data	

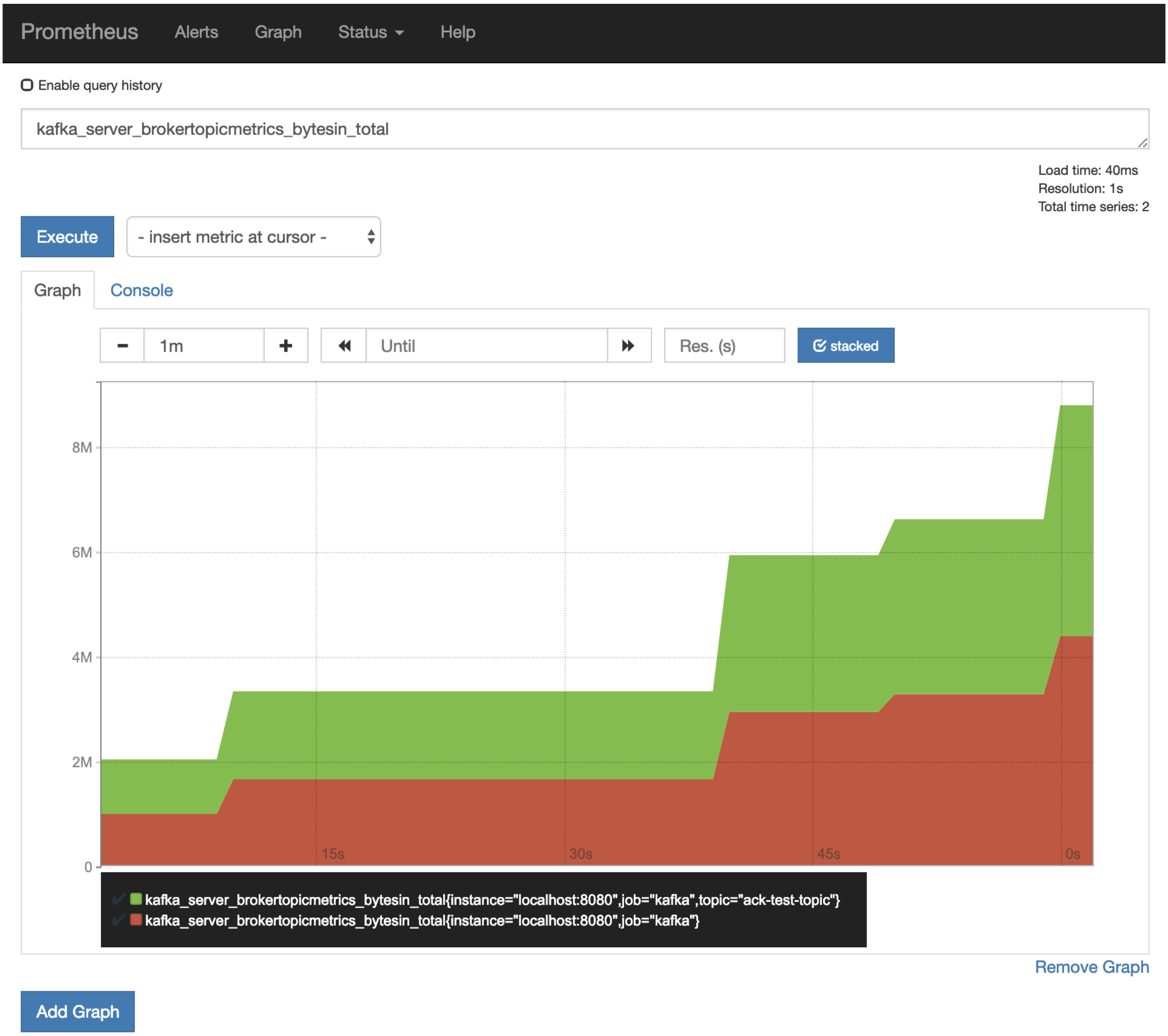


```
kafka_controller_kafkacontroller_activecontrollercount
```

Load time: 47ms
Resolution: 1s
Total time series: 1

Element	Value
kafka_controller_kafkacontroller_activecontrollercount{instance="localhost:8080",job="kafka"}	1

Run stress test - or run a producr to write messages continuously



```
kafka_server_brokertopicmetrics_bytesin_total
```

Load time: 40ms
Resolution: 1s
Total time series: 2

🟩 kafka_server_brokertopicmetrics_bytesin_total{instance="localhost:8080",job="kafka",topic="ack-test-topic"}
🟥 kafka_server_brokertopicmetrics_bytesin_total{instance="localhost:8080",job="kafka"}