Jprofiling commands

Wednesday, May 8, 2019 5:32 AM

Step 1 : make sure you're either user: tomcat or user: root (the user must be the same one by which the service was started)

Step 2: jcmd <PID of the task you want to profile> JFR.start duration=40s filename=frontend_QA.jfr
It will give this msg: 14358:
Java Flight Recorder not enabled.

Use VM.unlock_commercial_features to enable.

Step 3: jcmd 14358 VM.unlock_commercial_features
It will give this msg: 14358:
Commercial Features now unlocked.
Status of individual features:
Java Flight Recorder has not been used.
Resource Management is disabled.
Current Memory Restriction: None (0)

Step 4: jcmd 14358 JFR.start duration=40s filename=frontend_QA.jfr

If you have any issue you can refer this document
https://docs.oracle.com/javacomponents/jmc-5-4/jfr-runtime-guide/comline.htm#JFRUH188

For Object Instance tracking (eg)
jcmd 22116 JFR.start settings=/tmp/Heap.jfc duration=2400s filename=/tmp/psacstgap8002_12g.jfr

On Server Profiling

Add this line in the solr.in.sh file

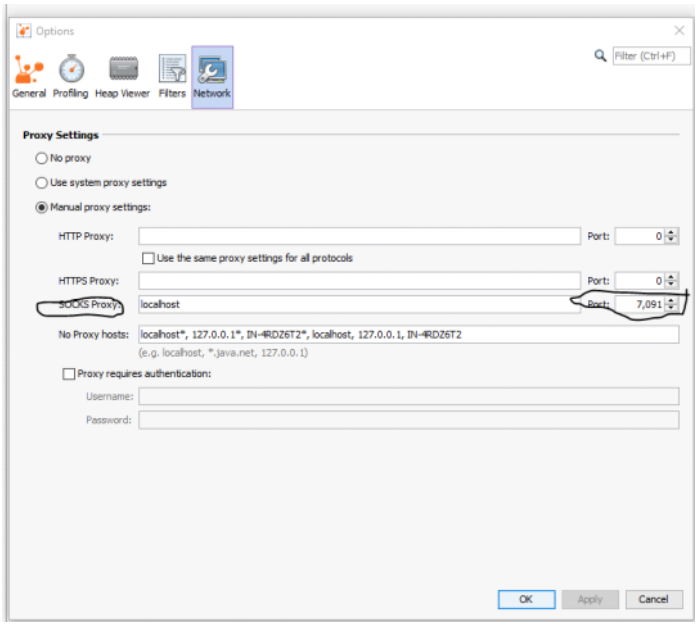
export SOLR_OPTS="-Dcom.sun.management.jmxremote.port=7091 -Dcom.sun.management.jmxremote.rmi.port=7091 -Dcom.sun.management.jmxremote.authenticate=false -Dcom.sun.management.jmxremote.ssl=false -Djava.rmi.server.hostname=psacqaap8001 $SOLR_OPTS"

goto local machine git bash type this command

ssh -v -D 7091 psacqaap8001

Goto jvisualvm
Tools-> Options->network

In Proxy setting
Goto SOCKS Proxy write localhost in the tab along with rmi port
Like this



Goto vsualvm

Right click-> add remote host

The moment you add the host you will see the logs starts runnig in the git bash

Right click -> add jmx connection and in conection provide <servername>:<rmi port>

Enforce JVM

Goto "**solr.in.sh**" file:
Change : -XX:+DisableExplicitGC
To : -XX:-DisableExplicitGC

Goto the server

su tomcat
jcmd <PID> GC.run

Heap.jfc

```
<?xml version="1.0" encoding="UTF-8"?>
<configuration version="1.0" name="Heap" description="heap stasts" provider="Oracle">

 <producer uri="http://www.oracle.com/hotspot/jvm/" label="Oracle JDK">

  <event path="java/statistics/thread_allocation">
   <setting name="enabled">true</setting>
   <setting name="period">everyChunk</setting>
  </event>

  <event path="java/statistics/class_loading">
   <setting name="enabled">true</setting>
   <setting name="period">1000 ms</setting>
  </event>
```

```
<event path="java/statistics/threads">
  <setting name="enabled">true</setting>
  <setting name="period">1000 ms</setting>
</event>

<event path="java/thread_start">
  <setting name="enabled">true</setting>
</event>

<event path="java/thread_end">
  <setting name="enabled">true</setting>
</event>

<event path="java/thread_sleep">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
  <setting name="threshold">10 ms</setting>
</event>

<event path="java/thread_park">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
  <setting name="threshold">10 ms</setting>
</event>

<event path="java/monitor_enter">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
  <setting name="threshold">10 ms</setting>
</event>

<event path="java/monitor_wait">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
  <setting name="threshold">10 ms</setting>
</event>

<event path="vm/class/load">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/class/unload">
  <setting name="enabled">true</setting>
</event>

<event path="vm/info">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/initial_system_property">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/prof/execution_sample">
  <setting name="enabled">true</setting>
  <setting name="period">10 ms</setting>
</event>

<event path="vm/prof/execution_sampling_info">
  <setting name="enabled">false</setting>
  <setting name="threshold">1 ms</setting>
</event>

<event path="vm/runtime/execute_vm_operation">
  <setting name="enabled">true</setting>
  <setting name="threshold">10 ms</setting>
</event>

<event path="vm/runtime/thread_dump">
  <setting name="enabled">true</setting>
  <setting name="period">60 s</setting>
</event>

<event path="vm/flag/long">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/flag/ulong">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/flag/double">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/flag/boolean">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/flag/string">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/flag/long_changed">
  <setting name="enabled">true</setting>
</event>

<event path="vm/flag/ulong_changed">
  <setting name="enabled">true</setting>
</event>

<event path="vm/flag/double_changed">
  <setting name="enabled">true</setting>
</event>

<event path="vm/flag/boolean_changed">
  <setting name="enabled">true</setting>
</event>

<event path="vm/flag/string_changed">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/detailed/object_count">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
```

```
</event>

<event path="vm/gc/configuration/gc">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/gc/configuration/heap">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/gc/configuration/young_generation">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/gc/configuration/tlab">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/gc/configuration/survivor">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
</event>

<event path="vm/gc/detailed/object_count_after_gc">
  <setting name="enabled">false</setting>
</event>

<event path="vm/gc/heap/summary">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/heap/ps_summary">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/heap/metaspace_summary">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/metaspace/gc_threshold">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/metaspace/allocation_failure">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
</event>

<event path="vm/gc/metaspace/out_of_memory">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
</event>

<event path="vm/gc/metaspace/chunk_free_list_summary">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/collector/garbage_collection">
  <setting name="enabled">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/collector/parold_garbage_collection">
  <setting name="enabled">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/collector/young_garbage_collection">
  <setting name="enabled">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/collector/old_garbage_collection">
  <setting name="enabled">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/collector/g1_garbage_collection">
  <setting name="enabled">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/phases/pause">
  <setting name="enabled">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/phases/pause_level_1">
  <setting name="enabled">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/phases/pause_level_2">
  <setting name="enabled">true</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/phases/pause_level_3">
  <setting name="enabled">false</setting>
  <setting name="threshold">0 ms</setting>
</event>

<event path="vm/gc/reference/statistics">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/detailed/promotion_failed">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/detailed/evacuation_failed">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/detailed/evacuation_info">
  <setting name="enabled">true</setting>
</event>

<event path="vm/gc/detailed/concurrent_mode_failure">
  <setting name="enabled">true</setting>
</event>
```

```
 <event path="vm/gc/detailed/allocation_requiring_gc">
  <setting name="enabled">false</setting>
  <setting name="stackTrace">true</setting>
 </event>

 <event path="vm/compiler/config">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="vm/compiler/stats">
  <setting name="enabled">true</setting>
  <setting name="period">1000 ms</setting>
 </event>

 <event path="vm/compiler/compilation">
  <setting name="enabled">true</setting>
  <setting name="threshold">100 ms</setting>
 </event>

 <event path="vm/compiler/phase">
  <setting name="enabled">true</setting>
  <setting name="threshold">10 s</setting>
 </event>

 <event path="vm/compiler/failure">
  <setting name="enabled">true</setting>
 </event>

 <event path="vm/code_sweeper/config">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="vm/code_sweeper/stats">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="vm/code_sweeper/sweep">
  <setting name="enabled">true</setting>
  <setting name="threshold">100 ms</setting>
 </event>

 <event path="vm/code_cache/config">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="vm/code_cache/stats">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="vm/code_cache/full">
  <setting name="enabled">true</setting>
 </event>

 <event path="os/information">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="os/processor/cpu_information">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="os/processor/context_switch_rate">
  <setting name="enabled">true</setting>
  <setting name="period">10 s</setting>
 </event>

 <event path="os/processor/cpu_load">
  <setting name="enabled">true</setting>
  <setting name="period">1000 ms</setting>
 </event>

 <event path="os/processor/cpu_tsc">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="os/system_process">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="os/initial_environment_variable">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="os/memory/physical_memory">
  <setting name="enabled">true</setting>
  <setting name="period">everyChunk</setting>
 </event>

 <event path="java/object_alloc_in_new_TLAB">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
 </event>

 <event path="java/object_alloc_outside_TLAB">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
 </event>

</producer>

<producer uri="http://www.oracle.com/hotspot/jdk/" label="Oracle JDK">

 <event path="java/file_read">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
  <setting name="threshold">10 ms</setting>
 </event>

 <event path="java/file_write">
  <setting name="enabled">true</setting>
  <setting name="stackTrace">true</setting>
  <setting name="threshold">10 ms</setting>
 </event>

 <event path="java/socket_read">
  <setting name="enabled">true</setting>
```

```
    <setting name="stackTrace">true</setting>
    <setting name="threshold">10 ms</setting>
   </event>

   <event path="java/socket_write">
    <setting name="enabled">true</setting>
    <setting name="stackTrace">true</setting>
    <setting name="threshold">10 ms</setting>
   </event>

   <event path="java/exception_throw">
    <setting name="enabled">false</setting>
    <setting name="stackTrace">true</setting>
   </event>

   <event path="java/error_throw">
    <setting name="enabled">true</setting>
    <setting name="stackTrace">true</setting>
   </event>

   <event path="java/statistics/throwables">
    <setting name="enabled">true</setting>
    <setting name="period">1000 ms</setting>
   </event>

  </producer>

  <producer uri="http://www.oracle.com/hotspot/jfr-info/" label="Oracle JDK">

   <event path="recordings/recording">
    <setting name="enabled">true</setting>
   </event>

   <event path="recordings/recording_setting">
    <setting name="enabled">true</setting>
   </event>

  </producer>

 </configuration>
```

Java profiling log of PsacQaap8005

Wednesday, July 3, 2019 11:18 AM

```
[tomcat@psacqaap8005 skumar]$ ps -ef | grep frontend
tomcat   14358     1  0 05:03 ?        00:00:47 java -Dlog.level=DEBUG -Denv=qa -Dsite=b37 -
Dcatalina.base=/data/ac_ids/frontend -jar /data/ac_ids/frontend/bin/autocomplete.war
tomcat   32706 32445  0 07:15 pts/0    00:00:00 grep --color=auto frontend
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$ jcmd 14358 JFR.start duration=40s filename=frontend_QA.jfr
Could not find any processes matching : '14358 JFR.start'
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$ jcmd 14358 JFR.start duration=40s filename=frontend_QA.jfr
14358:
Java Flight Recorder not enabled.

Use VM.unlock_commercial_features to enable.
[tomcat@psacqaap8005 skumar]$ jcmd 14358 VM.unlock_commercial_features
14358:
Commercial Features now unlocked.
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$ jcmd 14358 VM.check_commercial_features
14358:
Commercial Features are unlocked.
Status of individual features:
  Java Flight Recorder has not been used.
  Resource Management is disabled.
  Current Memory Restriction: None (0)
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$
[tomcat@psacqaap8005 skumar]$ jcmd 14358 JFR.start duration=40s filename=frontend_QA.jfr
14358:
Started recording 1. The result will be written to:

/home/tomcat/frontend_QA.jfr
[tomcat@psacqaap8005 skumar]$ cd /home/tomcat/
[tomcat@psacqaap8005 ~]$ ls -lrt
total 12
drwxr-xr-x. 2 tomcat tomcat 8192 Nov 15 00:11 logs
-rw-rw-r--. 1 tomcat tomcat    0 May  8 07:18 frontend_QA.jfr
[tomcat@psacqaap8005 ~]$ cp frontend_QA.jfr /tmp/^C
[tomcat@psacqaap8005 ~]$ ls -lrt
total 264
drwxr-xr-x. 2 tomcat tomcat   8192 Nov 15 00:11 logs
-rw-rw-r--. 1 tomcat tomcat 255895 May  8 07:19 frontend_QA.jfr
[tomcat@psacqaap8005 ~]$ cp -r frontend_QA.jfr /tmp/
[tomcat@psacqaap8005 ~]$
```

jcmd `cat wso2carbon.pid` JFR.start settings=/home/isuru/performance/jfr-settings/Heap.jfc

From <http://isuru-perera.blogspot.com/2016/03/specifying-custom-event-settings-file.html>