GCViewer Commandline

version 1.29.1

Sean Ryan

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GCViewer Commandline

GCViewer Commandline is a modified version of **GC Viewer** to dump Garbage Collector (GC) statistics to a CSV file, with **zero user interaction**.

This allows for automated test scripts to record GC statistics, which is quite useful if you are trying to monitor the performance of a **Java** application.

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About GCViewer Commandline

GCViewer Commandline is a modified version of **GC Viewer**.

GC Viewer is an excellent open source tool by tagtraum industries incorporated, to provide a way to view the log file produced by the Java Garbage collector (GC).

This web site hosts a modified version of the GC Viewer tool (modified by Sean Ryan), which allows you to run the tool with **NO interaction**, from the command line.

This is quite handy, if you use a lot of automated tests, and want to monitor the Java GC.

The GC statistics are output to a CSV file, which can easily be parsed by your scripts.

Example Usage

To parse a GC log file **my_gc_log.log** to a new CSV file **my_gc_summary.csv**:

```
java -jar target/gcviewer-1.29.jar my_gc_log.log my_gc_summary.csv
```

This will summarise the statistics of the GC log file **my_gc_log.log**, to the CSV file **my_summary.csv**.

The format of the CSV file:

```
{field name 1}, {value}, {units}
{field name 2}, {value}, {units}
{field name 3}, {value}, {units}
...
...
```

Example CSV output file:

```
gcLogFile, temp_gclog_input, -
footprint, 128.25, M
footprintAfterFullGC, 69.792, M
footprintAfterFullGCs, 2232.118, K
footprintAfterFullGCisSig, true, bool
freedMemoryByFullGC, 2643.391, M
freedMemoryByFullGCpc, 9.9, %
avgFreedMemoryByFullGC, 17.623, M/coll
avgFreedMemoryByFullGCs, 3874.805, K/coll
avgFreedMemoryByFullGCisSig, true, bool
...
...
```

Download

Download Sourcecode

Download the **Java source code** here:

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[gcviewer-1.29-src-modified-released-20110405_1.zip](#)

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Download this user guide in PDF format:

GCViewerCommandline.pdf

History

Version | Date	Changes
1.29.1 24th April 2011	😊 Started using Sphinx to auto-generate this documentation
1.29.1 4th April 2011	• Added unit test for the CSV output, for the Sun JDK • Made some changes to make the CSV more uniform, and easier to parse: • Removed embedded commas from the value field in the CSV output • Added another column for the units for each field • Lines that had an extra value for std. deviation, or for %, have now been split into two lines
1.29.0 26th March 2011	Released GC Viewer command line, with this user guide.

Versioning

GCViewer Commandline follows the versioning of the main GCViewer application, and appends one number at the end.

For example, for GCViewer version 1.29, the equivalent GCViewer Commandline version would be 1.29.x, where x is the build number.

This makes it easy to see what version of **GCViewer** was adapted to have the **Commandline** functionality.

Installation instructions

Installing on Ubuntu 10.10

Here are the instructions for installing **GCViewer Commandline** on Ubuntu 10.10.

Note: It should also be possible to run GC Viewer Command Line on any OS that runs Java 1.6.

Install Dependencies

Java 1.6

This application has been tested with **Sun's Java JDK**. It should also work with other flavours of Java.

First, see if you already have Sun Java installed:

```
sudo update-java-alternatives -l
```

```
java-6-openjdk 1061 /usr/lib/jvm/java-6-openjdk
java-6-sun 63 /usr/lib/jvm/java-6-sun
```

In the text above, you can see that there are two flavours of Java installed:

• the openjdk flavour

Installing Sun/Oracle's Java JDK

• the Sun flavour

Otherwise, if you do not see the Sun flavour, then you can install **Sun's Java JDK**.

Installing Sun/Oracle's Java JDK

For a guide on how to install Sun's Java on Ubuntu, see here:

http://www.cyberciti.biz/faq/howto-ubuntu-linux-install-configure-jdk-jre/

Set JAVA_HOME environment variable:

You may need to add the JAVA_HOME environment variable to your ~/.bashrc file:

To edit the ~/.bashrc file:

```
gedit ~/.bashrc
```

Add this line at the end of the file:

```
export JAVA_HOME="/usr/lib/jvm/java-6-sun-1.6.0.06;"
```

Save your changes.

Close the text editor.

Finally, you can verify the install of Java:

```
java -version
```

```
java version "1.6.0_24"
Java(TM) SE Runtime Environment (build 1.6.0_24-b07)
Java HotSpot(TM) 64-Bit Server VM (build 19.1-b02, mixed mode)
```

Maven

We use Maven to build the **GC Viewer** source code.

To install maven:

```
apt-cache search maven
```

```
maven-ant-helper - helper scripts for building Maven components with ant

maven-repo-helper - Helper tools for including Maven metatada in Debian packages

bnd - A tool to create and diagnose OSGi R4 bundles

libantlr-maven-plugin-java - Maven ANTLR Plugin

libclirr-maven-plugin-java - Clirr Maven Plugin
...
...
```

```
sudo apt-get install maven2
```

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
ant ant-optional antlr bsh bsh-gcj fop gcj-4.4-base gcj-4.4-jre-lib groovy
ivy java-wrappers junit4 libantlr-java libasm2-java libasm3-java
libavalon-framework-java libbackport-util-concurrent-java libbatik-java
libbsf-java libclassworlds-java libcommons-beanutils-java
libcommons-cli-java libcommons-codec-java libcommons-collections-java
```

Compile the Source Code

```
...
...
```

To verify the installation, type this:

```
mvn -version
```

```
Apache Maven 2.2.1 (rdebian-4)
Java version: 1.6.0_20
Java home: /usr/lib/jvm/java-6-openjdk/jre
Default locale: en_IE, platform encoding: UTF-8
OS name: "linux" version: "2.6.35-22-generic" arch: "amd64" Family: "unix"
```

Compile the Source Code

Download the modified GC Viewer from *Download*.

Unzip the ZIP file, to where you would like to have GCViewer installed.

Open a Terminal window.

Change directory to where you unzipped the zip file:

```
cd /home/sean/sourcecode/thirdparty/gcviewer/
gcviewer-1.29-src-modified__2011-03-05--18.55-
reduced/gcviewer-1.29-src-modified
```

Make the build script be executable:

```
chmod 755 run_build.sh
```

Run the build script: (this uses Maven to build the GC Viewer source code)

```
./run_build.sh
```

```
[INFO] Scanning for projects...
[INFO] ------------------------------------------------------------------------
[INFO] Building GCViewer
[INFO]    task-segment: [clean, install]
[INFO] ------------------------------------------------------------------------
...
...
```

Maven will build the source code, and will output the compiled jar file to the `./target` directory.

Installation Complete

You have completed the installation of GC Viewer Commandline.

Running the GC Viewer

Non-interactive mode (produces CSV file summary)

An example of running **GC viewer** in non-interactive mode:

```
java -jar target/gcviewer-1.29.jar my_gc_log.log my_summary.csv
```

Example Script:

```
./run_test_export_summary.sh
```

The generated CSV file looks like this:

```
gcLogFile, temp_gclog_input, -
footprint, 128.25, M
```

Interactive mode

```
footprintAfterFullGC, 69.792, M
footprintAfterFullGCs, 2232.118, K
footprintAfterFullGCisSig, true, bool
freedMemoryByFullGC, 2643.391, M
freedMemoryByFullGCpc, 9.9, %
avgFreedMemoryByFullGC, 17.623, M/coll
avgFreedMemoryByFullGCs, 3874.805, K/coll
avgFreedMemoryByFullGCisSig, true, bool
...
...
```

Interactive mode

To run the GC Viewer in 'normal' interactive mode, opening a log file **SampleSun1_5_0CMS_PrintGCDetails.txt**:

```
java -jar target/gcviewer-1.29.jar src/test/resources/com/tagtraum/perf/gcviewer/imp/SampleS
```

This will run the **GC Viewer** user interface, and will open the given log file.

No CSV file is generated.

GC Viewer License

Original GC Viewer

The original GC Viewer tool is here at tagtraum website.

GC Viewer was created by tagtraum industries incorporated.

LGPL Licence

GC Viewer and this modified version are released under the LGPL licence.

Tools used to modify GC Viewer

- Eclipse IDE to modify GC Viewer.
- Notepad++, GEdit and Sphinx were used to auto-generate this documentation
- Visual Studio 2010 originally used to manually create this web page.