

## Kepler - Bug #3106

### Out of memory while opening all demos, is -Xss5m or SVG the problem?

01/28/2008 08:54 PM - Christopher Brooks

<b>Status:</b>	New	<b>Start date:</b>	01/28/2008
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Matthew Brooke	<b>% Done:</b>	0%
<b>Category:</b>	interface	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	3.X.Y	<b>Spent time:</b>	0.00 hour
<b>Bugzilla-Id:</b>	3106		

#### Description

I'm marking this as having a target milestone of 1.0.0rc1 because I suspect we should remove -Xss5m from build.xml because it means we cannot open up very many models. Once that is addressed, the milestone should be changed to something later.

Under Windows XP with Java 1.5.0\_11, Kepler runs out of memory when opening all the demos whereas Ptolemy does not.

It could be that SVG is the issue, or it could be because Kepler does not do lazy evaluation and thus loads in everything.

To replicate

- 1) Start Kepler with "ant run-dev", which uses -Xmx512m
- 2) Help -> Documentation -> Ptolemy Documentation -> Acknowledgements
- 3) Click on the copyright link at the bottom
- 4) Click on copyrights in "Other copyrights about this configuration (may take a moment to run)."
- 5) Click on about in "Other information about this configuration."
- 6) In the "ptolemy/configs/doc/completeDemosPtinyKepler.htm" line, click on "Open the .htm, .html, .xml and .pdf "

Roughly 25 windows will open and eventually, we get:

Caused by: java.lang.OutOfMemoryError: unable to create new native thread at java.lang.Thread.start0(Native Method)

Under Windows, the task manager says we are using 330Mb of memory,

Editing the run-dev entry in build.xml and removing:

```
<jvmarg value="-Xss5m"/>
```

means we get to 580Mb in the task manager and then Kepler hangs with the CPU Usage at 99%

java -X says that -Xss

```
-Xss<size> set java thread stack size
```

Perhaps -Xss should be removed from build.xml?

If I increase the Xmx from 512 to 1024, then the show all demos works,

At the end the amount of memory reported by the Task Manager is 258Mb, with a max of 608Mb

Running the last demo (sr/demo/TrafficLight/TrafficLight.xml) shows this memory usage under Kepler:

```
[java] 14471 ms. Memory: 968096K Free: 211261K (22%)
```

In contrast, doing the same thing with Ptolemy (no SVG), the task manager reports 142Mb with a max of 142Mb. Running the same demo reports:

```
6780 ms. Memory: 117172K Free: 24710K (21%)
```

## History

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### #1 - 01/29/2008 10:59 AM - Dan Higgins

As I remember, the -Xss5m switch was included because setting the stack memory this way was needed to insure that several of our JNI based actors worked properly (the GARP ENM actors that run C code through JNI). So deleting that switch is probably NOT an option.

Also, Kepler now loads actor info only when needed, so it should be roughly equivalent to Ptolemy's lazy evaluations in terms of memory useage.

Another possible culprit for Kepler's memory use is the fact that documentation is included in the moml. This documentation increase the memory used by every actor.

Dan Higgins

### #2 - 01/29/2008 04:59 PM - Christopher Brooks

I did an experiment under Windows with Java 1.5.0\_14 where I changed -Xmx and -Xss and then used the about: facility to display all the ptolemy demos.

Below is the output

-Xmx	-Xss	Windows Mem	Windows Peak Mem	# of Windows before running out of memory
512m	5m	362M	365M	36
512m	10m	352M	380M	22
512m	3m	551M	551M	56
1024m	3m	387M	387M	45
1024m	2m	524M	527M	53
1024m	1m	811M	811M	80 (test completed)
1024m	not set	807M	808M	80 (test completed)

Note that not all the memory is getting used when we specify -Xss of 2m or greater.

Note also that there is some sort of non-linear relationship between -Xmx and -Xss. We get more windows with -Xmx512m -Xss3m than we do with -Xmx1024m and -Xss3m.

What I think is happening is that this test opens a bunch of models quickly. -Xss sets the stack size per thread. Each of the models is probably invoking a number of threads to get images etc. Thus we are running out of memory.

It could be that this test is somewhat artificial, so I'm downgrading this bug in priority and moving the milestone.

If people complain about running out of memory, and they are not using the ENM actors, then they can change -Xss. I think setting -Xss to 5m might be a little high, but let's wait and see if there are complaints before changing it.

### #3 - 03/27/2013 02:22 PM - Redmine Admin

Original Bugzilla ID was 3106