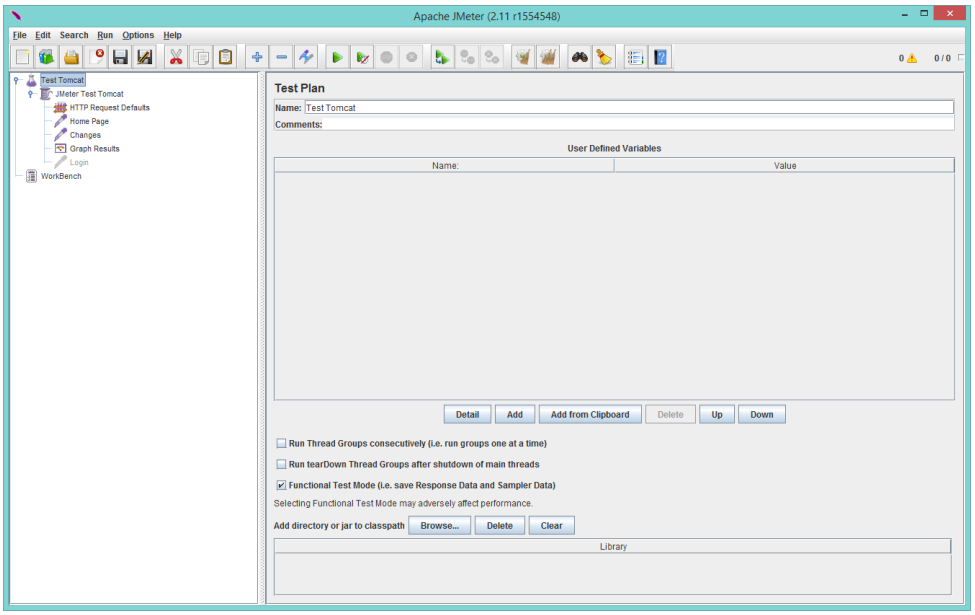
Install and Use JMeter

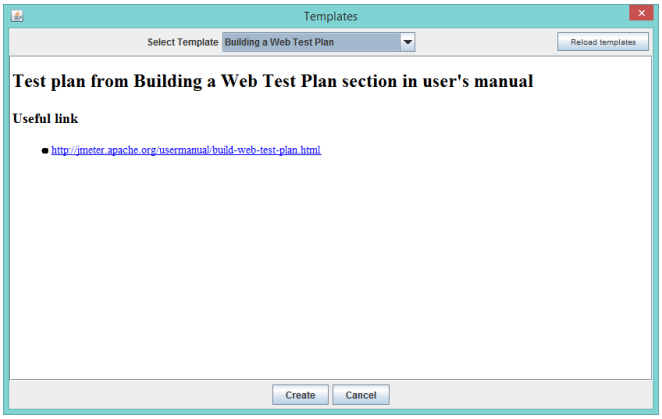
JMeter is an open source Java application from the Apache Software Foundation. It can be downloaded from http://jmeter.apache.org/

Download the zip file and extract it into a location that can be found, such as C:\

To run JMeter go into the JMeter bin directory and run the JMeter.bat file which will start JMeter. The following image shows JMeter started and a new Test Plan created to Test Tomcat. To create a test plan choose File/Templates.

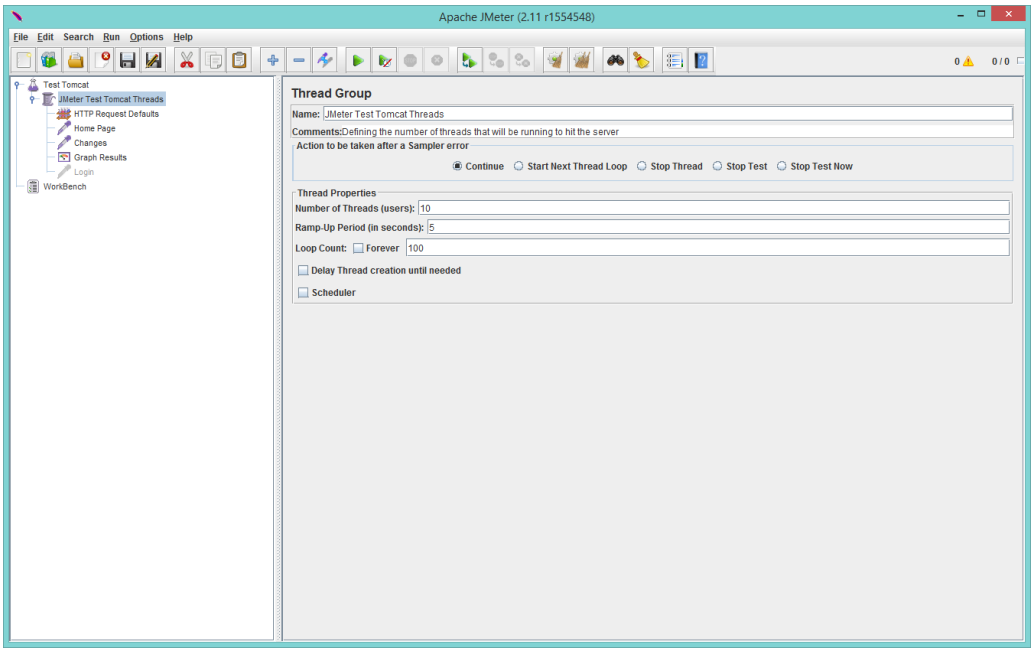


Choose to build a Web Test Plan once the templates Dialog opens.



The first step is to define the number of Thread Groups. This is done on the Thread Group page shown below. On this page the following can be defined

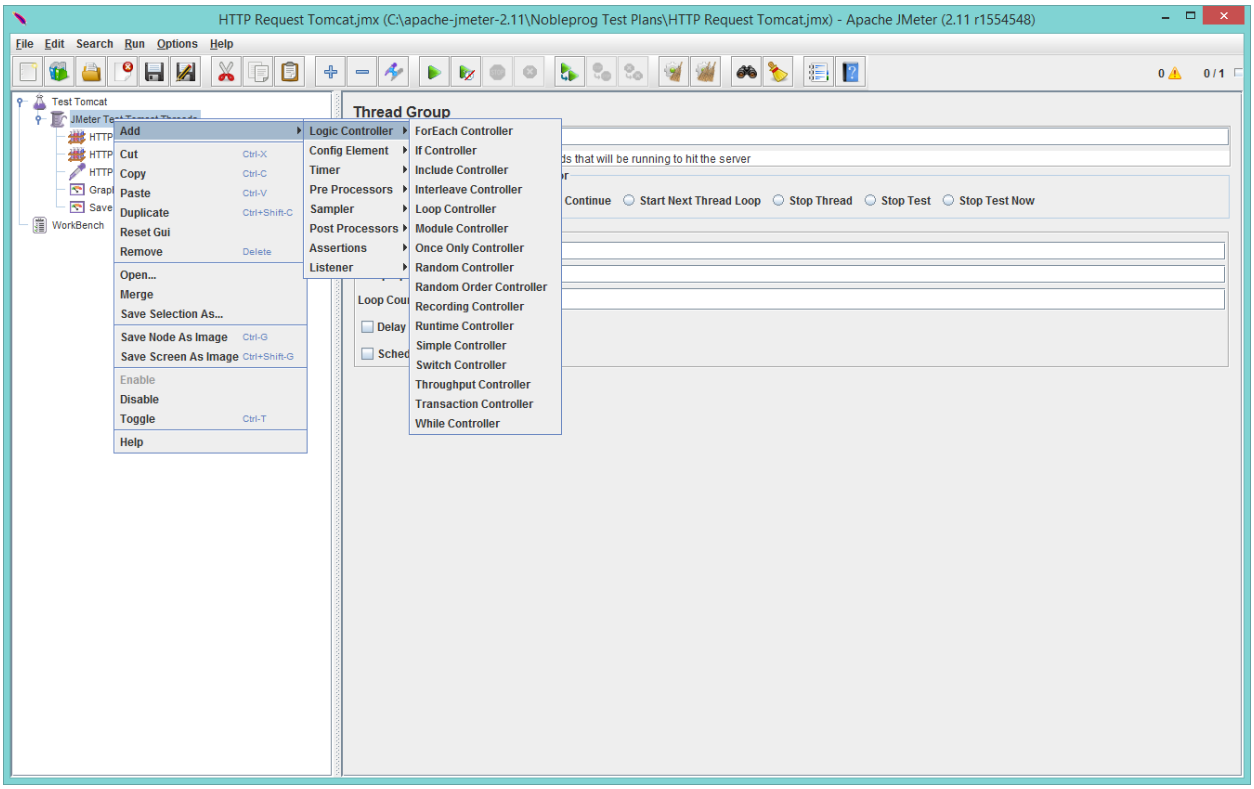
- The number of Threads that will run
- The ramp up period so that all threads do not start immediately
- The number of times to execute the test (loop count)
- The Schedule box can also be checked so that start time and end time can be entered for the test



There are two types of controllers in JMeter

- Samplers
    - tell JMeter to send requests and wait for a response.
    - Samplers are processed in the order in which they appear in the test tree
    - In this testing HTTP request samplers will be used
- Logical Controllers
    - Add custom logic to control the samplers

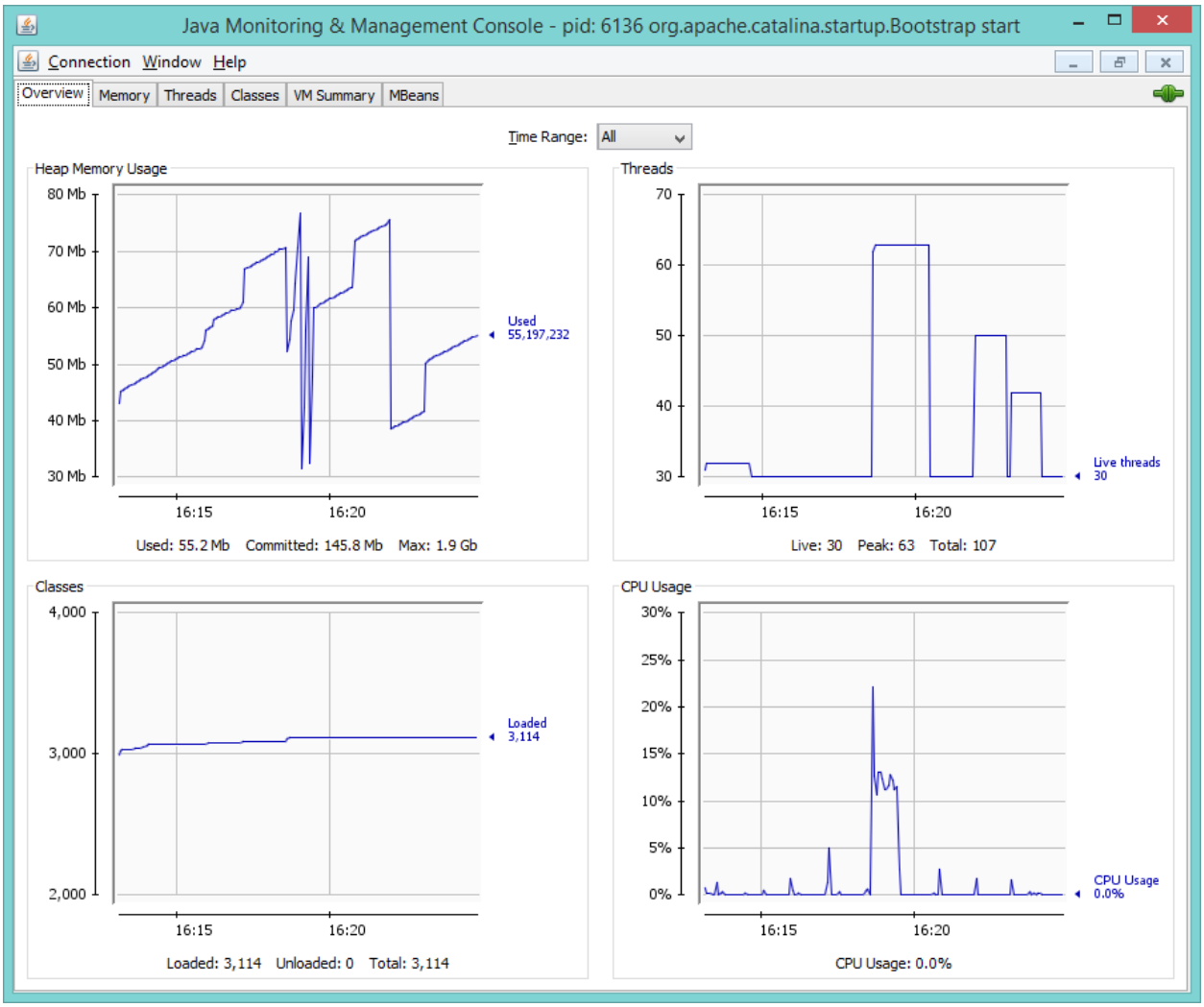
JMeter has many samplers, logic controllers, config elements, timers, pre and post processors, assertions, and listeners as shown in the next image (just the controllers are opened).



Using these elements many types of tests can be built.

- Assertions can be used to determine whether the response from the server is correct.
    - This can be used to regression test the code for example
- Listeners allow the user to graph results, send responses to a file, etc.
- Timers are used to slow down the sampling
- Config elements help the user to configure the test as it starts

On the next page the results of a test with 40 threads being started in JMeter with varying Ramp Up Times and timer intervals are shown using JConsole to track the effects on Tomcat.



Experiment with Tomcat, JConsole, and JMeter to see how they can interact.