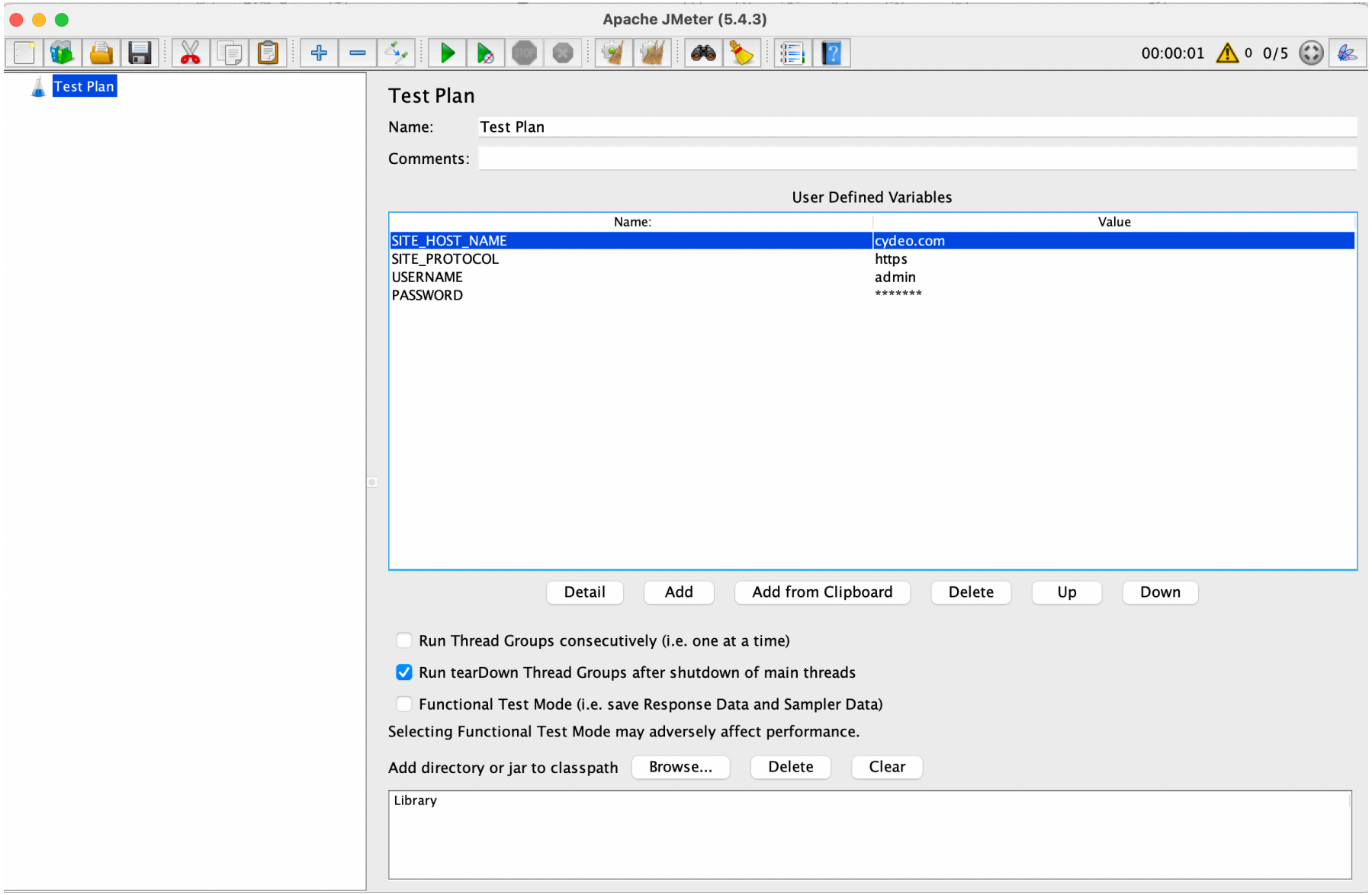
JMeter
GUI Overview

JMeter GUI

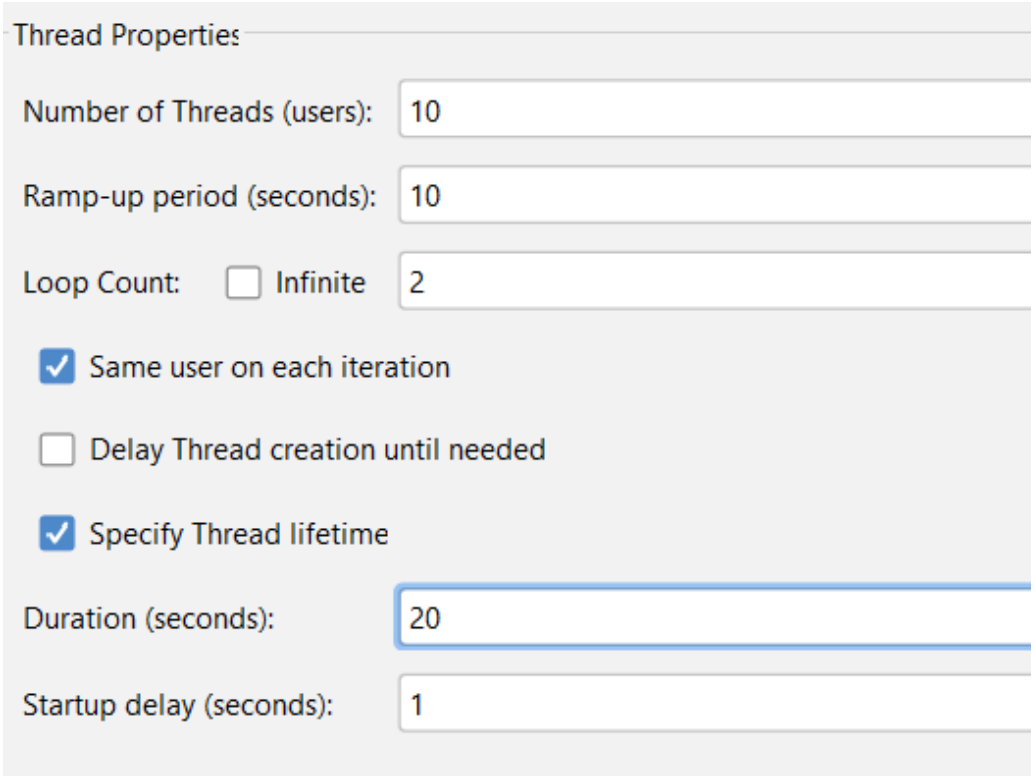

Apache JMeter (5.4.3)
00:00:01
0
0/5
Test Plan
Test Plan
Name:
Test Plan
Comments:
User Defined Variables
Name:
Value
SITE_HOST_NAME
cydeo.com
SITE_PROTOCOL
https
USERNAME
admin
PASSWORD
****
Detail
Add
Add from Clipboard
Delete
Up
Down
Run Thread Groups consecutively (i.e. one at a time)
Run tearDown Thread Groups after shutdown of main threads
Functional Test Mode (i.e. save Response Data and Sampler Data)
Selecting Functional Test Mode may adversely affect performance.
Add directory or jar to classpath
Browse...
Delete
Clear
Library

Test Plan

- Test Plan consists of all components and actions to execute a test script.
- A Test Plan might have multiple thread (user) groups.
- Test Plan options:
  - **Run thread group consecutively**: Only one thread group is executed at a time.
  - **Functional Test Mode:** JMeter records response of each request sent to server. This option is used in functional testing but degrades performance.
  - **User Defined Variables:** Global variables such as a URL, a key etc. can be created and these variables can be used throughout the testing using ${parameter}.

Thread Groups

- Each thread acts as a **user** and system user load can be specified by setting the number of threads.
- **Ramp-up period:** 10 threads in 10 seconds means each second a user is added and at the end of the 10 second, there will be 10 users sending requests.
- **Loop Count:** The number of loops to iterate the requests.
- **Thread life time:** Duration that a thread is active.



setUp and tearDown Thread Groups

Test Plan > Add > Threads (Users) > setUp Thread Group

setUp thread group can be utilized to perform Pre-Test actions. Below is some cases which we can consider to use setUp Thread Group.

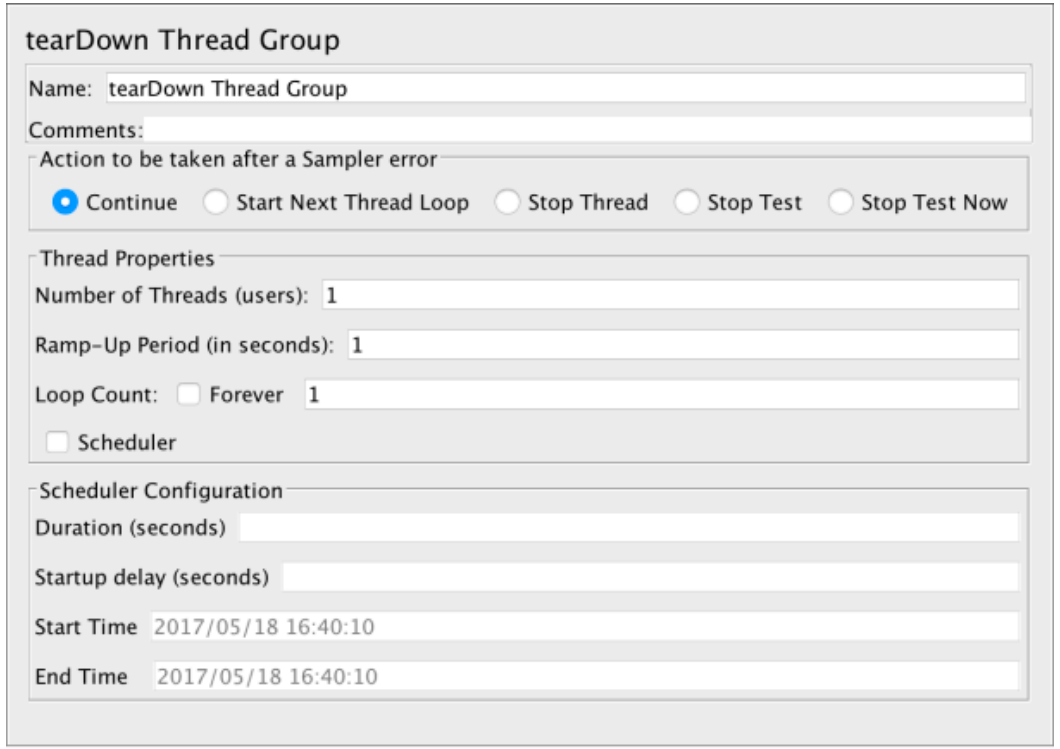
- Creating a list of users that need to be run in your tests.
- Getting data from the database and store into the .csv files or JMeter variables and use them during the test.
- Sending email or any kind of notification to notify that the test has been started.

setUp and tearDown Thread Groups

Test Plan > Add > Threads (Users) > tearDown Thread Group

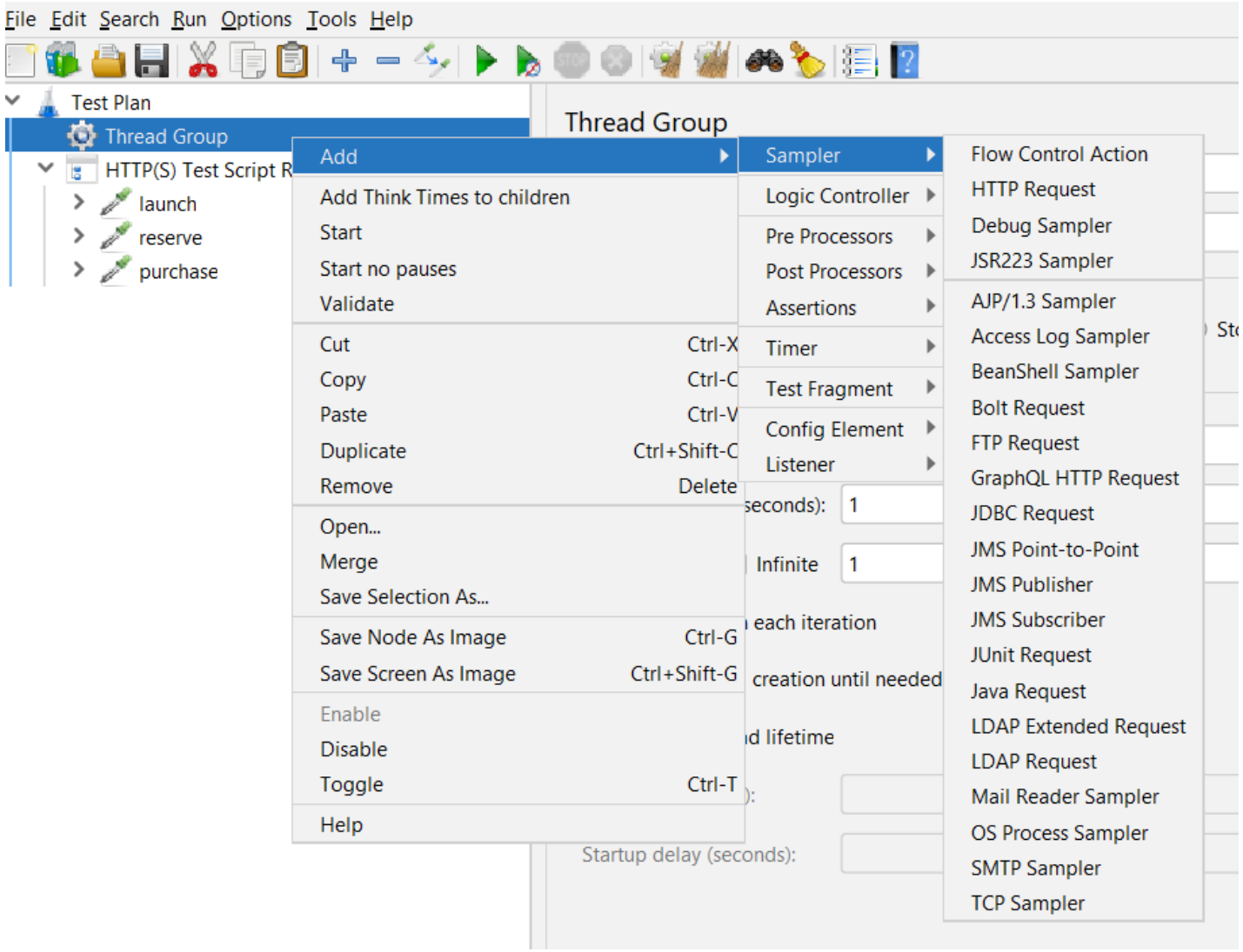
tearDown thread group can be used to perform some Post-Test actions after running the test. Below is some cases which we can consider to use tearDown Thread Group:

- Deleting users that were created in the setUp Thread Group.
- Cleaning up the system, deleting the data which were created during the test.
- Sending email or any kind of notification to notify that the test has been stopped.



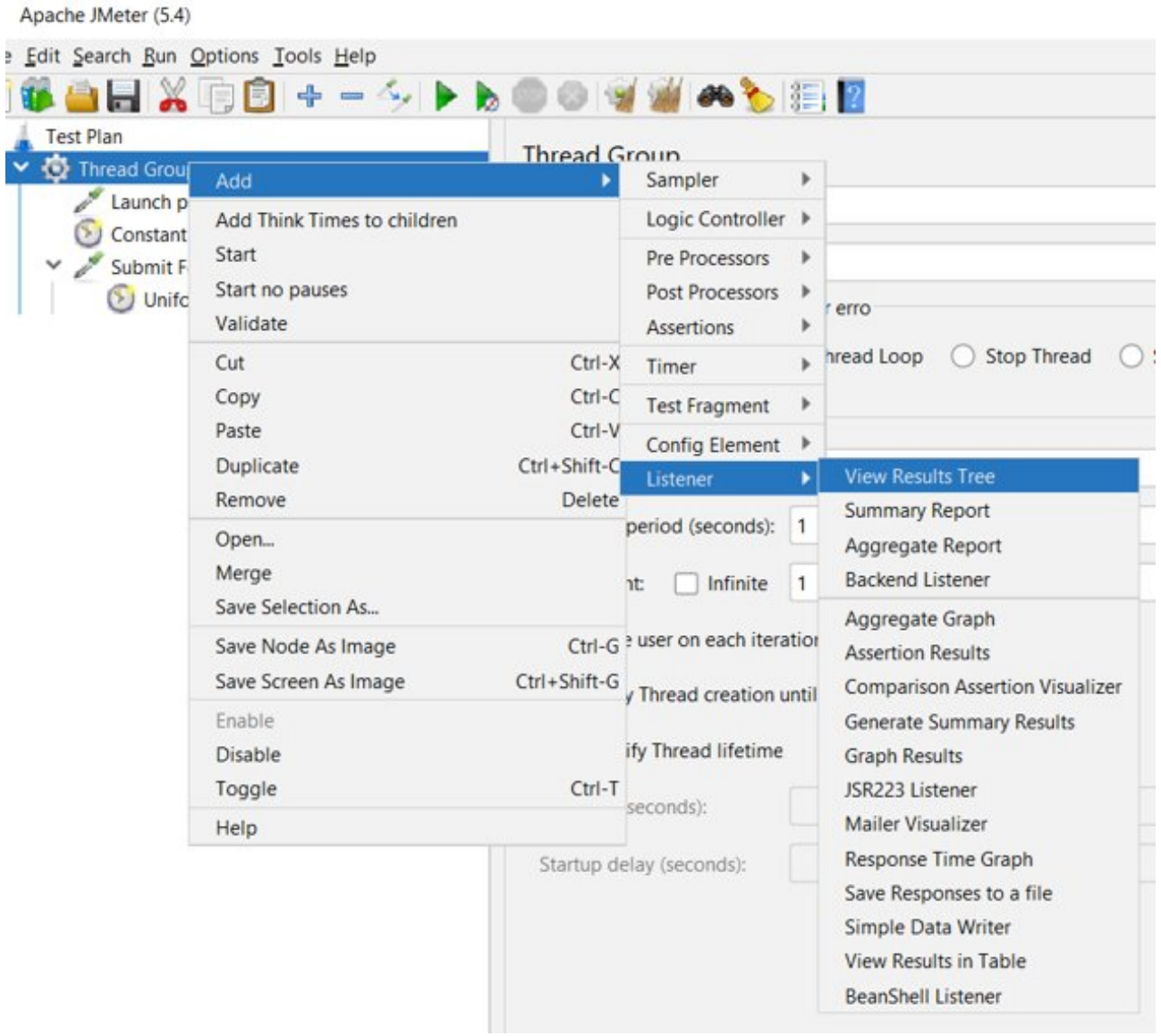
Samplers

- Samplers are used to send requests (HTTP, FTP, JDBC etc.) to servers.
- **HTTP Request** is used to send requests such as GET, POST, PUT, PATCH, DELETE etc.



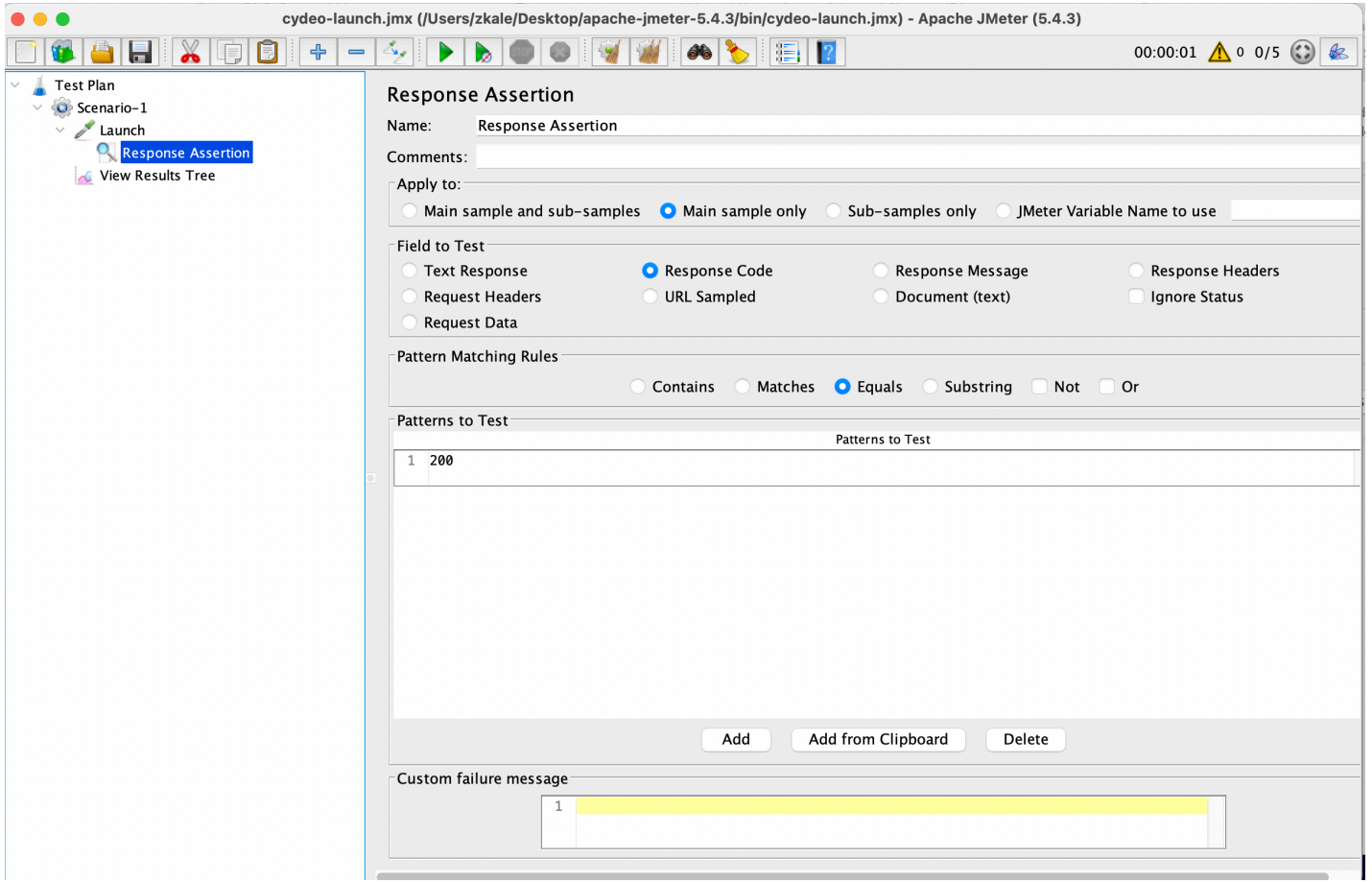
Listeners

- Listeners are used to display the test results.
- The results can be shown as a **tree, table, graph or recorded as a log file**.
- Adding more listeners to a test scenario decreases the performance of the test execution so listeners need to be added as needed.



Assertions

- Assertions are used to validate responses.
- Right-click HTTP Request>Add>Assertions
- **Response Assertion** checks whether a response text/ body/code/message/ header contains, matches, or equals a specified pattern.
- All assertions come with a cost in terms of CPU or memory consumption.



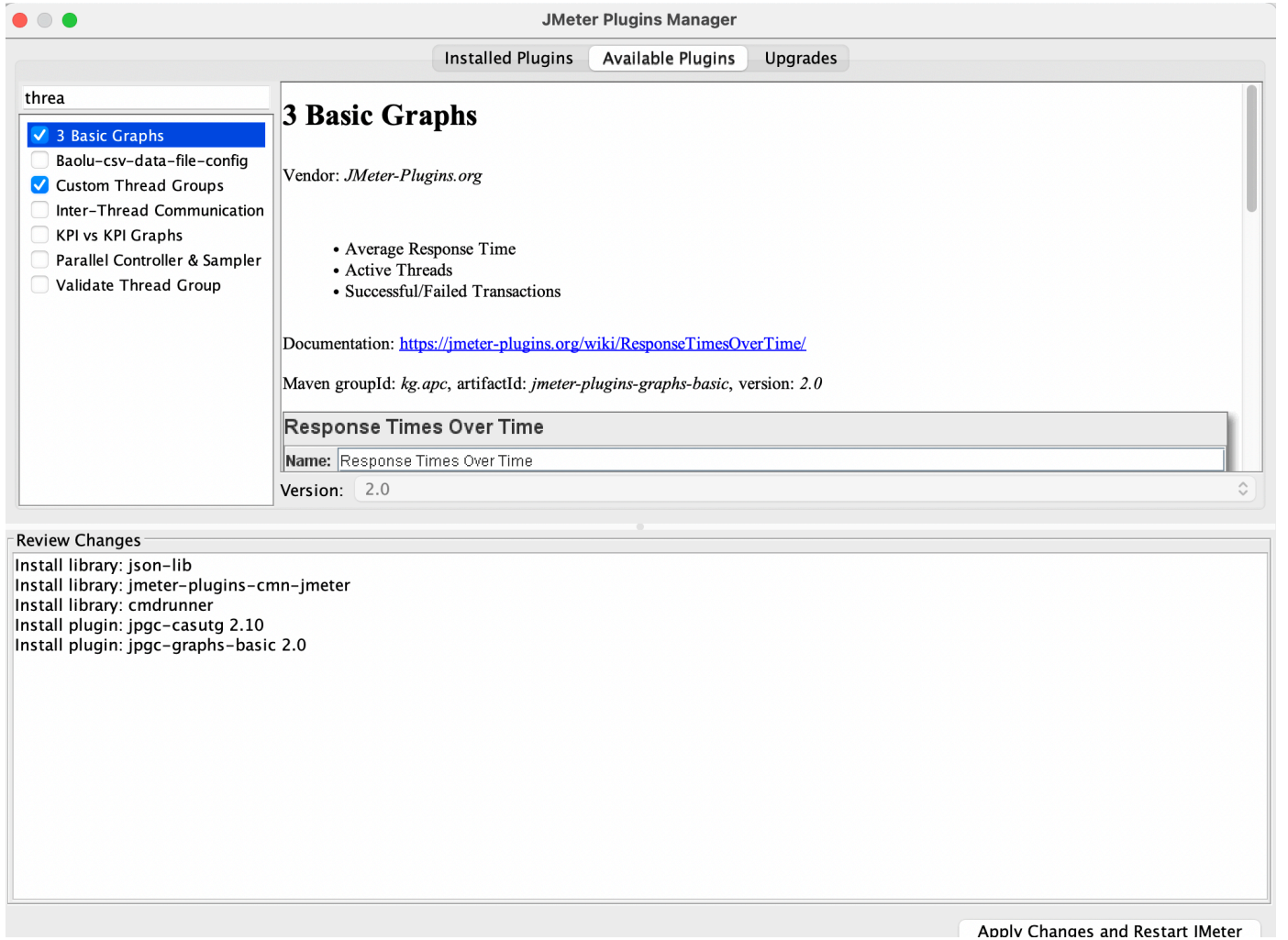
Creating a JMeter Test Script

1. Launch JMeter.
2. Add a thread group under Test Plan.
3. Add samplers under thread group.
4. Add a listener under Test Plan.
5. Add assertion to samplers.
6. Save the Test Plan and run the scenario.
7. Check the test results from the listener added.

Best Practice: JMeter reads and writes to bin directory by default. Saving the Test Script (.jmx) to the JMeter/bin directory would make it easier to locate and run the test script from the command line.

JMeter Plugins Manager

- Download the **Plugins Manager JAR file**: https://jmeter-plugins.org/wiki/PluginsManager/
- Save it under **JMeter lib/ext** directory.
- Relaunch JMeter and go to **Options** menu to access the Plugins Manager.



Specialty Thread Groups

- **Concurrency Thread Group:** Target concurrency, ramp-up time and ramp up steps can be specified so that we can identify at which point (number of users) the scenario fails.
- **Ultimate Thread Group:** Different groups of users can be added with different profiles (initial delay, startup time, hold load, shutdown time). Ultimate Thread Group can be used to perform Spike Testing.