**Introduction to JMeter**

[**Apache JMeter**](http://jmeter.apache.org/) is an **open source load and performance tool** written in Java and it’s available on almost any OS.

You can **use Apache JMeter for performance, load, stress testing and memory-leak testing** for accurate information. Also, JMeter can be used for understanding the performance of a web application, service, end-point etc.

* **Open source license**: JMeter is totally free,  allows developer use the source code for the development
* **Friendly GUI**: JMeter is extremely easy to use and doesn't take time to get familiar with it
* **Platform independent**: JMeter is 100% pure Java desktop application. So it can run on multiple platforms
* **Full multi-threading**[**framework**](http://www.guru99.com/quick-test-professional-qtp-tutorial-34.html). JMeter allows concurrent and simultaneous sampling of different functions by a separate thread group
* **Visualize Test Result:** Test result can be display in a different format such as chart, table, tree and log file
* **Easy installation**: You just copy and run the \*.bat file to run JMeter. No installation needed.
* **Highly Extensible**: You can write your own tests. JMeter also supports visualization plugins allow you extend your testing
* **Multiple testing strategies**: JMeter supports many testing strategies such as Load Testing, Distributed Testing, and Functional Testing.
* **Simulation**: JMeter can simulate multiple users with concurrent threads, create a heavy load against web application under test
* **Support multi-protocol**: JMeter does not only support web application testing, but also evaluate database server performance. All basic protocols such as HTTP, JDBC, LDAP, SOAP, JMS, and FTP are supported by JMeter
* **Record & Playback**- **Record** the user activity on the browser and simulate them in  web application using JMeter
* **Script Test**: Jmeter can be integrated with Bean Shell & [Selenium](http://www.guru99.com/selenium-tutorial.html) for automated testing.

**Key Features**

* JMeter is used to test performance both on static and dynamic resources such as static files, Java Servlets, CGI scripts, Java objects, databases, FTP servers and more. JMeter can be used to stimulate a heavy load on a server, network or object to test its strength or to analyze overall performance under different load types. JMeter can run on any environment/platform such as Windows, Linux, Mac, etc. Its multithreading framework is highly extensible and can be used to perform automated and functional testing.
* When compared to other testing application, 80% of what is required can be accomplished with a simple, intuitive GUI and not much of scripting is required to achieve that. Since JMeter is backed by such a large community, any use case that comes to mind probably has an answer within JMeter. With JMeter one can build test scripts that are realistic and accurate.

**Advantages**

* It’s pure Java tool, which allows executing this tool in any platform (i.e. platform independent)
* It’s have lot many configuration mechanism like Http Request, FTP Request, java request , SOAP Request
* This tool mainly used for performance testing (load, stress)
* GUI is very user friendly, which helps in executing and recording application sessions
* User can apply automation frame work (data driven, parameter)

**Drawbacks**

* Its only for web base application not windows base application
* User can't write its own script, or change any recorded script

**Limitations**

* JMeter is not a browser as it does not perform all the actions supported by browsers. To be more precise, it does not execute the JavaScript present in HTML pages nor does it render the html page as a browser does. It has limited support for JavaScript, AJAX and complicated frameworks.
* One of the major limitations is that everything goes through a single console. Under heavy load the GUI consumes a lot of memory and the console server alone cannot sustain such a heavy load which leads to out of memory and disconnection logs.