

# JMeter Cookbook

70 insightful and practical recipes to help you successfully use Apache JMeter



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**Bayo Erinle** 



**BIRMINGHAM - MUMBAI** 

### **JMeter Cookbook**

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I would like to thank my lovely wife, who lets me spend time working on reviewing a book instead of having more family time together. I want to assure her, I will catch up soon.

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I would like to thank my Guru, Mahajatok. Without his guidance, I would not be what I am today.

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Right now, he is working as a freelance web developer, deploying web apps in AWS, DigitalOcean, and Hetzner. He lends a hand in virtualization and helps everyone who wants to get started with Linux.

In addition to trying new things on his computer for long hours, he also likes mountain biking and watching TV. You can follow his activities on his blog or Twitter.

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I'd like to thank Packt Publishing for giving me the opportunity to edit this publication.

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# **Preface**

In today's ever-growing IT sector, users are growing increasingly impatient when faced with slow and unresponsive applications. Slow page load times and sluggish services could mean unsatisfactory customer experiences leading to fewer customer visits, which in the end translates to smaller profit margins for businesses. As such, it becomes increasingly important to a business's success to have fast, reliable, and responsive systems that give users a superb experience, foster growth, and increase revenue.

Performance testing is a type of testing intended to determine the responsiveness, reliability, throughput, interoperability, and scalability of a system and/or application under a given workload. It is critical and essential to the success of any software product launch and its maintenance. It also plays an integral part in scaling an application out to support a wider user base.

Apache JMeter is a free, open source, cross-platform performance testing tool that has been around since the late 90s. It is mature, robust, portable, and highly extensible. It has a large user base and offers lots of plugins to aid testing.

This book is a practical, hands-on guide that focuses on how to leverage Apache JMeter to meet your testing needs. With over 50 practical and carefully selected recipes, it will guide you through building robust and maintainable test scripts, Cloud testing, developing custom JMeter plugins, integrating JMeter into continuous delivery workflows, and much more. You will find a lot of useful knowledge here to apply to your current or future testing engagements. Whether you are a developer or tester, this book is sure to have an impact on you and provide you with valuable knowledge to help you achieve success in your future testing endeavors.

#### What this book covers

Chapter 1, JMeter Fundamentals, covers fundamental and intermediate skills to help you use JMeter efficiently.

Chapter 2, Handling Responses, details how to handle various server and application responses.

Chapter 3, Building Robust Test Plans with Controllers, covers five useful and often encountered JMeter controllers and how to apply them to your use cases.

Chapter 4, Testing Services, details how to test web services and supporting application resources with JMeter.

Chapter 5, Diving into Distributed Testing, takes an in-depth look at leveraging the Cloud for performance testing. We cover three Cloud providers and see how to roll our own when the need arises.

Chapter 6, Extending JMeter, covers how to extend JMeter with plugins. We also detail how to write your own JMeter plugin.

Chapter 7, Building, Debugging, and Analyzing the Results of Test Plans, discusses some useful components in JMeter and how to leverage them, as well as how to build realistic, robust, and maintainable scripts.

Chapter 8, Beyond the Basics, covers integrating JMeter into continuous delivery workflows, scaling JMeter, and many other advanced tips and pointers.

Appendix, Installing the Supporting Software Needed for This Book, covers how to install the supporting software and how to proceed with the recipes in the chapters.

### What you need for this book

To follow along with the examples in this book, you will need the following:

- A computer with an Internet connection
- Apache JMeter: http://jmeter.apache.org/
- ▶ Java Runtime Environment (JRE) or Java Development Kit (JDK): http://www.oracle.com/technetwork/java/javase/downloads/index.html

In addition, for some recipes in Chapter 1, JMeter Fundamentals, you will need the following:

- ▶ Google Chrome Browser: https://www.google.com/chrome/browser/
- Apache Maven: http://maven.apache.org/
- YourKit Java Profiler: http://www.yourkit.com/ (this is commercial ware, but the free trial will do to follow along with the recipe)
- ▶ A Heroku account: http://www.heroku.com
- Apache Tomcat: http://tomcat.apache.org/download-70.cgi

For Chapter 5, Diving into Distributed Testing, you will need the following:

- Vagrant: http://www.vagrantup.com/
- An AWS account: http://aws.amazon.com/
- A Flood.IO account: https://flood.io/
- ▶ A BlazeMeter account: http://blazemeter.com

For Chapter 8, Beyond the Basics, any free Java IDE will do. This includes the following:

- IntelliJ Community Edition: http://www.jetbrains.com/idea/download/
- ▶ Eclipse: https://www.eclipse.org/downloads/

The book contains pointers and additional helpful links to set all these up.

#### Who this book is for

This book is targeted primarily at developers and testers. Developers who have always been intrigued by performance testing and want to get in on the action will find it extremely useful, and will gain essential skills as they walk through the practical recipes in the book.

Testers will also benefit from this book since it will guide them through solving practical, real-world challenges when testing modern web applications, giving them ample knowledge to aid them in becoming better testers. Additionally, they will be exposed to certain helpful testing tools that will come in handy at some point in their testing careers.

### **Conventions**

In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles and an explanation of their meaning.

Code words in text, database table names, folder names, filenames, file extensions, pathnames, dummy URLs, user input, and Twitter handles are shown as follows: "Open the add\_cookie\_manager.jmx test script."

A block of code is set as follows:

```
JMeterVariables:
JMeterThread.last_sample_ok=true
JMeterThread.pack=org.apache.jmeter.threads.SamplePackage@2ae97e14
START.HMS=053854
START.MS=1396517934834
START.YMD=20140403
TESTSTART.MS=1396702498383
speed=7.7
```

```
speed_g=1
speed_g0="speed":7.7
speed_g1=7.7
sunrise=1396694648
sunrise_g=1
sunrise_g0="sunrise":1396694648
sunrise_g1=1396694648
sunset=1396740883
sunset_g=1
sunset_g0="sunset":1396740883
sunset_g1=1396740883
```

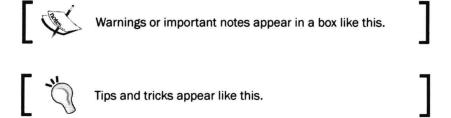
When we wish to draw your attention to a particular part of a code block, the relevant lines or items are set in bold:

```
<body>
Posted by
<a href='/login'>login</a>
<a href='/register'>register</a>
```

Any command-line input or output is written as follows:

```
Adding newrelic:stark on frozen-headland-2987... done, v7 (free) Use `heroku addons:docs newrelic` to view documentation.
```

**New terms** and **Important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "Press the **Record** button."



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