

Quick answers to common problems

JMeter Cookbook

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

Bayo Erinle

[PACKT] open source*
PUBLISHING community experience distilled

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BIRMINGHAM - MUMBAI

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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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Table of Contents

Preface	1
Chapter 1: JMeter Fundamentals	7
Introduction	7
Executing a test script	8
Recording a script via HTTP(S) Test Script Recorder	12
Recording scripts via the Chrome browser extension	17
Converting HTTP web archives (HAR) to JMeter test plans	19
Viewing and analyzing test results	22
Feeding data into a script	24
Using timers	26
Managing HTTP user sessions	27
Testing Single Page Applications (SPAs)	28
Testing AJAX-centric applications	30
Chapter 2: Handling Responses	33
Introduction	33
Using Regular Expression Extractor	34
Using Regular Expression Tester	36
Using CSS/jQuery Extractor	38
Using XPath Extractor	40
Dealing with file downloads	42
Handling XML responses	44
Handling JSON responses	47
Handling HTML responses	50
Using Response Assertion	54
Using Duration Assertion	56
Uploading files with your scripts	58

Chapter 3: Building Robust Test Plans with Controllers	61
Introduction	61
Using Transaction Controller in test plans	62
Using Loop Controller in test plans	65
Leveraging ForEach Controller in test plans	69
Using Interleave and Random Controller in test plans	72
Using Runtime Controller in test plans	77
Chapter 4: Testing Services	81
Introduction	81
Testing REST web services	82
Testing SOAP web services	85
Testing FTP services	90
Testing relational databases	94
Testing NoSQL databases	98
Testing JMS services	101
Chapter 5: Diving into Distributed Testing	105
Introduction	105
Testing applications with JMeter's master-slave setup	106
Testing internal applications using JMeter and Vagrant	109
Testing external facing applications using JMeter, Vagrant, and AWS	113
Testing external facing applications using Flood.IO	118
Testing external facing applications using BlazeMeter	122
Chapter 6: Extending JMeter	125
Introduction	125
Using REST Sampler	126
Using Ultimate Thread Group	130
Using Throughput Shaping Timer	132
Using Console Status Logger	136
Using Dummy Sampler	138
Developing custom JMeter plugins	140
Testing WebSocket-enabled applications	144
Chapter 7: Building, Debugging, and Analyzing the Results of Test Plans	149
Introduction	149
Using the View Results Tree listener	150
Using the Aggregate Report listener	152
Debugging with Debug Sampler	153
Using Constant Throughput Timer	155
Using the JSR223 postprocessor	156

Analyzing Response Times Over Time	159
Analyzing transactions per second	161
Using User Defined Variables (UDV)	163
Chapter 8: Beyond the Basics	165
<hr/>	
Introduction	165
Continuous Integration with JMeter	166
Testing with different bandwidths	173
Using the HTTP Cache Manager component	176
Using script languages within test plans	178
Writing Test scripts through Ruby DSL	181
Understanding JMeter properties	183
Monitoring servers while executing tests (using VisualVM)	186
Monitoring servers while executing tests (using YourKit Profiler)	189
Monitoring servers while executing tests (using New Relic)	192
Performance tips to scale JMeter	197
Appendix: Installing the Supporting Software Needed for This Book	201
<hr/>	
Introduction	201
Installing JMeter	202
Installing Java Development Kit (JDK)	202
Installing JMeter plugins	203
Installing Vagrant	203
Installing VirtualBox	204
Installing Maven	204
Installing Git	205
Obtaining AWS keys for EC2	205
Index	207

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."

 Warnings or important notes appear in a box like this. 

 Tips and tricks appear like this. 

Reader feedback

Feedback from our readers is always welcome. Let us know what you think about this book—what you liked or may have disliked. Reader feedback is important for us to develop titles that you really get the most out of.