

# Troubleshooting Puppet

Troubleshoot your Puppet infrastructure to fix problems quickly

**Thomas Uphill** 



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**BIRMINGHAM - MUMBAI** 

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I would like to thank my wife, Priya Fernandes, for her support while writing this book. Thank you to my PUGS members and Puppet Labs for troubleshooting problems and suggestions. Thank you to Andrew Parker for his input and support. Thank you to my reviewers and the support staff at Packt Publishing. And I'm thankful to everyone who bought *Mastering Puppet* and made it possible for me to write this book.

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# Table of Contents

Preface	V
Chapter 1: Puppet Infrastructure	1
The lifecycle of a Puppet run	2
Puppet configuration	4
puppet help	7
puppet resource	9
puppet apply	10
puppet parser validate	11
Log files and the catalog	11
puppet master	12
puppetserver	12
jq	13
Communication issues	13
Network-related problems	13
Netcat	15
SSL-related problems	18
Summary	23
Chapter 2: Writing Puppet Manifests	25
Writing code	25
Editors	28
Vim	28
Emacs	29
Geppetto	30
puppet-lint	33
Testing code	36
Validating code	36
Vagrant	39
Committing code	45

Table of Contents

Git hooks	46
Using environments	47
Personal branches	47
Summary	48
Chapter 3: Modules and Templates	49
Metaparameters	51
Autorequires	53
Explicit ordering	53
Defined types	55
Custom facts	57
Pry	59
Environment	60
Files	60
Templates	61
Debugging templates	62
Summary	63
Chapter 4: Hiera and External Node Classifiers	65
YAML files	65
JSON	67
Hiera	69
Permissions	70
PuppetDB	71
Debug	72
strace	73
puppet apply	74
External node classifiers – ENCs	76
The Foreman	80
The Foreman proxy	83
Puppet Enterprise	85
LDAP	86
Summary	87
Chapter 5: The Marionette Collective	89
Architecture	89
ActiveMQ configuration	92
JMX	95
ActiveMQ and resource limits	96
Using mco	97
Ping works, nothing else	99
Facts	99
Discovery timeout	100

	Table of Contents
Debugging and logging	101
Direct addressing	102
Time synchronization	103
Summary	103
Chapter 6: PuppetDB and Puppet Server	105
PuppetDB	105
Puppet Server	108
Debugging Ruby	110
Logging	115
Reports	115
Time	116
Summary	117
Chapter 7: Help Me!	119
Puppet Forge/GitHub	119
Community help	120
IRC channels	120
Puppet user groups	121
Puppet Labs	121
Summary	121
Index	123

Puppet is a configuration management system that was written for system administrators so that they could manage a large number of systems efficiently and help maintain order. The deployment of Puppet becomes more complex as you increase the number of nodes in your environment. This book will help you troubleshoot your Puppet infrastructure to leverage your system's performance effectively by using different methods and techniques.

#### What this book covers

*Chapter 1, Puppet Infrastructure,* introduces the various components of a Puppet installation. We cover the problems that arise in the infrastructure and communication between the components.

*Chapter 2, Writing Puppet Manifests,* talks about manifests – the files in which you write the Puppet code. We look at some Puppet code, the common syntax, and formatting problems. We examine tools to help correct our code and discover how to use Git to automatically check our manifests. We also look at a few popular editors and how to configure them to help us edit Puppet code.

*Chapter 3, Modules and Templates,* looks at how code is organized in modules. We'll cover the non-manifest code that is also present in modules such as custom facts. We'll also look at templates and how to debug issues with them.

*Chapter 4, Hiera and External Node Classifiers,* is about Hiera, a hierarchical *key:value* lookup tool that helps Puppet keep the code and data distinct. An external node classifier (ENC) is a way of determining the classes that are applied to a node. In this chapter, we look at the problems that occur when configuring and using these tools.

*Chapter 5, The Marionette Collective,* examines MCollective, a Puppet Labs orchestration tool. ActiveMQ is the message broker that is used by MCollective. We cover problems with the configuration of both ActiveMQ and MCollective.

*Chapter 6, PuppetDB and Puppet Server,* describes how both these tools were written to deal with problems concerning scale. PuppetDB deals with exported resources and reporting and utilizes PostgreSQL. Puppet Server uses the TrapperKeeper framework that was developed by Puppet Labs and relies on a JVM and JRuby. In this chapter, we explore the problems with these tools and how to debug them using Ruby tools.

*Chapter 7, Help Me!,* looks at where you can go when you need some help. We introduce many of the community resources that are available to you when you cannot solve your Puppet problems.

### What you need for this book

This book requires a Puppet installation – either the open source version or Puppet Enterprise. The material covers versions later than Version 3, which includes Version 4. You will need some test nodes with which you can experiment.

### Who this book is for

This book is for moderate to advanced Puppet engineers who work with Puppet in a production environment. The book aims to solve real-world problems that occur in real deployments.

# Conventions

In this book, you will find a number of text styles 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: "Puppet Labs suggested that hook runs puppet parser validate against all the files ending in the .pp extension."

A block of code is set as follows:

```
<root level="debug">
<!--<appender-ref ref="STDOUT"/>-->
<appender-ref ref="${logappender:-DUMMY}" />
```

```
<appender-ref ref="F1"/>
</root>
```

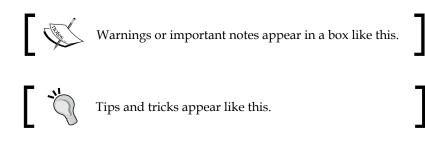
When we wish to draw your attention to a particular part of a code block, the relevant lines or items are set in bold:

```
<root level="debug">
<!--<appender-ref ref="STDOUT"/>-->
<appender-ref ref="${logappender:-DUMMY}" />
<appender-ref ref="F1"/>
</root>
```

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

```
$ openssl verify -CAfile ca_crt.pem mylaptop.pem
mylaptop.pem: OK
```

**New terms** and **important words** are shown in bold. Words that you see on the screen, for example, in menus or dialog boxes, appear in the text like this: "Once your project is imported, apply the Puppet nature to the project by selecting the **Add Puppet Nature** option."



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