



Community Experience Distilled

Troubleshooting Puppet

Troubleshoot your Puppet infrastructure to fix problems quickly

Thomas Uphill

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PUBLISHING community experience distilled

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BIRMINGHAM - MUMBAI

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Preface

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_cert.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."



Warnings or important notes appear in a box like this.



Tips and tricks appear like this.

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