In Chapter 1 we installed and configured Puppet, created our first module, and applied that module and its configuration via the Puppet agent to a host. In this chapter, we’re going to extend this process to build some more complete modules and hosts with Puppet for a hypothetical company, Example.com Pty Ltd. Each host’s functionality we build will introduce new Puppet concepts and ideas.

Example.com Pty Ltd has four hosts we’re going to manage with Puppet: a Web server, a database server, a mail server and our Puppet master server located in a flat network. You can see that network in Figure 2-1.

Like many organizations, though, Example.com is not a very homogenous environment and each host uses a different operating system, as follows:

- mail.example.com – (Red Hat Enterprise Linux 5)
- db.example.com – (Solaris 10)
- web.example.com – (Ubuntu 10.04)
- puppet.example.com – (Ubuntu 10.04)
To solve this problem, we’ll begin by working through how we use Puppet in a multiple operating system environment. Be sure you’ve installed the base operating system on these hosts as described in Chapter 1, because we’ll perform some basic configuration on the hosts. We’ll start with configuring SSH for each host, then we’ll install and configure some role-specific applications for the hosts as follows:

- Postfix (mail.example.com)
- MySQL (db.example.com)
- Apache and a website (web.example.com)
- Manage the Puppet master with Puppet (puppet.example.com)

As we configure each host, we’ll introduce some of the different features and functions available in Puppet. By the end of the chapter you’ll have a firm grasp of the basics. In subsequent chapters, we’ll build on this knowledge and introduce some of Puppet’s more advanced features.

**Getting Started**

Before proceeding, we must have the proper setup, so we need to install the Puppet master and agent and then create node definitions for each of our hosts.

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**Note** As we mentioned in Chapter 1, the Puppet software is called the “agent.” Puppet calls the definition of the host itself a “node.”

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**Installing Puppet**

First, we need to install the Puppet master and agent. We’re going to install the Puppet master on puppet.example.com and the Puppet agent on all our hosts, including puppet.example.com. We’re installing the agent on the Puppet master because we’re going to use Puppet to manage itself! We then need to connect, create and sign certificates for each host. To do this, you should follow the installation instructions for the relevant operating system from Chapter 1 on each of the four hosts. For example, for installation on the Red Hat Enterprise Linux host, use the instructions in the **Installing on Red Hat Enterprise Linux and Fedora** section. You can then move on to configuring the nodes (aka hosts).

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**Tip** If you use a provisioning tool like Kickstart or Preseed, you can also include Puppet installation and signing as part of your build process. You can see an example of how to do that at http://projects.puppetlabs.com/projects/1/wiki/Bootstrapping_With_Puppet.