CS312 Homework #3

February 11, 2015

Instructions

Please submit all answers as a single text file via T.E.A.C.H using the naming format `$onidusername-hw3.txt` and the cookbook tarball as `$onidusername-hw3-cookbook.tar.gz`. This homework is due at 4pm on Wednesday, Feb 18.

Questions

1. (1pt) Describe why configuration management is important. What was one of the first configuration management system widely used?
2. (1pt) Name four important problems that configuration management provides solutions for.
3. (1pt) Name two primary differences between Puppet and Chef.
4. (2pts) Given the following Chef code, explain in detail what its doing step by step. Is there a problem with this chef code, if so what is it?

```
service 'ntpd' do
  action [:enable, :start]
end

package 'ntpd' do
  package_name 'httpd'
  action :install
end
```

5. (1pt) Explain the differences between push and pull models in configuration management. What are pros and cons of each?
6. (1pt) Name two configuration management tools that use push and two that use the pull method.
7. (2pts) Give a brief description of each of the following components of chef. List any relationships between the components in their descriptions.

```
Resources
Providers
Nodes
Roles
Environments
```

8. (1pt) The slides skipped over two types of node attributes. What are they? (Hint: Chef has very good documentation on the subject of attributes at `http://docs.chef.io`).
9. (1pt) Describe why templates are useful in the context of configuration management. Why should using files instead of templates be avoided?
10. (1pt) Describe what Test Kitchen does and why its important.
11. (3pts) Chef has a series of interesting podcasts on both Chef specifically and DevOps in general, located at `http://foodfightshow.org/archives`. Listen to one entry that interests you. Write down the URL, a brief (1 paragraph) description of the podcast, and 3 things you learned.
12. (5pts) Change the default recipe to pass all of the serverspec tests for the following cookbook: `https://github.com/osuosl/cs312-hw-cookbook`. Use Test Kitchen to converge, verify and test the recipe and run the tests. Once you have a recipe finished and passing all serverspec tests, tar up the entire cookbook into a file named `<onid>-hw3-cookbook.tar.gz` and attach it to your email along with the rest of your homework answers. Don't forget to utilize the Chef documentation page to help you out!

Bonus: For 2 bonus points each,

A. Use community cookbooks for Apache (httpd) and the iptables rule

B. Ensure all ruby files pass Rubocop

C. Ensure Foodcritic compliance