Refining Custom Resources

Objectives:

- Set a default action for a custom resource property.

- Tying a custom resource's name to a property.

- Setting up default values for properties.

- Define notifications correctly when creating custom resources.

  Selecting a Default Action:

  - Resources have a default action. The default action is often the action that is most expected. For most resources it is an additive/restorative action that moves the system into the desired state.

  - The first action listed within the custom resource definition is, by default, the default action. **But the default action can be explicitly defined within the resource definition**, and can be any action listed in the custom resource.

Define the default action in an apache resource

1. **Update ~/chef-repo/cookbooks/apache/resources/vhost.rb to the following:**

```ruby
property :site_name, String
property :site_port, Integer

default_action :create

action :create do
  directory "/srv/apache/#{new_resource.site_name}/html" do
    recursive true
    mode '0755'
  end
```

2. Remove the default action for the apache_vhost resources in the default recipe.

```ruby
package node['apache']['package_name'] do
end

apache_vhost node['apache']['site_name'] do
  site_name node['apache']['site_name']
  action :remove
end

apache_vhost 'users' do
  site_name 'users'
  site_port 80
  action :create
end

apache_vhost 'admins' do
  site_name 'admins'
  site_port 8080
  action :create
end

service node['apache']['service_name'] do
  action [:enable, :start]
end
```

3. Use **ChefSpec** and **Test Kitchen** to verify your changes

Tying the resource name to the property

- Single properties may have the **'name_attribute'** option **set to true**

- This property is automatically populated from the name of the resource

- Using the name of the resource removes the need to specify that property

4. **Set the site_name name_attribute to true in**

   ~/chef-repo/cookbooks/apache/resources/vhost.rb:

```
property :site_name, String, name_attribute: true
property :site_port, Integer

default_action :create

action :create do
```

5. Now that the **name_attribute** is set to **true** for the **site_name property**, the **site_name resource** can be **removed** from the **default recipe**:

```
package node['apache']['package_name'] do
end

apache_vhost node['apache']['site_name'] do
  site_name node['apache']['site_name']
  action :remove
end

apache_vhost 'users' do
  site_name 'users'
  site_port 80
end

apache_vhost 'admins' do
  site_name 'admins'
  site_port 8080
end

service node['apache']['service_name'] do
  action [:enable, :start]
end
```

6. Use ChefSpec and Test Kitchen to verify your changes

Setting up default values for resource properties

7. Update **~/chef-repo/cookbooks/apache/resources/vhost.rb to**
   set the default port to be on port 80:

```
property :site_name, String, name_attribute: true
property :site_port, Integer, default: 80

default_action :create
```

8. Remove the site_port property from the default recipe of the apache cookbook:

```
package node['apache']['package_name'] do
end

apache_vhost node['apache']['site_name'] do
  site_name node['apache']['site_name']
  action :remove
end

apache_vhost 'users' do
  site_port 80
end

apache_vhost 'admins' do
  site_port 8080
end

service node['apache']['service_name'] do
  action [:enable, :start]
end
```

9. Use ChefSpec and Test Kitchen to verify the changes

Defining notifications in a custom resource is not common practice.

Defining a notification in a resource under a custom resource creates a fragile relationship. This can be addressed by removing any notifications that point to outside resources.

10. Add notifications to the resources in the default recipe:

```ruby
package node['apache']['package_name']

apache_vhost node['apache']['site_name'] do
  site_name node['apache']['site_name']
  action :remove
  notifies :restart, node['apache']['service_resource']
end

apache_vhost 'users' do
  notifies :restart, node['apache']['service_resource']
end

apache_vhost 'admins' do
  site_port 8080
  notifies :restart, node['apache']['service_resource']
end

service node['apache']['service_name'] do
  action [:enable, :start]
end
```

11. Use **ChefSpec** and **Test Kitchen** to verify the changes

```
/home/ubuntu/chef-repo/cookbooks/apache --$ chef exec rspec
..........

Finished in 1.88 seconds (files took 1.08 seconds to load)
11 examples, 0 failures

/home/ubuntu/chef-repo/cookbooks/apache --$
```

```
  Port 80
    ✔  is expected to be listening
  File /srv/apache/admins/html/index.html
    ✔  is expected to exist
  File /srv/apache/users/html/index.html
    ✔  is expected to exist
  Command: `curl http://localhost`
    ✔  stdout is expected to match /Welcome users/
  Command: `curl http://localhost:8080`
    ✔  stdout is expected to match /Welcome admins/

Test Summary: 5 successful, 0 failures, 0 skipped
       Finished verifying <default-centos-7> (0m3.42s).
-----> Setting up <default-ubuntu-2004>...
       Finished setting up <default-ubuntu-2004> (0m0.00s).
-----> Verifying <default-ubuntu-2004>...
       Loaded tests from {:path=>".home.ubuntu.chef-repo.cookbooks.apache.test.integration.default"}

Profile: tests from {:path=>"/home/ubuntu/chef-repo/cookbooks/apache/test/integration/default"} (test
s from {:path=>".home.ubuntu.chef-repo.cookbooks.apache.test.integration.default"})
Version: (not specified)
Target:  docker://01129a9805f61e1ed0f3d797789884003c05431929041b7f7b34c3c61806a205

  Port 80
    ✔  is expected to be listening
  File /srv/apache/admins/html/index.html
    ✔  is expected to exist
  File /srv/apache/users/html/index.html
    ✔  is expected to exist
  Command: `curl http://localhost`
    ✔  stdout is expected to match /Welcome users/
  Command: `curl http://localhost:8080`
    ✔  stdout is expected to match /Welcome admins/

Test Summary: 5 successful, 0 failures, 0 skipped
       Finished verifying <default-ubuntu-2004> (0m1.46s).
-----> Test Kitchen is finished. (0m6.02s)
```

Notify your instructor that you are done with the lab

END OF LAB