Testing Resources in Recipes



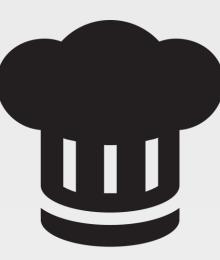
Objectives

After completing this module, you should be able to:

> Test resources within a recipe using ChefSpec



Testing Remaining Resources



No resources left behind!

Objective:

- ☐ Write and execute tests for the Install recipe
- □ Verify the test validates the recipe



Generated Recipes Also Generate Specs



```
> tree spec
spec
    spec helper.rb
   - unit
        recipes
            configuration spec.rb
            default spec.rb
            install spec.rb
           - service spec.rb
```



Execute the Install Specification



> chef exec rspec spec/unit/recipes/install_spec.rb

```
Finished in 0.7663 seconds (files took 1.86 seconds to load)
2 examples, 0 failures
```



Delete context for Ubuntu

~/apache/spec/unit/recipes/install_spec.rb

```
require 'spec helper'
describe 'apache::install' do
 context 'When all attributes are default, on Ubuntu 16.04' do
    let(:chef run) do
      # for a complete list of available platforms and versions see:
      # https://github.com/customink/fauxhai/blob/master/PLATFORMS.md
      runner = ChefSpec::ServerRunner.new(platform: 'ubuntu', version: '16.04')
      runner.converge(described recipe)
    end
    it 'converges successfully' do
      expect { chef_run }.to_not raise_error
    end
  end
```



Update the ChefSpec Platform

,

~/apache/spec/unit/recipes/install_spec.rb

```
require 'spec helper'
describe 'apache::install' do
  context 'When all attributes are default, on an CentOS 6.9' do
    let(:chef run) do
      runner = ChefSpec::ServerRunner.new(platform: 'centos', version: '6.9')+
      runner.converge(described recipe)
    end
    it 'converges successfully' do
      expect { chef run }.to not raise error
    end
  end
end
```



Add a Pending Test to Verify the Package

~/apache/spec/unit/recipes/install_spec.rb # ... START OF THE SPEC FILE ... it 'converges successfully' do expect { chef run }.to not raise error end it 'installs the necessary package' end end



ChefSpec Documentation

Find within the documentation examples of testing packages

https://github.com/chefspec/chefspec/tree/master/examples/package



Write the Test to Verify the Package

~/apache/spec/unit/recipes/install_spec.rb

```
# ... START OF THE SPEC FILE ...
    it 'converges successfully' do
      expect { chef run }.to not raise error
    end
    it 'installs the necessary package' do
      expect(chef run).to install package('httpd')
    end
  end
end
```

Write the Test to Verify the Package

~/apache/spec/unit/recipes/install_spec.rb # ... START OF THE SPEC FILE ... it 'converges successfully' do expect { chef_run } .to_not raise_error end it 'installs the necessary package' do expect(chef run).to install package('httpd') end resource's name end end resource's action resource



Execute the Test to See it Pass

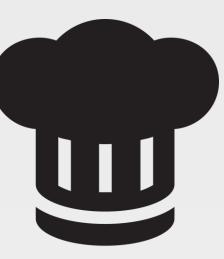


> chef exec rspec spec/unit/recipes/install_spec.rb

```
Finished in 0.73662 seconds (files took 4.4 seconds to load)
2 examples, 0 failures
```



Testing Remaining Resources



No resources left behind!

Objective:

- ✓ Write and execute tests for the Install recipe
- ☐ Verify the test validates the recipe



PROBLEW It's Quiet. Too Quiet.



When a test passes immediately without having to write code (or if the code has already been written) it is time to be concerned. This is one of those moments we should ensure that the tests are working by mutating that code.



Comment Out the Resource

~/apache/recipes/install.rb # Cookbook Name:: apache # Recipe:: install # Copyright (c) 2017 The Authors, All Rights Reserved. # package 'httpd'



Execute the Test to See it Fail



> chef exec rspec spec/unit/recipes/install_spec.rb

```
Failures:
  1) apache::install When all attributes are default, on an CentOS
6.9 installs the appropriate package
     Failure/Error: expect(chef run).to install package('httpd')
       expected "package[httpd]" with action :install to be in
Chef run. Other package resources:
```



Uncomment Out the Resource

~/apache/recipes/install.rb # Cookbook Name:: apache # Recipe:: install # Copyright (c) 2017 The Authors, All Rights Reserved. package 'httpd'



Execute the Test to See it Pass

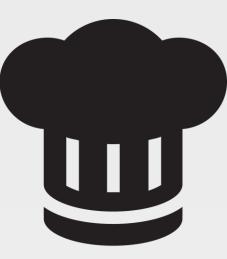


> chef exec rspec spec/unit/recipes/install_spec.rb

```
Finished in 0.73662 seconds (files took 4.4 seconds to load)
2 examples, 0 failures
```



Testing Remaining Resources



No resources left behind!

Objective:

- ✓ Write and execute tests for the Install recipe
- ✓ Verify the test validates the recipe







Test the Remaining Recipes

- □ Write a pending example
- ☐ Find the ChefSpec implementation
- □ Verify that the new example passes
- Mutate the recipe to generate a failure
- Restore the code in the recipe
- Verify that all examples pass
 - ❖ Repeat this series of steps for the configuration recipe and service recipe



Delete context for Ubuntu

~/apache/spec/unit/recipes/service_spec.rb

```
require 'spec helper'
describe 'apache::service' do
 context 'When all attributes are default, on Ubuntu 16.04' do
    let(:chef run) do
      # for a complete list of available platforms and versions see:
      # https://github.com/customink/fauxhai/blob/master/PLATFORMS.md
      runner = ChefSpec::ServerRunner.new(platform: 'ubuntu', version: '16.04')
      runner.converge(described recipe)
    end
    it 'converges successfully' do
      expect { chef_run }.to_not raise_error
    end
  end
```



Update the ChefSpec Platform

~/apache/spec/unit/recipes/service_spec.rb

```
require 'spec helper'
describe 'apache::service' do
  context 'When all attributes are default, on an CentOS 6.9' do
    let(:chef run) do
      runner = ChefSpec::ServerRunner.new(platform: 'centos', version: '6.9')
      runner.converge(described recipe)
    end
    it 'converges successfully' do
      expect { chef run }.to not raise error
    end
  end
end
```



Write the Tests to Verify the Service

~/apache/spec/unit/recipes/service_spec.rb

```
# ... START OF THE SPEC FILE ...
    it 'starts the necessary service' do
      expect(chef run).to start service('httpd')
    end
    it 'enables the necessary service' do
      expect(chef run).to enable service('httpd')
    end
  end
end
```



Execute the Tests to See it Pass



> chef exec rspec spec/unit/recipes/service_spec.rb

```
Finished in 0.93685 seconds (files took 4.28 seconds to load)
3 examples, 0 failures
```







Test the Remaining Recipes

- ✓ Write a pending example
- ✓ Find the ChefSpec implementation
- ✓ Verify that the new example passes
- ✓ Mutate the recipe to generate a failure
- ✓ Restore the code in the recipe
- ✓ Verify that all examples pass
 - **❖** Repeat this series of steps for the configuration recipe and service recipe



Delete context for Ubuntu

~/apache/spec/unit/recipes/configuration_spec.rb

```
require 'spec helper'
describe 'apache::configuration' do
 context 'When all attributes are default, on Ubuntu 16.04' do
    let(:chef run) do
      # for a complete list of available platforms and versions see:
      # https://github.com/customink/fauxhai/blob/master/PLATFORMS.md
      runner = ChefSpec::ServerRunner.new(platform: 'ubuntu', version: '16.04')
      runner.converge(described recipe)
    end
    it 'converges successfully' do
      expect { chef_run }.to_not raise_error
    end
  end
```



Update the ChefSpec Platform

~/apache/spec/unit/recipes/configuration_spec.rb

```
require 'spec helper'
describe 'apache::configuration' do
  context 'When all attributes are default, on an CentOS 6.9' do
    let(:chef run) do
      runner = ChefSpec::ServerRunner.new(platform: 'centos', version: '6.9')
      runner.converge(described recipe)
    end
    it 'converges successfully' do
      expect { chef run }.to not raise error
    end
  end
end
```



Write the Tests to Verify the Service

~/apache/spec/unit/recipes/configuration_spec.rb

```
# ... START OF THE SPEC FILE ...
    it 'creates the index.html' do
      expect(chef run).to render file('/var/www/html/index.html').with content('<h1>Welcome Home!</h1>')
    end
 end
end
```





rspec

When you run **rspec** without any paths it will automatically find and execute all the "_spec.rb" files within the 'spec' directory.



Execute All the Tests in the Spec Directory



```
> chef exec rspec
Finished in 2.31 seconds (files took 1.86 seconds to load)
11 examples, 0 failures
```



Discussion Discussion

What value does it bring to validate that the resources take the appropriate action?



DISCUSSION DE LA CONTRA DEL CONTRA DE LA CONTRA DEL CONTRA DE LA CONTRA DEL CONTRA DE LA CONTRA DEL CONTRA DE LA CONTRA DE

What questions can we answer for you?



Morning

Introduction
Why Write Tests? Why is that Hard?
Writing a Test First
Refactoring Cookbooks with Tests

Afternoon

Faster Feedback with Unit Testing
Testing Resources in Recipes
Refactoring to Attributes
Refactoring to Multiple Platforms



