Starting from Failure: TDD for your Infrastructure

Terraform + Kitchen + Inspec = ♥

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The paper

Will be used to connect to VMs

Resources

Workshop: https://bit.ly/2RPNOCf

This presentation is in the repository under the presentation directory

Kitchen Terraform: https://bit.ly/2QSCgNj

Overview of the workshop

Basics(Terminology, Kitchen phases, etc)

Module structure

Write a few tests

Write our module

Run our module and finish the tests

Q/A

Terminology

Terraform Module - Self contained package of Terraform configuration managed as a group.

```
variable "my_name" {}

locals {
  name_md5 = "${md5(var.my_name)}"
}

output "name_m5" {
  value = "${local.name_md5}"
}
```

Kitchen - A test harness for infrastructure code

kitchen-terraform - Driver and Provisioner plugin for Kitchen for Terraform code.

inspec - Audit and testing framework used to run tests with kitchen-terraform

Kitchen commands

kitchen list - lists suites and their current status

kitchen create - Verifies Terraform installation

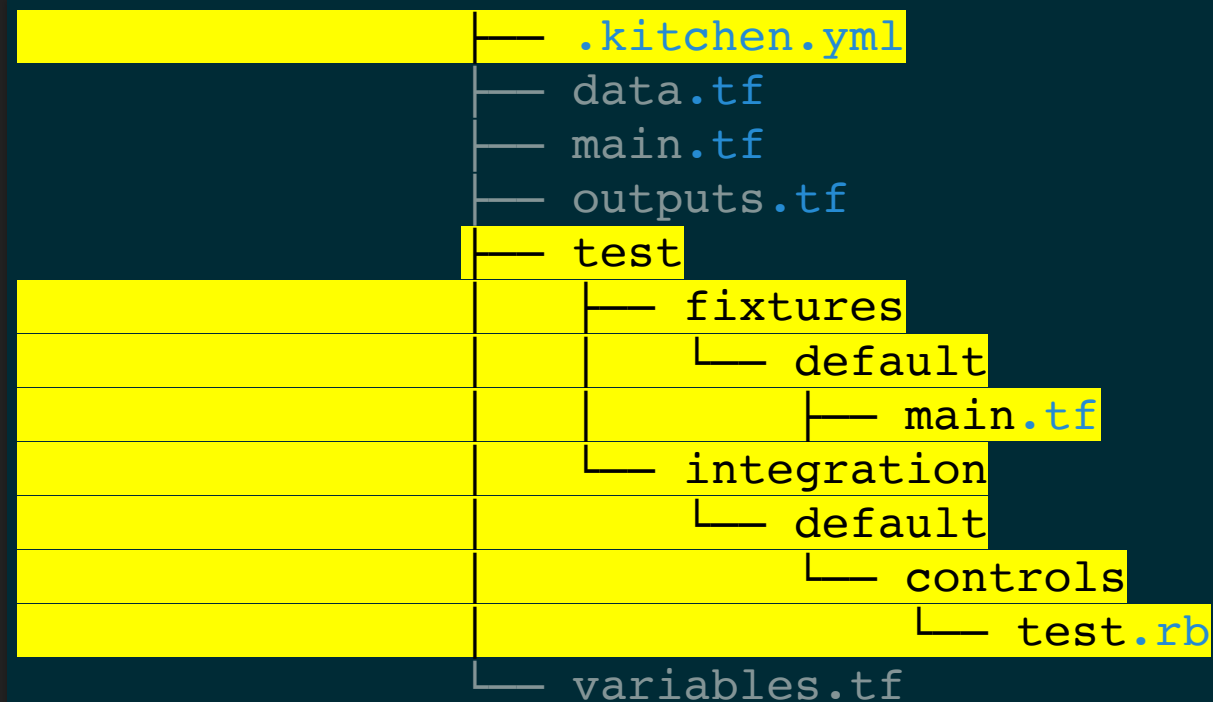kitchen converge - applies your Terraform configuration

kitchen verify - runs tests

kitchen destroy - destroys Terraform configuration

kitchen test - performs create, converge, verify, destroy all in a row

Module structure

Standard Test Kitchen Layout

```
├── .kitchen.yml
├── data.tf
├── main.tf
├── outputs.tf
├── test
│   ├── fixtures
│   │   └── default
│   │       ├── main.tf
│   └── integration
│       └── default
│           └── controls
│               └── test.rb
└── variables.tf
```

.kitchen.yml drives the whole thing

```yaml
---
driver:
  name: terraform
  root_module_directory: test/fixtures/default

provisioner:
  name: terraform

platforms:
  - name: test

verifier:
  name: terraform
  format: documentation
  systems:
```

Root

The actual module goes here

```
├── data.tf
├── main.tf
├── outputs.tf
└── variables.tf
```

test/fixtures

Here is our test module

```
├── test
│   ├── fixtures
│   │   └── default
│   │       ├── main.tf
```

```hcl
module "test" {
  source = "../../.."
}
```

test/integration

Our tests go in here

```
├── test
│   └── integration
│       └── default
│           └── controls
│               └── test.rb
```

Basic Inspec Usage

https://www.inspec.io/

```ruby
describe command 'whoami' do
  its('stdout') { should match /cullen/ }
end
```

What are we making?

EC2 Instance + Load Balancer + SSL Certificate

Connecting to the VM

Port 3200 is a Web IDE

Port 4200 is a Web Terminal

Let's write some tests!

Q/A