

Terraform

Terraform - A more versatile tool, than you thought



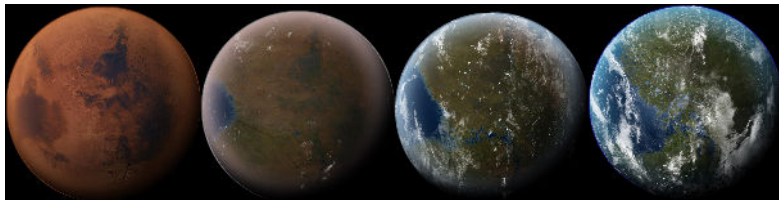
Dr. Sebastian Oehlke

2019-08-11

This is a high level talk to show the possibilities.

For illustration purpose the code is not in best practice.

We need n-resources ...now. They have to meet following criteria ...



<https://en.wikipedia.org/wiki/Image:MarsTransitionV.jpg>

- ▶ Infrastructure-as-code
- ▶ Hashicorp (Vagrant, Vault, Packer)

- ▶ Codified API-calls in declarative configuration files
- ▶ Open-Source

Marketing promises

- ▶ Safely and predictable
- ▶ Create, change or improve infrastructure
- ▶ Combine different provider

General advantages of working with code

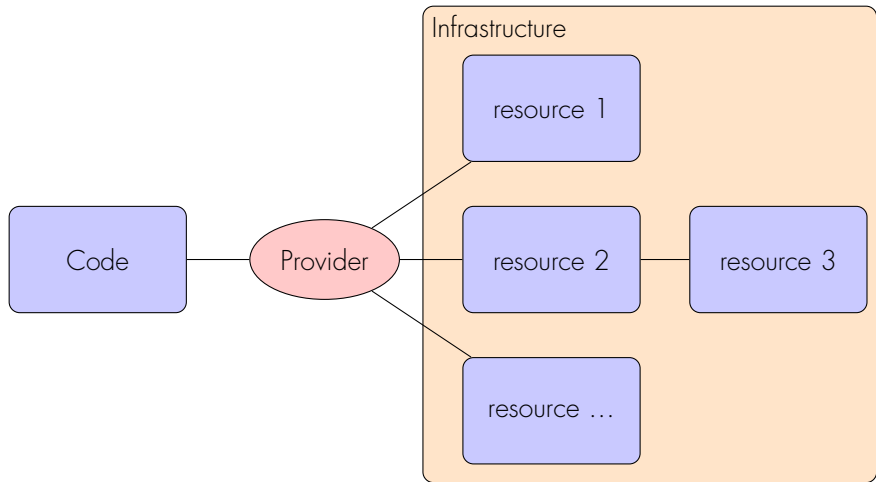
- ▶ Share code, version control and review possibilities
- ▶ Modular
- ▶ Easy to automate

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Provider-groups:

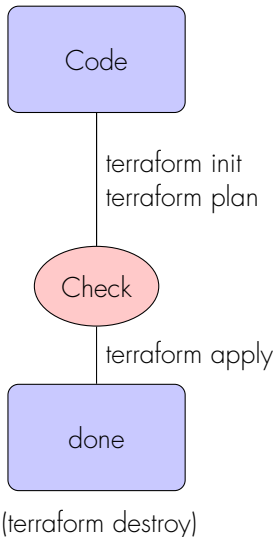
- ▶ Management of Cloud-Services
- ▶ Management of Container-Platforms
- ▶ Network Provider
- ▶ Version Control Systems
- ▶ Monitoring & System Management
- ▶ Databases

⇒ If there is an API, you can most likely manage it with Terraform.

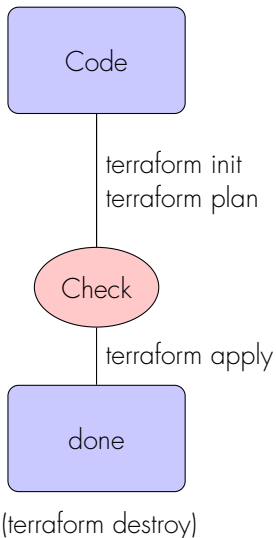
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⇒ If there is an API, you can most likely manage it with Terraform.



- ▶ Syntax check and loading of required plugins
- ▶ Creation of an overview
 - ▶ What does exist already?
 - ▶ What will be changed?
 - ▶ How are the changes applied?
- ▶ Provider communication (API)
- ▶ (resource removal)



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variables.tf :

```
variable "region" {  
  description = "Region to be used"  
}
```

terraform.tfvars :

```
region = "eu-central-1"
```

Code :

```
region = var.region
```

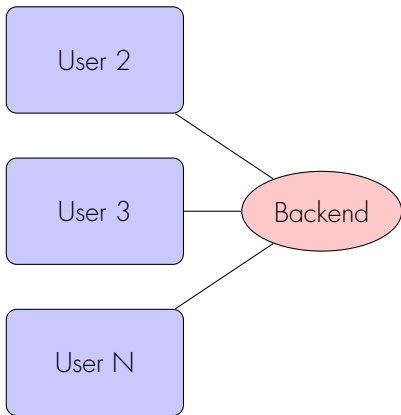
⇒ Can be combined with modules

```
module "name" {  
  source = "/path/to/folder"  
  variable1 = "foo"  
  variable2 = "bar"  
}
```

```
module "frontend" {  
  source = "git::git@github.com:user/module.git/m-name?ref=v0.1"  
  
  variable1 = 8  
  variable2 = 20  
}
```

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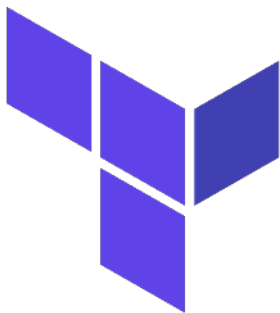



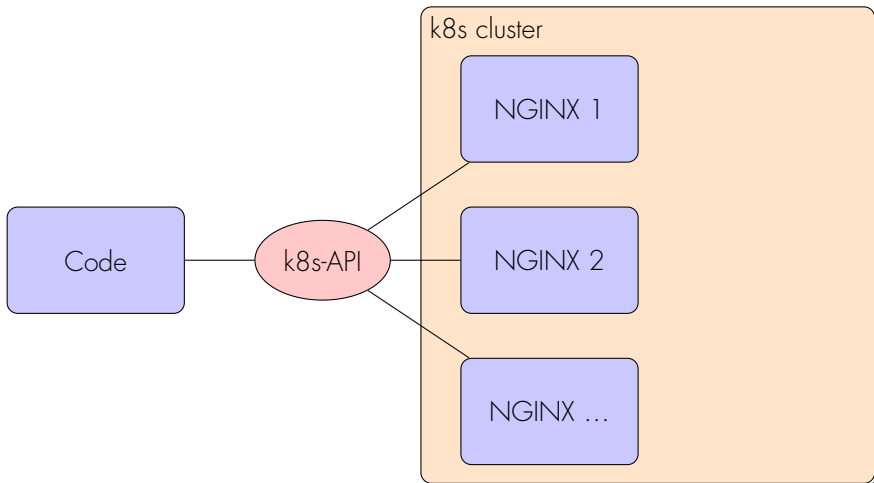
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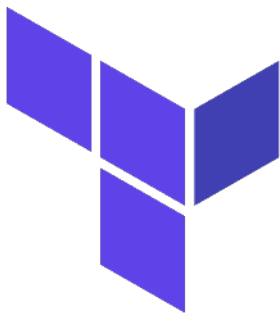
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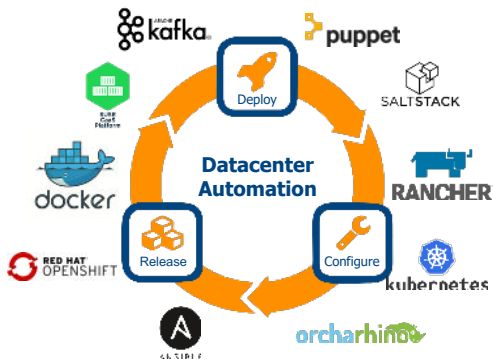
Why not combine both? Lets build a pipeline...

Show demo
how to connect cluster to gitlab-project

Current critics

- ▶ Gives great overview about what will be changed
- ▶ Code is provider specific
 - ▶ Due to different applied technologies, there is no 1:1 migration possible
- ▶ Provisioners are relatively limited
 - ▶ Currently: Chef, Salt, Puppet and rudimentary provisioners
 - ▶ Currently no Ansible-support

Terraform is still in version 0.x therefore, bigger changes can be expected



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