

Updating Your Configuration with More Resources



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Module Overview



Improving our architecture

Using the documentation

Adding resources

Viewing state data





Globomantics Scenario



Potential Improvements



Add a second availability zone

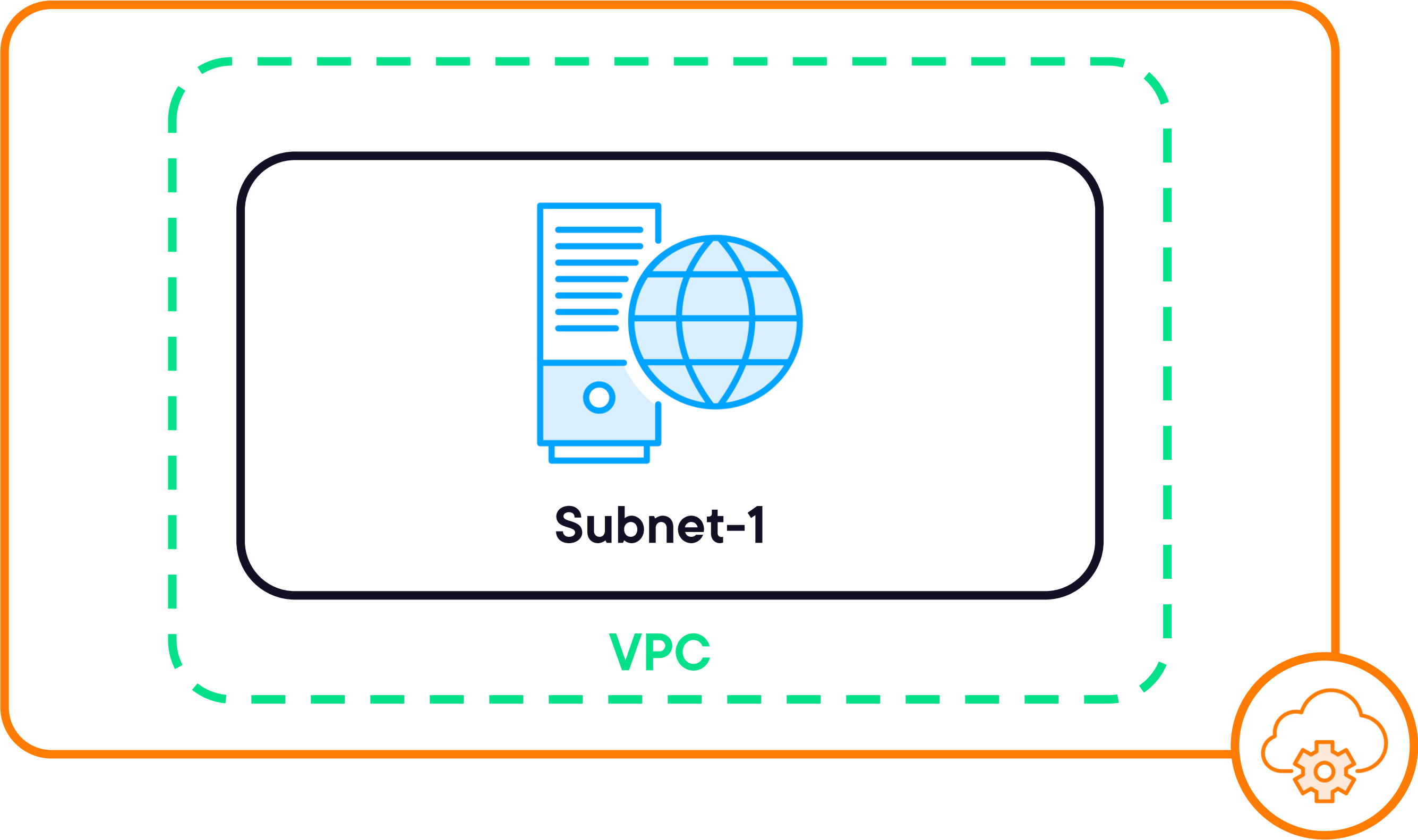
Add a second EC2 instance

Add load balancing for instances

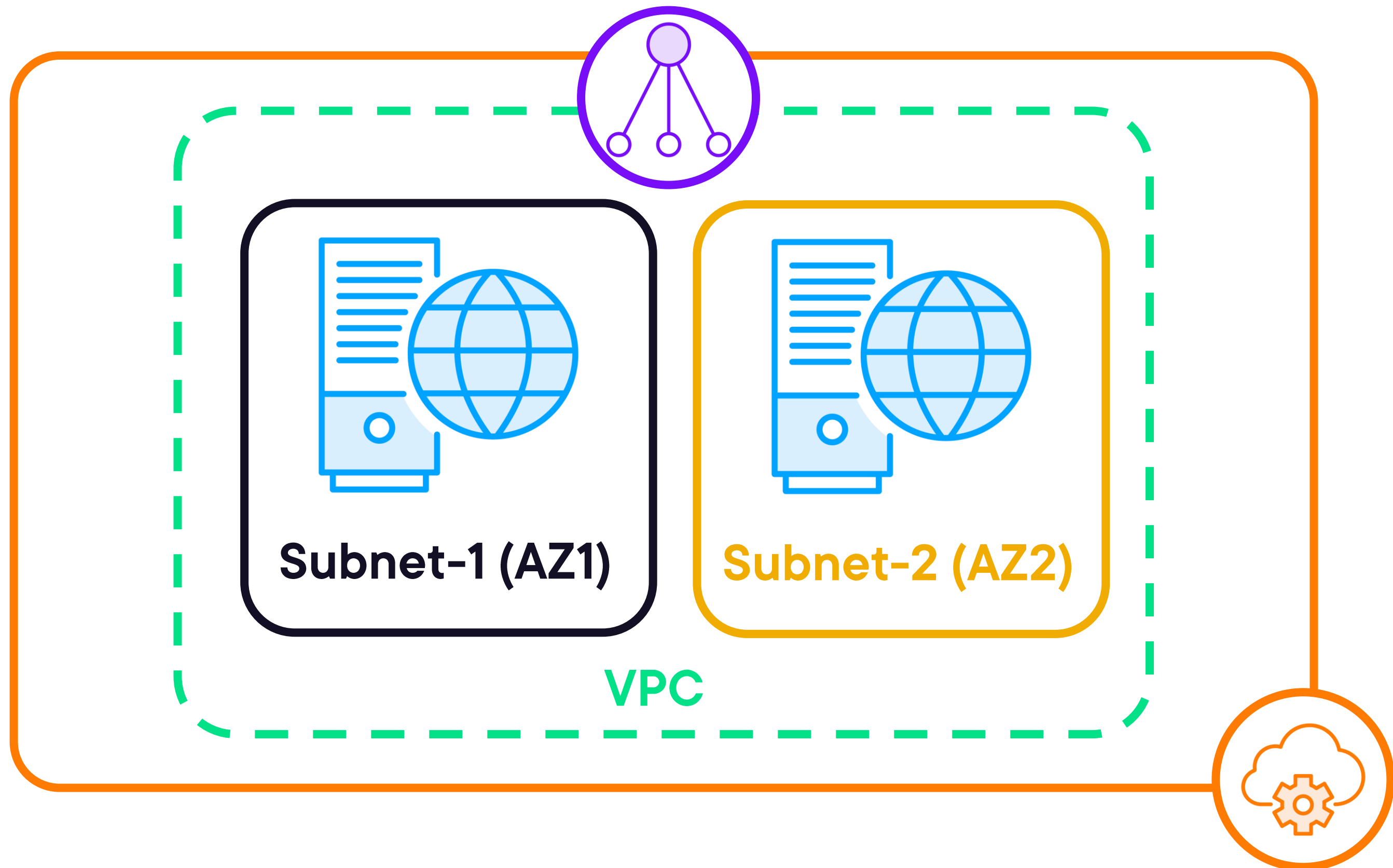
Maintain readability of code



Deployment Architecture



Deployment Architecture



Additional Data Sources and Resources

```
# Data source

"aws_availability_zones" # List of current availability zones

# Load balancer resources

"aws_lb" # AWS Application Load Balancer

"aws_lb_target_group" # Target group for load balancer

"aws_lb_listener" # Listener configuration for target group

"aws_lb_target_group_attachment" # Attach to EC2 instances
```



**There is no shame in
reading the docs.**

developer.hashicorp.com
registry.terraform.io

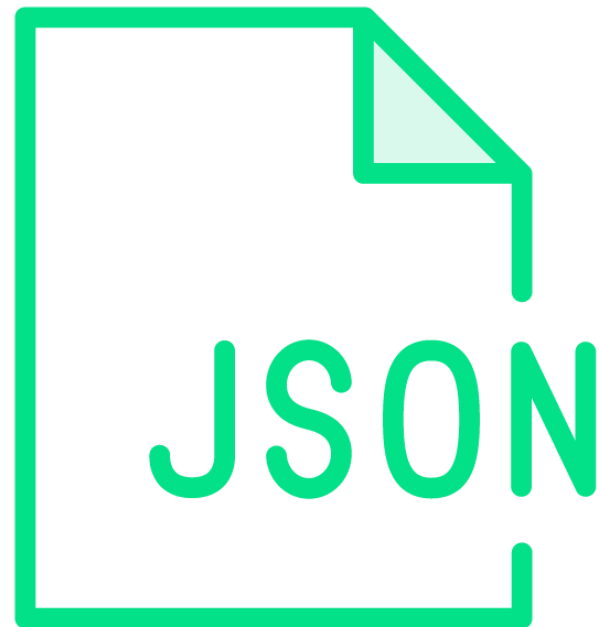




State Data Overview



Terraform State



Contents

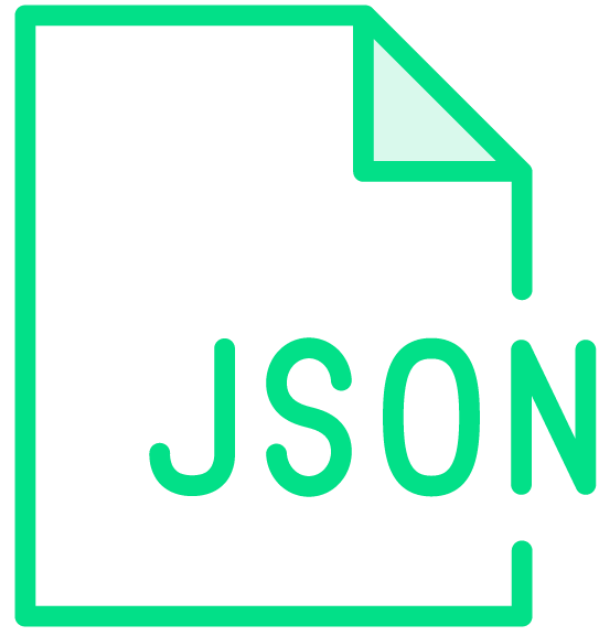
- Resources, data sources, and outputs
- JSON format (Do not touch!)
- Maps object address to unique ID

Planning

- Refresh on execution plan
- Diff between configuration and state data
- Locking



Terraform State



Location

- Local
- Remote: AWS, Azure, NFS, Terraform Cloud
- Collaboration and protection

Workspaces





State Scenarios



Scenario #1

New resource block in the configuration

What will Terraform do?

aws_instance.nginx

Configuration

empty

State data

no resource

AWS



Scenario #1

New resource block in the configuration

What will Terraform do?

aws_instance.nginx

Configuration

empty

State data

id-314159

AWS

Create instance



Scenario #1

New resource block in the configuration

What will Terraform do?

`aws_instance.nginx`

Configuration

`aws_instance.nginx =
id-314159`

State data

Update state data

`id-314159`

AWS

Create instance



Scenario #2

Missing instance in AWS

What will Terraform do?

`aws_instance.nginx`

Configuration

`aws_instance.nginx =
id-314159`

State data

???

AWS



Scenario #2

Missing instance in AWS

What will Terraform do?

```
aws_instance.nginx
```

Configuration

```
aws_instance.nginx =  
  id-314159
```

State data

```
id-8675309
```

AWS

Create instance



Scenario #2

Missing instance in AWS

What will Terraform do?

```
aws_instance.nginx
```

Configuration

```
aws_instance.nginx =  
  id-8675309
```

State data

Update state data

```
id-8675309
```

AWS

Create instance



Scenario #3

Removed instance resource from configuration

What will Terraform do?

empty

Configuration

**aws_instance.nginx =
id-8675309**

State data

id-8675309

AWS



Scenario #3

Removed instance resource from configuration

What will Terraform do?

empty

Configuration

**aws_instance.nginx =
id-8675309**

State data

no instance

AWS

Destroy instance



Scenario #3

Removed instance resource from configuration

What will Terraform do?

empty

Configuration

empty

State data

Update state data

no instance

AWS

Destroy instance



Scenario #4

Removed entry from state data

What will Terraform do?

aws_instance.nginx

Configuration

empty

State data

id-8675309

AWS



Scenario #4

Removed entry from state data

What will Terraform do?

aws_instance.nginx

Configuration

empty

State data

id-8675309

id-314159

AWS

Create an instance



Scenario #4

Removed entry from state data

What will Terraform do?

`aws_instance.nginx`

Configuration

`aws_instance.nginx =
id-314159`

State data

Update state data

`id-8675309
id-314159`

AWS

Create an instance



State Commands

List all state resources

```
terraform state list
```

Show a specific resource

```
terraform state show ADDRESS
```

Move an item in state

```
terraform state mv SOURCE DESTINATION
```

Remove an item in state

```
terraform state rm ADDRESS
```



First rule of Terraform?

Make all changes with Terraform.



Module Summary



Improving our deployment

Read the docs!

Explore state data



Up Next:

Adding a New Provider to Your Configuration

