



**Tim Davis**

DevOps Advocate, env0  
@vTimD

# Pitfalls of Infrastructure as Code

And how to avoid them!



# About Tim



## Startups



DevOps  
Advocate

## Bigger Companies



Cloud & Developer  
Advocate



Enterprise  
Architect



Infrastructure  
Operations



What is Infrastructure as Code?

# The Infrastructure As Code Model

This

```
provider "aws" {
  region = "us-west-2"
}

data "aws_ami" "ubuntu" {
  most_recent = true

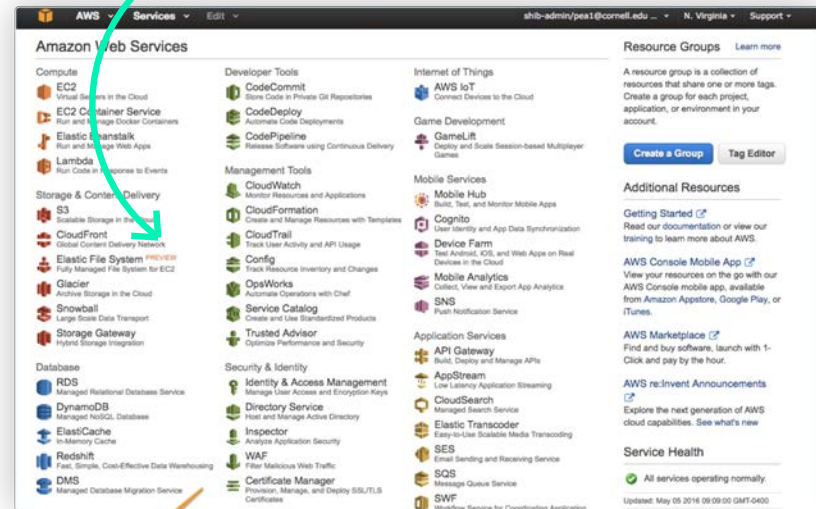
  filter {
    name   = "virtualization-type"
    values = ["hvm"]
  }

  owners = ["099720109477"] # Canonical
}

resource "aws_instance" "web" {
  ami           = data.aws_ami.ubuntu.id
  instance_type = "t3.micro"

  tags = {
    Name = "HelloWorld"
  }
}
```

Instead of This





What types of pitfalls can come up?

# It's Infrastructure + Code

All of the pitfalls of Infrastructure

+

All of the pitfalls of Code

Dev AND Ops Involvement

Dev...Ops...DevOps. Get it?



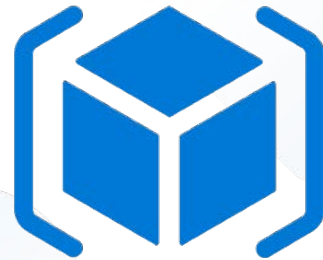
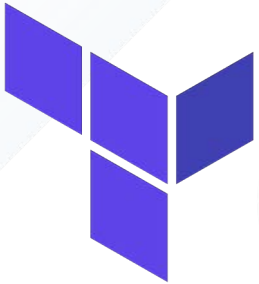
The background is a solid blue color with several overlapping geometric shapes in various shades of blue and teal. These shapes include circles, rounded rectangles, and trapezoids, some of which are tilted at an angle. The shapes are scattered across the page, creating a modern, abstract pattern.

## Infrastructure Pitfalls



# Different IaC Choices

Which one do you choose?





# Security

It's not just an afterthought!



# Security

Shift-Left With:



Open Policy Agent

The background is a dark blue field filled with various geometric shapes in shades of blue and teal. These shapes include circles, rounded rectangles, and trapezoids, some of which are tilted. The colors range from a deep navy blue to a bright cyan. The text 'Code Pitfalls' is positioned in the lower-left area of this field.

## Code Pitfalls

# What are your default values?

Variables?

Defaults?

What happens when it's blank?



**How do we mitigate value issues?**



**Open Policy Agent**

```
2 // DRY – DO NOT REPEAT YOURSELF
3
4 console.log('I will not repeat myself')
5 console.log('I will not repeat myself')
6 console.log('I will not repeat myself')
7 console.log('I will not repeat myself')
8 console.log('I will not repeat myself')
9 console.log('I will not repeat myself')
10 console.log('I will not repeat myself')
11 console.log('I will not repeat myself')
12 console.log('I will not repeat myself')
13
```

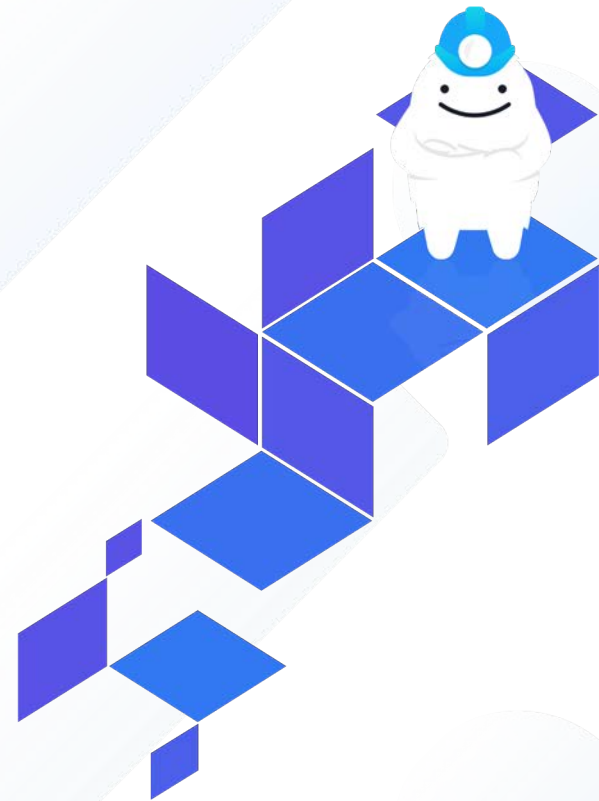
# How to mitigate DRY issues?



*Reusable, composable, battle-tested*

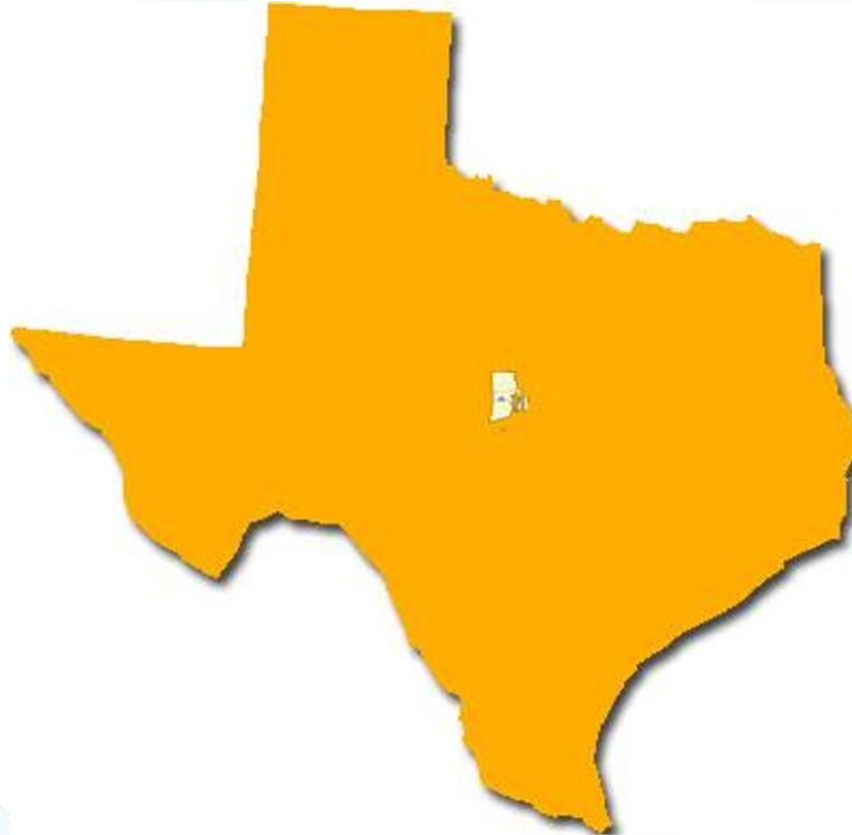
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MODULES**

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# Designing for State Size?



# How to mitigate State size issues

We already learned  
that!

```
2 // DRY – DO NOT REPEAT YOURSELF
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4 console.log('I will not repeat myself')
5 console.log('I will not repeat myself')
6 console.log('I will not repeat myself')
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12 console.log('I will not repeat myself')
13
```

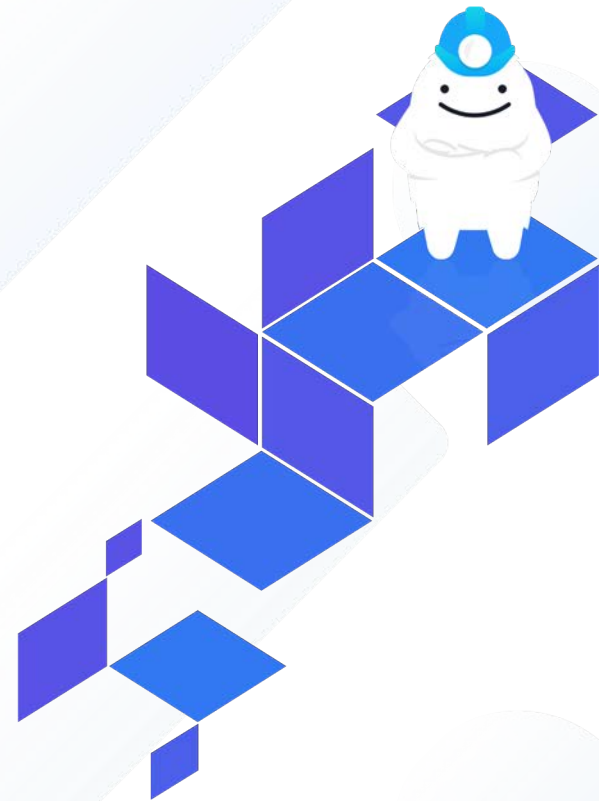
# How to mitigate State Size issues?



*Reusable, composable, battle-tested*

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# Where to Learn More



@vTimD

The background features an isometric 3D architectural scene. It includes several geometric shapes: a tall rectangular block with a square top on the left; a stack of five circular disks with horizontal lines; a stepped pyramid-like structure; a small blue cylinder; a tall, thin cylinder with horizontal lines; a small blue cube; a tall rectangular block with a grid of small squares on its side; a tall, thin rectangular block with a grid of small squares; a small blue cube; and a stack of four rounded rectangular blocks with horizontal lines. The scene is set against a gradient background transitioning from dark blue on the left to light teal on the right.

Q&A