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DevOps Advocate, env0
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Pitfalls of Infrastructure as Code

And how to avoid them!



About Tim



Startups



DevOps
Advocate

Bigger Companies



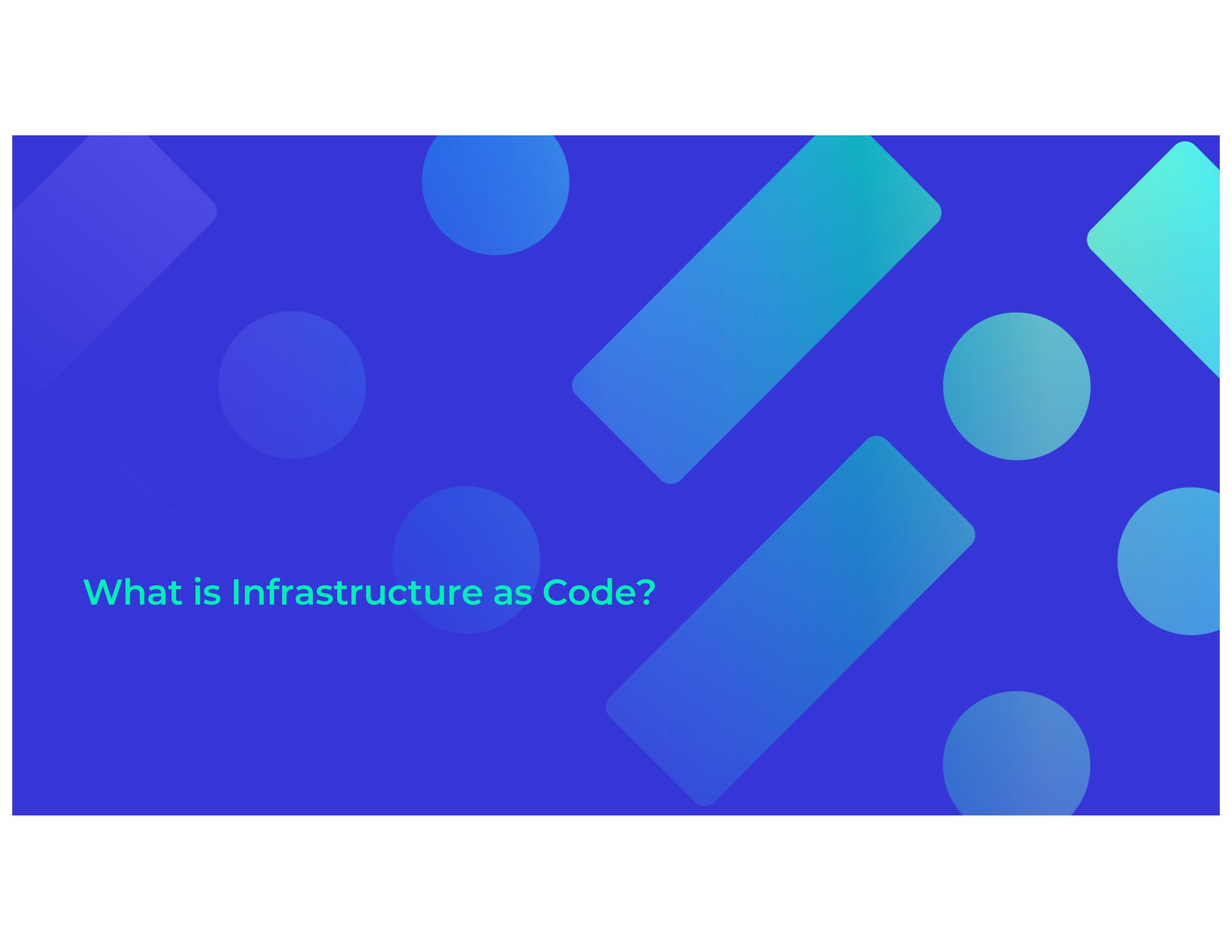
Cloud & Developer
Advocate



Enterprise
Architect



Infrastructure
Operations



The background features a dark blue gradient with various semi-transparent, rounded rectangular and circular shapes in shades of blue and cyan. These shapes overlap and vary in size, creating a dynamic and modern feel.

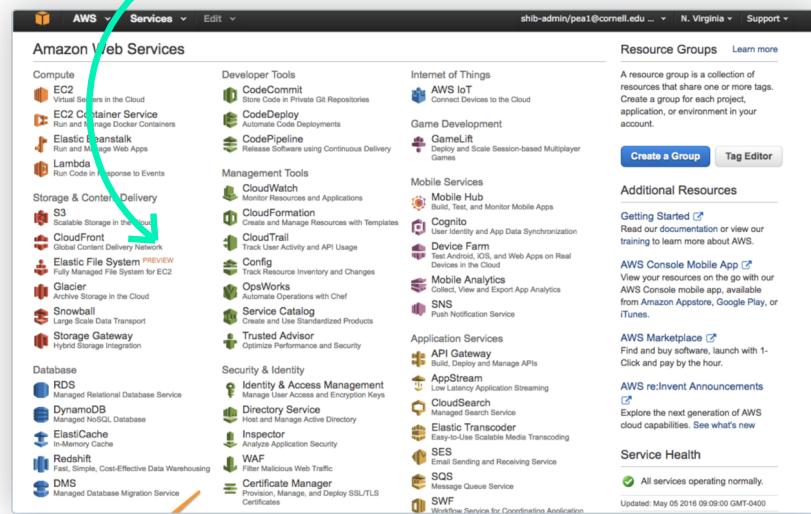
What is Infrastructure as Code?

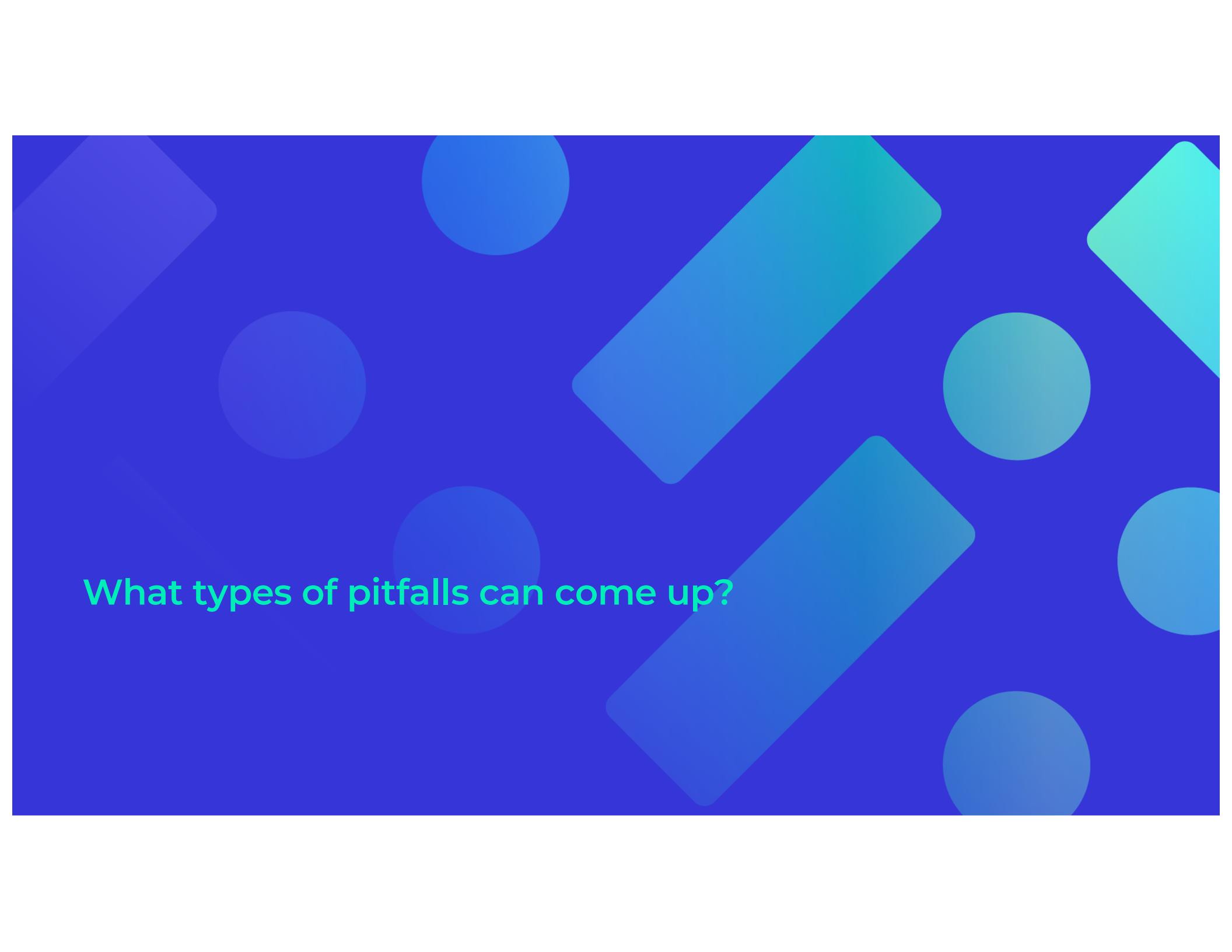
The Infrastructure As Code Model

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



The background of the slide features a dark blue gradient. Overlaid on this are several abstract shapes: a large cyan circle in the upper left, a large blue circle in the center, a large cyan rectangle in the upper right, a large blue rectangle in the lower center, and a smaller cyan rectangle in the lower right.

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

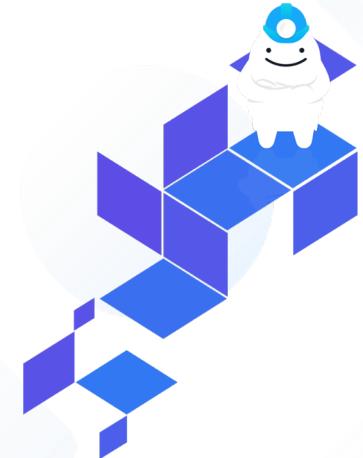
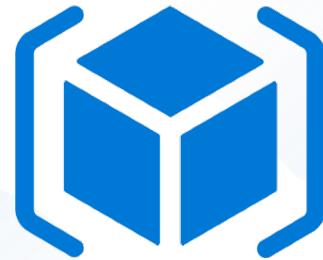
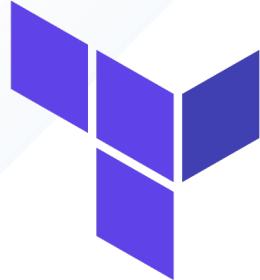
Dev...Ops...DevOps. Get it?



Infrastructure Pitfalls

Different IaC Choices

Which one do you choose?



Security

It's not just an afterthought!



Security

Shift-Left With:



Open Policy Agent

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

**TERRAFORM
MODULES**

gruntwork.io



Designing for State Size?



How to mitigate State size issues

We already learned
that!

```
2 // DRY – DO NOT REPEAT YOURSELF
3
4 console.log('I will not repeat myself')
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12 console.log('I will not repeat myself')
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```

How to mitigate State Size issues?



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Where to Learn More



@vTimD

Q&A

