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Manage and Maintain Your AWS Infrastructure as Code using Terraform

University of Brawijaya

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About me

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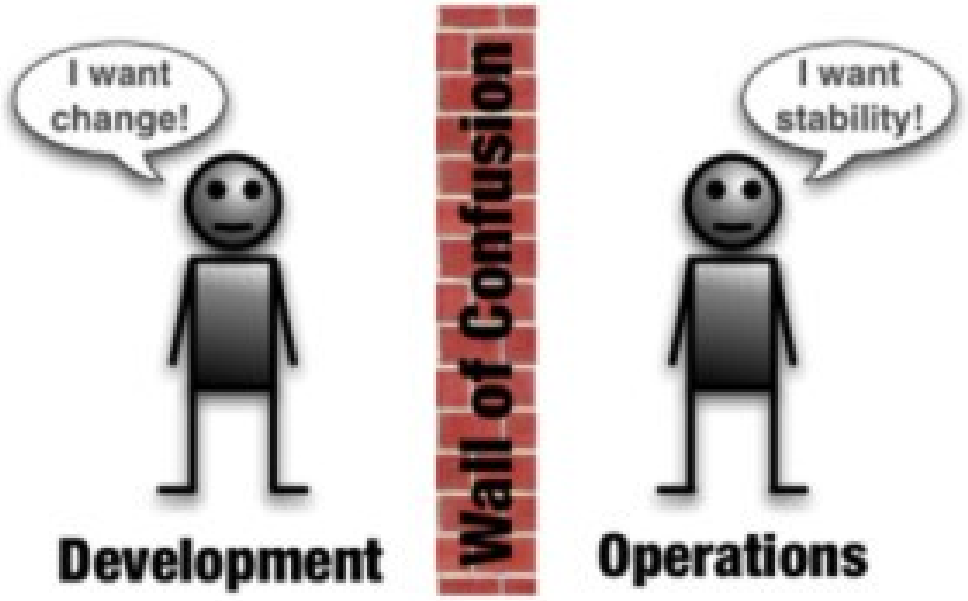
Agenda

1. Introduction : The rise of DevOps
2. What is Infrastructure as Code ?
3. Why codify your infrastructure ?
4. Comparison of Infrastructure as Code tools
5. Demo & Conclusion

Introduction : The rise of DevOps



https://www.oxagile.com/

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Introduction : The rise of DevOps

https://www.oreilly.com/learning/why-use-terraform

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Introduction : The rise of DevOps

Stratosphere (source: Namoliang via Pixabay)

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What is Infrastructure as Code ?

The idea behind infrastructure as code (IAC) is that you write and execute code to define, deploy, and update your infrastructure.

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Why codify your infrastructure ?

- A lot of complexity
- Managing resources and dependencies
- Deal with malfunctioning parts
- Perform upgrade and roll-backs

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Why codify your infrastructure ?

kiwitravelwriter.files.wordpress.com

Pinterest.com

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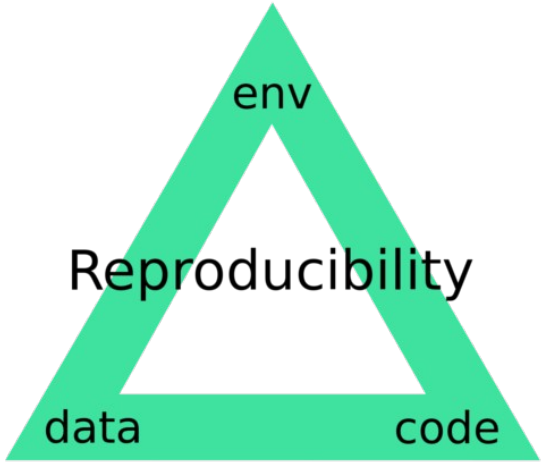
Why codify your infrastructure ?



Netflow.io

Devero.com

Dreamstime.com

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Comparison of Infrastructure as Code tools

	Source	Type	Language	Cloud Support	Initial Release
Ansible	Open	Config Mgmt	Procedural	Any	2011
CloudFormation	Closed	Provisioning	Declarative	AWS	2012
Terraform	Open	Provisioning	Declarative	Any	2014

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Procedural Language Vs Declarative Language

Ansible	Terraform

- ec2:
count: 10
image: ami-40d28157
instance_type: t2.micro
	resource “aws_instance” “demo” {
	count = 10
	ami = “ami-40d28157”
	instance_type = “t2.micro”
	}

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Procedural Language Vs Declarative Language

Ansible	Terraform

- ec2:
count: 5
image: ami-40d28157
instance_type: t2.micro
	resource “aws_instance” “demo” {
	count = 15
	ami = “ami-40d28157”
	instance_type = “t2.micro”
	}

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Procedural Language Vs Declarative Language

```
> terraform plan

+ aws_instance.example.11
    ami:                        "ami-40d28157"
    instance_type:              "t2.micro"
+ aws_instance.example.12
    ami:                        "ami-40d28157"
    instance_type:              "t2.micro"
+ aws_instance.example.13
    ami:                        "ami-40d28157"
    instance_type:              "t2.micro"
+ aws_instance.example.14
    ami:                        "ami-40d28157"
    instance_type:              "t2.micro"
+ aws_instance.example.15
    ami:                        "ami-40d28157"
    instance_type:              "t2.micro"

Plan: 5 to add, 0 to change, 0 to destroy.
```

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Using Ansible or Terraform ?

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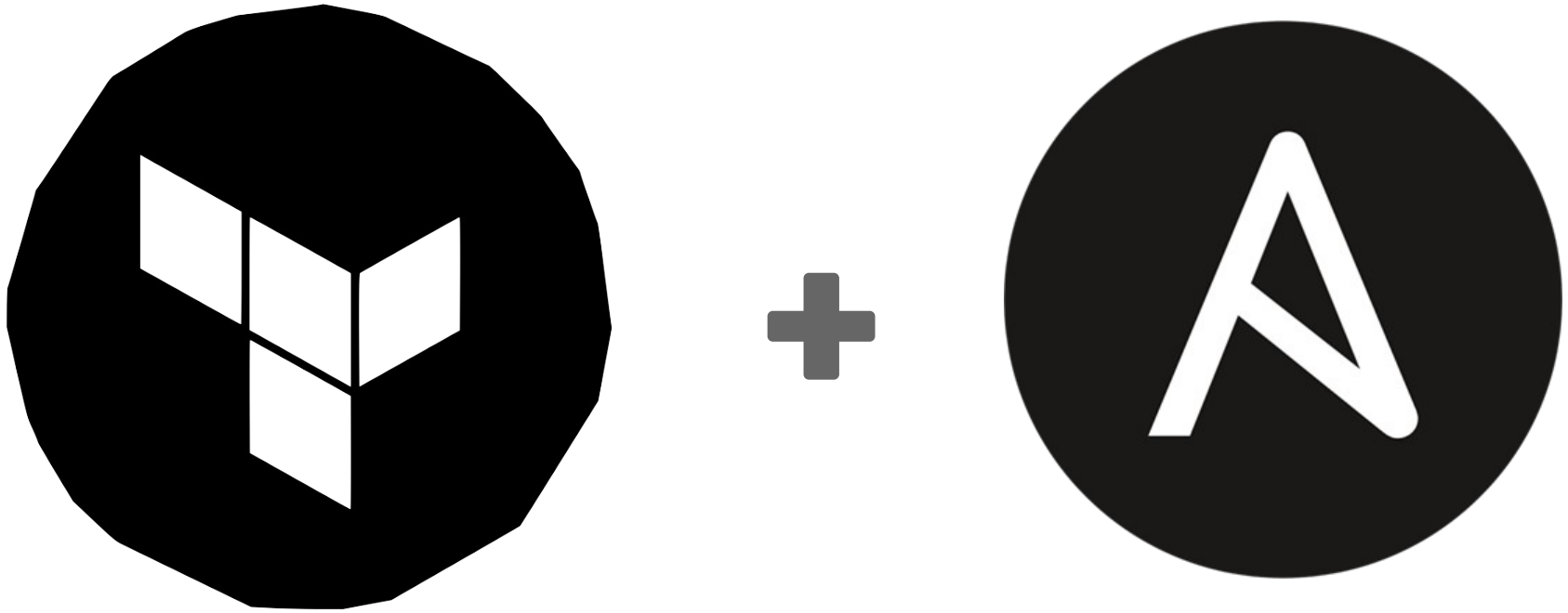
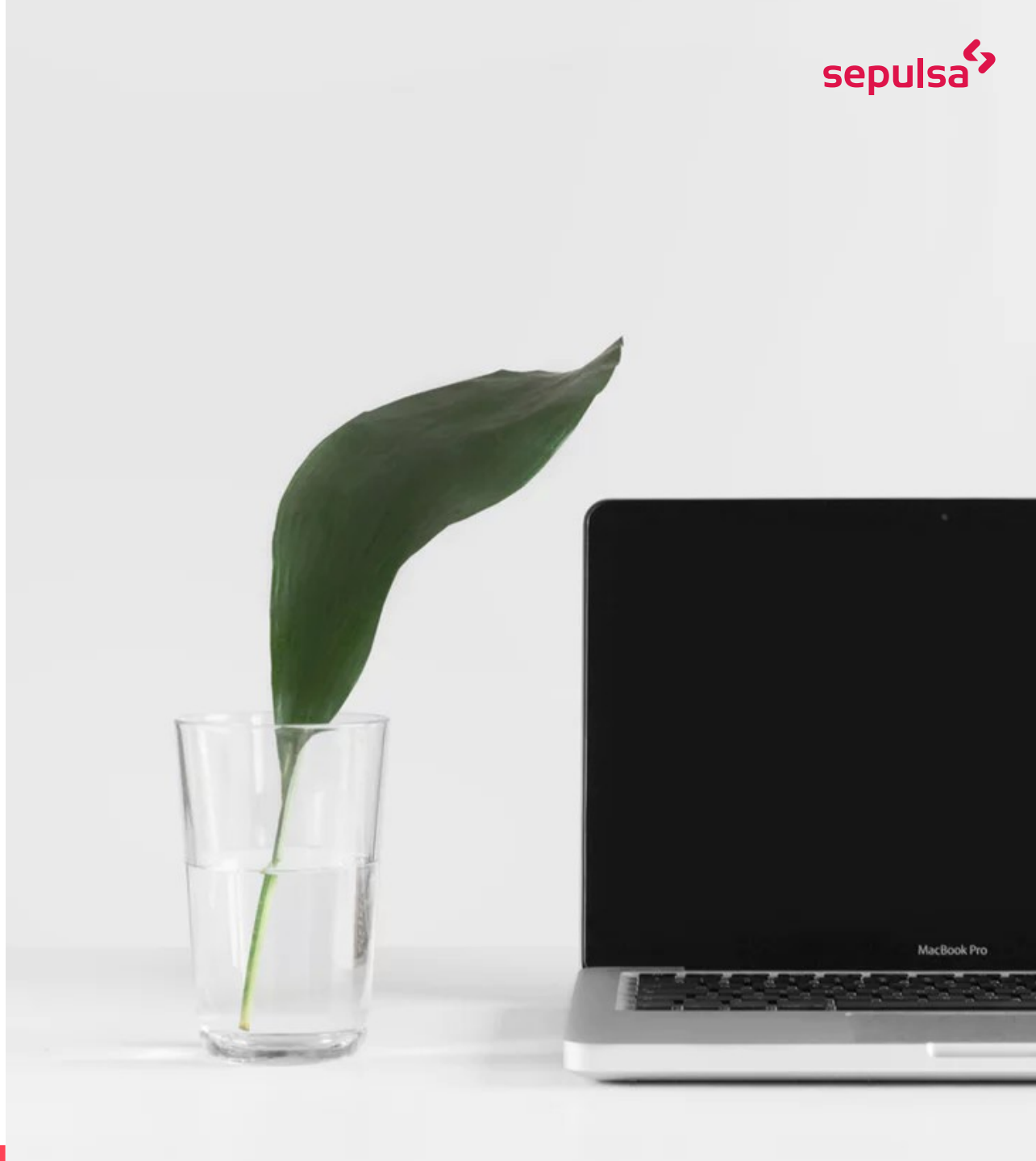
Demo



Conclusion

Does Terraform fit your criteria, too?



Q&A