



Happy Techie Hours

> Deploying a Kubernetes Cluster using Ansible

2023-07-06 | César Bento Freire

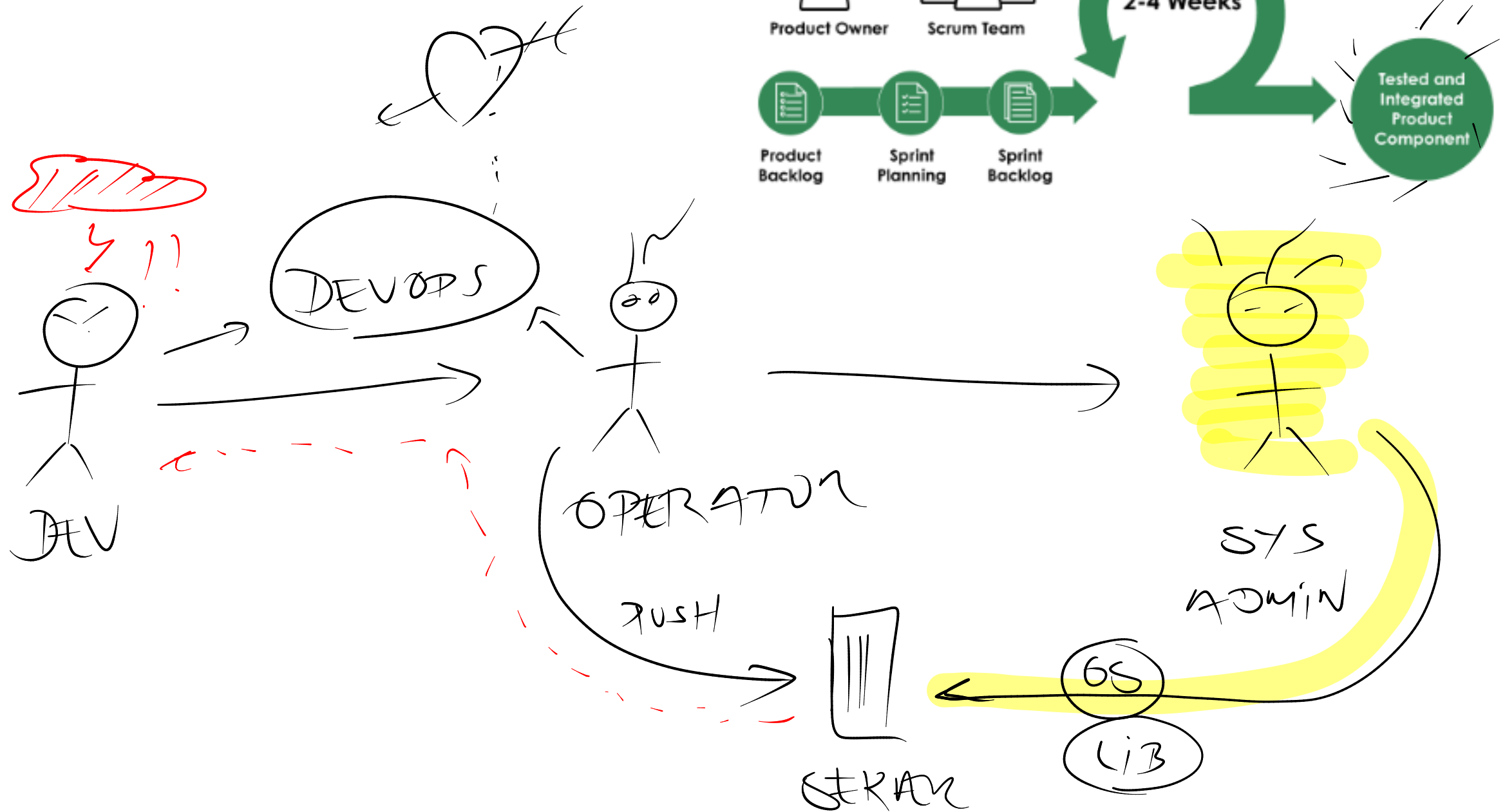
Agenda da Sessão

01. DevOps
02. IaasC
03. Terraform
04. Containers
05. Kubernetes
06. Ansible

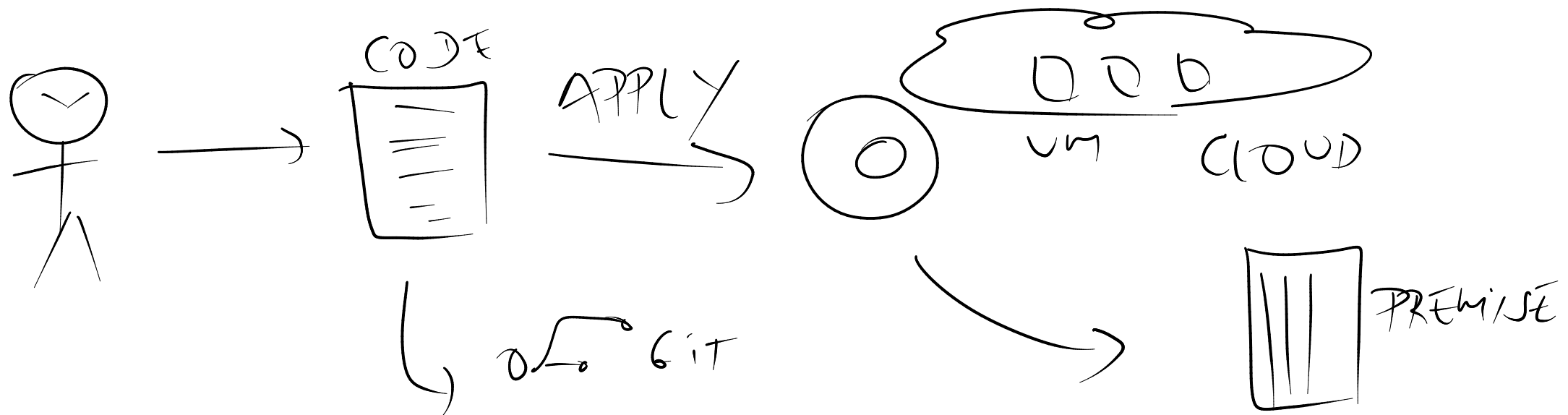
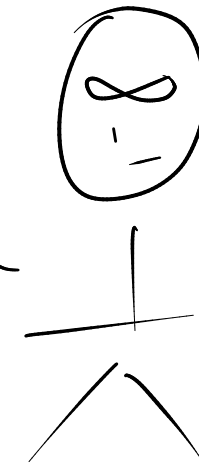
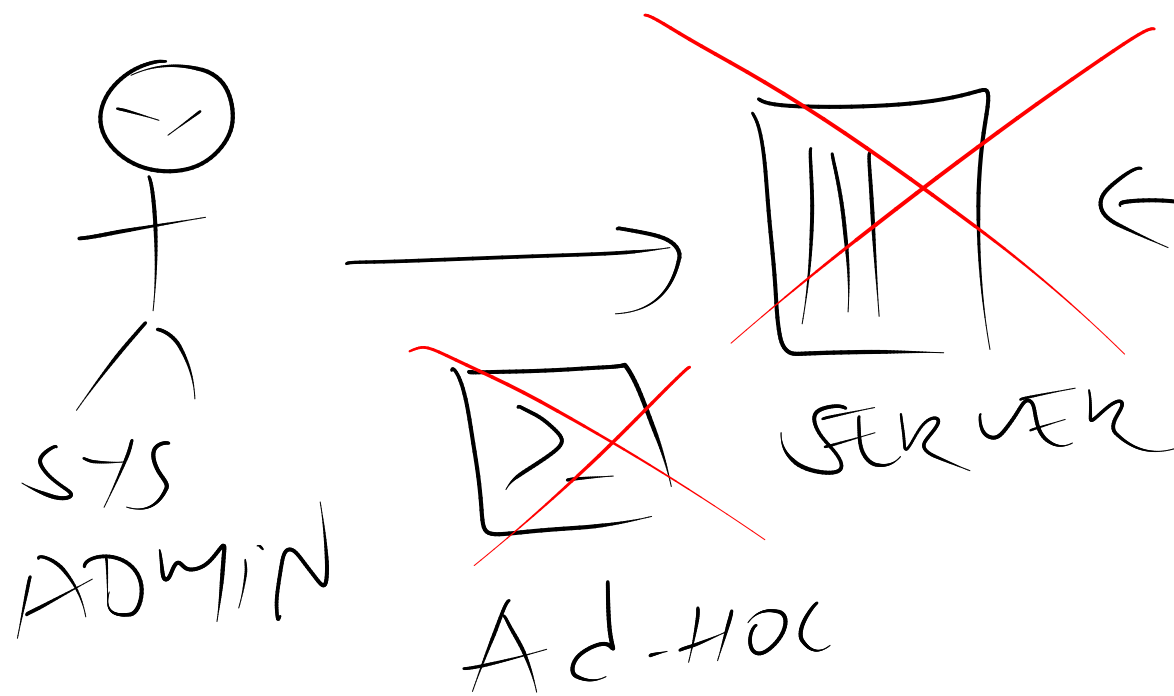
DEMO: Implementação de um cluster kubernetes com
Ansible e Terraform

01. Devops

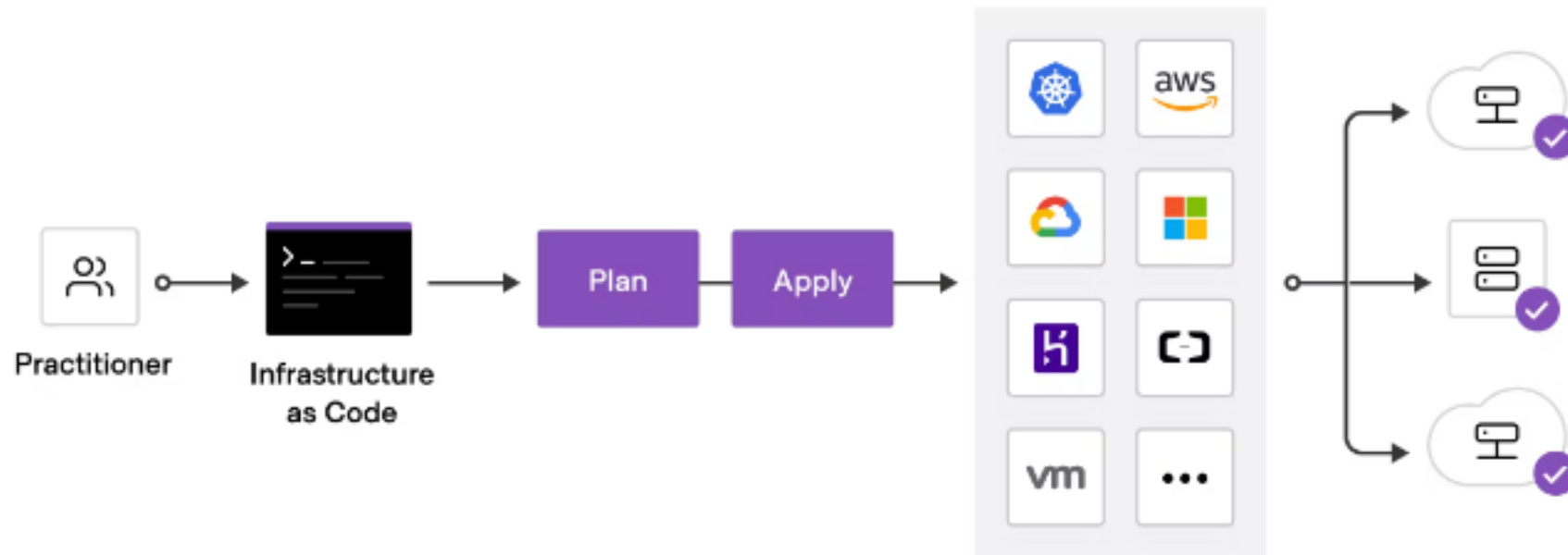
AGILE



02. IaaS



03. Terraform



← → ↻ landscape.cncf.io/card-mode?category=automation-configuration&grouping=category&sort=stars

CLOUD NATIVE LANDSCAPE

[Landscape](#) [Guide](#)

[Reset Filters](#)

Grouping

Category

Sort By

Stars (high to low)

Category

Automation & Configuration

Project

Any

License

Any

Organization

Any

CNCF Cloud Native Interactive Landscape

The cloud native landscape (png, pdf), serverless landscape (png, pdf), and member landscape (png, pdf) are dynamically generated below. Please [open a pull request](#) to add or update cards.

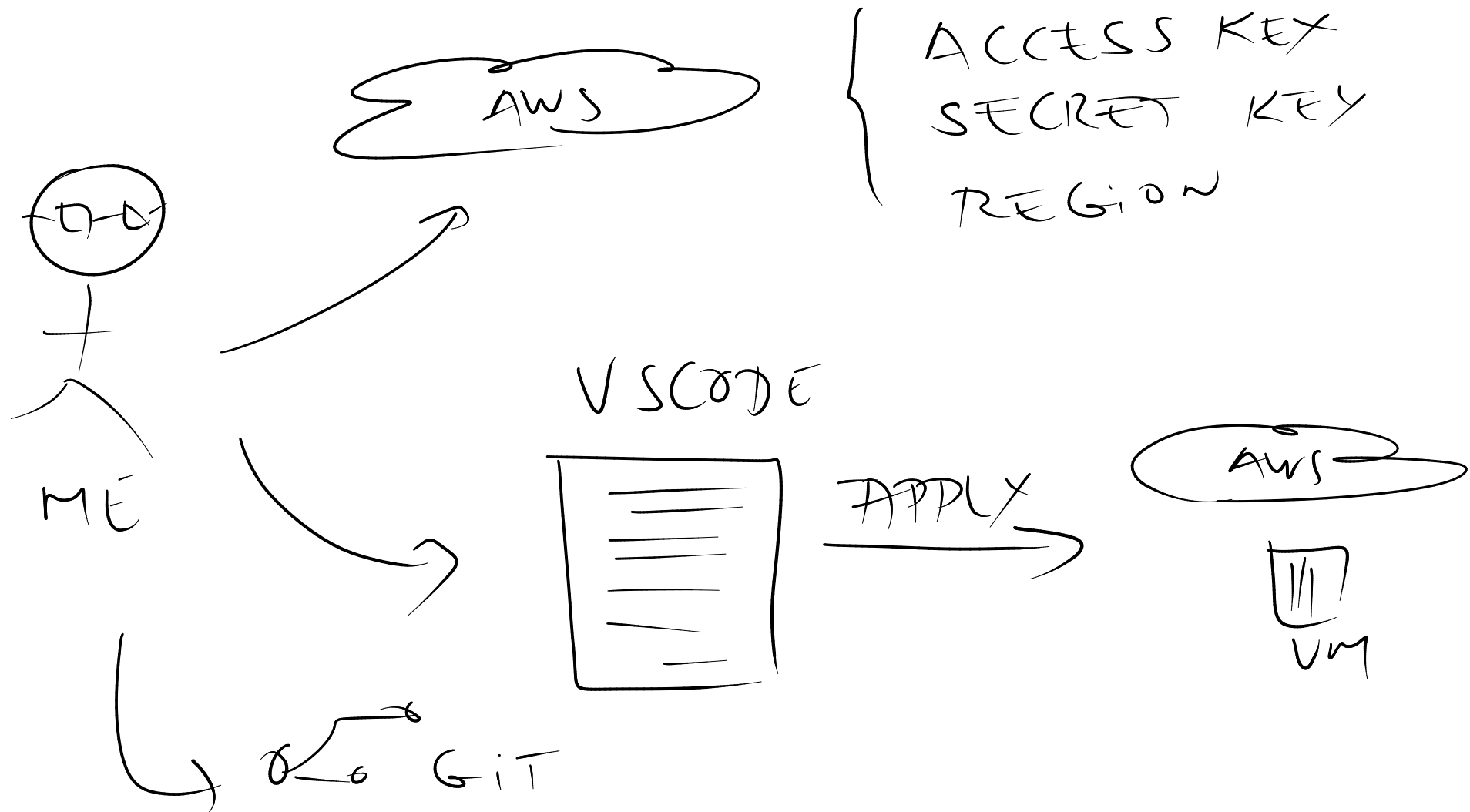
You are viewing 41 cards with a total of 224,265 stars, market cap of \$1.6T and funding of \$10.3B.

[Landscape](#) [Card Mode](#) [Members](#) [Serverless](#) [Wasm](#)

[Provisioning - Automation & Configuration](#) (41)

 ANSIBLE Ansible Red Hat ★ 57,092 MCap: \$114.6B	 Terraform HashiCorp ★ 36,977 MCap: \$5.3B	 Apollo Trip.com ★ 27,977 MCap: \$22.4B	 Pulumi Pulumi ★ 15,726 Funding: \$57.5M
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03. Terraform example na AWS



03. Terraform example code

The image shows a code editor with three panels. The left panel displays the `mais.tf` file, which defines an AWS provider and an `aws_instance` resource named `my-server`. The middle panel shows the `variables.tf` file, which defines variables for AWS credentials, region, and an SSH access key. The right panel shows a preview of the `README.md` file, which lists the steps to run the Terraform example.

```
mais.tf
PREP-terraform-example > mais.tf > resource "aws_instance" "my-server"
1 provider "aws" {
2   region = var.aws_region
3   access_key = var.aws_access_key
4   secret_key = var.aws_secret_key
5 }
6
7 resource "aws_instance" "my-server" {
8   instance_type = "t2.medium"
9   ami = "ami-04e601abe3e1a910f"
10  key_name = var.access_key
11 }
12
```

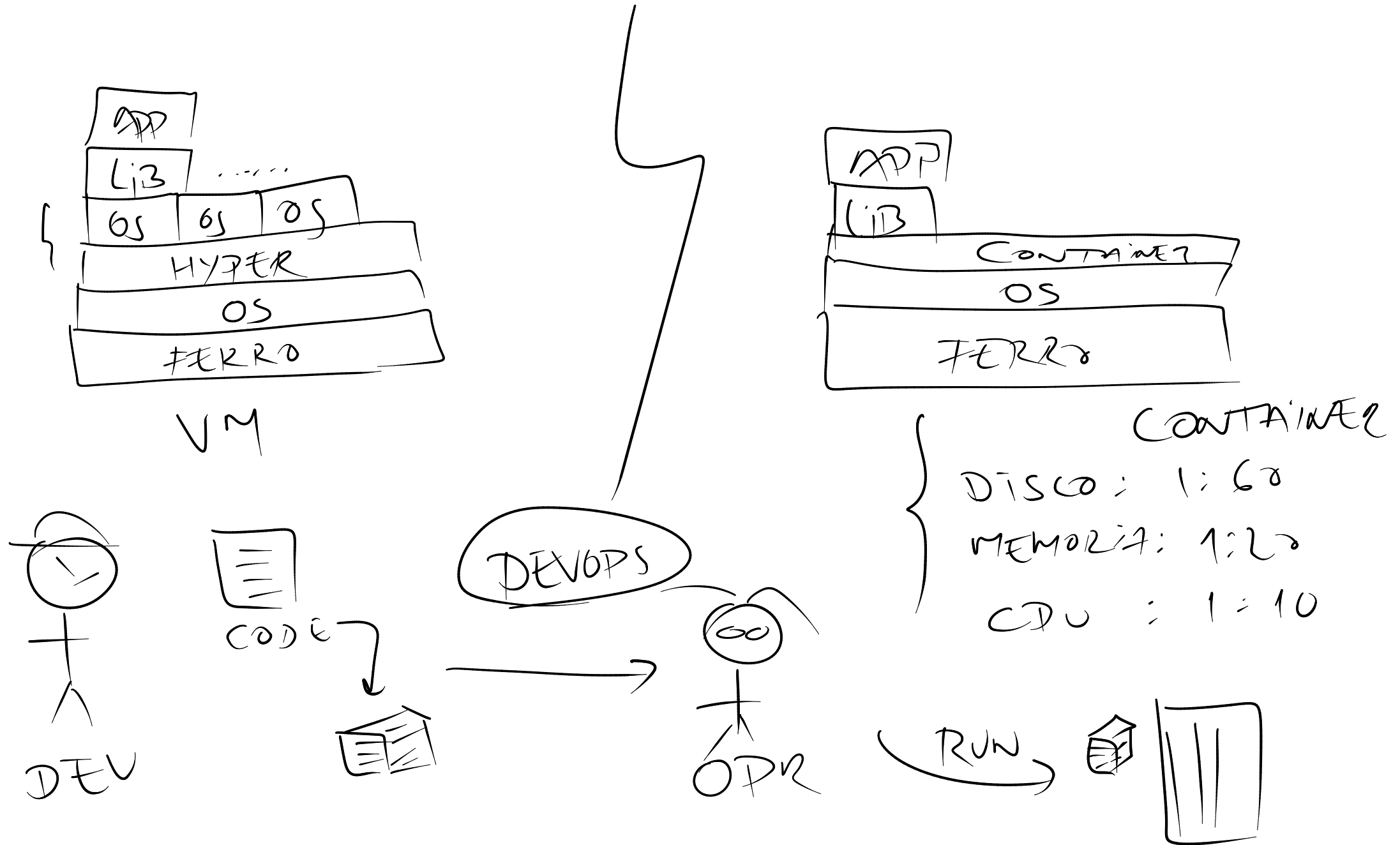
```
variables.tf
PREP-terraform-example > variables.tf > variable "access_key"
1 # AWS credentials
2
3 variable "aws_access_key" {
4   type = string
5   description = "AWS access key"
6 }
7
8 variable "aws_secret_key" {
9   type = string
10  description = "AWS secret key"
11 }
12
13 variable "aws_region" {
14   type = string
15   description = "AWS region"
16 }
17
18 variable "access_key" {
19   description = "SSH Access key"
20   default = "ubuntu@ubuntu-key-20220301"
21 }
```

```
Preview README.md
Terraform simple example

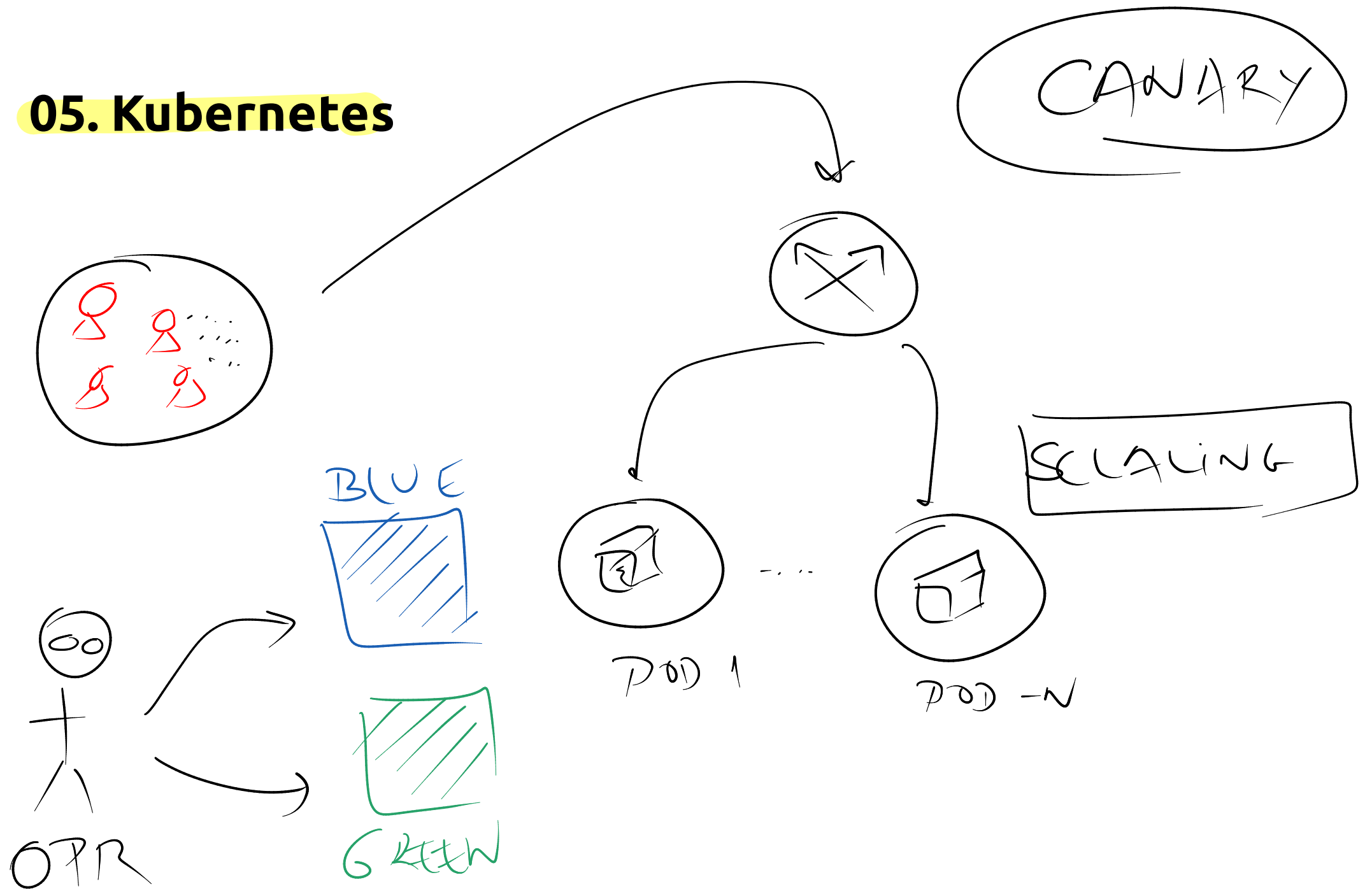
1. Login to AWS Console
2. Goto IAM and create a user with AdministratorAccess
3. Create access key
4. Download credentials
5. Create terraform.tfvars
6. If using git add file to .gitignore
7. Add variables.tf
8. Add main.tf
9. Add output.tf
10. Type terraform init
11. Type terraform apply
12. ssh -i ~/.ssh/ubuntu-key-20220301.pem ubuntu@18.156.163.188
13. Type hostamectl
14. Destroy instance with terraform destroy
```

```
output.tf
PREP-terraform-example > output.tf > output "public_ip"
1 output "public_ip" {
2   value = "${aws_instance.my-server.public_ip}"
3 }
```

04. Containers



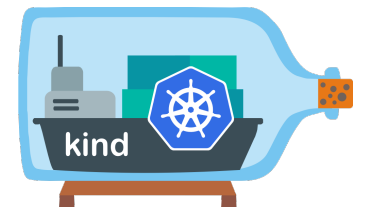
05. Kubernetes



MicroK8s



minikube



05. Kubernetes



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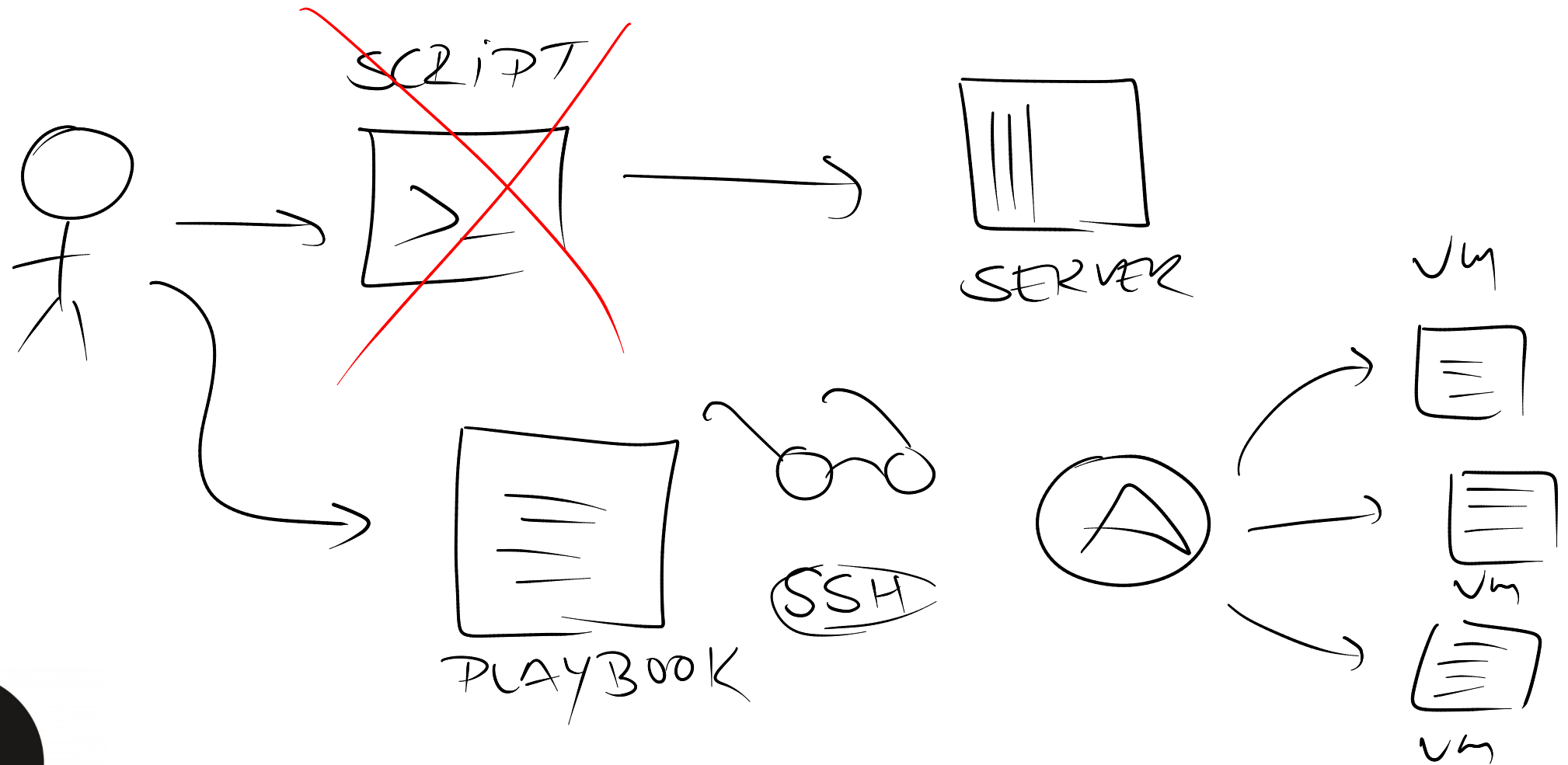
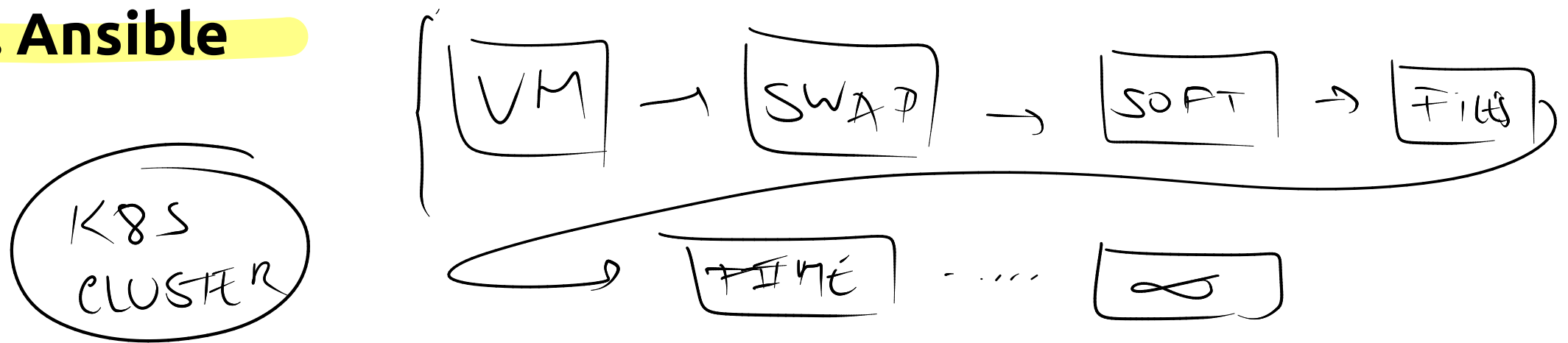


QUESTION: HOW WOULD YOU RATE THE IMPORTANCE OF THE FOLLOWING TECHNICAL SKILLS WITHIN THE IT ENTERPRISE ORGANIZATION IN THE FUTURE?

2023 TECHNICAL MUST-HAVE SKILLS

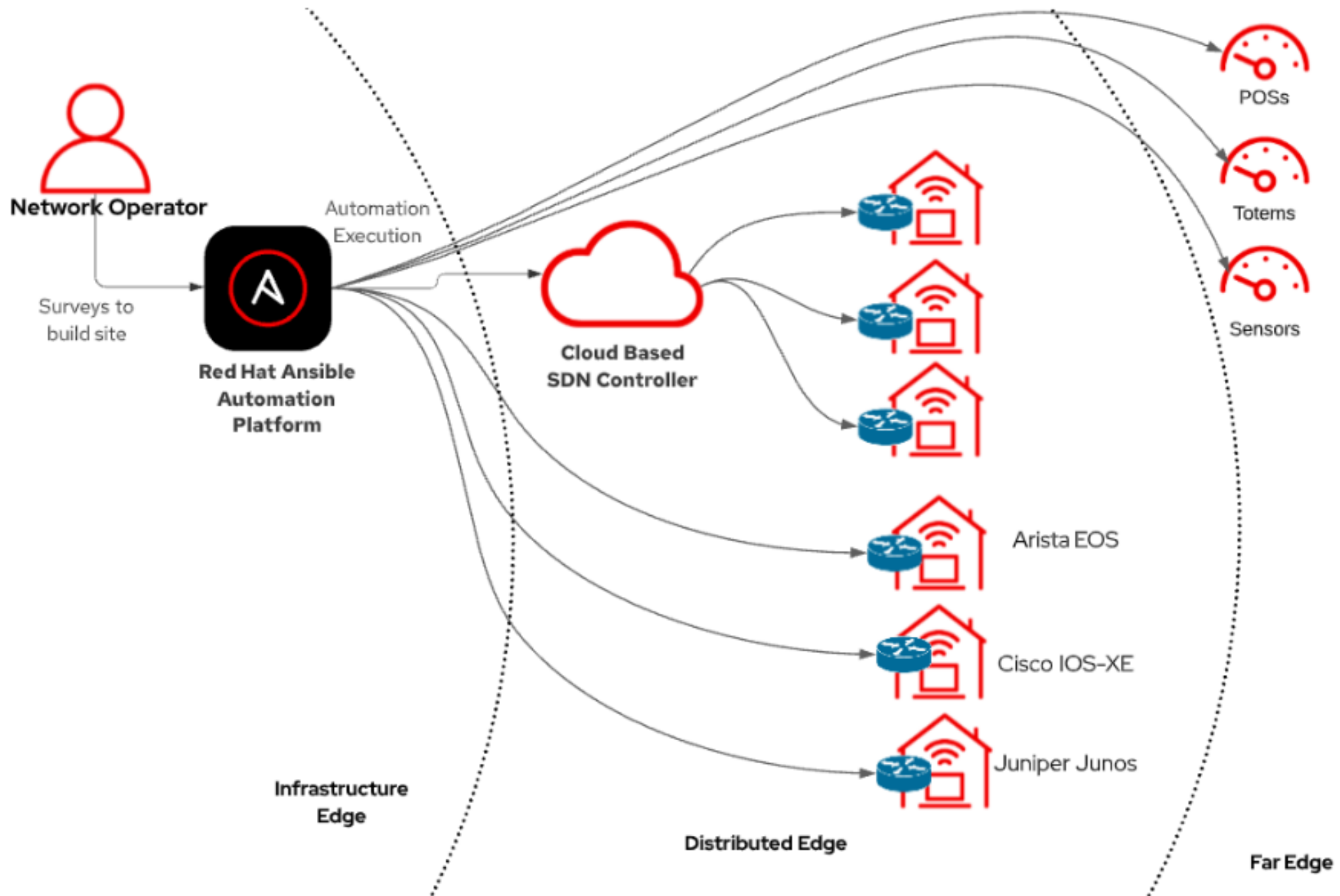
CONTAINER ORCHESTRATION	54%
SECURITY AND CYBERSECURITY	50%
CLOUD COMPUTE PLATFORM	48%
MODERN COMPUTE TECHNOLOGY AND ARCHITECTURES	47%
APPLICATION TECHNOLOGIES	43%
DATABASES	42%
EXPERIENCE WITH UI, WEB AND MIDDLE TIER SERVICES	41%
OPERATING SYSTEMS	40%
MULTIPLE PROGRAMMING LANGUAGES	40%
WORKING KNOWLEDGE WITHIN MOBILITY AND MOBILE ENVIRONMENT	39%
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	39%
USER EXPERIENCE DESIGN	39%
STORAGE KNOWLEDGE	38%
SPECIFIC TECHNOLOGY FRAMEWORKS	36%
SOCIOTECHNICAL SYSTEMS ENGINEERING	35%
HERITAGE OR LEGACY NON-CLOUD COMPUTE TECHNOLOGY	34%
VIRTUAL AND/OR AUGMENTED REALITY	33%
MAINFRAME KNOWLEDGE	33%

06. Ansible

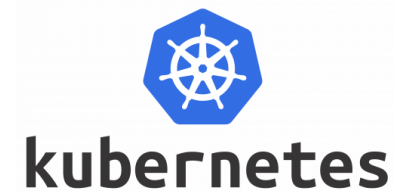
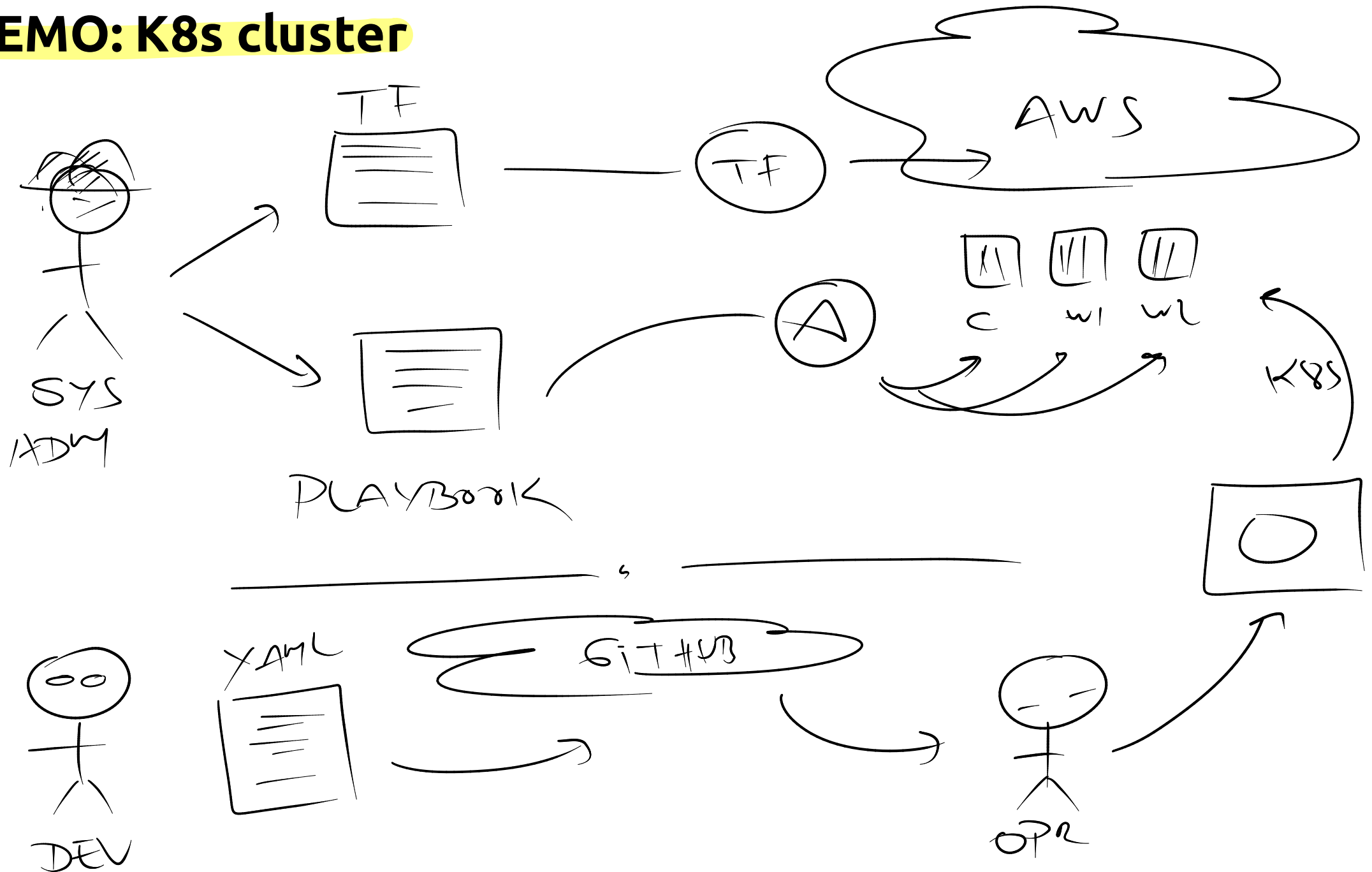


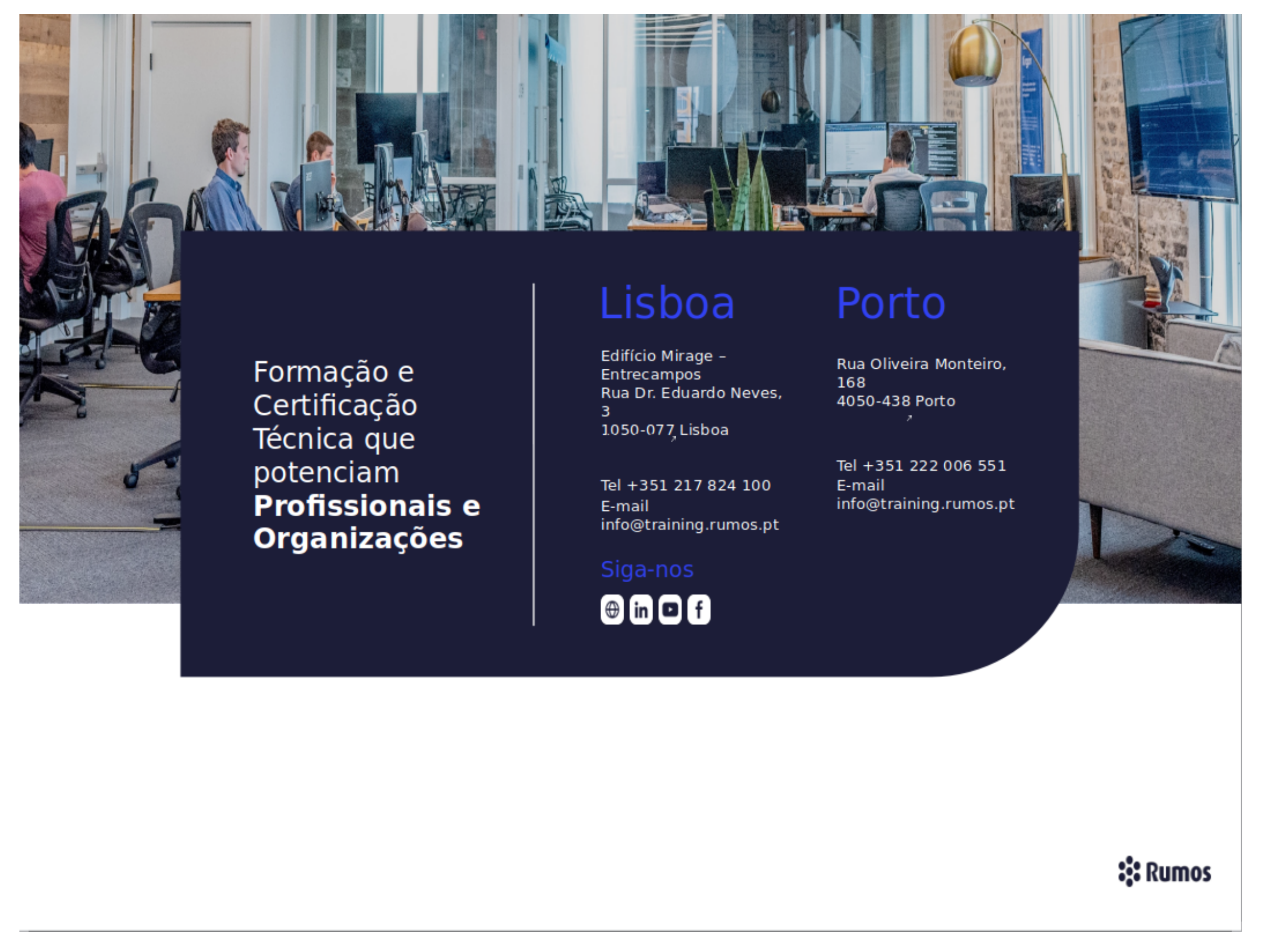
ANSIBLE

06. Ansible Automation Platform



DEMO: K8s cluster





Formação e
Certificação
Técnica que
potenciam
**Profissionais e
Organizações**

Lisboa

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Siga-nos



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4050-438 Porto

Tel +351 222 006 551
E-mail
info@training.rumos.pt

Referências

Ansible: <https://www.ansible.com/>

AWS: <https://aws.amazon.com/pt/>

Terraform: <https://www.terraform.io/>

Kubernetes: <https://kubernetes.io/>

Microk8s: <https://microk8s.io/>

Containerd: <https://containerd.io/>

git repos:

<https://github.com/cesar-freire-rumos/kubernetes-ansible-deployment.git>

<https://github.com/cesar-freire-rumos/webcounter>

docker playground

<https://labs.play-with-docker.com/>

Rumos:

<https://www.rumos.pt/>

