



Membangun Infrastruktur Berbasis Container Orchestration

History

Startup bernama Macross, perusahaan tersebut akan memigrasikan layanan yang mereka miliki menjadi container base dengan mengintegrasikan ke layanan AWS. Tadinya mereka memiliki 2 server yaitu staging dan production dengan tiga aplikasi yaitu sosial media pesbuk, website company, dan blog documentation berbasis wordpress. Mereka berencana memindahkan semua service ke kubernetes.

Goal

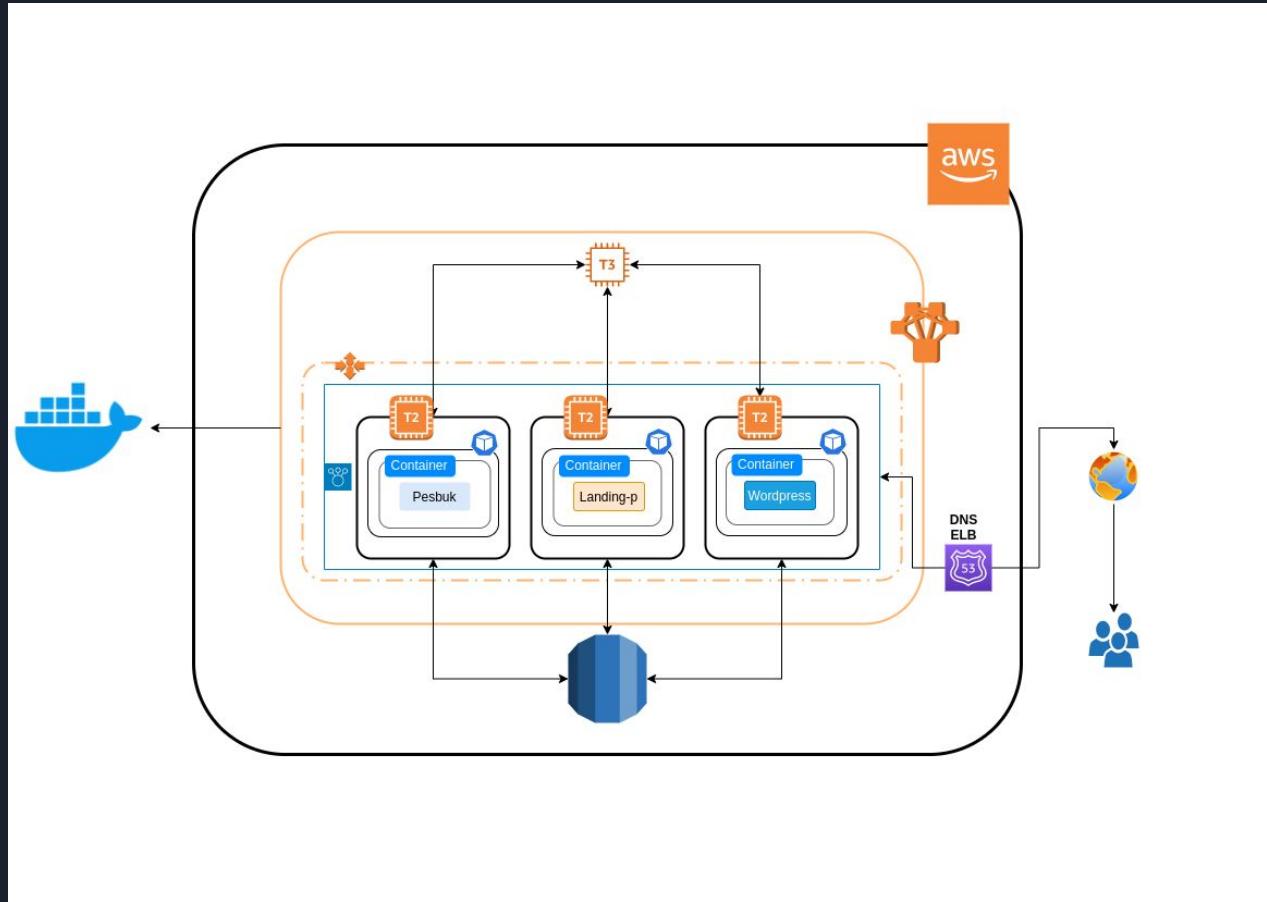
Infrastruktur berbasis ini kontainerisasi yang mudah dan efisien, dimana sistem sudah saling terintegrasi dengan layanan AWS sehingga bisa melakukan scaling dengan mudah.



Environment

1. Topologi
2. Budget /3bln
3. membagi lingkungan staging dan production dengan menggunakan namespaces
4. Image aplikasi pesbuk, wordpress dan landing page terintegrasi dengan RDS
5. Ketiga aplikasi tersebut harus dapat dipanggil dengan domain yang sudah di tentukan sebelumnya

Topologi





Budget

Minimum budgeting Rp. 1.630.085.28/bln

1. **EC2** T2.micro x3 (Rp 321.342.72)
2. **RDS MySql** db.T3.micro x1. Storage 30gb Backup storage 210gb/pekan (Rp 437.198.10)
3. **Classic Load Balancer** x2 (Rp 864.498.56)
4. **Route 53** Hosted Zones (3), Number of Elastic Network Interfaces (2) (Rp 7.045.90)

Maximum budgeting Rp. 10.094.366.61/bln

1. **EC2** T3.medium x3 (Rp 1.913.107.62)
2. **RDS MySql** db.t3.large x1 . storage 50gb Backup storage 350gb/pekan (Rp 7.310.555.20)
3. **Classic Load Balancer** x2, (Rp 864.667.19)
4. **Route 53** Hosted Zones (5), Basic Checks Within AWS (5), Number of Elastic Network Interfaces (5)(Rp 7.050.45)

Kops Cluster

```
sub@Sheena:~$ kops validate cluster
Validating cluster ahmadwizam.site

INSTANCE GROUPS
NAME          ROLE      MACHINETYPE    MIN    MAX    SUBNETS
master-ap-southeast-1a  Master    t2.micro        1      1    ap-southeast-1a
nodes-ap-southeast-1a   Node     t2.micro        3      3    ap-southeast-1a

NODE STATUS
NAME                                     ROLE    READY
ip-172-20-32-232.ap-southeast-1.compute.internal  master  True
ip-172-20-43-185.ap-southeast-1.compute.internal  node    True
ip-172-20-44-55.ap-southeast-1.compute.internal  node    True
ip-172-20-48-152.ap-southeast-1.compute.internal  node    True

Your cluster ahmadwizam.site is ready
sub@Sheena:~$ |
```

Images yang terintegrasi dengan RDS

```
sub@Sheena:~$ docker images
REPOSITORY          TAG      IMAGE ID      CREATED       SIZE
ahmadwizam/wp      mantap   b2bbe2e28d31  11 hours ago  285MB
ahmadwizam/pesbuk-production latest   b1385c8fed73  38 hours ago  235MB
ahmadwizam/pesbuk-staging   beta    b1385c8fed73  38 hours ago  235MB
ahmadwizam/lp-production  latest   9f6cf8d9ef6f  38 hours ago  248MB
ahmadwizam/lp-staging     beta    9f6cf8d9ef6f  38 hours ago  248MB
```



ahmad

Summary

DB identifier

ahmad

CPU

2.50%

Status

Available

Role

Instance

Current activity

0 Connections

Engine

MySQL Community

Connectivity & security

Monitoring

Logs & events

Configuration

Maintenance & backups

Tags

Connectivity & security

Endpoint & port

Endpoint

ahmad.cauehypxqpzh.ap-southeast-1.rds.amazonaws.com

Port

3306

Networking

Availability zone

ap-southeast-1a

VPC

Default (vpc-1934c47f)

Subnet group

default-vpc-1934c47f

Subnets

subnet-f6ec4890

subnet-78108021

subnet-1e2aff56

Pembagian ns untuk aplikasi

```
sub@Sheena:~$ kubectl get svc -A
NAMESPACE          NAME        TYPE        CLUSTER-IP
default            kubernetes ClusterIP  100.64.0.1
ingress-nginx-fb-production ingress-nginx LoadBalancer 100.67.253.1
ingress-nginx-fb-staging    ingress-nginx LoadBalancer 100.66.85.36
ingress-nginx-lp-production ingress-nginx LoadBalancer 100.67.102.19
ingress-nginx-lp-staging   ingress-nginx LoadBalancer 100.66.46.234
ingress-nginx-wp-production ingress-nginx LoadBalancer 100.69.235.68
ingress-nginx-wp-staging   ingress-nginx LoadBalancer 100.66.253.124
kube-system         kube-dns   ClusterIP  100.64.0.10
lp-production       landing-page ClusterIP  100.64.5.242
lp-staging          landing-page ClusterIP  100.66.17.149
pesbuk-production   pesbuk     ClusterIP  100.67.143.64
pesbuk-staging      pesbuk     ClusterIP  100.71.241.166
production          wordpress ClusterIP  100.69.27.138
staging-wp          wordpress ClusterIP  100.65.187.108
sub@Sheena:~$ |
```

Pod

```
sub@Sheena:~$ kubectl get pod -A
NAMESPACE          NAME                                         READY   STATUS
ingress-nginx-fb-production  nginx-ingress-controller-54b86f8f7b-slbvr  1/1    Running
ingress-nginx-fb-staging    nginx-ingress-controller-54b86f8f7b-sdn2t  1/1    Running
ingress-nginx-lp-production nginx-ingress-controller-54b86f8f7b-lcd6b  1/1    Running
ingress-nginx-lp-staging    nginx-ingress-controller-54b86f8f7b-lwtlv  1/1    Running
ingress-nginx-wp-production nginx-ingress-controller-54b86f8f7b-s5rl6  1/1    Running
ingress-nginx-wp-staging    nginx-ingress-controller-54b86f8f7b-rxp6t  1/1    Running
lp-production           landing-page-558f5fcf54-mqkst      1/1    Running
lp-staging              landing-page-bf4bf8499-hnwc9      1/1    Running
pesbuk-production        pesbuk-55b6547556-6ktwr      1/1    Running
pesbuk-staging           pesbuk-787d484755-qcwnv      1/1    Running
production               wordpress-6d59696ff6-tpm8t      1/1    Running
staging-wp               wordpress-5bbb7cc646-gtgmn      1/1    Running
```



Nama domain Aplikasi



Thank you!

