

개인 프로젝트_2차

쿠버네티스 클러스터 (Kubernetes)

과 정 : 클라우드 데브옵스(DevOps)
엔지니어 및 관리자 양성과정
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서버 구축

```
master | worker1 | worker2 |  
[root@master ~]# kubectl get nodes  
NAME          STATUS    ROLES          AGE    VERSION  
master        Ready     control-plane  20h    v1.26.3  
worker1       Ready     <none>         20h    v1.26.3  
worker2       Ready     <none>         20h    v1.26.3  
[root@master ~]#
```

< master, worker1, worker2 구축 및 연동 >

K8s Engine

```
[root@master ~ (kubernetes-admin@kubernetes:prometheus)]#systemctl status -l containerd
● containerd.service - containerd container runtime
   Loaded: loaded (/usr/lib/systemd/system/containerd.service; enabled; vendor preset: disabled)
   Active: active (running) since Fri 2023-03-24 13:47:51 KST; 2h 1min ago
     Docs: https://containerd.io
  Process: 975 ExecStartPre=/sbin/modprobe overlay (code=exited, status=0/SUCCESS)
 Main PID: 990 (containerd)
    Tasks: 323
   Memory: 1.3G
    CGroup: /system.slice/containerd.service
            └─ 990 /usr/bin/containerd
```

< Containerd 방식으로 구축 확인 >

Voting-app Service 구현

```
[root@master01 nginx-13.2.13 (kubernetes-admin@kubernetes:default)]#k create ns nginx
namespace/nginx created
[root@master01 nginx-13.2.13 (kubernetes-admin@kubernetes:default)]#k ns nginx
Context "kubernetes-admin@kubernetes" modified.
Active namespace is "nginx".
```

```
[root@master01 nginx-13.2.13 (kubernetes-admin@kubernetes:nginx)]#helm install nginx -f my-values.yaml .
NAME: nginx
LAST DEPLOYED: Fri Mar 24 10:54:59 2023
NAMESPACE: nginx
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
CHART NAME: nginx
CHART VERSION: 13.2.31
APP VERSION: 1.23.3
```

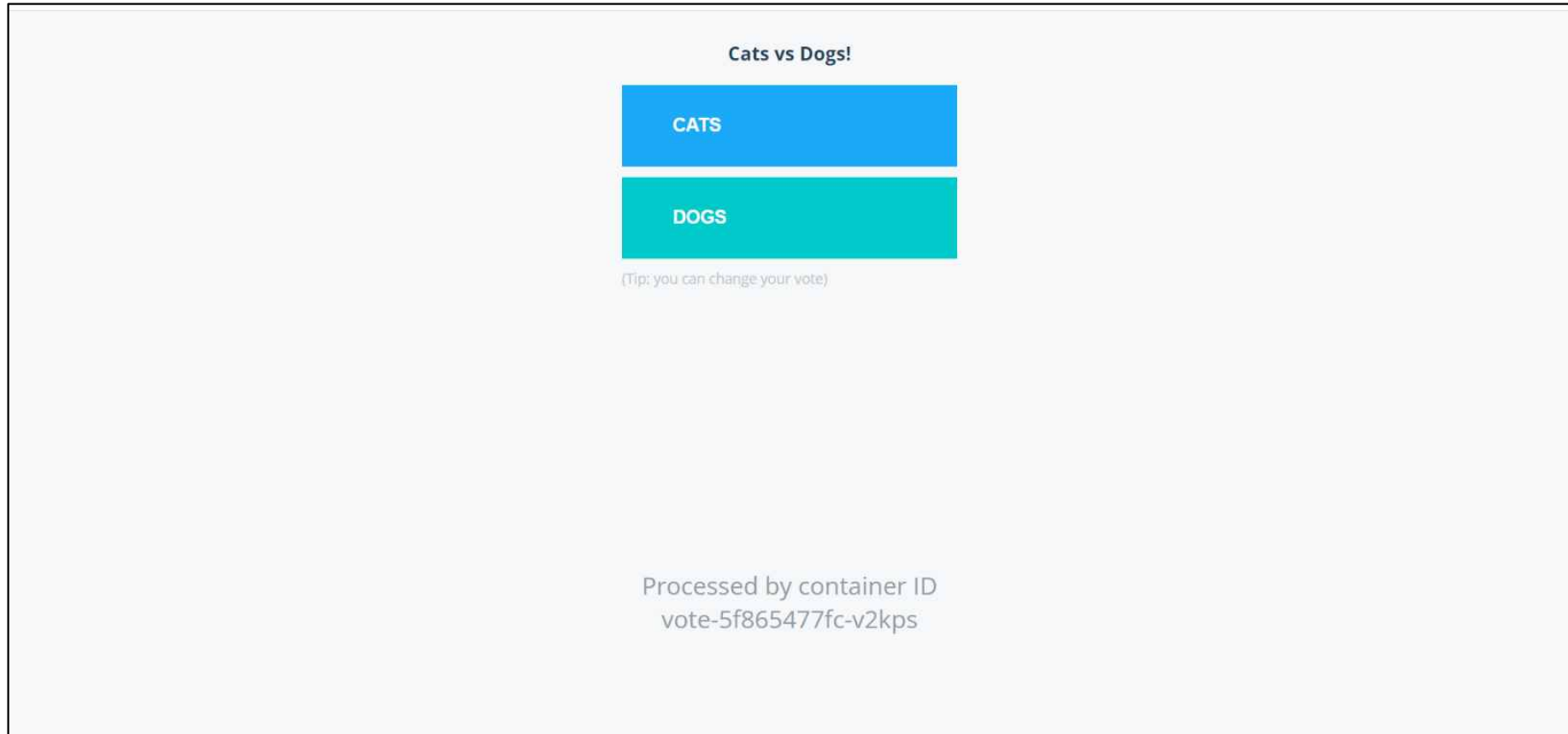
```
[root@k8s-kubect1 example-voting-app (kubernetes-admin@kubernetes:vote)]#kgp
NAME                READY   STATUS    RESTARTS   AGE   IP              NODE             NOMINATED NODE   READINESS GATES
db-989b6b476-hhw2x  1/1     Running   0           3m27s  172.16.194.66   k8s-worker1      <none>            <none>
redis-7fdbb9576f-62q4z  1/1     Running   0           3m27s  172.16.194.67   k8s-worker1      <none>            <none>
result-f9f4fbbc7-bxzs5  1/1     Running   0           3m27s  172.16.126.7    k8s-worker2      <none>            <none>
vote-5f865477fc-lgrsg  1/1     Running   0           3m27s  172.16.194.68   k8s-worker1      <none>            <none>
vote-5f865477fc-sc56w  1/1     Running   0           88s    172.16.194.69   k8s-worker1      <none>            <none>
vote-5f865477fc-v2kps  1/1     Running   0           88s    172.16.126.9    k8s-worker2      <none>            <none>
worker-667975666-srg2r  1/1     Running   0           3m27s  172.16.126.8    k8s-worker2      <none>            <none>

[root@k8s-kubect1 example-voting-app (kubernetes-admin@kubernetes:vote)]#kg svc | grep vote
vote    LoadBalancer  10.98.190.214  192.168.255.20  80:31000/TCP  3m49s

[root@k8s-kubect1 example-voting-app (kubernetes-admin@kubernetes:vote)]#for i in {1..10}; do curl -s 192.168.255.20 | grep ID;
4      Processed by container ID vote-5f865477fc-v2kps
3      Processed by container ID vote-5f865477fc-sc56w
3      Processed by container ID vote-5f865477fc-lgrsg
```

< Voting-app Service 구현 >

Voting-app Service 구현



< Voting-app Service 구현 >

Prometheus, Grafana

The image shows the Prometheus Alertmanager web interface. The top section displays a list of active alerts, including 'AlertmanagerFailedToSendAlert', 'AlertmanagerClusterFailedToSendAlert', and 'AlertmanagerClusterDown'. Below this, the 'Runtime Information' and 'Build Information' sections are visible, providing details about the service's status and version.

Runtime Information

Start time	Wed, 22 Mar 2023 15:09:41 GMT
Working directory	/prometheus
Configuration reload	Success
Last successful configuration reload	2023-03-22T15:09:42Z
WAL corruptions	0
Goroutines	226
GOMAXPROCS	8
GOGC	
GODEBUG	
Storage retention	10d

Build Information

Version	2.42.0
Revision	225:61122d88613110eaeedc91b13e557a0f
Branch	HEAD
BuildUser	root@6f7440962307
BuildDate	20230201-07:53:32
GoVersion	go1.19.5

Alertmanagers

Endpoints	
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The image shows the Grafana web interface. The top section displays the 'Welcome to Grafana' message and a 'Need help?' link. Below this, the 'Advanced' section provides options to manage users and teams. The 'Dashboards' section shows a list of dashboards, including 'New dashboard'. The 'Recently viewed dashboards' section displays a line chart with multiple data series, showing a general upward trend over time.

New dashboard

The chart displays data for the 'New dashboard' over a period of time. The Y-axis represents a numerical value, ranging from 0 to 100,000. The X-axis represents time, with labels for various dates and times. The chart shows several data series, each represented by a different colored line with markers. The overall trend of the data is upward, indicating a positive growth or increase in the measured metric.

< 프로메테우스, 그라파나 구현 >

A top-down view of a spiral-bound notebook with a black metal spiral binding on the left side. The notebook is open to a page with a light gray grid pattern. A black pen with a silver clip and a small label is lying vertically on the left side of the grid. The notebook is placed on a light-colored wooden surface with vertical planks. The word "END" is superimposed in the center of the notebook page.

END