

PROSES DEPLOYMENT APLIKASI WEB DENGAN DOCKER SWARM

WORKSHOP CLOUD



Disusun Oleh :

- 1. Slamet Saptoto (155410047)**
- 2. Harish Abdurrohman (155410003)**
- 3. Thomas Prayudhi (155410041)**

STMIK AKAKOM

YOGYAKARTA

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A. Kebutuhan VM

Proses deployment membutuhkan 2 buah VM, dimana masing-masing VM menggunakan OS Ubuntu Server 16.04 LTS dan sudah terinstall docker. 1 VM berfungsi sebagai manager dan 1 VM berfungsi sebagai worker.

B. Konfigurasi NFS Server di VM Manager

NFS Server digunakan untuk sharing document root antara Manager dan Worker. NFS Server diinstall dan dikonfigurasi di VM Manager, berikut langkah - langkahnya :

1. Lakukan update dan install package nfs-kernel-server

```
root@ubuntu:~# apt-get update
```

```
root@ubuntu:~# apt-get install nfs-kernel-server
```

2. Buat folder web untuk sharing document root di var/nfs

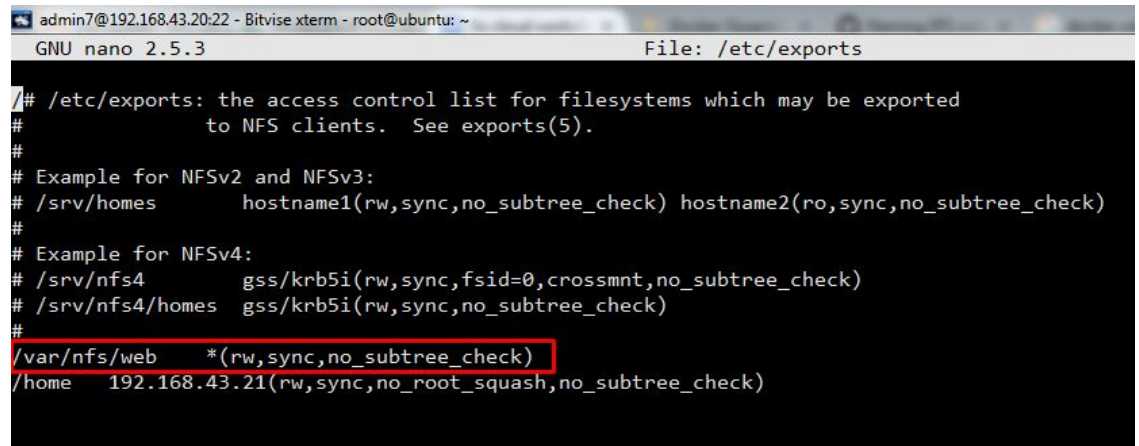
```
root@ubuntu:~# mkdir /var/nfs/web -p
```

3. Beri hak akses folder web

```
root@ubuntu:~# chown nobody:nogroup /var/nfs/web
```

4. Setting agar worker bisa mengakses folder /var/nfs/web di /etc/exports

```
root@ubuntu:~# nano /etc/exports
```



```
admin7@192.168.43.20:22 - Bitvise xterm - root@ubuntu: ~
GNU nano 2.5.3 File: /etc/exports

/# /etc/exports: the access control list for filesystems which may be exported
# to NFS clients. See exports(5).
#
# Example for NFSv2 and NFSv3:
# /srv/homes hostname1(rw,sync,no_subtree_check) hostname2(ro,sync,no_subtree_check)
#
# Example for NFSv4:
# /srv/nfs4 gss/krb5i(rw,sync,fsid=0,crossmnt,no_subtree_check)
# /srv/nfs4/homes gss/krb5i(rw,sync,no_subtree_check)
#
/var/nfs/web *(rw,sync,no_subtree_check)
/home 192.168.43.21(rw,sync,no_root_squash,no_subtree_check)
```

5. Restart service nfs

```
root@ubuntu:~# systemctl restart nfs-kernel-server
```

C. Konfigurasi Docker Swarm

Langkah - langkah konfigurasinya :

1. Inisialisasi swarm init di Manager dengan **docker swarm init**
2. Di Worker lakukan join node ke Manager

3. Buat docker volume htdocs bertipe nfs di Manager maupun worker

```
root@ubuntu:~# docker volume create --driver local --opt type=nfs --opt o=addr=192.168.43.20 --opt device=/var/nfs/web htdocs
```

```
root@ubuntu:~# docker volume ls
DRIVER          VOLUME NAME
local           htdocs
local           vol_web
root@ubuntu:~# docker volume inspect htdocs
[
  {
    "CreatedAt": "2018-07-28T19:04:27+07:00",
    "Driver": "local",
    "Labels": {},
    "Mountpoint": "/var/lib/docker/volumes/htdocs/_data",
    "Name": "htdocs",
    "Options": {
      "device": ":/var/nfs/web",
      "o": "addr=192.168.43.20",
      "type": "nfs"
    },
    "Scope": "local"
  }
]
```

4. Buat folder mysql di root Manager

5. Buat file app.yml, berikut isinya :

```
version: "3.3"
volumes:
  htdocs:
    driver: local
    driver_opts:
      type: nfs
      o: addr=192.168.43.20
      device: ":/var/nfs/web"
services:
  web:
    image: tutum/apache-php
    environment:
      - ALLOW_OVERRIDE=true
    volumes:
      - type: volume
        source: htdocs
        target: /app
    ports:
      - "80:80"
    networks:
      - overlay
    deploy:
```

```

    replicas: 7
    restart_policy:
      condition: on-failure
  mysql:
    image: mariadb
    volumes:
      - type: bind
        source: ./mysql
        target: /var/lib/mysql
    environment:
      MYSQL_ROOT_PASSWORD: root
      MYSQL_USER: admin
      MYSQL_PASSWORD: test
      MYSQL_DATABASE: database
    ports:
      - "8889:3306"
    networks:
      - overlay
  deploy:
    replicas: 1
    restart_policy:
      condition: on-failure

networks:
  overlay:

```

6. Deploy file app.yml dengan perintah :

```
root@ubuntu:~# docker stack deploy -c app.yml swarm_web
```

```

root@ubuntu:~# docker network rm swarm_web_overlay
swarm_web_overlay
root@ubuntu:~# docker stack deploy -c app.yml web
Creating network web_overlay
Creating service web_web
Creating service web_mysql

```

7. Secara otomatis akan terbentuk 2 buah service

```

root@ubuntu:~# docker service ls

```

ID	NAME	MODE	REPLICAS	IMAGE	PORTS
0kjz6em01o15	swarm_web_mysql	replicated	1/1	mariadb:latest	*:8889->3306/tcp
qsclov87f3eu	swarm_web_web	replicated	7/7	tutum/apache-php:latest	*:80->80/tcp

8. Lakukan cek apakah container sudah berjalan di Manager dan Worker
- Di Manager

```
root@ubuntu:~# docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS
c105897066ce	tutum/apache-php:latest	"/run.sh"	10 seconds ago	Up 8 seconds
8734b83c3085	tutum/apache-php:latest	"/run.sh"	About an hour ago	Up About an hour
a1d3df30e7d8	mariadb:latest	"docker-entrypoint.s..."	About an hour ago	Up About an hour
bcdc658cbbfc	tutum/apache-php:latest	"/run.sh"	About an hour ago	Up About an hour

Di Worker

```
root@ubuntu:~# docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS
59e31f156b4c	tutum/apache-php:latest	"/run.sh"	About a minute ago	Up About a minute
1439f8642865	tutum/apache-php:latest	"/run.sh"	About an hour ago	Up About an hour
eaccb9b3e5	tutum/apache-php:latest	"/run.sh"	About an hour ago	Up About an hour
0ec4e27c4127	tutum/apache-php:latest	"/run.sh"	About an hour ago	Up About an hour

D. Testing Aplikasi Web dan Scalling Service

1. Testing Aplikasi Web

Langkah - langkahnya :

- a. Upload aplikasi cms sekolahku ke document root /var/nfs/web di Manager

```
root@ubuntu:/var/nfs/web/sekolah# ls
```

cms-sekolahku-v2.2.0.zip

- b. Lakukan Unzip file tersebut

```
root@ubuntu:/var/nfs/web/sekolah# unzip cms-sekolahku-v2.2.0.zip
```

- c. Buka browser dan akses ke 192.168.43.20 (ip Manager) dan install

Proses Instalasi CMS Sekolahku

Step 1 Konfigurasi Database Step 2 Informasi Situs Step 3 Konfigurasi Akun

Konfigurasi Database

Nama Database:

Nama Akun:

Kata Sandi:

Host:

[Selanjutnya >](#)

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192.168.43.20/sekolah/install/#

Proses Instalasi CMS Sekolahku

Step 1
Konfigurasi Database

Step 2
Informasi Situs

Step 3
Konfigurasi Akun

Informasi Situs

Jenjang Sekolah
Universitas

Nama Sekolah / Kampus
AKAKOM

Alamat
Bantul

Slogan
Code for life

< Sebelumnya

Selanjutnya >

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192.168.43.20/sekolah/install/#

Proses Instalasi CMS Sekolahku

Step 1
Konfigurasi Database

Step 2
Informasi Situs

Step 3
Konfigurasi Akun

Konfigurasi Akun

Nama Akun
admin

Nama Lengkap
admin7

Email
admin7@gmail.com

Kata Sandi

< Sebelumnya

INSTALL

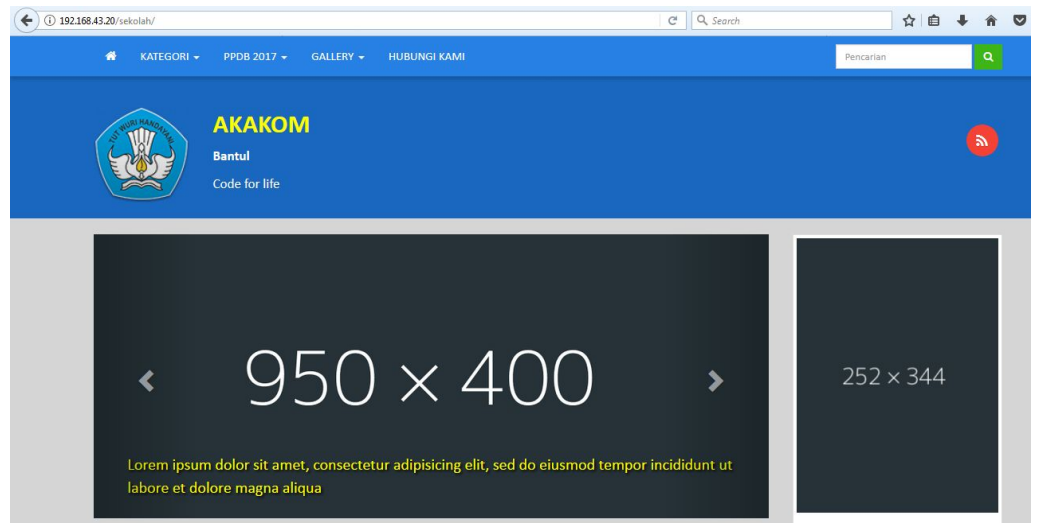
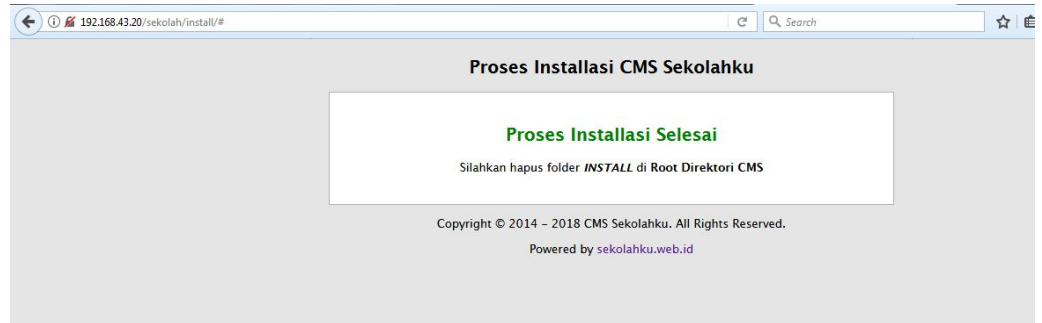
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192.168.43.20/sekolah/install/#

Proses Instalasi CMS Sekolahku

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2. Testing Scalling

```
root@ubuntu:~# docker service ls
ID                NAME                MODE                REPLICAS                IMAGE
PORTS
giyflwoh4g4i     web_mysql           replicated           1/1                     mariadb:latest
*:8889->3306/tcp
xqlzs8ql0w7q     web_web             replicated           2/2                     tutum/apache-php:lat
est *:80->80/tcp
root@ubuntu:~#
```

```
root@ubuntu:~# docker service scale web_web=5
web_web scaled to 5
overall progress: 5 out of 5 tasks
1/5: running
2/5: running
3/5: running
4/5: running
5/5: running
verify: Service converged
```



```

root@ubuntu:~# docker service ls

```

ID	NAME	MODE	REPLICAS	IMAGE
giyflwoh4g4i	web_mysql	replicated	1/1	mariadb:latest
xqlzs8q10w7q	web_web	replicated	5/5	tutum/apache-php:latest

Di Manager

```

root@ubuntu:~# docker ps

```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS
1f1bc87f1a02	tutum/apache-php:latest	"/run.sh"	About a minute ago	Up About a minute
83a1081ba09a	mariadb:latest	"docker-entrypoint.s..."	12 minutes ago	Up 12 minutes
051277c58262	tutum/apache-php:latest	"/run.sh"	12 minutes ago	Up 12 minutes

Di Worker

```

root@ubuntu:~# docker ps

```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS
d1282f2c45df	tutum/apache-php:latest	"/run.sh"	3 minutes ago	Up 3 minutes
ec723d942ef3	tutum/apache-php:latest	"/run.sh"	3 minutes ago	Up 3 minutes
e5af19457806	tutum/apache-php:latest	"/run.sh"	13 minutes ago	Up 13 minutes