DATA2410-1 22V Datanettverk og Skytjenester

GROUP Portfolio Assignment 2 - Docker and Zabbix Real Use-Case

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1. VM1: Docker containers setup 10%

VM Setup

We Started by deleting the 3 default VMs, because these had a different ubuntu version than what was recommended in the assignment description.

We used these commands to make new containers with the focal fossa version, whilst also allowing for docker containers within docker containers.

Making the images to run containers from

```
# making vm 1 image
docker build -f vm1-dockerfile -t vm-image1

# making vm 2 image
docker build -f vm2-dockerfile -t vm-image2

# making vm 3 image
docker build -f vm3-dockerfile -t vm-image3
```

```
# running vm1 container
sudo docker container run --privileged -v /var/run/docker.sock:/var/run/docker.sock -d vm_image
# running vm2 container
sudo docker container run -d -t vm2-dockerfile
```

The image, `vm_image`, was made from this Dockerfile:

```
TODO
- [ ] get from configs/Dockerfile
```

Quad Container Setup

After setting up the VMs we used the file `docker compose.yml`, found in the configs folder, to set up the four containers with required the required config instructions for the assignment.

```
TODO
- [ ] Paste finalized version of this file
```

The assignment does not specify volumes. Therefore, in order to keep the maintenance simple, we used four files from `this directory` as the volumes for each of the four containers. At first we ran the docker containers without the volume statements to auto generrate the configs, then we edited the configs and pasted them back in to a new

compose file to automate our statements. The final files we used can be found below (alt. The changes we made to the files can be found below).

mysql

zabbix-server

zabbix-web

zabbix-agent

2. VM2 and VM3: Install zabbix-agent and zabbix-proxy 10%

We start by fetching this: `wget https://repo.zabbix.com/zabbix/6.1/ubuntu/pool/main/z/zabbix-release/zabbix-release_6.1-1%2Bubuntu20.04_all.deb` So that we can install the `zabbix-agent`

Installing zabbix-proxy on VM2:

```
root@47b33e945b34:/# apt-get install wget
Reading package lists... Done
...
root@47b33e945b34:/# wget https://repo.zabbix.com/zabbix/6.1/ubuntu/pool/main/z/zabbix-release/zabbix-release_6

root@47b33e945b34:/# dpkg -i zabbix-release_6.1-1+ubuntu20.04_all.deb
Selecting previously unselected package zabbix-release.
(Reading database ... 4623 files and directories currently installed.)
Preparing to unpack zabbix-release_6.1-1+ubuntu20.04_all.deb ...
Unpacking zabbix-release (1:6.1-1+ubuntu20.04) ...
Setting up zabbix-release (1:6.1-1+ubuntu20.04) ...
root@47b33e945b34:/# apt-get install -f

root@47b33e945b34:/# apt-get install zabbix-proxy-mysql
Reading package lists... Done
..

root@47b33e945b34:/# apt-get install zabbix-sql-scripts
```

Installing MariaDB inside VM2:

```
root@47b33e945b34:/# curl -LsS -O https://downloads.mariadb.com/MariaDB/mariadb_repo_setup
root@47b33e945b34:/# bash mariadb_repo_setup --mariadb-server-version=10.6
```

Accessing zabbix web with lynx

Accessing the zabbix-web

```
# if lynx is not installed
g13@net513:~$ lynx localhost

g13@net513:~$ lynx localhost

this gives you a cli web browser
```

VM 3

Installing zabbix-agent on VM3:

Run the following script as root on the vm3 container to install the zabbix agent:

```
wget https://repo.zabbix.com/zabbix/6.1/ubuntu/pool/main/z/zabbix-release/zabbix-release_6.1-1%2Bubuntu20.04_a
```

```
dpkg -i zabbix-release_6.1-1+ubuntu20.04_all.deb

apt-get install -f

apt-get install zabbix-agent
```

Creating psk encryption key:

```
root@4d08e816a5a3:/# openssl rand -hex 32 > zabbix_agent.psk
root@4d08e816a5a3:/# cat zabbix_agent.psk
f62ae210eb7e91ab7908cbad2f2e8e0189f57b54e9d4de9be636e17ad362e7f7
```

Since we are running this in a docker container and not a straight vm, then we do not have systemd available, therefore we cannot *enable* the service, only start it, and have it as a run command in a dockerfile and make sure that the service is started every time the contained based on the dockerfile is run

3. VM2: Nginx proxy 10%

4. VM1: Zabbix frontend