1. Buat container microservice1

   # lxc-create --name microservice1 --template download -- --dist "ubuntu" --release "focal" --arch amd64

```
root@DESKTOP-3V50F26:/bin# lxc-create --name microservice1 --template download -- --dist "ubuntu" --release "focal" --arch amd64
Downloading the image index
Downloading the rootfs

Downloading the metadata
The image cache is now ready
Unpacking the rootfs

---
You just created an Ubuntu focal amd64 (20240326_07:42) container.

To enable SSH, run: apt install openssh-server
No default root or user password are set by LXC.
root@DESKTOP-3V50F26:/bin#
```

2. Buat container microservice2

   # lxc-create --name microservice2 --template download -- --dist "ubuntu" --release "bionic" --arch amd64

```
root@DESKTOP-3V50F26:/bin# lxc-create --name microservice2 --template download -- --dist "ubuntu" --release "bionic" --arch amd64
Using image from local cache
Unpacking the rootfs

---
You just created an Ubuntu bionic amd64 (20240326_07:42) container.

To enable SSH, run: apt install openssh-server
No default root or user password are set by LXC.
```

3. command # ip r -> untuk mengetahui ip dan subnet server dan microservice

```
farel@DESKTOP-3V50F26:~$ ip r
default via 172.18.64.1 dev eth0 proto kernel
10.0.3.0/24 dev lxcbr0 proto kernel scope link src 10.0.3.1
172.18.64.0/20 dev eth0 proto kernel scope link src 172.18.71.213
```

   # lxc-ls -f

```
farel@DESKTOP-3V50F26:~$ sudo lxc-ls -f
NAME          STATE   AUTOSTART GROUPS IPV4       IPV6 UNPRIVILEGED
microservice1 RUNNING 0         -      10.0.3.152 -    false
microservice2 RUNNING 0         -      10.0.3.74  -    false
```

4. masuk ke microservice1 dan microservice2 lalu install nginx dan network manager

   # lxc-attach -n microservice1

   # sudo apt install nginx nginx-extras network-manager nano

```
farel@DESKTOP-3V50F26:~$ sudo lxc-attach -n microservice1
root@microservice1:/# sudo apt install nginx nginx-extras net-tools nano
Reading package lists... Done
Building dependency tree
Reading state information... Done
nano is already the newest version (4.8-1ubuntu1).
net-tools is already the newest version (1.60+git20180626.aebd88e-1ubuntu1).
nginx is already the newest version (1.18.0-0ubuntu1.4).
nginx-extras is already the newest version (1.18.0-0ubuntu1.4).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@microservice1:/# sudo apt install nginx nginx-extras net-tools nano curl
Reading package lists... Done
Building dependency tree
Reading state information... Done
nano is already the newest version (4.8-1ubuntu1).
net-tools is already the newest version (1.60+git20180626.aebd88e-1ubuntu1).
nginx is already the newest version (1.18.0-0ubuntu1.4).
```

   #exit

   # lxc-attach -n microservice2

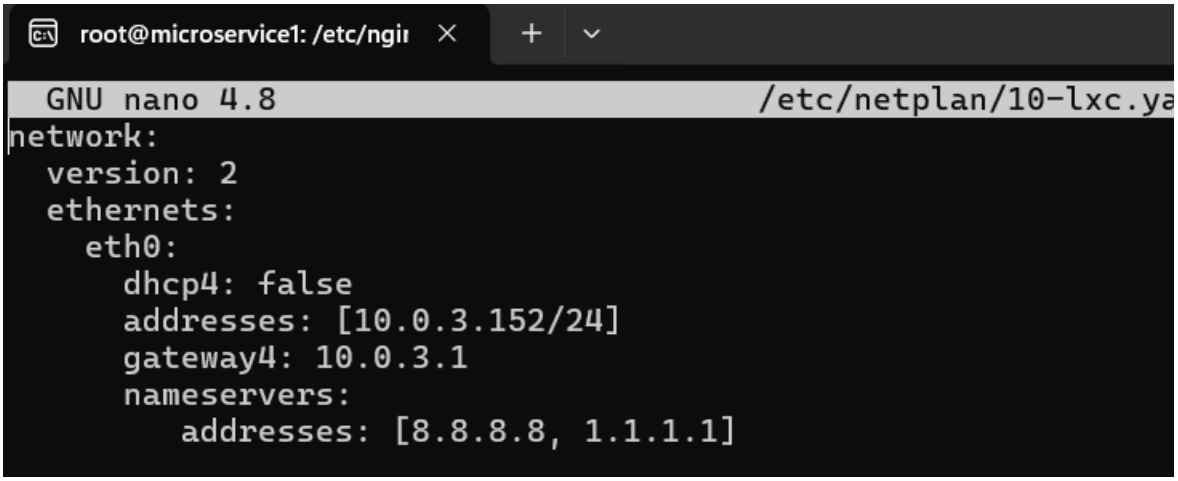
   # sudo apt install nginx net-tools nginx-extras

```
farel@DESKTOP-3V50F26:~$ sudo lxc-attach -n microservice2
root@microservice2:/# sudo apt install nginx net-tools nginx-extras
Reading package lists... Done
Building dependency tree
Reading state information... Done
nginx is already the newest version (1.18.0-0ubuntu1.4).
nginx-extras is already the newest version (1.18.0-0ubuntu1.4).
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 196 kB of archives.
After this operation, 864 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal/main amd64 net-tools amd64 1.60+git20180626.aebd88e-1ubuntu1 [196 kB]
Fetched 196 kB in 4s (52.7 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 18487 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20180626.aebd88e-1ubuntu1_amd64.deb ...
Unpacking net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...
Setting up net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...
```

exit

5. setting static IP di microservice1

nano /etc/netplan/10-lxc.yaml



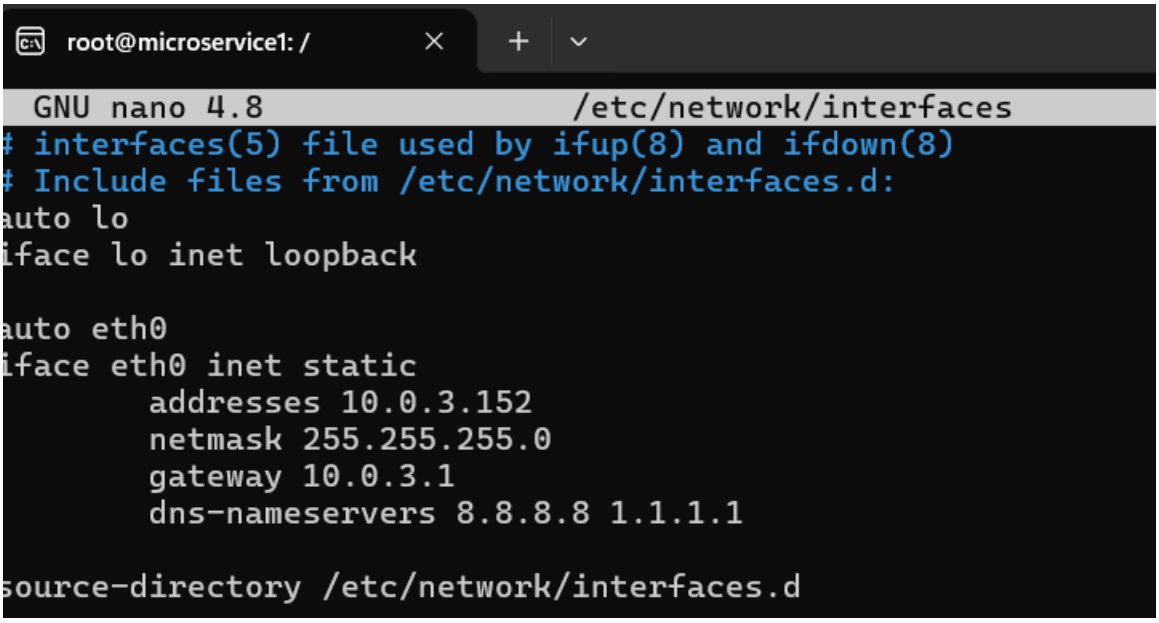
sudo netplan apply

ifconfig

```
root@microservice1:/# sudo nano /etc/netplan/10-lxc.yaml
root@microservice1:/# sudo netplan apply
root@microservice1:/# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.3.152  netmask 255.255.255.0  broadcast 10.0.3.255
        inet6 fe80::216:3eff:fe5b:8213  prefixlen 64  scopeid 0x20<link>
        ether 00:16:3e:5b:82:13  txqueuelen 1000  (Ethernet)
        RX packets 99  bytes 13629 (13.6 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 77  bytes 7488 (7.4 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 24  bytes 2780 (2.7 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 24  bytes 2780 (2.7 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

6. setting network interfaces

nano /etc/network/interfaces

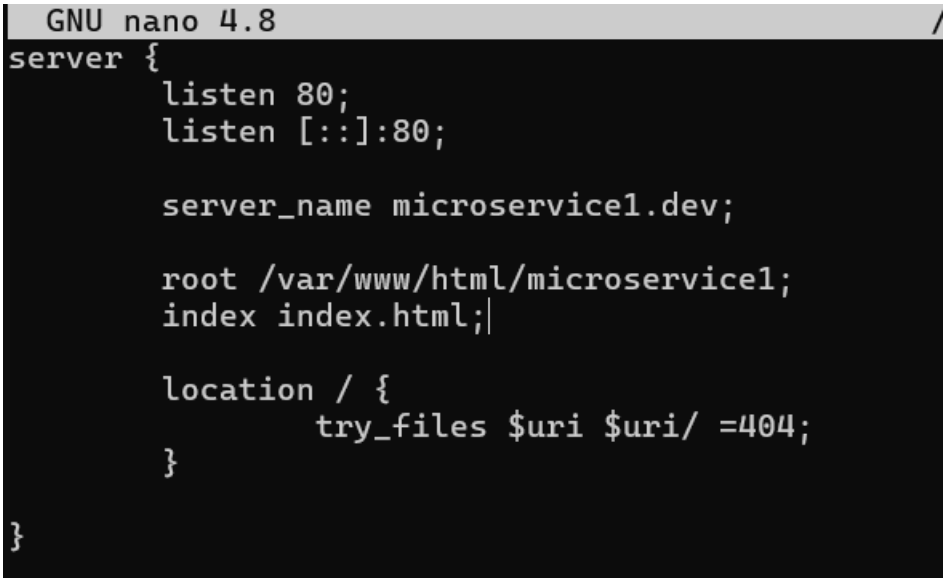


7. Setting ngix

cd /etc/nginx/sites-available

touch microservice1.dev

nano microservice1.dev



cd ../sites-enabled

ln -s /etc/nginx/sites-available/microservice1.dev .

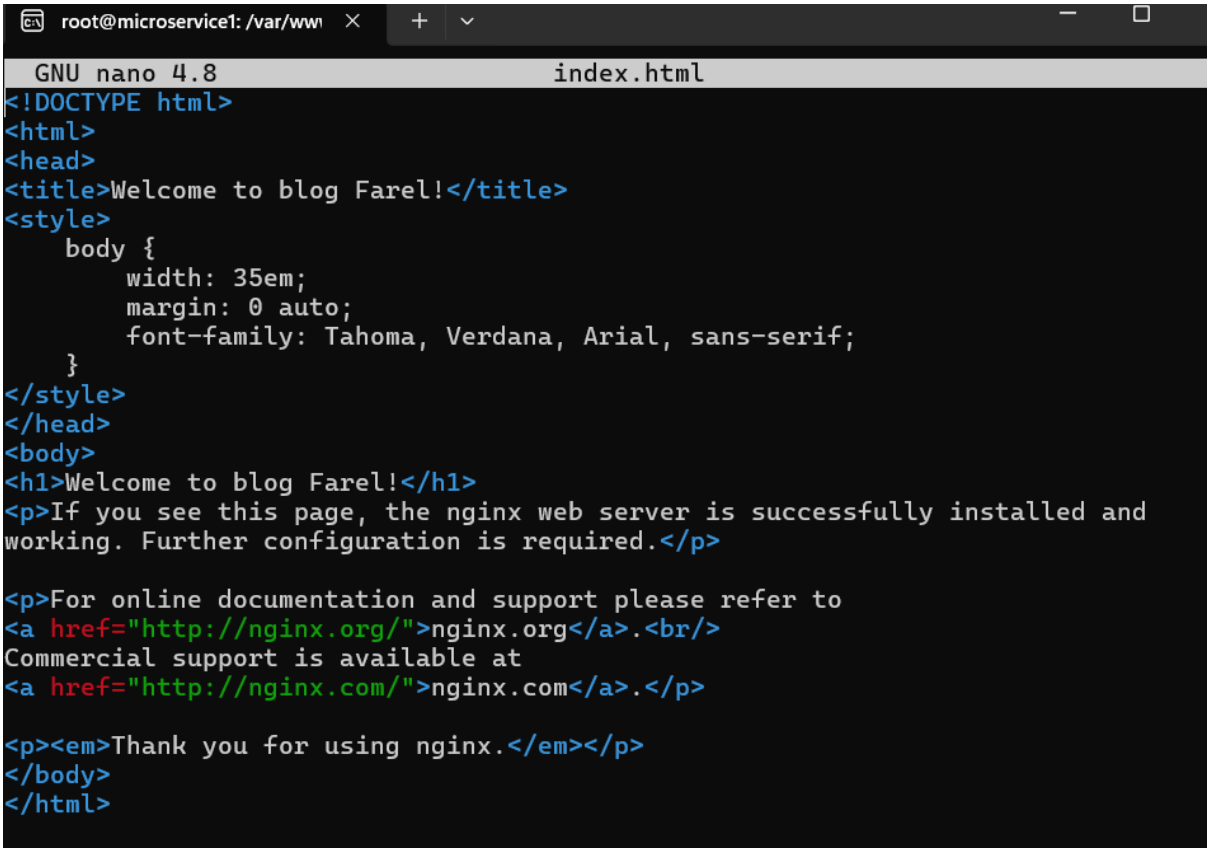
nginx -t

nginx -s reload

nano /etc/hosts

```
  GNU nano 4.8
127.0.1.1       microservice1
127.0.0.1       localhost
127.0.0.1       microservice1.dev
::1             localhost ip6-localhost ip6-loopback
ff02::1         ip6-allnodes
ff02::2         ip6-allrouters
```

cd /var/www/html
mkdir microservice1
cp index.nginx-debian.html microservice1/index.html
cd microservice1
nano index.html



8. Lakukan curl ke microservice1
   # curl -i http://microservice1.dev

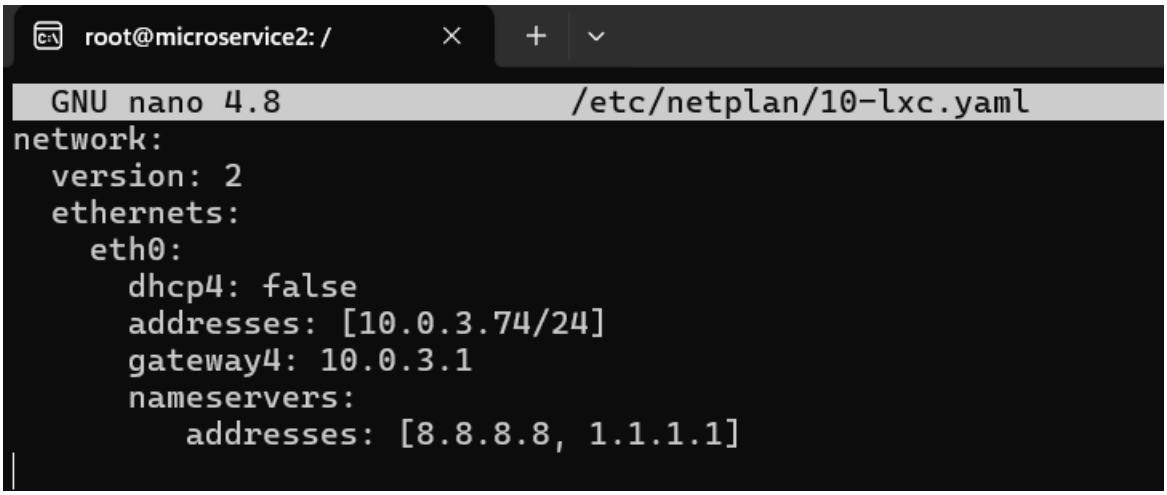
```
farel@DESKTOP-3V50F26:~$ curl -i microservice1.dev
HTTP/1.1 200 OK
Server: nginx/1.18.0 (Ubuntu)
Date: Sun, 31 Mar 2024 18:51:09 GMT
Content-Type: text/html
Content-Length: 622
Last-Modified: Sun, 31 Mar 2024 16:31:26 GMT
Connection: keep-alive
ETag: "66098fde-26e"
Accept-Ranges: bytes

<!DOCTYPE html>
<html>
<head>
<title>Welcome to blog Farel!</title>
<style>
    body {
        width: 35em;
        margin: 0 auto;
        font-family: Tahoma, Verdana, Arial, sans-serif;
    }
</style>
</head>
<body>
<h1>Welcome to blog Farel!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
```

9. Setting Static IP microservice2

apt install nano net-tools curl

```
farel@DESKTOP-3V50F26:~$ sudo lxc-attach -n microservice2
[sudo] password for farel:
root@microservice2:/# apt install nano net-tools curl
Reading package lists... Done
Building dependency tree
Reading state information... Done
net-tools is already the newest version (1.60+git20180626.aebd88e-1ubuntu1).
The following additional packages will be installed:
  libasn1-8-heimdal libbrotli1 libcurl4 libgssapi3-heimdal
  libhcrypto4-heimdal libheimbase1-heimdal libheimntlm0-heimdal
  libhx509-5-heimdal libkrb5-26-heimdal libldap-2.4-2 libldap-common
  libnghttp2-14 libpsl5 libroken18-heimdal librtmp1 libsasl2-2
  libsasl2-modules libsasl2-modules-db libssh-4 libwind0-heimdal publicsuffix
Suggested packages:
  libsasl2-modules-gssapi-mit | libsasl2-modules-gssapi-heimdal
  libsasl2-modules-ldap libsasl2-modules-otp libsasl2-modules-sql hunspell
The following NEW packages will be installed:
  curl libasn1-8-heimdal libbrotli1 libcurl4 libgssapi3-heimdal
  libhcrypto4-heimdal libheimbase1-heimdal libheimntlm0-heimdal
  libhx509-5-heimdal libkrb5-26-heimdal libldap-2.4-2 libldap-common
  libnghttp2-14 libpsl5 libroken18-heimdal librtmp1 libsasl2-2
  libsasl2-modules libsasl2-modules-db libssh-4 libwind0-heimdal nano
  publicsuffix
0 upgraded, 23 newly installed, 0 to remove and 0 not upgraded.
Need to get 2499 kB of archives.
After this operation, 8195 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal/main amd64 libpsl5 amd64 0.21.0-1u
```

sudo nano /etc/netplan/10-lxc.yaml



sudo netplan apply

ifconfig

```
root@microservice2:/# sudo netplan apply
root@microservice2:/# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.3.74  netmask 255.255.255.0  broadcast 10.0.3.255
        inet6 fe80::216:3eff:fef0:9074  prefixlen 64  scopeid 0x20<link>
        ether 00:16:3e:f0:90:74  txqueuelen 1000  (Ethernet)
        RX packets 840  bytes 2378016 (2.3 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 743  bytes 57803 (57.8 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 18  bytes 2082 (2.0 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 18  bytes 2082 (2.0 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

Setting network interfaces

nano /etc/network/interfaces

```
  GNU nano 4.8                    /etc/network/interfaces
# interfaces(5) file used by ifup(8) and ifdown(8)
# Include files from /etc/network/interfaces.d:

auto lo
iface lo inet loopback

# primary
auto eth0
iface lo inet static
   address 10.0.3.152
   netmask 255.255.255.0
   gateway 10.0.3.1

source-directory /etc/network/interfaces.d
```

sudo systemctl restart NetworkManager

ifconfig

```
root@microservice2:/# sudo systemctl restart NetworkManager
root@microservice2:/# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.3.74  netmask 255.255.255.0  broadcast 10.0.3.255
        inet6 fe80::216:3eff:fef0:9074  prefixlen 64  scopeid 0x20<link>
        ether 00:16:3e:f0:90:74  txqueuelen 1000  (Ethernet)
        RX packets 7040  bytes 26908992 (26.9 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 5723  bytes 441099 (441.0 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 70  bytes 8044 (8.0 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 70  bytes 8044 (8.0 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

Setting nginx

cd /etc/nginx/sites-available

touch microservice2.dev

nano microservice2.dev

```
root@microservice2: /etc/ngi
  GNU nano 4.8                        microservice2.dev
server {
        listen 80;
        listen [::]:80;

        server_name microservice2.dev

        root /var/www/html/microservice2
        index index.html

        location / {
                try_files $uri $uri/ =404;
        }

}
```

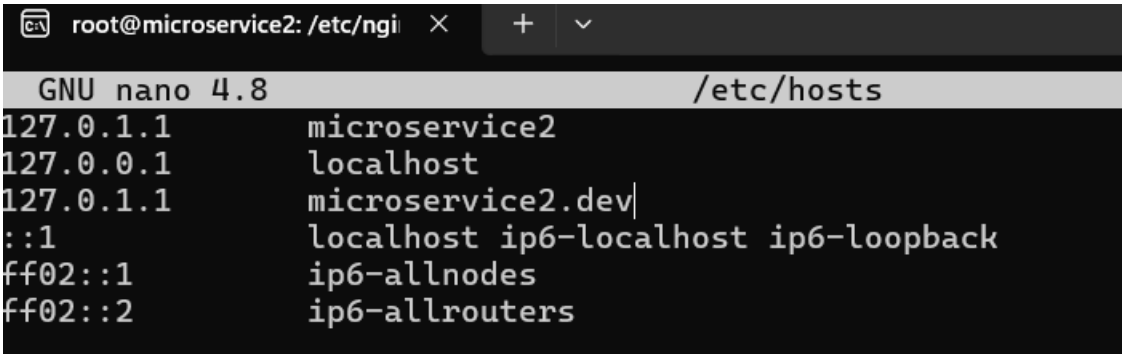
cd ../sites-enabled

ln -s /etc/nginx/sites-available/microservice2.dev

nginx -t

nginx -s reload

nano /etc/hosts

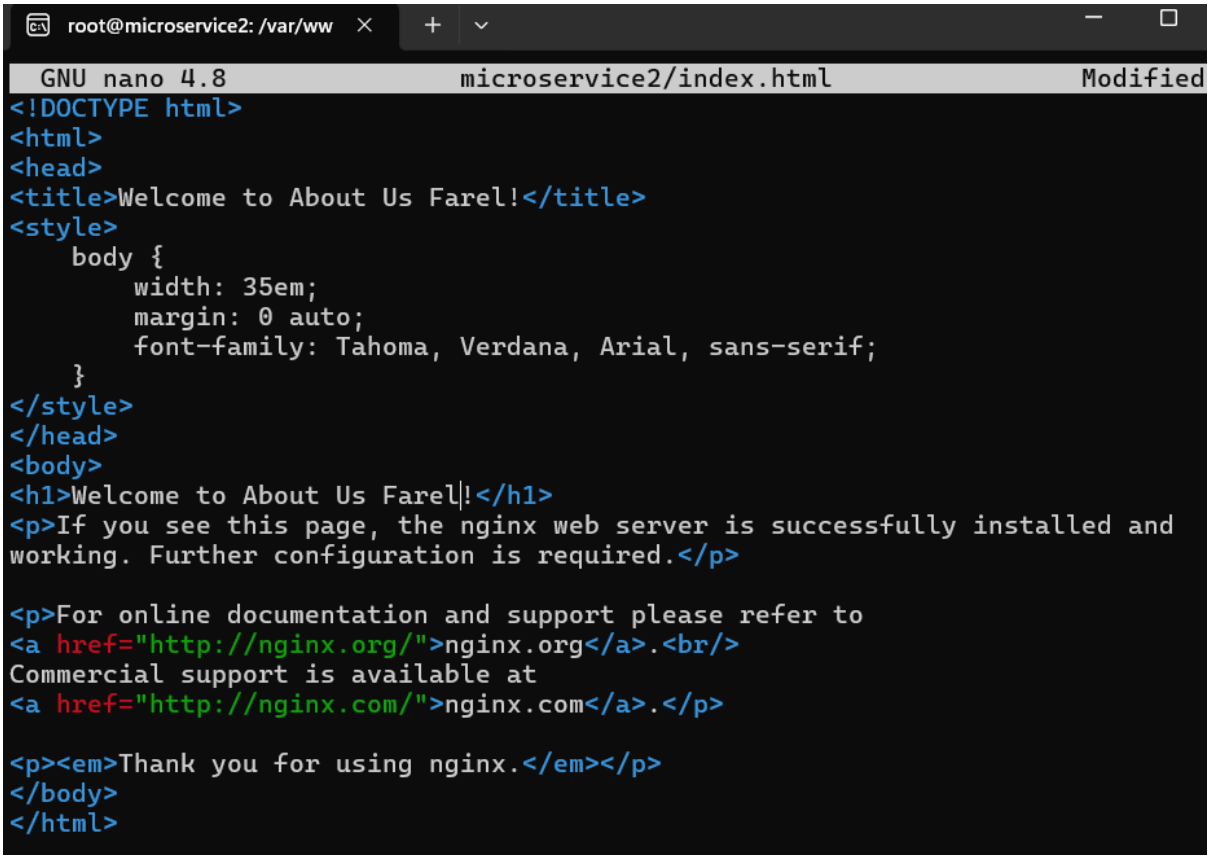


cd /var/www/html

mkdir microservice2

cp index.nginx-debian.html microservice2/index.html

nano /microservice2/index.html



curl -i http://microservice2.dev

```
root@microservice2:/var/www/html# curl -i microservice2.dev
HTTP/1.1 200 OK
Server: nginx/1.18.0 (Ubuntu)
Date: Sun, 31 Mar 2024 19:14:36 GMT
Content-Type: text/html
Content-Length: 630
Last-Modified: Sun, 31 Mar 2024 19:14:12 GMT
Connection: keep-alive
ETag: "6609b604-276"
Accept-Ranges: bytes

<!DOCTYPE html>
<html>
<head>
<title>Welcome to About Us Farel!</title>
<style>
    body {
        width: 35em;
        margin: 0 auto;
        font-family: Tahoma, Verdana, Arial, sans-serif;
    }
</style>
</head>
<body>
<h1>Welcome to About Us Farel!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
```

10. Setting hosts di WSL

    # nano /etc/hosts

```
farel@DESKTOP-3V50F26: ~
  GNU nano 6.2                                                /etc/hosts
# This file was automatically generated by WSL. To stop automatic generation
# [network]
# generateHosts = false
127.0.0.1       localhost
127.0.1.1       DESKTOP-3V50F26.        DESKTOP-3V50F26
127.0.1.1       sister.local

10.0.3.152      microservice1.dev
10.0.3.74       microservice2.dev
# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

    # cd /etc/nginx/sites-available

    # touch sister.local

    # nano sister.local

```
farel@DESKTOP-3V50F26: /et
  GNU nano 6.2                                  sister.local *
server {
        listen 80;
        listen [::]:80;

        server_name sister.local;
        server_name app.sister.local;

        root /var/www/html;
        index index.html;

        location /blog {
                rewrite /blog/?(.*)$ /$1 break;
                proxy_pass http://microservice1.dev;
        }
        location /aboutus {
                rewrite /aboutus/?(.*)$ /$1 break;
                proxy_pass http://microservice2.dev;
        }

        location / {
                try_files $uri $uri/ =404;
}
```

cd ../sites-enabled

sudo ln -s /etc/nginx/sites-available/sister.local .

sudo nginx -t

sudo nginx -s reload

```
farel@DESKTOP-3V50F26:/etc/nginx/sites-available$ cd ../sites-enabled
farel@DESKTOP-3V50F26:/etc/nginx/sites-enabled$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
farel@DESKTOP-3V50F26:/etc/nginx/sites-enabled$ sudo nginx -s reload
nginx: [error] invalid PID number "" in "/run/nginx.pid"
farel@DESKTOP-3V50F26:/etc/nginx/sites-enabled$
```

Test curl sister.local

curl -i sister.local

```
farel@DESKTOP-3V50F26:/etc/nginx$ curl sister.local
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
    body {
        width: 35em;
        margin: 0 auto;
        font-family: Tahoma, Verdana, Arial, sans-serif;
    }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
```

curl -i sister.local/blog

```
farel@DESKTOP-3V50F26:/etc/nginx$ curl sister.local/blog
<!DOCTYPE html>
<html>
<head>
<title>Welcome to blog Farel!</title>
<style>
    body {
        width: 35em;
        margin: 0 auto;
        font-family: Tahoma, Verdana, Arial, sans-serif;
    }
</style>
</head>
<body>
<h1>Welcome to blog Farel!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
```

curl -i sister.local/aboutus

```
farel@DESKTOP-3V50F26:/etc/nginx$ curl sister.local/aboutus
<!DOCTYPE html>
<html>
<head>
<title>Welcome to About Us Farel!</title>
<style>
    body {
        width: 35em;
        margin: 0 auto;
        font-family: Tahoma, Verdana, Arial, sans-serif;
    }
</style>
</head>
<body>
<h1>Welcome to About Us Farel!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
```