

LAPORAN WSL

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Membuat Microservice 1 dan 2

Dengan command

`lxc-create --name microservice1 --template download -- --dist "ubuntu" --release "focal" --arch amd64` (Microservice 1)

`lxc-create --name microservice2 --template download -- --dist "ubuntu" --release "focal" --arch amd64` (Microservice 2)

```
File capabilities:

Note : Before booting a new kernel, you can check its configuration
usage : CONFIG=/path/to/config /usr/bin/lxc-checkconfig

root@LAPTOP-32TOJ60A:/home/azkalazkyaa# 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 (20240610_07:42) container.

To enable SSH, run: apt install openssh-server
No default root or user password are set by LXC.
root@LAPTOP-32TOJ60A:/home/azkalazkyaa# lxc-create --name microservice2 --template download -- --dist "ubuntu" --release
"focal" --arch amd64
Using image from local cache
Unpacking the rootfs

---
You just created an Ubuntu focal amd64 (20240610_07:42) container.

To enable SSH, run: apt install openssh-server
No default root or user password are set by LXC.
root@LAPTOP-32TOJ60A:/home/azkalazkyaa#
root@LAPTOP-32TOJ60A:/home/azkalazkyaa#
```

Kemudian memasukan command `ip r` untuk mengetahui subnet server dan ip pada microservice 1 dan 2

```
root@LAPTOP-32TOJ60A:/home/azkalazkyaa#
root@LAPTOP-32TOJ60A:/home/azkalazkyaa# ip r
default via 172.25.112.1 dev eth0 proto kernel
10.0.3.0/24 dev lxcbr0 proto kernel scope link src 10.0.3.1 linkdown
172.25.112.0/20 dev eth0 proto kernel scope link src 172.25.116.106
root@LAPTOP-32TOJ60A:/home/azkalazkyaa#
```

```

root@LAPTOP-32T0J60A:/home/azkalazkyaa# lxc-ls -f
NAME          STATE    AUTOSTART GROUPS IPV4      IPV6 UNPRIVILEGED
microservice1 RUNNING  0        -        10.0.3.8 -        false
microservice2 RUNNING  0        -        10.0.3.18 -        false
root@LAPTOP-32T0J60A:/home/azkalazkyaa# lxc-ls -f
NAME          STATE    AUTOSTART GROUPS IPV4      IPV6 UNPRIVILEGED
microservice1 RUNNING  0        -        10.0.3.8 -        false
microservice2 RUNNING  0        -        10.0.3.18 -        false
root@LAPTOP-32T0J60A:/home/azkalazkyaa#

```

Masuk ke microservice 1 dan 2 kemudian install nginx dan network manager

`lxc-attach -n microservice1`

`sudo apt install nginx nginx-extras`

`sudo apt install network-manager`

```

Fetched 16.8 MB in 42s (403 kB/s)
Reading package lists... Done
root@microservice1:/# sudo apt install nginx nginx-extras
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  fontconfig-config fonts-dejavu-core geopip-database libfontconfig1 libfreetype6 libgd3 libgdbm-compat4 libgdbm6 libgeoip1 libhiredis0.14 libjbig0
  libjpeg-turbo8 libjpeg8 liblua5.1-2 liblua5.1-common libmaxminddb0 libnginx-mod-http-auth-pam libnginx-mod-http-cache-purge
  libnginx-mod-http-dav-ext libnginx-mod-http-echo libnginx-mod-http-fancyindex libnginx-mod-http-geoip libnginx-mod-http-geoip2
  libnginx-mod-http-headers-more-filter libnginx-mod-http-image-filter libnginx-mod-http-lua libnginx-mod-http-ndk libnginx-mod-http-perl
  libnginx-mod-http-subfilter libnginx-mod-http-uploadprogress libnginx-mod-http-upstream-fair libnginx-mod-http-xslt-filter libnginx-mod-mail
  libnginx-mod-nchan libnginx-mod-stream libperl5.30 libpng16-16 libtiff5 libwebp6 libxpm4 libxslt1.1 nginx-common perl perl-modules-5.30
Suggested packages:

```

```

Processing triggers for libc-bin (2.31-0ubuntu9.16) ...
root@microservice1:/# sudo apt install network-manager
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  crda dns-root-data dnsmasq-base iptables iw libasnl-8-heimdall libbluetooth3 libbrotli1 libcurl3-gnutls libgssapi3-heimdall libgudev-1.0-0

```

`lxc-attach -n microservice2`

`sudo apt install nginx nginx-extras`

`sudo apt install network-manager`

```

exit
root@LAPTOP-32T0J60A:/home/azkalazkyaa# lxc-attach -n microservice2
root@microservice2:/# sudo apt install nginx nginx-extras
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  fontconfig-config fonts-dejavu-core geopip-database libfontconfig1 libfreetype6 libgd3 libgdbm-compat4 libgdbm6 libgeoip1 libhiredis0.14 libjbig0
  libjpeg-turbo8 libjpeg8 liblua5.1-2 liblua5.1-common libmaxminddb0 libnginx-mod-http-auth-pam libnginx-mod-http-cache-purge
  libnginx-mod-http-dav-ext libnginx-mod-http-echo libnginx-mod-http-fancyindex libnginx-mod-http-geoip libnginx-mod-http-geoip2
  libnginx-mod-http-headers-more-filter libnginx-mod-http-image-filter libnginx-mod-http-lua libnginx-mod-http-ndk libnginx-mod-http-perl
  libnginx-mod-http-subfilter libnginx-mod-http-uploadprogress libnginx-mod-http-upstream-fair libnginx-mod-http-xslt-filter libnginx-mod-mail
  libnginx-mod-nchan libnginx-mod-stream libperl5.30 libpng16-16 libtiff5 libwebp6 libxpm4 libxslt1.1 nginx-common perl perl-modules-5.30

```

```

Processing triggers for libc-bin (2.31-0ubuntu9.16) ...
root@microservice2:/# sudo apt install network-manager
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  crda dns-root-data dnsmasq-base iptables iw libasnl-8-heimdall libbluetooth3 libbrotli1 libcurl3-gnutls libgssapi3-heimdall libgudev-1.0-0
  libhcrypto4-heimdall libheimbase1-heimdall libheimntlm0-heimdall libhx509-5-heimdall libidn11 libip6tc2 libjansson4 libkrb5-26-heimdall libldap-2.4-2
  libldap-common libmbim-glib4 libmbim-proxy libmm-glib0 libndp0 libnetfilter-conntrack3 libnftnl1 libnftnl1 libnghttp2-14 libnl-3-200
  libnl-genl-3-200 libnl-route-3-200 libnm0 libpcap0.8 libpcsc-lite1 libpipewire1 libpolkit-agent-1-0 libpolkit-gobject-1-0 libpsl5 libqmi-glib5
  libqmi-proxy libroken18-heimdall librtmp1 librsas2-2 libssl2-modules libssl2-modules-db libssh-4 libteamctl0 libusb-1.0-0 libwind0-heimdall
  modemmanager network-manager-pptp policykit-1 ppp pptp-linux publicsuffix usb-modeswitch usb-modeswitch-data wireless-regdb wpasupplicant

```

Setting ip static pada microservice 1

`Sudo apt install nano (untuk menginstall package nano)`

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

```
root@microservice1:/# sudo apt install nano
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  hunspell
The following NEW packages will be installed:
  nano
```

```
GNU nano 4.8 /etc/netplan/10-lxc.yaml Modified
network:
  version: 2
  ethernet:
    eth0:
      dhcp4: false
      addresses: [10.0.3.8/24]
      gateway4: 10.0.3.1
      nameservers:
        addresses: [8.8.8.8, 1.1.1.1]
```

sudo netplan apply

ifconfig

```
root@microservice1:/# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.3.8 netmask 255.255.255.0 broadcast 10.0.3.255
    inet6 fe80::216:3eff:fe94:11f7 prefixlen 64 scopeid 0x20<link>
    ether 00:16:3e:94:11:f7 txqueuelen 1000 (Ethernet)
    RX packets 26120 bytes 49960836 (49.9 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 23668 bytes 1321868 (1.3 MB)
    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 88 bytes 10082 (10.0 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 88 bytes 10082 (10.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

Kemudian melakukan setting network interfaces pada microservice1

nano /etc/network/interfaces

```
GNU nano 4.8 /etc/network/interfaces
auto lo
iface lo inet loopback

auto eth0
iface eth0 inet static
    address 10.0.3.8
    netmask 255.255.255.0
    gateway 10.0.3.1
    dns-nameservers 8.8.8.8 1.1.1.1

source /etc/network/interfaces.d/*.cfg
```

Restart network Manager

sudo systemctl restart NetworkManager

ifconfig

```
root@microservice1:/# sudo systemctl restart NetworkManager
root@microservice1:/# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.3.8 netmask 255.255.255.0 broadcast 10.0.3.255
    inet6 fe80::216:3eff:fe94:11f7 prefixlen 64 scopeid 0x20<link>
    ether 00:16:3e:94:11:f7 txqueuelen 1000 (Ethernet)
    RX packets 26123 bytes 49960996 (49.9 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 23677 bytes 1322450 (1.3 MB)
    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 88 bytes 10082 (10.0 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 88 bytes 10082 (10.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

Setting nginx

cd /etc/nginx/sites-available

touch microservice1.dev

nano microservice1.dev

```
server {
    listen 80;
    listen [::]:80;

    server_name microservice1.dev;

    root /var/www/microservice1;
    index index.html;

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

cd ../sites-enabled

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

nginx -t

nginx -s reload

nano /etc/hosts

```
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

```
<!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>Halo skall</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>
```

Cek curl pada microservice1

curl -i http://microservice1.dev

```

root@microservice1:/var/www/html# curl -i http://microservice1.dev
HTTP/1.1 200 OK
Server: nginx/1.18.0 (Ubuntu)
Date: Mon, 10 Jun 2024 19:25:23 GMT
Content-Type: text/html
Content-Length: 612
Last-Modified: Mon, 10 Jun 2024 18:21:07 GMT
Connection: keep-alive
ETag: "66674413-264"
Accept-Ranges: bytes

<!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>
root@microservice1:/var/www/html#

```

Setting pada microservice2

nano /etc/network/interfaces

```

GNU nano 4.8 /etc/network/interfaces
auto lo
iface lo inet loopback

auto eth0
iface eth0 inet static
    addresses 10.0.3.18
    netmask 255.255.255.0
    gateway 10.0.3.1
source /etc/network/interface.d/*.cfg

```

sudo systemctl restart NetworkManager

ifconfig

```

root@microservice2:~# sudo systemctl restart NetworkManager
root@microservice2:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.3.18 netmask 255.255.255.0 broadcast 10.0.3.255
    inet6 fe80::216:3eff:fe3d:2aae prefixlen 64 scopeid 0x20<link>
    ether 00:16:3e:3d:2a:ae txqueuelen 1000 (Ethernet)
    RX packets 458  bytes 890451 (890.4 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 418  bytes 25284 (25.2 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 12  bytes 1384 (1.3 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 12  bytes 1384 (1.3 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

```

Setting static ip microservice2

apt install nano net-tools curl

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

```

network:
  version: 2
  ethernet:
    eth0:
      dhcp4: false
      addresses: [10.0.3.18/24]
      gateway4: 10.0.3.1
      nameservers:
        addresses: [8.8.8.8, 1.1.1.1]

```

sudo netplan apply

ifconfig

```

root@microservice2:~# sudo netplan apply
root@microservice2:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.3.18 netmask 255.255.255.0 broadcast 10.0.3.255
    inet6 fe80::216:3eff:fe3d:2aae prefixlen 64 scopeid 0x20<link>
    ether 00:16:3e:3d:2a:ae txqueuelen 1000 (Ethernet)
    RX packets 7315 bytes 18238113 (18.2 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 6793 bytes 381240 (381.2 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 40 bytes 4572 (4.5 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 40 bytes 4572 (4.5 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

cd /etc/nginx/sites-available

touch microservice2.dev

nano microservice2.dev

```

GNU nano 4.8 microservice2.dev modified
server {
    listen 80;
    listen [::]:80;

    server_name example.com;

    root /var/www/example.com;
    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

```

127.0.1.1    microservice2
127.0.0.1    localhost
127.0.0.1    microservice2.dev
::1          localhost ip6-localhost ip6-loopback
ff02::1      ip6-allnodes
ff02::2      ip6-allrouters

```

```
cd /var/www/html
```

```
mkdir microservice2
```

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

```
cd microservice2
```

```
nano index.html
```

```
GNU nano 4.8 index.html
<!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 http://microservice2.dev
```

```
Connection: keep-alive
ETag: "6667465c-264"
Accept-Ranges: bytes

<!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>
root@microservice2:/var/www/html/microservice2# |
```

Setting hosts di WSL

```
nano /etc/hosts
```

```

GNU nano 6.2 /etc/hosts
# This file was automatically generated by WSL. To stop automatic generation of this file, add the following entry to /
# [network]
# generateHosts = false
127.0.0.1    localhost
127.0.1.1    LAPTOP-32T0J60A.    LAPTOP-32T0J60A
127.0.1.1    sister.local

10.0.3.8     microservice1.dev
10.0.3.18    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

```

GNU nano 6.2 sister.local
server {
    listen 80;
    listen [::]:80;

    server_name sister.local;

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

    location /blog {
        rewrite /blog/?(.*)$ /$1 break;
        proxy_pass http://microservice.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


```
curl -i http://sister.local/blog
```

```
</html>
root@LAPTOP-32T0J60A:/var/www/html# curl -i http://sister.local/blog
HTTP/1.1 200 OK
Server: nginx/1.18.0 (Ubuntu)
Date: Tue, 11 Jun 2024 04:51:59 GMT
Content-Type: text/html
Content-Length: 612
Connection: keep-alive
Last-Modified: Mon, 10 Jun 2024 18:21:07 GMT
ETag: "66674413-264"
Accept-Ranges: bytes

<!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>
root@LAPTOP-32T0J60A:/var/www/html# |
```

curl -i http://sister.local/aboutus

```
Last-Modified: Fri, 29 Jul 2024 12:00:10 GMT
ETag: "6606aeb7-274"
Accept-Ranges: bytes

<!DOCTYPE html>
<html>
<head>
<title>Welcome to About us!</title>
<style>
  body {
    width: 35em;
    margin: 0 auto;
    font-family: Tahoma, Verdana, Arial, sans-serif;
  }
</style>
</head>
<body>
<h1>Welcome to About us ubuntu 18!</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>
```