[실습] MSA: Nginx Load Balancing

```
kevin@hostos1:~/LABs/nginx_alb$ tree
.
├── docker-compose.yml
├── nginx_alb
│   ├── Dockerfile-nginx
│   └── nginx.conf
├── pyfla_app1
│   ├── Dockerfile-pyapp1
│   ├── pyfla_app1.py
│   └── requirements.txt
├── pyfla_app2
│   ├── Dockerfile-pyapp2
│   ├── pyfla_app2.py
│   └── requirements.txt
└── pyfla_app3
    ├── Dockerfile-pyapp3
    ├── pyfla_app3.py
    └── requirements.txt

4 directories, 12 files
```

● docker-compose.yml

```
version: '3'
services:
  pyfla_app1:
    build:
      context: ./pyfla_app1
      dockerfile: Dockerfile-pyapp1
    ports:
    - "5001:5000"
  pyfla_app2:
    build:
      context: ./pyfla_app2
      dockerfile: Dockerfile-pyapp2
    ports:
    - "5002:5000"
  pyfla_app3:
    build:
      context: ./pyfla_app3
      dockerfile: Dockerfile-pyapp3
    ports:
```
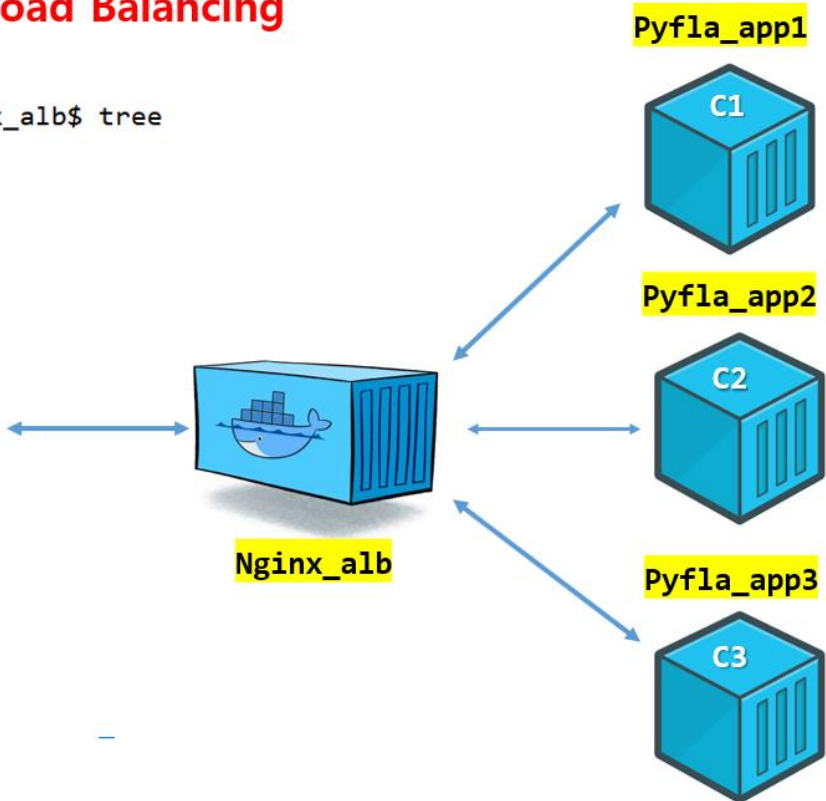
```
    - "5003:5000"
  nginx:
    build:
      context: ./nginx_alb
      dockerfile: Dockerfile-nginx
    ports:
    - "8080:80"
    depends_on:
      - pyfla_app1
      - pyfla_app2
      - pyfla_app3
```

- ● nginx_alb
- - Dockerfile-nginx

```
FROM nginx:1.21
RUN rm /etc/nginx/conf.d/default.conf
COPY nginx.conf /etc/nginx/conf.d/default.conf
```

- - nginx.conf

```
upstream web-alb {
    server 172.17.0.1:5001;
    server 172.17.0.1:5002;
    server 172.17.0.1:5003;
}

server {
    location / {
        proxy_pass http://web-alb;
    }
}
```

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- pyfla_app1
  - Dockerfile-pyapp1

```
FROM python:3

COPY ./requirements.txt /requirements.txt

WORKDIR /

RUN pip install -r requirements.txt

COPY . /

CMD [ "python3", "pyfla_app1.py" ]
```

- Pyfla_app1.py

```
from flask import request, Flask
import json

app1 = Flask(__name__)


@app1.route('/')
def hello_world():
    return 'Nginx Web Application Load Balancing Server [1]' + '\n'


if __name__ == '__main__':
    app1.run(debug=True, host='0.0.0.0')
```

- requirements

```
Flask==2.1.0
```

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