

Task : Web Server & Load Balancing

1. Definisi Web Server

web server adalah komputer yang menyimpan, memproses, dan mengirim file website ke web browser. Web server terdiri dari hardware dan software yang menggunakan HTTP (Hypertext Transfer Protocol) untuk merespons permintaan pengguna web dari World Wide Web. Melalui proses ini, web server memuat dan mengirim halaman yang diminta untuk disajikan di browser pengguna, misalnya Google Chrome. Web server juga menggunakan SMTP (Simple Mail Transfer Protocol) dan FTP (File Transfer Protocol) dalam memproses file untuk email atau penyimpanan.

2. Jalankan 2 VM (Optional)

- VM 1 = appserver
- VM 2 = nginx

3. VM1 :

- jalankan aplikasi dumbflix-frontend

```
Compiled with warnings.

./src/components/Register/Register.js
  Line 105:46: Expected '===' and instead saw '=='      eeqeqeq
  Line 108:48: Expected '===' and instead saw '=='      eeqeqeq

./src/components/MovieCard/MovieCard.js
  Line 10:4:  img elements must have an alt prop, either with meaningful text, or an empty string for decorative images  jsx-ally/alt-text

./src/pages/Movie/ListMovie.js
  Line 11:3:  'getFilmsTVSeries' is defined but never used      no-unused-vars
  Line 12:3:  'getFilmsMovies' is defined but never used         no-unused-vars
  Line 28:6:  React Hook useEffect has a missing dependency: 'category'. Either include it or remove the dependency array  react-hooks/exhaustive-deps
  Line 31:24: Expected '===' and instead saw '=='      eeqeqeq
  Line 34:31: Expected '===' and instead saw '=='      eeqeqeq

./src/components/Routing/PrivateAdminRoute.js
  Line 17:38: Expected '===' and instead saw '=='      eeqeqeq

./src/components/MovieDetail/Episode.js
  Line 1:27:  'useEffect' is defined but never used      no-unused-vars
  Line 25:7:  Redundant alt attribute. Screen-readers already announce 'img' tags as an image. You don't need to use the words 'image', 'photo', or 'picture' (or any specified custom words) in the alt prop  jsx-ally/img-redundant-alt

./src/components/Utils/ScrollToTop.js
  Line 1:8:  'React' is defined but never used         no-unused-vars

./src/pages/Movie/Styles.js
  Line 23:3:  Duplicate key 'width'      no-dupe-keys
  Line 35:3:  Duplicate key 'width'      no-dupe-keys

./src/components/AddEpisode/Styles.js
  Line 23:5:  Duplicate key 'width'      no-dupe-keys
  Line 35:5:  Duplicate key 'width'      no-dupe-keys
```

Aplikasi berhasil dijalankan di localhost port 3000



- gunakan PM2 (Challenge)

```
johndy@johndy:~/dumbflix/dumbflix-frontend$ pm2 start npm -- start
[PM2] Applying action restartProcessId on app [npm](ids: 0)
[PM2] [npm](0) ✓
[PM2] Process successfully started
```

id	name	mode	u	status	cpu	memory
0	npm	fork	15	online	0%	8.6mb

```
[PM2][WARN] Current process list is not synchronized with saved list. App in
dex differs. Type 'pm2 save' to synchronize.
johndy@johndy:~/dumbflix/dumbflix-frontend$ |
```

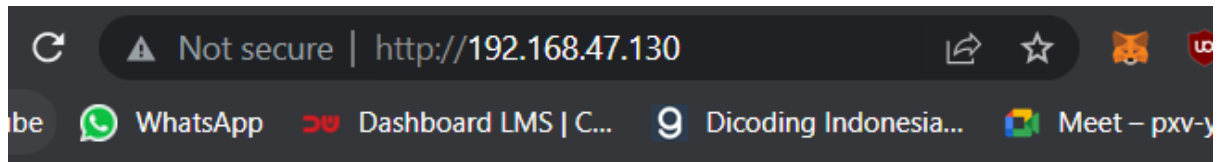
Aplikasi berhasil dijalankan menggunakan pm2



4. VM2 :

- jalankan nginx

```
johndy@johndy2:~$ sudo apt install nginx
[sudo] password for johndy:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  fontconfig-config fonts-dejavu-core libfontconfig1 libgd3 libjbig0
  libjpeg-turbo8 libjpeg8 libnginx-mod-http-image-filter
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream
  libtiff5 libwebp6 libxpm4 nginx-common nginx-core
Suggested packages:
  libgd-tools fcgiwrap nginx-doc ssl-cert
The following NEW packages will be installed:
  fontconfig-config fonts-dejavu-core libfontconfig1 libgd3 libjbig0
  libjpeg-turbo8 libjpeg8 libnginx-mod-http-image-filter
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream
  libtiff5 libwebp6 libxpm4 nginx nginx-common nginx-core
```



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

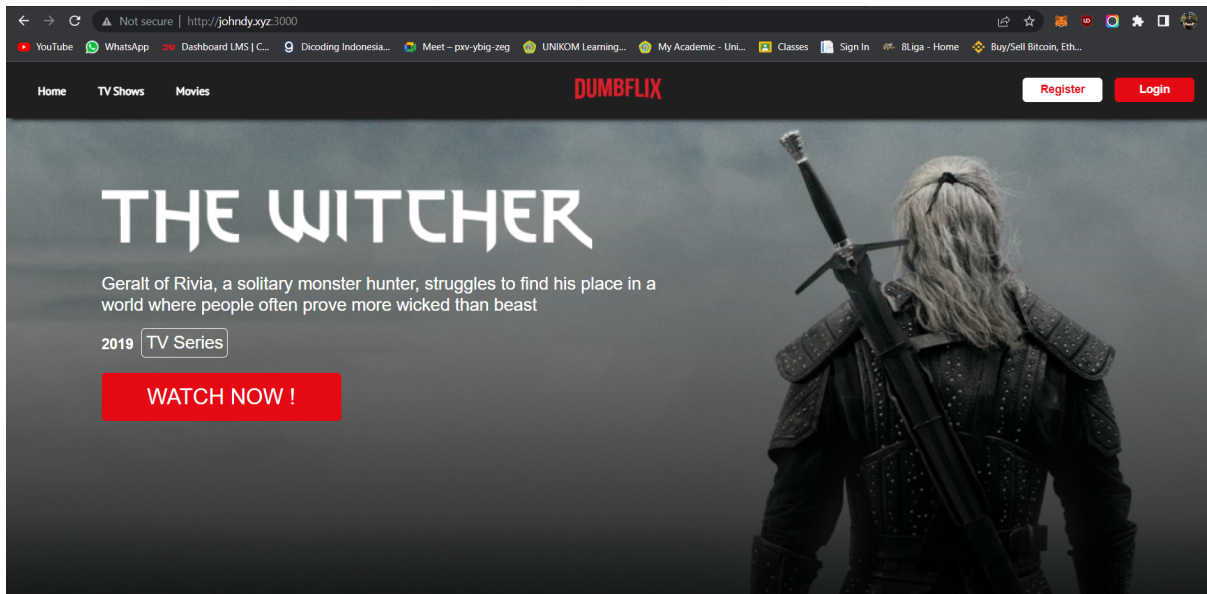
For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

- buat konfigurasi reverse proxy dengan domain (gunakan nama kalian) mengarah ke app di VM1

```
GNU nano 4.8 /etc/hosts
127.0.0.1 localhost
127.0.1.1 johndy2
192.168.47.128 johndy.xyz

# 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
```



- buat konfigurasi load balance antara VM1 dan VM2

Kita clone aplikasi di vm2 terlebih dulu dan kita run dengan npm

```
johndy@johndy2:~/dumbways/dumbflix-frontend$ npm install
npm WARN tsutils@3.17.1 requires a peer of typescript@>=2.8.0 || >= 3.2.0-dev || >= 3.3.0-dev || >= 3.4.0-dev || >= 3.5.0-dev || >= 3.6.0-dev || >= 3.7.0-dev || >= 3.7.0-beta but none is installed. You must install peer dependencies yourself.
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@2.1.3 (node_modules/chokidar/node_modules/fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@2.1.3: wanted {"os":"darwin","arch":"any"} (current: {"os":"linux","arch":"x64"})
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@1.2.13 (node_modules/fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@1.2.13: wanted {"os":"darwin","arch":"any"} (current: {"os":"linux","arch":"x64"})
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@2.1.2 (node_modules/react-scripts/node_modules/fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@2.1.2: wanted {"os":"darwin","arch":"any"} (current: {"os":"linux","arch":"x64"})

audited 1931 packages in 7.675s

60 packages are looking for funding
  run `npm fund` for details

found 320 vulnerabilities (20 low, 107 moderate, 165 high, 28 critical)
  run `npm audit fix` to fix them, or `npm audit` for details
johndy@johndy2:~/dumbways/dumbflix-frontend$ npm start
```

```
Line 23:3: Duplicate key 'width' no-dupe-keys
Line 35:3: Duplicate key 'width' no-dupe-keys

./src/components/AddEpisode/Styles.js
Line 23:5: Duplicate key 'width' no-dupe-keys
Line 35:5: Duplicate key 'width' no-dupe-keys

./src/pages/Movie/AddMovie.js
Line 329:5: img elements must have an alt prop, either with meaningful text, or an empty string for decorative images jsx-ally/alt-text

./src/redux/reducers/payment.js
Line 37:15: Expected '===' and instead saw '==' eqeqeq

./src/pages/DetailMovie.js
Line 41:3: React Hook useEffect has a missing dependency: 'match.params.id'. Either include it or remove the dependency array react-hooks/exhaustive-deps
Line 65:33: Expected '===' and instead saw '==' eqeqeq
Line 73:13: Expected '===' and instead saw '==' eqeqeq
Line 73:51: Expected '===' and instead saw '==' eqeqeq

./src/pages/IncomingTransaction.js
Line 56:20: Expected '===' and instead saw '==' eqeqeq
Line 58:23: Expected '===' and instead saw '==' eqeqeq

./src/pages/Payment.js
Line 5:10: 'API' is defined but never used no-unused-vars
Line 119:17: img elements must have an alt prop, either with meaningful text, or an empty string for decorative images jsx-ally/alt-text

./src/redux/actions/film.js
Line 8:3: 'LOADING_TRUE' is defined but never used no-unused-vars
Line 79:28: Expected '===' and instead saw '==' eqeqeq
Line 130:35: Expected '===' and instead saw '==' eqeqeq

./src/components/VideoThumbnail/VideoThumbnail.js
Line 9:6: 'type' is assigned a value but never used no-unused-vars

Search for the keywords to learn more about each warning.
To ignore, add // eslint-disable-next-line to the line before.
```



Jika sudah berjalan selanjutnya kita akan load balancing antar 2 vm ini

Tambahkan konfigurasi upstream ke file reverse proxy kita yang tadi dibuat
Masukan ip server dengan port tujuan

```
johndy@johndy2:~$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
johndy@johndy2:~$ sudo service nginx restart
```

Lalu cek konfigurasi kita, jika sudah benar kita tinggal restart nginx

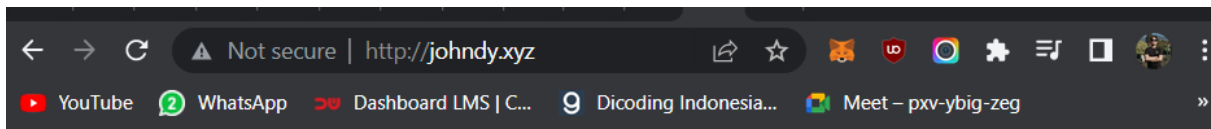
```
GNU nano 4.8 /etc/nginx/dumbways/my.reve
upstream domain {
    server 192.168.47.128:3000;
    server 192.168.47.130:3000;
}

server {
    server_name johndy.xyz;

    location / {
        proxy_pass http://domain;
    }
}
```

Setelah konfigurasi reverse proxy kita dibuat
Kita harus memasukkannya di nginx.conf terlebih dahulu

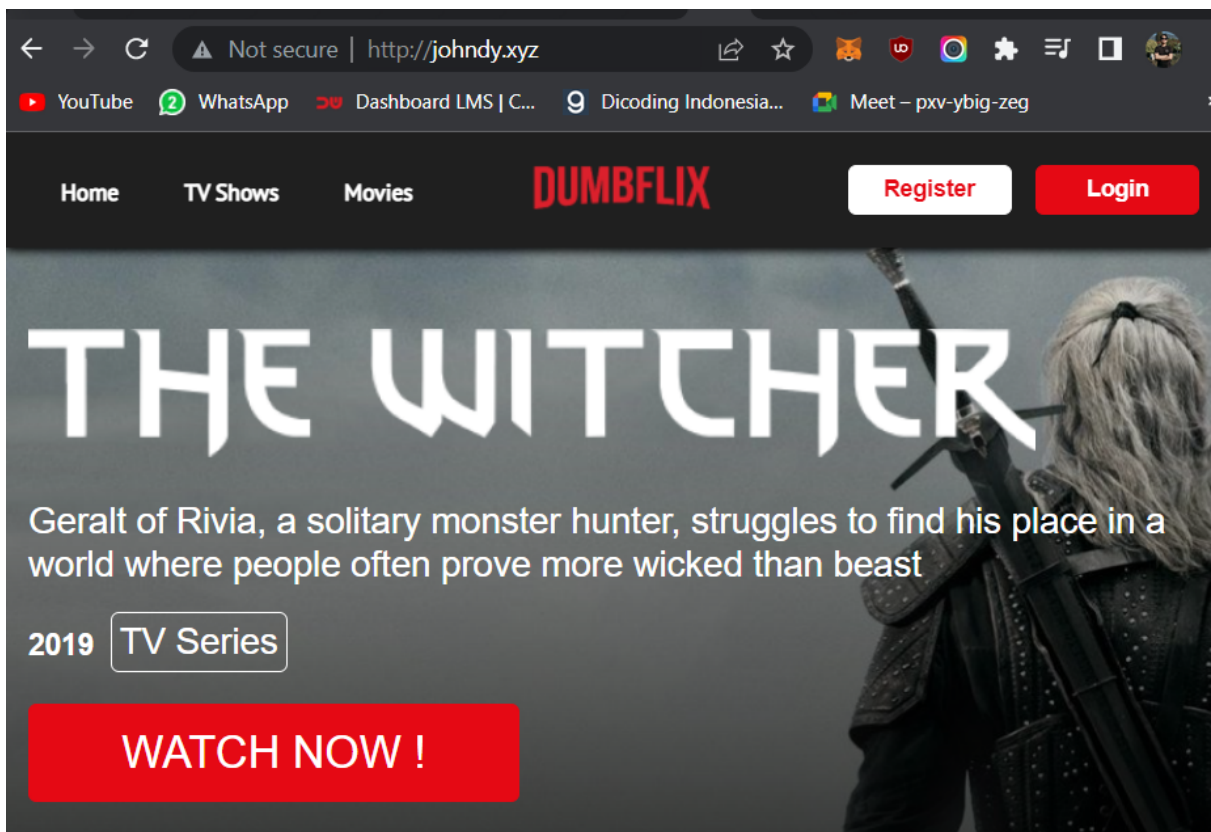

```
include /etc/nginx/conf.d/*.conf;  
include /etc/nginx/sites-enabled/*;  
include /etc/nginx/dumbways/*;  
}
```



502 Bad Gateway

nginx/1.18.0 (Ubuntu)

Ini adalah tampilan ketika kedua server vm dimatikan
Kita coba run aplikasi di vm pertama



Ini adalah tampilannya
Lalu kita run aplikasi di server kedua terlebih dahulu

```
johndy@johndy2:~/dumbways/dumbflix-frontend$ npm start
```

Setelah itu kita matikan aplikasi di server pertama

```
Search for the keywords to learn more about each warning.  
To ignore, add // eslint-disable-next-line to the line before.  
  
^C  
johndy@johndy:~/dumbflix/dumbflix-frontend$ |
```



Dapat dilihat aplikasi masih berjalan dari server ke 2

Load balancer antara vm1 dan vm2 sudah berhasil

5. Domain bisa diakses melalui web browser kalian (edit filenya di /etc/hosts)

```
#host  
192.168.47.128 johndy.xyz
```


Note : kalau hanya bisa menjalankan 1 VM, kalian cukup jalankan task no 3 & 4 di 1 VM tersebut

Dumbflix-frontend :

Click Here! (<https://github.com/dumbwaysdev/dumbflix-frontend>)

Challenge

Load Balancer dapat berjalan dengan baik