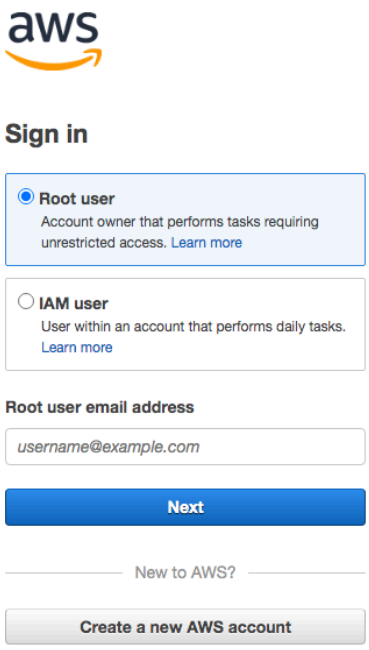
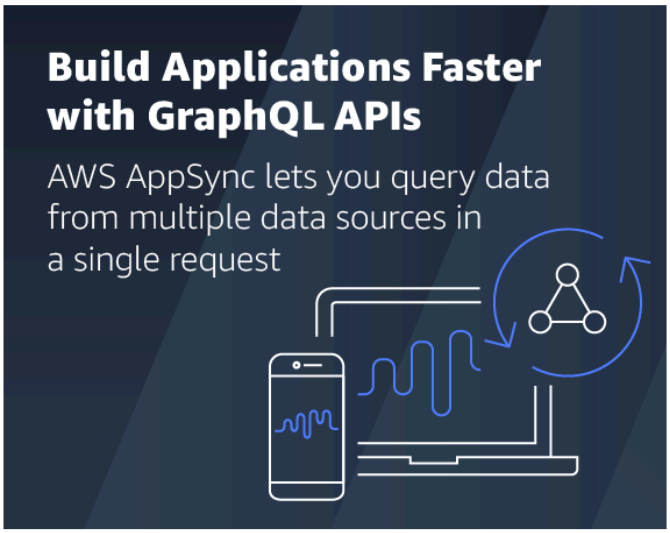
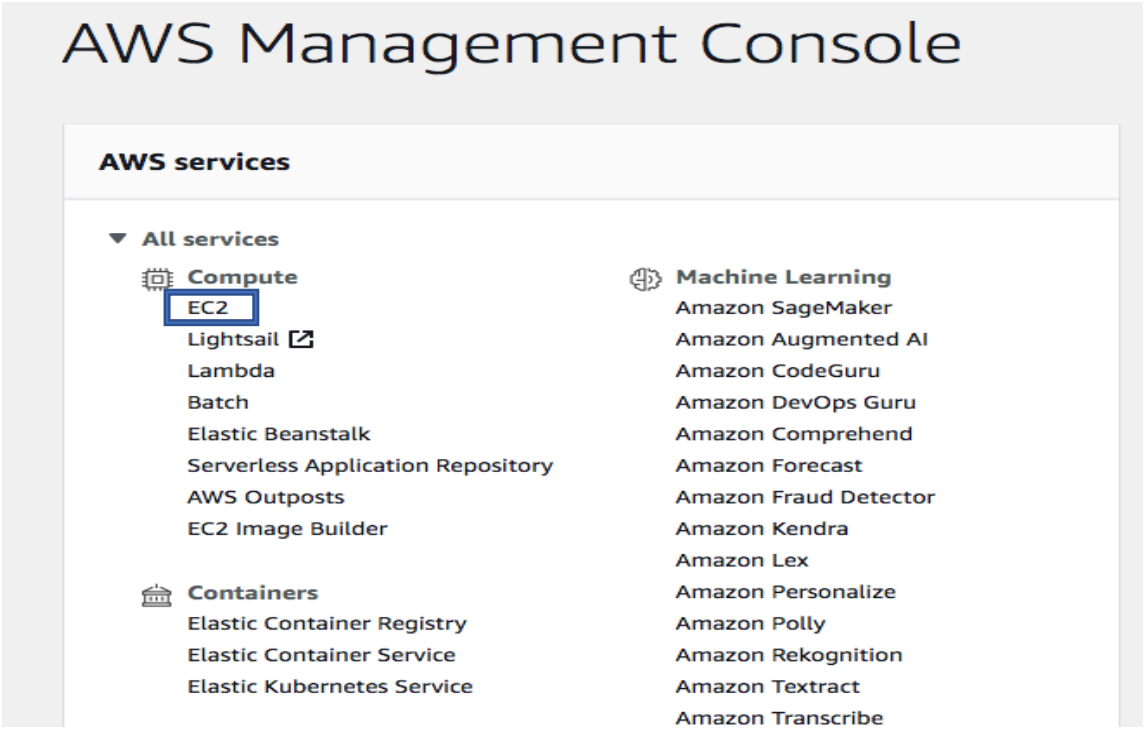
AWS CREATE & SETUP SERVER FOR APPLICATION , REVERSE PROXY DOMAIN COSTUM & SSL CONFIGURATION

1. Login dengan akun yang sudah disiapkan

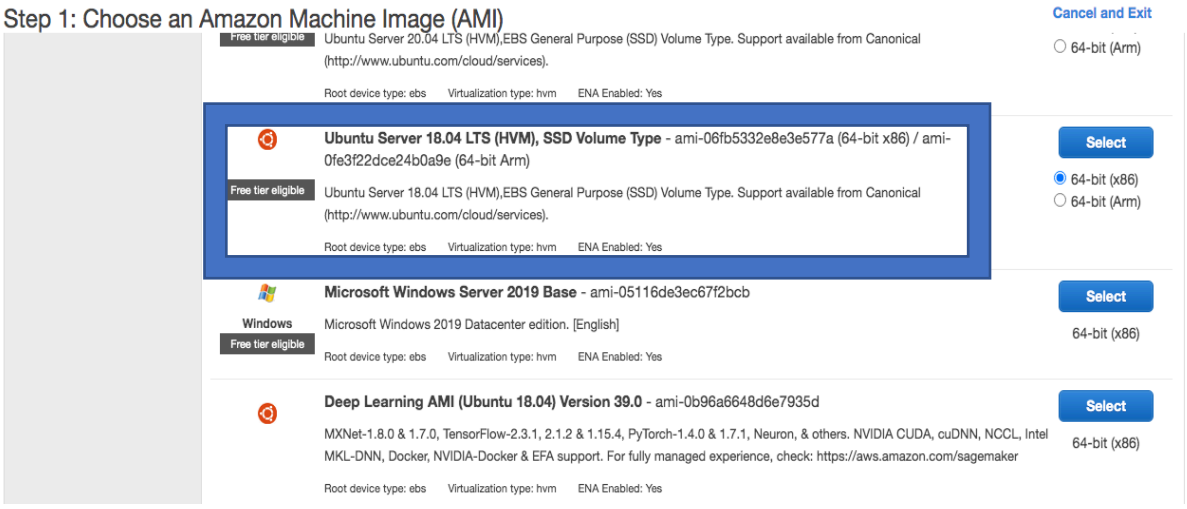




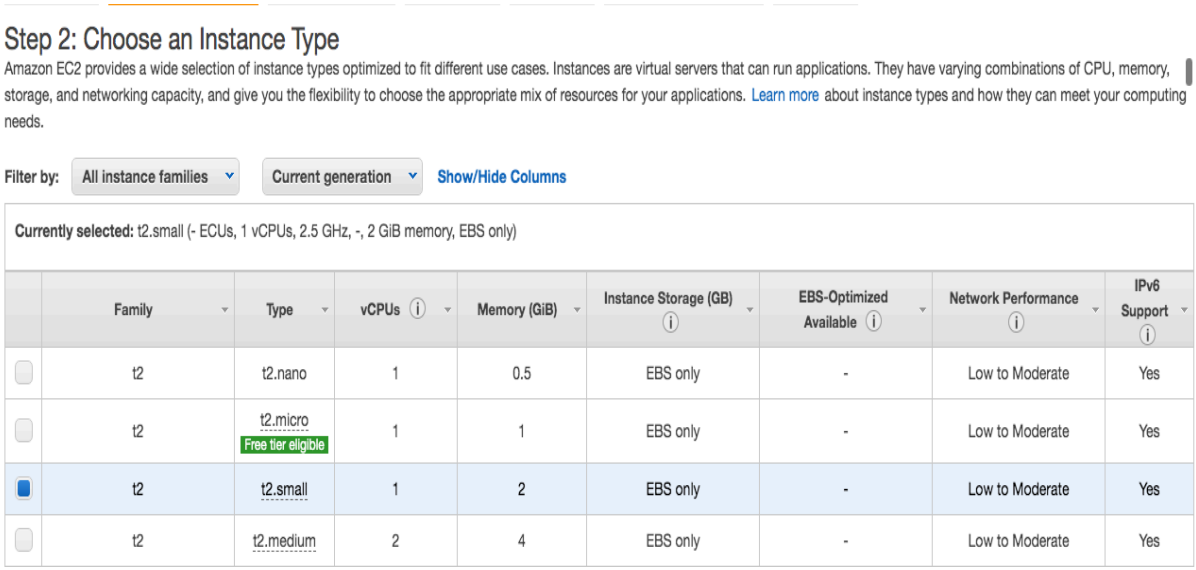
2. Setelah Login pada dashboard management console pilih layanan compute → EC2



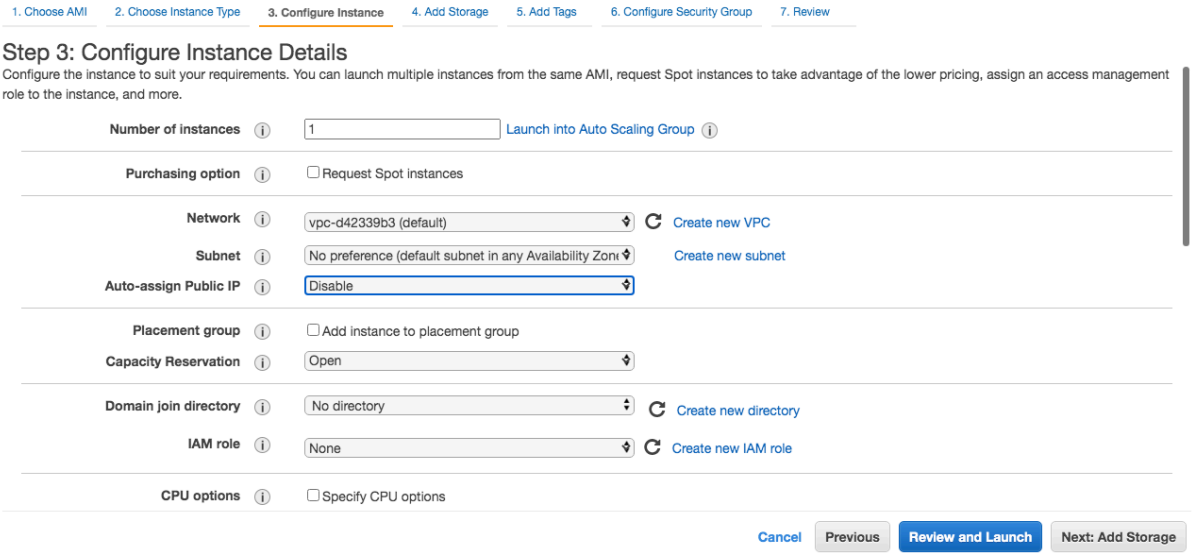
3. Pilih OS yang akan di gunakan untuk server , pilih ubuntu 18.04. Pada kondisi ini akan buat 2 server yaitu untuk *reverse proxy satu memiliki akses ke public 1 server application memiliki akses private.*



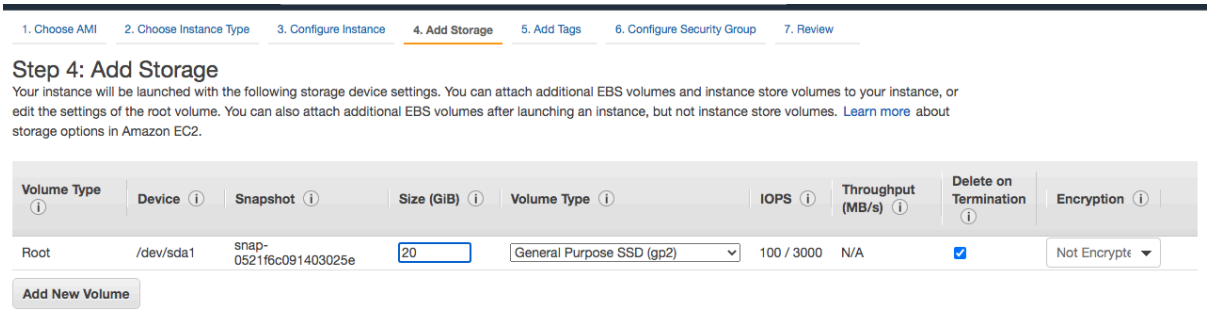
4. Pilih type spesifikasi hardware yang di gunakan untuk computer virtual.



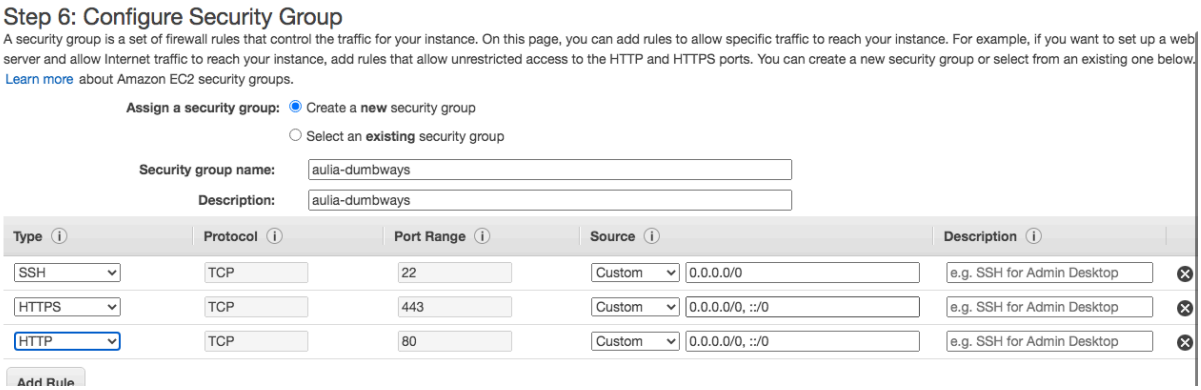
5. Konfigurasi Virtual Komputer dan pilih opsi untuk menonaktifkan auto assign public ip karena jika VM reboot akan berganti IP.



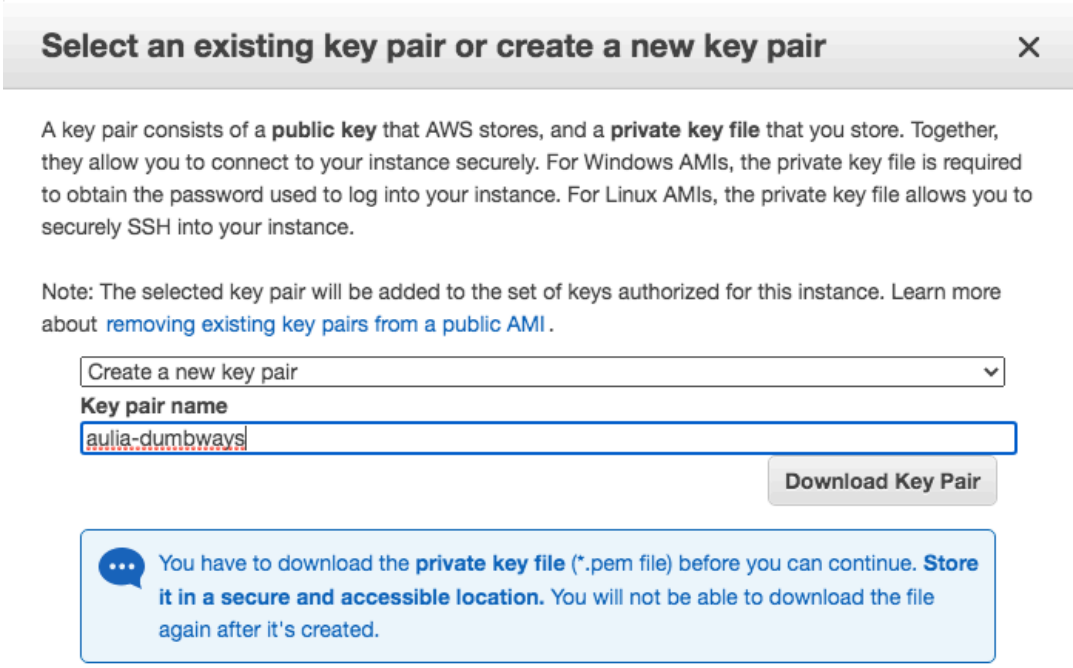
6. Tambahkan Storage untuk ukuran-nya sesuai kebutuhan. Disini menggunakan 20 GB.



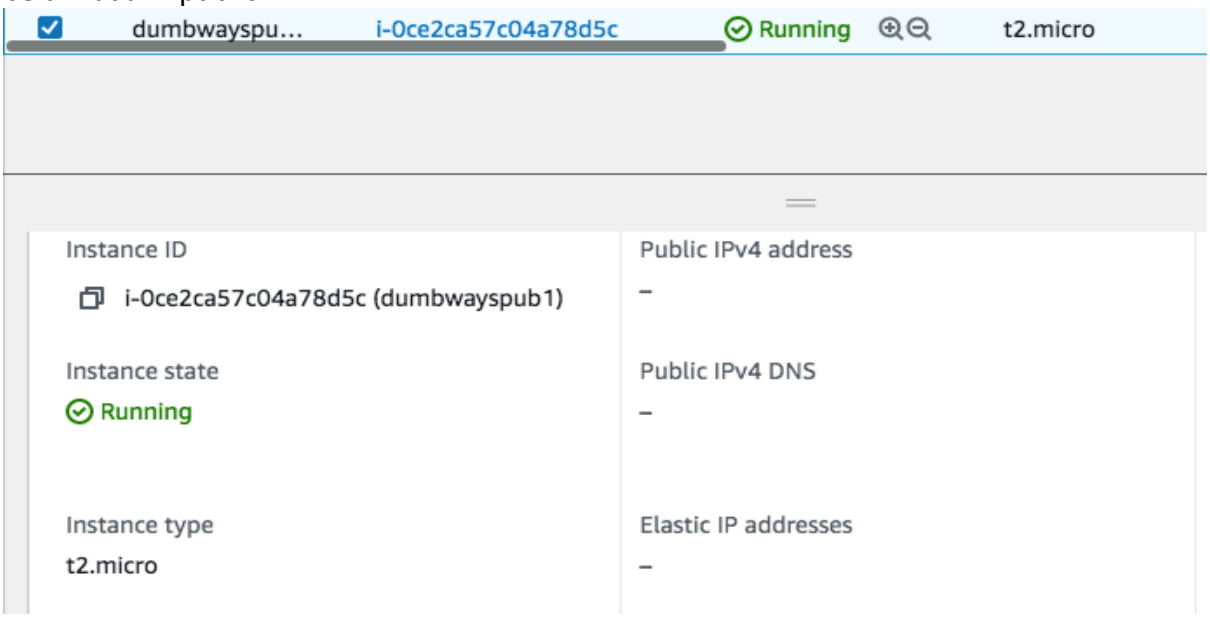
7. Konfigurasi Security Group yang di butuhkan dalam , seperti port 80 , 443 , 21 dan berikan keterangan SG-Name serta aturan IP-nya .
    - SSH (21) : bisa di akses dari mana saja
    - HTTP (80) : bisa di akses dari mana saja
    - HTTPS (443) : bisa di akses dari mana saja



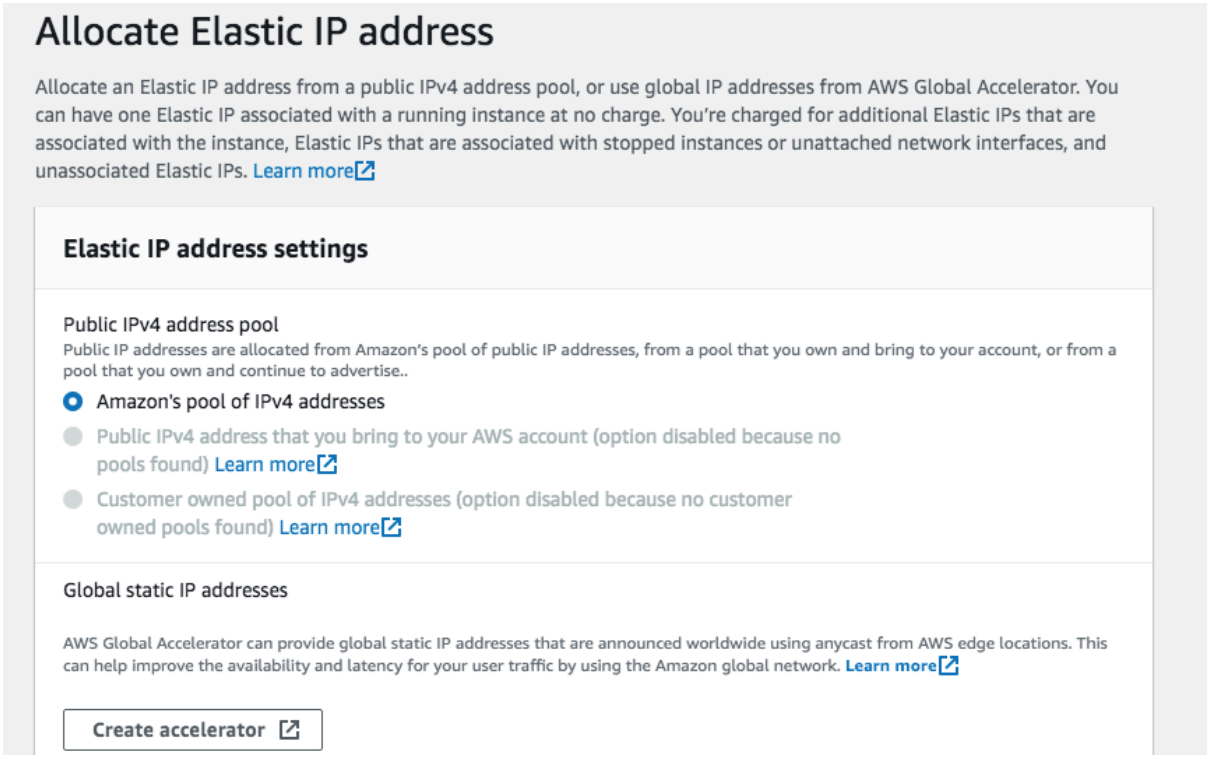
8. Pembuatan Kunci server untuk masuk ke server.

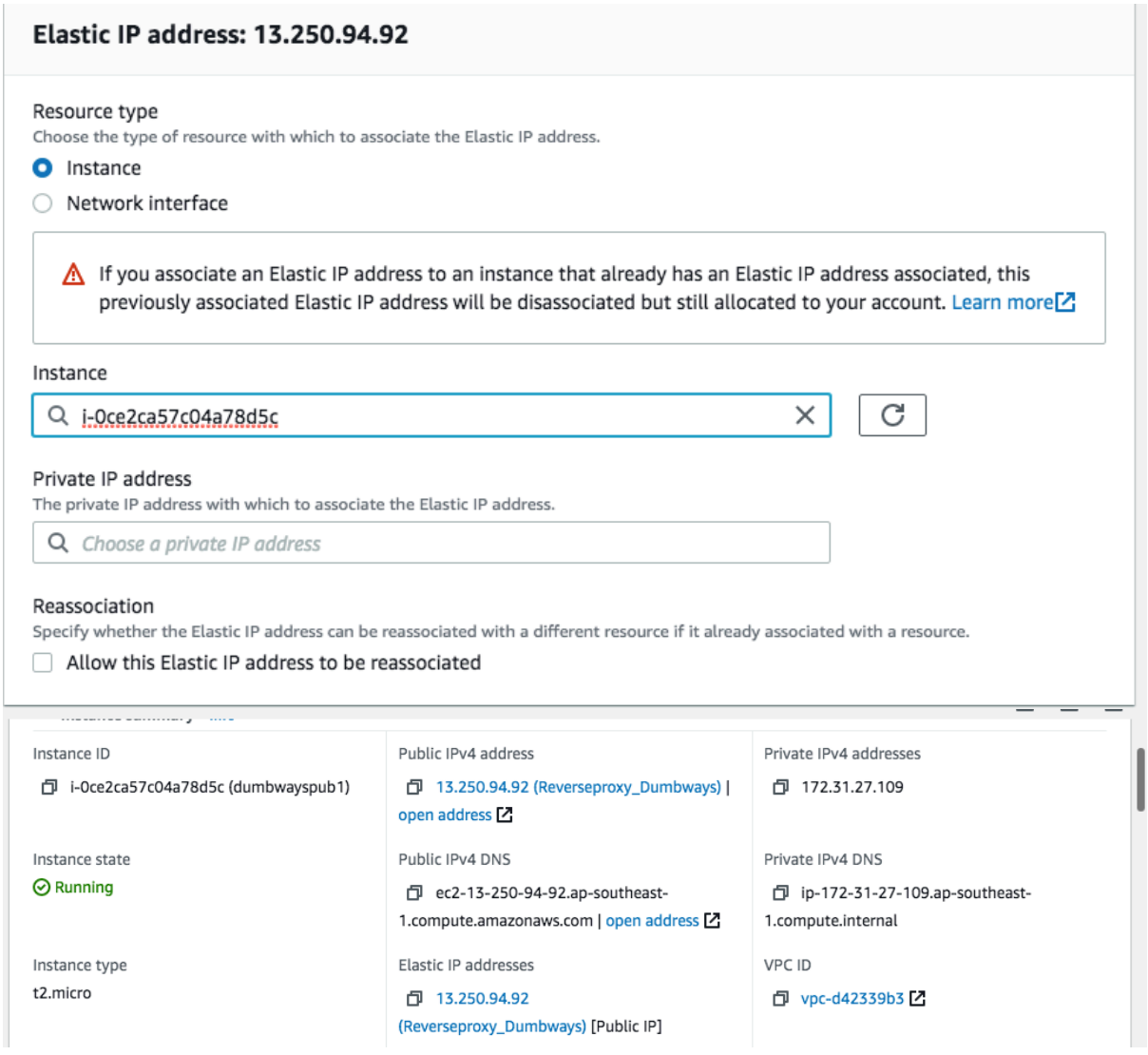


9. Untuk Menambahkan IP Public , Network & Security → Elastic IP , pada instance ini belum ada IP public.

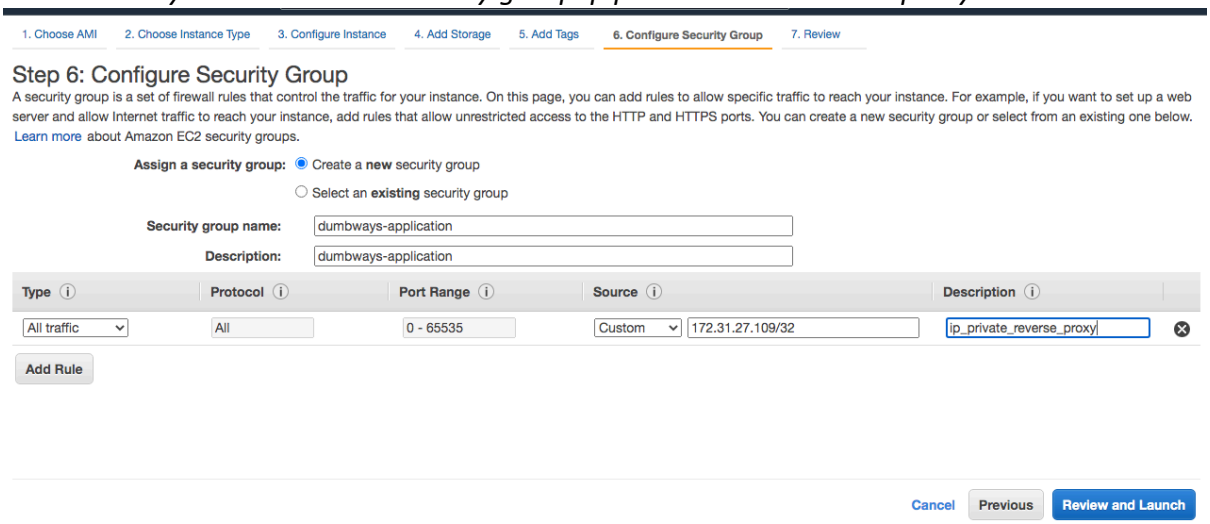


10. Alokasi kan IP public ke server *reverse proxy.*

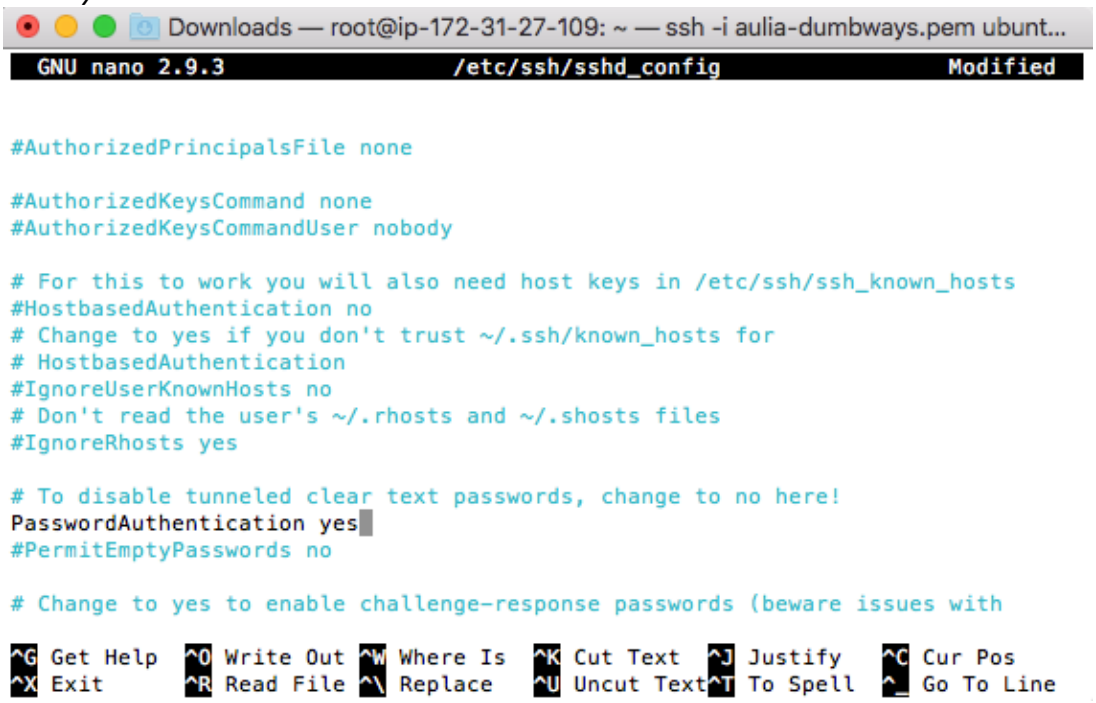




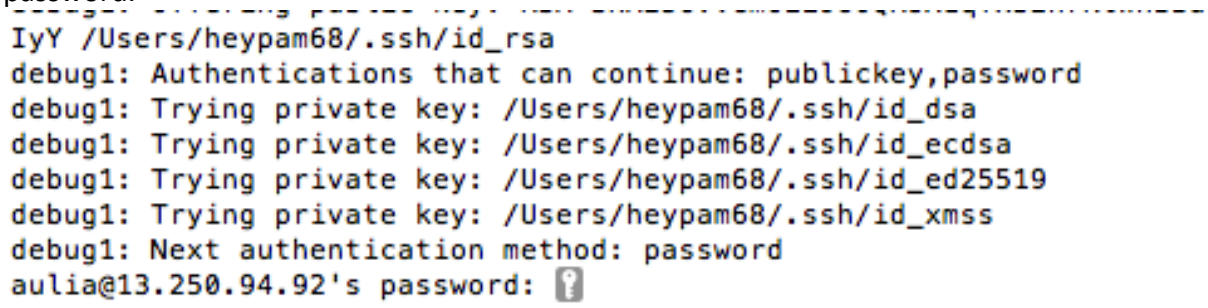
11. Untuk *server application* Pembuatannya sama seperti *server Reverse proxy* hanya saja tidak memiliki akses public , jadi akses yang di bolehkan hanya dari ip private *Reverse Proxy*. Tambahkan di *Security group ip private server reverse proxy.*



12. Tambahkan agar user login ssh tanpa menggunakan key-pair tetapi bisa menggunakan password. Edit file yang ada pada *sshd_config passwordautenfication no → yes.*



13. Test ssh ke user yang telah di bikin. Autentifikasi sudah dapat menggunakan password.



14. Coba ssh ke private server application

```
ubuntu@ip-172-31-27-109:~$ ssh -i aulia-dumbways.pem ubuntu@172.31.31.245
Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.4.0-1029-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Wed Jan 27 08:44:45 UTC 2021

  System load:  0.0               Processes:             99
  Usage of /:   6.8% of 19.32GB   Users logged in:       0
  Memory usage: 20%               IPv4 address for eth0: 172.31.31.245
  Swap usage:   0%

1 update can be installed immediately.
```

15. Lakukan Updgrade dan Update

```
root@ip-172-31-27-109:~# apt-get update && apt-get upgrade
Hit:1 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic InRelease
Hit:2 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic-updates InRelea
se
Hit:3 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic-backports InRel
ease
Hit:4 http://security.ubuntu.com/ubuntu bionic-security InRelease
Reading package lists... Done
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
  linux-aws linux-headers-aws linux-image-aws
The following packages will be upgraded:
  accountsservice apport apt apt-utils ca-certificates cloud-init curl
  distro-info-data dnsmasq-base ec2-hibinit-agent grub-common grub-pc
  grub-pc-bin grub2-common krb5-locales libaccountsservice0 libapt-inst2.0
  libapt-pkg5.0 libaudit-common libaudit1 libc-bin libc6 libcurl3-gnutls
  libcurl4 libgssapi-krb5-2 libk5crypto3 libkrb5-3 libkrb5support0
  libldap-2.4-2 libldap-common libnetplan0 libnss-systemd libp11-kit0
  libpam-systemd libsasl2-2 libsasl2-modules libsasl2-modules-db libssl1.0.0
  libssl1.1 libsystemd0 libudev1 locales lshw multiarch-support netplan.io
```

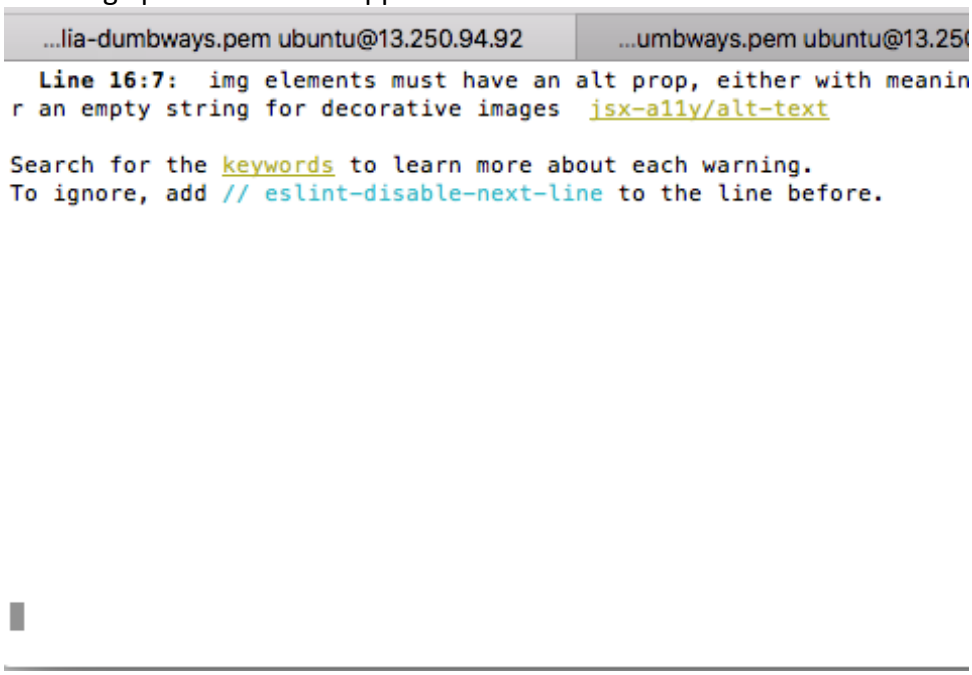
16. Install Nginx di server reverseproxy dan Node dan Npm server application.

```
root@ip-172-31-27-109:~# apt-get install nginx
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-geoip
  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-geoip
  libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter
  libnginx-mod-mail libnginx-mod-stream libtiff5 libwebp6 libxpm4 nginx
  nginx-common nginx-core
0 upgraded, 18 newly installed, 0 to remove and 3 not upgraded.
Need to get 2462 kB of archives.
```

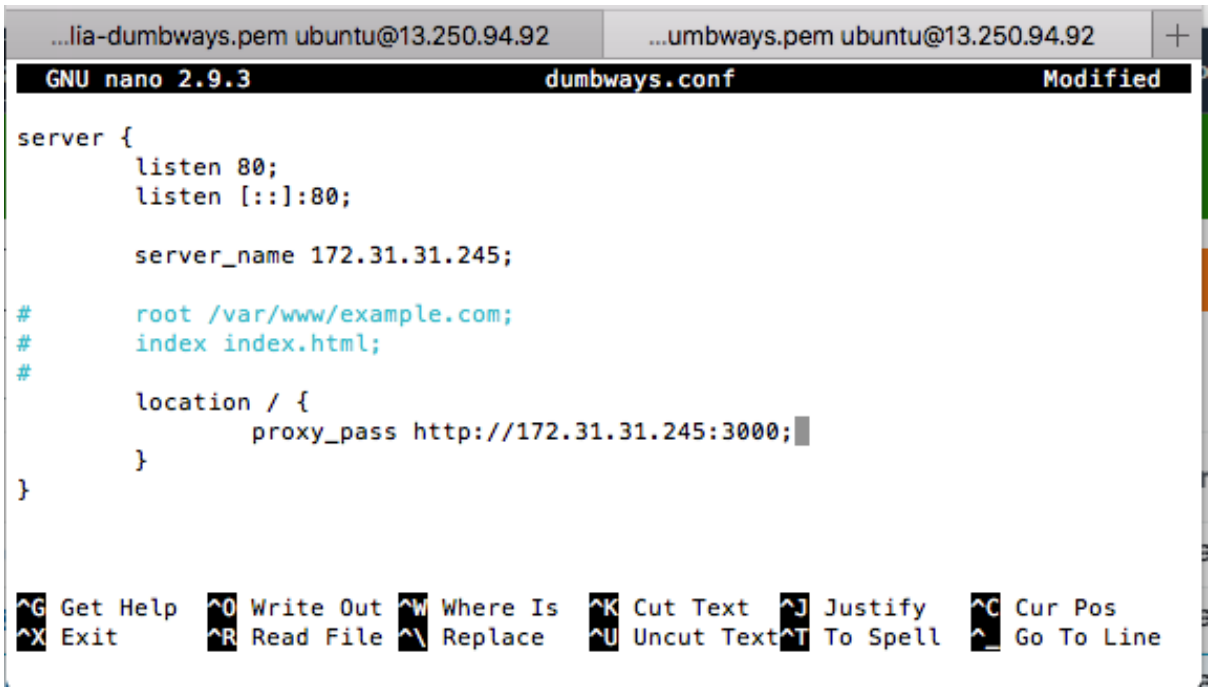
17. Clone repositori dan install node & npm di server application server.

```
ubuntu@ip-172-31-31-245:~$ git clone https://github.com/sgnd/library-frontend.git
Cloning into 'library-frontend'...
remote: Enumerating objects: 306, done.
remote: Counting objects: 100% (306/306), done.
remote: Compressing objects: 100% (197/197), done.
remote: Total 306 (delta 162), reused 238 (delta 100), pack-reused 0
Receiving objects: 100% (306/306), 5.03 MiB | 2.95 MiB/s, done.
Resolving deltas: 100% (162/162), done.
ubuntu@ip-172-31-31-245:~$ node -v
v10.23.2
ubuntu@ip-172-31-31-245:~$ npm -v
6.14.10
ubuntu@ip-172-31-31-245:~$
```

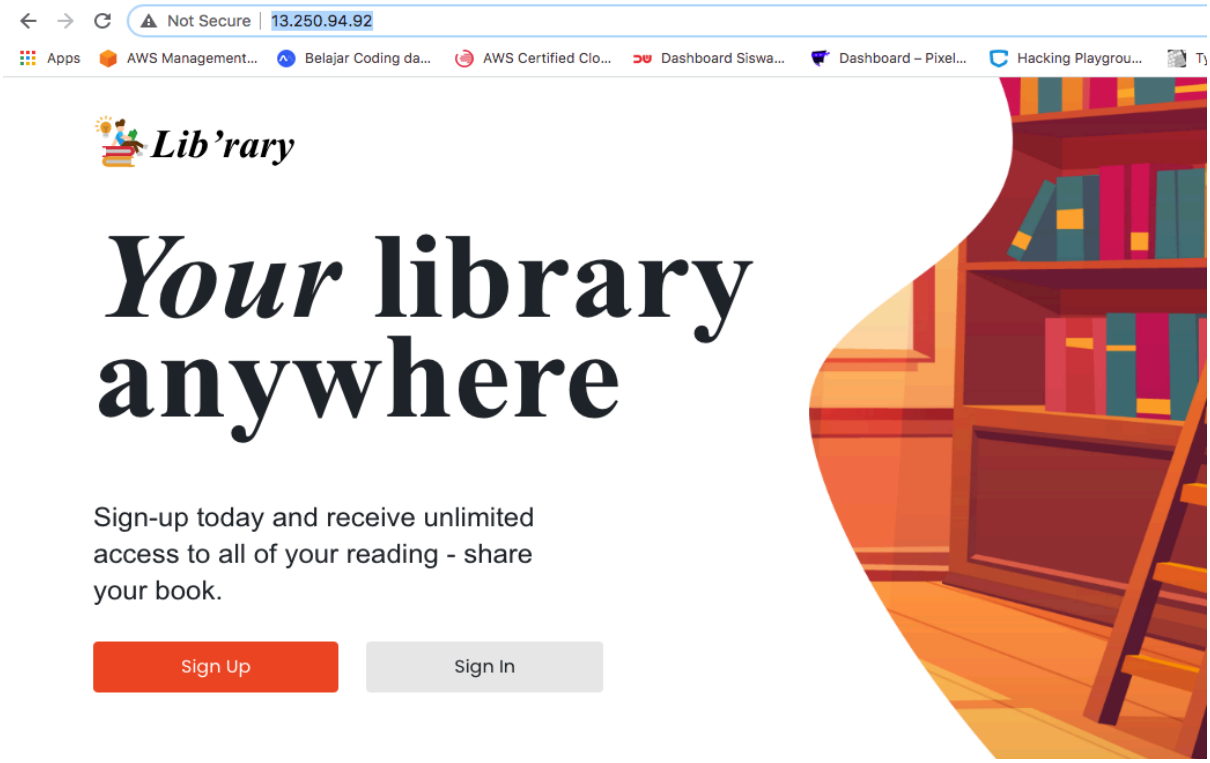
18. Running aplikasi di server application server.



19. Buat Konfigurasi nginx ke server application. Buat pada server reverse proxy.



20. Coba akses ip *reverse proxy*.



21. Untuk membuat ssl configurasi install package package yang di butuhkan disini menggunakan let encyrpt.

```
ubuntu@ip-172-31-27-109:/etc/nginx/sites-available$ sudo apt install certbot
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  python-pyicu python3-acme python3-certbot python3-configargparse python3-future python3-josepy python3-lib2to3 python3-mock python3-parsedatetime python3-pbr
  python3-requests-toolbelt python3-rfc3339 python3-tz python3-zope.component python3-zope.event python3-zope.hookable
Suggested packages:
  python3-certbot-apache python3-certbot-nginx python-certbot-doc python-acme-doc python-future-doc python-mock-doc
The following NEW packages will be installed:
  certbot python-pyicu python3-acme python3-certbot python3-configargparse python3-future python3-josepy python3-lib2to3 python3-mock python3-parsedatetime python3-pbr
  python3-requests-toolbelt python3-rfc3339 python3-tz python3-zope.component python3-zope.event python3-zope.hookable
0 upgraded, 17 newly installed, 0 to remove and 3 not upgraded.
Need to get 1159 kB of archives.
After this operation, 6824 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python-pyicu amd64 1.9.8-0ubuntu1 [176 kB]
Get:2 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-josepy all 1.1.0-1 [27.6 kB]
Get:3 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python3-pbr all 3.1.1-3ubuntu3 [53.8 kB]
Get:4 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-mock all 2.0.0-3 [47.5 kB]
Get:5 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-requests-toolbelt all 0.8.0-1 [35.1 kB]
Get:6 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python3-tz all 2018.3-2 [25.1 kB]
Get:7 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python3-rfc3339 all 1.0-4 [6356 B]
Get:8 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 python3-acme all 0.31.0-2~ubuntu18.04.1 [49.3 kB]
Get:9 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-configargparse all 0.11.0-1 [22.4 kB]
Get:10 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3-lib2to3 all 3.6.9-1~18.04 [77.4 kB]
Get:11 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-future all 0.15.2-4ubuntu2 [333 kB]
Get:12 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-parsedatetime all 2.4-2 [31.6 kB]
Get:13 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-zope.hookable amd64 4.0.4-4build4 [9372 B]
Get:14 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-zope.event all 4.2.0-1 [7402 B]
Get:15 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-zope.component all 4.3.0-1 [38.2 kB]
Get:16 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 python3-certbot all 0.27.0-1~ubuntu18.04.2 [201 kB]
Get:17 http://ap-southeast-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 certbot all 0.27.0-1~ubuntu18.04.2 [18.1 kB]
Fetched 1159 kB in 1s (825 kB/s)
```

22. Generate sertifikat untuk domain disini contohnya menggunakan *name.instructype.com* di asumsikan menggunakan sudah di pointing di domainnya . untuk asumsi domainnya https://aulia.chique.store/ .

☐	aulia.chique.store	A	Simple	-	13.250.94.92

23. Generate ssl dengan certbot.

```
ubuntu@ip-172-31-27-109:~$ sudo certbot --nginx -d aulia.chique.store
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Plugins selected: Authenticator nginx, Installer nginx
Enter email address (used for urgent renewal and security notices) (Enter 'c' to
cancel): heypam68@gmail.com

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Please read the Terms of Service at
https://letsencrypt.org/documents/LE-SA-v1.2-November-15-2017.pdf. You must
agree in order to register with the ACME server at
https://acme-v02.api.letsencrypt.org/directory
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
(A)gree/(C)ancel: A

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Would you be willing to share your email address with the Electronic Frontier
Foundation, a founding partner of the Let's Encrypt project and the non-profit
organization that develops Certbot? We'd like to send you email about our work
encrypting the web, EFF news, campaigns, and ways to support digital freedom.
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

24. Konfigurasi domain nginx akan di tambahkan secara default oleh ssl.

```
server {

        server_name aulia.chique.store;

        location / {
                proxy_pass http://172.31.31.245:3000;
        }

    listen [::]:443 ssl ipv6only=on; # managed by Certbot
    listen 443 ssl; # managed by Certbot
    ssl_certificate /etc/letsencrypt/live/aulia.chique.store/fullchain.pem; # managed by Certbot
    ssl_certificate_key /etc/letsencrypt/live/aulia.chique.store/privkey.pem; # managed by Certbot
    include /etc/letsencrypt/options-ssl-nginx.conf; # managed by Certbot
    ssl_dhparam /etc/letsencrypt/ssl-dhparams.pem; # managed by Certbot

}
```

25. Cek domain dan akses , di asumsikan disini memakai domain yang berbeda.