

LAPORAN

DEPLOY WEBSITE KE GOOGLE CLOUD PLATFORM



SMK Telkom Malang



PT PETROKIMIA GRESIK

Disusun oleh :

Desy Dwi Puspita

Program Keahlian:

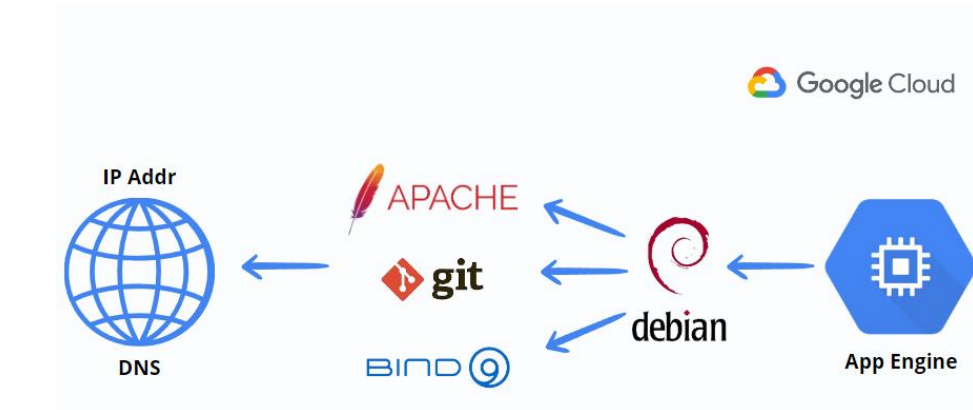
Teknik Komputer dan Jaringan

Cloud Computing

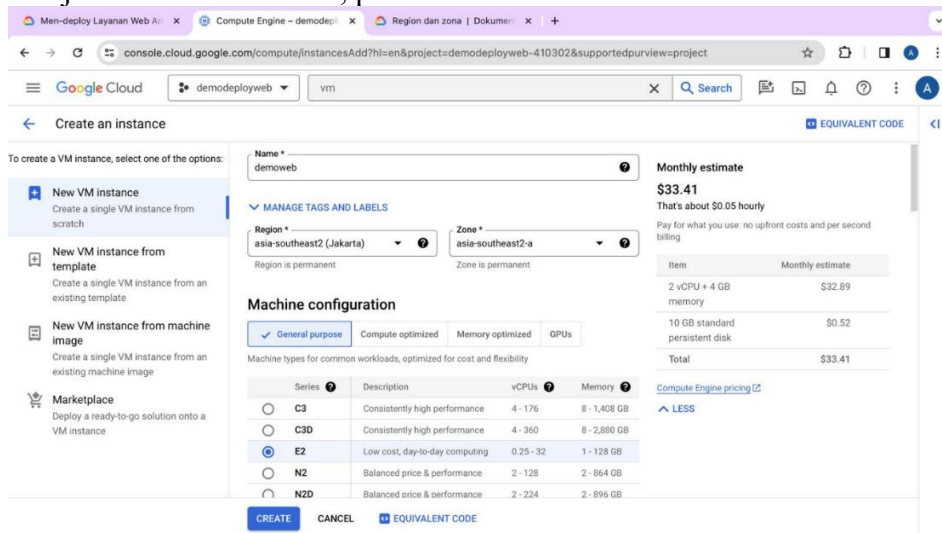
PT Petrokimia Gresik

Januari 2024

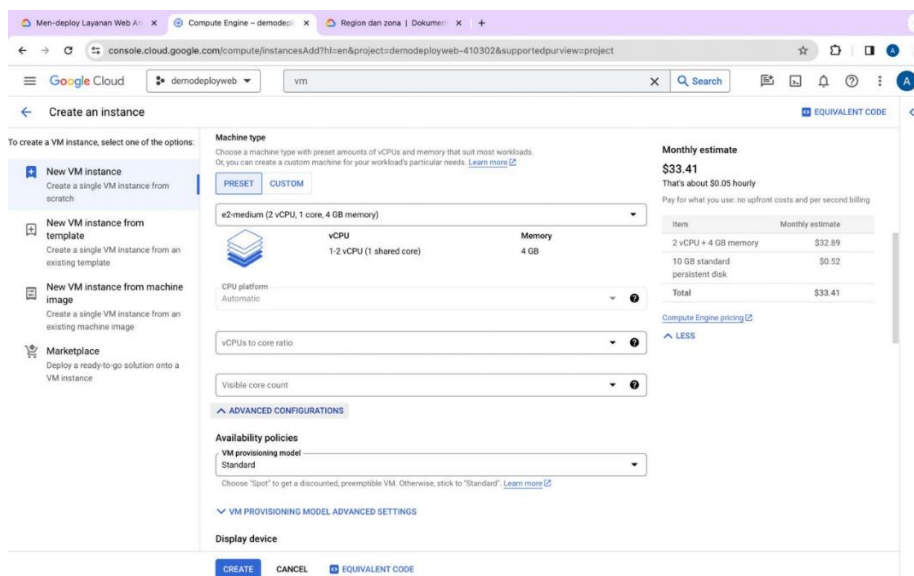
ARCITECTURE



1. Langkah pertama untuk melakukan deploy website ke gcp yaitu membuat vm instance ganti region menjadi asia-southeast2 (Jakarta) dengan zone yang otomatis terganti menjadi asia-southeast2-a, pilih series machine E2



Pilih machine type e2-medium (2 vCPU, 1 core, 4 GB memory)



Pada bagian boot disk pilih yang debian dengan size 10GB

Create an instance

To create a VM instance, select one of the options:

- New VM instance**
Create a single VM instance from scratch
- New VM instance from template**
Create a single VM instance from an existing template
- New VM instance from machine image**
Create a single VM instance from an existing machine image
- Marketplace**
Deploy a ready-to-go solution onto a VM instance

Display device
Enable to use screen capturing and recording tools.
☐ Enable display device

Confidential VM service
Confidential Computing is disabled on this VM instance.
[ENABLE](#)

Container
Deploy a container image to this VM instance.
[DEPLOY CONTAINER](#)

Boot disk
Name: demoweb
Type: New standard persistent disk
Size: 10 GB
License type: Free
Image: Debian GNU/Linux 11 (bullseye)
[CHANGE](#)

Identity and API access

Monthly estimate
\$33.41
That's about \$0.05 hourly
Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
2 vCPU + 4 GB memory	\$32.89
10 GB standard persistent disk	\$0.52
Total	\$33.41

[Compute Engine pricing](#)
[LESS](#)

[CREATE](#) [CANCEL](#) [EQUIVALENT CODE](#)

Pada bagian firewall centang allow HTTP traffic, kemudian create

Create an instance

To create a VM instance, select one of the options:

- New VM instance**
Create a single VM instance from scratch
- New VM instance from template**
Create a single VM instance from an existing template
- New VM instance from machine image**
Create a single VM instance from an existing machine image
- Marketplace**
Deploy a ready-to-go solution onto a VM instance

Identity and API access
Service accounts: Compute Engine default service account
Access scopes: ☒ Allow default access

Firewall
Add tags and firewall rules to allow specific network traffic from the internet.
☒ Allow HTTP traffic
☐ Allow HTTPS traffic
☐ Allow Load Balancer Health Checks

Observability - Ops Agent
Monitor your system through collection of logs and key metrics.
☐ Install Ops Agent for Monitoring and Logging

Advanced options
Networking, disks, security, management, scale tenancy

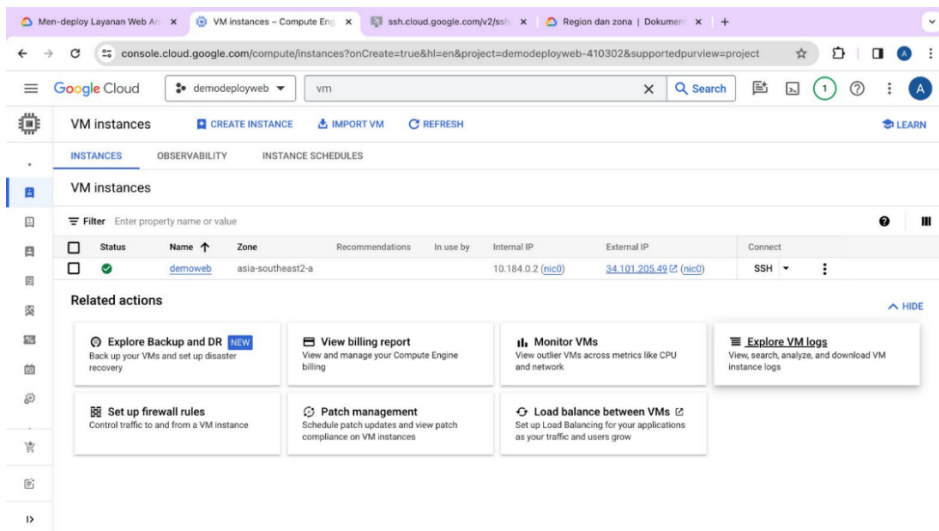
Monthly estimate
\$33.41
That's about \$0.05 hourly
Pay for what you use: no upfront costs and per second billing

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2 vCPU + 4 GB memory	\$32.89
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Total	\$33.41

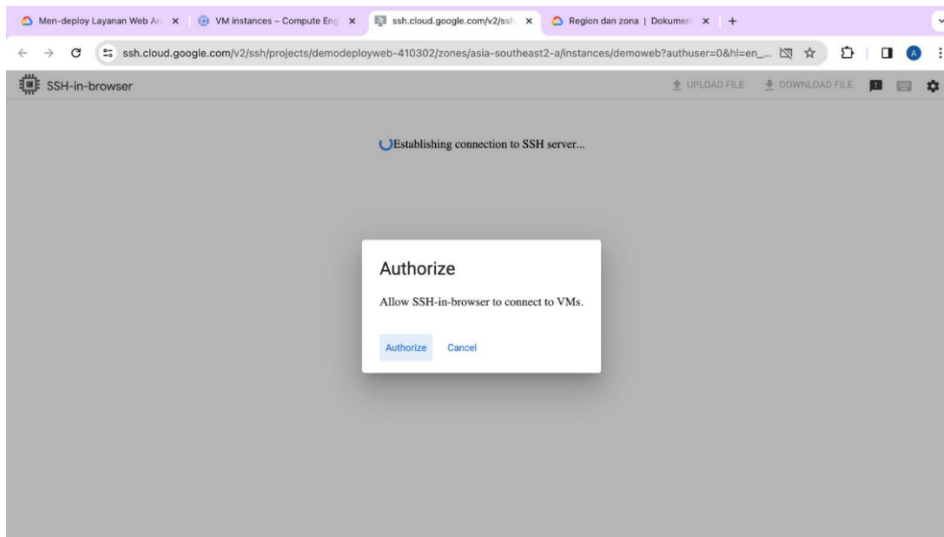
[Compute Engine pricing](#)
[LESS](#)

[CREATE](#) [CANCEL](#) [EQUIVALENT CODE](#)

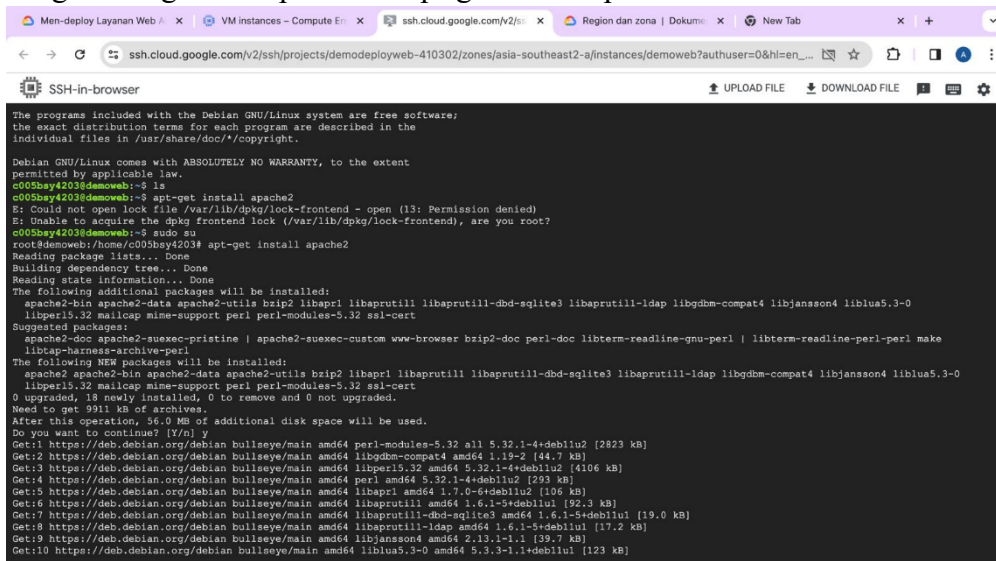
2. Setelah selesai membuat vm instance, kemudian Connect ssh



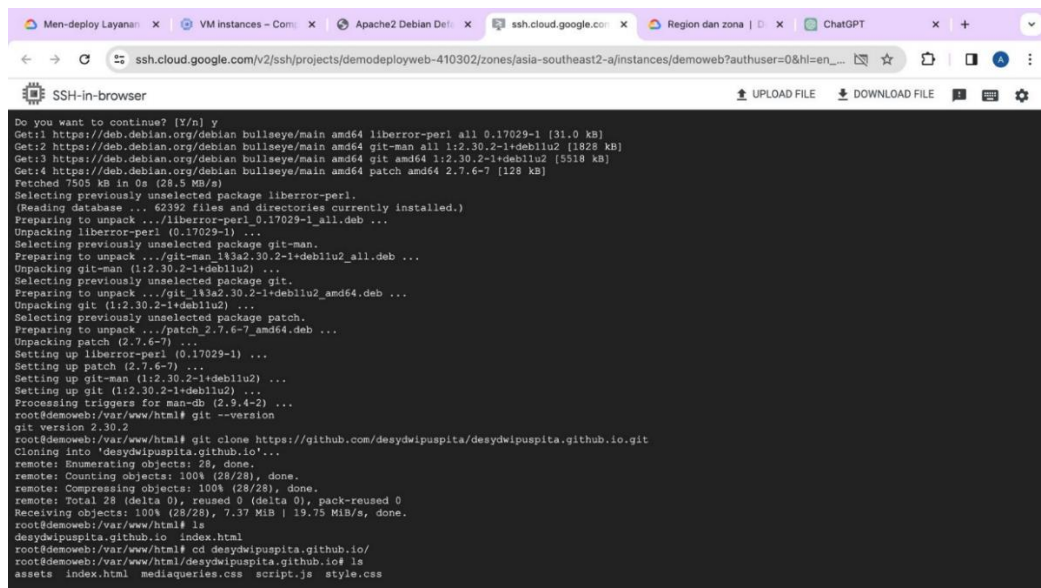
Klik Authorize



- Langkah pertama yang dilakukan adalah dengan Install apache2 dengan mengetikkan perintah “apt-get install apache2”

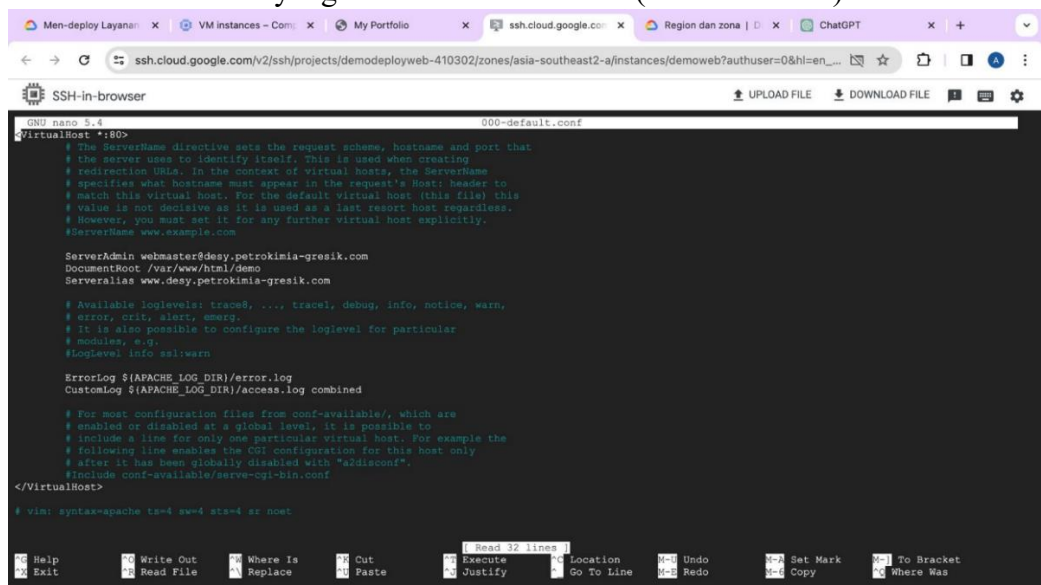


4. Lakukan instalasi git dengan mengetikkan perintah “apt-get install git”
Setelah Git terinstal, ketikkan perintah “git clone (link github)”



```
Do you want to continue? [Y/n] y
Get:1 https://deb.debian.org/debian bullseye/main amd64 liberror-perl all 0.17029-1 [31.0 kB]
Get:2 https://deb.debian.org/debian bullseye/main amd64 git-man all 1:2.30.2-1+deb11u2 [1828 kB]
Get:3 https://deb.debian.org/debian bullseye/main amd64 git amd64 1:2.30.2-1+deb11u2 [5518 kB]
Get:4 https://deb.debian.org/debian bullseye/main amd64 patch amd64 2.7.6-7 [120 kB]
Fetched 7505 kB in 0s (28.5 MB/s)
Selecting previously unselected package liberror-perl.
(Reading database ... 62392 files and directories currently installed.)
Preparing to unpack .../liberror-perl_0.17029-1_all.deb ...
Unpacking liberror-perl (0.17029-1) ...
Selecting previously unselected package git-man.
Preparing to unpack .../git-man_1:2.30.2-1+deb11u2_all.deb ...
Unpacking git-man (1:2.30.2-1+deb11u2) ...
Selecting previously unselected package git.
Preparing to unpack .../git_1:2.30.2-1+deb11u2_amd64.deb ...
Unpacking git (1:2.30.2-1+deb11u2) ...
Selecting previously unselected package patch.
Preparing to unpack .../patch_2.7.6-7_amd64.deb ...
Unpacking patch (2.7.6-7) ...
Setting up liberror-perl (0.17029-1) ...
Setting up patch (2.7.6-7) ...
Setting up git-man (1:2.30.2-1+deb11u2) ...
Setting up git (1:2.30.2-1+deb11u2) ...
Processing triggers for man-db (2.9.4-2) ...
git version 2.30.2
root@demoweb:/var/www/html# git clone https://github.com/desydwipuspita/desydwipuspita.github.io.git
Cloning into 'desydwipuspita.github.io'...
remote: Enumerating objects: 28, done.
remote: Counting objects: 100% (28/28), done.
remote: Compressing objects: 100% (28/28), done.
remote: Total 28 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (28/28), 7.37 MiB | 19.75 MiB/s, done.
root@demoweb:/var/www/html# ls
desydwipuspita.github.io index.html
root@demoweb:/var/www/html# cd desydwipuspita.github.io/
root@demoweb:/var/www/html/desydwipuspita.github.io# ls
assets index.html mediaqueries.css script.js style.css
```

5. Masuk ke apache2 kemudian masuk ke directory sites-available, ganti webmaster@localhost menjadi nama domain “desy.petrokimia-gresik.com”, tambahkan direktori yang ada di /var/www/html/(nama direktori)



```
GNU nano 2.9.4 000-default.conf
VirtualHost *:80>
#
# The ServerName directive sets the request scheme, hostname and port that
# the server uses to identify itself. This is used when creating
# redirection URLs. In the context of virtual hosts, the ServerName
# specifies what hostname must appear in the request's Host: header to
# match this virtual host. For the default virtual host (this file) this
# value is not decisive as it is used as a last resort host regardless.
# However, you must set it for any further virtual host explicitly.
#ServerName www.example.com

ServerAdmin webmaster@desy.petrokimia-gresik.com
DocumentRoot /var/www/html/demo
ServerAlias www.desy.petrokimia-gresik.com

# Available loglevels: trace8, ..., trace1, debug, info, notice, warn,
# error, crit, alert, emerg.
# It is also possible to configure the loglevel for particular
# modules, e.g.
#loglevel info ssl:warn

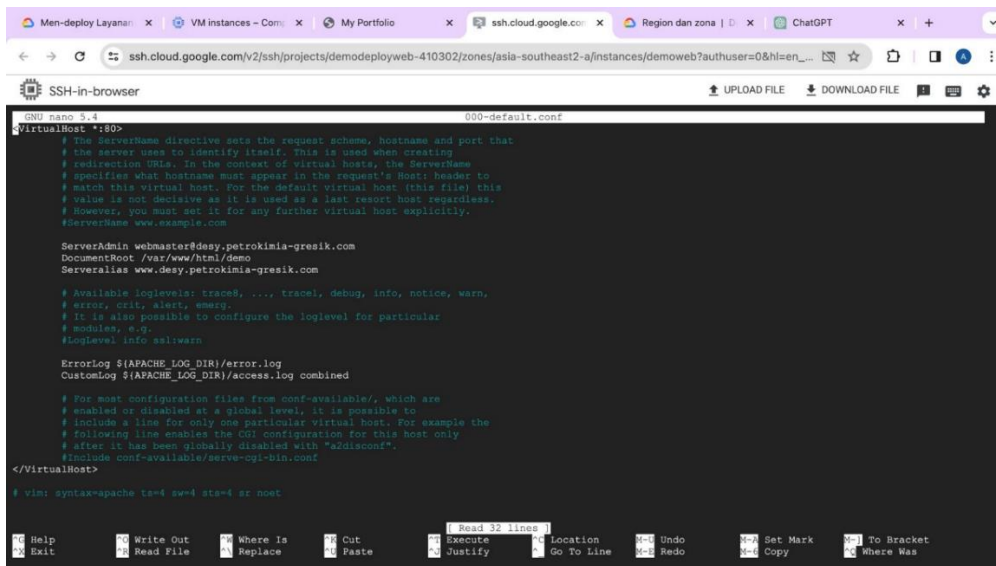
ErrorLog $(APACHE_LOG_DIR)/error.log
CustomLog $(APACHE_LOG_DIR)/access.log combined

# For most configuration files from conf-available/, which are
# enabled or disabled at a global level, it is possible to
# include a line for only one particular virtual host. For example the
# following line enables the CGI configuration for this host only
# after it has been globally disabled with "2disconf".
#Include conf-available/serve-cgi-bin.conf

</VirtualHost>

# vim: syntax=apache ts=4 sw=4 sts=4 sr nowt
```

Masuk ke directory sites-enabled untuk melihat isi directory, pastikan isi sudah terganti seperti di sites-available, jika sudah terganti ketikkan perintah “systemctl restart apache2”



```
GNU nano 5.4 000-default.conf
VirtualHost *:80
# The ServerName directive sets the request scheme, hostname and port that
# the server uses to identify itself. This is used when creating
# redirection URLs. In the context of virtual hosts, the ServerName
# specifies what hostname must appear in the request's Host: header to
# match this virtual host. For the default virtual host (this file) this
# value is not decisive as it is used as a last resort host regardless.
# However, you must set it for any further virtual host explicitly.
#ServerName www.example.com

ServerAdmin webmaster@desy.petrokimia-gresik.com
DocumentRoot /var/www/html/demo
ServerAlias www.desy.petrokimia-gresik.com

# Available loglevels: trace8, ..., trace1, debug, info, notice, warn,
# error, crit, alert, emerg.
# It is also possible to configure the loglevel for particular
# modules, e.g.
#LogLevel info ssl:warn

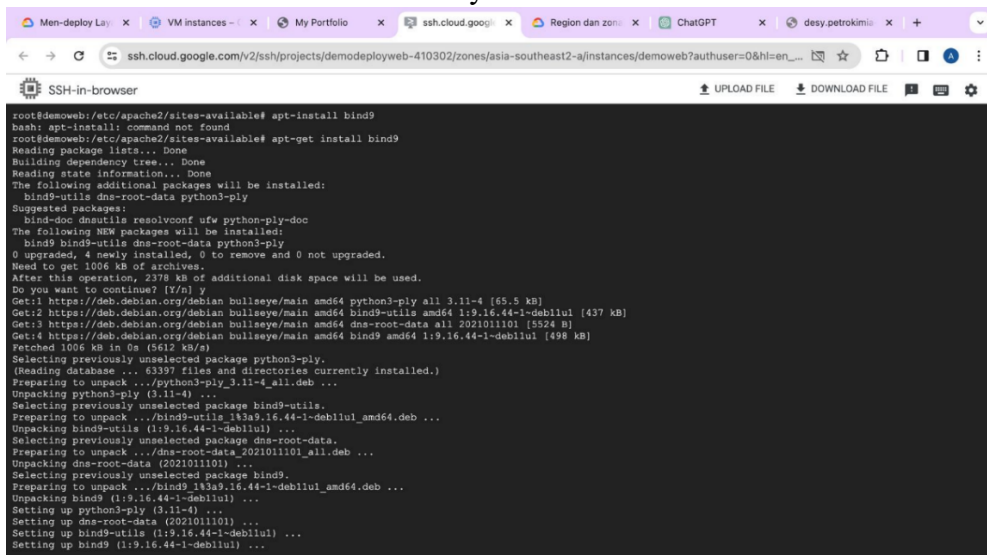
ErrorLog ${APACHE_LOG_DIR}/error.log
CustomLog ${APACHE_LOG_DIR}/access.log combined

# For most configuration files from conf-available/, which are
# enabled or disabled at a global level, it is possible to
# include a line for only one particular virtual host. For example the
# following line enables the CGI configuration for this host only
# after it has been globally disabled with "a2disconf".
#Include conf-available/serve-cgi-bin.conf

</VirtualHost>

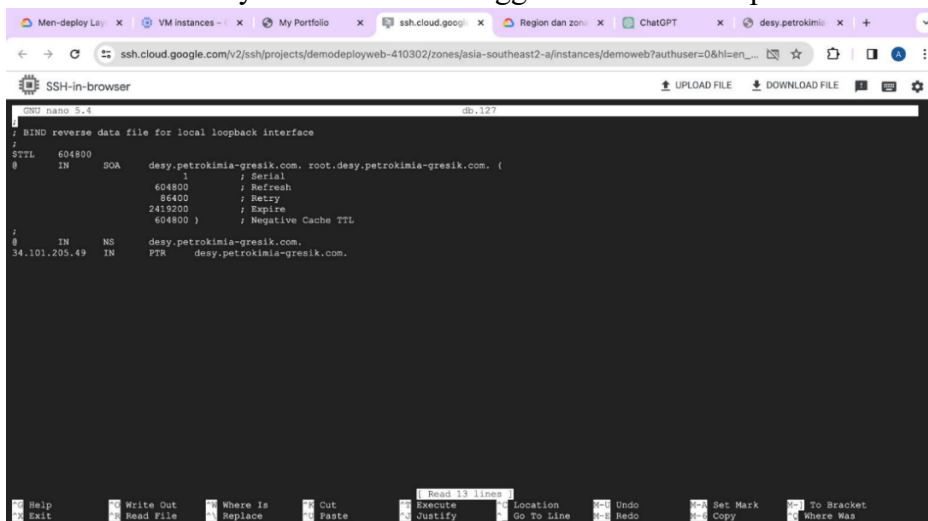
# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
```

6. Install bind9 dengan mengetikan perintah “apt-get install bind9” kemudian ketik “ls” untuk melihat daftar sebuah directory



```
root@demoweb:/etc/apache2/sites-available# apt-get install bind9
bash: apt-get: command not found
root@demoweb:/etc/apache2/sites-available# apt-get install bind9
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bind9-utils dns-root-data python3-ply
Suggested packages:
  bind-doc dnswalk resolvconf ufw python-ply-doc
The following NEW packages will be installed:
  bind9 bind9-utils dns-root-data python3-ply
0 upgraded, 4 newly installed, 0 to remove and 0 not upgraded.
Need to get 1006 kB of archives.
After this operation, 2378 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 https://deb.debian.org/debian bullseye/main amd64 python3-ply all 3.11-4 [65.5 kB]
Get:2 https://deb.debian.org/debian bullseye/main amd64 bind9-utils amd64 1:9.16.44-1-deb1u1 [437 kB]
Get:3 https://deb.debian.org/debian bullseye/main amd64 dns-root-data all 2021011101 [5524 B]
Get:4 https://deb.debian.org/debian bullseye/main amd64 bind9 amd64 1:9.16.44-1-deb1u1 [498 kB]
Fetched 1006 kB in 1s (6412 kB/s)
Selecting previously unselected package python3-ply.
(Reading database ... 63397 files and directories currently installed.)
Preparing to unpack .../python3-ply_3.11-4_all.deb ...
Unpacking python3-ply (3.11-4) ...
Selecting previously unselected package bind9-utils.
Preparing to unpack .../bind9-utils_1:9.16.44-1-deb1u1_amd64.deb ...
Unpacking bind9-utils (1:9.16.44-1-deb1u1) ...
Selecting previously unselected package dns-root-data.
Preparing to unpack .../dns-root-data_2021011101_all.deb ...
Unpacking dns-root-data (2021011101) ...
Selecting previously unselected package bind9.
Preparing to unpack .../bind9_1:9.16.44-1-deb1u1_amd64.deb ...
Unpacking bind9 (1:9.16.44-1-deb1u1) ...
Setting up python3-ply (3.11-4) ...
Setting up dns-root-data (2021011101) ...
Setting up bind9-utils (1:9.16.44-1-deb1u1) ...
Setting up bind9 (1:9.16.44-1-deb1u1) ...
```

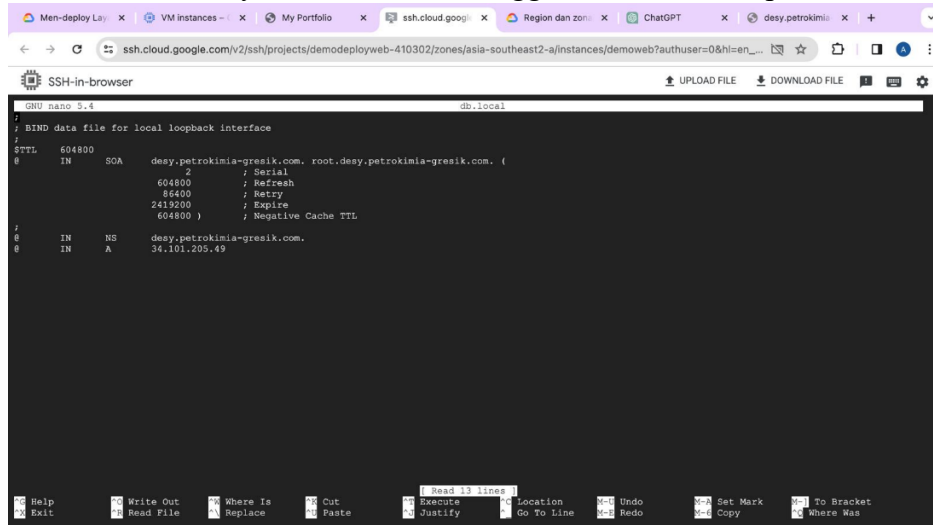
7. Masuk ke directory db.127 untuk mengganti domain dan ip address



```
GNU nano 5.4 db.127
# BIND reverse data file for local loopback interface

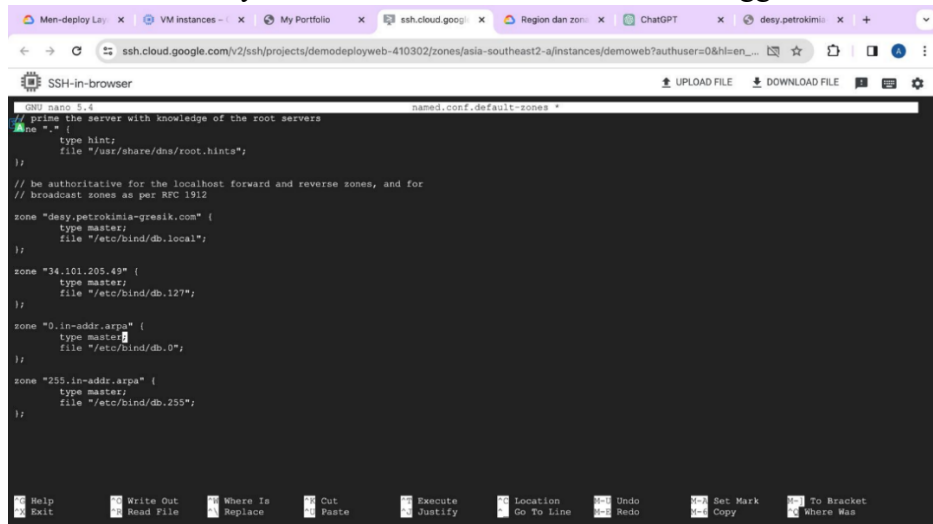
$TTL      604800
$ORIGIN   .
IN      SOA     desy.petrokimia-gresik.com. root.desy.petrokimia-gresik.com. (
    1          ; Serial
    604800     ; Refresh
    86400      ; Retry
    2419200    ; Expire
    604800 )    ; Negative Cache TTL
;
IN      NS      desy.petrokimia-gresik.com.
34.101.205.49 IN PTR desy.petrokimia-gresik.com.
```


8. Masuk ke directory db.local untuk mengganti domain dan ip address



```
GNU nano 3.4 db.local
; BIND data file for local loopback interface
$TTL 604800
IN SOA desy.petrokimia-gresik.com. root.desy.petrokimia-gresik.com. (
    604800      ; Serial
    604800      ; Refresh
    2419200     ; Retry
    604800     ; Expire
    604800 )    ; Negative Cache TTL
;
IN NS desy.petrokimia-gresik.com.
IN A 34.101.205.49
```

9. Masuk ke directory named.conf.default-zones untuk mengganti domain dan ip address



```
GNU nano 3.4 named.conf.default-zones
// Provide the server with knowledge of the root servers
zone "." {
    type hint;
    file "/usr/share/dns/root.hints";
};

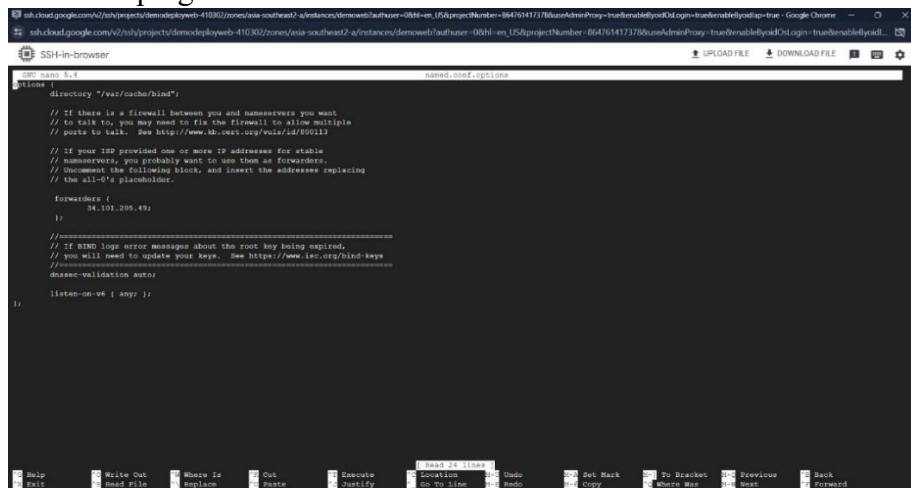
// Be authoritative for the localhost forward and reverse zones, and for
// broadcast zones as per RFC 1912
zone "desy.petrokimia-gresik.com" {
    type master;
    file "/etc/bind/db.local";
};

zone "34.101.205.49" {
    type master;
    file "/etc/bind/db.127";
};

zone "0.in-addr.arpa" {
    type master;
    file "/etc/bind/db.0";
};

zone "255.in-addr.arpa" {
    type master;
    file "/etc/bind/db.255";
};
```

10. Masuk ke directory named.conf.options, ganti ip address dan hapus tanda “//” yang ada disamping forwarders



```
GNU nano 3.4 named.conf.options
// Options for the BIND server

// Directory for the database files
directory "/var/cache/bind";

// If there is a firewall between you and nameservers you want
// to talk to, you may need to fix the firewall to allow multiple
// ports to talk. See http://www.isc.org/wiki/BindFirewall

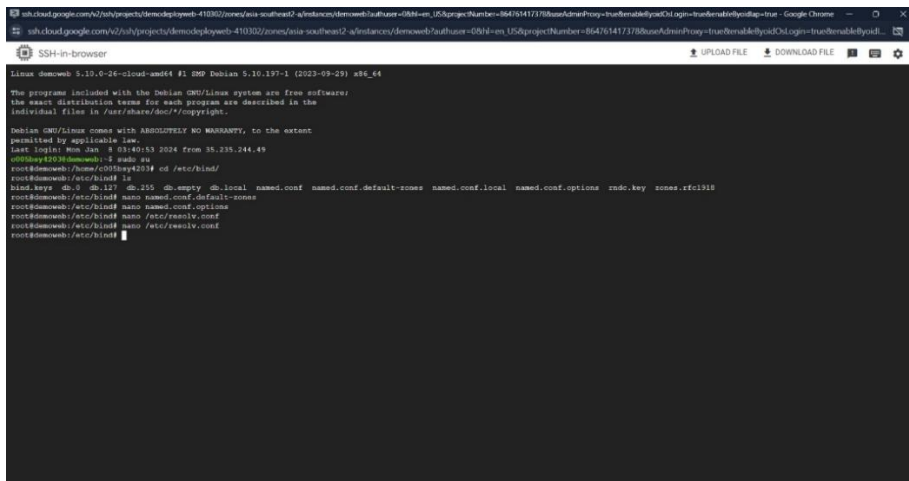
// If your ISP provided one or more IP addresses for stable
// nameservers, you probably want to use them as forwarders.
// Uncomment the following block, and insert the addresses replacing
// the all-0's placeholder.

forwarders {
    34.101.205.49;
};

//=====
// If BIND logs error messages about the root key being expired,
// you will need to update your keys. See http://www.isc.org/bind-keys
//=====
dnssec-validation auto;

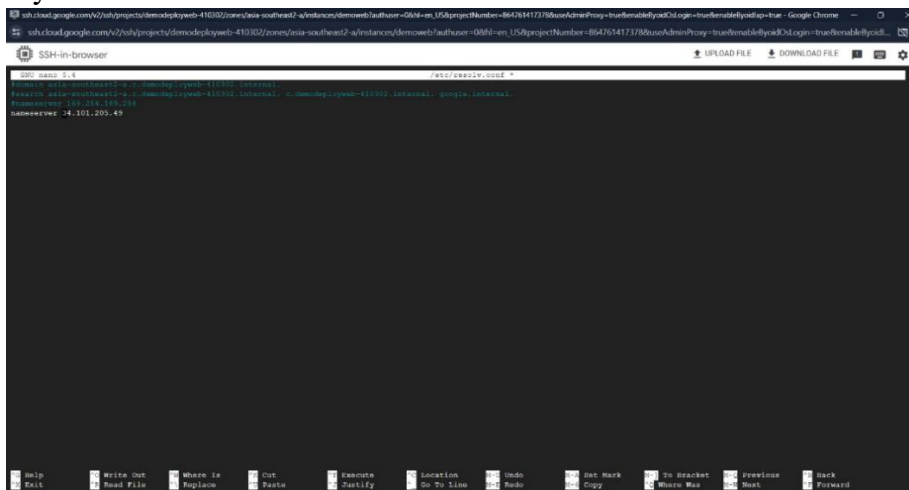
listen-on-v6 { any; };
```

11. Masuk ke /etc/resolv.conf



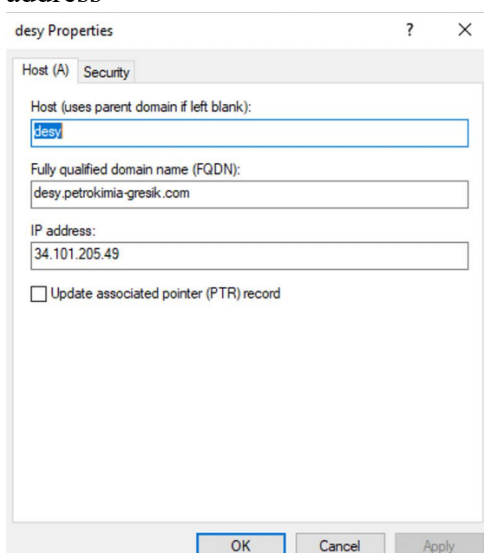
```
ssh.cloud.google.com/v2/sh/projects/demodpkyweb-410302/zones/asia-southeast2-a/instances/demoweb/authorize-OAuth-en_US&projectNumber=86476147378&useAdminProxy=true&tokenableByOidLogin=true&tokenableByOidLogin=true
SSH-in-browser
Linux demoweb 5.10.0-26-cloud-amd64 #1 SMP Debian 5.10.197-1 (2023-09-29) x86_64
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright*.
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Jan 9 03:40:53 2024 from 35.235.244.49
root@demoweb:~# sudo apt-get install bind9
root@demoweb:~# cd /etc/bind/
root@demoweb:/etc/bind# ls
bind.keys  db.3  db.11  db.15  db.empty  db.local  named.conf  named.conf.default-zones  named.conf.local  named.conf.options  rndc.key  zones.rfc1918
root@demoweb:/etc/bind# nano named.conf.default-zones
root@demoweb:/etc/bind# nano named.conf.options
root@demoweb:/etc/bind# nano /etc/resolv.conf
root@demoweb:/etc/bind# nano /etc/resolv.conf
root@demoweb:/etc/bind#
```

Tambahkan “nameserver (ip address instance)”, kemudian save dan ketikkan perintah “systemctl restart bind”



```
ssh.cloud.google.com/v2/sh/projects/demodpkyweb-410302/zones/asia-southeast2-a/instances/demoweb/authorize-OAuth-en_US&projectNumber=86476147378&useAdminProxy=true&tokenableByOidLogin=true&tokenableByOidLogin=true
SSH-in-browser
GNU nano 3.8 /etc/resolv.conf
# Generated by systemd-resolved.
# See: man:systemd-resolved.service(8).
# This file is part of the systemd package.
nameserver 34.101.205.49
root@demoweb:/etc/bind#
```

12. Sebelum membuka web menggunakan domain, registrasikan domain yang telah dikonfigurasi pada penyedia domain. Dengan menuliskan nama domain dan ip address



desy Properties

Host (A) Security

Host (uses parent domain if left blank):
desy

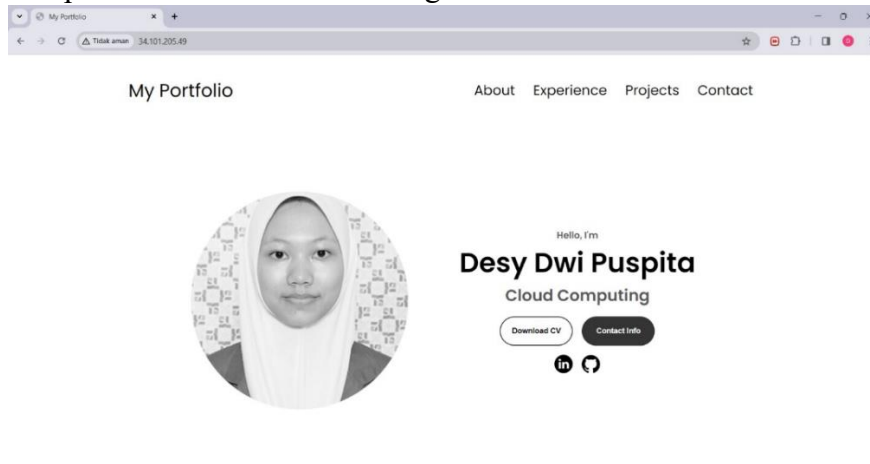
Fully qualified domain name (FQDN):
desy.petrokimia-gresik.com

IP address:
34.101.205.49

☐ Update associated pointer (PTR) record

OK Cancel Apply

13. Tampilan web ketika dibuka dengan IP Address



14. Tampilan web ketika dibuka dengan domain

