

Linux Server

"Web Server dan VirtualHost"

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Apa Itu WebServer

Server atau Web server adalah sebuah software yang memberikan layanan berbasis data dan berfungsi menerima permintaan dari HTTP atau HTTPS pada klien yang dikenal dan biasanya kita kenal dengan nama web browser (Mozilla Firefox, Google Chrome) dan untuk mengirimkan kembali yang hasilnya dalam bentuk beberapa halaman web dan pada umumnya akan berbentuk dokumen HTML.

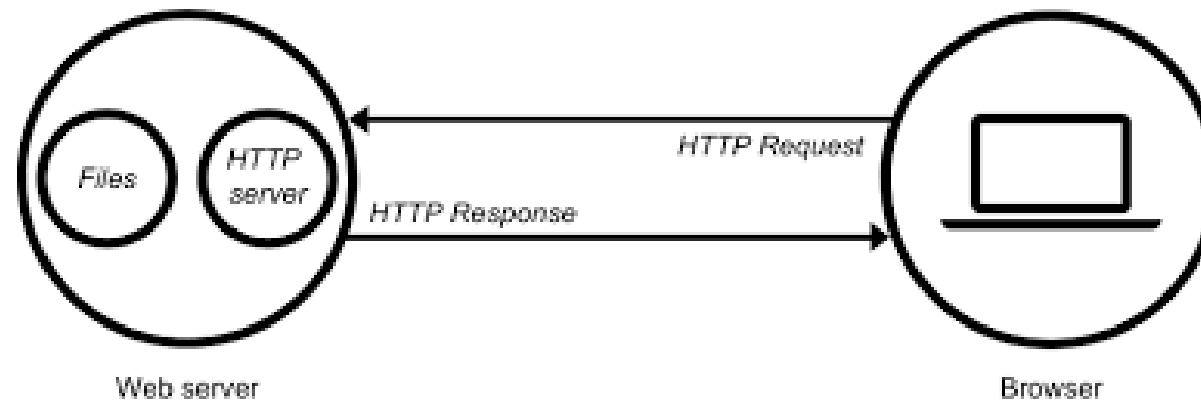


Apa Fungsi dari WebServer

Fungsi utama Server atau Web server adalah untuk melakukan atau akan mentransfer berkas permintaan pengguna melalui protokol komunikasi yang telah ditentukan sedemikian rupa. halaman web yang diminta terdiri dari berkas teks, video, gambar, file dan banyak lagi. pemanfaatan web server berfungsi untuk mentransfer seluruh aspek pemberkasan dalam sebuah halaman web termasuk yang di dalam berupa teks, video, gambar dan banyak lagi.



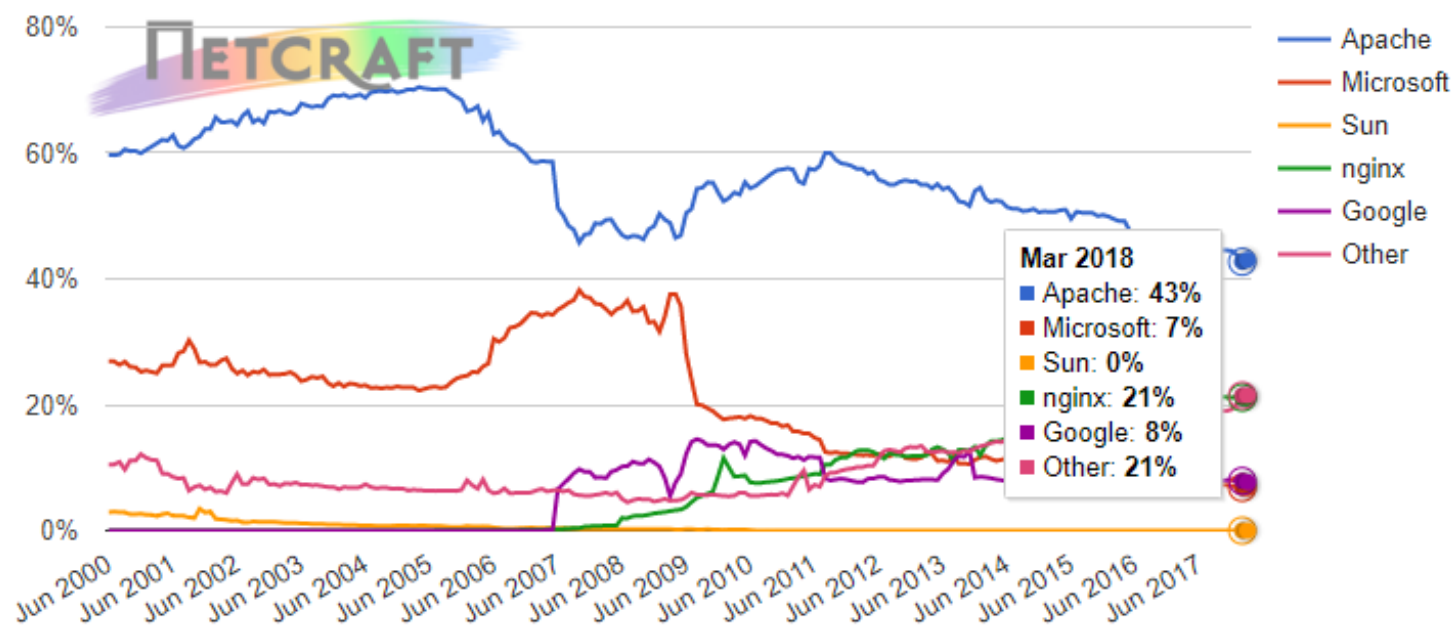
Bagaimana cara kerja dari WebServer



saat mengambil halaman website, browser mengirimkan permintaan ke server yang kemudian diproses oleh web server. HTTP request dikirimkan ke web server. Sebelum memproses HTTP request, web server juga melakukan pengecekan terhadap keamanan. Pada web server, HTTP request diproses dengan bantuan HTTP server. HTTP server merupakan perangkat lunak yang bertugas menerjemahkan URL (alamat situs web) serta HTTP (protokol yang digunakan browser untuk menampilkan halaman website). Kemudian web server mengirimkan HTTP response ke browser dan memprosesnya menjadi halaman situs web.



Web server developers: Market share of active sites



| Developer | February 2018 | Percent | March 2018 | Percent | Change |
|-----------|---------------|---------|------------|---------|--------|
| Apache | 77,324,937 | 42.72% | 76,398,184 | 43.03% | 0.31 |
| nginx | 38,239,250 | 21.13% | 37,321,104 | 21.02% | -0.11 |
| Google | 14,288,736 | 7.89% | 13,684,777 | 7.71% | -0.19 |
| Microsoft | 12,301,688 | 6.80% | 11,986,413 | 6.75% | -0.05 |



Keunggulan masing-masing WebServer

1. Apache

- Pengaturan lebih mudah
- Open Source
- Komunitas yang besar

2. NGINX

- Ringan
- Banyak fitur dan stabil
- Performa tinggi

3. IIS

- IIS mendukung penuh pada Windows
- Adanya kemampuan pengecekan kesalahan
- Kerja menggunakan PHP lebih stabil

4. LiteSpeed Web Server

- Memiliki pencegahan DDoS
- Recover kesalahan secara langsung
- Kompatibel dengan .htaccess



Apa itu Nginx ?

Nginx adalah server HTTP dan Proxy dengan kode sumber terbuka yang bisa juga berfungsi sebagai proxy IMAP/POP3. Kode sumber nginx ditulis oleh seorang warga negara Rusia yang bernama Igor Sysoev pada tahun 2002 dan dirilis ke publik pada tahun 2004. Nginx terkenal karena stabil, memiliki tingkat performansi tinggi dan minim mengonsumsi sumber daya.

Nginx juga memiliki fitur seperti reverse proxy multiple protocols (HTTP, Memcached, PHP-FPM, SCGI, uwsgi), Stream HTTP video (FLV, HDS, HLS, MP4) serta HTTP/2 gateway.

Beberapa situs terkenal yang menggunakan Nginx adalah Wordpress, Fastmail, Ohloh, Sourceforge dan Github.



Strutucure Directory Nginx

Debian:

/etc/nginx = default konfigurasi nginx

/etc/nginx/sites-available = semua konfigurasi situs/virtualhost yang aktif/belum/tidak

/etc/nginx/sites-enabled = semua konfigurasi situs/virtualhost yang sedang aktif

/etc/nginx/conf.d = fungsi kurang lebih sama seperti sites-enabled.

/etc/nginx/modules-available = modules yang tersedia bisa aktif/belum/maupun tidak.

/etc/nginx/modules-enabled = modules yang sedang aktvi

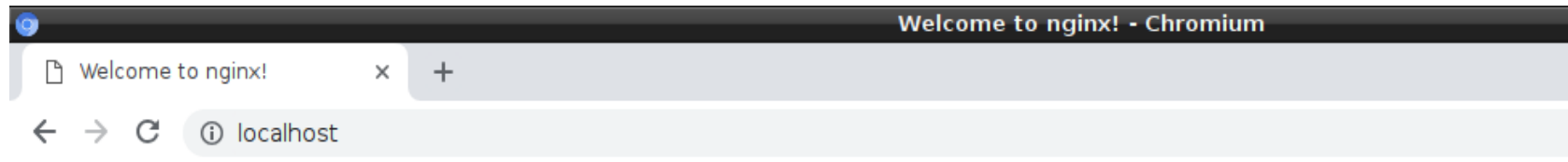
/var/www/html = directory default penyimpanan web server(html,php,dsb)



Memasang WebServer Nginx

```
fossil@fossil:~$ sudo apt install nginx
```

Melihat tampilan default webserver Nginx



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.



Melihat letak file halaman webserver default.

```
fossil@fossil:~$ ls /var/www/html/  
index.nginx-debian.html
```

Memasang Database Server yaitu mariadb-server

```
fossil@fossil:~$ sudo apt install mariadb-server
```

Mengamankan database server(mariadb-server)

```
fossil@fossil:~$ sudo mysql_secure_installation
```



Mengamankan Database Server lanjutan

```
NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB  
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!
```

```
In order to log into MariaDB to secure it, we'll need the current  
password for the root user. If you've just installed MariaDB, and  
you haven't set the root password yet, the password will be blank,  
so you should just press enter here.
```

```
Enter current password for root (enter for none):             
OK, successfully used password, moving on...
```

```
Setting the root password ensures that nobody can log into the MariaDB  
root user without the proper authorisation.
```

```
Set root password? [Y/n] y  
New password:             
Re-enter new password:             
Password updated successfully!  
Reloading privilege tables..  
... Success!
```

```
By default, a MariaDB installation has an anonymous user, allowing anyone  
to log into MariaDB without having to have a user account created for  
them. This is intended only for testing, and to make the installation  
go a bit smoother. You should remove them before moving into a  
production environment.
```

```
Remove anonymous users? [Y/n] y  
... Success!
```



Mengamankan Database Server lanjutan

Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y
... Success!

By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment.

Remove test database and access to it? [Y/n] y
- Dropping test database...
... Success!
- Removing privileges on test database...
... Success!

Reloading the privilege tables will ensure that all changes made so far will take effect immediately.

Reload privilege tables now? [Y/n] y
... Success!

Cleaning up...

All done! If you've completed all of the above steps, your MariaDB installation should now be secure.

Thanks for using MariaDB!



Memasang php-fpm dan php-mysql

```
fossil@fossil:~$ sudo apt install php-fpm php-mysql
```

membuka dan mengkonfigurasi file default yang berada di /etc/nginx/sites-available

```
fossil@fossil:~$ sudo nano /etc/nginx/sites-available/default
```



Konfigurasi file tersebut. Edit bagian yang dicoret bawah.

```
# Add index.php to the list if you are using PHP
index index.php index.html index.htm index.nginx-debian.html;

server_name localhost;

location / {
    # First attempt to serve request as file, then
    # as directory, then fall back to displaying a 404.
    try_files $uri $uri/ =404;
}

# pass PHP scripts to FastCGI server
#
location ~ \.php$ {
    include snippets/fastcgi-php.conf;
#
#   # With php-fpm (or other unix sockets):
#   fastcgi_pass unix:/var/run/php/php7.0-fpm.sock;
#   # With php-cgi (or other tcp sockets):
#   fastcgi_pass 127.0.0.1:9000;
}
```



Cek apakah konfigurasi tidak ada yang salah.

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

Mereload service nginx

```
fossil@fossil:~$ sudo systemctl reload nginx  
fossil@fossil:~$
```



Mengecek apakah php sudah berjalan di server. Dengan membuat file php di server yang berisi informasi php

```
fossil@fossil:~$ sudo nano /var/www/html/cekphp.php
```

```
GNU nano 2.7.4 File: /var/www/html/cekphp.php Modified
<?php
    phpinfo();
?>
```




Mengecek apakah php berjalan di server dengan mengakses file php. Di browser.

phpinfo() - Chromium

phpinfo()

localhost/cekphp.php

PHP Version 7.0.30-0+deb9u1



| | |
|--|--|
| System | Linux fossil 4.9.0-8-amd64 #1 SMP Debian 4.9.130-2 (2018-10-27) x86_64 |
| Build Date | Jun 14 2018 13:50:25 |
| Server API | FPM/FastCGI |
| Virtual Directory Support | disabled |
| Configuration File (php.ini) Path | /etc/php/7.0/fpm |
| Loaded Configuration File | /etc/php/7.0/fpm/php.ini |
| Scan this dir for additional .ini files | /etc/php/7.0/fpm/conf.d |
| Additional .ini files parsed | /etc/php/7.0/fpm/conf.d/10-mysqld.ini, /etc/php/7.0/fpm/conf.d/10-opcache.ini, /etc/php/7.0/fpm/conf.d/10-pdo.ini, /etc/php/7.0/fpm/conf.d/20-calendar.ini, /etc/php/7.0/fpm/conf.d/20-ctype.ini, /etc/php/7.0/fpm/conf.d/20-exif.ini, /etc/php/7.0/fpm/conf.d/20-fileinfo.ini, /etc/php/7.0/fpm/conf.d/20-ftp.ini, /etc/php/7.0/fpm/conf.d/20-gettext.ini, /etc/php/7.0/fpm/conf.d/20-iconv.ini, /etc/php/7.0/fpm/conf.d/20-json.ini, /etc/php/7.0/fpm/conf.d/20-mysqli.ini, /etc/php/7.0/fpm/conf.d/20-pdo_mysql.ini, /etc/php/7.0/fpm/conf.d/20-phar.ini, /etc/php/7.0/fpm/conf.d/20-posix.ini, /etc/php/7.0/fpm/conf.d/20-readline.ini, /etc/php/7.0/fpm/conf.d/20-shmop.ini, /etc/php/7.0/fpm/conf.d/20-sockets.ini, /etc/php/7.0/fpm/conf.d/20-sysvmsg.ini, /etc/php/7.0/fpm/conf.d/20-sysvsem.ini, /etc/php/7.0/fpm/conf.d/20-sysvshm.ini, /etc/php/7.0/fpm/conf.d/20-tokenizer.ini |
| PHP API | 20151012 |
| PHP Extension | 20151012 |
| Zend Extension | 320151012 |
| Zend Extension Build | API320151012,NTS |
| PHP Extension Build | API20151012,NTS |
| Debug Build | no |
| Thread Safety | disabled |
| Zend Signal Handling | disabled |
| Zend Memory Manager | enabled |
| Zend Multibyte Support | disabled |
| IPv6 Support | enabled |
| DTrace Support | available, disabled |



Membuat file baru bernama index.html

```
fossil@fossil:~$ sudo nano /var/www/html/index.html
```

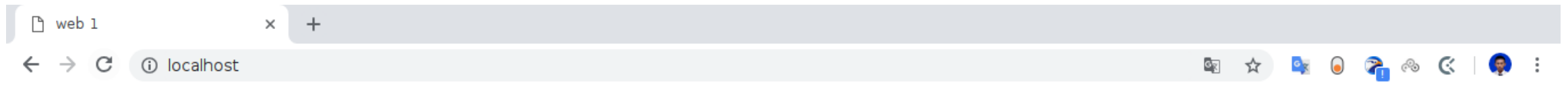
Membuat tampilan web sederhana menggunakan html.

```
GNU nano 2.7.4  File: /var/www/html/index.html  Modified

<html>
  <head>
    <title>web 1</title>
  </head>
  <body>
    <h1>ini web pertama member.fossil.com</h1>
  </body>
</html>
```



Tampilan web sudah berubah.



ini web pertama member.fossil.com



VirtualHost

Membuka dan mengkonfigurasi file hosts yang berada di directory /etc

```
fossil@fossil:~$ sudo nano /etc/hosts
```

Menambahkan 2 domain/subdomain baru kemudian diarahkan di 127.0.0.1

```
GNU nano 2.7.4      File: /etc/hosts

127.0.0.1    localhost
127.0.1.1    fossil
127.0.0.1    member.fossil.com
127.0.0.1    pengurus.fossil.com
# The following lines are desirable for IPv6 capable hosts
::1         localhost ip6-localhost ip6-loopback
ff02::1     ip6-allnodes
ff02::2     ip6-allrouters

```



Membuka dan mengkonfigurasi file default yang berada di directory /etc/nginx/sites-available/default

```
fossil@fossil:~$ sudo nano /etc/nginx/sites-available/default
```

```
GNU nano 2.7.4      File: /etc/nginx/sites-available/default      Modified

# Don't use them in a production server!
#
# include snippets/snakeoil.conf;

root /var/www/html;

# Add index.php to the list if you are using PHP
index index.php index.html index.htm index.nginx-debian.html;

server_name member.fossil.com;

location / {

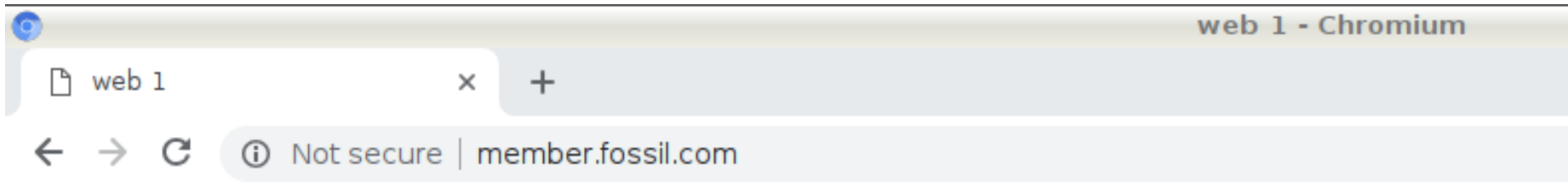
^G Get Help    ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify    ^C Cur Pos
^X Exit        ^R Read File  ^\ Replace    ^U Uncut Text ^T To Spell   ^_ Go To Line
```



Mereload service nginx

```
fossil@fossil:~$ sudo systemctl reload nginx
```

Cek apakah domain tadi bisa diakses di browser.



ini web pertama member.fossil.com



Site 2

Membuat directory site2 di directory www. Yang berada di directory home user fossil
Kemudian buat file berupa index.html di directory baru tersebut.

```
fossil@fossil:~$ mkdir -p www/site2  
fossil@fossil:~$ nano www/site2/index.html
```

Membuat tampilan sederhana di html.

```
GNU nano 2.7.4      File: www/site2/index.html      Modified  
  
<html>  
  <head>  
    <title>web-2</title>  
  </head>  
  <body>  
    <h1>ini web kedua pengurus.fossil.com</h1>  
  </body>  
</html>
```



Buat directory conf.d di home directory user fossil
Kemudian salin file default yang berada di /etc/nginx/sites-available ke directory conf.d dan dinamai site2.con

```
fossil@fossil:~$ mkdir conf.d  
fossil@fossil:~$ cp /etc/nginx/sites-available/default conf.d/site2.conf
```

Buka file hasil Salinan tersebut.

```
fossil@fossil:~$ sudo nano conf.d/site2.conf
```



Sisakan menjadi listen 80;

```

GNU nano 2.7.4      File: /home/fossil/conf.d/site2.conf      Modified
#
# Please see /usr/share/doc/nginx-doc/examples/ for more detailed examples.
##
# Default server configuration
#
server {
    listen 80;
    listen [::]:80;

    # SSL configuration
    #

```

[^]G Get Help [^]O Write Out [^]W Where Is [^]K Cut Text [^]J Justify [^]C Cur Pos
[^]X Exit [^]R Read File [^]\ Replace [^]U Uncut Text [^]T To Spell [^] Go To Line



Karena sebelumnya sudah dirubah buat site sebelumnya maka disini cukup mengganti bagian root dan server_name

```
GNU nano 2.7.4           File: conf.d/site2.conf           Modified

# Self signed certs generated by the ssl-cert package
# Don't use them in a production server!
#
# include snippets/snakeoil.conf;

root /home/fossil/www/site2;

# Add index.php to the list if you are using PHP
index index.php index.html index.htm index.nginx-debian.html;

server_name pengurus.fossil.com;

^G Get Help  ^O Write Out ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos
^X Exit      ^R Read File ^\ Replace   ^U Uncut Text ^T To Spell  ^_ Go To Line
```



Merubah dan membuka file konfigurasi nginx.conf

```
fossil@fossil:~$ sudo nano /etc/nginx/nginx.conf
```

Tambahkan include dibagian akhir agar file yang tadi dibuat bisa terload

```
GNU nano 2.7.4      File: /etc/nginx/nginx.conf      Modified

    include /etc/nginx/conf.d/*.conf;
    include /etc/nginx/sites-enabled/*;
    include /home/fossil/conf.d/*.conf;
}

#mail {
#    # See sample authentication script at:
#    # http://wiki.nginx.org/ImapAuthenticateWithApachePhpScript
#
#    # auth_http localhost/auth.php;
#}

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell  ^_ Go To Line
```

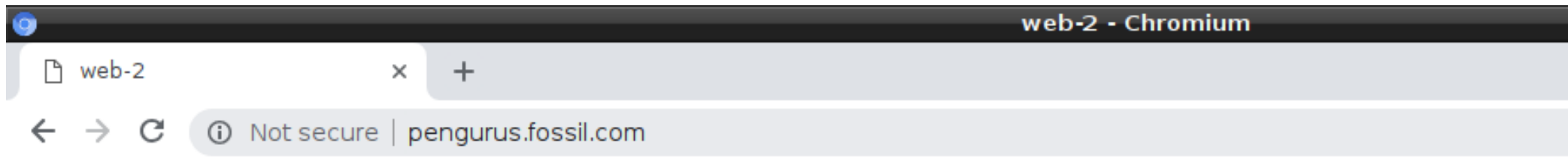


Reload service nginx

kemudian cek konfigurasinya apakah ada yang salah atau dibalik dicek terlebih dahulu baru di reload

```
fossil@fossil:~$ sudo systemctl reload nginx
fossil@fossil:~$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
fossil@fossil:~$
```

Setelah itu cek di browser



ini web kedua pengurus.fossil.com



Buat file php di site 2 untuk mengecek apakah php juga berfungsi di site kedua

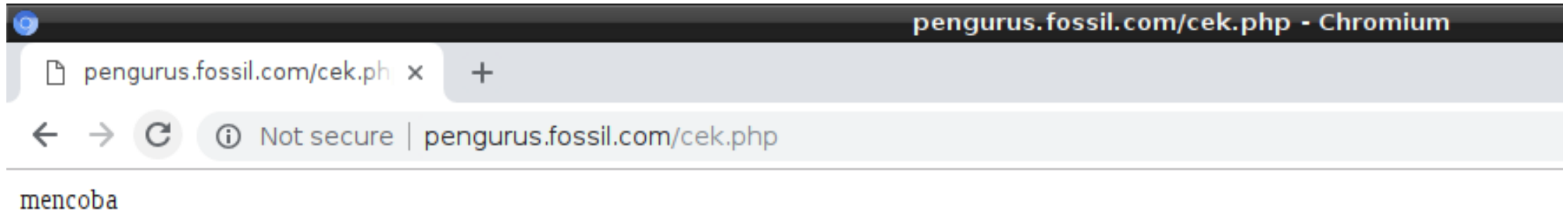
```
fossil@fossil:~$ sudo nano www/site2/cek.php
```

Berisi tampilan yang mencetak mencoba.

```
GNU nano 2.7.4      File: www/site2/cek.php      Modified
<?php
    echo("mencoba")
?>
```



Setelah itu cek di browser



Menghapus phpinfo

```
fossil@fossil:~$ sudo rm -r /var/www/html/cekphp.php
```



Studi Kasus

Di konfigurasi modul diatas kan situs pertama masih menggunakan default. Silahkan dirubah tidak lagi menggunakan virtualhost default. Dan directory defaultnya tidak lagi di /var/www/html.

Kunci: lakukan seperti situs2/site 2. namun berbeda nama file dan directory.

