

PROGRES 2 PROYEK
“MEMBANGUN WEB SERVER BERBASIS
LINUX (APACHE/NGINX+SSL)”

Disusun untuk memenuhi tugas mata kuliah Sistem Operasi

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LANGKAH 3 : Membuat SSL / HTTPS

Target : Mengubah HTTP menjadi HTTPS (Gembok).

- #### 1. Aktifkan Modul SSL:

```
christinesimolon@christinesimolon-VirtualBox: $ sudo a2enmod ssl
[sudo] password for christinesimolon:
Considering dependency mime for ssl:
Module mime already enabled
Considering dependency socache_shmcb for ssl:
Enabling module socache_shmcb.
Enabling module ssl.
See /usr/share/doc/apache2/README.Debian.gz on how to configure SSL and create self-signed certificates.
To activate the new configuration, you need to run:
  systemctl restart apache2
```

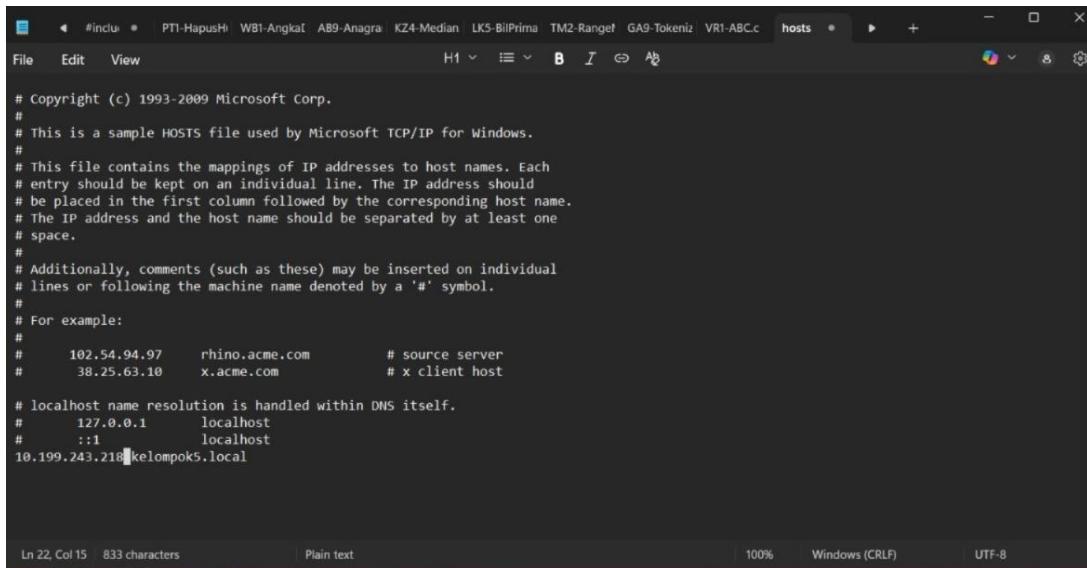
```
christinesimbolon@christinesimbolon-VirtualBox:~$ sudo systemctl restart apache2
```

- ## 2. Buat Sertifikat SSL Sendiri (Self-Signed):

```
christinesimbolon@christinesimbolon-VirtualBox:~$ sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout /etc/ssl/private/apache-selfsigned.key -out /etc/ssl/certs/apache-selfsigned.crt
[sudo] password for christinesimbolon:
-----  
You are about to be asked to enter information that will be incorporated  
into your certificate request.  
What you are about to enter is what is called a Distinguished Name or a DN.  
There are quite a few fields but you can leave some blank  
For some fields there will be a default value,  
If you enter '.', the field will be left blank.  
-----  
Country Name (2 letter code) [AU]:ID  
State or Province Name (full name) [Some-State]:Kepulauan Riau  
Locality Name (eg, city) []:Tanjungpinang  
Organization Name (eg, company) [Internet Widgets Pty Ltd]:kelompok5 Proyek 50  
Organizational Unit Name (eg, section) []:Sistem Operasi  
Common Name (e.g. server FQDN or YOUR name) []:kelompok5.local  
Email Address []:240102015B@student.umrah.ac.id
```

(Nanti diminta isi Info Negara dll, isi bebas saja atau tekan Enter terus).

3. Setting Domain Lokal (Hosts File): Karena ini domain palsu (lokal), komputer kamu harus dikasih tahu.
 - Di Windows (Laptop yang buat buka browser): Buka Notepad as Administrator -> Buka file C:\Windows\System32\drivers\etc\hosts.
 - Tambahkan baris paling bawah: 10.199.243.218 kelompok5.local (Ganti IP sesuai IP servermu).



The screenshot shows a Microsoft Notepad window with the file 'hosts' open. The content of the file is a sample HOSTS file for Windows, containing IP address mappings to host names. The file includes comments explaining the format and examples like '102.54.94.97 rhino.acme.com # source server'. It also shows localhost entries and a line for 'kelompok5.local'. The Notepad interface includes a menu bar (File, Edit, View), toolbars, and status bars indicating the line and character count (Ln 22, Col 15 | 833 characters), file type (Plain text), and encoding (100% | Windows (CRLF) | UTF-8).

```
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#      102.54.94.97    rhino.acme.com        # source server
#      38.25.63.10    x.acme.com            # x client host
#
# localhost name resolution is handled within DNS itself.
#      127.0.0.1        localhost
#      ::1              localhost
10.199.243.218 kelompok5.local
```

4. Update Konfigurasi Apache untuk HTTPS:

```
christinesimbolon@christinesimbolon-VirtualBox:~$ sudo nano /etc/apache2/sites-available/kelompok5.conf
```

Tambahkan blok baru di bawah blok <VirtualHost *:80>...</VirtualHost> tadi:

```
GNU nano 7.2                                         /etc/apache2/sites-available/kelompok5.conf
<VirtualHost *:80>
  ServerAdmin admin@localhost
  ServerName kelompok5.local

  Redirect permanent / https://kelompok5.local/

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

<VirtualHost *:443>
  ServerName kelompok5.local
  DocumentRoot /var/www/kelompok5

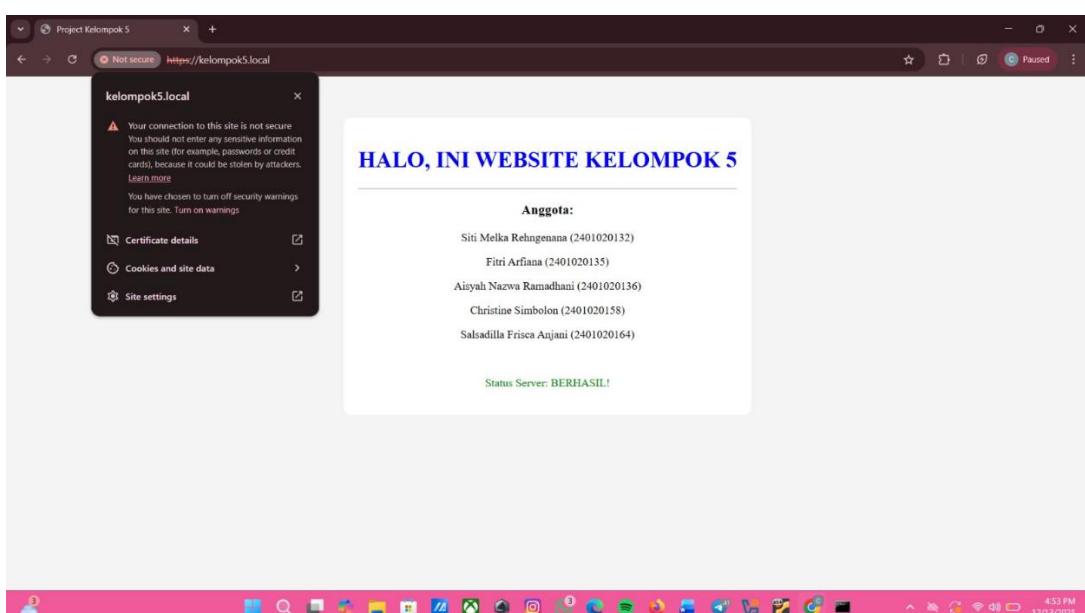
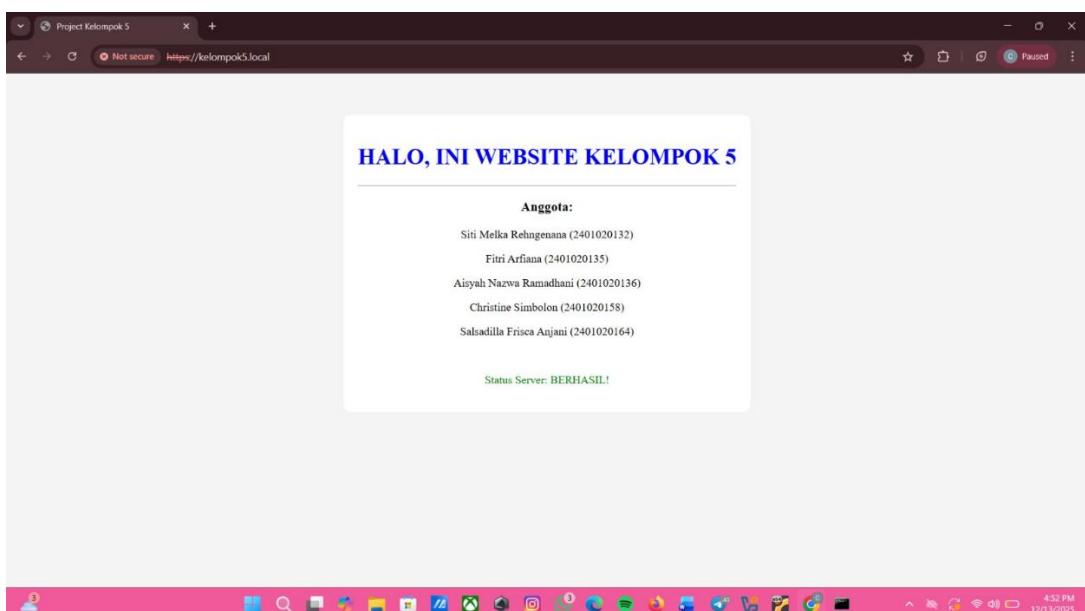
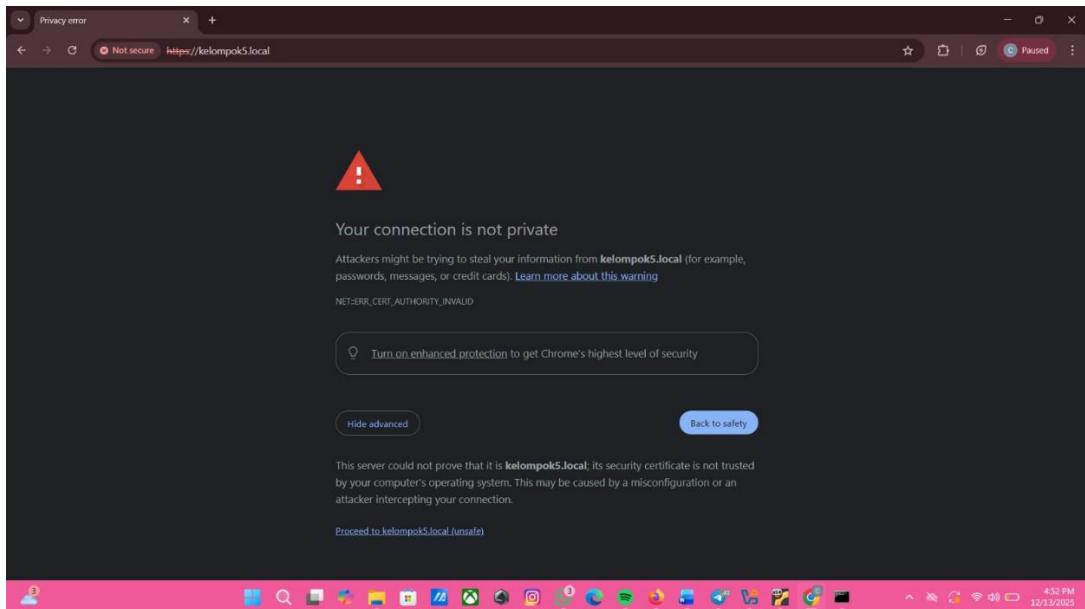
  SSLEngine on
  SSLCertificateFile /etc/ssl/certs/apache-selfsigned.crt
  SSLCertificateKeyFile /etc/ssl/private/apache-selfsigned.key
</VirtualHost>
```

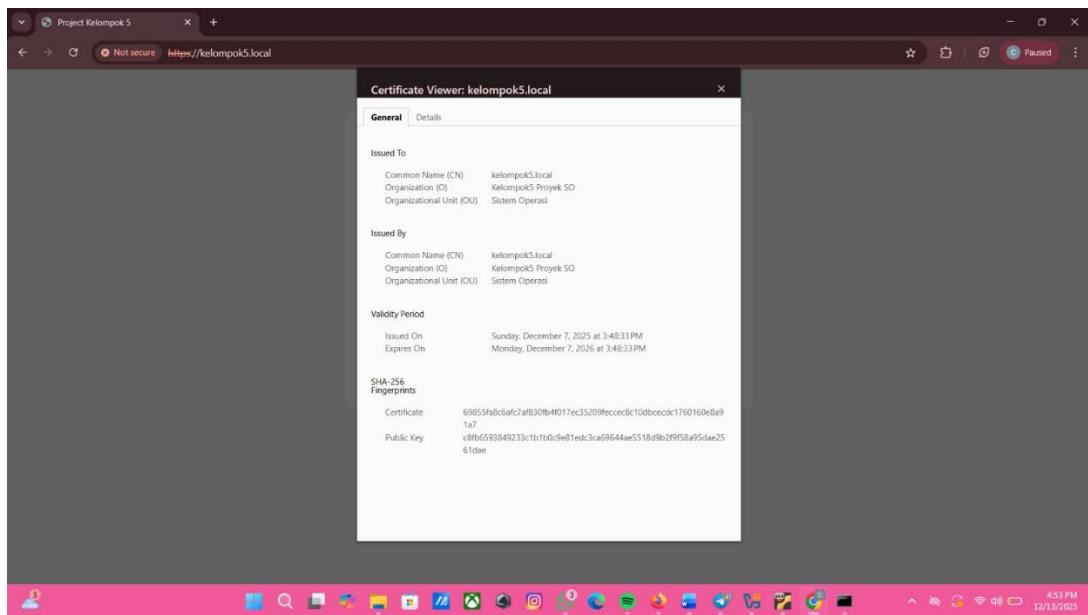
5. Restart Apache:

```
christinesimbolon@christinesimbolon-VirtualBox:~$ sudo systemctl reload apache2
```

6. Coba Akses:

Buka <https://kelompok1.local>. Catatan: Karena pakai Self-Signed, browser akan bilang "Not Secure" atau "Warning". Itu wajar! Klik Advanced -> Proceed to... Itu artinya HTTPS sudah jalan.





Dokumentasi Bukti Kerja :

