Shahjalal University of Science & Technology, Sylhet

Department of Software Engineering

Course Title: Information and Network Security
Course Code: SWE 430
LAB 5,6 report submission

Submitted to

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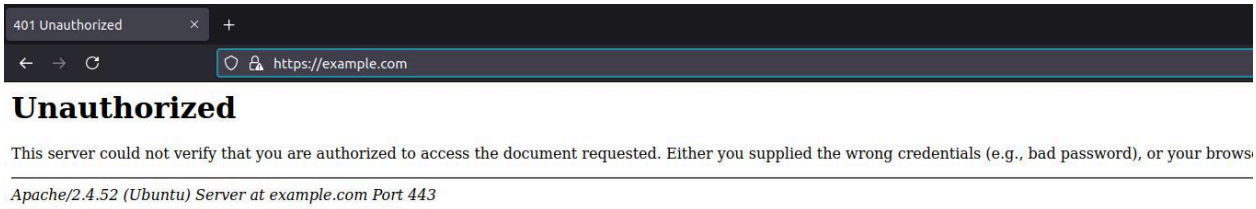
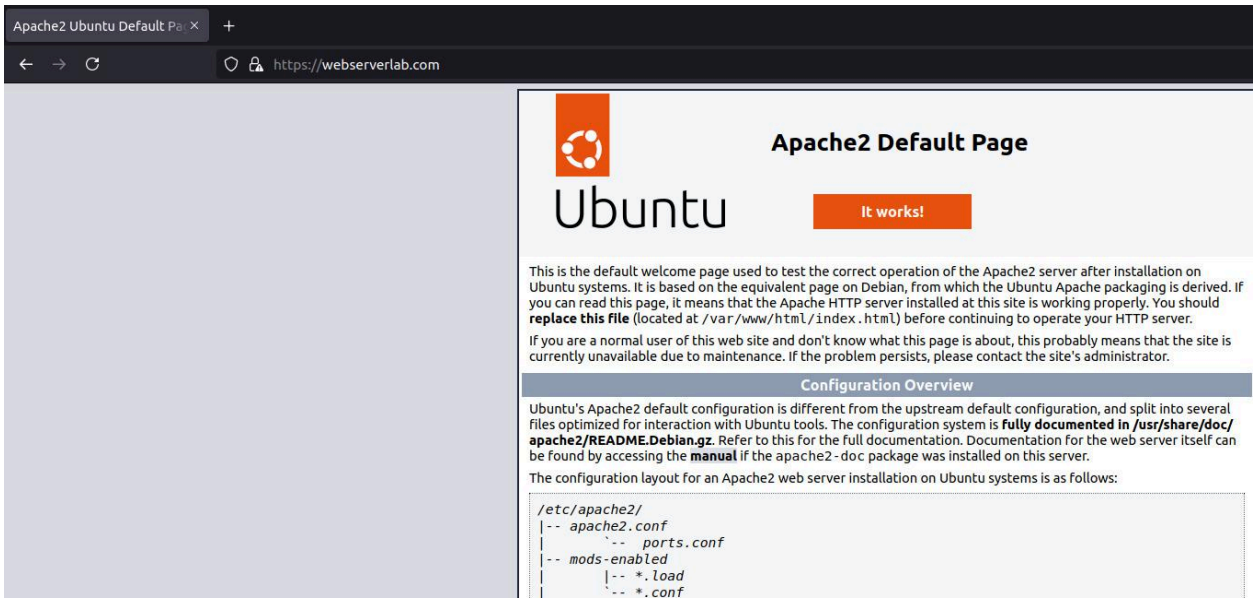
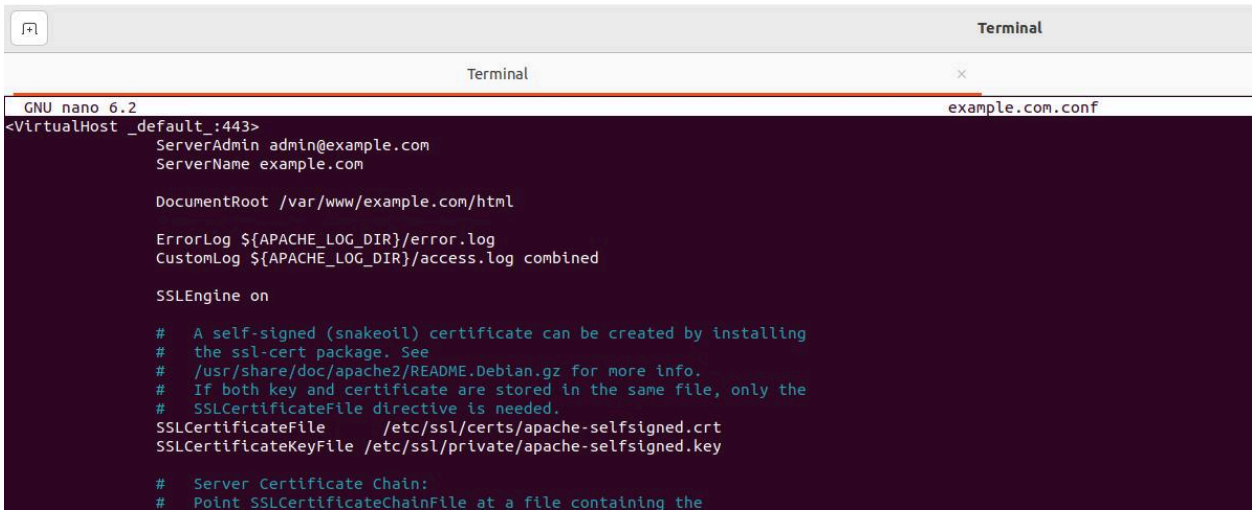
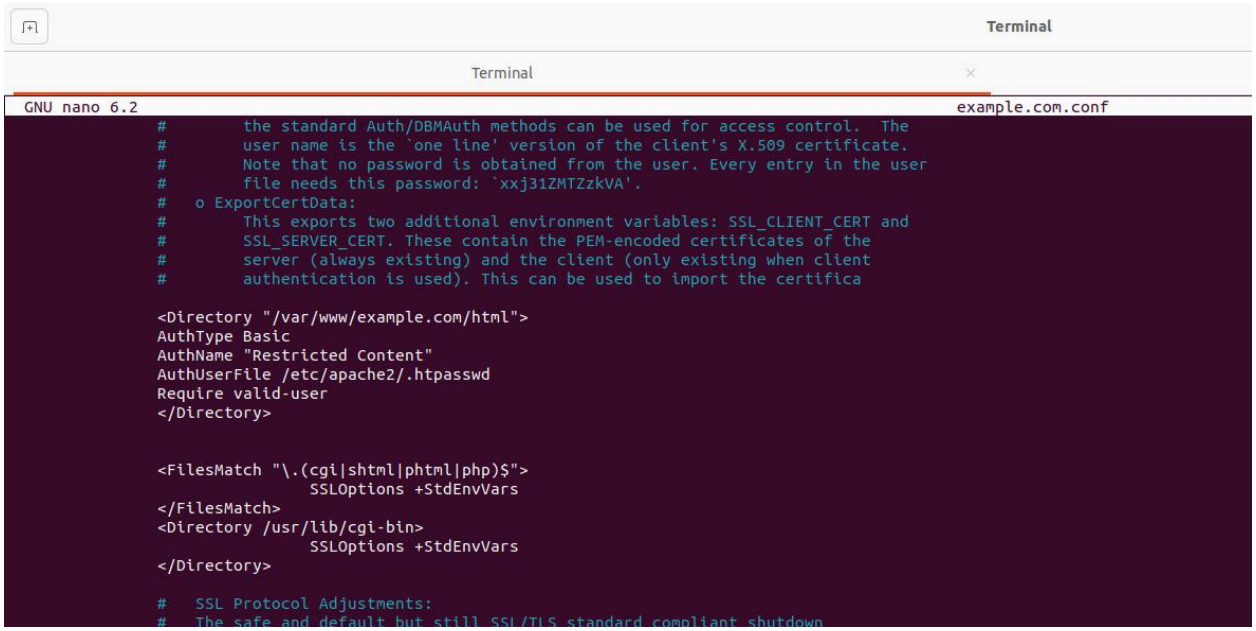
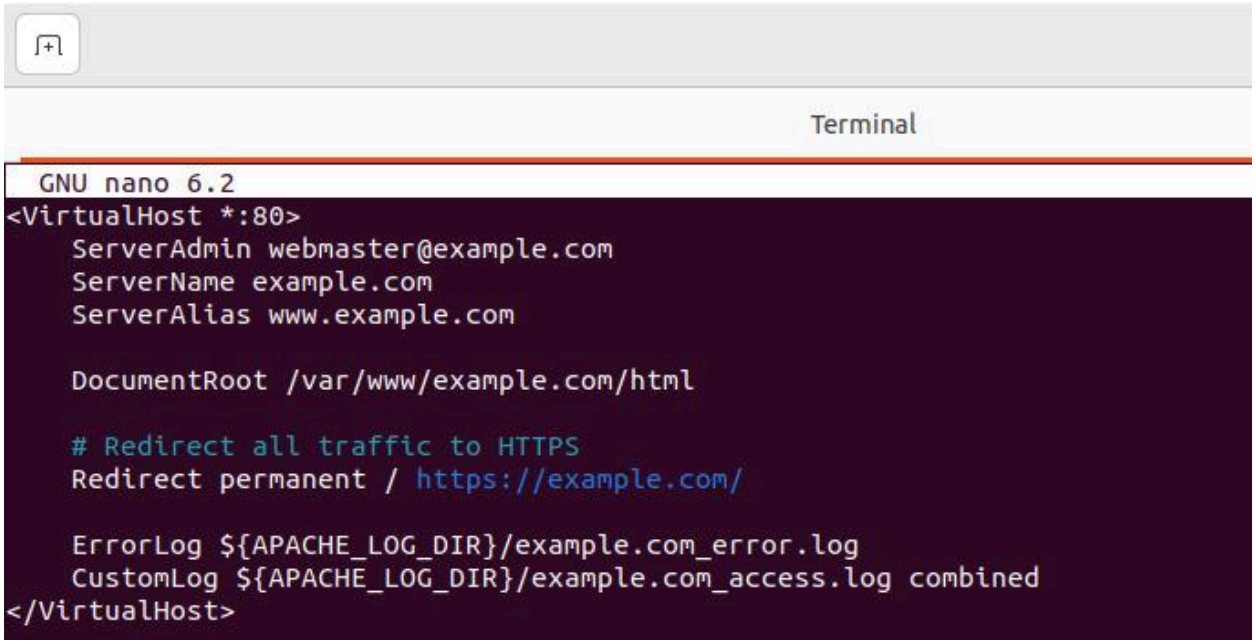
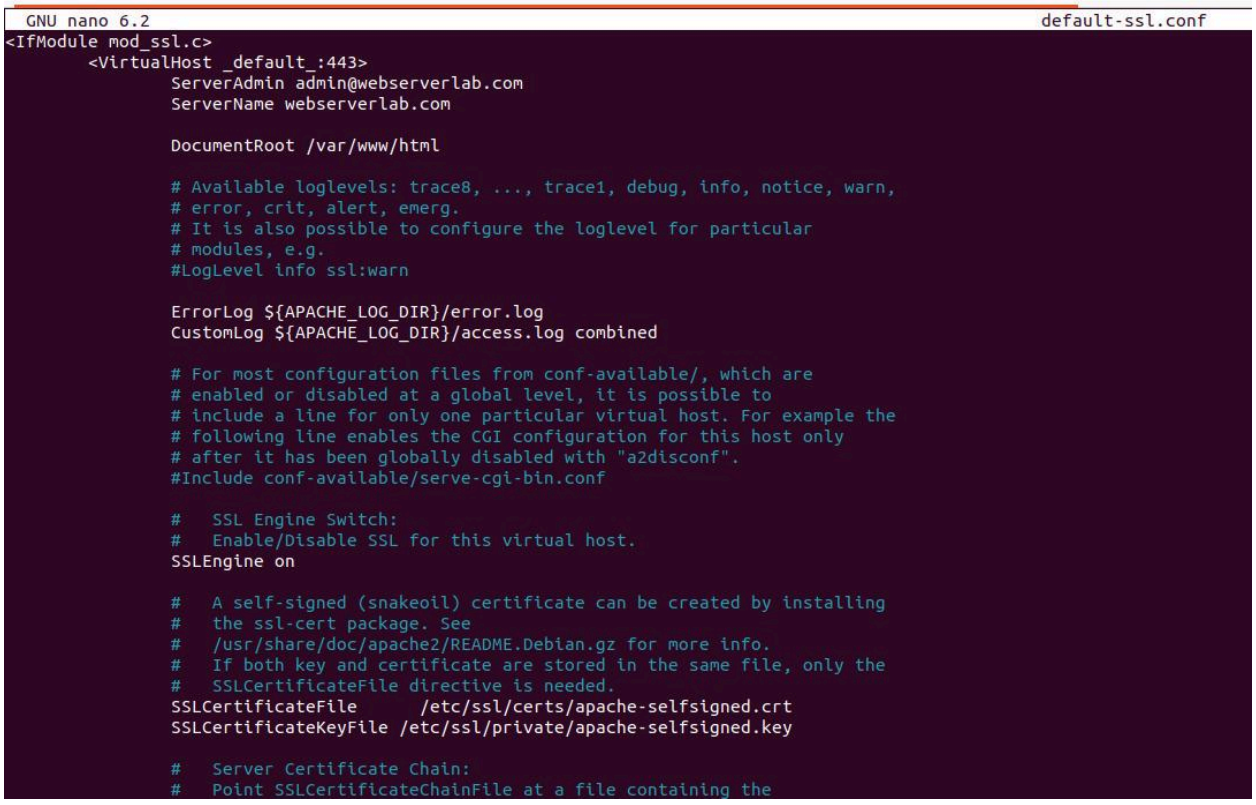

401 Unauthorized
https://example.com
Unauthorized
This server could not verify that you are authorized to access the document requested. Either you supplied the wrong credentials (e.g., bad password), or your brows
Apache/2.4.52 (Ubuntu) Server at example.com Port 443


Apache2 Ubuntu Default Pa
https://webserverlab.com
Apache2 Default Page
Ubuntu
It works!
This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should replace this file (located at /var/www/html/index.html) before continuing to operate your HTTP server.
If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.
Configuration Overview
Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is fully documented in /usr/share/doc/apache2/README.Debian.gz. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the manual if the apache2-doc package was installed on this server.
The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:
/etc/apache2/
|-- apache2.conf
| `-- ports.conf
|-- mods-enabled
| |-- *.load
| `-- *.conf


Terminal
Terminal
GNU nano 6.2
example.com.conf
<VirtualHost _default_:443>
ServerAdmin admin@example.com
ServerName example.com
DocumentRoot /var/www/example.com/html
ErrorLog ${APACHE_LOG_DIR}/error.log
CustomLog ${APACHE_LOG_DIR}/access.log combined
SSLEngine on
A self-signed (snakeoil) certificate can be created by installing
the ssl-cert package. See
/usr/share/doc/apache2/README.Debian.gz for more info.
If both key and certificate are stored in the same file, only the
SSLCertificateFile directive is needed.
SSLCertificateFile /etc/ssl/certs/apache-selfsigned.crt
SSLCertificateKeyFile /etc/ssl/private/apache-selfsigned.key
Server Certificate Chain:
Point SSLCertificateChainFile at a file containing the


Terminal
Terminal
GNU nano 6.2
example.com.conf
the standard Auth/DBMAuth methods can be used for access control. The
user name is the `one line' version of the client's X.509 certificate.
Note that no password is obtained from the user. Every entry in the user
file needs this password: `xxj31ZMTZzkVA'.
o ExportCertData:
This exports two additional environment variables: SSL_CLIENT_CERT and
SSL_SERVER_CERT. These contain the PEM-encoded certificates of the
server (always existing) and the client (only existing when client
authentication is used). This can be used to import the certifica
<Directory "/var/www/example.com/html">
AuthType Basic
AuthName "Restricted Content"
AuthUserFile /etc/apache2/.htpasswd
Require valid-user
</Directory>
<FilesMatch "\.(cgi|shtml|phtml|php)$">
SSLOptions +StdEnvVars
</FilesMatch>
<Directory /usr/lib/cgi-bin>
SSLOptions +StdEnvVars
</Directory>
SSL Protocol Adjustments:
The safe and default but still SSL/TLS standard compliant shutdown


Terminal
GNU nano 6.2
<VirtualHost *:80>
ServerAdmin webmaster@example.com
ServerName example.com
ServerAlias www.example.com
DocumentRoot /var/www/example.com/html
Redirect all traffic to HTTPS
Redirect permanent / https://example.com/
ErrorLog ${APACHE_LOG_DIR}/example.com_error.log
CustomLog ${APACHE_LOG_DIR}/example.com_access.log combined
</VirtualHost>


GNU nano 6.2
default-ssl.conf
<IfModule mod_ssl.c>
<VirtualHost _default_:443>
ServerAdmin admin@webserverlab.com
ServerName webserverlab.com
DocumentRoot /var/www/html
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
SSL Engine Switch:
Enable/Disable SSL for this virtual host.
SSLEngine on
A self-signed (snakeoil) certificate can be created by installing
the ssl-cert package. See
/usr/share/doc/apache2/README.Debian.gz for more info.
If both key and certificate are stored in the same file, only the
SSLCertificateFile directive is needed.
SSLCertificateFile /etc/ssl/certs/apache-selfsigned.crt
SSLCertificateKeyFile /etc/ssl/private/apache-selfsigned.key
Server Certificate Chain:
Point SSLCertificateChainFile at a file containing the

```
$ cd /var
$ ls
backups  cache  crash  lib  local  lock  log  mail  metrics  opt  run  snap  spool  tmp  www
$ cd www
$ ls
example.com  html
$ cd example.com
$ ls
html
$ cd html
$ ls
index.html
$ susdo nano index.html
sh: 219: susdo: not found
$ sudo nano index.html
$ sudo nano index.html
$ cd /etc
$ ls
acpi                    ca-certificates.conf          emacs          gss              kerneloops.conf  mailcap              opt           rc1.d          snmp                ufw
adduser.conf            ca-certificates.conf.dpkg-old environment    gtk-2.0          ldap             mailcap.order        os-release    rc2.d          speech-dispatcher   update-manager
alsa                    chatscripts                   environment.d  gtk-3.0          ld.so.cache      manpath.config       PackageKit    rc3.d          ssh                 update-motd.d
alternatives            console-setup                 ethertypes     hdparm.conf      ld.so.conf       mecabrc              pam.conf      rc4.d          ssl                 update-notifier
anacrontab              cracklib                      firebird       host.conf        ld.so.conf.d     mime.types           pam.d         rc5.d          subgid              UPower
apache2                 cron.d                        firefox        hostid           legal            mke2fs.conf          papersize     rc6.d          subgid-             usb_modeswitch.conf
apg.conf                cron.daily                    fonts          hostname         libao.conf       ModemManager         passwd        rcS.d          subuid              usb_modeswitch.d
apm                     cron.hourly                   fprintd.conf   hosts            libaudit.conf    modprobe.d           passwd-       resolv.conf    subuid-             vim
apparmor                cron.monthly                  fstab          hosts.allow      libblockdev      modules              pcmcia        rmt            sudo.conf           vtrgb
apparmor.d              crontab                       fuse.conf      hosts.deny       libnl-3          modules-load.d       perl          rpc            sudoers             vulkan
apport                  cron.weekly                   fwupd          hp               libpaper.d       mongod.conf          pki           rsyslog.conf   sudoers.d           wgetrc
appstream.conf          cups                          gai.conf       ifplugd          libreoffice      mtab                 pm            rsyslog.d      sudo_logsrvd.conf   whoopsie
apt                     cupshelpers                   gdb            init             lighttpd         mysql                pnm2ppa.conf  rygel.conf     sysctl.conf         wpa_supplicant
avahi                   dbus-1                        gdm3           init.d           locale.alias     nanorc               polkit-1      sane.d         sysctl.d            X11
bash.bashrc             dconf                         geoclue        initramfs-tools  locale.gen       netconfig            ppp           security       systemd             xattr.conf
bash_completion         debconf.conf                  ghostscript    inputrc          localtime        netplan              preload.conf  selinux        terminfo            xdg
bash_completion.d       debian_version                glvnd          insserv.conf.d   logcheck         network              printcap      sensors3.conf  thermald            xml
bindresvport.blacklist  default                       gnome          ipp-usb          login.defs       networkd-dispatcher  profile       sensors.d      thunderbird         zsh_command_not_found
binfmt.d                deluser.conf                  groff          iproute2         logrotate.conf   NetworkManager       profile.d     services       timezone
bluetooth               depmod.d                      group          issue            logrotate.d      networks             protocols     sgml           tmpfiles.d
brlapi.key              dhcp                          group-         issue.net        lsb-release      newt                 pulse         shadow         ubuntu-advantage
brltty                  dictionaries-common           grub.d         java-11-openjdk  machine-id       nftables.conf        python3       shadow-        ucf.conf
brltty.conf             dpkg                          gshadow        kernel           magic            nsswitch.conf        python3.10    shells         udev
ca-certificates         e2scrub.conf                  gshadow-       kernel-img.conf  magic.mime       openvpn              rc0.d         skel           udisks2
$ cd apache2
$ ls
apache2.conf  conf-available  conf-enabled  envvars  magic  mods-available  mods-enabled  ports.conf  sites-available  sites-enabled
$ cd sites-enabled
$ ls
default-ssl.conf  example.com.conf
$ sudo nano example.com.conf
$ sudo nano default-ssl.conf
$
```