

Задание 4.4.1

APACHE web-server

1. Установить Apache и убедиться, что он работает через команду.

```
liveuser@localhost-live:~  
liveuser@localhost-live:~$ sudo systemctl status httpd.service  
Warning: The unit file, source configuration file or drop-ins of httpd.service changed on disk. Run 'systemctl  
o httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)  
   Drop-In: /usr/lib/systemd/system/service.d  
           └─10-timeout-abort.conf  
   Active: inactive (dead)  
   Docs: man:httpd.service(8)  
  
liveuser@localhost-live:~$ sudo systemctl start httpd  
Warning: The unit file, source configuration file or drop-ins of httpd.service changed on disk. Run 'systemctl  
daemon-reload' to reload units.  
liveuser@localhost-live:~$ systemctl daemon-reload  
liveuser@localhost-live:~$ sudo systemctl start httpd  
liveuser@localhost-live:~$ sudo systemctl enable httpd  
Created symlink '/etc/systemd/system/multi-user.target.wants/httpd.service' → '/usr/lib/systemd/system/httpd.se  
rvice'.  
liveuser@localhost-live:~$ sudo systemctl status httpd  
• httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)  
   Drop-In: /usr/lib/systemd/system/service.d  
           └─10-timeout-abort.conf  
   Active: active (running) since Tue 2025-01-07 01:13:50 EST; 1min 49s ago  
   Invocation: 3bcacc34435d4271968bdefdcfebb7c7  
   Docs: man:httpd.service(8)  
   Main PID: 3299 (httpd)  
   Status: "Total requests: 0; Idle/Busy workers 100/0; Requests/sec: 0; Bytes served/sec: 0 B/sec"  
   Tasks: 177 (limit: 2169)  
   Memory: 21.8M (peak: 23.1M)  
   CPU: 277ms  
   CGroup: /system.slice/httpd.service  
           └─3299 /usr/sbin/httpd -DFOREGROUND  
             └─3300 /usr/sbin/httpd -DFOREGROUND  
               └─3302 /usr/sbin/httpd -DFOREGROUND  
                 └─3305 /usr/sbin/httpd -DFOREGROUND  
                   └─3306 /usr/sbin/httpd -DFOREGROUND  
  
Jan 07 01:13:49 localhost-live systemd[1]: Starting httpd.service - The Apache HTTP Server...  
Jan 07 01:13:50 localhost-live (httpd)[3299]: httpd.service: Referenced but unset environment variable evaluat  
Jan 07 01:13:50 localhost-live httpd[3299]: AH00558: httpd: Could not reliably determine the server's fully qu  
Jan 07 01:13:50 localhost-live httpd[3299]: Server configured, listening on: port 80  
Jan 07 01:13:50 localhost-live systemd[1]: Started httpd.service - The Apache HTTP Server.
```

Настройка IP-адреса в конфигурации Apache и доступа к html-файлам

```
liveuser@localhost-live:~ — sudo nano /etc/httpd/conf/httpd.conf  
GNU nano 8.1 /etc/httpd/conf/httpd.conf  
Listen localhost:80  
#
```

```
liveuser@localhost-live:/etc/httpd — sudo nano /etc/httpd/conf/httpd.conf
/etc/httpd

GNU nano 8.1 /etc/httpd/conf/httpd.conf

# Further relax access to the default document root:
<Directory "/var/www/html">
#
# Possible values for the Options directive are "None", "All",
# or any combination of:
#   Indexes Includes FollowSymLinks SymLinksifOwnerMatch ExecCGI MultiViews
#
# Note that "MultiViews" must be named *explicitly* --- "Options All"
# doesn't give it to you.
#
# The Options directive is both complicated and important. Please see
# http://httpd.apache.org/docs/2.4/mod/core.html#options
# for more information.
#
Options Indexes FollowSymLinks

#
# AllowOverride controls what directives may be placed in .htaccess files.
# It can be "All", "None", or any combination of the keywords:
#   Options FileInfo AuthConfig Limit
#
# AllowOverride None
AllowOverride All

#
# Controls who can get stuff from this server.
#
Require all granted
</Directory>

#
```

```
liveuser@localhost-live:~$ sudo systemctl restart httpd
liveuser@localhost-live:~$ sudo netstat -pltn | grep httpd
tcp        0      0 127.0.0.1:80          0.0.0.0:*             LISTEN      6100/httpd
tcp6       0      0 :::1:80              :::*                   LISTEN      6100/httpd
```

Просмотреть страницу по URL-адресу для проверки рабочего состояния.

Fedora Webserver Test Page

If you can read this page, it means that the web server installed at this site is working properly, but has not yet been configured.

<p>If you are a member of the general public:</p> <p>The website you just visited is either experiencing problems or undergoing routine maintenance.</p> <p>To let the administrators of this website know that you are seeing this page and not what you were expecting, an e-mail addressed to "webmaster" at the website's domain should reach an appropriate person. For example, if you saw this page while visiting www.example.com, you could send e-mail to "webmaster@example.com".</p> <p>Fedora is a distribution of Linux, a popular computer operating system. It is commonly used by hosting companies because it is free, and includes free web server software. This "test page" is shown instead of the expected website if they do not set up their web server.</p>	<p>If you are the website administrator:</p> <p>You may now add content to the webroot directory. Note that until you do so, people visiting your website will see this page, and not your content.</p> <p>For systems using Apache Webserver: You may now add content to the directory <code>/var/www/html/</code>. Note that until you do so, people visiting your website will see this page, and not your content. To prevent this page from ever being used, follow the instructions in the file <code>/etc/httpd/conf.d/welcome.conf</code>.</p> <p>For systems using Nginx: You should now put your content in a location of your choice and edit the <code>root</code> configuration directive in the nginx configuration file <code>/etc/nginx/nginx.conf</code>.</p> <p>For systems using Caddy: You</p>
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2. Для обеспечения безопасности данных настроить HTTPS-подключение с использованием самоподписанных SSL-сертификатов в Apache.

Создаем сертификат

```
sudo dnf install openssl
```

```
cd /etc/httpd
```

```
sudo mkdir ssl
```

```
sudo openssl req -new -newkey rsa:4096 -x509 -sha256 -days 365 -nodes -out ssl/apache-  
cert.crt -keyout ssl/apache.key
```

[illegible]

```
sudo dnf install mod_ssl
```

```
sudo nano /etc/httpd/conf.d/ssl.conf
```

Открытый файл конфигурации корректируем:

```
<VirtualHost *:443>
```

```
    ServerName localhost
```

```
    DocumentRoot /var/www/apache/data
```

```
    SSLEngine on
```

```
    SSLCertificateFile ssl/cert.pem
```

```
    SSLCertificateKeyFile ssl/cert.key
```

```
    #SSLCertificateChainFile ssl/cert.ca-bundle
```

```
</VirtualHost>
```

** где:*

- ❑ *ServerName* — домен сайта;
- ❑ *DocumentRoot* — расположение файлов сайта в системе;
- ❑ *SSLCertificateFile* и *SSLCertificateKeyFile* — пути до файлов ключей, которые были сгенерированы на шаге 1;

- *SSLCertificateChainFile* — при необходимости, путь до цепочки сертификатов (если используем не самоподписанный сертификат).

```
liveuser@localhost-live:/etc/httpd — sudo nano conf.d/ssl.conf
/etc/httpd

GNU nano 8.1                                conf.d/ssl.conf

<VirtualHost _default_:443>

# General setup for the virtual host, inherited from global configuration
#DocumentRoot "/var/www/html"
#ServerName www.example.com:443
DocumentRoot "/var/www/html"
ServerName localhost

# Use separate log files for the SSL virtual host; note that LogLevel
# is not inherited from httpd.conf.
ErrorLog logs/ssl_error_log
TransferLog logs/ssl_access_log
LogLevel warn

#   SSL Engine Switch:
#   Enable/Disable SSL for this virtual host.
SSLEngine on
```

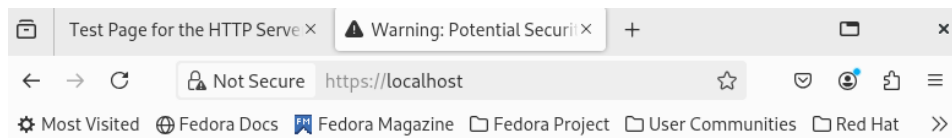
```
liveuser@localhost-live:/etc/httpd — sudo nano conf.d
/etc/httpd

GNU nano 8.1                                conf.d/ssl.conf

SSLCertificateFile /etc/httpd/ssl/apache-cert.crt

#   Server Private Key:
#   If the key is not combined with the certificate, use this
#   directive to point at the key file.  Keep in mind that if
#   you've both a RSA and a DSA private key you can configure
#   both in parallel (to also allow the use of DSA ciphers, etc.)
#   ECC keys, when in use, can also be configured in parallel
#SSLCertificateKeyFile /etc/pki/tls/private/localhost.key
SSLCertificateKeyFile /etc/httpd/ssl//apache.key

#   Server Certificate Chain:
#   Point SSLCertificateChainFile at a file containing the
#   concatenation of PEM encoded CA certificates which form the
#   certificate chain for the server certificate. Alternatively
#   the referenced file can be the same as SSLCertificateFile
#   when the CA certificates are directly appended to the server
#   certificate for convenience.
#SSLCertificateChainFile /etc/pki/tls/certs/server-chain.crt
```



Warning: Potential Security Risk Ahead

Firefox detected a potential security threat and did not continue to **localhost**. If you visit this site, attackers could try to steal information like your passwords, emails, or credit card details.

[Learn more...](#)

Go Back (Recommended)

Advanced...

localhost uses an invalid security certificate.

The certificate is not trusted because it is self-signed.

Error code: [MOZILLA_PKIX_ERROR_SELF_SIGNED_CERT](#)

[View Certificate](#)

Go Back (Recommended)

Accept the Risk and Continue

Fedora Webserver Test Page

If you can read this page, it means that the web server installed at this site is working properly, but has not yet been configured.

If you are a member of the general public:

The website you just visited is either experiencing problems...

If you are the website administrator:

You may now add content to the webroot directory. Note...

Чтобы все запросы по [http](http://localhost) автоматически перенаправлялись на [https](https://localhost), необходимо настроить перенаправление (redirect).

Добавим файл конфигурации `conf.d/http.conf` и перезапустим `apache`:

```
liveuser@localhost-live:/etc/httpd — sudo nano conf.d/http.conf
/etc/httpd

GNU nano 8.1 conf.d/http.conf
##
## Redirect to SSL from http. Virtual Host Context
##

<VirtualHost _default_:80>

ServerName localhost
RewriteEngine On
RewriteCond %{HTTPS} off
RewriteRule ^/?(.*) https://%{HTTP_HOST}%{REQUEST_URI} [R=301,L]

</VirtualHost>
```

`sudo systemctl restart httpd`

Проверяем по ссылке <http://localhost>, происходит редирект на <https://localhost>.