Департамент образования и науки города Москвы

Государственное автономное образовательное учреждение

высшего образования города Москвы

«Московский городской педагогический университет»

Институт цифрового образования

Департамент информатики, управления и технологий

ДИСЦИПЛИНА: «Распределенные системы»

Отчет по практической работе №1

Тема:

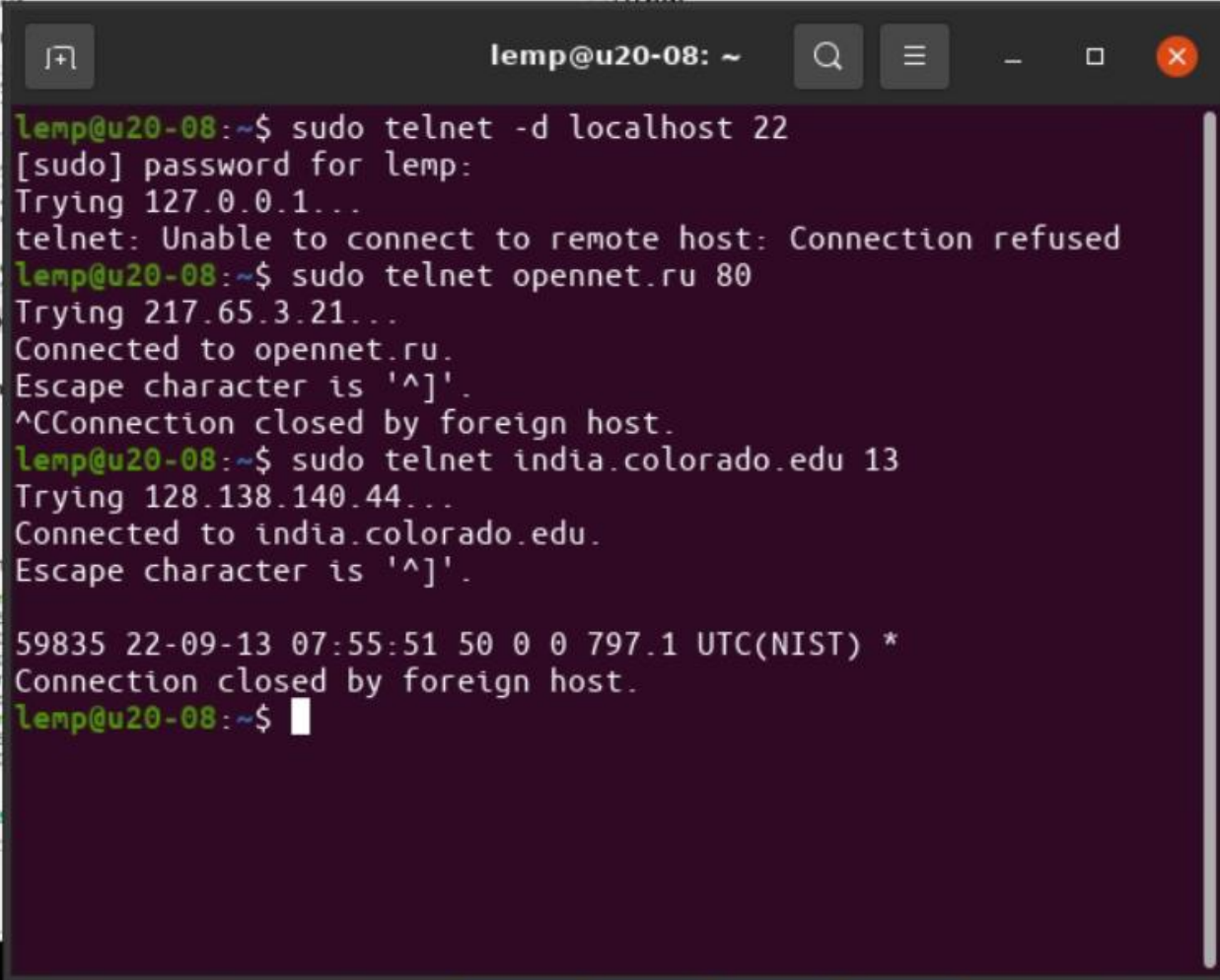**«HTTP»**

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Выполнил: Макаревич Д.Е.

группа: ТП-191

Москва
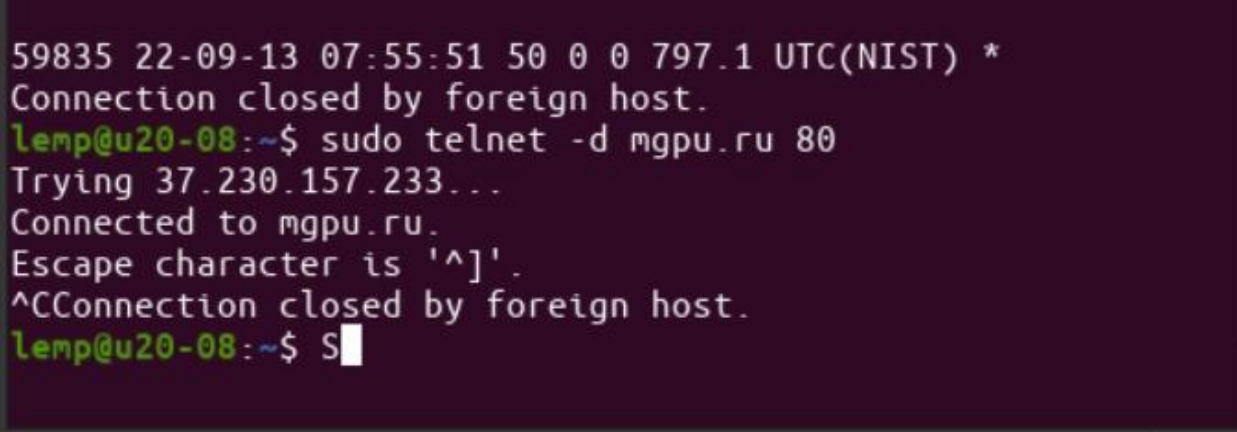
2022

1. Режим «Тестирования», попытка подключиться к сайтам opennet.ru и india.colorado.edu


```
lemp@u20-08:~$ sudo telnet -d localhost 22
[sudo] password for lemp:
Trying 127.0.0.1...
telnet: Unable to connect to remote host: Connection refused
lemp@u20-08:~$ sudo telnet opennet.ru 80
Trying 217.65.3.21...
Connected to opennet.ru.
Escape character is '^]'.
^CConnection closed by foreign host.
lemp@u20-08:~$ sudo telnet india.colorado.edu 13
Trying 128.138.140.44...
Connected to india.colorado.edu.
Escape character is '^]'.

59835 22-09-13 07:55:51 50 0 0 797.1 UTC(NIST) *
Connection closed by foreign host.
lemp@u20-08:~$
```

2. Попытка подключиться к сайту mgpu.ru


```
59835 22-09-13 07:55:51 50 0 0 797.1 UTC(NIST) *
Connection closed by foreign host.
lemp@u20-08:~$ sudo telnet -d mgpu.ru 80
Trying 37.230.157.233...
Connected to mgpu.ru.
Escape character is '^]'.
^CConnection closed by foreign host.
lemp@u20-08:~$ S
```

3. Попытка подключиться к сайту http://mgpu.ru

```
lemp@u20-08:~$ sudo curl -v http://mgpu.ru/
*   Trying 37.230.157.233:80...
* TCP_NODELAY set
* Connected to mgpu.ru (37.230.157.233) port 80 (#0)
> GET / HTTP/1.1
> Host: mgpu.ru
> User-Agent: curl/7.68.0
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 301 Moved Permanently
< Content-length: 0
< Location: https://mgpu.ru/
<
* Connection #0 to host mgpu.ru left intact
```

4. Попытка подключиться к сайту https://mgpu.ru


```
lemp@u20-08: ~

lemp@u20-08:~$ sudo curl -v https://mgpu.ru
*   Trying 37.230.157.233:443...
* TCP_NODELAY set
* Connected to mgpu.ru (37.230.157.233) port 443 (#0)
* ALPN, offering h2
* ALPN, offering http/1.1
* successfully set certificate verify locations:
*   CAfile: /etc/ssl/certs/ca-certificates.crt
  CApath: /etc/ssl/certs
* TLSv1.3 (OUT), TLS handshake, Client hello (1):
* TLSv1.3 (IN), TLS handshake, Server hello (2):
* TLSv1.3 (IN), TLS handshake, Encrypted Extensions (8):
* TLSv1.3 (IN), TLS handshake, Certificate (11):
* TLSv1.3 (IN), TLS handshake, CERT verify (15):
* TLSv1.3 (IN), TLS handshake, Finished (20):
* TLSv1.3 (OUT), TLS change cipher, Change cipher spec (1):
* TLSv1.3 (OUT), TLS handshake, Finished (20):
* SSL connection using TLSv1.3 / TLS_AES_256_GCM_SHA384
* ALPN, server did not agree to a protocol
* Server certificate:
*   subject: CN=*.mgpu.ru
*   start date: Mar 29 11:44:41 2022 GMT
*   expire date: Apr 30 11:44:40 2023 GMT
*   subjectAltName: host "mgpu.ru" matched cert's "mgpu.ru"
*   issuer: C=BE; O=GlobalSign nv-sa; CN=AlphaSSL CA - SHA256 - G
2
*   SSL certificate verify ok.
> GET / HTTP/1.1
> Host: mgpu.ru
> User-Agent: curl/7.68.0
```

```
> Accept: */*
>
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* old SSL session ID is stale, removing
* Mark bundle as not supporting multiuse
< HTTP/1.1 301 Moved Permanently
< Content-length: 0
< Location: https://www.mgpu.ru/
<
* Connection #0 to host mgpu.ru left intact
```

5. Попытка подключиться к сайту https://www.mgpu.ru/

```
lemp@u20-08:~$ sudo curl -v https://www.mgpu.ru/
*    Trying 37.230.157.233:443...
* TCP_NODELAY set
* Connected to www.mgpu.ru (37.230.157.233) port 443 (#0)
* ALPN, offering h2
* ALPN, offering http/1.1
* successfully set certificate verify locations:
*   CAfile: /etc/ssl/certs/ca-certificates.crt
  CApath: /etc/ssl/certs
* TLSv1.3 (OUT), TLS handshake, Client hello (1):
* TLSv1.3 (IN), TLS handshake, Server hello (2):
* TLSv1.3 (IN), TLS handshake, Encrypted Extensions (8):
* TLSv1.3 (IN), TLS handshake, Certificate (11):
* TLSv1.3 (IN), TLS handshake, CERT verify (15):
* TLSv1.3 (IN), TLS handshake, Finished (20):
* TLSv1.3 (OUT), TLS change cipher, Change cipher spec (1):
* TLSv1.3 (OUT), TLS handshake, Finished (20):
* SSL connection using TLSv1.3 / TLS_AES_256_GCM_SHA384
* ALPN, server did not agree to a protocol
* Server certificate:
*  subject: CN=*.mgpu.ru
*  start date: Mar 29 11:44:41 2022 GMT
*  expire date: Apr 30 11:44:40 2023 GMT
*  subjectAltName: host "www.mgpu.ru" matched cert's "*.mgpu.ru"
*  issuer: C=BE; O=GlobalSign nv-sa; CN=AlphaSSL CA - SHA256 - G
2
*  SSL certificate verify ok.
> GET / HTTP/1.1
> Host: www.mgpu.ru
> User-Agent: curl/7.68.0
> Accept: */*
>
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* old SSL session ID is stale, removing
* Mark bundle as not supporting multiuse
< HTTP/1.1 200 OK
< Server: nginx/1.18.0 (Ubuntu)
```

```
< Server: nginx/1.18.0 (Ubuntu)
< Date: Tue, 13 Sep 2022 08:08:55 GMT
< Content-Type: text/html; charset=UTF-8
< Transfer-Encoding: chunked
< Vary: Accept-Encoding
< Vary: Cookie
< Link: <https://www.mgpu.ru/wp-json/>; rel="https://api.w.org/"
< Link: <https://www.mgpu.ru/wp-json/wp/v2/pages/2>; rel="altern
ate"; type="application/json"
< Link: <https://www.mgpu.ru/>; rel=shortlink
```

6. Попытка подключиться к сайту http://www.hse.ru/

```
lemp@u20-08:~$ sudo curl -v http://www.hse.ru/
*    Trying 178.248.234.104:80...
* TCP_NODELAY set
* Connected to www.hse.ru (178.248.234.104) port 80 (#0)
> GET / HTTP/1.1
> Host: www.hse.ru
> User-Agent: curl/7.68.0
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 301 Moved Permanently
< Server: QRATOR
< Date: Tue, 13 Sep 2022 08:16:02 GMT
< Content-Type: text/html
< Content-Length: 162
< Connection: keep-alive
< Keep-Alive: timeout=15
< Location: https://www.hse.ru/
< Strict-Transport-Security: max-age=15552000
< X-XSS-Protection: 1; mode=block; report=https://www.hse.ru/n/a
pi/xss/report
<
<html>
<head><title>301 Moved Permanently</title></head>
<body>
<center><h1>301 Moved Permanently</h1></center>
<hr><center>nginx</center>
</body>
</html>
* Connection #0 to host www.hse.ru left intact
```

7. Попытка подключиться к сайту https://www.hse.ru/

```
lem@u20-08:~$ sudo curl -v https://www.hse.ru/
*   Trying 178.248.234.104:443...
* TCP_NODELAY set
* Connected to www.hse.ru (178.248.234.104) port 443 (#0)
* ALPN, offering h2
* ALPN, offering http/1.1
* successfully set certificate verify locations:
*   CAfile: /etc/ssl/certs/ca-certificates.crt
  CApath: /etc/ssl/certs
* TLSv1.3 (OUT), TLS handshake, Client hello (1):
* TLSv1.3 (IN), TLS handshake, Server hello (2):
* TLSv1.3 (IN), TLS handshake, Encrypted Extensions (8):
* TLSv1.3 (IN), TLS handshake, Certificate (11):
* TLSv1.3 (IN), TLS handshake, CERT verify (15):
* TLSv1.3 (IN), TLS handshake, Finished (20):
* TLSv1.3 (OUT), TLS change cipher, Change cipher spec (1):
* TLSv1.3 (OUT), TLS handshake, Finished (20):
* SSL connection using TLSv1.3 / TLS_AES_128_GCM_SHA256
* ALPN, server accepted to use h2
* Server certificate:
*  subject: CN=*.hse.ru
*  start date: Jan 21 00:00:00 2022 GMT
*  expire date: Feb 21 23:59:59 2023 GMT
*  subjectAltName: host "www.hse.ru" matched cert's "*.hse.ru"
*  issuer: C=GB; ST=Greater Manchester; L=Salford; O=Sectigo Lim
ited; CN=Sectigo RSA Domain Validation Secure Server CA
*  SSL certificate verify ok.
* Using HTTP2, server supports multi-use
* Connection state changed (HTTP/2 confirmed)
* Copying HTTP/2 data in stream buffer to connection buffer afte
r upgrade: len=0
* Using Stream ID: 1 (easy handle 0x560a85dd92f0)
```

```
> GET / HTTP/2
> Host: www.hse.ru
> user-agent: curl/7.68.0
> accept: */*
>
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* old SSL session ID is stale, removing
* Connection state changed (MAX_CONCURRENT_STREAMS == 16)!
< HTTP/2 302
< server: QRATOR
< date: Tue, 13 Sep 2022 08:16:53 GMT
< content-type: text/html
< content-length: 138
< location: https://www.hse.ru/en/
< expires: Tue, 13 Sep 2022 08:16:53 GMT
< cache-control: max-age=0
< strict-transport-security: max-age=15552000
< x-xss-protection: 1; mode=block; report=https://www.hse.ru/n/a
pi/xss/report
< set-cookie: tracking=ZEsUBGMgPHVL38EyCWTIAg==; expires=Thu, 31
-Dec-37 23:55:55 GMT; domain=.hse.ru; path=/
<
<html>
<head><title>302 Found</title></head>
<body>
<center><h1>302 Found</h1></center>
<hr><center>nginx</center>
</body>
</html>
* Connection #0 to host www.hse.ru left intact
```

8. Попытка подключиться к сайту https://www.hse.ru/en/

```
lemp@u20-08:~$ sudo curl -v https://www.hse.ru/en/
*    Trying 178.248.234.104:443...
* TCP_NODELAY set
* Connected to www.hse.ru (178.248.234.104) port 443 (#0)
* ALPN, offering h2
* ALPN, offering http/1.1
* successfully set certificate verify locations:
*   CAfile: /etc/ssl/certs/ca-certificates.crt
  CApath: /etc/ssl/certs
* TLSv1.3 (OUT), TLS handshake, Client hello (1):
* TLSv1.3 (IN), TLS handshake, Server hello (2):
* TLSv1.3 (IN), TLS handshake, Encrypted Extensions (8):
* TLSv1.3 (IN), TLS handshake, Certificate (11):
* TLSv1.3 (IN), TLS handshake, CERT verify (15):
* TLSv1.3 (IN), TLS handshake, Finished (20):
* TLSv1.3 (OUT), TLS change cipher, Change cipher spec (1):
* TLSv1.3 (OUT), TLS handshake, Finished (20):
* SSL connection using TLSv1.3 / TLS_AES_128_GCM_SHA256
* ALPN, server accepted to use h2
* Server certificate:
*  subject: CN=*.hse.ru
*  start date: Jan 21 00:00:00 2022 GMT
*  expire date: Feb 21 23:59:59 2023 GMT
*  subjectAltName: host "www.hse.ru" matched cert's "*.hse.ru"
*  issuer: C=GB; ST=Greater Manchester; L=Salford; O=Sectigo Lim
ited; CN=Sectigo RSA Domain Validation Secure Server CA
*  SSL certificate verify ok.
* Using HTTP2, server supports multi-use
* Connection state changed (HTTP/2 confirmed)
* Copying HTTP/2 data in stream buffer to connection buffer afte
r upgrade: len=0
* Using Stream ID: 1 (easy handle 0x55815d2962f0)
```

```
* Using Stream ID: 1 (easy handle 0x55815d2962f0)
> GET /en/ HTTP/2
> Host: www.hse.ru
> user-agent: curl/7.68.0
> accept: */*
>
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* old SSL session ID is stale, removing
* Connection state changed (MAX_CONCURRENT_STREAMS == 16)!
< HTTP/2 200
< server: QRATOR
< date: Tue, 13 Sep 2022 08:19:11 GMT
< content-type: text/html; charset=utf-8
< content-length: 100547
< etag: W/"188c3-TTRGgiSJ8Xq6BiuGAC4y1eeBTdc"
< x-ireland-cache-status: HIT
< strict-transport-security: max-age=15552000
< x-xss-protection: 1; mode=block; report=https://www.hse.ru/n/a
pi/xss/report
< set-cookie: tracking=ZEsUBGMgPP9L38EyCXDrAg==; expires=Thu, 31
-Dec-37 23:55:55 GMT; domain=.hse.ru; path=/
<
```
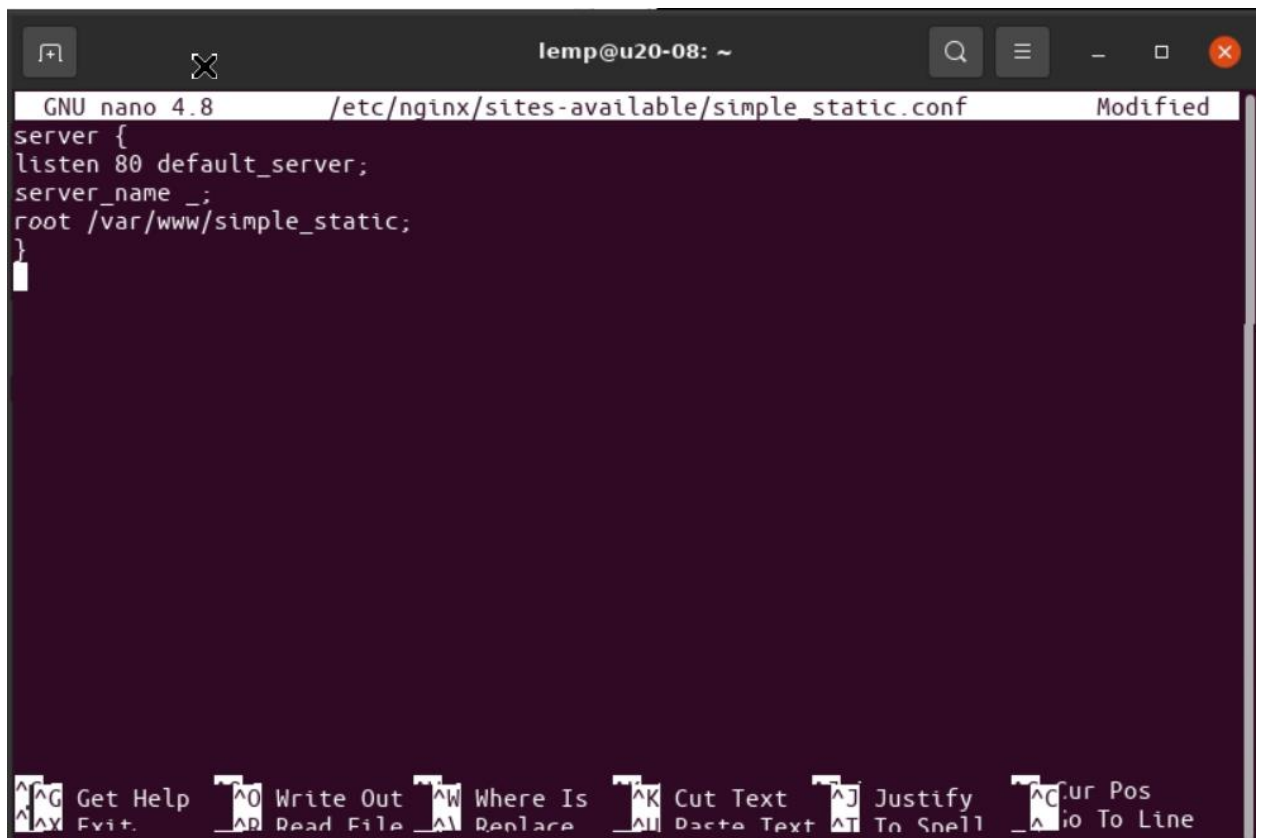
Индивидуальное задание:

1. Установка nginx.

2. Проверка папок в nginx.

```
lemp@u20-08:~$ ls -l /etc/nginx/sites-enabled/
total 0
lrwxrwxrwx 1 root root 34 сен 13 11:27 default -> /etc/nginx/sites-available
/default
lemp@u20-08:~$ ls -l /etc/nginx/sites-available/
total 4
-rw-r--r-- 1 root root 2416 мар 26  2020 default
```

3. Удаление конфигурации default и создание простой статики.


```
lemp@u20-08:~$ sudo rm /etc/nginx/sites-enabled/default
lemp@u20-08:~$ sudo mkdir -p /var/www/simple_static
lemp@u20-08:~$ sudo chown hdmaster /var/www/simple_static
chown: invalid user: 'hdmaster'
lemp@u20-08:~$ sudo chown lemp /var/www/simple_static
lemp@u20-08:~$ cd /var/www/simple_static
lemp@u20-08:/var/www/simple_static$ curl https://www.google.com/images/branding/google
logo/2x/googlelogo_color_272x92dp.png
Warning: Binary output can mess up your terminal. Use "--output -" to tell
Warning: curl to output it to your terminal anyway, or consider "--output
Warning: <FILE>" to save to a file.
lemp@u20-08:/var/www/simple_static$ curl https://www.google.com/images/branding/google
logo/2x/googlelogo_color_272x92dp.png> google.png
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--   100 13504
 100 13504    0     0   173k      0 --:--:-- --:--:-- --:--:--  173k
lemp@u20-08:/var/www/simple_static$ curl https://www.google.com/images/branding/google
logo/2x/googlelogo_color_272x92dp.png > google.png
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 13504  100 13504    0     0   171k      0 --:--:-- --:--:-- --:--:--  171k
lemp@u20-08:/var/www/simple_static$ printf "<body>This is our first html file</body>\n
" > index.html
lemp@u20-08:/var/www/simple_static$ ls
google.png   index.html
```

4. Конфигурация для получения доступа к файлам по http.

GNU nano 4.8   /etc/nginx/sites-available/simple_static.conf   Modified
```
server {
listen 80 default_server;
server_name _;
root /var/www/simple_static;
}
```
^G Get Help   ^O Write Out   ^W Where Is   ^K Cut Text   ^J Justify   ^C ur Pos
^X Exit   ^R Read File   ^\ Replace   ^U Paste Text ^T To Spell ^_ o To Line

5. Ссылка на файл в «sites-enabled».


```
lemp@u20-08:/var/www/simple_static$ cd
lemp@u20-08:~$ sudo nano /etc/nginx/sites-available/simple_static.conf
lemp@u20-08:~$ cd /etc/nginx/
lemp@u20-08:/etc/nginx$ sudo ln sites-available/simple_static.conf sites-
lemp@u20-08:/etc/nginx$ sudo ln sites-available/simple_static.conf sites-enabled/simpl
e_static.conf
lemp@u20-08:/etc/nginx$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
lemp@u20-08:/etc/nginx$
```

6. Перезагрузка nginx.


```
lemp@u20-08:/var/www/simple_static$ sudo service nginx stop
lemp@u20-08:/var/www/simple_static$ ls
google.png   index.html
lemp@u20-08:/var/www/simple_static$ cd
lemp@u20-08:~$ sudo nano /etc/nginx/sites-available/simple_static.conf
lemp@u20-08:~$ cd /etc/nginx/
lemp@u20-08:/etc/nginx$ sudo ln sites-available/simple_static.conf sites-
lemp@u20-08:/etc/nginx$ sudo ln sites-available/simple_static.conf sites-enabled/simpl
e_static.conf
lemp@u20-08:/etc/nginx$ sudo nginx
nginx the configuration file /etc/nginx/nginx.conf nf syntax is ok
nginx configuration file /etc/nginx/nginx.conf test:est is successful
lemp@u20-08:/etc/nginx$ sudo service nginx start
lemp@u20-08:/etc/nginx$
```

7. Проверка сайта.

This is our first html file