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ДИСЦИПЛИНА:
Распределённые системы
Лабораторная работа №1
Тема:
«Работа с http протоколом»

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1. Устанавливаем telnet, git для последующей работы (Рис.1).

```
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo apt install telnet^C
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo apt install telnet
[sudo] password for kravtsovaalyona:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
telnet is already the newest version (0.17-44build1).
telnet set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ git clone https://github.com/BosenkoTM/Distributed_systems.git
Command 'git' not found, but can be installed with:
sudo apt install git
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo apt install git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-email git-gui gitk gitweb git-cvs
  git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 30 not upgraded.
Need to get 4.147 kB of archives.
After this operation, 21,0 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://lt.archive.ubuntu.com/ubuntu jammy/main amd64 liberror-perl all 0.17029-1 [26,5
```

Рис.1

2. Скачиваем репозиторий для просмотра заданий командой git clone (Рис.2).

```
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ git clone https://github.com/BosenkoTM/Distributed_systems.git
Cloning into 'Distributed_systems'...
remote: Enumerating objects: 693, done.
remote: Counting objects: 100% (188/188), done.
remote: Compressing objects: 100% (132/132), done.
remote: Total 693 (delta 66), reused 150 (delta 43), pack-reused 505
Receiving objects: 100% (693/693), 74.52 MiB | 5.95 MiB/s, done.
Resolving deltas: 100% (300/300), done.
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$
```

Рис.2

3. Пробуем подключиться к сайту opennet.ru (Рис.3).

```
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.10).
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ git clone https://github.com/BosenkoTM/Distributed_systems.git
Cloning into 'Distributed_systems'...
remote: Enumerating objects: 693, done.
remote: Counting objects: 100% (188/188), done.
remote: Compressing objects: 100% (132/132), done.
remote: Total 693 (delta 66), reused 150 (delta 43), pack-reused 505
Receiving objects: 100% (693/693), 74.52 MiB | 5.95 MiB/s, done.
Resolving deltas: 100% (300/300), done.
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo telnet -d localhost22
telnet: could not resolve localhost22/telnet: Temporary failure in name resolution
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ telnet.opennet.ru.80
telnet.opennet.ru.80: command not found
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ telnet opennet.ru.80
telnet: could not resolve opennet.ru.80/telnet: Name or service not known
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo apt install telnet
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
telnet is already the newest version (0.17-44build1).
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ telnet opennet.ru 80
Trying 217.65.3.21...
Connected to opennet.ru.
Escape character is '^]'.
^CConnection closed by foreign host.
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$
```

Рис.3

4. Устанавливаем curl (Рис.4).

```

Building dependency tree... Done
Reading state information... Done
telnet is already the newest version (0.17-44build1).
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ telnet opennet.ru 80
Trying 217.65.3.21...
Connected to opennet.ru.
Escape character is '^]'.
^CConnection closed by foreign host.
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo apt install curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 30 not upgraded.
Need to get 194 kB of archives.
After this operation, 454 kB of additional disk space will be used.
Get:1 http://lt.archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1
[194 kB]
Fetched 194 kB in 1s (136 kB/s)
Selecting previously unselected package curl.
(Reading database ... 199877 files and directories currently installed.)
Preparing to unpack .../curl_7.81.0-1ubuntu1.13_amd64.deb ...
Unpacking curl (7.81.0-1ubuntu1.13) ...
Setting up curl (7.81.0-1ubuntu1.13) ...
Processing triggers for man-db (2.10.2-1) ...
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$

```

Рис.4

5. Пытаемся подключиться к ресурсу <http://mgpu.ru> (Рис.5).

```

kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ curl http://mgpu.ru
<!DOCTYPE html><html lang=en><meta charset=utf-8><meta name=viewport content="initial-scale=1
inimum-scale=1, width=device-width"><title>Error 301</title><style>{*{margin:0;padding:0}html{
t:15px/22px arial,sans-serif;background: #fff;color:#222;padding:15px}body{margin:7% auto 0;n
width:390px;min-height:180px;padding:30px 0 15px}p{margin:11px 0 22px;overflow :hidden}ins{co
:#777;text-decoration :none;}</style><p><b>301 - Moved Permanently .</b> <ins>That's an error
ins><p>Requested content has been permanently moved. <ins>That's all we know.</ins>kravtsova
ona@kravtsovaalyona-VirtualBox:~$

```

Рис.5

6. Пробуем подключиться к тому же ресурсу с помощью `curl -v` (Рис.6) и видим, код 301, следовательно, ресурс перенесен

```
ona@kravtsovaalyona-VirtualBox:~$ curl -v http://mgpu.ru
* Trying 91.215.42.162:80...
* Connected to mgpu.ru (91.215.42.162) port 80 (#0)
> GET / HTTP/1.1
> Host: mgpu.ru
> User-Agent: curl/7.81.0
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 301 Moved Permanently
< Server: ddos-guard
< Date: Fri, 08 Sep 2023 07:58:23 GMT
< Connection: keep-alive
< Keep-Alive: timeout=60
< Location: https://mgpu.ru/
< Content-Type: text/html; charset=utf8
< Content-Length: 568
<
* Connection #0 to host mgpu.ru left intact
<!DOCTYPE html><html lang=en><meta charset=utf-8><meta name=viewport content="initial-scale=1
inimum-scale=1, width=device-width"><title>Error 301</title><style>{*{margin:0;padding:0}html{
t:15px/22px arial,sans-serif;background: #fff;color:#222;padding:15px}body{margin:7% auto 0;n
width:390px;min-height:180px;padding:30px 0 15px}p{margin:11px 0 22px;overflow :hidden}ins{co
:#777;text-decoration :none;}</style><p><b>301 - Moved Permanently .</b> <ins>That's an error
ins><p>Requested content has been permanently moved. <ins>That's all we know.</ins>kravtsova
ona@kravtsovaalyona-VirtualBox:~$
```

Рис. 6

7. Подключаемся к `https://mgpu.ru/` и видим, что ресурс снова перенесен (Рис.7).


```
kravtsovaalyona@kravtsovaalyona-VirtualBox: ~  
<  
* Connection #0 to host mgpu.ru left intact  
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ curl -v https://mgpu.ru/  
* Trying 91.215.42.162:443...  
* Connected to mgpu.ru (91.215.42.162) port 443 (#0)  
* ALPN, offering h2  
* ALPN, offering http/1.1  
* CAfile: /etc/ssl/certs/ca-certificates.crt  
* Capath: /etc/ssl/certs  
* TLSv1.0 (OUT), TLS header, Certificate Status (22):  
* TLSv1.3 (OUT), TLS handshake, Client hello (1):  
* TLSv1.2 (IN), TLS header, Certificate Status (22):  
* TLSv1.3 (IN), TLS handshake, Server hello (2):  
* TLSv1.2 (IN), TLS header, Finished (20):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Encrypted Extensions (8):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Certificate (11):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, CERT verify (15):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Finished (20):  
* TLSv1.2 (OUT), TLS header, Finished (20):  
* TLSv1.3 (OUT), TLS change cipher, Change cipher spec (1):  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* 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=*.mgpu.ru  
* start date: Apr 17 06:46:45 2023 GMT  
* expire date: May 18 06:46:44 2024 GMT  
* subjectAltName: host "mgpu.ru" matched cert's "mgpu.ru"  
* issuer: C=BE; O=GlobalSign nv-sa; CN=AlphaSSL CA - SHA256 - G4  
* SSL certificate verify ok.  
* Using HTTP2, server supports multiplexing  
* Connection state changed (HTTP/2 confirmed)  
* Copying HTTP/2 data in stream buffer to connection buffer after upgrade: len=0  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* Using Stream ID: 1 (easy handle 0x55b56ad1ce90)  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
> GET / HTTP/2  
> Host: mgpu.ru  
> user-agent: curl/7.81.0
```

Рис. 7

8.Подключаемся к <https://www.mgpru.ru/> (Рис.8) и видим, что подключение произошло успешно, код -200 (Рис.9).

```
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ curl -v https://www.mgpru.ru/  
* Connection #0 to host mgpu.ru left intact  
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ curl -v https://www.mgpru.ru/  
* Trying 91.215.42.162:443...  
* Connected to www.mgpru.ru (91.215.42.162) port 443 (#0)  
* ALPN, offering h2  
* ALPN, offering http/1.1  
* CAfile: /etc/ssl/certs/ca-certificates.crt  
* Capath: /etc/ssl/certs  
* TLSv1.0 (OUT), TLS header, Certificate Status (22):  
* TLSv1.3 (OUT), TLS handshake, Client hello (1):  
* TLSv1.2 (IN), TLS header, Certificate Status (22):  
* TLSv1.3 (IN), TLS handshake, Server hello (2):  
* TLSv1.2 (IN), TLS header, Finished (20):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Encrypted Extensions (8):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Certificate (11):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, CERT verify (15):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Finished (20):  
* TLSv1.2 (OUT), TLS header, Finished (20):  
* TLSv1.3 (OUT), TLS change cipher, Change cipher spec (1):  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* 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=*.mgpu.ru  
* start date: Apr 17 06:46:45 2023 GMT  
* expire date: May 18 06:46:44 2024 GMT  
* subjectAltName: host "www.mgpru.ru" matched cert's "*.mgpu.ru"  
* issuer: C=BE; O=GlobalSign nv-sa; CN=AlphaSSL CA - SHA256 - G4  
* SSL certificate verify ok.  
* Using HTTP2, server supports multiplexing  
* Connection state changed (HTTP/2 confirmed)  
* Copying HTTP/2 data in stream buffer to connection buffer after upgrade: len=0  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* Using Stream ID: 1 (easy handle 0x55bf08fd2e90)  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
> GET / HTTP/2  
> Host: www.mgpru.ru  
> user-agent: curl/7.81.0
```

Рис.8

```
kravtsovaalyona@kravtsovaalyona-VirtualBox: ~
* TLSv1.2 (IN), TLS header, Supplemental data (23):
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* TLSv1.2 (IN), TLS header, Supplemental data (23):
* TLSv1.3 (IN), TLS handshake, Newsession Ticket (4):
* old SSL session ID is stale, removing
* TLSv1.2 (IN), TLS header, Supplemental data (23):
* Connection state changed (MAX_CONCURRENT_STREAMS == 8)!
* TLSv1.2 (OUT), TLS header, Supplemental data (23):
* TLSv1.2 (IN), TLS header, Supplemental data (23):
* TLSv1.2 (IN), TLS header, Supplemental data (23):
* TLSv1.2 (IN), TLS header, Supplemental data (23):
< HTTP/2 200
< server: ddos-guard
< content-security-policy: upgrade-insecure-requests;
< set-cookie: __ddg1=inhZDDglVIwj21NFzra8; Domain=.mgpu.ru; HttpOnly; Path=/; Expires=Sat, 07-Sep-2024 08:05:10 GMT
< date: Fri, 08 Sep 2023 08:05:12 GMT
< content-type: text/html; charset=UTF-8
< 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="alternate"; type="application/json"
< link: <https://www.mgpu.ru/>; rel=shortlink
<
<!DOCTYPE html>
<html lang="ru-RU">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <meta name="yandex-verification" content="884a505bd541ad70"/>
  <meta name="robots" content="noyaca"/>
  <meta http-equiv="Cache-control" content="public">

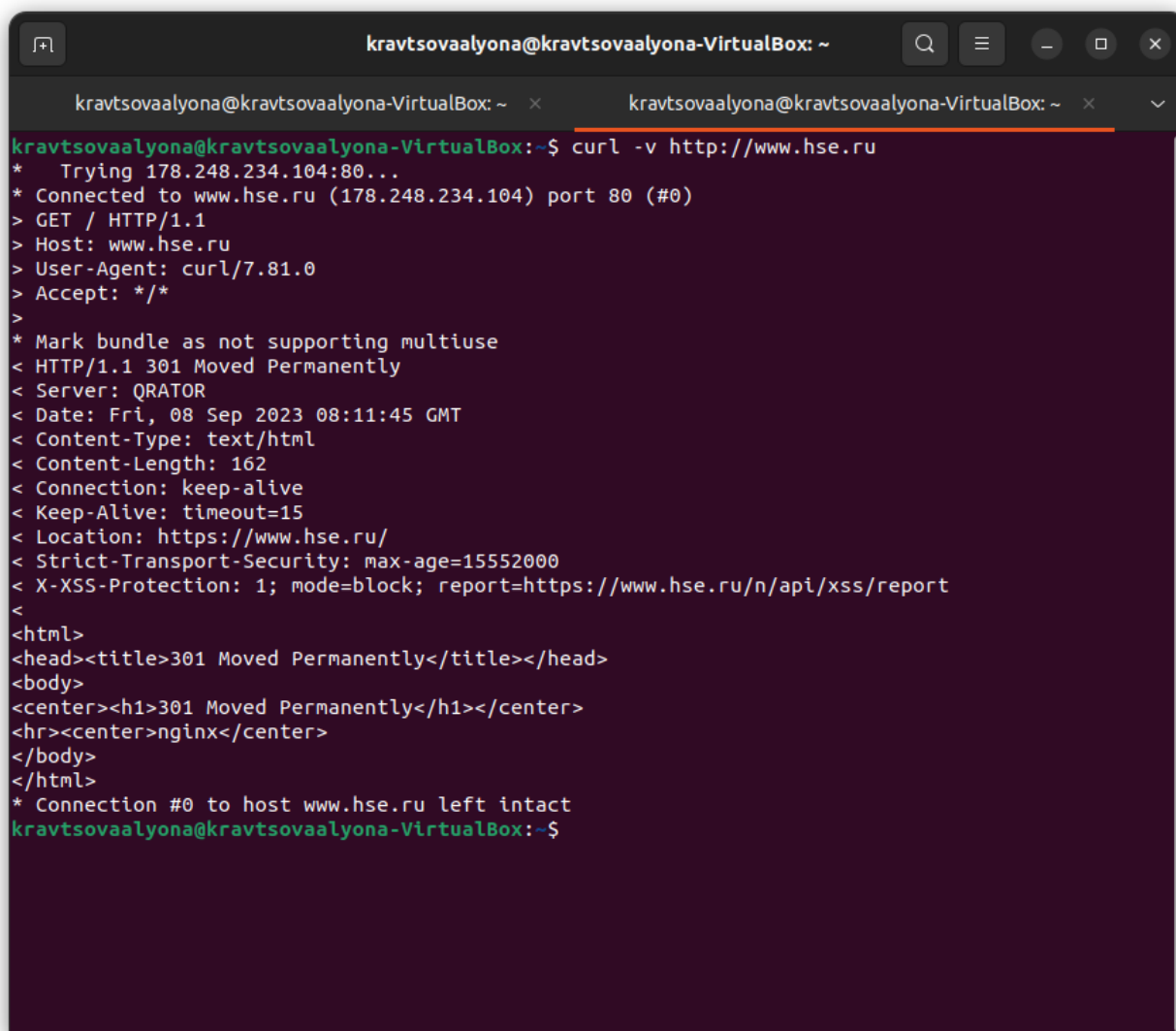
  <link rel="profile" href="http://gmpg.org/xfn/11">

  <meta name='robots' content='index, follow, max-image-preview:large, max-snippet:-1, max-video-preview:-1' />

  <!-- This site is optimized with the Yoast SEO plugin v18.3 - https://yoast.com/wordpress/plugins/seo/ -->
  <title>Московский городской педагогический университет</title>
  <meta name="description" content="Государственный вуз Москвы. Бакалавриат, специалитет, магистратура, СПО, аспирантура, дополнительное образование. Приёмная комис
сия, новости." />
  <link rel="canonical" href="https://www.mgpu.ru/" />
  <meta property="og:locale" content="ru_RU" />
  <meta property="og:type" content="website" />
  <meta property="og:title" content="Московский городской педагогический университет" />
  <meta property="og:description" content="Государственный вуз Москвы, ведущий педагогический университет страны. В МГПУ обучается около 20 000 студентов по десятка
м программ бакалавриата и магистратуры, также дополнительного образования. Более 3000 бюджетных мест ежегодно." />
  <meta property="og:url" content="https://www.mgpu.ru/" />
  <meta property="og:site_name" content="МГПУ" />
```

Рис.9

9. Прделаем тоже самое только с ресурсом <http://www.hse.ru>, код 301-ресерс перемещен (Рис.10).

A screenshot of a terminal window titled 'kravtsovaalyona@kravtsovaalyona-VirtualBox: ~'. The terminal shows a command 'curl -v http://www.hse.ru' being executed. The output displays the connection details, including the IP address 178.248.234.104, port 80, and various HTTP headers. The response is a 301 Moved Permanently status, with the location redirected to https://www.hse.ru/. The terminal text is as follows:

```
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ curl -v http://www.hse.ru
* Trying 178.248.234.104:80...
* Connected to www.hse.ru (178.248.234.104) port 80 (#0)
> GET / HTTP/1.1
> Host: www.hse.ru
> User-Agent: curl/7.81.0
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 301 Moved Permanently
< Server: QRATOR
< Date: Fri, 08 Sep 2023 08:11:45 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/api/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
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$
```

Рис. 10

11. Подключаемся к англоязычной версии сайта и понимаем, что она кгнечная, данные в отличие от сайта МГПУ зашифрованы, юолее того нельзя определить на каком именно сервере расположен ресурс (Рис.11).


```
kravtsovaalyona@kravtsovaalyona-VirtualBox: ~  
kravtsovaalyona@kravtsovaalyona-VirtualBox: ~  
</html>  
* Connection #0 to host www.hse.ru left intact  
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ curl -v https://www.hse.ru/en/  
* Trying 178.248.234.104:443...  
* Connected to www.hse.ru (178.248.234.104) port 443 (#0)  
* ALPN, offering h2  
* ALPN, offering http/1.1  
* CAfile: /etc/ssl/certs/ca-certificates.crt  
* CApath: /etc/ssl/certs  
* TLSv1.0 (OUT), TLS header, Certificate Status (22):  
* TLSv1.3 (OUT), TLS handshake, Client hello (1):  
* TLSv1.2 (IN), TLS header, Certificate Status (22):  
* TLSv1.3 (IN), TLS handshake, Server hello (2):  
* TLSv1.2 (IN), TLS header, Finished (20):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Encrypted Extensions (8):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Certificate (11):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, CERT verify (15):  
* TLSv1.2 (IN), TLS header, Supplemental data (23):  
* TLSv1.3 (IN), TLS handshake, Finished (20):  
* TLSv1.2 (OUT), TLS header, Finished (20):  
* TLSv1.3 (OUT), TLS change cipher, Change cipher spec (1):  
* TLSv1.2 (OUT), TLS header, Supplemental data (23):  
* 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 31 10:18:18 2023 GMT  
* expire date: Mar 3 10:18:17 2024 GMT  
* subjectAltName: host "www.hse.ru" matched cert's "*.hse.ru"  
* issuer: C=BE; O=GlobalSign nv-sa; CN=AlphaSSL CA - SHA256 - G4  
* SSL certificate verify ok.  
* Using HTTP2, server supports multiplexing  
* Connection state changed (HTTP/2 confirmed)  
* Copying HTTP/2 data in stream buffer to connection buffer after upgrade: len=0
```

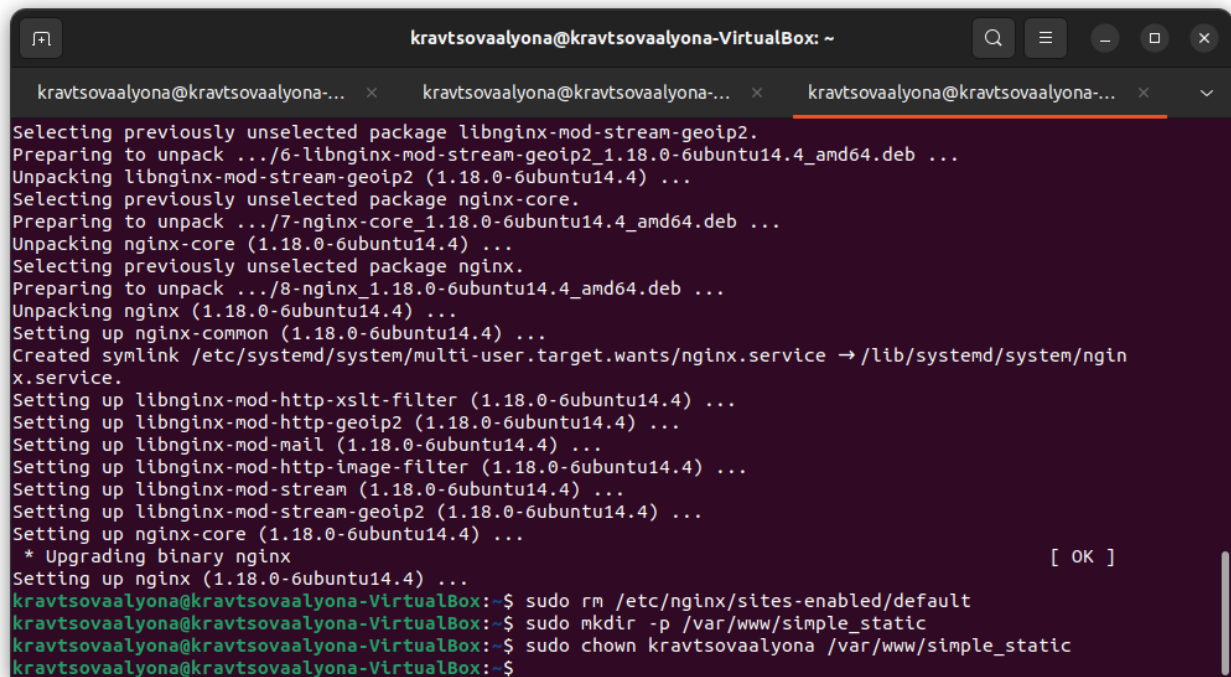
Рис. 11

12. Устанавливаем nginx (Рисю12).

```
kravtsovaalyona@kravtsovaalyona-VirtualBox: ~  
kravtsovaalyona@kravtsovaalyona-VirtualBox: ~  
kravtsovaalyona@kravtsovaalyona-VirtualBox: ~  
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo apt update && sudo apt install -y nginx  
[sudo] password for kravtsovaalyona:  
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]  
Hit:2 http://lt.archive.ubuntu.com/ubuntu jammy InRelease  
Get:3 http://lt.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]  
Get:4 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [761 kB]  
Get:5 http://lt.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]  
Get:6 http://lt.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [970 kB]  
Get:7 http://security.ubuntu.com/ubuntu jammy-security/main i386 Packages [319 kB]  
Get:8 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [164 kB]  
Get:9 http://security.ubuntu.com/ubuntu jammy-security/main amd64 DEP-11 Metadata [43,0 kB]  
Get:10 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [11,3 kB]  
Get:11 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [822 kB]  
Get:12 http://lt.archive.ubuntu.com/ubuntu jammy-updates/main i386 Packages [484 kB]  
Get:13 http://lt.archive.ubuntu.com/ubuntu jammy-updates/main amd64 DEP-11 Metadata [101 kB]  
Get:14 http://lt.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [15,6 kB]  
Get:15 http://lt.archive.ubuntu.com/ubuntu jammy-updates/universe i386 Packages [653 kB]  
Get:16 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [132 kB]  
Get:17 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 DEP-11 Metadata [40,0 kB]  
Get:18 http://lt.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [979 kB]  
Get:19 http://lt.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 DEP-11 Metadata [289 kB]  
Get:20 http://lt.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 DEP-11 Metadata [940 B]  
Get:21 http://lt.archive.ubuntu.com/ubuntu jammy-backports/main amd64 DEP-11 Metadata [4.932 B]  
Get:22 http://lt.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 DEP-11 Metadata [16,7 kB]  
Fetched 6.144 kB in 5s (1.134 kB/s)  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
31 packages can be upgraded. Run 'apt list --upgradable' to see them.  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  libnginx-mod-http-geoip2 libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter  
  libnginx-mod-mail libnginx-mod-stream libnginx-mod-stream-geoip2 nginx-common nginx-core  
Suggested packages:  
  fcgiwrap nginx-doc  
The following NEW packages will be installed:
```

Рис.12

13. Удаляем шаблон с помощью команды rm (Рис.13).



```
kravtsovaalyona@kravtsovaalyona-VirtualBox: ~  
kravtsovaalyona@kravtsovaalyona-... x  kravtsovaalyona@kravtsovaalyona-... x  kravtsovaalyona@kravtsovaalyona-... x  v  
Selecting previously unselected package libnginx-mod-stream-geoip2.  
Preparing to unpack .../6-libnginx-mod-stream-geoip2_1.18.0-6ubuntu14.4_amd64.deb ...  
Unpacking libnginx-mod-stream-geoip2 (1.18.0-6ubuntu14.4) ...  
Selecting previously unselected package nginx-core.  
Preparing to unpack .../7-nginx-core_1.18.0-6ubuntu14.4_amd64.deb ...  
Unpacking nginx-core (1.18.0-6ubuntu14.4) ...  
Selecting previously unselected package nginx.  
Preparing to unpack .../8-nginx_1.18.0-6ubuntu14.4_amd64.deb ...  
Unpacking nginx (1.18.0-6ubuntu14.4) ...  
Setting up nginx-common (1.18.0-6ubuntu14.4) ...  
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /lib/systemd/system/nginx.service.  
Setting up libnginx-mod-http-xslt-filter (1.18.0-6ubuntu14.4) ...  
Setting up libnginx-mod-http-geoip2 (1.18.0-6ubuntu14.4) ...  
Setting up libnginx-mod-mail (1.18.0-6ubuntu14.4) ...  
Setting up libnginx-mod-http-image-filter (1.18.0-6ubuntu14.4) ...  
Setting up libnginx-mod-stream (1.18.0-6ubuntu14.4) ...  
Setting up libnginx-mod-stream-geoip2 (1.18.0-6ubuntu14.4) ...  
Setting up nginx-core (1.18.0-6ubuntu14.4) ...  
* Upgrading binary nginx [ OK ]  
Setting up nginx (1.18.0-6ubuntu14.4) ...  
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo rm /etc/nginx/sites-enabled/default  
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo mkdir -p /var/www/simple_static  
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo chown kravtsovaalyona /var/www/simple_static  
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$
```

Рис.13

14. Самая простая задача, которую можно реализовать с помощью nginx — заhostить статические файлы. Будет странно это использовать, чтобы поделиться с кем-то файлом по сети, но, например, заhostить простейший личный сайт или скомпилированное JS приложение можно именно так. Для начала создадим простую статику, которую можно будет раздать — html файл и картинку (Рис.14).

```
kravtsovaalyona@kravtsovaalyona-VirtualBox: /var/www/simple_static
kravtsovaalyona@kravtso... x  kravtsovaalyona@kravtso... x  kravtsovaalyona@kravtso... x  v
Setting up libnginx-mod-stream (1.18.0-6ubuntu14.4) ...
Setting up libnginx-mod-stream-geoip2 (1.18.0-6ubuntu14.4) ...
Setting up nginx-core (1.18.0-6ubuntu14.4) ...
* Upgrading binary nginx
  [ OK ]
Setting up nginx (1.18.0-6ubuntu14.4) ...
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo rm /etc/nginx/sites-enabled/default
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo mkdir -p /var/www/simple_static
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ sudo chown kravtsovaalyona /var/www/simple_static
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ cd /var/www/simple_static
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ curl https://www.google.com/images/branding/googlelogo/2x/googlelogo_color_272x92dp.png
> google.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.
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ curl https://www.google.com/images/branding/googlelogo/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  38733      0  --:--:-- --:--:-- --:--:-- 38804
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ printf "<body>This is
our first html file</body>\n" > index.html
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ ls
google.png  index.html
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$
```

Рис. 14

15. Теперь напишем конфигурацию nginx, которая позволит получить доступ к этим файлам по http. Создадим файл `/etc/nginx/sites-available/simple_static.conf` и напишем в него очень простую конфигурацию (Рис.15):
`$sudo service nginx stop`

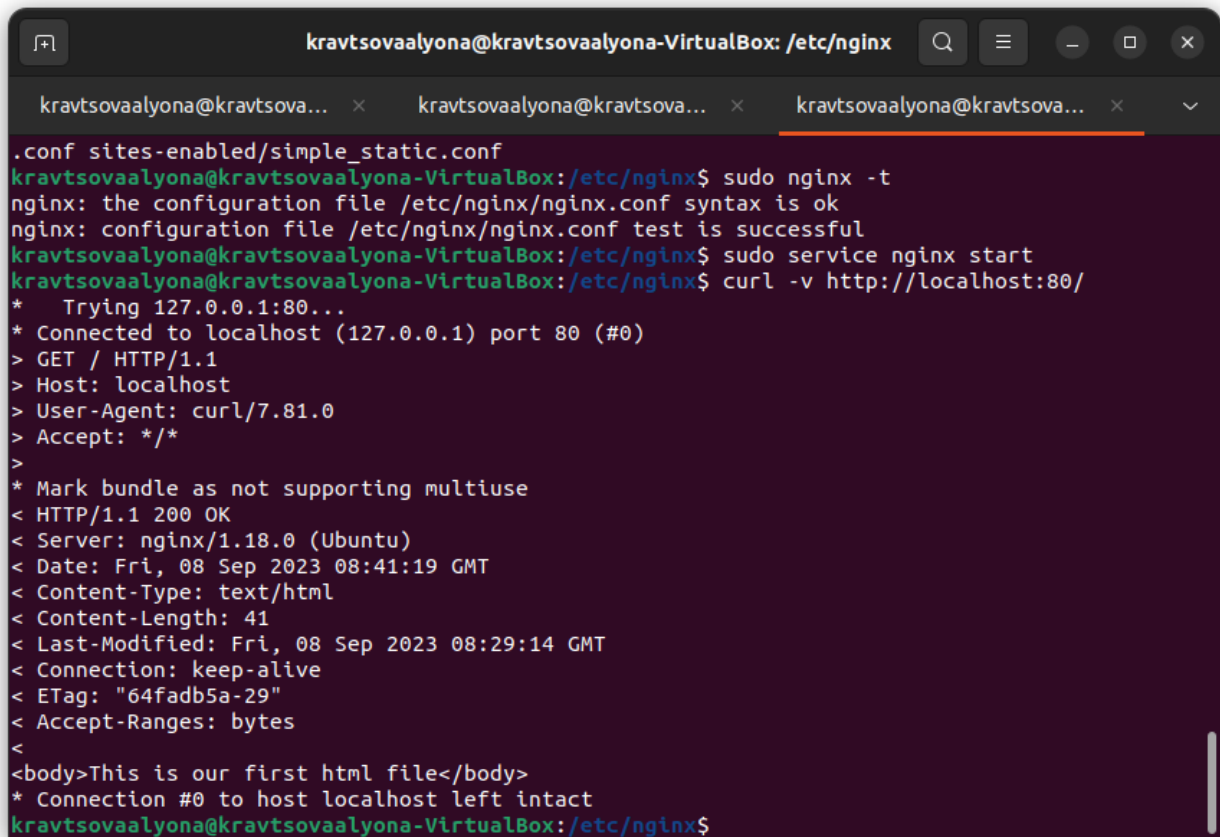
```
kravtsovaalyona@kravtsovaalyona-VirtualBox: /etc/nginx
kravtsovaalyona@kravtsova... x  kravtsovaalyona@kravtsova... x  kravtsovaalyona@kravtsova... x
tic
kravtsovaalyona@kravtsovaalyona-VirtualBox:~$ cd /var/www/simple_static
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ curl https://www.google.c
om/images/branding/googlelogo/2x/googlelogo_color_272x92dp.png
> google.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.
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ curl https://www.google.c
om/images/branding/googlelogo/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  38733      0  --:--:-- --:--:-- --:--:-- 38804
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ printf "<body>This is our
first html file</body>\n" > index.html
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ ls
google.png  index.html
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ sudo service nginx stop
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ sudo nano /etc/nginx/site
s-available/simple_static.conf
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ sudo nano /etc/nginx/site
s-available/simple_static.conf
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ cd/etc/nginx/
bash: cd/etc/nginx/: No such file or directory
kravtsovaalyona@kravtsovaalyona-VirtualBox:/etc/nginx$ sudo ln sites-available/simple_static
kravtsovaalyona@kravtsovaalyona-VirtualBox:/etc/nginx$ sudo ln sites-available/simple_static
.conf sites-enabled/simple_static.conf
```

Рис. 15

```
kravtsovaalyona@kravtsovaalyona-VirtualBox: /etc/nginx
kravtsovaalyona@kravtsova... x  kravtsovaalyona@kravtsova... x  kravtsovaalyona@kravtsova... x
> google.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.
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ curl https://www.google.c
om/images/branding/googlelogo/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  38733      0  --:--:-- --:--:-- --:--:-- 38804
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ printf "<body>This is our
first html file</body>\n" > index.html
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ ls
google.png  index.html
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ sudo service nginx stop
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ sudo nano /etc/nginx/site
s-available/simple_static.conf
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ sudo nano /etc/nginx/site
s-available/simple_static.conf
kravtsovaalyona@kravtsovaalyona-VirtualBox:/var/www/simple_static$ cd/etc/nginx/
bash: cd/etc/nginx/: No such file or directory
kravtsovaalyona@kravtsovaalyona-VirtualBox:/etc/nginx$ sudo ln sites-available/simple_static
kravtsovaalyona@kravtsovaalyona-VirtualBox:/etc/nginx$ sudo ln sites-available/simple_static
.conf sites-enabled/simple_static.conf
kravtsovaalyona@kravtsovaalyona-VirtualBox:/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
kravtsovaalyona@kravtsovaalyona-VirtualBox:/etc/nginx$
```

Рис. 16

16. Подключаемся к нашему ресурсу, код -200, подключение прошло успешно (Рис.17).

A terminal window titled 'kravtsovaalyona@kravtsovaalyona-VirtualBox: /etc/nginx' with three tabs. The terminal shows the following commands and output:

```
.conf sites-enabled/simple_static.conf
kravtsovaalyona@kravtsovaalyona-VirtualBox:/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
kravtsovaalyona@kravtsovaalyona-VirtualBox:/etc/nginx$ sudo service nginx start
kravtsovaalyona@kravtsovaalyona-VirtualBox:/etc/nginx$ curl -v http://localhost:80/
* Trying 127.0.0.1:80...
* Connected to localhost (127.0.0.1) port 80 (#0)
> GET / HTTP/1.1
> Host: localhost
> User-Agent: curl/7.81.0
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 200 OK
< Server: nginx/1.18.0 (Ubuntu)
< Date: Fri, 08 Sep 2023 08:41:19 GMT
< Content-Type: text/html
< Content-Length: 41
< Last-Modified: Fri, 08 Sep 2023 08:29:14 GMT
< Connection: keep-alive
< ETag: "64fadb5a-29"
< Accept-Ranges: bytes
<
<body>This is our first html file</body>
* Connection #0 to host localhost left intact
kravtsovaalyona@kravtsovaalyona-VirtualBox:/etc/nginx$
```

Рис.17

17. Переходим на сайт и видим наш index.html (Рис.18).

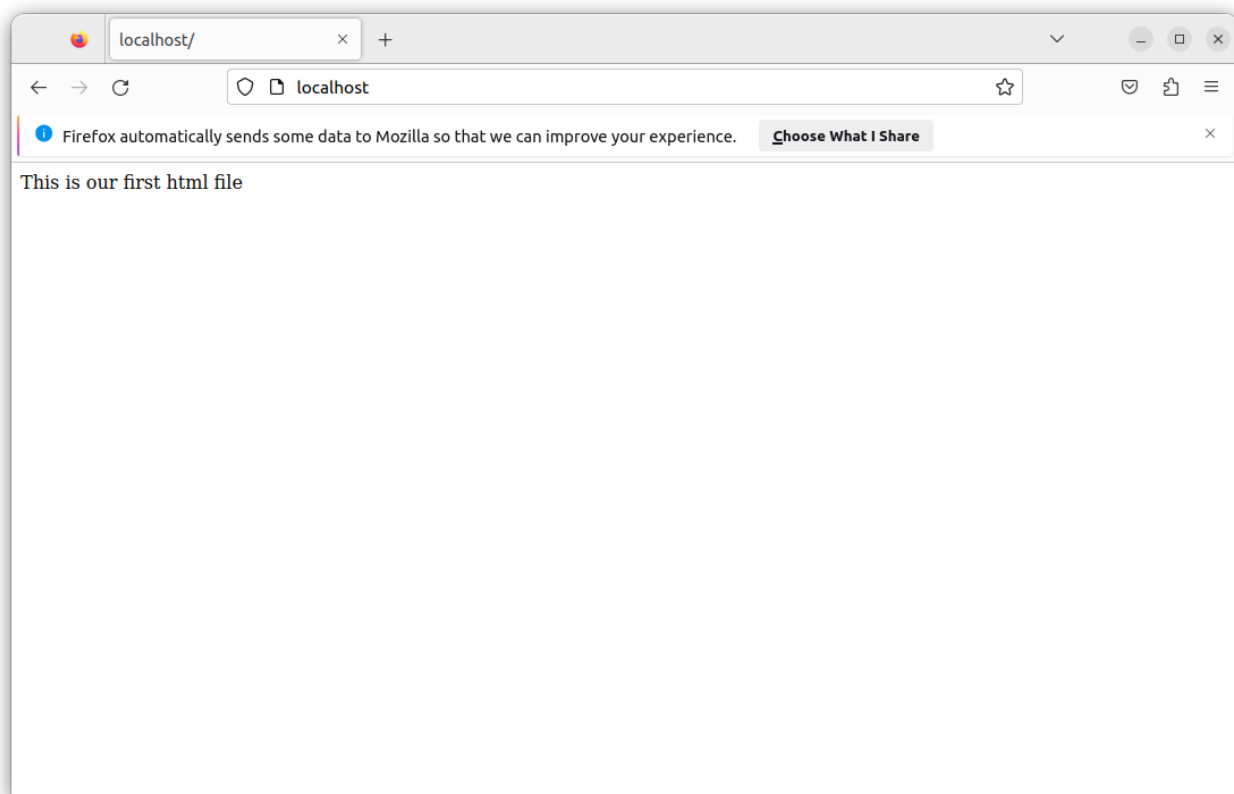


Рис. 18