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Институт цифрового образования
Департамент информатики, управления и технологий

ДИСЦИПЛИНА:
«Распределенные системы»

Отчет по практической работе №1

Тема:

«Семинар 1. HTTP»

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Москва
2022

```
lemp@u20-14:~$ sudo apt install telnet
[sudo] password for lemp:
Reading package lists... Done
Building dependency tree
Reading state information... Done
telnet is already the newest version (0.17-41.2build1).
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libfwupdplugin1
  libgstreamer-plugins-bad1.0-0 libminizip1 libva-wayland2
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 50 not upgraded.
lemp@u20-14:~$
```

```
lemp@u20-14:~$ sudo telnet -d localhost 22
Usage: telnet [-4] [-6] [-8] [-E] [-L] [-a] [-d] [-e char] [-l user]
        [-n tracefile] [ -b addr ] [-r] [host-name [port]]
lemp@u20-14:~$ telnet opennet.ru 80
Trying 217.65.3.21...
Connected to opennet.ru.
Escape character is '^]'.

Connection closed by foreign host.
lemp@u20-14:~$ sudo telnet india.colorado.edu 13
Trying 128.138.140.44...
Connected to india.colorado.edu.
Escape character is '^]'.

59847 22-09-25 19:37:07 50 0 0 839.6 UTC(NIST) *
Connection closed by foreign host.
lemp@u20-14:~$
```

```
lemp@u20-14:~$ sudo apt install curl
Reading package lists... Done
Building dependency tree
Reading state information... Done
curl is already the newest version (7.68.0-1ubuntu2.13).
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libfwupdplugin1
  libgstreamer-plugins-bad1.0-0 libminizip1 libva-wayland2
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 50 not upgraded.
lemp@u20-14:~$
```

```
lemp@u20-14:~$ 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
lemp@u20-14:~$
```

```
lemp@u20-14:~$ 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 - G2
*  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
lemp@u20-14:~$
```

```
lemp@u20-14:~$ 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 - G2
*  SSL certificate verify ok.
> GET / HTTP/1.1
```

```
*   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)
< Date: Sun, 25 Sep 2022 19:46:47 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="alternate"; type="application/json"
< Link: <https://www.mgpu.ru/>; rel=shortlink
<
```

```
lemp@u20-14:~$ 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 Limited; CN=Sectigo RSA Domain Validation S
ecure 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 after upgrade: len=0
* Using Stream ID: 1 (easy handle 0x557b51bf82f0)
> GET / HTTP/2
> Host: www.hse.ru
> user-agent: curl/7.68.0
```

```
*   issuer: C=GB; ST=Greater Manchester; L=Salford; O=Sectigo Limited; CN=Sectigo RSA Domain Validation S
ecure 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 after upgrade: len=0
* Using Stream ID: 1 (easy handle 0x557b51bf82f0)
> 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: Sun, 25 Sep 2022 19:51:34 GMT
< content-type: text/html
< content-length: 138
< location: https://www.hse.ru/en/
< expires: Sun, 25 Sep 2022 19:51:34 GMT
< cache-control: max-age=0
< strict-transport-security: max-age=15552000
< x-xss-protection: 1; mode=block; report=https://www.hse.ru/n/api/xss/report
< set-cookie: tracking=ZEsUBGMwsUakfuy18FC1Ag==; expires=Thu, 31-Dec-37 23:55:55 GMT; domain=.hse.ru; pa
th=/
<
<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
lemp@u20-14:~$
```
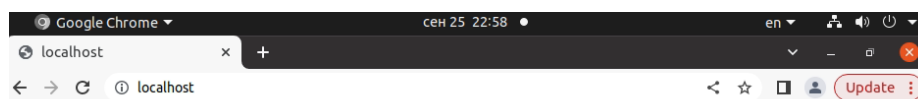
```
lemp@u20-14:~$ sudo apt update && sudo apt install -y nginx
Hit:1 http://ru.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://ru.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:4 http://ppa.launchpad.net/serge-rider/dbeaver-ce/ubuntu focal InRelease
Get:5 http://ru.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Hit:6 https://dl.google.com/linux/chrome/deb stable InRelease
Hit:7 http://deb.anydesk.com all InRelease
Get:8 http://ru.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [277 kB]
Get:9 http://ru.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [391 kB]
Get:10 http://ru.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 DEP-11 Metadata [944 B]
Hit:11 https://download.docker.com/linux/ubuntu focal InRelease
Get:12 http://ru.archive.ubuntu.com/ubuntu focal-backports/main amd64 DEP-11 Metadata [7 968 B]
Get:13 http://ru.archive.ubuntu.com/ubuntu focal-backports/universe amd64 DEP-11 Metadata [30,5 kB]
Get:14 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [40,7 kB]
Get:15 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [77,1 kB]
Get:16 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 DEP-11 Metadata [2 464 B]
Fetched 1 164 kB in 1s (983 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
50 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree
Reading state information... Done
nginx is already the newest version (1.18.0-0ubuntu1.3).
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libfwupdplugin1 libgstreamer-plugins-bad1.0-0
  libminizip1 libva-wayland2
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 50 not upgraded.
lemp@u20-14:~$
```

```
lemp@u20-14:~$ ls -l /etc/nginx/sites-enabled/
total 4
-rw-r--r-- 3 root root 81 июн 24 22:35 simple_static.conf
lemp@u20-14:~$ ls -l /etc/nginx/sites-available/
total 8
-rw-r--r-- 1 root root 2416 мар 26  2020 default
-rw-r--r-- 3 root root   81 июн 24 22:35 simple_static.conf
lemp@u20-14:~$ sudo rm /etc/nginx/sites-enabled/default
rm: cannot remove '/etc/nginx/sites-enabled/default': No such file or directory
lemp@u20-14:~$ 
```

```
lemp@u20-14:~$ sudo mkdir -p /var/www/simple_static
lemp@u20-14:~$ sudo chown hdmaster /var/www/simple_static
chown: invalid user: 'hdmaster'
lemp@u20-14:~$ sudo chown lemp /var/www/simple_static
lemp@u20-14:~$ cd /var/www/simple_static
lemp@u20-14:/var/www/simple_static$ sudo nano /etc/nginx/sites-available/simple_static.conf
lemp@u20-14:/var/www/simple_static$ 
```

```
lemp@u20-14:/var/www/simple_static$ sudo curl -v http://localhost:80
*   Trying 127.0.0.1:80...
* TCP_NODELAY set
* Connected to localhost (127.0.0.1) port 80 (#0)
> GET / HTTP/1.1
> Host: localhost
> User-Agent: curl/7.68.0
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 200 OK
< Server: nginx/1.18.0 (Ubuntu)
< Date: Sun, 25 Sep 2022 20:05:57 GMT
< Content-Type: text/html
< Content-Length: 41
< Last-Modified: Fri, 24 Jun 2022 18:30:27 GMT
< Connection: keep-alive
< ETag: "62b602c3-29"
< Accept-Ranges: bytes
<
<body>This is our first html file</body>
* Connection #0 to host localhost left intact
lemp@u20-14:/var/www/simple_static$ 
```

This is our first html file