

# COMPUTER NETWORKS [CS F303] 05/04/2021

## LAB - 7

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Write TCP client to download and locally save a file.

1. The client, as a command-line argument, accepts the URL of the file. The URL can be HTTP or HTTPS-based. (2 marks)

```
chetan@chetan-Lenovo-Ideapad-330-15IKB:~$ gcc -c -o SSLClient.o SSLClient.c
chetan@chetan-Lenovo-Ideapad-330-15IKB:~$ gcc -o SSLClient SSLClient.o -lssl -lcrypto
chetan@chetan-Lenovo-Ideapad-330-15IKB:~$ ./SSLClient http://www.africau.edu/images/default/sample.pdf
HTTP response header:

HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 13:01:03 GMT
Content-Type: application/pdf
Content-Length: 3028
Connection: close
Set-Cookie: __cfduid=decd156d09d174bb154522bee63c2a92f1617627663; expires=Wed, 05-May-21 13:01:03 GMT; path=/; domain=.africau.edu; HttpOnly; SameSite=Lax
Last-Modified: Fri, 24 Feb 2017 17:42:38 GMT
ETag: "58b0708e-bd4"
Expires: Sun, 06 Mar 2022 15:30:12 GMT
Cache-Control: max-age=31536000
Host-Header: 8441280b0c35cbc1147f8ba998a563a7
X-Proxy-Cache-Info: DT:1
CF-Cache-Status: HIT
Age: 2583051
Accept-Ranges: bytes
cf-request-id: 0943b8631900000a200eab0000000001
Report-To: {"endpoints":[{"url":"https://a.nel.cloudflare.com/report?s=nv8%2Fb%2BRzi0xu2TIp4k07VfyQgTj%2FMQ3L1%2BJ2hdNjfvZUtnQM6Mk8vM7L7HBmKofqaUh%2Bro04gLpnnasw%2BK2%2FcUswSzOzrhplvczpZ5aRKEE%3D"}],"max_age":604800,"group":"cf-nel"}
NEL: {"max_age":604800,"report_to":"cf-nel"}
Server: cloudflare
CF-RAY: 63b2f67e8ffe0a20-KIX
alt-svc: h3-27=":443"; ma=86400, h3-28=":443"; ma=86400, h3-29=":443"; ma=86400
reply received.
```

```
chetan@chetan-Lenovo-Ideapad-330-15IKB:~$ ./SSLClient https://web.ist.utl.pt/~fabio.ferreira/material/asa/clrs.pdf
SSL connected.
HTTP response header:

HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 13:01:47 GMT
Server: Apache/2.4.38 (Debian)
Last-Modified: Fri, 22 Feb 2008 13:23:38 GMT
ETag: "c82e39-446bf21496a80"
Accept-Ranges: bytes
Content-Length: 13119033
Connection: close
Content-Type: application/pdf
Set-Cookie: BACKENDID=backend_10PQ1|YGsKP|YGsKP; path=/
reply received.
```

2. If the URL does not exist or unreachable, the client prints an error and exits. (2 marks)

```

chetan@chetan-Lenovo-ideapad-330-15IKB:~$ ./SSLClient http://www.123.com
gethostbyname: Unknown host
chetan@chetan-Lenovo-ideapad-330-15IKB:~$

```

3. After connecting to the server, the client sends a GET request to the server. (2 marks)

4. The client downloads the whole file and saves it to the local folder with the same file name as mentioned in the URL. (8 marks)

|   |            |         |             |
|---|------------|---------|-------------|
|  | Public     | 0 items | 25 Mar 2019 |
|  | Music      | 0 items | 25 Mar 2019 |
|  | clrs.pdf   | 13.1 MB | 18:31       |
|  | sample.pdf | 3.0 kB  | 18:31       |
|  | SSLClient  | 18.0 kB | 18:30       |

5. If a file with the same name exists, the old file is overwritten. (1 mark)

6. The client exits after downloading the file. (1 mark)

```

reply received.
chetan@chetan-Lenovo-ideapad-330-15IKB:~$ ./SSLClient https://web.ist.utl.pt/~fabio.ferreira/material/asa/clrs.pdf
SSL connected.
HTTP response header:
HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 13:01:47 GMT
Server: Apache/2.4.38 (Debian)
Last-Modified: Fri, 22 Feb 2008 13:23:38 GMT
ETag: "c82e39-446bf21496a80"
Accept-Ranges: bytes
Content-Length: 13119033
Connection: close
Content-Type: application/pdf
Set-Cookie: BACKENDID=backend_10PQ1|YGsKP|YGsKP; path=/

reply received.
chetan@chetan-Lenovo-ideapad-330-15IKB:~$ ./SSLClient http://www.123.com
gethostbyname: Unknown host

```