

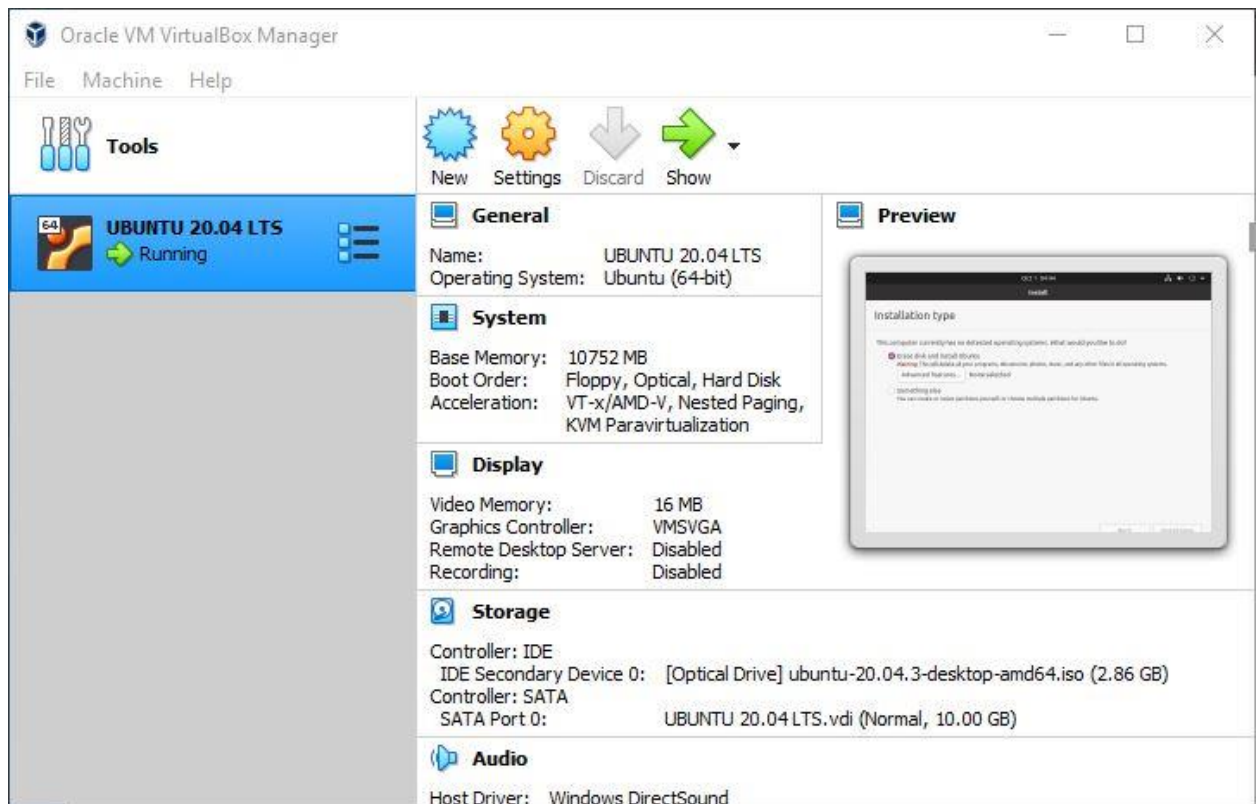
NETWORKING AND SYSTEM ADMINISTRATION LAB

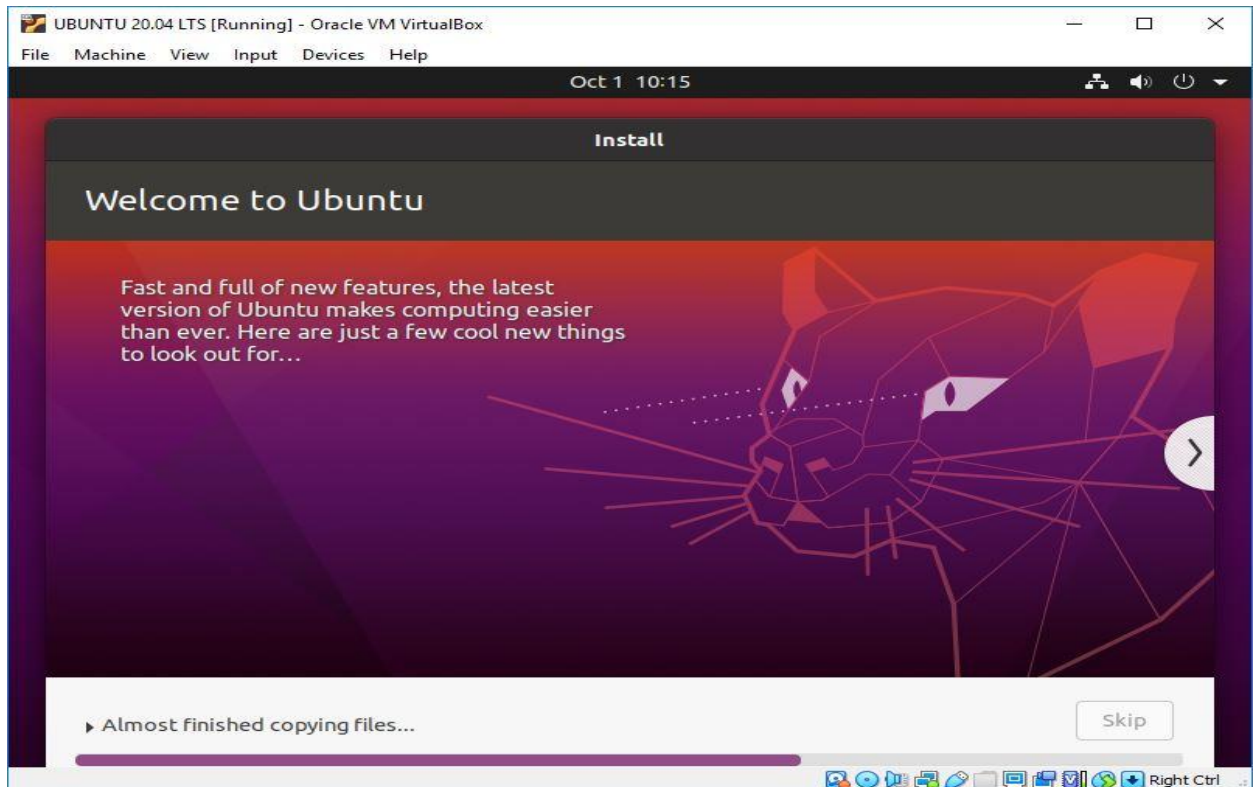
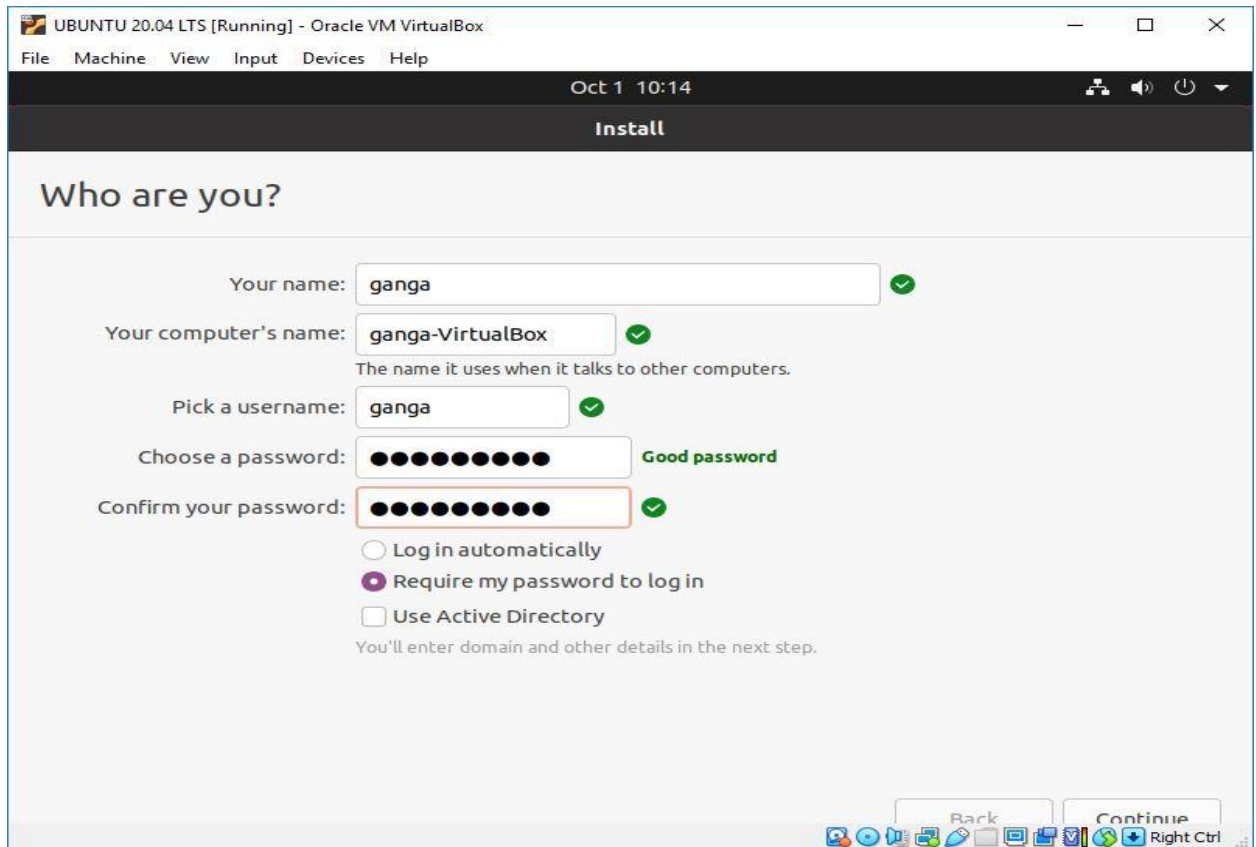
SUBMITTED BY :

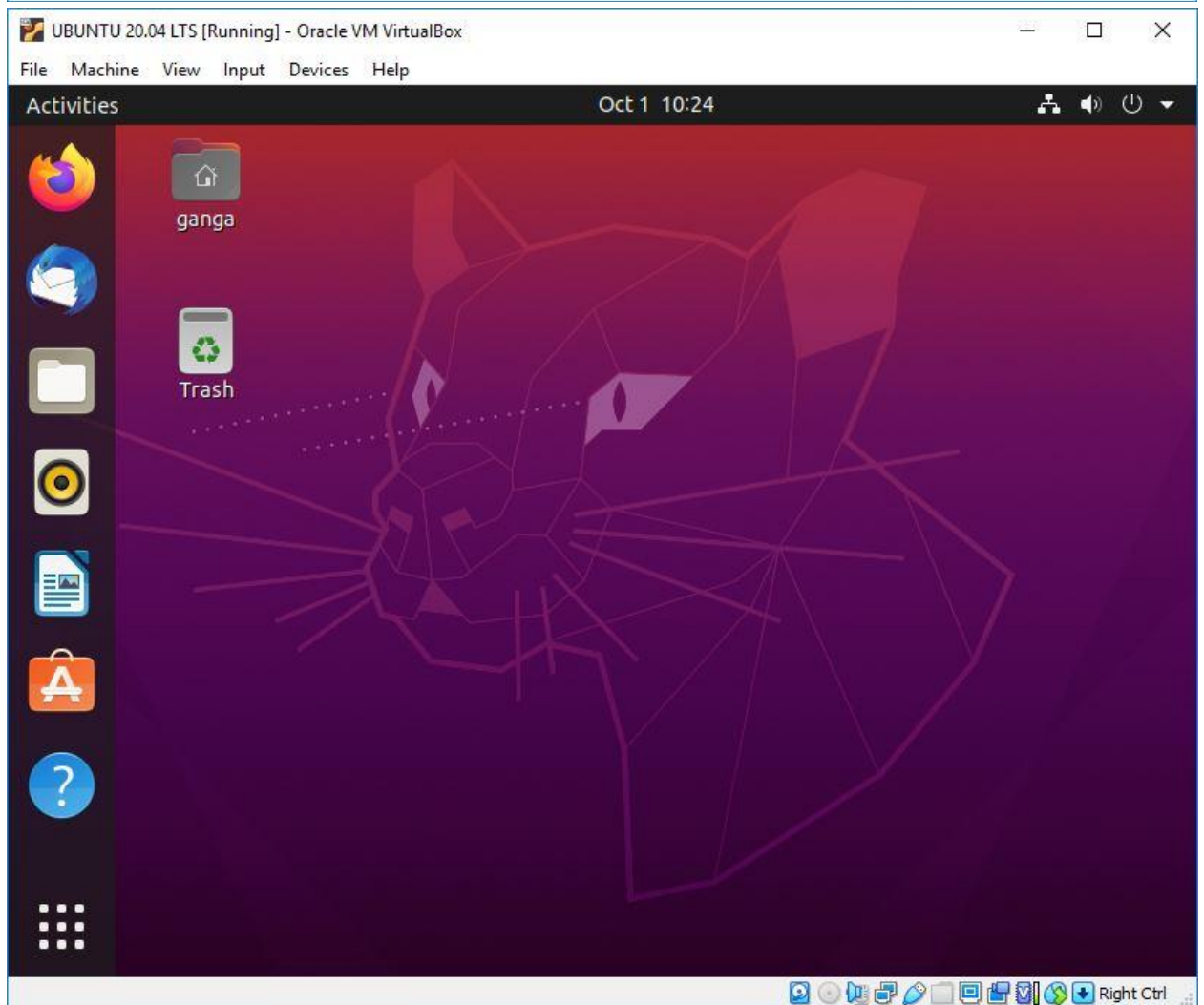
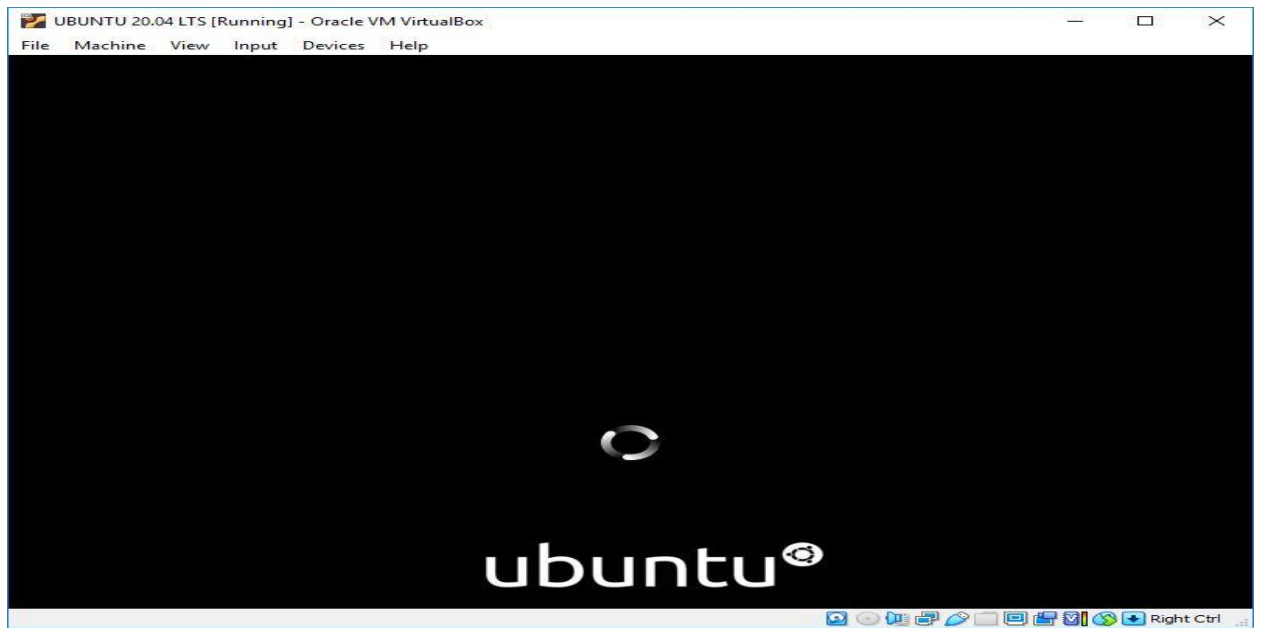
GANGA KRISHNAN.G

ROLL NO : 20MCA218

1. Install linux on virtualbox in windows 10







2.write a shell script that displays list of all files in the current directory to which the user has read,write and execute permissions?

```
Open  qn2.sh ~/Desktop Save
1 dir="/home/desktop/gang"
2 file="/home/desktop/gang/sample.txt"
3 if [ -d '$dir' ]
4 then
5 echo "directory exists"
6 echo "list of files in directory $dir"
7 ls
8 fi
9 if [ -e '$file' ]
10 then
11 echo "file is password protected"
12 fi
13 if [ -x '$file' ]
14 then
15 echo "Files in which users have read,write and execute permissions are : "
16 echo "$file"
17 else
18 echo "$file"
19 echo "user have no read,write and execute permission"
20 fi
21
22
```

```
ganga@ganga-VirtualBox:~/Desktop/gang$ ls
qn2.sh  sample.txt
ganga@ganga-VirtualBox:~/Desktop/gang$ bash qn2.sh
list of files in directory /home/desktop/gang
/home/desktop/gang/sample.txt
Files in which users have read,write and execute permissions are :
/home/desktop/gang/sample.txt
ganga@ganga-VirtualBox:~/Desktop/gang$
```

3. use a network command to find the route that a packet takes to reach the host. Use host name as <https://www.iitm.ac.in>

```
ganga@ganga-VirtualBox:~/Desktop/network$ trace https://www.iitm.ac.in/

Command 'trace' not found, did you mean:

  command 'ltrace' from deb ltrace (0.7.3-6.1ubuntu1)
  command 'grace' from deb grace (1:5.1.25-7build1)
  command 'mtrace' from deb libc-dev-bin (2.31-0ubuntu9.2)
  command 'itrac' from deb irpas (0.10-7)
  command 'xtrace' from deb xtrace (1.4.0-1)
  command 'dtrace' from deb systemtap-sdt-dev (4.2-3)
  command 'strace' from deb strace (5.5-3ubuntu1)
  command 'btrace' from deb blktrace (1.2.0-5)
  command 'tracer' from deb pvm-dev (3.4.6-2build2)

Try: sudo apt install <deb name>

ganga@ganga-VirtualBox:~/Desktop/network$
```

4. write a shell script to get the total count of the word "Linux" in all the ".txt" files and across files present in subdirectories

```
ganga@ganga-VirtualBox:~/Desktop/network$ ls
aa.txt  gg.txt  lnx.txt
ganga@ganga-VirtualBox:~/Desktop/network$ awk '{for(i=1 ; i<=NF ; i++)a[$i]++;}
END{for(i in a){print(i,a[i]);}}' *.txt
network 1
linux 7
ganga@ganga-VirtualBox:~/Desktop/network$
```


5. Answer the questions based on trace file –<https://www.iitm.ac.in/>

***Ethernet**

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Destination	Protocol	Length	Info
15468	07:33:38.825540	172.20.32.177	216.92.49.183	HTTP	540	GET /qatweb1.html HTTP/1.1
15563	07:33:39.172537	172.20.32.177	216.92.49.183	HTTP	409	GET /style.css HTTP/1.1
15564	07:33:39.172759	172.20.32.177	216.92.49.183	HTTP	399	GET /rotated_top.js HTTP/1.1
15619	07:33:39.252474	172.20.32.177	142.250.195.142	HTTP	423	GET /translate_a/element.js?cb=googleTran
15634	07:33:39.342108	142.250.195.142	172.20.32.177	HTTP	495	HTTP/1.1 301 Moved Permanently
15703	07:33:39.440006	172.20.32.177	216.92.49.183	HTTP	400	GET /rotated_side.js HTTP/1.1
15724	07:33:39.502736	216.92.49.183	172.20.32.177	HTTP	984	HTTP/1.1 200 OK (application/javascript)
15727	07:33:39.538145	216.92.49.183	172.20.32.177	HTTP	922	HTTP/1.1 200 OK (text/css)
15878	07:33:39.769466	216.92.49.183	172.20.32.177	HTTP	1248	HTTP/1.1 200 OK (application/javascript)
15924	07:33:39.859897	172.20.32.177	192.229.237.25	HTTP	381	GET /widgets.js HTTP/1.1
16042	07:33:39.943413	192.229.237.25	172.20.32.177	HTTP	472	HTTP/1.1 200 OK (application/javascript)
16808	07:33:40.791095	216.92.49.183	172.20.32.177	HTTP	271	HTTP/1.1 200 OK (text/html)
16851	07:33:40.894088	172.20.32.177	104.114.109.146	HTTP	505	GET /www07/ptc/beec954e-fada-402e-b49d-b5
17450	07:33:41.887609	172.20.32.177	216.92.49.183	HTTP	457	GET /favicon.ico HTTP/1.1

0000 00 1a 8c 6b b3 da f4 39 09 2e 8d 3d 08 00 45 00 ...k...9 ...E...
 0010 02 0e 67 1c 40 00 80 06 ba f4 ac 14 20 b1 d8 5c ...g@... ..\...
 0020 31 b7 e4 1a 00 50 88 37 63 03 04 be b1 5c 50 18 1....P.7 c....\P...
 0030 01 04 1e bb 00 00 47 45 54 20 2f 71 61 74 77 65GE T /qatwe
 0040 62 31 2e 68 74 6d 6c 20 48 54 54 50 2f 31 2e 31 b1.html HTTP/1.1
 0050 0d 0a 48 6f 73 74 3a 20 77 77 77 2e 73 6f 66 74 ..Host: www.soft
 0060 77 61 72 65 71 61 74 65 73 74 2e 63 6f 6d 0d 0a waregate st.com..
 0070 43 6f 6e 6e 65 63 74 69 6f 6e 3a 20 6b 65 65 70 Connecti on: keep
 0080 2d 61 6c 69 76 65 0d 0a 55 70 67 72 61 64 65 2d -alive.. Upgrade-

Hypertext Transfer Protocol: Protocol | Packets: 51608 · Displayed: 18 (0.0%) | Profile: Default

> Frame 15468: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{88E0AD79-CA84-49A5-8
 > Ethernet II, Src: HewlettP_2e:8d:3d (f4:39:09:2e:8d:3d), Dst: Sophos_6b:b3:da (00:1a:8c:6b:b3:da)
 > Internet Protocol Version 4, Src: 172.20.32.177, Dst: 216.92.49.183
 > Transmission Control Protocol, Src Port: 58394, Dst Port: 80, Seq: 1, Ack: 1, Len: 486
 > Hypertext Transfer Protocol
 > GET /qatweb1.html HTTP/1.1\r\n
 Host: www.softwareqatest.com\r\n
 Connection: keep-alive\r\n
 Upgrade-Insecure-Requests: 1\r\n
 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/94.0.4606.54 Safari
 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/s
 Referer: https://www.google.com/\r\n
 Accept-Encoding: gzip, deflate\r\n
 Accept-Language: en-US,en;q=0.9\r\n
 \r\n
 [Full request URI: <http://www.softwareqatest.com/qatweb1.html>]
 [HTTP request 1/2]
 [Response in frame: 16808]
 [Next request in frame: 17450]

a.What is the ip address of your computer and server?

15468 07:33:38.825540 172.20.32.177 216.92.49.183 HTTP 540 GET /qatweb1.html HTTP/1.1

Computer – 172.20.32.177

Server – 216.92.49.183

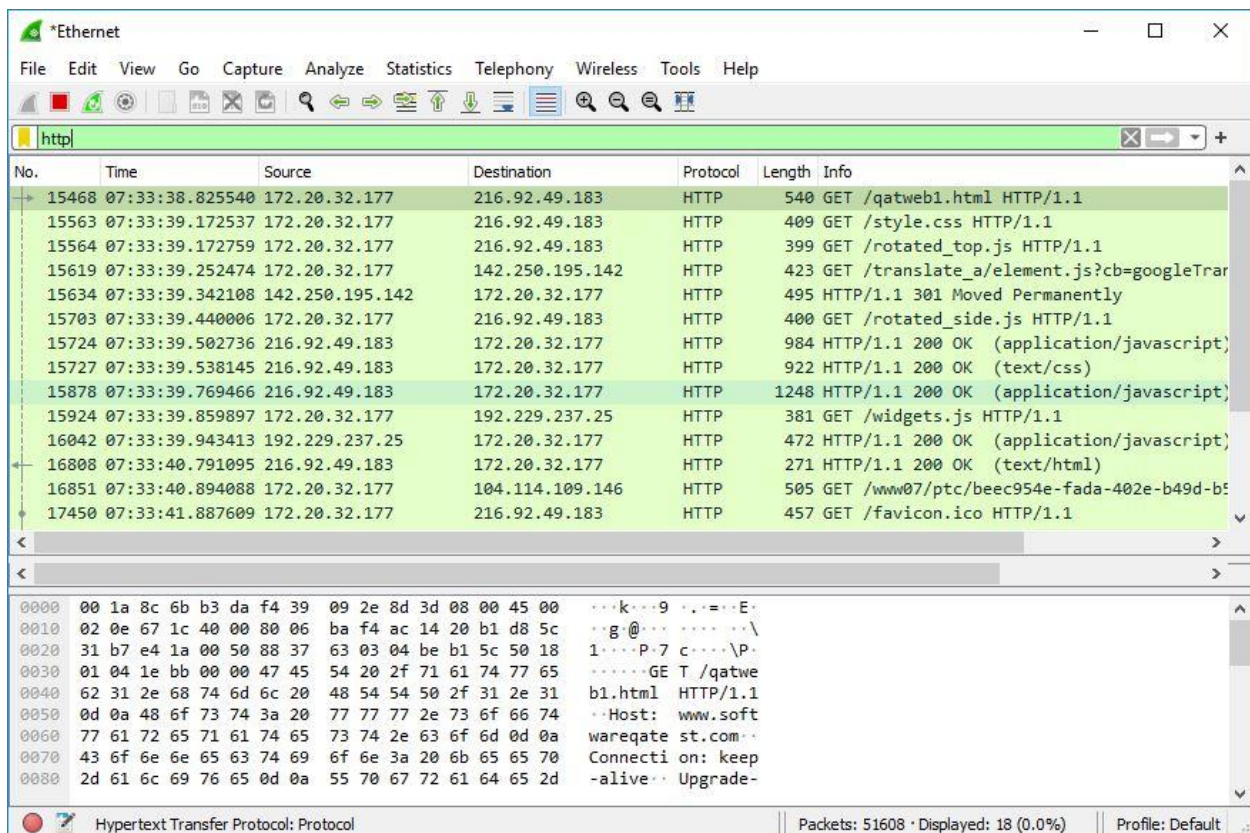
b.What is the status code returned from the server to your browser?

16808 07:33:40.791095 216.92.49.183 172.20.32.177 HTTP 271 HTTP/1.1 200 OK (text/html)

HTTP/1.1 200 OK

Status code – 200 OK

c.when was the html file that you are retrieving last modified at server?



The screenshot shows a Wireshark packet capture of an HTTP transaction. The packet list displays several packets, including a GET request for /qatweb1.html (packet 15468) and a 200 OK response (packet 16808). The packet details pane shows the structure of the HTTP request and response, including the status code 200 OK and the content type text/html.

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0000 00 1a 8c 6b b3 da f4 39 09 2e 8d 3d 08 00 45 00 ...k...9 ...=...E...
0010 02 0e 67 1c 40 00 80 06 ba f4 ac 14 20 b1 d8 5c ...g...@...\n
0020 31 b7 e4 1a 00 50 88 37 63 03 04 be b1 5c 50 18 1...P...7 c......\P...
0030 01 04 1e bb 00 00 47 45 54 20 2f 71 61 74 77 65GE T /qatwe
0040 62 31 2e 68 74 6d 6c 20 48 54 54 50 2f 31 2e 31 b1.html HTTP/1.1
0050 0d 0a 48 6f 73 74 3a 20 77 77 77 2e 73 6f 66 74 ..Host: www.soft
0060 77 61 72 65 71 61 74 65 73 74 2e 63 6f 6d 0d 0a waregate st.com..
0070 43 6f 6e 6e 65 63 74 69 6f 6e 3a 20 6b 65 65 70 Connecti on: keep
0080 2d 61 6c 69 76 65 0d 0a 55 70 67 72 61 64 65 2d -alive.. Upgrade-

07:33:40.791095

d.How many bytes of content are being returned to your browser?a.128 bytes is being returned to the browser

16808 07:33:40.791095 216.92.49.183 172.20.32.177 HTTP 271 HTTP/1.1 200 OK (text/html)

Number of packets – 16808

Length 271

271 bytes