

Practical 8

Name: Vedant Murai

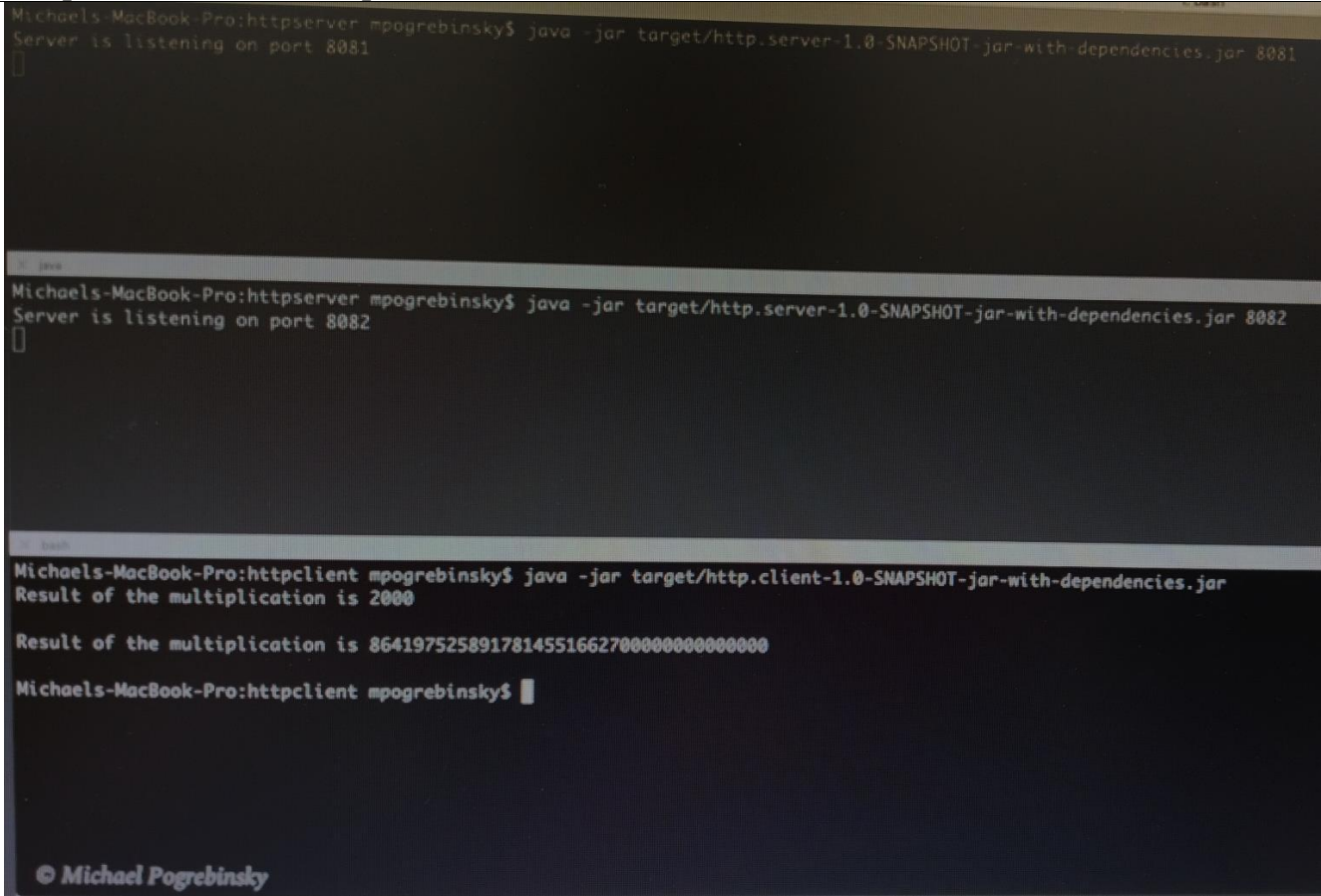
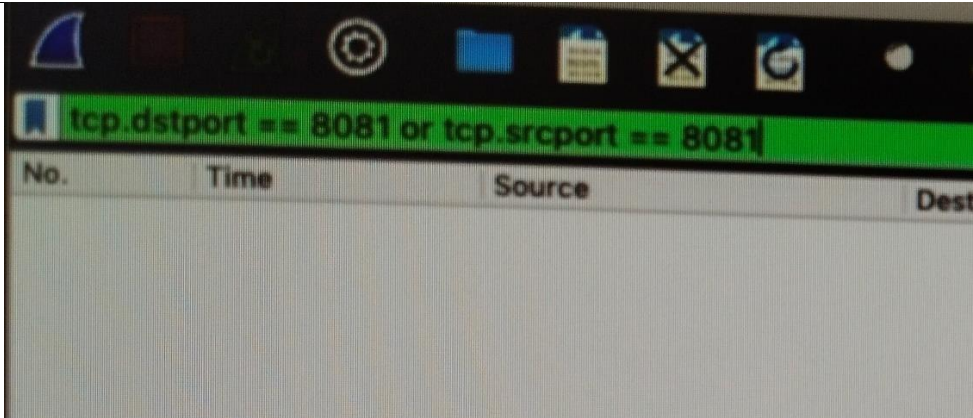
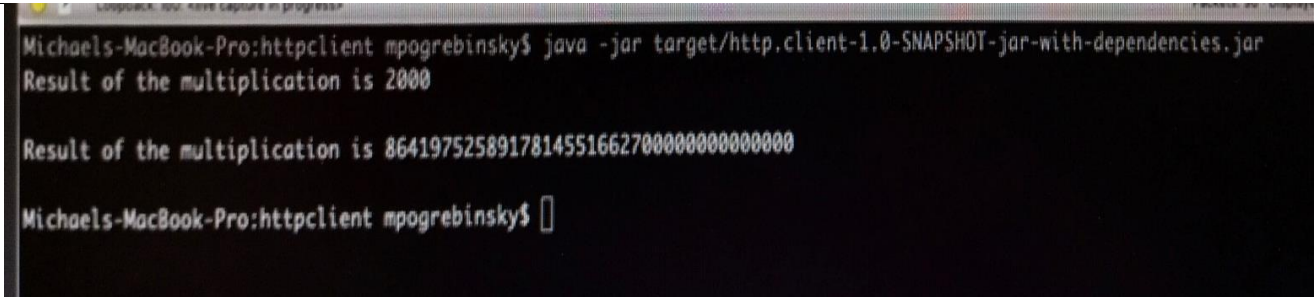
stems.

Roll no: 64

Branch: CSE (Data Science).

Aim: Network Packet Analysis using HTTP Client in distributed environment.

Output: On next page

	Output:
1.	Launch worker at port 8081 and 8082 and client in the third terminal to send request and gets complex calculation in output.
	 <p>The image shows three terminal windows. The first window shows the httpserver jar being executed on port 8081. The second window shows the httpserver jar being executed on port 8082. The third window shows the httpclient jar being executed, which sends a request to the server and receives a complex calculation result: 2000 and 864197525891781455166270000000000000000.</p>
2.	Filter the message in source and destination port using wireshark.
	 <p>The image shows the Wireshark interface with a filter applied to the packet list pane: tcp.dstport == 8081 or tcp.srcport == 8081. The packet list pane shows a table with columns: No., Time, Source, and Destination.</p>
3.	Send an HTTP request from our client to worker
	 <p>The image shows a terminal window with the httpclient jar being executed. It sends a request to the server and receives a complex calculation result: 2000 and 864197525891781455166270000000000000000.</p>

4. Wireshark Captured TCP packets corresponding to our transaction

Leave a rating You

Filter: srcport == 8081

Source	Destination	Protocol	Length	Info
127.0.0.1	127.0.0.1	TCP	68	60188 → 8081 [SYN] Seq=0 Win=65535 Len=0 MSS=16344 WS=64 TSval=77309455 TSecr=77309455
127.0.0.1	127.0.0.1	TCP	68	8081 → 60188 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=16344 WS=64 TSval=77309455 TSecr=77309455
127.0.0.1	127.0.0.1	TCP	56	60188 → 8081 [ACK] Seq=1 Ack=1 Win=408256 Len=0 TSval=77309455 TSecr=77309455
127.0.0.1	127.0.0.1	TCP	56	[TCP Window Update] 8081 → 60188 [ACK] Seq=1 Ack=1 Win=408256 Len=0 TSval=77309455 TSecr=77309455
127.0.0.1	127.0.0.1	TCP	266	60188 → 8081 [PSH, ACK] Seq=1 Ack=1 Win=408256 Len=210 TSval=77309477 TSecr=77309477
127.0.0.1	127.0.0.1	HTTP	56	8081 → 60188 [ACK] Seq=1 Ack=211 Win=408064 Len=0 TSval=77309477 TSecr=77309477
127.0.0.1	127.0.0.1	TCP	62	POST /task HTTP/1.1
127.0.0.1	127.0.0.1	TCP	56	8081 → 60188 [ACK] Seq=1 Ack=217 Win=408064 Len=0 TSval=77309479 TSecr=77309479
127.0.0.1	127.0.0.1	TCP	132	8081 → 60188 [PSH, ACK] Seq=1 Ack=217 Win=408064 Len=76 TSval=77309479 TSecr=77309479
127.0.0.1	127.0.0.1	TCP	56	60188 → 8081 [ACK] Seq=217 Ack=77 Win=408192 Len=0 TSval=77309479 TSecr=77309479
127.0.0.1	127.0.0.1	HTTP	93	HTTP/1.1 200 OK
127.0.0.1	127.0.0.1	TCP	56	60188 → 8081 [ACK] Seq=217 Ack=114 Win=408128 Len=0 TSval=77309479 TSecr=77309479
127.0.0.1	127.0.0.1	TCP	56	60188 → 8081 [FIN, ACK] Seq=217 Ack=114 Win=408128 Len=0 TSval=77309886 TSecr=77309886
127.0.0.1	127.0.0.1	TCP	56	8081 → 60188 [ACK] Seq=114 Ack=218 Win=408064 Len=0 TSval=77309886 TSecr=77309886
127.0.0.1	127.0.0.1	TCP	56	8081 → 60188 [FIN, ACK] Seq=114 Ack=218 Win=408064 Len=0 TSval=77309886 TSecr=77309886
127.0.0.1	127.0.0.1	TCP	56	60188 → 8081 [ACK] Seq=218 Ack=115 Win=408128 Len=0 TSval=77309886 TSecr=77309886

Wire (544 bits), 68 bytes captured (544 bits) on interface 0

Ethernet II, Src: 127.0.0.1, Dst: 127.0.0.1

Protocol: Src Port: 8081, Dst Port: 60188, Seq: 0, Ack: 1, Len: 0

5. Network Layers

Frame 7: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface 0

Null/Loopback

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 60188, Dst Port: 8081, Seq: 0, Len: 0

0000	02 00 00 00 45 00 00 40	00 00 40 00 40 06 00 00	E 0 0 0
0010	7f 00 00 01 7f 00 00 01	eb 1c 1f 91 88 14 06 0b	
0020	00 00 00 00 00 02 ff ff	fe 34 00 00 02 04 3f d8	4 7
0030	01 03 03 06 01 01 08 0a	04 9b a6 0f 00 00 00 00	
0040	04 02 00 00		

6. Sending more than one request on same server

▶ Transmission Control Protocol, Src Port: 60188, Dst Port: 8081, Seq: 211, Ack: 1, Len: 6
 ▶ [2 Reassembled TCP Segments (216 bytes): #16(210), #21(6)]

▼ Hypertext Transfer Protocol

▶ POST /task HTTP/1.1\r\n
 Connection: Upgrade, HTTP2-Settings\r\n
 Content-Length: 6\r\n
 Host: localhost:8081\r\n
 HTTP2-Settings: AAEAAEAAAAIAAAABAAABAAABKAAQBAAAAAAUAAEAA\r\n
 Upgrade: h2c\r\n
 User-Agent: Java-http-client/11.0.1\r\n
 \r\n
[\[Full request URI: http://localhost:8081/task\]](#)
[\[HTTP request 1/1\]](#)
[\[Response in frame: 29\]](#)
 File Data: 6 bytes

0000	02 00 00 00 45 00 00 3a 00 00 40 00 40 05 00 00E : @ @
0010	7f 00 00 01 7f 00 00 01 eb 1c 1f 91 88 f4 07 8e
0020	1e 3c 9a a0 80 18 18 eb fe 2e 00 00 01 01 08 0a	<.....
0030	04 9b a6 27 04 9b a6 25 31 30 2c 32 30 30% 10,200

Frame (62 bytes) Reassembled TCP (216 bytes)

Transmission Control Protocol (tcp), 32 bytes