Name: Kaustav Ghosh
Section: C
Reg no:180905188
Roll no:29

Q7.4
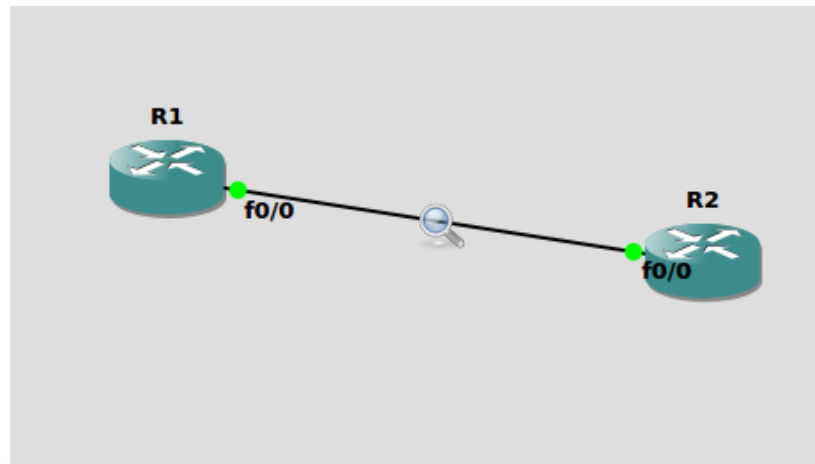
No.	Time	Source	Destination	Protocol	Length	Info
39	2020-12-17 14:58:51.334043	ca:02:25:f1:00…	ca:02:25:f1:00…	LOOP	60	Reply
40	2020-12-17 14:58:57.864987	ca:01:25:e2:00…	ca:01:25:e2:00…	LOOP	60	Reply
41	2020-12-17 14:59:01.746091	ca:02:25:f1:00…	ca:02:25:f1:00…	LOOP	60	Reply
42	2020-12-17 14:59:08.358675	ca:01:25:e2:00…	ca:01:25:e2:00…	LOOP	60	Reply
43	2020-12-17 14:59:12.190524	ca:02:25:f1:00…	ca:02:25:f1:00…	LOOP	60	Reply
44	2020-12-17 14:59:16.947755	ca:02:25:f1:00…	CDP/VTP/DTP/PA…	CDP	347	Device ID: R2 Port ID: FastEthernet0/0
45	2020-12-17 14:59:18.419129	ca:01:25:e2:00…	ca:01:25:e2:00…	LOOP	60	Reply
46	2020-12-17 14:59:22.592516	ca:02:25:f1:00…	ca:02:25:f1:00…	LOOP	60	Reply

```
▶ Frame 4: 75 bytes on wire (600 bits), 75 bytes captured (600 bits) on interface 0
▶ Ethernet II, Src: ca:01:25:e2:00:00 (ca:01:25:e2:00:00), Dst: ca:02:25:f1:00:00 (ca:02:25:f1:00:00)
▶ Internet Protocol Version 4, Src: 10.10.10.1, Dst: 10.10.10.2
▶ User Datagram Protocol, Src Port: 50048, Dst Port: 53
▼ Domain Name System (query)
     Transaction ID: 0x0002
   ▼ Flags: 0x0100 Standard query
       0... .... .... .... = Response: Message is a query
       .000 0... .... .... = Opcode: Standard query (0)
       .... ..0. .... .... = Truncated: Message is not truncated
       .... ...1 .... .... = Recursion desired: Do query recursively
       .... .... .0.. .... = Z: reserved (0)
       .... .... ...0 .... = Non-authenticated data: Unacceptable
     Questions: 1
     Answer RRs: 0
     Authority RRs: 0
     Additional RRs: 0
   ▼ Queries
     ▼ loopback.R2.com: type A, class IN
         Name: loopback.R2.com
         [Name Length: 15]
         [Label Count: 3]
         Type: A (Host Address) (1)
         Class: IN (0x0001)
     [Response In: 5]
```

```
0000  ca 02 25 f1 00 00 ca 01  25 e2 00 00 08 00 45 00   ··%····· %·····E·
0010  00 3d 00 00 00 00 ff 11  93 99 0a 0a 0a 01 0a 0a   ·=······ ········
0020  0a 02 c3 80 00 35 00 29  97 26 00 02 01 00 00 01   ·····5·) ·&······
0030  00 00 00 00 00 00 08 6c  6f 6f 70 62 61 63 6b 02   ·······l oopback·
0040  52 32 03 63 6f 6d 00 00  01 00 01                  R2·com·· ···
```

Frame (frame), 75 bytes   Pac

```
R1(config)#ip route 0.0.0.0 0.0.0.0 10.10.10.2
R1(config)#end
R1#
*Dec 17 14:55:35.723: %SYS-5-CONFIG_I: Configured from console by console
R1#ping loopback.R2.com repeat 3

Translating "loopback.R2.com"...domain server (10.10.10.2) [OK]

Type escape sequence to abort.
Sending 3, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!
Success rate is 100 percent (3/3), round-trip min/avg/max = 60/61/64 ms
R1#ping loopback.R2.com repeat 3

Translating "loopback.R2.com"...domain server (10.10.10.2) [OK]

Type escape sequence to abort.
Sending 3, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!
Success rate is 100 percent (3/3), round-trip min/avg/max = 60/61/64 ms
R1#
```
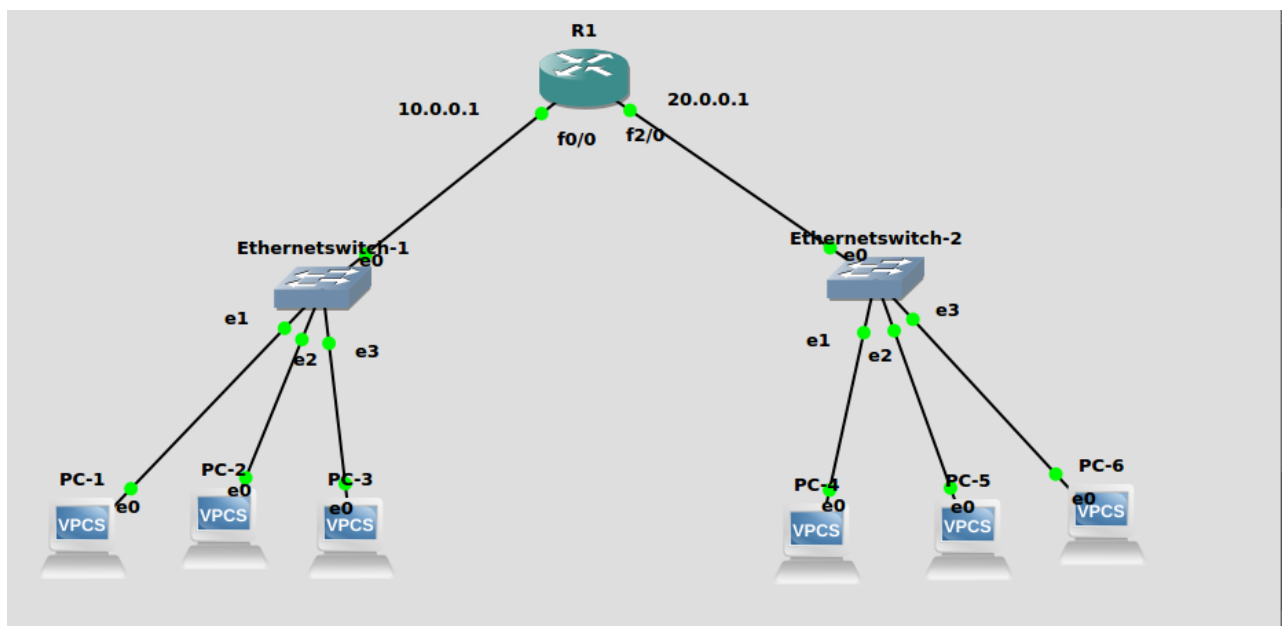
```
R2(config)#ip dns server
R2(config)#ip host loopback.R2.com 2.2.2.2
R2(config)#interface loopback 1
R2(config-if)#
*Dec 17 14:53:48.903: %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1,
 changed state to up
R2(config-if)#ip address 2.2.2.2 255.255.255.255
R2(config-if)#end
R2#
*Dec 17 14:54:02.995: %SYS-5-CONFIG_I: Configured from console by console
R2#ping loopback.R2.com

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/3/4 ms
R2#
```

Q7.5

R1 IP and Hostname Configurations:

#enable

#config t

#hostname R2

#int f0/0

#ip address 10.0.0.0.1 255.255.255.0

#no shut

#do wr

#end

#int f0/0

#ip address 20.0.0.0.1 255.255.255.0

#no shut

#do wr

#end

Setting up R1 as DNS Server

#config t

#ip dns server

#ip host loopback.R1.com 2.2.2.2

#interface loopback 1

#ip address 2.2.2.2 255.255.255.255

#end

ip host PC1.com 10.0.0.2

ip host PC2.com 10.0.0.3

ip host PC3.com 10.0.0.4

ip host PC4.com 20.0.0.2

ip host PC5.com 20.0.0.3

ip host PC6.com 20.0.0.4

```
R1#enab
R1#enable
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#hostnam
R1(config)#hostname R1
R1(config)#int f0/0
R1(config-if)#ip addre
R1(config-if)#ip address 10.0.0.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#
*Dec 17 15:23:05.995: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
R1(config-if)#
*Dec 17 15:23:05.995: %ENTITY_ALARM-6-INFO: CLEAR INFO Fa0/0 Physical Port Administrative State Down
*Dec 17 15:23:06.995: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#do wr
Building configuration...
[OK]
R1(config-if)#end
R1#
*Dec 17 15:23:26.075: %SYS-5-CONFIG_I: Configured from console by console
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip dns ser
R1(config)#ip dns server
R1(config)#ip host loopb
R1(config)#ip host loopback.R1.com 2.2.2.2
R1(config)#end
R1#
*Dec 17 15:26:59.143: %SYS-5-CONFIG_I: Configured from console by console
R1#ping loopback.R1.com

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
R1#ping loopback.R1.com

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
R1#interf
R1#interface loopback 1
       ^
% Invalid input detected at '^' marker.

R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int
R1(config)#int loop
R1(config)#int loopback 1
R1(config-if)#
```

```
Success rate is 0 percent (0/5)
R1#interf
R1#interface loopback 1
       ^
% Invalid input detected at '^' marker.

R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int
R1(config)#int loop
R1(config)#int loopback 1
R1(config-if)#
*Dec 17 15:29:16.547: %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up
R1(config-if)#ip address 2.2.2.2 255.255.255.255
R1(config-if)#^Z
R1#
*Dec 17 15:29:26.995: %SYS-5-CONFIG_I: Configured from console by console
R1#ping loopback.R1.com

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/3/4 ms
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#
R1#xterm-256color
*Dec 17 15:30:15.411: %SYS-5-CONFIG_I: Configured from console by console
R1#xterm-256color
Translating "xterm-256color"

Translating "xterm-256color"
% Unknown command or computer name, or unable to find computer address
R1#
R1#int f2/0
      ^
% Invalid input detected at '^' marker.

R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int f2/0
R1(config-if)#ip add
R1(config-if)#ip address 20.0.0.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#
*Dec 17 15:36:01.403: %LINK-3-UPDOWN: Interface FastEthernet2/0, changed state to up
R1(config-if)#
*Dec 17 15:36:01.403: %ENTITY_ALARM-6-INFO: CLEAR INFO Fa2/0 Physical Port Administrative State Down
*Dec 17 15:36:02.403: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed state to up
R1(config-if)#do wr
Building configuration...
[OK]
R1(config-if)#end
```

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip host PC1.com 10.0.0.2
R1(config)#ip host PC2.com 10.0.0.3
R1(config)#ip host PC3.com 10.0.0.4
R1(config)#ip host PC4.com 20.0.0.2
R1(config)#ip host PC5.com 20.0.0.3
R1(config)#ip host PC6.com 20.0.0.4
R1(config)#ping PC1.com
                ^
% Invalid input detected at '^' marker.

R1(config)#^Z
R1#
*Dec 17 15:38:13.391: %SYS-5-CONFIG_I: Configured from console by console
R1#ping PC1.com

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.0.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 28/48/56 ms
R1#
```

PC1:
ip 10.0.0.2/24 10.0.0.1
ip dns 20.0.0.1

PC2:
ip 10.0.0.3/24 10.0.0.1
ip dns 20.0.0.1

PC3:
ip 10.0.0.4/24 10.0.0.1
ip dns 20.0.0.1

PC4:
ip 20.0.0.2/24 20.0.0.1
ip dns 10.0.0.1

PC5:
ip 20.0.0.3/24 20.0.0.1
ip dns 10.0.0.1

PC6:
ip 20.0.0.4/24 20.0.0.1
ip dns 10.0.0.1

PC1 to PC4 PING Successful

```
PC-1> ping PC4.com
PC4.com resolved to 20.0.0.2
PC4.com icmp_seq=1 timeout
84 bytes from 20.0.0.2 icmp_seq=2 ttl=63 time=19.287 ms
PC4.com icmp_seq=3 timeout
PC4.com icmp_seq=4 timeout
84 bytes from 20.0.0.2 icmp_seq=5 ttl=63 time=17.063 ms

PC-1> ping PC4.com
PC4.com resolved to 20.0.0.2
84 bytes from 20.0.0.2 icmp_seq=1 ttl=63 time=19.737 ms
PC4.com icmp_seq=2 timeout
84 bytes from 20.0.0.2 icmp_seq=3 ttl=63 time=15.898 ms
84 bytes from 20.0.0.2 icmp_seq=4 ttl=63 time=14.344 ms
PC4.com icmp_seq=5 timeout
```

PC5 to PC3 PING Succesful

```
Terminal
MAC          : 00:50:79:66:68:04
LPORT        : 10020
RHOST:PORT   : 127.0.0.1:10021
MTU:         : 1500

PC-5> ip dns 10.0.0.1

PC-5> ping PC3.com
PC3.com resolved to 10.0.0.4
PC3.com icmp_seq=1 timeout
PC3.com icmp_seq=2 timeout
84 bytes from 10.0.0.4 icmp_seq=3 ttl=63 time=17.794 ms
84 bytes from 10.0.0.4 icmp_seq=4 ttl=63 time=15.535 ms
84 bytes from 10.0.0.4 icmp_seq=5 ttl=63 time=17.602 ms

PC-5>
```
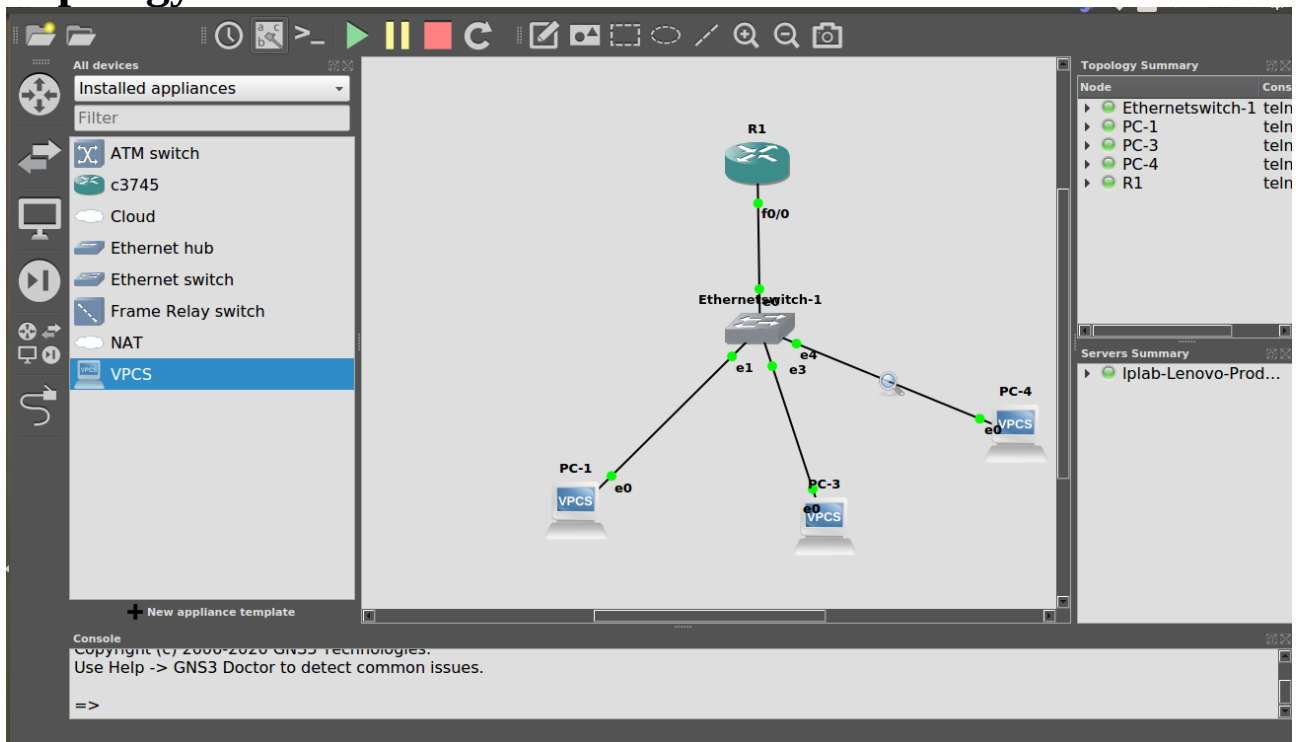
Q8.1

Topology

Pinging pc1 to pc3

No.	Time	Source	Destination	Protoco	Lengt	Info
1	0.000000	Private_66:68:00	Broadcast	ARP	64	Who has 192.168.3.1? Tell 192.168.3.3 [ETHERNET FRAME CHECK SEQUENCE INCORRECT]
2	0.013007	c4:01:24:67:00:00	Private_66:68:00	ARP	60	192.168.3.1 is at c4:01:24:67:00:00
3	0.013658	192.168.3.3	192.168.3.66	ICMP	98	Echo (ping) request id=0x213b, seq=1/256, ttl=64 (reply in 4)
4	0.033230	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) reply id=0x213b, seq=1/256, ttl=63 (request in 3)
5	1.033955	192.168.3.3	192.168.3.66	ICMP	98	Echo (ping) request id=0x223b, seq=2/512, ttl=64 (no response found!)
6	3.034612	192.168.3.3	192.168.3.66	ICMP	98	Echo (ping) request id=0x243b, seq=3/768, ttl=64 (no response found!)
7	5.034994	192.168.3.3	192.168.3.66	ICMP	98	Echo (ping) request id=0x263b, seq=4/1024, ttl=64 (reply in 8)
8	5.051323	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) reply id=0x263b, seq=4/1024, ttl=63 (request in 7)
9	6.051919	192.168.3.3	192.168.3.66	ICMP	98	Echo (ping) request id=0x273b, seq=5/1280, ttl=64 (no response found!)

> Frame 1: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface 0
> Ethernet II, Src: Private_66:68:00 (00:50:79:66:68:00), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
> Address Resolution Protocol (request)

```
0000  ff ff ff ff ff ff 00 50  79 66 68 00 08 06 00 01   ·······P yfh····
0010  08 00 06 04 00 01 00 50  79 66 68 00 c0 a8 03 03   ·······P yfh····
```

Ready to load or capture | Packets: 9 · Displayed: 9 (100.0%) | Profile: Default

Pinging pc3 to pc1

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	Private_66:68:02	Broadcast	ARP	64	Who has 192.168.3.65? Tell 192.168.3.66 [ETHERNET FRAME CHECK SEQUENCE INCORRECT]
2	0.002929	c4:01:24:67:00:00	Private_66:68:02	ARP	60	192.168.3.65 is at c4:01:24:67:00:00
3	0.003140	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xaf3b, seq=1/256, ttl=64 (reply in 5)
4	2.004197	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xb13b, seq=2/512, ttl=64 (no response found!)
5	3.018421	192.168.3.3	192.168.3.66	ICMP	98	Echo (ping) reply id=0xaf3b, seq=1/256, ttl=63 (request in 3)
6	4.005069	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xb33b, seq=3/768, ttl=64 (no response found!)
7	6.005907	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xb53b, seq=4/1024, ttl=64 (no response found!)
8	8.006146	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xb73b, seq=5/1280, ttl=64 (no response found!)
9	18.240116	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xc13b, seq=1/256, ttl=64 (no response found!)
10	20.240663	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xc33b, seq=2/512, ttl=64 (no response found!)
11	22.241076	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xc53b, seq=3/768, ttl=64 (no response found!)
12	24.241798	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xc73b, seq=4/1024, ttl=64 (reply in 13)
13	24.260450	192.168.3.3	192.168.3.66	ICMP	98	Echo (ping) reply id=0xc73b, seq=4/1024, ttl=63 (request in 12)
14	25.260857	192.168.3.66	192.168.3.3	ICMP	98	Echo (ping) request id=0xc83b, seq=5/1280, ttl=64 (reply in 15)
15	25.276648	192.168.3.3	192.168.3.66	ICMP	98	Echo (ping) reply id=0xc83b, seq=5/1280, ttl=63 (request in 14)

▶ Frame 1: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface 0
▶ Ethernet II, Src: Private_66:68:02 (00:50:79:66:68:02), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
▶ Address Resolution Protocol (request)

```
0000  ff ff ff ff ff ff 00 50   79 66 68 02 08 06 00 01    ·······P yfh·····
0010  08 00 06 04 00 01 00 50   79 66 68 02 c0 a8 03 42    ·······P yfh···B
```

Ready to load or capture   Packets: 15 · Displayed: 15 (100.0%)   Profile: Default