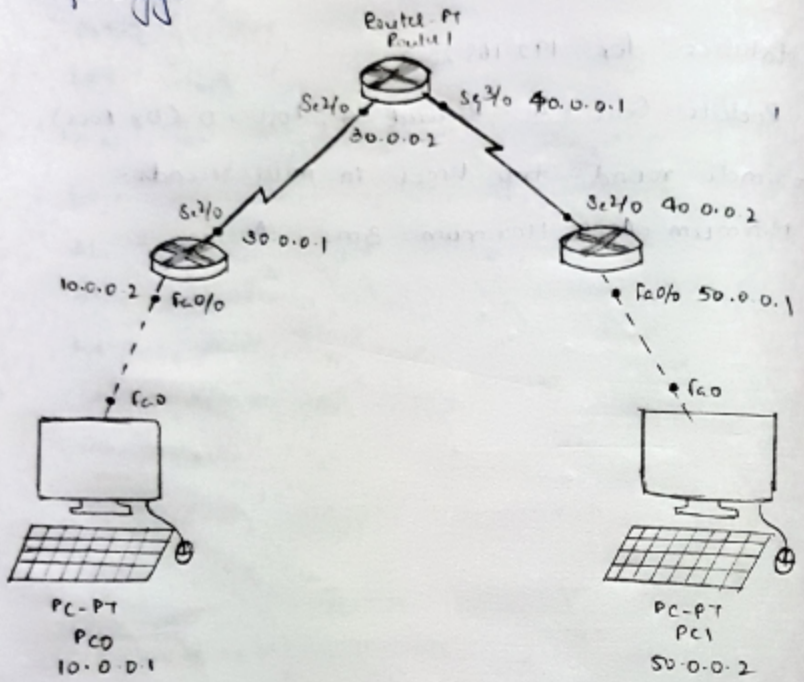
PROGRAM -7

Demonstrate the TTL/ Life of a Packet

11/8/22

Aim : Demonstrate the TTL / Life of a packet

Topology:



Procedure:

1. Create a topology as shown above with 2 PCs and 3 routers
2. Configure the IP address of PC0 and PC1 as 10.0.0.1 , 50.0.0.2 respectively.
3. Configure the IP address of routers using following commands.

   Router # config t
   Router (config) # interface Fa0/0 10.0.0.2 255.0.0.0
   Router (config-if) # ip address 10.0.0.2 255.0.0.0
   Router # exit

④ Configure the routers using default / static routing.

⑤ On simulation mode, send a simple PDU from one PC to another

⑥ Use capture button to capture every transfer.

⑦ Click on PDU during every transfer to see the Inbound & outbound PDU details

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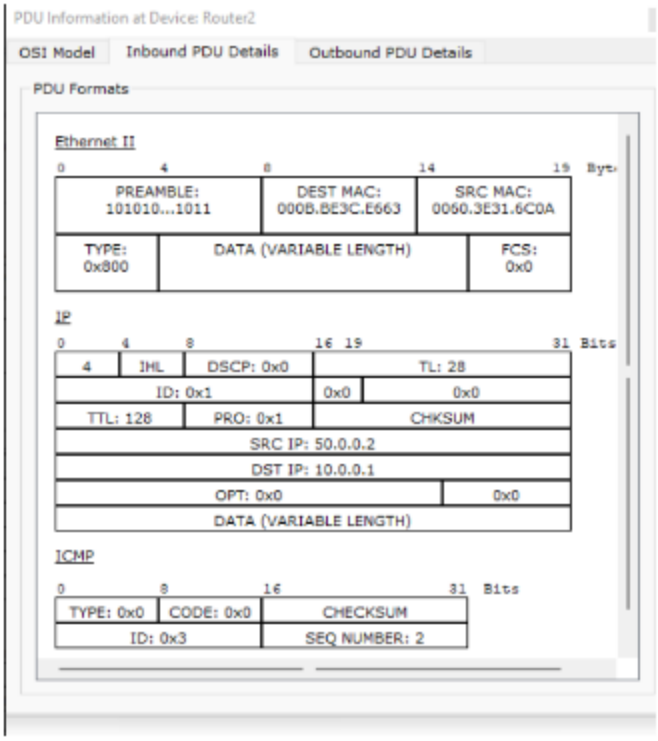
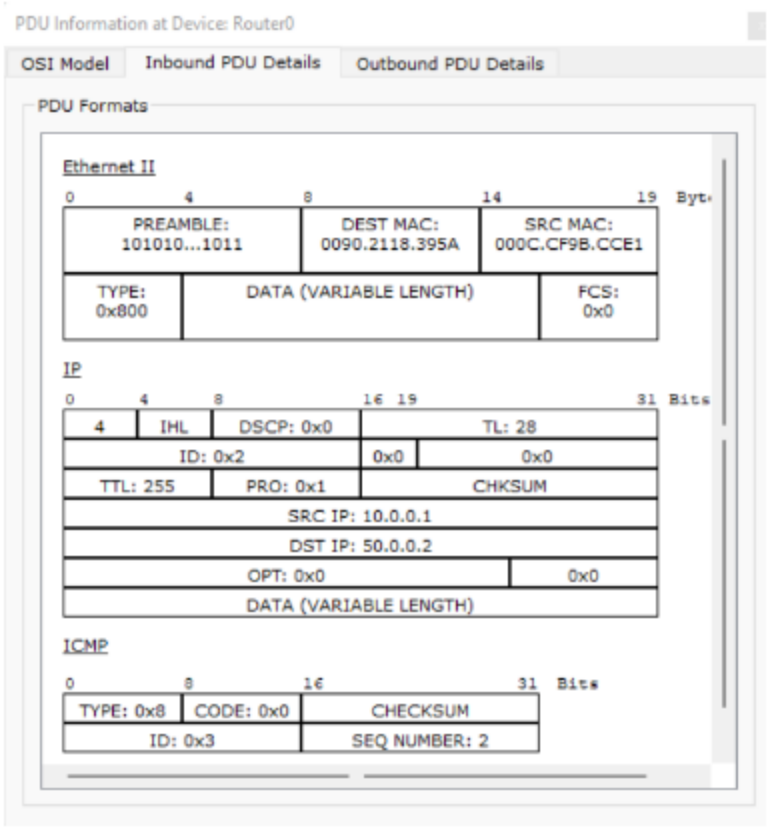
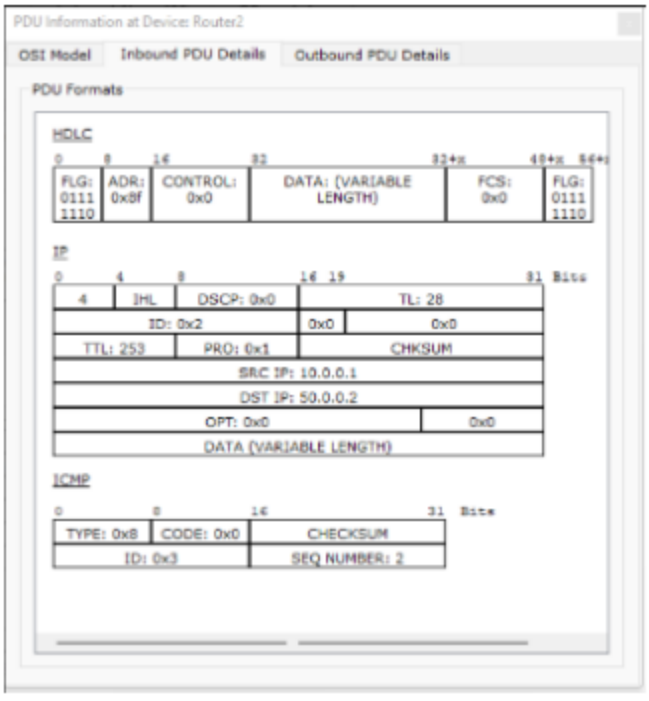



PDU Information at Device: Router0
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
Ethernet II
0 4 8 14 19 Byt
PREAMBLE: 101010...1011
DEST MAC: 0090.2118.395A
SRC MAC: 000C.CF9B.CCE1
TYPE: 0x800
DATA (VARIABLE LENGTH)
FCS: 0x0
IP
0 4 8 16 19 31 Bits
4
IHL
DSCP: 0x0
TL: 28
ID: 0x2
0x0
0x0
TTL: 255
PRO: 0x1
CHKSUM
SRC IP: 10.0.0.1
DST IP: 50.0.0.2
OPT: 0x0
0x0
DATA (VARIABLE LENGTH)
ICMP
0 8 16 31 Bits
TYPE: 0x8
CODE: 0x0
CHECKSUM
ID: 0x3
SEQ NUMBER: 2


PDU Information at Device: Router2
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
HDLC
FLG: 0111 1110
ADR: 0x8f
CONTROL: 0x0
DATA: (VARIABLE LENGTH)
FCS: 0x0
FLG: 0111 1110
IP
4
IHL
DSCP: 0x0
TL: 28
ID: 0x2
0x0
0x0
TTL: 253
PRO: 0x1
CHKSUM
SRC IP: 10.0.0.1
DST IP: 50.0.0.2
OPT: 0x0
0x0
DATA (VARIABLE LENGTH)
ICMP
TYPE: 0x8
CODE: 0x0
CHECKSUM
ID: 0x3
SEQ NUMBER: 2

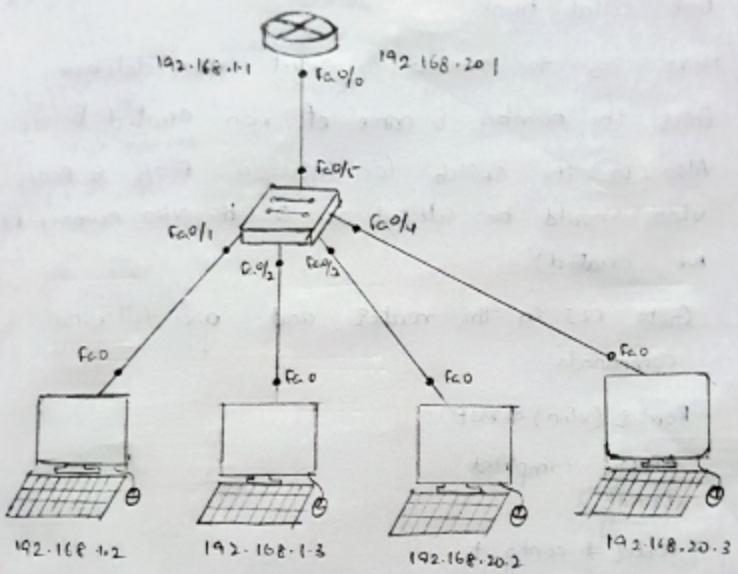
PROGRAM -11

To construct a VLAN and make the PC's communicate among a VLAN

11/8/23

Aim: To construct a VLAN and make the Pc's communicate among a VLAN

Topology:



Procedure:

1. Create the topology as given above.
2. Configure IP address for Pc's as 192.168.1.2, 192.168.1.3, 192.168.20.2, 192.168.20.3, respectively.
3. Configure the IP address for the router using following commands:

   Router > enable
   Router # config t
   Router (config) interface fa0/0
   Router (config-if)# ip address 192.168.1.1 255.255.255.0
   Router (config-if) # exit
4. On the switch go to VLAN database & create/add

new vlan database.

(5) Now, go to Interface fastEthernet 0/5 & make it trunk, in vlan everything need to be Select &. This allows different VLAN's over single link called trunk.

(6) Next, go to router & Select vlan database enter the number & name of vlan created before Also, in the Switch for interface fa0/3 & fa0/4 vlan should be selected as 2 (the vlan number which we created)

(7) Goto CLI in the router and give following commands..

```
Router (vlan) # exit
APPLY completed.
exiting..
Router # config t
Router (config) # interface fastEthernet 0/0.1
Router (config-subif) # encapsulation dot1q 2
Router (config-subif) # ip address 192.168.20.1
                                   255.255.255.0
Router (config-subif) # no shut
Router (config-sub.if) # exit
```

Output:-

On command prompt

PC> ping 192.168.20.2

Reply from 192.168.20.2 : bytes = 32 time = 0ms TTL = 127
Reply from 192.168.20.2 : bytes = 32 time = 3ms TTL = 127
Reply from 192.168.20.2 : bytes = 32 time = 1ms TTL = 127

Ping statistics for 192.168.20.2:

Packets : Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:-

Minimum = 0ms, Maximum = 3ms, Average =

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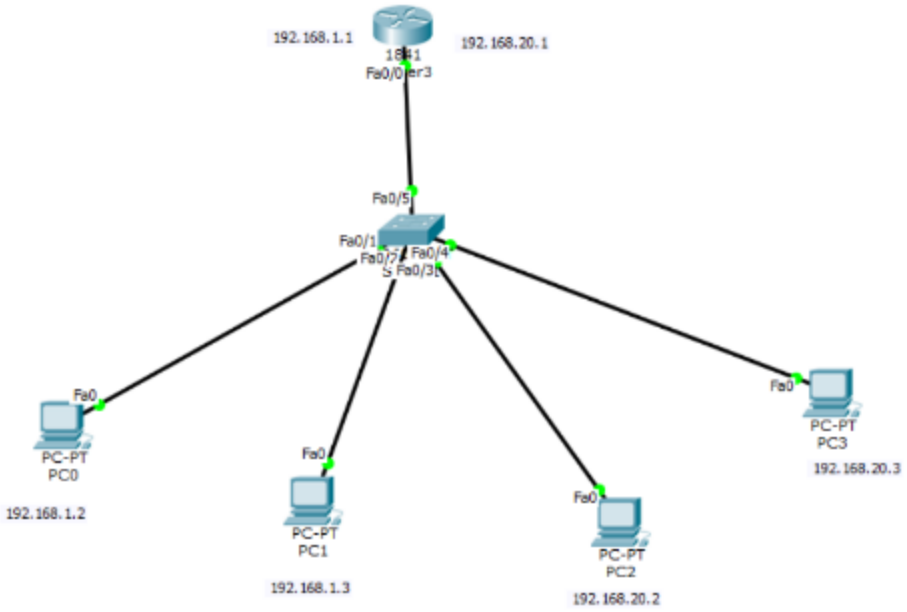

Command Prompt X

```
Packet Tracer PC Command Line 1.0
PC>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.20.2: bytes=32 time=4ms TTL=127
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=3ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 2ms

PC>
```

PROGRAM 12

To construct a WLAN and make the nodes communicate wirelessly

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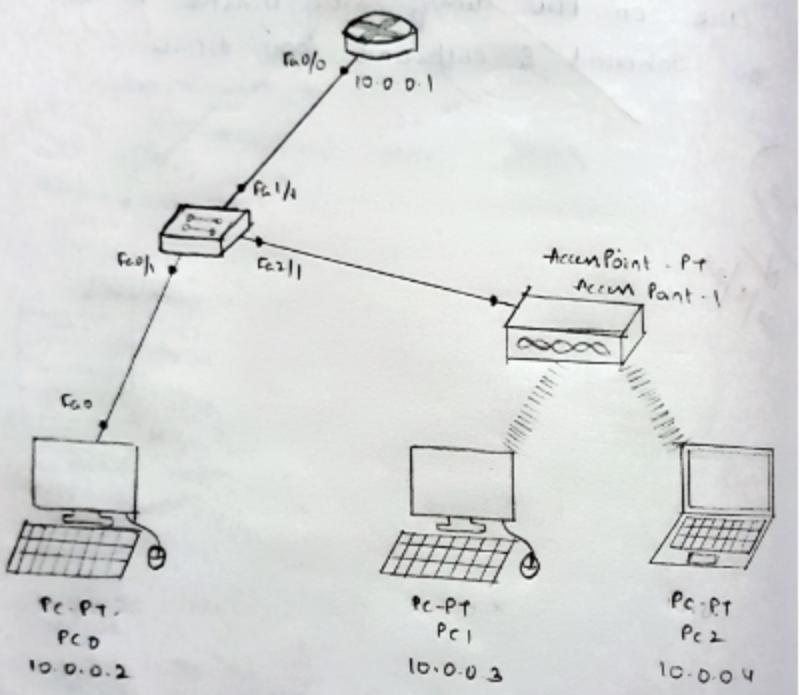
Aim: To construct a WLAN and make the nodes communicate wirelessly.

Topology:



Procedure:

① Create the topology as shown above with Pc, Switch, Router and Access point connected directly. (Wired connection)

② Configure Pc0 and Router as normally done

③ Configure the Access point 1, Go to port1 & Give SSID name - any name.

④ Select WEP & given any 10 digit hex key - 1234567890 (example)

(5) Configure PCs & Laptop with Wireless Standards

(6) Switch off the device. Drag the existing PT-HOST-NM-1AM to the component listed in the LHS. Drag WMP300N Wireless interface to empty port. Switch on the device.

(7) On the config tab. a new wireless interface would have been added. Now configure SSID, WEP, WEP Key, IP address and Gateway (as normally done) to the device.

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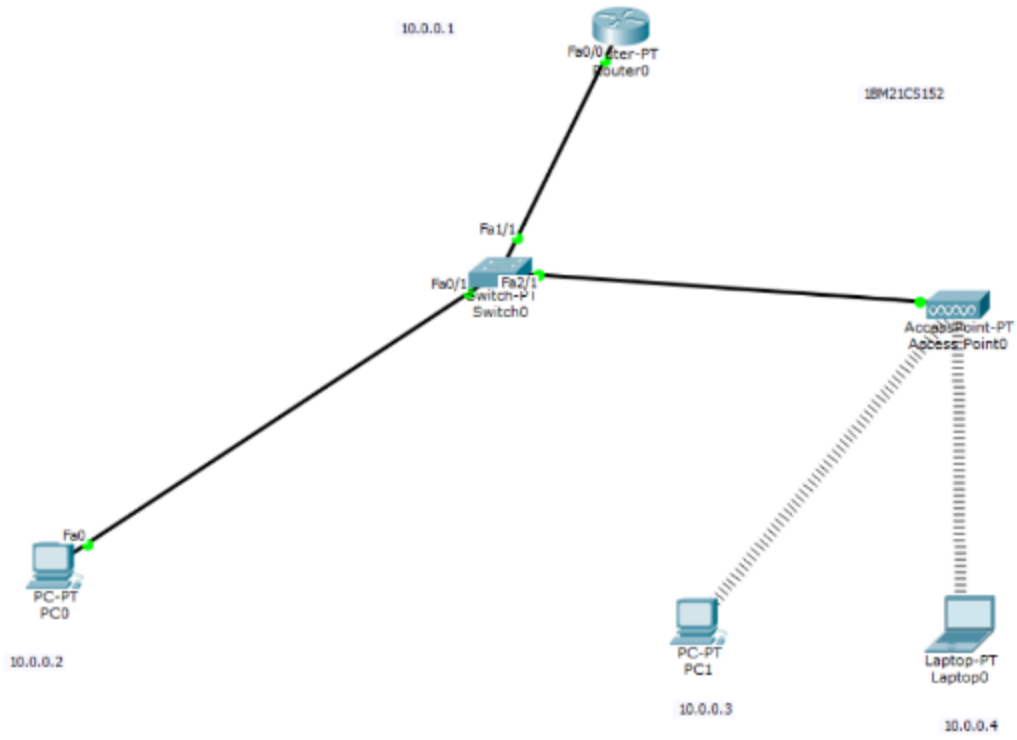
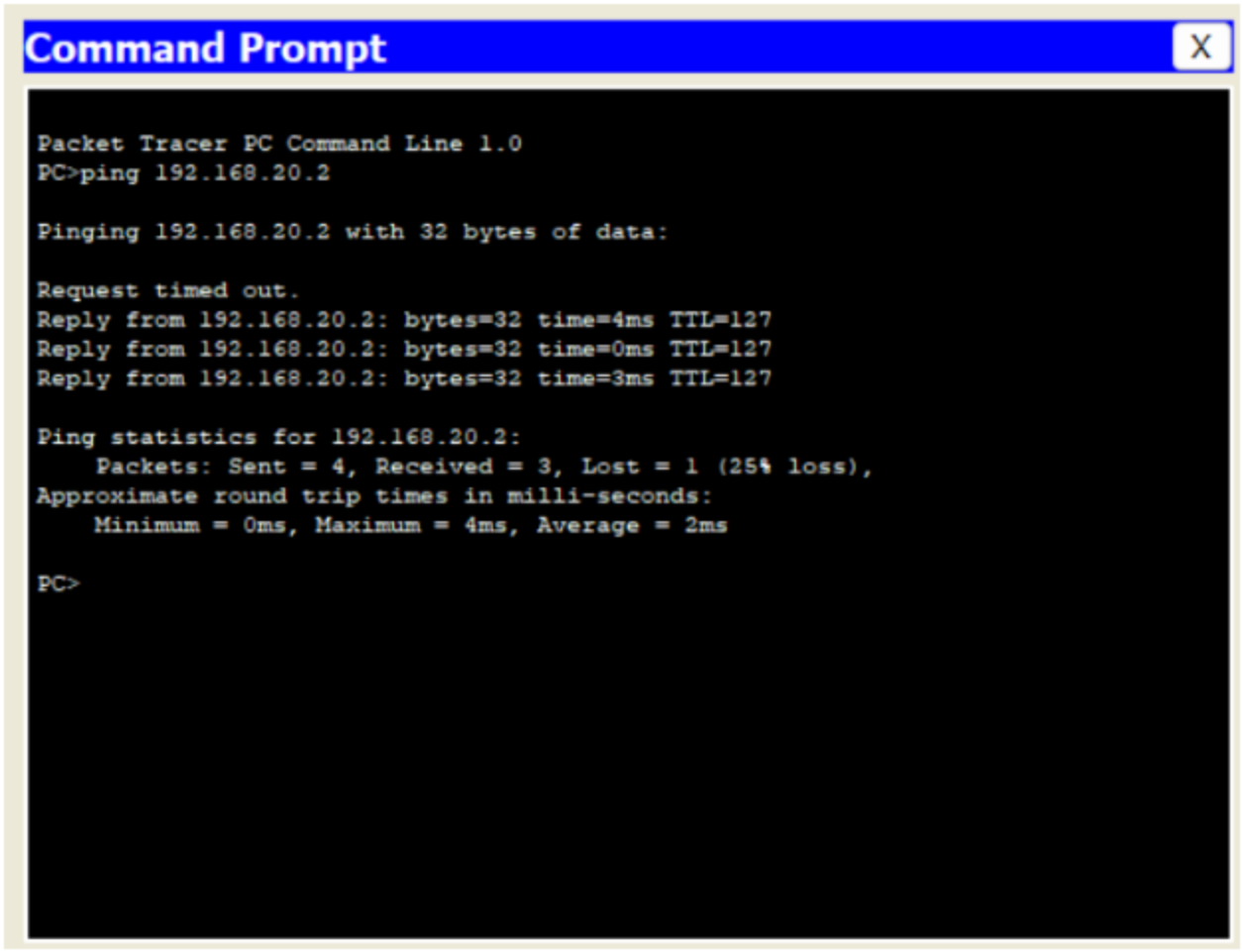

10.0.0.1
Fa0/0
Router-PT
Router0
1BM21CS152
Fa1/1
Fa0/1
Fa2/1
Switch-PT
Switch0
Access Point-PT
Access Point0
Fa0
PC-PT
PC0
10.0.0.2
PC-PT
PC1
10.0.0.3
Laptop-PT
Laptop0
10.0.0.4


Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 192.168.20.2
Pinging 192.168.20.2 with 32 bytes of data:
Request timed out.
Reply from 192.168.20.2: bytes=32 time=4ms TTL=127
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=3ms TTL=127
Ping statistics for 192.168.20.2:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 4ms, Average = 2ms
PC>