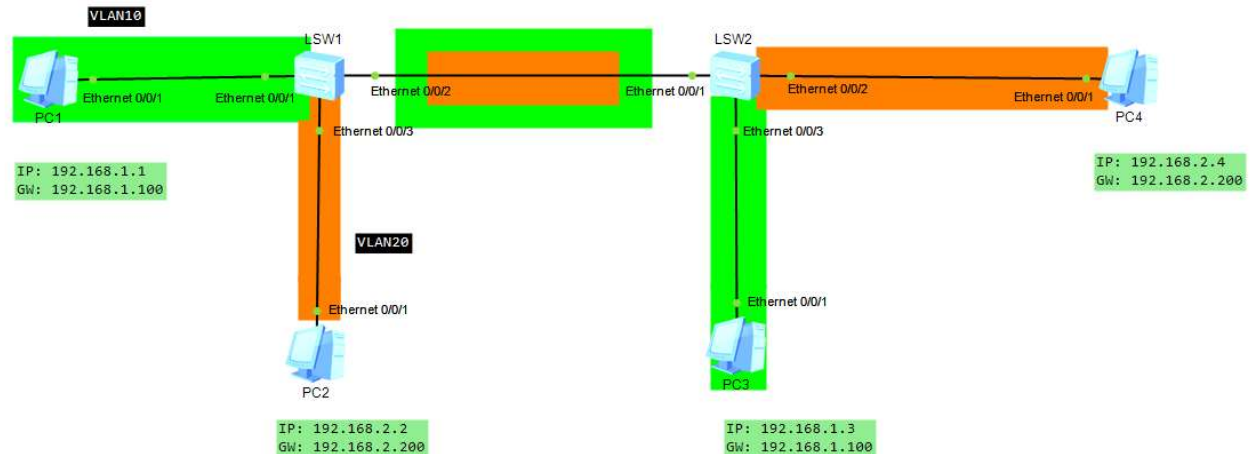


## LAB-07

Configure the following scenario (inter VLAN routing) in eNSP:

eNSP simulation:



First, we have to assign the Ip address and gateway to each PC then we have to configure these commands on switches.

Configuration on Switch (LSW1):

```
sysname LSW1
#
vlan batch 10 20
#
```

```
interface Ethernet0/0/1
port link-type access
port default vlan 10
#
interface Ethernet0/0/2
port link-type trunk
port trunk allow-pass vlan 10 20
#
interface Ethernet0/0/3
port link-type access
port default vlan 20
#
```

We make Vlanif interfaces and assign gateway as ip address to them which results in inter vlan routing

```
interface Vlanif10
ip address 192.168.1.100 255.255.255.0
#
interface Vlanif20
ip address 192.168.2.200 255.255.255.0
#
```

## Vlanif Interface Configuration

```
<LSW1>display ip interface brief
*down: administratively down
^down: standby
(l): loopback
(s): spoofing
The number of interface that is UP in Physical is 4
The number of interface that is DOWN in Physical is 1
The number of interface that is UP in Protocol is 3
The number of interface that is DOWN in Protocol is 2
```

Interface	IP Address/Mask	Physical	Protocol
MEth0/0/1	unassigned	down	down
NULL0	unassigned	up	up(s)
Vlanif1	unassigned	up	down
Vlanif10	192.168.1.100/24	up	up
Vlanif20	192.168.2.200/24	up	up

```
<LSW1>
```

## VLAN Configuration

```
<LSW1>display vlan
The total number of vlans is : 3
```

VID	Type	Ports
1	common	UT:Eth0/0/2 (U) Eth0/0/7 (D) Eth0/0/11 (D) Eth0/0/15 (D) Eth0/0/19 (D) GE0/0/1 (D) Eth0/0/4 (D) Eth0/0/8 (D) Eth0/0/12 (D) Eth0/0/16 (D) Eth0/0/20 (D) GE0/0/2 (D) Eth0/0/5 (D) Eth0/0/9 (D) Eth0/0/13 (D) Eth0/0/17 (D) Eth0/0/21 (D) Eth0/0/6 (D) Eth0/0/10 (D) Eth0/0/14 (D) Eth0/0/18 (D) Eth0/0/22 (D)
10	common	UT:Eth0/0/1 (U) TG:Eth0/0/2 (U)
20	common	UT:Eth0/0/3 (U) TG:Eth0/0/2 (U)

```
U: Up; D: Down; TG: Tagged; UT: Untagged;
MP: Vlan-mapping; ST: Vlan-stacking;
#: ProtocolTransparent-vlan; *: Management-vlan;
```

VID	Status	Property	MAC-LRN	Statistics	Description
1	enable	default	enable	disable	VLAN 0001
10	enable	default	enable	disable	VLAN 0010
20	enable	default	enable	disable	VLAN 0020

```
<LSW1>
```

**Configuration on Switch (LSW2):**

```
sysname LSW2
#
vlan batch 10 20
#
cluster enable
```

```
#
interface Ethernet0/0/1
 port link-type trunk
 port trunk allow-pass vlan 10 20
#
interface Ethernet0/0/2
 port link-type access
 port default vlan 20
#
interface Ethernet0/0/3
 port link-type access
 port default vlan 10
#
```

We make Vlanif interfaces and assign gateway as ip address to them which results in inter vlan routing

```
#
interface Vlanif10
 ip address 192.168.1.100 255.255.255.0
#
interface Vlanif20
 ip address 192.168.2.200 255.255.255.0
#
```

**Vlanif Interface Configuration**

```
<LSW2>display ip interface brief
*down: administratively down
^down: standby
(l): loopback
(s): spoofing
The number of interface that is UP in Physical is 4
The number of interface that is DOWN in Physical is 1
The number of interface that is UP in Protocol is 3
The number of interface that is DOWN in Protocol is 2
```

Interface	IP Address/Mask	Physical	Protocol
MEth0/0/1	unassigned	down	down
NULL0	unassigned	up	up(s)
Vlanif1	unassigned	up	down
Vlanif10	192.168.1.100/24	up	up
Vlanif20	192.168.2.200/24	up	up

```
<LSW2>
```

## VLAN Configuration

```
<LSW2>display vlan
The total number of vlans is : 3
-----
U: Up;           D: Down;           TG: Tagged;       UT: Untagged;
MP: Vlan-mapping; ST: Vlan-stacking;
#: ProtocolTransparent-vlan; *: Management-vlan;
-----

VID  Type      Ports
-----
1    common  UT:Eth0/0/1 (U)   Eth0/0/4 (D)   Eth0/0/5 (D)   Eth0/0/6 (D)
                        Eth0/0/7 (D)   Eth0/0/8 (D)   Eth0/0/9 (D)   Eth0/0/10 (D)
                        Eth0/0/11 (D)  Eth0/0/12 (D)  Eth0/0/13 (D)  Eth0/0/14 (D)
                        Eth0/0/15 (D)  Eth0/0/16 (D)  Eth0/0/17 (D)  Eth0/0/18 (D)
                        Eth0/0/19 (D)  Eth0/0/20 (D)  Eth0/0/21 (D)  Eth0/0/22 (D)
                        GE0/0/1 (D)   GE0/0/2 (D)

10   common  UT:Eth0/0/3 (U)
                        TG:Eth0/0/1 (U)

20   common  UT:Eth0/0/2 (U)
                        TG:Eth0/0/1 (U)

VID  Status  Property      MAC-LRN Statistics Description
-----
1    enable  default      enable  disable  VLAN 0001
10   enable  default      enable  disable  VLAN 0010
20   enable  default      enable  disable  VLAN 0020
<LSW2>
```

## TESTING

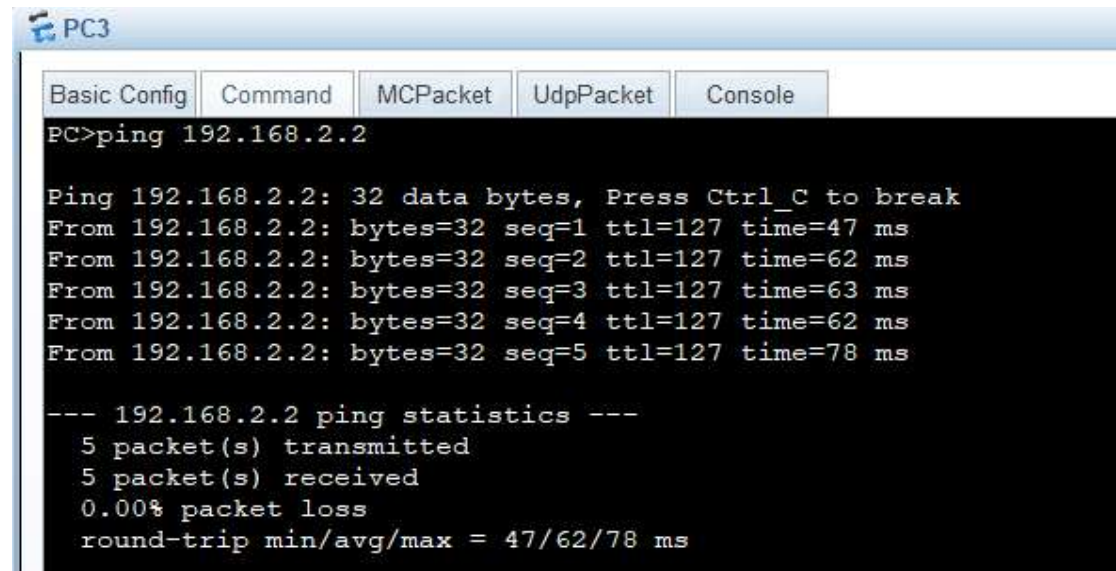
### Ping PC4 from PC1

```
PC>ping 192.168.2.4

Ping 192.168.2.4: 32 data bytes, Press Ctrl_C to break
From 192.168.2.4: bytes=32 seq=1 ttl=127 time=109 ms
From 192.168.2.4: bytes=32 seq=2 ttl=127 time=47 ms
From 192.168.2.4: bytes=32 seq=3 ttl=127 time=63 ms
From 192.168.2.4: bytes=32 seq=4 ttl=127 time=62 ms
From 192.168.2.4: bytes=32 seq=5 ttl=127 time=62 ms

--- 192.168.2.4 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 47/68/109 ms
PC>
```



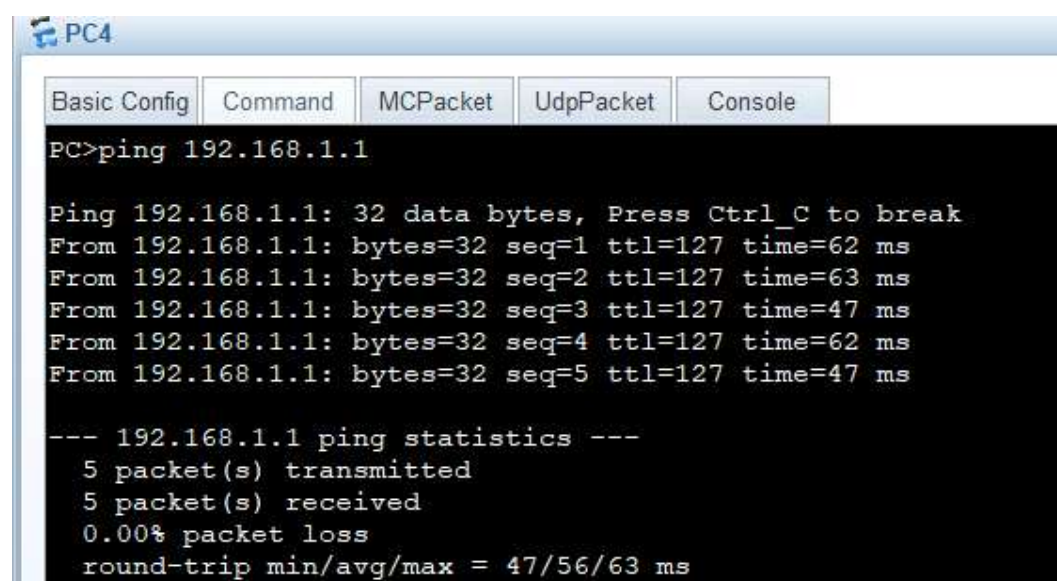
**PC2 from PC3:**

The screenshot shows a PC3 console window with the 'Console' tab selected. The command 'PC>ping 192.168.2.2' has been entered. The output shows five successful ping requests to 192.168.2.2, each with 32 data bytes, TTL=127, and varying response times (47, 62, 63, 62, 78 ms). A summary line indicates 5 packets transmitted, 5 received, 0.00% loss, and a round-trip time range of 47/62/78 ms.

```
PC3
Basic Config Command MCPacket UdpPacket Console
PC>ping 192.168.2.2

Ping 192.168.2.2: 32 data bytes, Press Ctrl_C to break
From 192.168.2.2: bytes=32 seq=1 ttl=127 time=47 ms
From 192.168.2.2: bytes=32 seq=2 ttl=127 time=62 ms
From 192.168.2.2: bytes=32 seq=3 ttl=127 time=63 ms
From 192.168.2.2: bytes=32 seq=4 ttl=127 time=62 ms
From 192.168.2.2: bytes=32 seq=5 ttl=127 time=78 ms

--- 192.168.2.2 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 47/62/78 ms
```

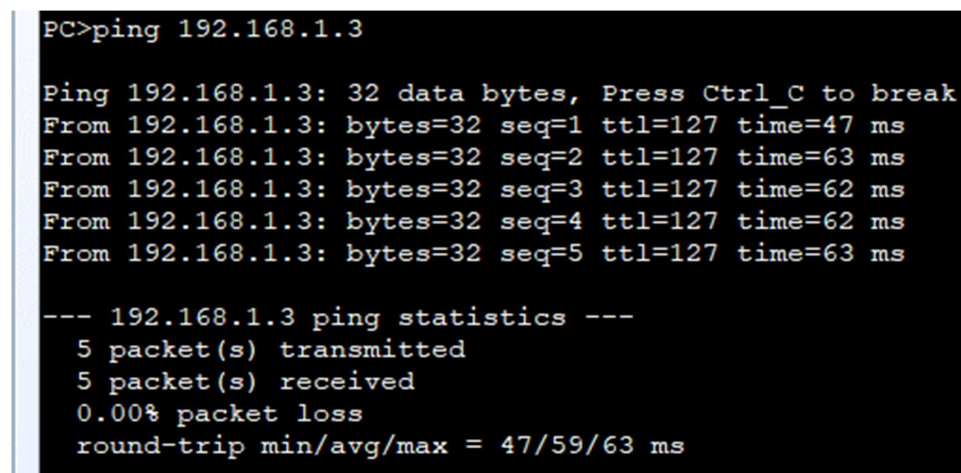
**PC1 from PC4**

The screenshot shows a PC4 console window with the 'Console' tab selected. The command 'PC>ping 192.168.1.1' has been entered. The output shows five successful ping requests to 192.168.1.1, each with 32 data bytes, TTL=127, and varying response times (62, 63, 47, 62, 47 ms). A summary line indicates 5 packets transmitted, 5 received, 0.00% loss, and a round-trip time range of 47/56/63 ms.

```
PC4
Basic Config Command MCPacket UdpPacket Console
PC>ping 192.168.1.1

Ping 192.168.1.1: 32 data bytes, Press Ctrl_C to break
From 192.168.1.1: bytes=32 seq=1 ttl=127 time=62 ms
From 192.168.1.1: bytes=32 seq=2 ttl=127 time=63 ms
From 192.168.1.1: bytes=32 seq=3 ttl=127 time=47 ms
From 192.168.1.1: bytes=32 seq=4 ttl=127 time=62 ms
From 192.168.1.1: bytes=32 seq=5 ttl=127 time=47 ms

--- 192.168.1.1 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 47/56/63 ms
```

**PC3 from PC2**

The screenshot shows a PC2 console window with the 'Console' tab selected. The command 'PC>ping 192.168.1.3' has been entered. The output shows five successful ping requests to 192.168.1.3, each with 32 data bytes, TTL=127, and varying response times (47, 63, 62, 62, 63 ms). A summary line indicates 5 packets transmitted, 5 received, 0.00% loss, and a round-trip time range of 47/59/63 ms.

```
PC2
Basic Config Command MCPacket UdpPacket Console
PC>ping 192.168.1.3

Ping 192.168.1.3: 32 data bytes, Press Ctrl_C to break
From 192.168.1.3: bytes=32 seq=1 ttl=127 time=47 ms
From 192.168.1.3: bytes=32 seq=2 ttl=127 time=63 ms
From 192.168.1.3: bytes=32 seq=3 ttl=127 time=62 ms
From 192.168.1.3: bytes=32 seq=4 ttl=127 time=62 ms
From 192.168.1.3: bytes=32 seq=5 ttl=127 time=63 ms

--- 192.168.1.3 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 47/59/63 ms
```