

Date: 8/22/2025

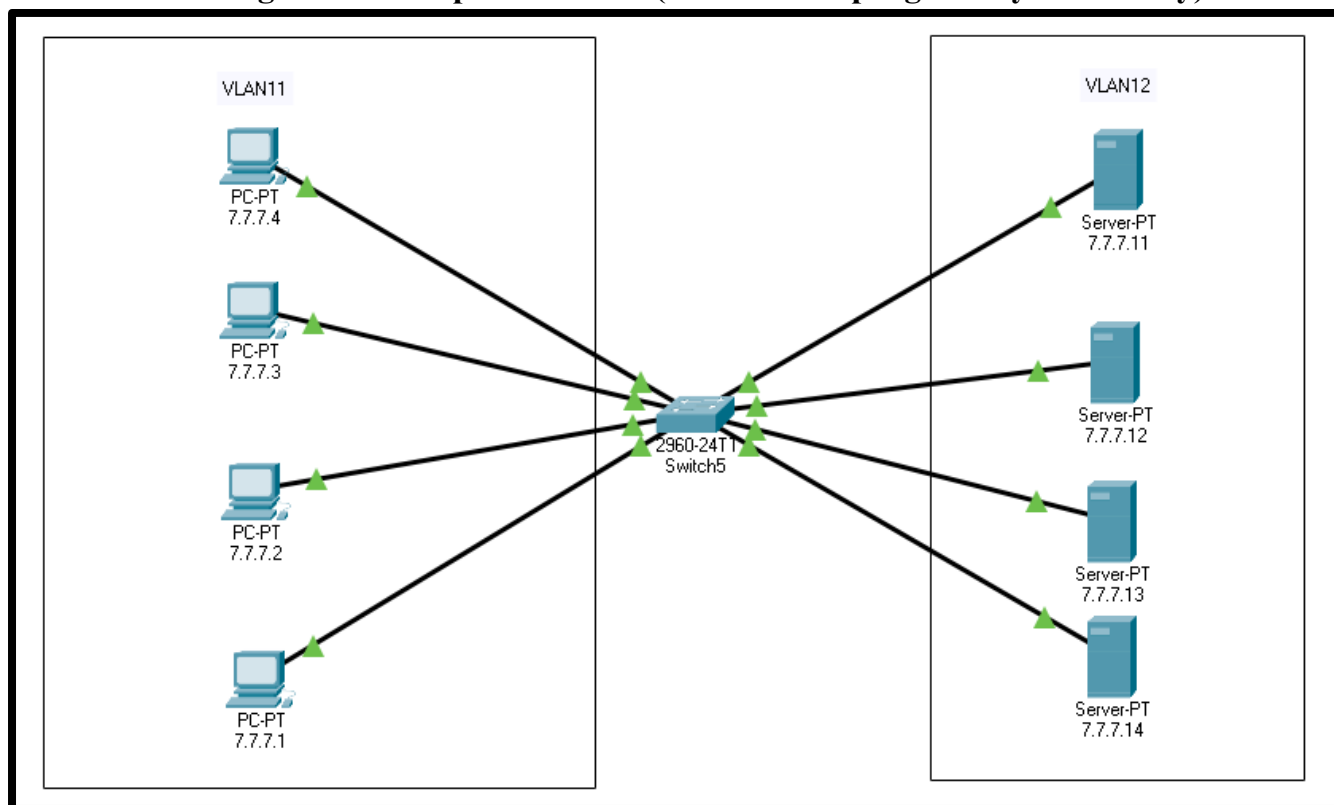
Lab Practical #05:

Study the concept of VLAN using packet tracer.

Practical Assignment #05:

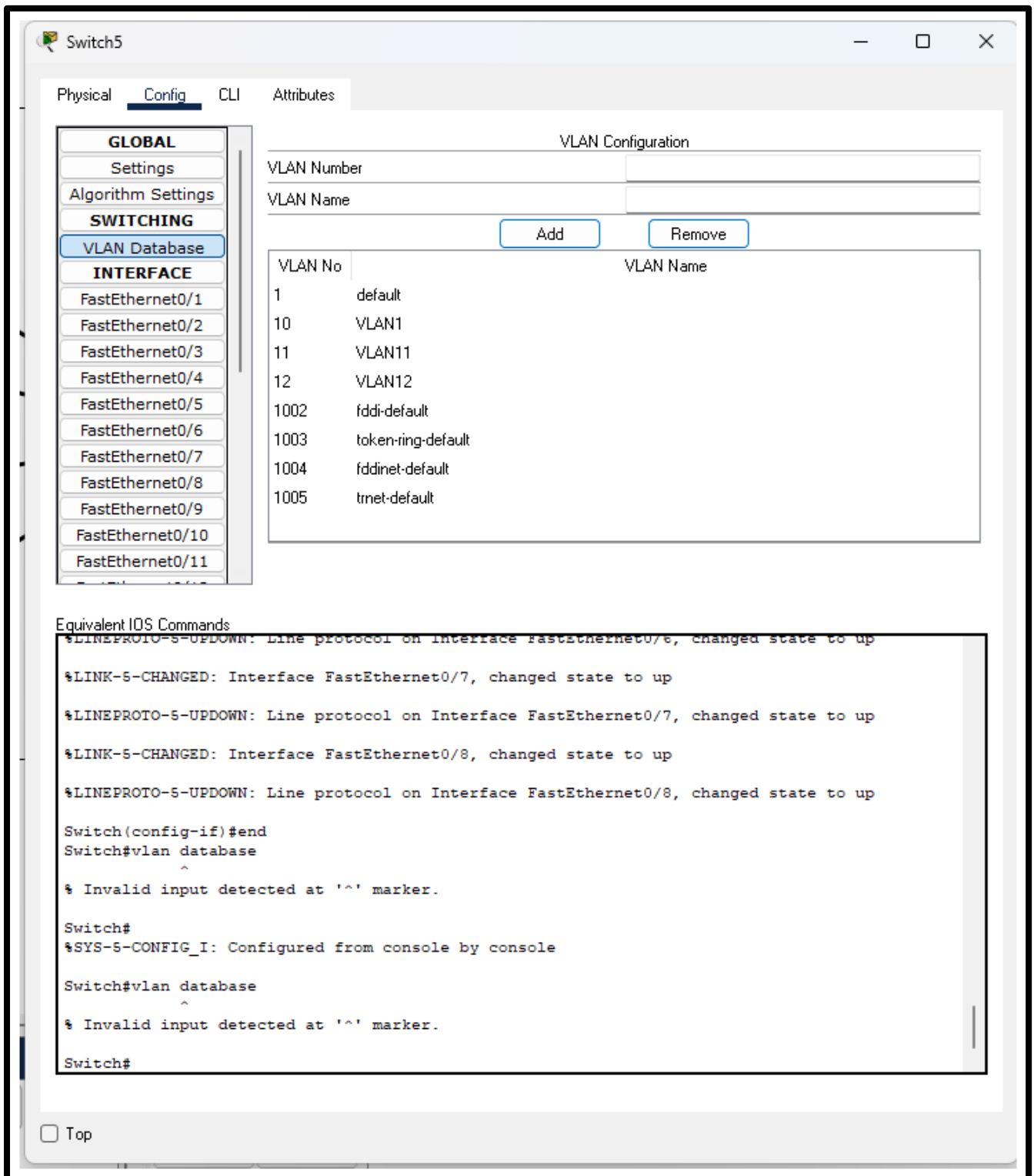
1. Implement the different network structures in VLAN and VLAN trunking.
Also check connectivity between them using ping command or PDU utility.

1. VLANs configuration setup screenshot. (VLAN example given by lab faculty)



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VLAN Database



The screenshot shows the configuration interface for a switch named 'Switch5'. The 'Config' tab is selected, and the 'VLAN Database' option is highlighted in the left sidebar. The main area displays the 'VLAN Configuration' section with input fields for 'VLAN Number' and 'VLAN Name', and 'Add' and 'Remove' buttons. Below this is a table listing the current VLANs:

VLAN No	VLAN Name
1	default
10	VLAN1
11	VLAN11
12	VLAN12
1002	fddi-default
1003	token-ring-default
1004	fddinet-default
1005	trnet-default

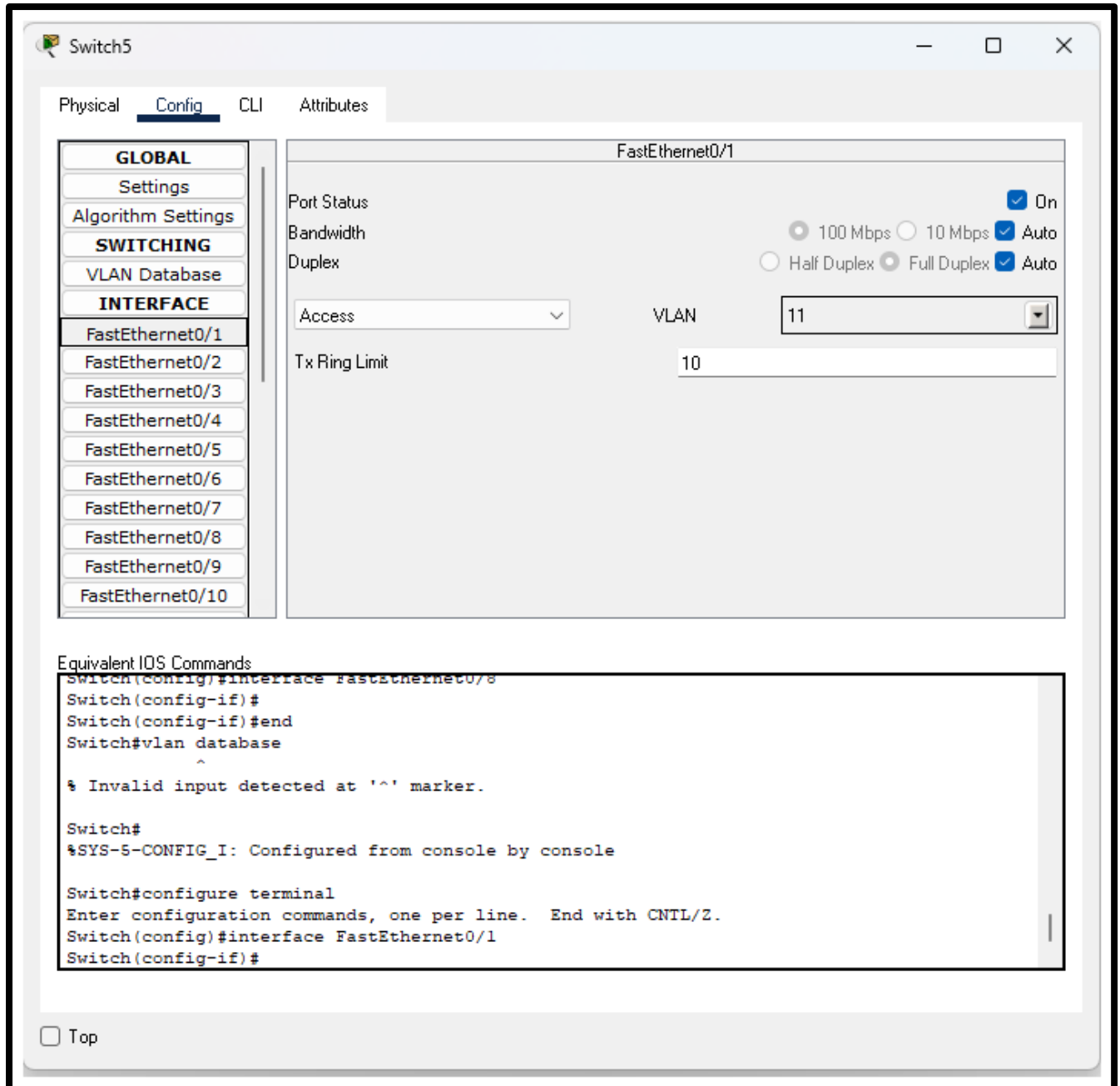
Below the table, the 'Equivalent IOS Commands' section shows a series of commands and system messages:

```
Switch#  
Switch#vlan database  
^  
% Invalid input detected at '^' marker.  
  
Switch#  
Switch#vlan database  
^  
% Invalid input detected at '^' marker.  
  
Switch#
```

At the bottom left, there is a 'Top' button.

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Port



Switch5

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings
- SWITCHING**
- VLAN Database
- INTERFACE**
- FastEthernet0/1
- FastEthernet0/2
- FastEthernet0/3
- FastEthernet0/4
- FastEthernet0/5
- FastEthernet0/6
- FastEthernet0/7
- FastEthernet0/8
- FastEthernet0/9
- FastEthernet0/10

FastEthernet0/1

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

Access VLAN

Tx Ring Limit

Equivalent IOS Commands

```
Switch(config)#interface FastEthernet0/1
Switch(config-if)#
Switch(config-if)#end
Switch#vlan database
^
% Invalid input detected at '^' marker.

Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#
```

☐ Top

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2. Steps to create VLANs in packet tracer.

1. Open Packet Tracer and Add Devices

- Drag and drop a **2960 Switch** from the network devices section.
- Add some **PCs** and **Servers** to the workspace.
- Connect them to the switch using **Copper Straight-Through cables**.

2. Create VLANs on the Switch

1. Click on the switch.
2. Go to the **Config** tab.
3. From the left panel, click on **VLAN Database**.
4. In the VLAN Number field, type the VLAN ID (e.g., **11**) and give it a name (e.g., **VLAN11**).
5. Click **Add**.
6. Repeat the same process for VLAN 12 (name it **VLAN12**).
7. Now you will see both VLANs listed in the VLAN table.

3. Assign Ports to VLANs

1. In the same **Config** tab, click on **FastEthernet0/1** (or whichever port a PC is connected to).
2. Change **Port Mode** to **Access**.
3. From the VLAN drop-down menu, select **VLAN11** for PCs.
4. Do the same for all other PC ports (assign them to VLAN11).
5. Next, select the ports where servers are connected (e.g., FastEthernet0/5, 0/6, etc.).
6. Set **Port Mode** to **Access** and assign them to **VLAN12**.

4. Configure IP Addresses

- Assign IP addresses to each PC and Server by clicking on the device → **Desktop tab** → **IP Configuration**.
- Example:
 - PCs in VLAN11: **7.7.7.1 – 7.7.7.4**
 - Servers in VLAN12: **7.7.7.11 – 7.7.7.14**

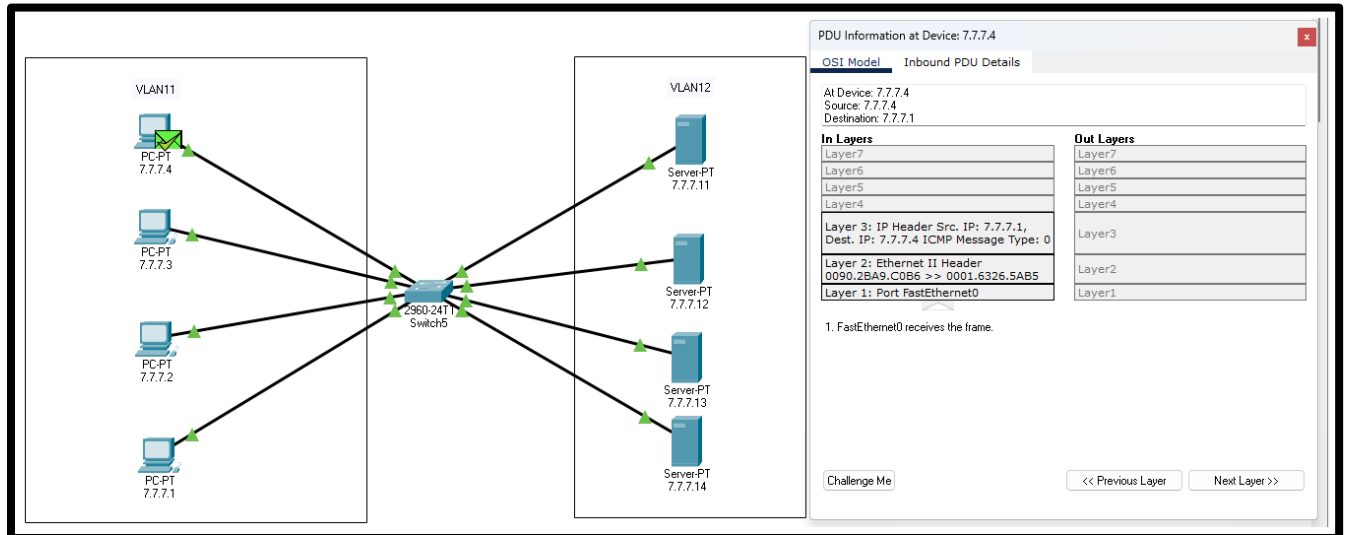
5. Test Connectivity

- Use the **ping tool** or **add a PDU** to check communication.
- Devices in the **same VLAN** will be able to communicate with each other.
- Devices in **different VLANs** will not communicate unless you configure a router or Layer 3 switch for inter-VLAN routing.

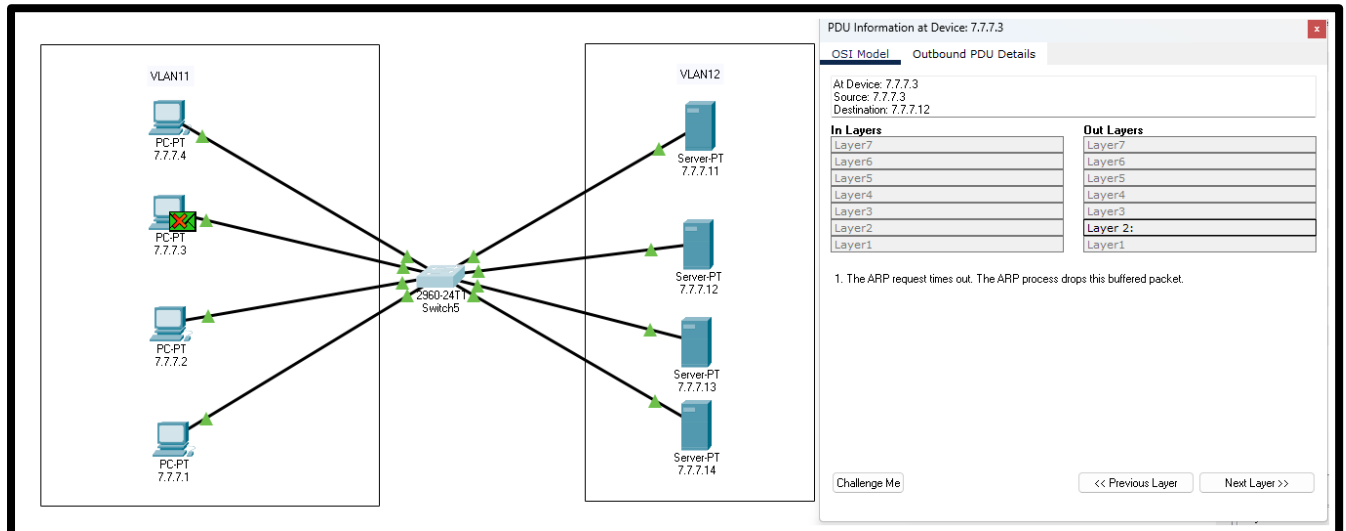
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3. PDU screenshot between two VLANs.

Successful



Failed





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4. Mention IP address of each pc as label.

For VLAN11 (PCs):

1. PC1 → 7.7.7.1
2. PC2 → 7.7.7.2
3. PC3 → 7.7.7.3
4. PC4 → 7.7.7.4

For VLAN12 (Servers):

1. Server1 → 7.7.7.11
2. Server2 → 7.7.7.12
3. Server3 → 7.7.7.13
4. Server4 → 7.7.7.14