

**COMPUTER NETWORKS LAB**

**LAB 2**

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**Lab 2 - Tasks**

**Task 1**

Why are we using 2911 router and not the others?

The **Cisco 2911 router** is preferred in Cisco Packet Tracer because of its versatility and ability to handle more advanced network simulations. It is a **modular router**, allowing you to add different interface modules such as Ethernet, serial, and voice cards, which makes it suitable for various scenarios like **LAN, WAN, and VoIP** setups. Its **Layer 3 capabilities** support advanced routing protocols (OSPF, EIGRP, BGP), and it handles **IPv4 and IPv6**, making it ideal for complex enterprise environments. Additionally, the 2911 supports **security features** like **VPNs and ACLs** and has **Quality of Service (QoS)** capabilities, which are essential for managing network traffic, especially in voice and video communications.

Compared to other routers in Packet Tracer, like the **1941** or **1841**, the 2911 provides greater flexibility, more **interface options**, and better **performance**, making it suitable for **medium-sized enterprise networks** that require both scalability and security. Its balance of features makes it a go-to choice for more robust and realistic network simulations.

**Task 2**

Why are we using 2950T or 2960 switch and not the others?

The **Cisco 2950T** and **2960 switches** are commonly used in Cisco Packet Tracer due to their simplicity, cost-effectiveness, and suitability for **basic Layer 2 switching** in small to medium-sized networks. These switches are designed primarily for **access layer** connections, where end devices like PCs, printers, and IP phones connect to the network. The **2950T** provides **Fast Ethernet ports** and a **Gigabit uplink**, while the **2960** offers additional features like **Gigabit Ethernet** and **PoE** (Power over Ethernet), making it ideal for powering devices such as IP phones or wireless access points.

Compared to more advanced switches like the **3560** or **3650**, which offer **Layer 3 capabilities** for routing, the **2950T** and **2960** are more streamlined and easier to configure for simple **VLANs** and basic network tasks. These switches are ideal for educational purposes, as they allow users to focus on fundamental switching concepts without the complexity of advanced routing features. Their **cost-efficiency** and reliability make them a practical choice for simulating small business or campus networks.

**Task 3**

Design the network of "Lab-7" or “Lab-8” (2-3 rows of computers) Use: Switch, Router, & End-Devices like Laptop/PC.

