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**Assignment:**

LAB 2 TASK

**Course:**

Computer Network LAB

**Section:**

Data Science 5-A

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# CN LAB 2 TASKS

# Task 1:

**Why are we using 2911 router and not the others?**

**The Cisco 2911 router is often chosen over other models for several reasons:**

**Key Features of the Cisco 2911 Router**

**1. Integrated Services:** The Cisco 2911 is designed to deliver data, voice, video, and application services, making it versatile for various networking needs.

**2. Modular Design:** It has multiple slots for expansion, including four WAN interface card slots and one service module slot. This allows for customization and future upgrades as network requirements grow.

**3. Performance:** The router supports high-speed WAN connections and can handle concurrent services up to 75 Mbps, which is suitable for small to medium-sized businesses.

**4. Security Features:** It includes built-in security options like hardware-accelerated VPN encryption and firewall capabilities, ensuring secure communications.

**5. Voice Support:** The Cisco 2911 has digital signal processor (DSP) slots that support voice applications, making it a good choice for businesses that require VoIP services.

**6. Power over Ethernet (Poe**): It supports Poe, allowing connected devices like IP phones and wireless access points to receive power through the network cable, reducing the need for additional power sources.

**When to Use the Cisco 2911**

**- Small to Medium-Sized Networks:** It is ideal for businesses that need a reliable router with good performance and security features.

**- VoIP Services:** If your network requires voice communication capabilities, the Cisco 2911 is a suitable choice due to its support for voice applications.

**- Future Expansion:** If you anticipate growth in your network or the need for additional features in the future, its modular design allows for easy upgrades.

**TASK 2:**

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

The Cisco **2950T** and Cisco **2960** switches are commonly used in networking, but there are key differences that make one preferable over the other in certain situations.

**Why Use the Cisco 2960 Switch?**

**1. Advanced Features:**

- The 2960 supports more advanced features compared to the 2950, including better Quality of Service (Qu’s) options and enhanced security features. This makes it suitable for modern networks that require efficient traffic management and security.

**2. Gigabit Ethernet Support:**

- The 2960 typically includes Gigabit Ethernet ports, allowing for faster data transfer speeds (up to 1 Gbps), while the 2950T mainly supports Fast Ethernet (up to 100 Mbps). This is important for networks that need higher bandwidth.

**3. More Uplink Options:**

- The 2960often provides additional uplink ports, which allow for better connectivity options to other devices or switches. This flexibility is beneficial for expanding the network.

**4. Greater Scalability:**

- The 2960 is designed to handle more devices and traffic, making it a better choice for growing networks. It can support more VLANs and has a higher maximum MTU size, which is useful for larger data packets.

**5. Future-Proofing:**

- Since the 2960series is newer and more advanced, it is likely to receive better support and updates from Cisco in the future. The **2950** may become outdated as technology progresses.

**When to Use Each Switch**

**- Use Cisco 2960:**

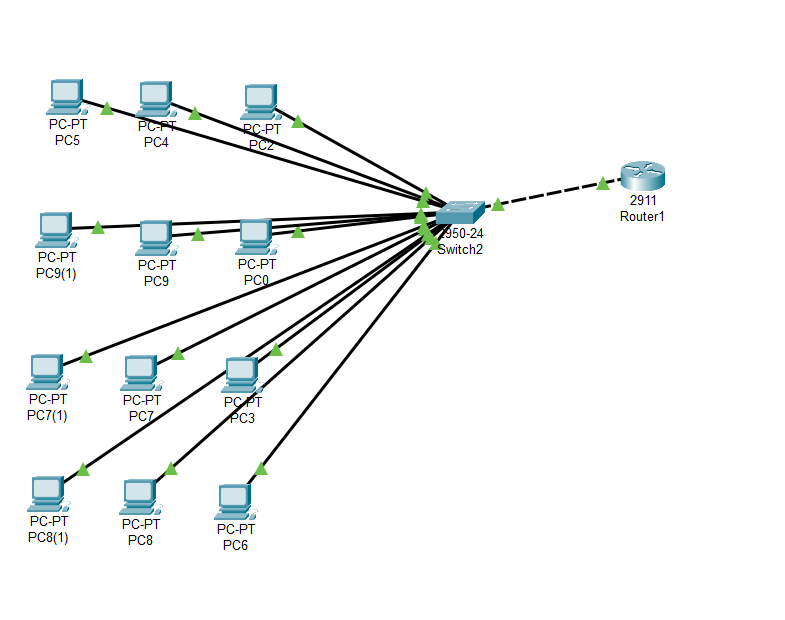
- In environments where high performance, advanced features, and scalability are needed, such as medium to large businesses or networks that require VoIP or video services.

**- Use Cisco 2950T:**

- In smaller or legacy systems where advanced features are not necessary, and budget constraints are a priority.

**TASK 3:**

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

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