Network Topology and Configuration with Packet Tracer

Introduction

This repository contains the configuration files and documentation for a network topology created using Cisco Packet Tracer. The topology includes subnetting, Variable Length Subnet Masking (VLSM), basic switch configuration, and basic router configuration.

Overview

The network topology consists of the following components:

Switches

Router

End devices (PCs/Laptops)

Home Router

Configuration Steps

Topology Design: I designed the network topology using Packet Tracer, including the placement of switches, routers, and end devices.

Subnetting and VLSM (Variable Length Subnet Masking): I choose 192.168.0.0/24 address for the project. However, I segmented the network into two: LAN1 and LAN2. LAN1 is meant to have 12 hosts while LAN2 is to have 5 hosts. The most appropriate subnet for LAN1 is 255.255.255.240 which gives 16 hosts. For LAN2, 255.255.255.248 is the appropriate subnet as it gives 6 hosts.

To optimize the IP address allocation and minimize wastage of IP addresses, I implemented VLSM. The first segment which requires 12 host then have 192.168.0.0/28 network while second segment will have 192.168.0.16/29 network.

Switch Basic Configuration: Configure the switches with VLANs, trunking, and basic security features.

Router Basic Configuration: Configure the routers with IP routing, routing protocols (if applicable), and basic security settings.

Files Included

Topology File (.pkt): Packet Tracer file containing the network topology.

Configuration Files: Text files containing the configurations for switches and routers.

Instructions

Download or clone this repository to your local machine.

Open the Packet Tracer file (.pkt) using Cisco Packet Tracer software.

Review the configurations in the provided text files to understand the setup.

Simulate the network in Packet Tracer to observe its behavior.

Make any necessary adjustments or modifications as needed.

Additional Notes

This project is intended for educational purposes to demonstrate network configuration concepts using Packet Tracer.

Feel free to explore and modify the topology to further enhance your understanding of networking principles.

Credits

[Your Name]

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