

Network Documentation

Overview

This documentation provides a detailed overview of the network infrastructure for a company that consists of multiple departments: IT, Sales, and Admin. The network is designed with VLAN segmentation to enhance security and manageability.

Network Topology

The network topology consists of the following components:

1. Core Layer Router (Core-Layer-Router):

- Acts as the gateway for all VLANs.
- Provides inter-VLAN routing.
- Connects to the distribution layer switch.

2. Distribution Layer Switch (Distribution-Switch):

- Connects the core layer router to the access layer switches.
- Acts as an aggregation point for traffic from the access layer switches.

3. Access Layer Switches:

- IT-Department-Switch: Provides connectivity for devices in the IT department.
- Sales-Department-Switch: Provides connectivity for devices in the Sales department.
- Admin-Department-Switch: Provides connectivity for devices in the Admin department.

VLAN Configuration

The network is divided into three VLANs, each corresponding to a department:

- VLAN 10: IT Department (192.168.1.0/24)
- VLAN 20: Sales Department (192.168.2.0/24)
- VLAN 30: Admin Department (192.168.3.0/24)

IP Addressing Scheme

Each VLAN is assigned a unique subnet from the private IP address range (192.168.0.0/16) for internal communication. The IP addressing scheme is as follows:

- VLAN 10 (IT Department):
 - Subnet: 192.168.1.0/24
 - Default Gateway: 192.168.1.1
 - DHCP Range: 192.168.1.10 - 192.168.1.254
 - DHCP Pool: vlan10

- VLAN 20 (Sales Department):
 - Subnet: 192.168.2.0/24
 - Default Gateway: 192.168.2.1
 - DHCP Range: 192.168.2.10 - 192.168.2.254
 - DHCP Pool: vlan20

- VLAN 30 (Admin Department):
 - Subnet: 192.168.3.0/24
 - Default Gateway: 192.168.3.1
 - DHCP Range: 192.168.3.10 - 192.168.3.254
 - DHCP Pool: vlan30

Device Configuration

Core Layer Router (Core-Layer-Router)

- Configured with subinterfaces for VLAN routing.
- DHCP pools configured for each VLAN.
- VLAN interfaces configured with IP addresses.

Distribution Layer Switch (Distribution-Switch)

- Configured with access ports for VLANs 10, 20, and 30.

- Trunk port configured to connect to other switches.

Access Layer Switches

IT-Department-Switch

- Configured with access ports for VLAN 10 (IT department).

Sales-Department-Switch

- Configured with access ports for VLAN 20 (Sales department).

Admin-Department-Switch

- Configured with access ports for VLAN 30 (Admin department).

Additional Configurations

- Spanning Tree Protocol (PVST) is enabled on all switches.
- Port security and DHCP snooping are not configured in the provided configurations but should be considered for enhancing security.

Conclusion

This documentation outlines the network infrastructure, VLAN configuration, IP addressing scheme, and device configurations for the company's network. It provides a clear overview of how the network is designed and implemented to meet the requirements of the different departments while ensuring security and manageability.