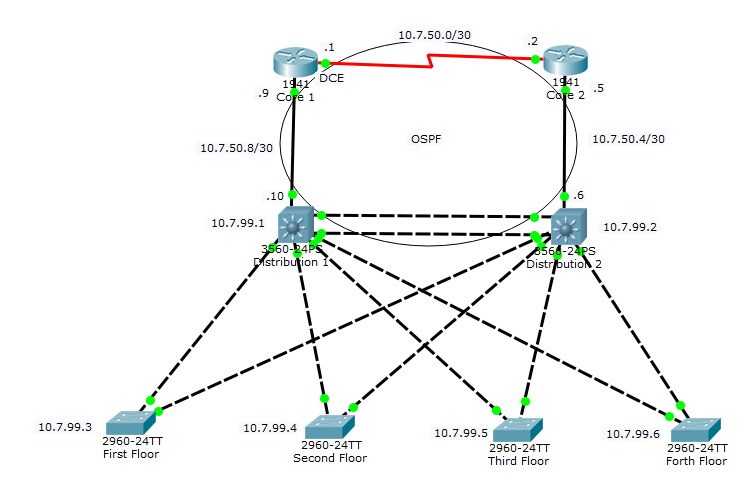
LAN Assignment – Phase 1

# Overview

This document outlines the topology and configuration for the Head Office branch of our WAN. It defines the configuration for each gateway router, level 3 distribution switches, and an example configuration for an access switch.

# Topology Diagram



# Addressing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | VLAN | Network | Subnet | Usable Address Range |
| Sales & Marketing | 10 | 10.7.10.0 | 255.255.255.0 | .1 - .254 |
| Human Resources | 20 | 10.7.20.0 | 255.255.255.0 | .1 - .254 |
| Finance | 30 | 10.7.30.0 | 255.255.255.0 | .1 - .254 |
| Administration | 40 | 10.7.40.0 | 255.255.255.0 | .1 - .254 |
| Management | 99 | 10.7.99.0 | 255.255.255.0 | .1 - .254 |
| Point to Point 1 | - | 10.7.50.0 | 255.255.255.252 | .1 - .2 |
| Point to Point 2 | - | 10.7.50.4 | 255.255.255.252 | .5 - .6 |
| Point to Point 3 | - | 10.7.50.8 | 255.255.255.252 | .9 - .10 |

Variable Length subnetting was calculated and considered. However due to the large numbers of address spaces available to us, we decided that this network would be easier to maintain using fixed length subnetting.

# Gateway Routers (Core)

We are implementing two cisco routers as a redundant gateway into our LAN. After doing some research we have selected two Cisco ASR 1001-X Routers to purchase as our gateway routers. These are 1 rack unit devices with upgradable throughput (2.5, 5, 10, 20Gbps) (Cisco ASR 1006-X Router, 2017). This will allow us to scale in the future as our head office grows.

The routers are joined via a gigabit ethernet link. Each router is connected to a layer 3 switch via a gigabit Ethernet link.

OSPF is used to advertise the network links between the routers and layer 3 switches.

The configuration is as follows:

**Core1:**

**Interface Config**

int g0/0

ip address 10.7.50.0 255.255.255.252

no shut

int g0/1

ip address 10.7.50.1 255.255.255.252

no shut

**OSPF Config:**

router ospf 1

router-id 1.1.1.1

log-adjacency-changes

network 10.7.50.9 0.0.0.0 area 0

network 10.7.50.1 0.0.0.0 area 0

**Core2:**

**Interface Config**

int g0/0

ip address 10.7.50.5 255.255.255.252

no shut

int g0/1

ip address 10.7.50.2 255.255.255.252

no shut

**OSPF Config:**

router ospf 1

router-id 2.2.2.2

log-adjacency-changes

network 10.7.50.2 0.0.0.0 area 0

network 10.7.50.5 0.0.0.0 area 0

# Layer 3 Distribution Switches

References

Cisco ASR 1006-X Router. (2017). Cisco. Retrieved from: https://www.cisco.com/c/en/us/products/routers/asr-1001-x-router/index.html