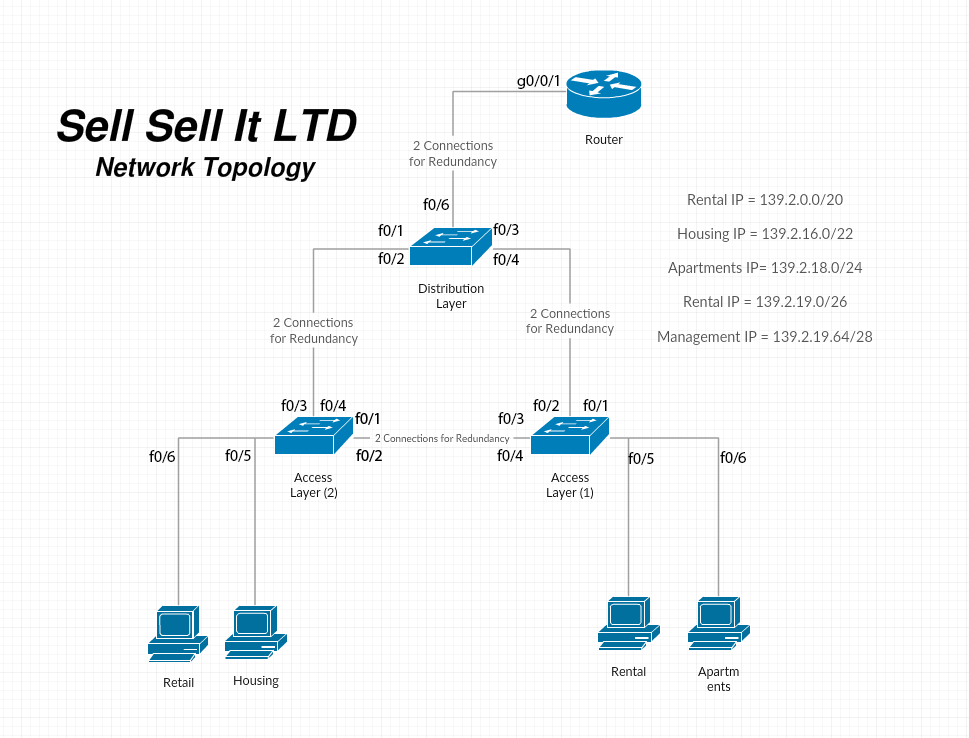
Company Information:

Sell Sell it LTD

Class B Network: IP = 139.2.0.0/16

The company requires 4 LANS and needs to ensure that it can be updated if need be later in the future. As such the Spanning tree protocol and a network hierarchy has been chosen as shown below. This is a 2-layer system in which the connections between access layer switches act as a form of redundancy. It also allows for much easier maintenance of switches and easy upgradeability if more nodes or switches need to be added later down the line for an expansion of the company.

**Basic Topology**



**Subnet Information:**

|  |  |  |
| --- | --- | --- |
| **Name** | **IP Address** | **Subnet Mask** |
| **Retail (VLAN 546)** | 139.2.0.0/20 | 255.255.240.0 |
| **Housing (VLAN 547)** | 139.2.16.0/22 | 255.255.252.0 |
| **Apartments (VLAN 548)** | 139.2.20.0/24 | 255.255.255.0 |
| **Rental (VLAN 549)** | 139.2.21.0/26 | 255.255.255.192 |
| **Management (VLAN 598)** | 139.2.21.64/27 | 255.255.255.224 |

**Subnetting Documentation:**

**IP Address:** 139.2.0.0/16

**Retail** (VLAN 546) 4000 Hosts:

-Host Bit =12

-Subnet mask = 255.255.240.0 (/20)

-IP Address = 139.2.0.0/20

**Housing** (VLAN 547) 1000 Hosts

Host Bit = 10

Subnet Mask = 255.255.252.0 (/22)

IP Address = 139.2.16.0/22

**Apartments** (VLAN 548) 250 Hosts

Host Bit = 8

Subnet Mask = 255.255.255.0 (/24)

IP Address =139.2.20.0/24

**Rental** (VLAN 549) 58 Hosts

Host Bit = 6

Subnet Mask = 255.255.255.192 (/26)

IP Address = 139.2.21.0/26

**Management** (VLAN 598) 10 Hosts (20 hosts for expansion)

Host Bit = 5

Subnet Mask=255.255.255.224 (/27)

IP Address = 139.2.21.64 /27

**Notes:**

Current config the spanning tree root is the distribution switch

Every **password** on the current config is labpassword

**SSH Credentials For Switches**

**Username** SSH: Sell-Sell-It

**Password**: labpassword

**SSH Credentials For Router**:

User: Sell-Sell-It

Password: SellSellItRouter

Router is designated to the **first** usable ip of each vlan

Gateway is the first ip of the management VLAN which is the router's IP (132.2.19.65)

Computers currently configured with the second usable address for there specific VLAN

**Management** VLAN configs: 255.255.255.224

-*R1* 139.2.21.65

-*DL1* 139.2.21.66

-*AS1* 139.2.21.67

-*AS2* 139.2.21.68

**Security Measures:**

-Disabling ports

-Port Security for the active ones

**Port Security Router**

**-**Maximum login attempts. 5 login attempts over 60 seconds will cause a 60 second lockout

**Port Security DL1 (Ports 1-4)**

- Maximum number of mac addresses is 3

-Violation of the port will cause a shutdown of the port

-MAC addresses are set to sticky so they are learnt

**Port Security AL1 (Ports 1-4) & (5-6)**

- Maximum number of mac addresses is 3

-Violation of the port will cause a shutdown of the port

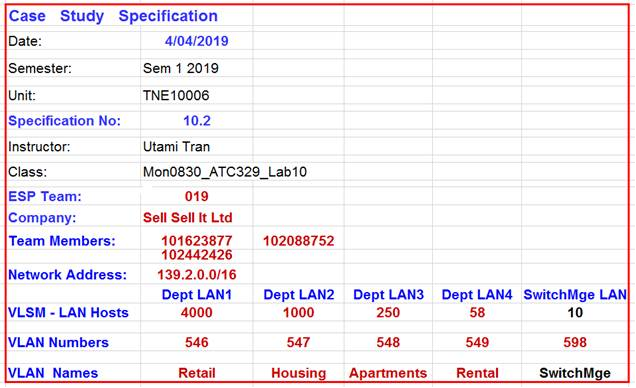
-MAC addresses are set to sticky so they are learnt

**Port Security AL2 (Ports 1-4) & (5-6)**

- Maximum number of mac addresses is 3

-Violation of the port will cause a shutdown of the port

-MAC addresses are set to sticky so they are learnt

Specifications

Main Goals that need to be achieved from **the case study**:

1) Build a small network using three switches and one router

2) One switch will run as a distribution layer switch, the other two will run as access layer switches

3) A router will be connected to the distribution layer switch using 802.1Q trunking to route between subnets

4) The switches will relate to two Ethernet links using Ether-channel bonding

5) The distribution layer switch will be configured as the STP root bridge