Project #4

Project No. 4 Case Study and Requirements

- A Romanian company working in the field of transporting goods, and it wants to establish another branch of the company in Hungary, we want to create a network to connect the two branches with each other, the main branch in Romania contains three departments (administration, company employees and the warehouse), and in the secondary branch the company contains two departments (administration and Warehouse), each employee has a computer and in each department, there is an access point.

A network diagram must be created with the major components to support the following:

The main branch:

- The first floor: On the first floor there is the warehouse, which is divided into two parts, one for dispatching goods and the another for receiving goods. There are two computers and one printer in each department.

- The second floor: The company's employees will be on the second floor, which contains three offices, HR, accounting, and public relations. There is one computer for each employee and a printer in each office. The access point and the DHCP Server are on this floor.

- The third floor: the manager's office is on it, which contains two computers and a printer in this office.

Secondary branch:

- The first floor: On the first floor there is the warehouse, which is divided into two parts, one for dispatch goods and the other for receiving goods. There is one computer and printer in each department.

- The second floor: The company's employees and the manager are on the second floor, which contains two offices, the manager's office, and the accounting office. There is one computer and a printer in each office. The access point is located on this floor.

* Each office is expected to be on its own separate IP network.
* The switches should be configured with appropriate VLANs and security settings.
* The network between the routers should be 10.10.10.0/30 . and between routers and switchs 172.16.2.0/30, 172.16.1.0/30
* Each department is expected to be in a different VLAN with the following details;

Romania branch

|  |  |  |  |
| --- | --- | --- | --- |
| 3rd floor | the manager's office  VLAN 60  192.168.6.0/24 | |  |
| 2nd floor | HR office VLAN 30 192.168.3.0/24 | Accounting office VLAN 40 192.168.4.0/24 | public relations office  VLAN 50 192.168.5.0/24 |
| 1st floor | dispatch dept VLAN 10  192.168.1.0/24 | receiving dept VLAN 20  192.168.2.0/24 |  |

Hungary branch

|  |  |  |  |
| --- | --- | --- | --- |
| 2nd floor | the manager's office  VLAN 90 192.168.9.0/24 | Accounting office VLAN 100 192.168.10.0/24 |  |
| 1st floor | dispatch dept VLAN 70  192.168.7.0/24 | receiving dept VLAN 80  192.168.8.0/24 |  |

* RIPv2 will be used to provide routing for the routers in the internal network.
* All devices in the network are expected to obtain an IP address dynamically from the dedicated DHCP server located in the Accounting Office.
* Configure SSH in all the routers for remote login.
* In HR department, add PC called Test-PC1 to port fa0/10 and use it to test remote login.
* Configure port security to “F2-SW-R” to allow only Test-PC2 to access port fa0/3 (use sticky method to obtain mac-address with violation mode of a shutdown.)

Configure in Packet Tracer the network with appropriate settings to achieve the connectivity and functionalities specified in the requirements.

Technologies Implemented

* Creating a network topology using Cisco Packet Tracer.
* Hierarchical Network Design.
* Connecting Networking devices with Correct cabling.
* Creating VLANs and assigning ports VLAN numbers.
* Configuring LACP between L2 switches and L3 switches.
* Subnetting and IP Addressing.
* Configuring Rip v2 as the routing protocol.
* Configuring Inter-VLAN Routing (SVI).
* Configuring Dedicated DHCP Server device to provide dynamic IP allocation.
* Configuring SSH for secure Remote access.
* Configuring switchport security or Port-Security on the switches.
* Configuring WLAN or wireless network (Cisco Access Point).
* Test and Verifying Network Communication.