Project Details

SD Web Services is a fast-growing company in Eastern Australia with more than 2 million customers globally. The company deals with selling and buying of food items, which are basically operated from the headquarters. The company is intending to open a branch near the local village Bonalbo. Thus, the company requires young IT graduates to design the network for the branch. The network is intended to operate separately from the HQ network.

Being a small network, the company has the following requirements during implementation;

a) One router and one switch to be used (all CISCO products).

b) 3 departments (Admin/IT, Finance/HR and Customer service/Reception)

c) Each department is required to be in different VLANS.

d) Each department is required to have wireless network for the users.

e) Host devices in the network are required to obtain IPv4 address automatically.

f) Devices in all the departments are required to communicate with each other.

Assuming the ISP gave out a base network of 192.168.1.0, you, as the young network engineer who has been hired, design and implement a network considering the above requirements.

Solution

Base Network was 192.168.1.0 but I will take base network a bit different as According to sir requirement.

Base Network: 201.168.1.0

No of subnets required = 3

No of subnet=2^n where n=2

No of subnets = 4

Class C default subnet= 255.255.255.0

In binary:

11111111.11111111.11111111.00000000

Borrow bits: 2

> **Customize subnet** =11111111.11111111.11111111.11000000

> 255.255.255.192

Block size = 64

1st subnet

> *Network id*: 201.168.1.0

> *Broadcast id*: 201.168.1.63

> *Range:* 201.168.1.0 To 201.168.1.63

> *Assignable Host range*: 201.168.1.1 To 201.168.1.62

2nd subnet

> *Network id*: 201.168.1.64

> *Broadcast id*: 201.168.1.127

> *Range*: 201.168.1.64 To 201.168.1.127

> *Assignable Host range*: 201.168.1.65 To 201.168.1.126

3rd subnet

> *Network id*: 201.168.1.128

> *Broadcast id:* 201.168.1.191

> *Range*: 201.168.1.128 To 201.168.1.191

> *Assignable Host range*: 201.168.1.129 To 201.168.1.190