Chapter 1

Introduction

1.1 Objective

The main objective of this project is to design network topology for hotel and to provide facilities to customers such as internet and calling.

1.2 Introduction to Project

- Our project is Hotel Topology, and in this 4 floors , in each floor contain 10 computers and 2 ip phones .
- In this we use concept of subnetting for assigning ip to Computers.
- Natting is used for access google server.

Chapter 2

Theory

2.1 Packet Tracer

- Packet Tracer is a cross-platform visual simulation tool designed by Cisco Systems that allows users to create network topologies and imitate modern computer networks.
- The software allows users to simulate the configuration of Cisco routers and switches using a simulated command line interface.
- Packet Tracer makes use of a drag and drop user interface, allowing users to add and remove simulated network devices as they see fit.
- The software is mainly focused towards Certified Cisco Network Associate Academy students as an educational tool for helping them learn fundamental CCNA concepts.
- Previously students enrolled in a CCNA Academy program could freely download and use the tool free of charge for educational use.

2.2 Subnetting

- Subnetting enables the network administrator to further divide the host part of the address into two or more subnets.
- In this case, a part of the host address is reserved to identify the particular subnet.
- This is easier to see if we show the IP address in binary format.
- Improve network performance and speed
- Reduce network congestion
- Boost network security
- Control network growth
- Ease administration

2.3 Natting

- Network Address Translation (NAT) is designed for IP address conservation.

- It enables private IP networks that use unregistered IP addresses to connect to the Internet.
- NAT operates on a router, usually connecting two networks together, and translates the private (not globally unique) addresses in the internal network into legal addresses, before packets are forwarded to another network.
- As part of this capability, NAT can be configured to advertise only one address for the entire network to the outside world.
- This provides additional security by effectively hiding the entire internal network behind that address.
- NAT offers the dual functions of security and address conservation and is typically implemented in remote-access environments.
- It can prevent the depletion of IPv4 addresses.
- NAT (Network Address Translation) can provide an additional layer of security by making the original source and destination addresses hidden.

Chapter 3

Software Requirement Specification

3.1 Hardware Requirements

- Personal computer/Laptop

  Operation system: Windows 7 or advance

  RAM: 3GB

  Hard disk:320GB

3.2 Software Requirements

- Cisco packet tracer 7.2

Chapter 4

Results

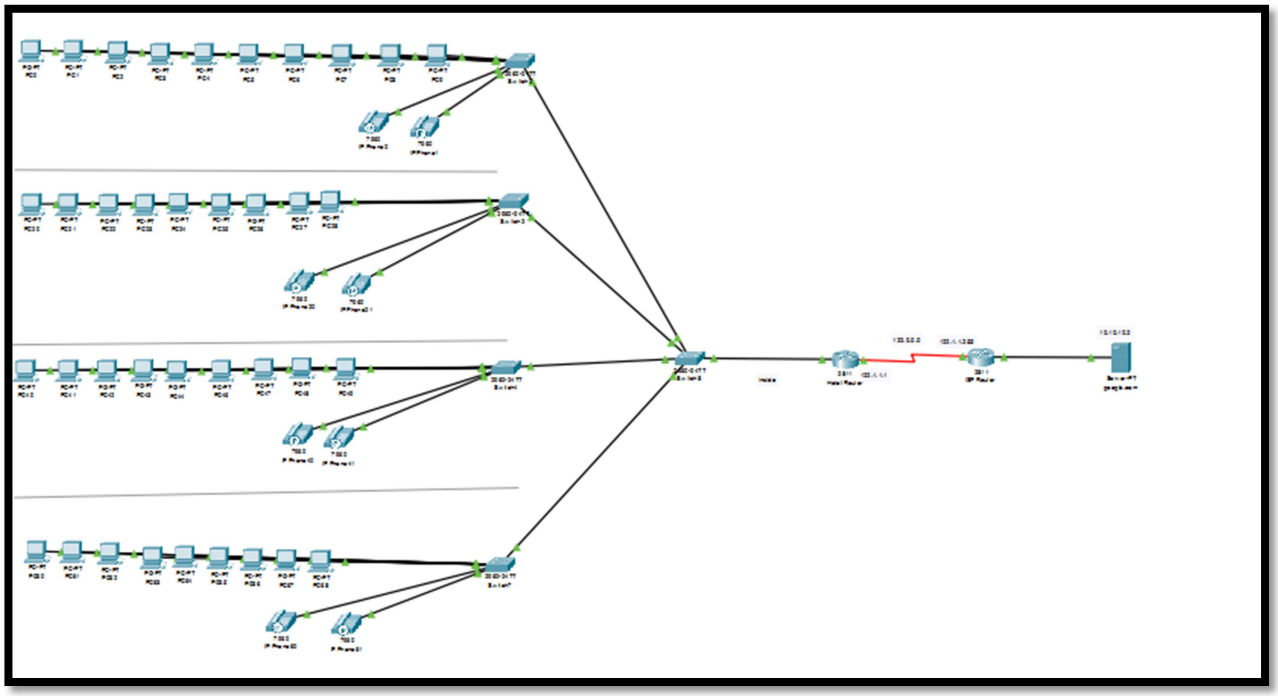

Fig 1: Network Design for Hotel

- Running-configuration of devices(Hotel router,ISP router)

Router>

Router>enable

Router#show running-config

Building configuration...

Current configuration : 3581 bytes

!

version 12.4

no service timestamps log datetime msec

no service timestamps debug datetime msec

no service password-encryption

!

hostname Router

!

!

!

!

!

!

!

!

no ip cef

no ipv6 cef

!

!

!

!

!

!

!

!

```
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
 ip address 192.168.0.1 255.255.255.0
 ip nat inside
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
```

```
 speed auto
 shutdown
!
interface FastEthernet0/2/0
!
interface FastEthernet0/2/1
!
interface FastEthernet0/2/2
!
interface FastEthernet0/2/3
!
interface FastEthernet0/3/0
!
interface FastEthernet0/3/1
!
interface FastEthernet0/3/2
!
interface FastEthernet0/3/3
!
interface Serial1/0
 ip address 122.1.1.1 255.0.0.0
```

```
 ip nat outside
!
interface Serial1/1
 no ip address
 clock rate 2000000
 shutdown
!
interface Serial1/2
 no ip address
 clock rate 2000000
 shutdown
!
interface Serial1/3
 no ip address
 clock rate 2000000
 shutdown
!
interface Serial1/4
 no ip address
 clock rate 2000000
 shutdown
```

```
!
interface Serial1/5
 no ip address
 clock rate 2000000
 shutdown
!
interface Serial1/6
 no ip address
 clock rate 2000000
 shutdown
!
interface Serial1/7
 no ip address
 clock rate 2000000
 shutdown
!
interface Vlan1
 no ip address
 shutdown
!
ip nat inside source static 192.168.0.2 122.1.1.1
```

ip nat inside source static 192.168.0.3 122.1.1.2

ip nat inside source static 192.168.0.4 122.1.1.3

ip nat inside source static 192.168.0.5 122.1.1.4

ip nat inside source static 192.168.0.6 122.1.1.5

ip nat inside source static 192.168.0.7 122.1.1.6

ip nat inside source static 192.168.0.8 122.1.1.7

ip nat inside source static 192.168.0.9 122.1.1.8

ip nat inside source static 192.168.0.10 122.1.1.9

ip nat inside source static 192.168.0.11 122.1.1.10

ip nat inside source static 192.168.0.65 122.1.1.11

ip nat inside source static 192.168.0.66 122.1.1.12

ip nat inside source static 192.168.0.67 122.1.1.13

ip nat inside source static 192.168.0.68 122.1.1.14

ip nat inside source static 192.168.0.69 122.1.1.15

ip nat inside source static 192.168.0.70 122.1.1.16

ip nat inside source static 192.168.0.71 122.1.1.17

ip nat inside source static 192.168.0.72 122.1.1.18

ip nat inside source static 192.168.0.73 122.1.1.19

ip nat inside source static 192.168.0.74 122.1.1.20

ip nat inside source static 192.168.0.129 122.1.1.21

ip nat inside source static 192.168.0.120 122.1.1.22

```
ip nat inside source static 192.168.0.130 122.1.1.23
ip nat inside source static 192.168.0.131 122.1.1.24
ip nat inside source static 192.168.0.132 122.1.1.25
ip nat inside source static 192.168.0.133 122.1.1.26
ip nat inside source static 192.168.0.134 122.1.1.27
ip nat inside source static 192.168.0.135 122.1.1.28
ip nat inside source static 192.168.0.136 122.1.1.29
ip nat inside source static 192.168.0.137 122.1.1.30
ip nat inside source static 192.168.0.138 122.1.1.31
ip nat inside source static 192.168.0.193 122.1.1.32
ip nat inside source static 192.168.0.194 122.1.1.33
ip nat inside source static 192.168.0.195 122.1.1.34
ip nat inside source static 192.168.0.196 122.1.1.35
ip nat inside source static 192.168.0.197 122.1.1.36
ip nat inside source static 192.168.0.198 122.1.1.37
ip nat inside source static 192.168.0.199 122.1.1.38
ip nat inside source static 192.168.0.200 122.1.1.39
ip nat inside source static 192.168.0.201 122.1.1.40
ip nat inside source static 192.168.0.202 122.1.1.41
ip classless
ip route 10.0.0.0 255.0.0.0 122.1.1.255
```

```
!
ip flow-export version 9
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
 login
!
!
!
end
```

```
Router>enable
Router#show running-config
Building configuration...

Current configuration : 1109 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
ip address 10.10.10.1 255.0.0.0
duplex auto
speed auto
!
```

```
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial1/0
ip address 122.1.1.255 255.0.0.0
clock rate 2000000
!
interface Serial1/1
no ip address
clock rate 2000000
shutdown
!
interface Serial1/2
no ip address
clock rate 2000000
shutdown
!
interface Serial1/3
no ip address
clock rate 2000000
shutdown
!
interface Serial1/4
no ip address
clock rate 2000000
shutdown
!
interface Serial1/5
no ip address
clock rate 2000000
shutdown
!
interface Serial1/6
no ip address
clock rate 2000000
shutdown
!
interface Serial1/7
no ip address
clock rate 2000000
shutdown
!
interface Vlan1
```

```
no ip address
shutdown
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
!
!
end
```

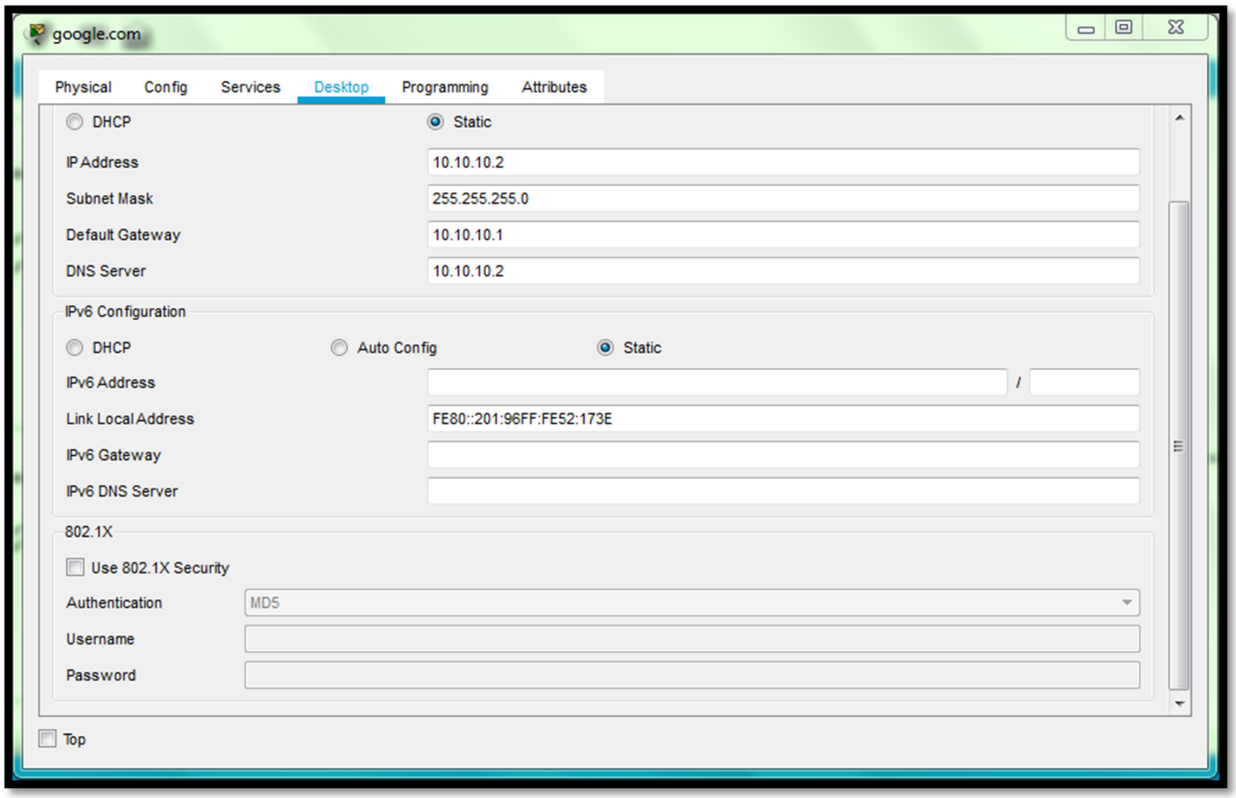

Fig 2: Server configurations

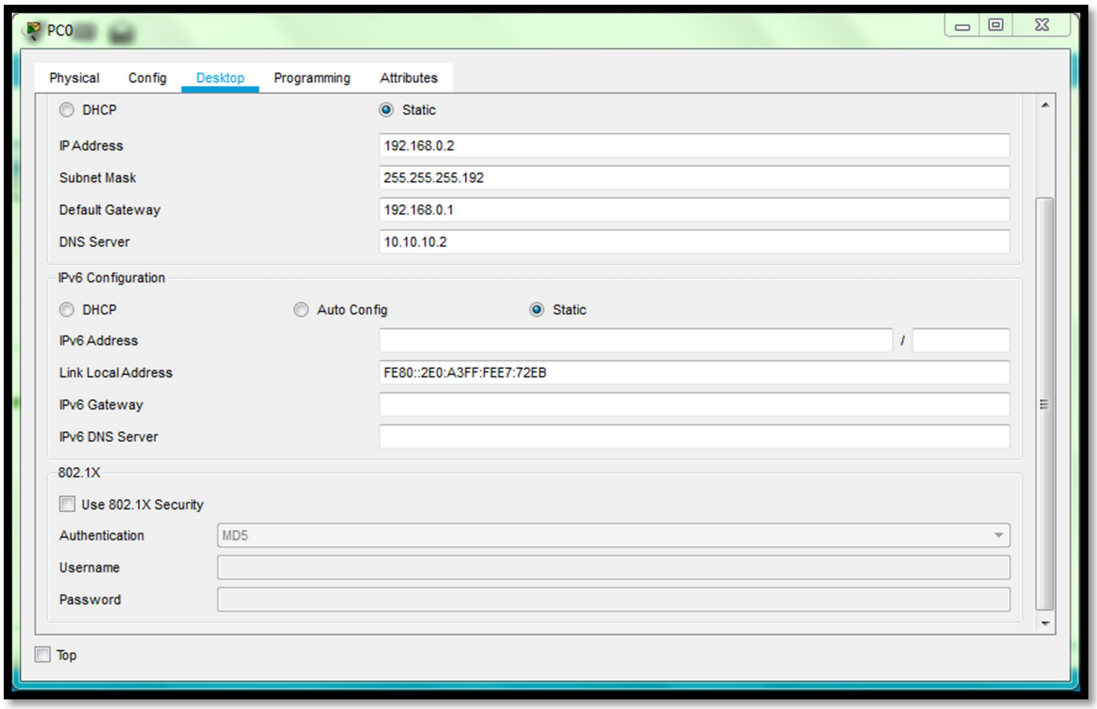

Fig 3: PC configurations

Chapter 5

Conclusion

- We successfully done our project of Hotel Topology.
- We learn new concepts like natting and ip phone configurations practically.
- We also do subnetting practically.
- While doing project we got information from you tube, so we add knowledge more.
- We also learn how to solve errors while doing project.

References

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- https://kb.iu.edu/d/aoru
- www.youtube.com