DAYANANDA SAGAR COLLEGE OF ENGINEERING

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Mini Project Report

on

"Call Centre Data Transmission And Communication"

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5th Semester B.E (CSE)
in

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Call Centre Data Transmission And Communication

Abstract

This project briefly explains the concept of OSPF protocol and shows its implementation with an use case scenario. Here the scenario is communication and transmission of data, within the branches of a call centre.
It also illustrates OSPF protocol's benefits and possible (if any) issues.

The OSPF Protocol is a dynamic routing protocol which provides a highly functional open protocol that any vendor can use to communicate using the TCP/IP protocol family. It can converge the networks extremely fast and ensures loop free paths.

It has features that allow for the stricter propagation of routes, for load sharing, and for selective route importing. It can also provide better load sharing on external links rather than other IGPs (Internal Gateway Protocols).

Introduction

OSPF (Open Shortest Path First) Protocol is a famous TCP/IP Internal Gateway Protocol which is used to distribute information within a single system. It is based on link-state technology which is different from algorithms like RIPv4 which are used in Internet Routing protocols.

OSPF Protocol has many new features, including:

- Variable Length Subnet Masks
- Route summarization
- Authentication of Routing Updates, etc.
- It uses IP multicast to send link-state updates. This ensures less processing on routers that are not meant to listen to the packets. This in only done in case of a change instead of doing it periodically This helps in a better use of bandwidth

The traditionally used RIP has various limits in a large network setting which have paved the way for OSPF.

Name of call centre branch	Router number	Starting address	Broadcast address	Subnet mask
Dotcom	R0	192.168.10.0	192.168.10.15	28
Dot2com	R1	192.168.10.16	192.168.10.31	28
Dot3com	R2	192.168.10.32	192.168.10.47	28

From Router	To Router	Network ID
Router 0	Router 1	10.0.0.0
Router 1	Router 2	11.0.0.0
Router 2	Router 0	12.0.0.0
Router 1	Router 3	13.0.0.0
Router 2	Router 4	14.0.0.0
Router 3	Router 5	15.0.0.0
Router 4	Router 6	16.0.0.0
Router 5	Router 7	17.0.0.0
Router 6	Router 8	18.0.0.0
Router 7	Router 9	19.0.0.0
Router 9	Router 8	20.0.0.0
Router 8	Router 5	21.0.0.0
Router 6	Router 3	22.0.0.0
Router 0	Router 3	23.0.0.0
Router 4	Router 7	24.0.0.0

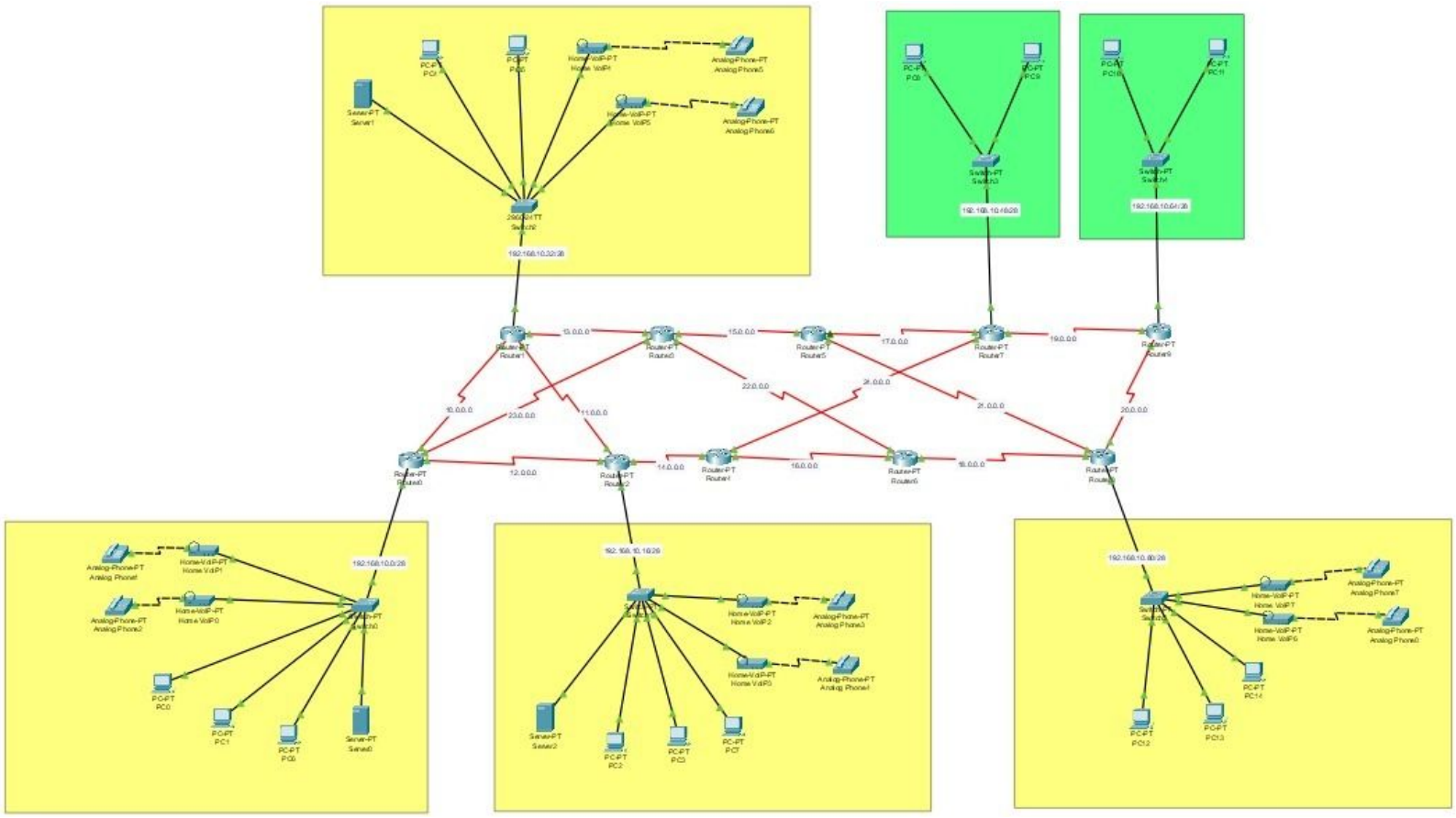
Assignable host address= 14 each

Web servers:

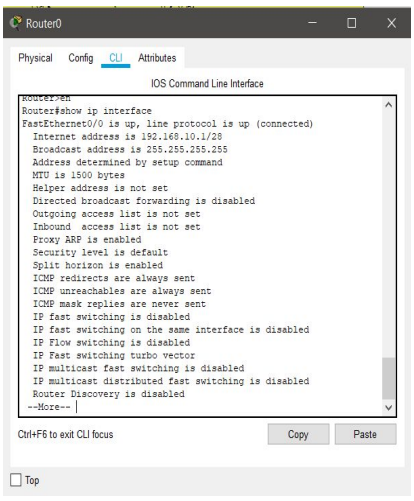
192.168.10.5 : www.callcentre1.com
192.168.10.25 : www.callcentre2.com
192.168.10.45 : www.callcentre3.com

DESIGN

We have designed a network scenario which resembles different branches of a call centre.



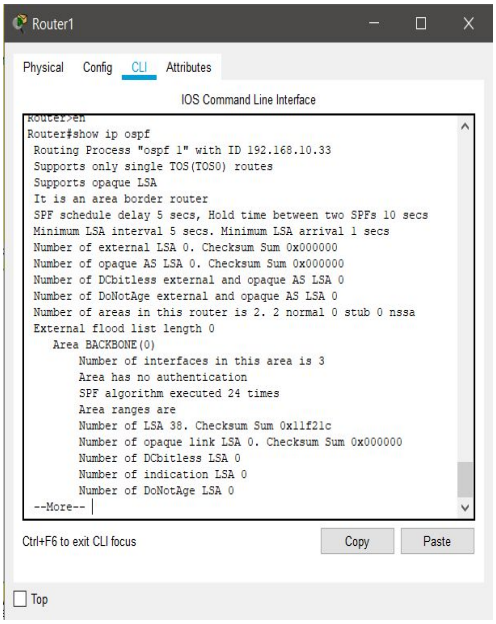
TESTING AND ANALYSIS



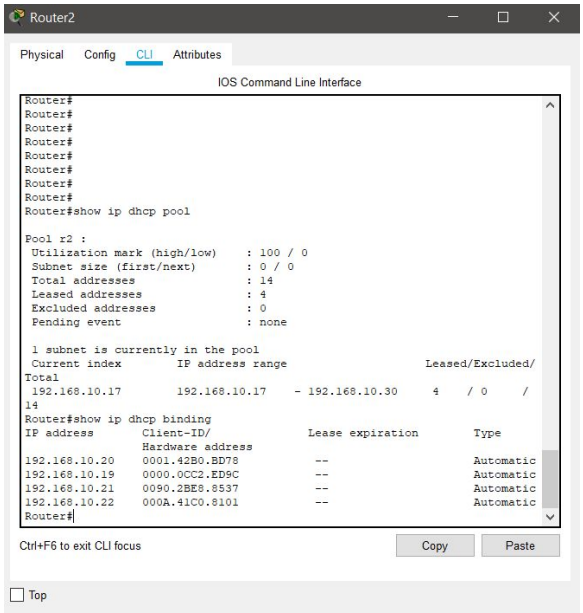
1)The CLI of router 0 shows the internet address with the subnet mask and broadcast address.

Assignment of IP addresses is successful.

2.

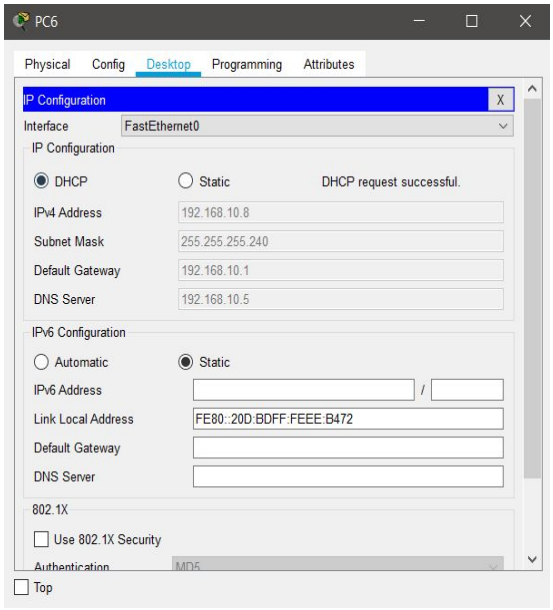


The OSPF protocol successfully configured at router 1



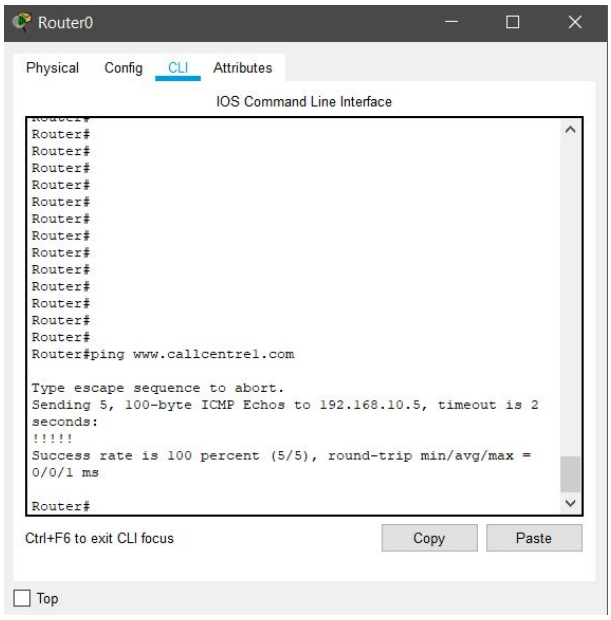
3) Total addresses, IP address range, current index are show on CLI of router 0.

Similarly we can check if the DHCP has been setup or not on other routers too.



DHCP request on PC0 is successful.

4)



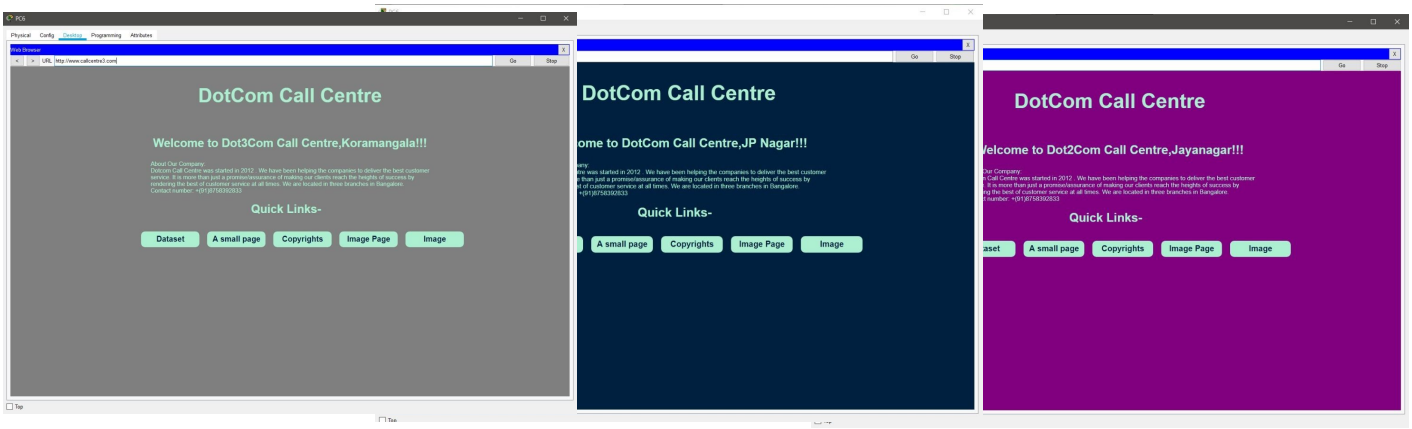
Shows the DNS server(192.168.10.5) at zone1 resolving host names into IP addresses.

www.callcentre1.com to 192.168.10.5

www.callcentre2.com to 192.168.10.25

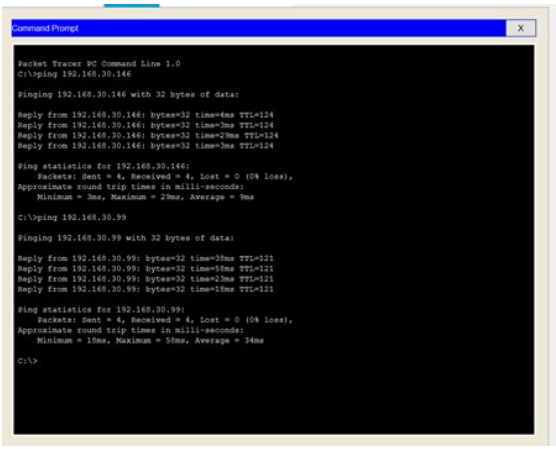
www.callcentre3.com to 192.168.10.45

5)



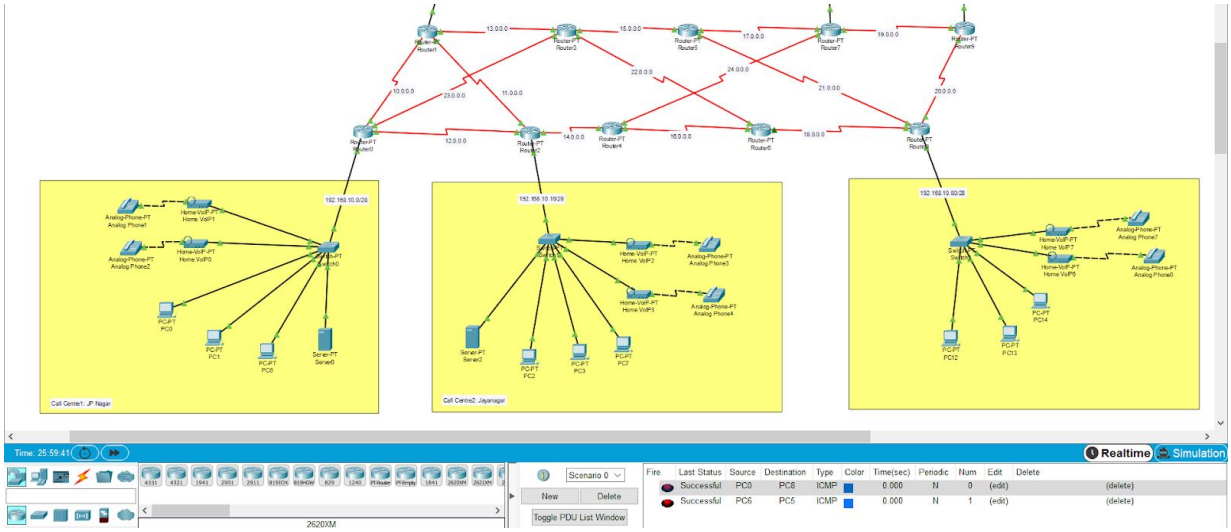
The web search results when the host name/IP address is entered in the URL on the web servers that have been set up.

6)



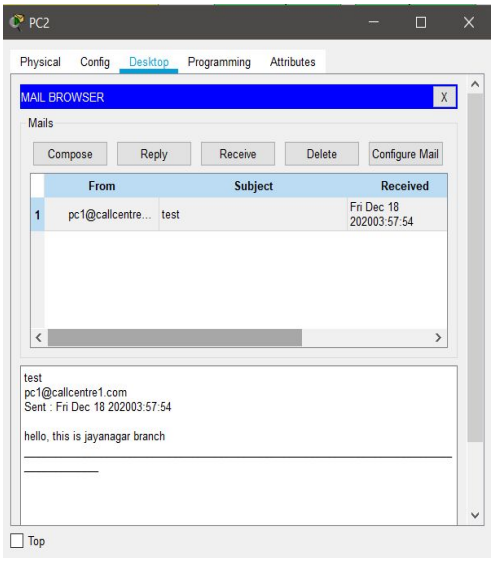
Pinging from PC2(192.168.30.51) to Laptop1(192.168.30.99) and PC8(192.168.30.146)

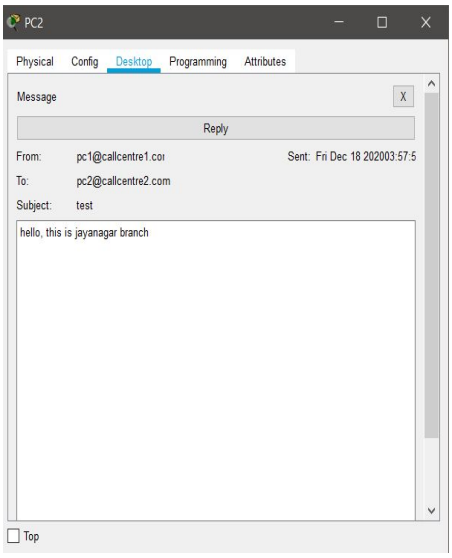
7)



Shows the successful pinging of message packets from PC0(192.168.10.6) to PC8(192.168.10.50) and from PC6(192.168.10.8) to PC5(192.168.10.35)

8)





Shows e-mail sent successfully from pc1 of first domain to pc2 of second domain.

CONCLUSIONS AND FUTURE ENHANCEMENTS

Multi LAN Fast Communication Network Topology is useful and can be implemented in call centres where quick retrieval of data is needed in order to ensure quick responses to the customers. As we have implemented OSPF Protocol, communication happens faster finding the shortest path for a message sent from a sender to travel and reach the receiver.

Future Enhancements:

- For future enhancement of this network scenario, we can implement VPN (Virtual Private Network) tunnel between routers.Hence,when one call centre transfers data to another,the data being transferred is always secure and in case of a breach the location cannot be traced.
- 10 routers are available so the number of branches can be increased in order to expand the area covered by the call centre.

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