Netsim4: OSPF Module Extension to Scalable Cisco IOS Simulator for Virtual Networks

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ABSTRACT

Open Shortest Path First module was implemented in Scalable Cisco IOS Simulator for Virtual networks to help the students configure networks using this dynamic routing protocol aside from RIP. OSPF is used to calculate the best path to be taken by the packets passing through networks using Dijkstra's Algorithm.

OBJECTIVES

The main objective of this study is to implement OSPF module in Scalable Cisco IOS Simulator for Virtual Networks. Specifically, it aimed:

1.) To simulate OSPF routing IP configuration in routers.

2.)To be able to provide User Interface to enable students to use OSPF in the software.

3.) To test the implementation of OSPF routing IP configuration in the software.

METHODOLOGY

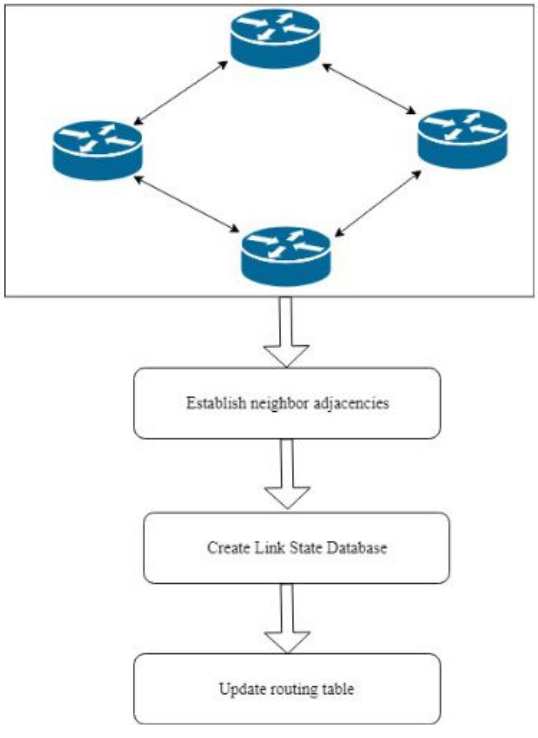

Figure 2: Using Trace Route command to see the path taken

RESULTS

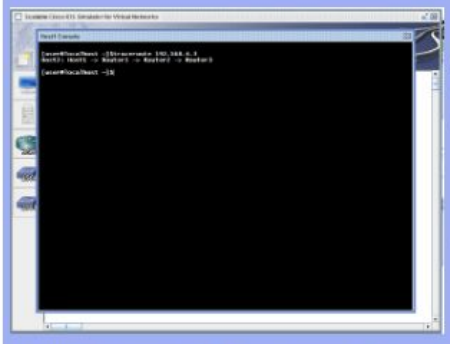

Figure 2: Using Trace Route command to see the path taken

After having a correctly configured topology and setting up the routing protocol for each router, the source host should be able to ping the receiving host.

Using trace route command, the shortest path taken by the packets from the selected source host to the destination will be shown. The user should enter the IP address of the destination.

CONCLUSION

OSPF was added as one of the dynamic routing protocols implemented in the system. It can find the shortest path within a network topology. Instead of connecting up to two devices only, the routers were added an interface, in order to connect to up to three devices.

For future studies, Border Gateway Protocol (BGP), a dynamic routing protocol may be implemented. Also, additional features such as clock rates and aging may be added to the system.

ABOUT THE AUTHOR

Andrea Danelle P. Quilang is an undergraduate BS Computer Science student at the University of the Philippines Los Baños. She was born on February 18, 1998 and is the eldest child of Freddie and Rebecca Quilang.She is also a member of Systems Research Group (SRG).