Activity based

Project Report on

Computer Network

Project Module - III

Submitted to Vishwakarma University, Pune

Under the Initiative of

Contemporary Curriculum, Pedagogy, and Practice (C2P2)

By

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SRN No : 202200930

Roll No : 38

Div : B

Third Year Engineering

Department of Computer Engineering

Faculty of Science and Technology

Academic Year

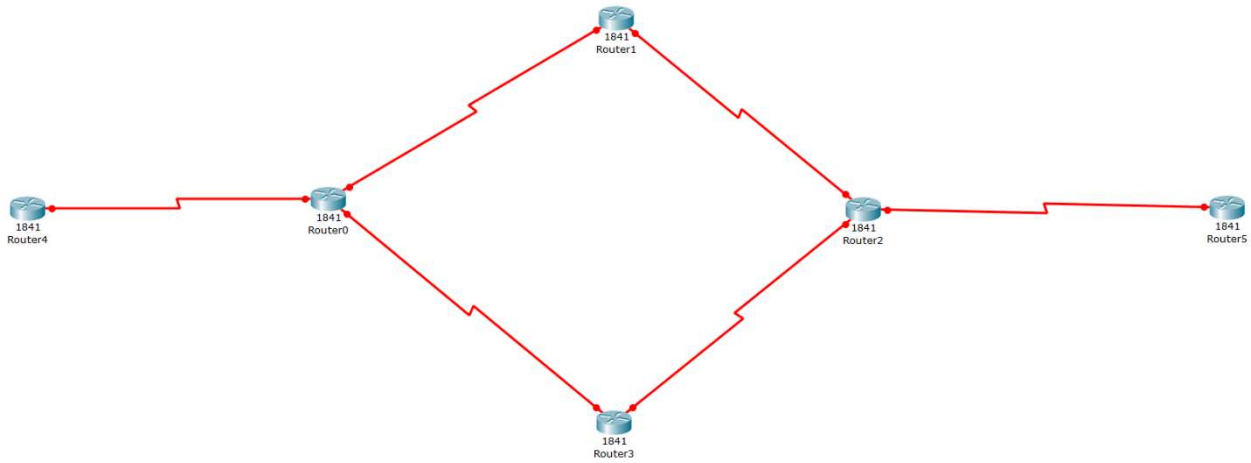
2023-2024

Design and develop a LAN & WAN network and implement OSPF protocol

Project Statement:

Implement OSPF Routing with single area for following network.

Select Class A IP addresses.



Problem Description:

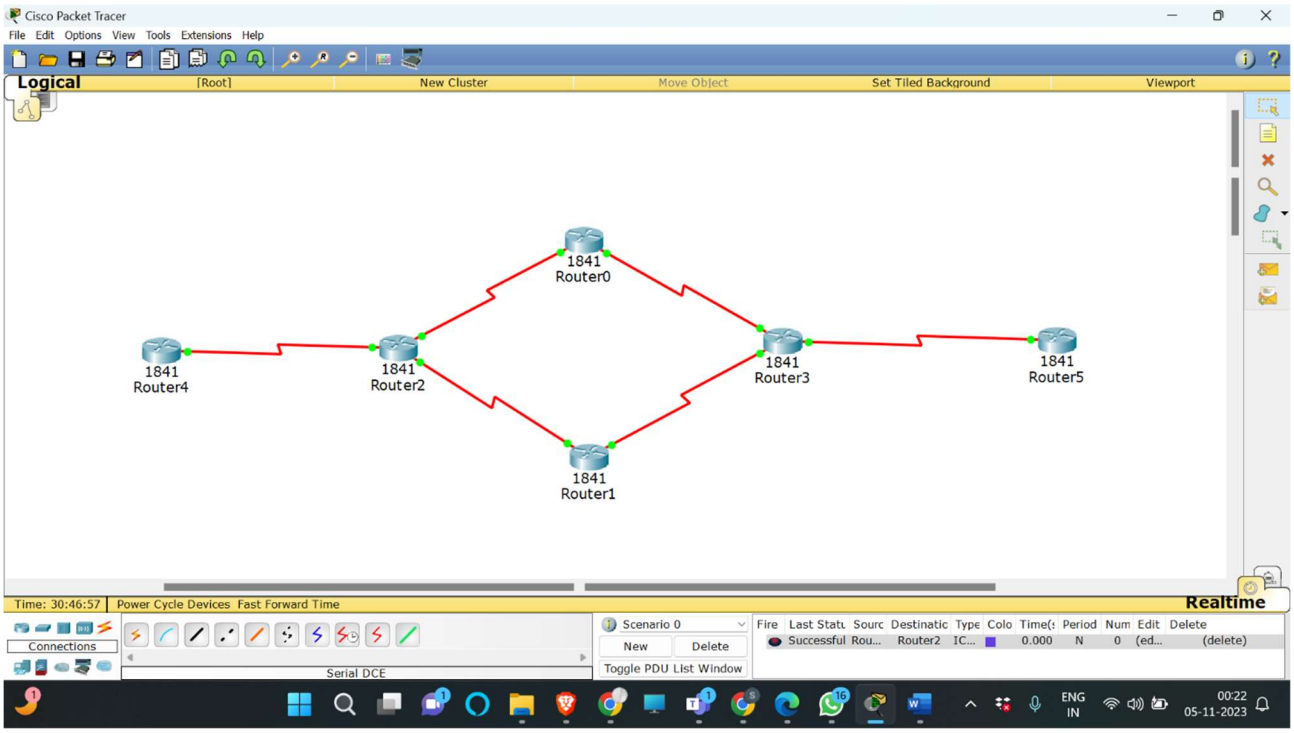
I. Develop a LAN and WAN network for above mentioned diagram.
II. Implement OSPF routing.
III. Show successful communication in between different Network.

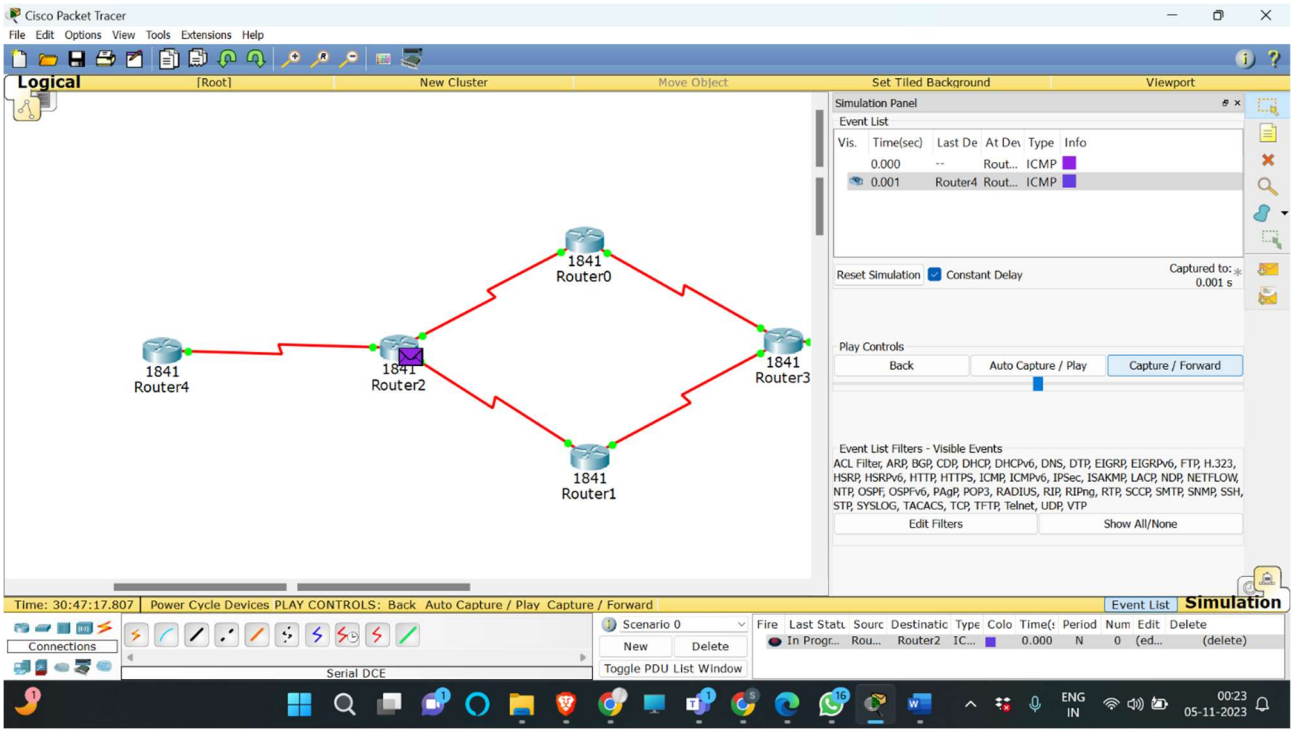
Project Module III

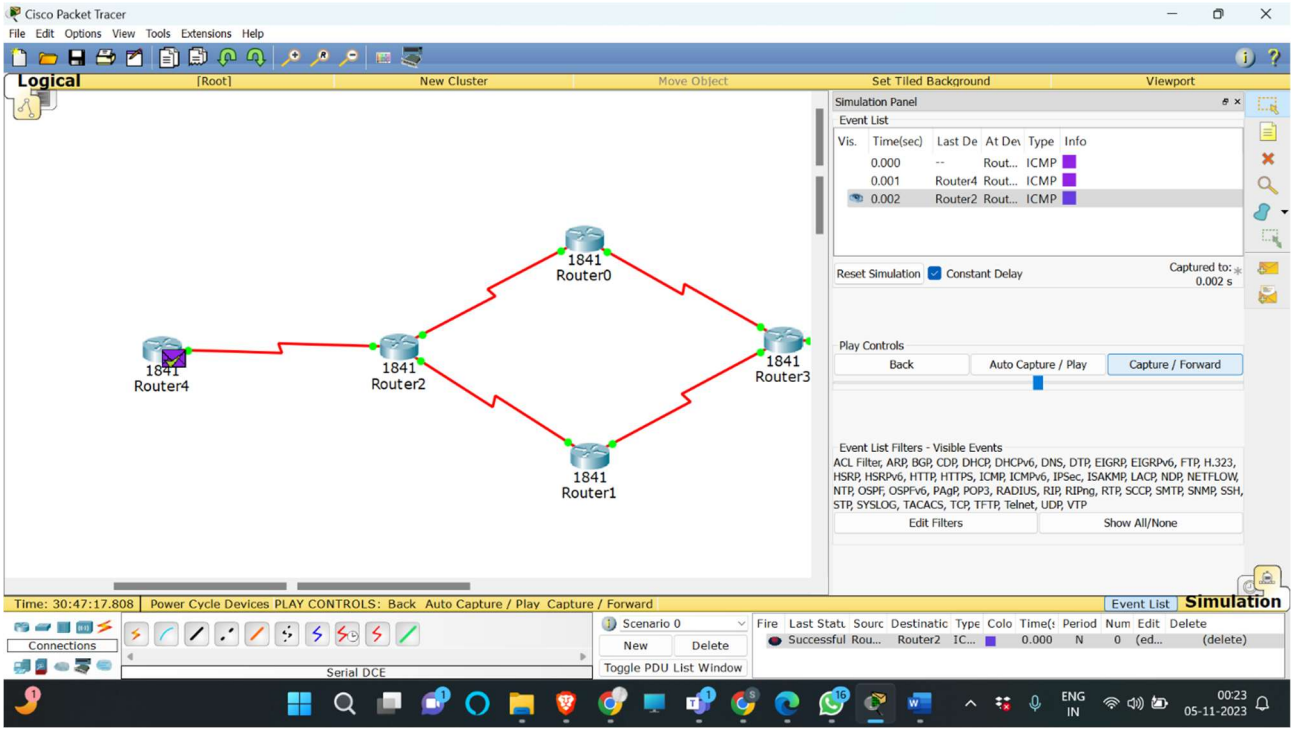
I. Show screenshot of communication in between different Network.

Separate screenshot of communication in between two different network.

Create a report with all screenshot






Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Simulation Panel
Event List
Vis. Time(sec) Last De At De Type Info
0.000 -- Rout... ICMP
0.001 Router4 Rout... ICMP
0.002 Router2 Rout... ICMP
Reset Simulation
Constant Delay
Captured to: 0.002 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
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1841 Router0
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1841 Router2
1841 Router3
1841 Router1
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Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward
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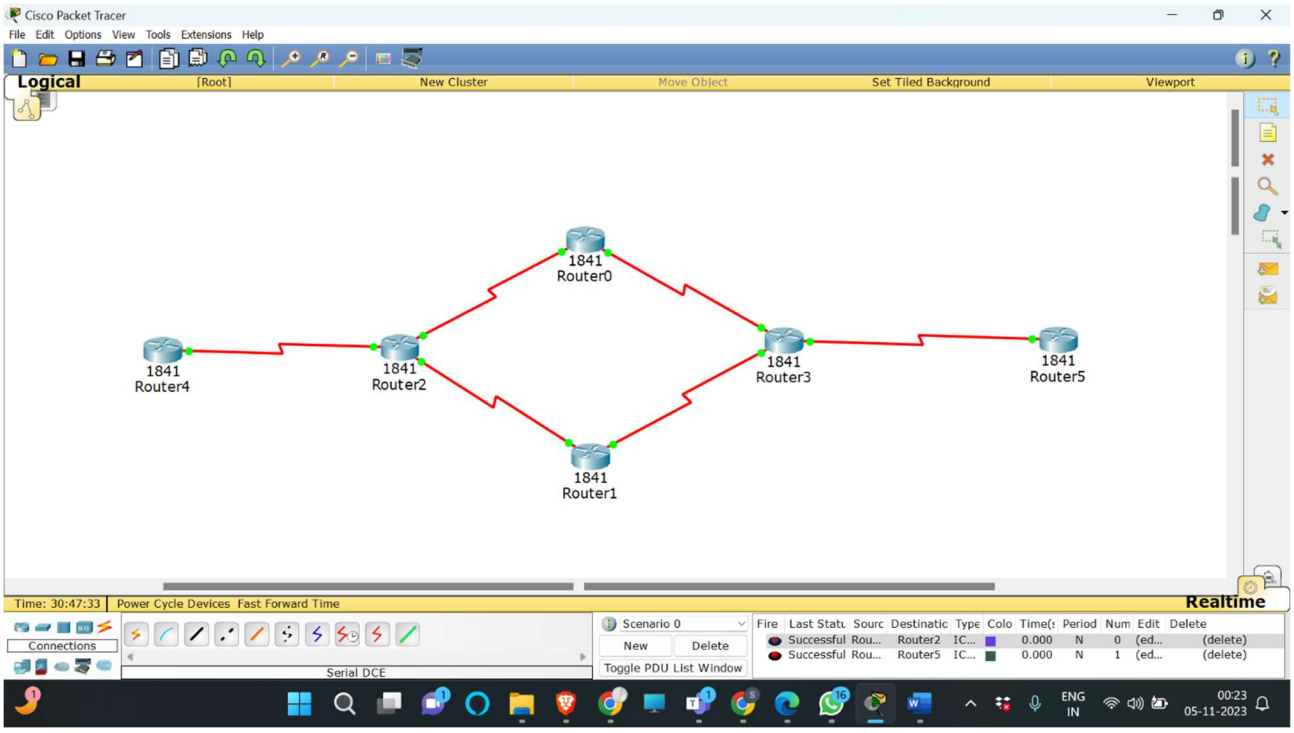
Cisco Packet Tracer
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1841 Router3
1841 Router5
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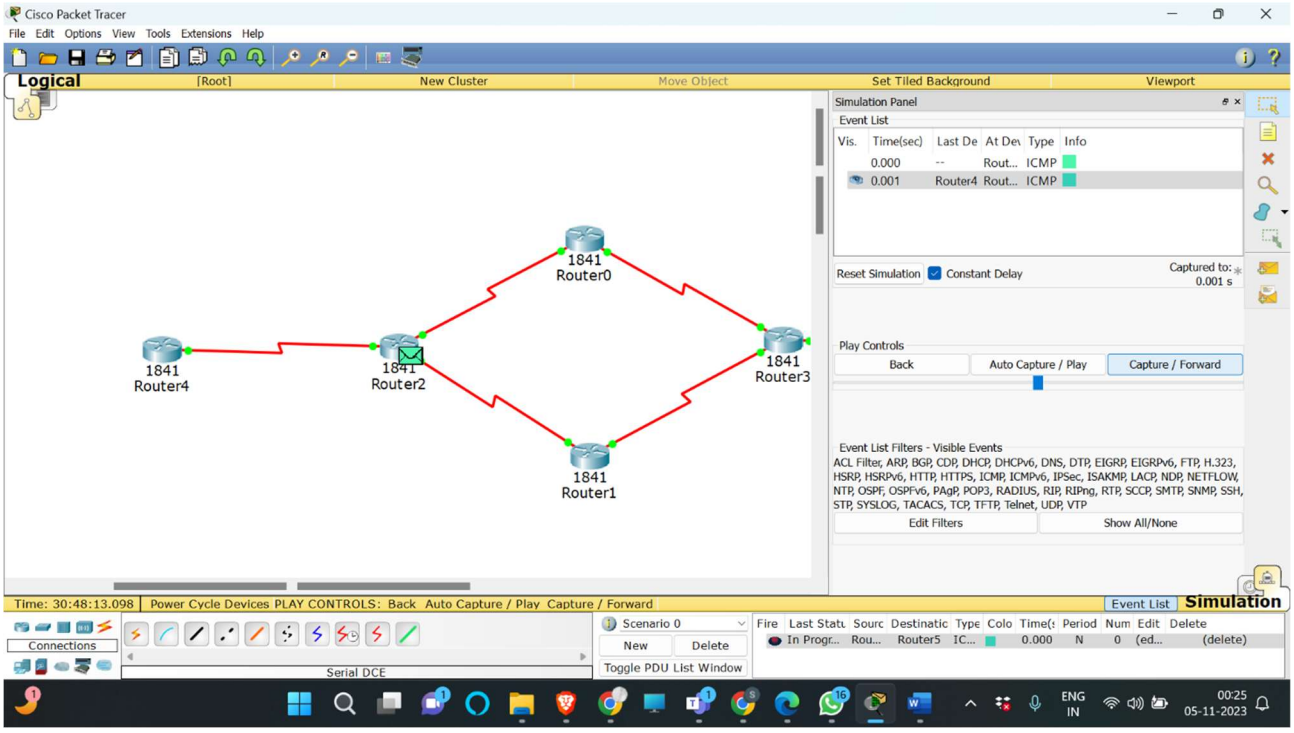
Cisco Packet Tracer
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1841 Router3
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Simulation Panel
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0.000 -- Rout... ICMP
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Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
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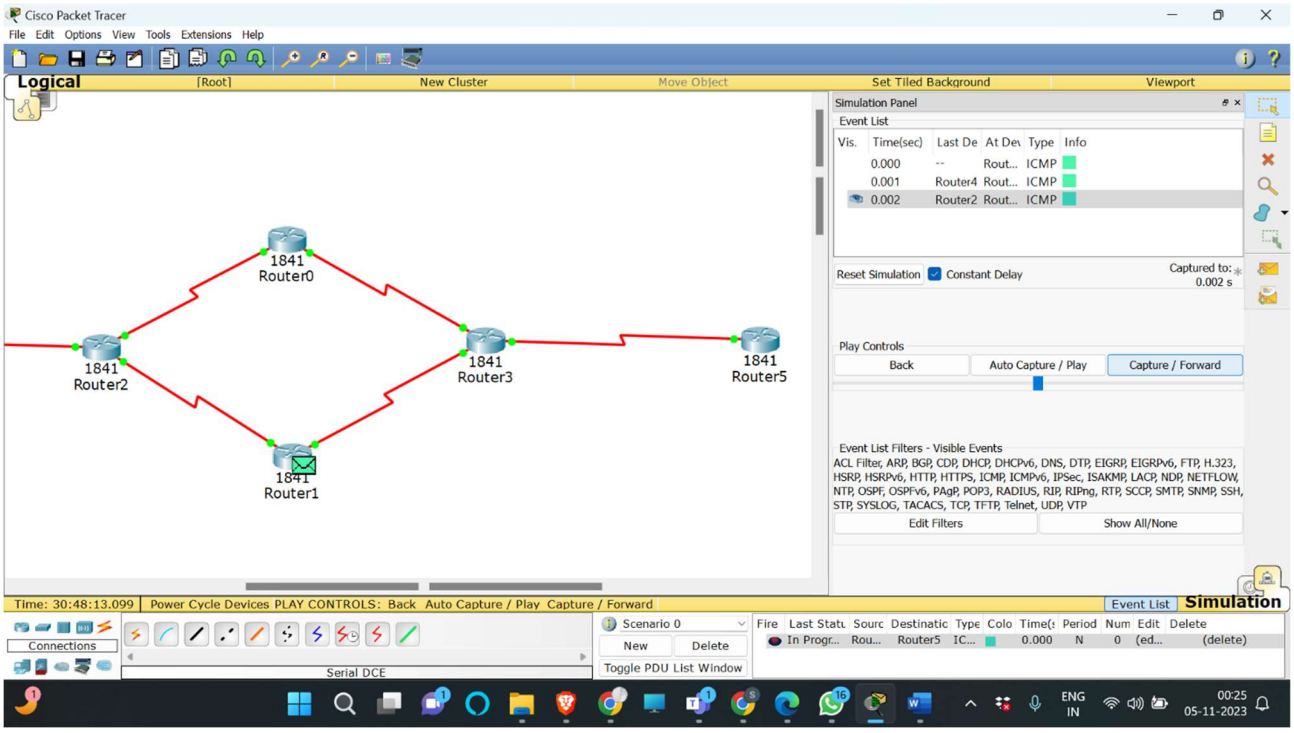
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1841 Router1
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0.001 Router4 Rout... ICMP
0.002 Router2 Rout... ICMP
Reset Simulation
Constant Delay
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Play Controls
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Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
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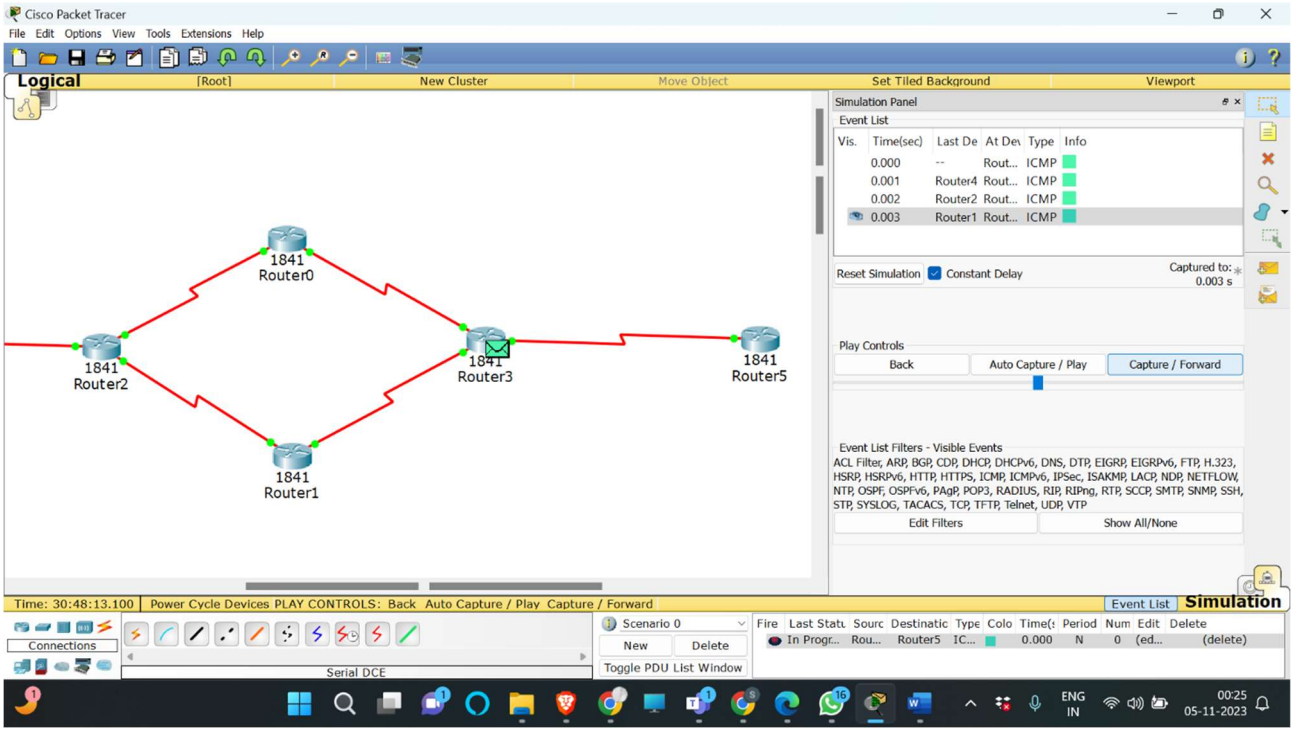
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1841 Router5
1841 Router1
Simulation Panel
Event List
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0.002 Router2 Rout... ICMP
0.003 Router1 Rout... ICMP
Reset Simulation
Constant Delay
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Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
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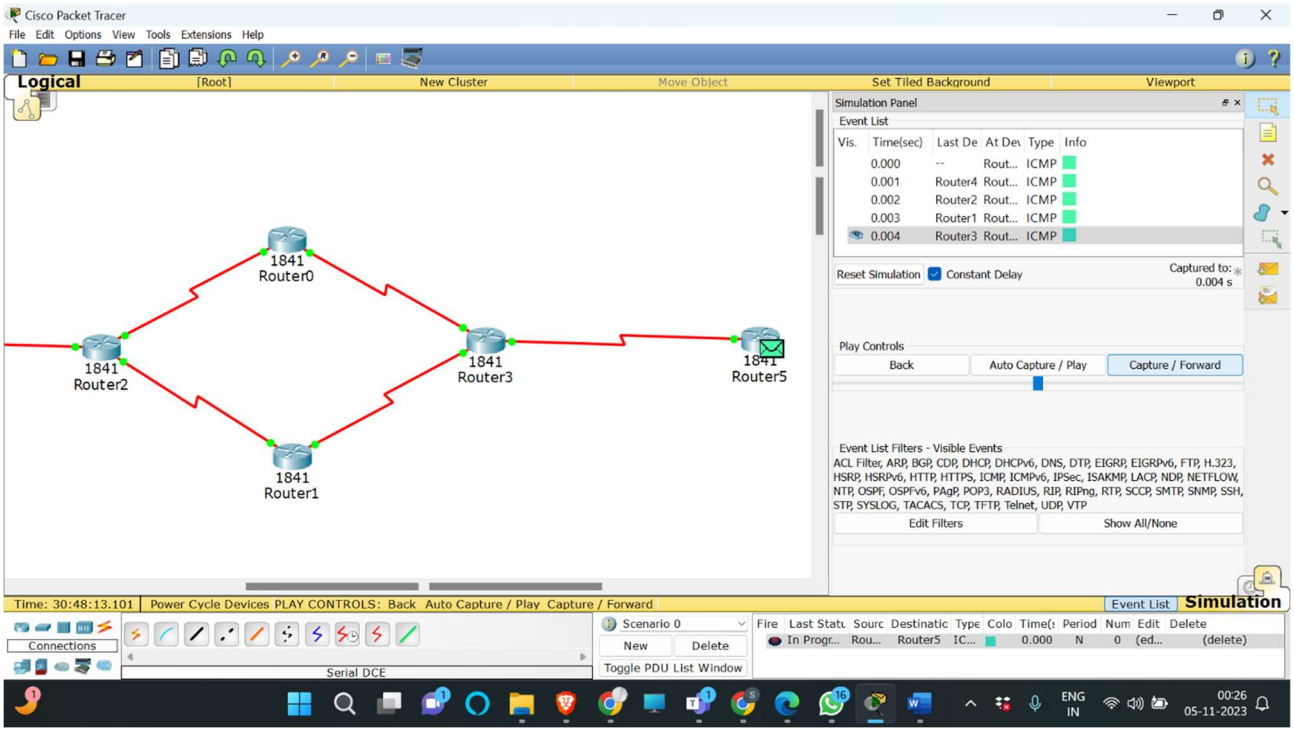
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0.003 Router1 Rout... ICMP
0.004 Router3 Rout... ICMP
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Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
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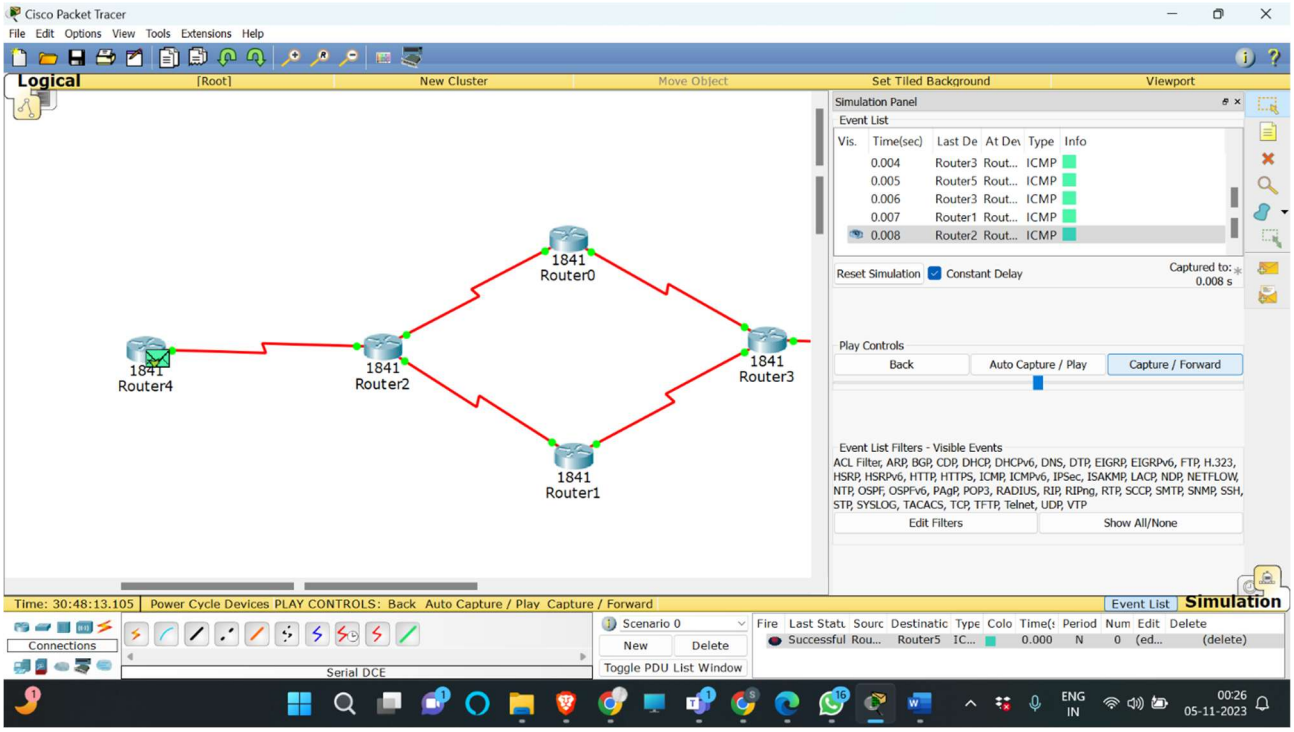
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0.006 Router3 Rout... ICMP
0.007 Router1 Rout... ICMP
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Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
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Conclusion :

"In conclusion, this network project has been a valuable learning experience in configuring and managing a complex network infrastructure. Through the setup of six interconnected routers, we have gained practical insights into network design, configuration, and routing. The implementation of OSPF routing protocol allowed us to establish efficient communication between the routers, ensuring data packets are delivered optimally across the network.

We have also explored the importance of IP subnetting, which aids in efficient IP address allocation and management within the network. Understanding the roles and functions of hardware components, such as routers, switches, cables, and interfaces, is essential for building a resilient network infrastructure.

One key takeaway from this project is the significance of documenting configurations and saving them on the routers. Proper documentation ensures that configurations are preserved and can be easily restored if necessary, preventing network downtime and disruptions.

The systematic documentation of configurations and the successful setup of this network provide a solid foundation for future network management and troubleshooting. The knowledge gained in this project can be applied to real-world scenarios, helping to build and maintain robust and efficient network infrastructures.

Attached to this report are screenshots demonstrating the successful implementation of the network, showcasing the configurations, routing, and connectivity achieved across all routers. This visual representation of the project serves as a testament to the practical skills and expertise developed throughout this endeavor."