## **NWEN 302 LAB 3 REPORT**

**Instructions:** Use this editable form to answer the questions and other discussion points. Type your answers in the boxes provided, ensuring that your answers do not go beyond the boxes. Once completed, save the file as lab3-report.pdf and submit to the ECS Submission System.

Last Name First Name Student ID
Lab Objectives  1. To gain understanding of routing tables and use this knowledge to configure static routes.  2. To use and configure the Open Shortest Path First (OSPF) routing protocol for dynamic routing.
Objective 1: Understanding Routing Table and Static Routing
Q1.1: How many subnets are there in the network?
Q1.2: How many entries are there in m1's routing table? What does 0.0.0.0 stand for?
Q1.3: How many entries are there in R1's routing table? Copy and paste the command output into the report.
Od 4: What a group and did year up a to display the IDyC position table?
Q1.4: What command did you use to display the IPv6 routing table?

<b>Q1.5:</b> Which router did you need to add the static route, and what Zebra commands did you add? Provide 2 answers: one for IPv4 and one for IPv6.
Q1.6: What is the shortest path from m1 to m4? You can write the set of links that makes up the path.
Q1.7: Which nodes did you configure? For each node, write the Zebra commands that you added
Q1.8: What throughput was achieved using the static route? Copy and paste the output of Netper showing the throughput into your report.
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<b>Q1.9:</b> What throughput was achieved using the new static route? Copy and paste the output of Netperf showing the throughput into your report.
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## **Objective 2: Using and Configuring OSPF for Dynamic Routing**

<b>Q2.1:</b> What is the output of the command show ip ospf route when executed at R1? Copy and paste the output.
Q2.2: Is the output the same across all routers? Explain your answer.
Q2.3: Compare the routing table before and after enabling OSPF. Describe how the Unix routing
table has changed.
<b>Q2.4:</b> What is the output of the command show ipv6 ospf6 route when executed at R1? Copy and paste the output.
paste the output.
Q2.5: How would you test that this change (OSPFv3 is now running on all routers) enables IPv6
packets to be forwarded?

Q2.6: What happens to the output of traceroute after disconnecting? Explain the result.	
Q2.7: What happens after you reconnect the link c2? Explain the result.	
Explain the result.	
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Q2.10: What changes occurred to this table when you disconnect c2?	
<b>Q2.11:</b> Record the debugging output from the experiment with disconnecting c2.	
Q2.12: What happened when c2 was disconnected? Use your theoretical knowledge of	
OSPF and debugging output from the router to explain.	
02.13: Davise a scheme to assign integer costs to links c1.c10. Briefly explain the	
<b>Q2.13:</b> Devise a scheme to assign integer costs to links c1-c10. Briefly explain the	
Q2.13: Devise a scheme to assign integer costs to links c1-c10. Briefly explain the scheme, and enumerate the cost for every link.	

Q2.14: W	hat is the route from m1 to m4? Is this different from the shortest path?
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<b>QZ.13.</b> VV	nat is the throughput between mil and m4? Is this better than the throughput you
	hat is the throughput between m1 and m4? Is this better than the throughput you eved with static routing?