Course Name: Networks & Communications

Course Code: CSE 205

Practice Assignments 3.5

Student's Full Name:

Student ID:

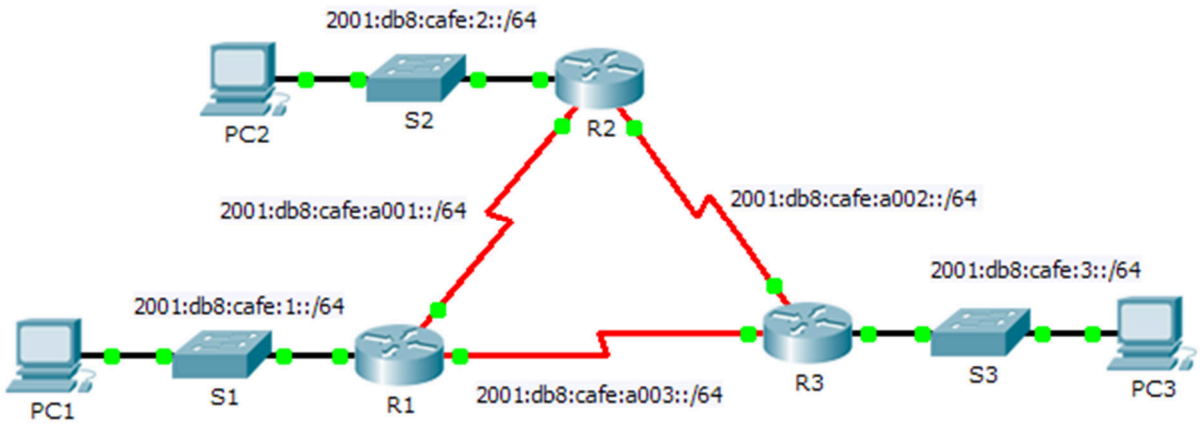
***Instruction*:**

** Students are allowed to write their answers in a word file (Answer sheet) provided by instructor. After finishing the assignment, students must convert the word file (Answer sheet) into a PDF file. The PDF file should have name in the following format "Mã số SV_Họ và tên SV_LabX.Y.pdf". Finally, students upload the file in Moodle.*

** PDF file should have screenshot of network design, screenshot or written code of each network and device configuration (like router, switch, etc.) and screenshot of the output of every instruction.*

Configuring Basic OSPFv3 in a Single Area

Topology



Addressing Table

Device	Interface	IPv6 Address/Prefix	Default Gateway
R1	G0/0	2001:db8:cafe:1::1/64	N/A
	S0/0/0	2001:db8:cafe:a001::1/64	N/A
	S0/0/1	2001:db8:cafe:a003::1/64	N/A
R2	G0/0	2001:db8:cafe:2::1/64	N/A
	S0/0/0	2001:db8:cafe:a001::2/64	N/A
	S0/0/1	2001:db8:cafe:a002::1/64	N/A
R3	G0/0	2001:db8:cafe:3::1/64	N/A
	S0/0/0	2001:db8:cafe:a003::264	N/A
	S0/0/1	2001:db8:cafe:a002::2/64	N/A
PC1	NIC	2001:db8:cafe:1::10/64	fe80::1
PC2	NIC	2001:db8:cafe:2::10/64	fe80::2
PC3	NIC	2001:db8:cafe:3::10/64	fe80::3

Objectives

Part 1: Configure OSPFv3 Routing

Part 2: Verify Connectivity

Background

In this activity, the IPv6 addressing is already configured. You are responsible for configuring the three router topology with basic single area OSPFv3 and then verifying connectivity between end devices.

Part 1: Configure OSPFv3 Routing

Step 1: Configure OSPFv3 on R1, R2 and R3.

Use the following requirements to configure OSPF routing on all three routers:

- Enable IPv6 routing
- Process ID 10
- Router ID for each router: R1 = 1.1.1.1; R2 = 2.2.2.2; R3 = 3.3.3.3
- Enable OSPFv3 on each interface
- Adjust the default reference bandwidth to support gigabit links using the **auto-cost reference-bandwidth** command.
- Prevent the LAN interfaces from sending out OSPF routing messages.

Step 2: Verify OSPF routing is operational.

Verify each router has established adjacency with the other two routers. Verify the routing table has a route to every network in the topology.

Part 2: Verify Connectivity

Each PC should be able to ping the other two PCs. If not, check your configurations.

Note: This activity is graded using only connectivity tests. The instructions window will not show your score. To see your score, click **Check Results** > **Assessment Items**. To see the results of a specific connectivity test, click **Check Results** > **Connectivity Tests**.