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Lab 3 Report

Grader's Note: We have attached the Excel Sheet for the necessary aggregations on the IP Addressing, and Given PDFs on the work done for IP Assigning.

Lab Report 1: There are 24 P2P subnets

Lab Report 2: There are 10 multi-access subnets

Lab Report 3:

LAB REPORT 3:			
Campus IP: 132.26.0.0/21			
Multi-Access	Subnet	Point-to-Point	Subnet
SW2	132.26.4.0/24	R1-R6	132.26.2.16/30
SW5	132.26.5.0/24	R1-R2	132.26.2.20/30
SW10	132.26.6.0/24	R1-R3	132.26.2.24/30
SW8	132.26.7.0/24	R1-R4	132.26.2.28/30
SW6	132.26.0.0/25	R6-Web	132.26.2.32/30
SW11	132.26.0.128/25	R6-Email	132.26.2.36/30
SW9	132.26.1.0/26	R6-VPN	132.26.2.40/30
SW3	132.26.1.64/26	R2-Server1	132.26.2.44/30
SW1	132.26.1.128/26	R2-Server2	132.26.2.48/30
Unused	132.26.1.192/26	R2-R5	132.26.2.52/30
SW7	132.26.2.0/29	R2-R3	132.26.2.56/30
Unused	132.26.2.8/29	R3-R7	132.26.2.60/30
Unused	132.26.15.0/25	R3-R8	132.26.2.64/30
Unused	132.26.3.0/24	R8-R7	132.26.2.68/30
		R7-Server10	132.26.2.72/30
		R7-Server11	132.26.2.76/30
		R3-R4	132.26.2.80/30
		R4-R2	132.26.2.84/30
		R4-R10	132.26.2.88/30
		R4-R9	132.26.2.92/30
		R9-R10	132.26.2.96/30
		R9-R12	132.26.2.100/30
		R9-R11	132.26.2.104/30
		R11-R12	132.26.2.108/30
		Unused	132.26.2.112/28

Lab Report 4:

LAB REPORT 4:				
Destination	**Dest. IP**	**Next Hop**	**Next Hop IP**	**Interface**
R2	132.26.2.20/30	--	--	Directly- f1/1
R4	132.26.2.28/30	--	--	Directly- f0/0
R3	132.26.2.24/30	--	--	Directly- f1/0
R6	132.26.2.16/30	--	--	Directly- f2/0
R5	132.26.2.52/30	R2	132.26.2.20/30	f3/0
R7	132.26.2.60/30	R3	132.26.2.24/30	f2/0
R8	132.26.2.64/30	R3	132.26.2.24/30	f2/1
R9	132.26.2.92/30	R4	132.26.2.28/30	f2/1
R10	132.26.2.88/30	R4	132.26.2.28/30	f2/0
R11	132.26.2.104/30	R9	132.26.2.92/30	f2/1
R12	132.26.2.108/30	R9	132.26.2.92/30	f2/0

Lab Report 5:

LAB REPORT 5:				
Campus IP: 132.26.0.0/20				
IP for School	Multi-Access	Subnet	Point-to-Point	Subnet
ECS 132.26.0.0/22	SW8	132.26.0.0/24	R9-R11	132.26.3.104/30
	SW10	132.26.1.0/24	R9-R12	132.26.3.100/30
	SW11	132.26.2.0/25	R4-R9	132.26.3.92/30
	SW9	132.26.2.128/26	R4-R10	132.26.3.88/30
	SW1	132.26.2.192/26	R11-R12	132.26.3.108/30
	SW7	132.26.1.0/29	R9-R10	132.26.3.96/30
	Unused	132.26.4.0/22	Unused	132.26.3.32/27
			Unused	132.26.4.0/22
SOM 132.26.8.0/23	SW2	132.26.1.0/24	R2-Server 2	132.26.9.64/30
	SW3	132.26.9.0/26	R2-Server 3	132.26.9.68/30
	Unused	132.26.9.80/28	R2-R5	132.26.9.72/30
	Unused	132.26.9.96/27	Unused	132.26.9.76/30
	Unused	132.26.9.128/25		
SAH 132.26.10.0/23	SW5	132.26.10.0/24	R3-R7	132.26.11.128/30
	SW6	132.26.11.0/25	R3-R8	132.26.11.132/30
	Unused	132.26.11.152/29	R8-R7	132.26.11.136/30
	Unused	132.26.11.160/27	R7-Server10	132.26.11.140/30
	Unused	132.26.11.192/26	R7-Server11	132.26.11.144/30
			Unused	132.26.11.148/30
DMZ 132.26.12.0/27			R6-Web	132.26.12.0/30
	Unused	132.26.12.12/28	R6-Email	132.26.12.4/30
			R6-VPN	132.26.12.8/30
Campus Border Router 132.26.12.32/27			R1-R2	132.26.12.32/30
	Unused	132.26.12.60/30	R1-R3	132.26.12.36/30
			R1-R6	132.26.12.40/30
			R1-R4	132.26.12.44/30
			R4-R2	132.26.12.48/30
			R3-R4	132.26.12.52/30
			R2-R3	132.26.12.56/30
Unused IP for Campus IP	Unused	132.26.12.16/28	Unused	132.26.12.80/25
	Unused	132.26.12.64/26	Unused	132.26.13.800/24
	Unused	132.26.14.0/23		

Lab Report 6:

LAB REPORT 6				
Destination	**Dest. IP**	**Next Hop**	**Next Hop IP**	**Interface**
R2	132.26.12.32/30	--	--	Directly- f1/1
R4	132.26.12.44/30	--	--	Directly- f0/0
R3	132.26.12.36/30	--	--	Directly- f1/0
R6	132.26.12.40/30	--	--	Directly- f2/0
SAH	132.26.10.0/23	R3	132.26.12.36/30	Directly- f1/0
ECS	132.26.0.0/22	R4	132.26.12.44/30	Directly- f0/0
SOM	132.26.8.0/23	R2	132.26.12.32/30	Directly- f1/1
DMZ	132.26.12.0/27	R6	132.26.12.40/30	Directly- f2/0

It reduced the number of entries needed on the routing table since R1 now only needs to know the first router belonging to a certain school's network in order to route.

Lab Report 7:

This network is not resilient since there is a lack of redundancy when routing. For instance, if router 3 were to go down, then R1 would no longer be able to reach the School of Arts and Humanities. To improve resiliency, additional connections to other routers would be needed, such as a direct connection between R1 and R8. It would also benefit from adding additional routers to serve as the backups for R1 (campus border router) and R6 (DMZ router). This would ensure that there is no single point of failure for the campus-wide network.