



PRIFYSGOL CYMRU
Y Drindod Dewi Sant
UNIVERSITY OF WALES
Trinity Saint David
SWANSEA - ABERTAWE

Applied Computing

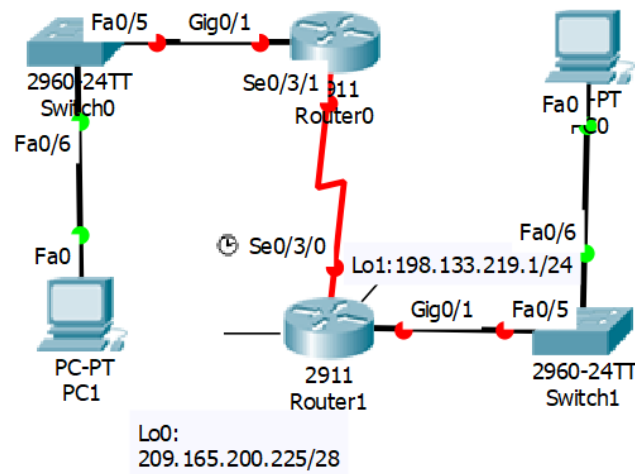
Wales Institute of Science and Art (WISA)

Advanced Networking (ACCA5024)

Lab 8: (Part 1) Static Routing Practice

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Mind Wide Open[™]

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R0	G0/1	192.168.0.1	255.255.255.0	N/A
	S0/3/1	10.1.1.1	255.255.255.252	N/A
R1	G0/1	192.168.1.1	255.255.255.0	N/A
	S0/3/0 (DCE)	10.1.1.2	255.255.255.252	N/A
	Lo0	209.165.200.225	255.255.255.224	N/A
	Lo1	198.133.219.1	255.255.255.0	N/A
PC1	NIC	192.168.0.10	255.255.255.0	192.168.0.1
PC2	NIC	192.168.1.10	255.255.255.0	192.168.1.1

Objectives

- Create the Topology as per the Diagram stated above and initialize the devices.
- Configure and Verify Static Routes.
- Configure and Verify Default Routes.

Tasks

1: Design the Topology as per the requirement

2: Initialize and Reload the Router and Switch

3: Configure the Host's

Hostname R0

4: Configure Host Names, IPv4 Address, Passwords in the Router and Switch.

interface s0/0/0

ip address 10.1.1.2 255.255.255.252

clock rate 128000

no shutdown

5: Disable DNS Lookup in both the Routers and Save the Running Configuration.

no ip domain-lookup

6: Set Clock Rate for the DCE Serial Connection

7: Verify Connections: PC to Gateway's, Directly Connected Routes (All Connectivity should be successful)

8: Verify Connections: PC to PC's, Other Routes (All Connectivity should be unsuccessful. Analyse the reason)

9: Use the commands and learn the necessity of them:

Show ip interface brief, Show ip route

R0# show ip interface brief

R0# show ip route

10: Configure Recursive Static Route

ip route network-address subnet-mask ip-address

On the R0 router, configure a static route to the 192.168.1.0 network using the IP address of the Serial 0/0/0 interface of R1 as the next-hop address

ip route 192.168.1.0 255.255.255.0 10.1.1.2

View the routing table to verify the new static route entry.

R1# show ip route

11: Configure Directly Connected Static Route

Router(config)# ip route network-address subnet-mask exit-intf

On the R1 router, configure a static route to the 192.168.0.0 network using S0/0/0 as the exit interface.

ip route 192.168.0.0 255.255.255.0 s0/0/0

View the routing table to verify the new static route entry.

12: Configure Static Route

Router(config)# ip route network-address subnet-mask exit-intf

On the R0 router, configure a static route to the 198.133.219.0 network. (Use either Directly Connected Static Route Method or Recursive Static Route Method)

View the routing table to verify the new static route entry.

On the R0 router, configure a static route to the 198.133.219.0 network.

R0(config)# ip route 198.133.219.0 255.255.255.0 S0/0/1

or

R0(config)# ip route 198.133.219.0 255.255.255.0 10.1.1.2

On the R0 router, configure a static route to the 209.165.200.224 network on R3

R0(config)# ip route 209.165.200.224 255.255.255.224 S0/0/1

or

R0(config)# ip route 209.165.200.224 255.255.255.224 10.1.1.2

View the routing table to verify the new static route entry.

R1# show ip route

13: Remove Static Route

On R0, use the **no** command to remove the static routes for the two loopback addresses from the routing table.

no ip route 209.165.200.224 255.255.255.224 10.1.1.2

no ip route 198.133.219.0 255.255.255.0 S0/0/1

R1(config)# no ip route 209.165.200.224 255.255.255.224

R1(config)# no ip route 198.133.219.0 255.255.255.0

14: Configure Default Route

Router(config)# ip route 0.0.0.0 0.0.0.0 {ip-address or exit-intf}