Lab-11: Objective:

Configure Route Redistribution on given network

Lab-11
Configuration of Route Redistribution

Configure Route Redistribution on given network in figure 29, this network is consists of static routing, RIPv2, EIGRP and OSPF. At the end of the configuration, all the devices should be able to send data packets to each other. Each student will use Process ID's (for EIGRP and OSPF) on their Student ID's.

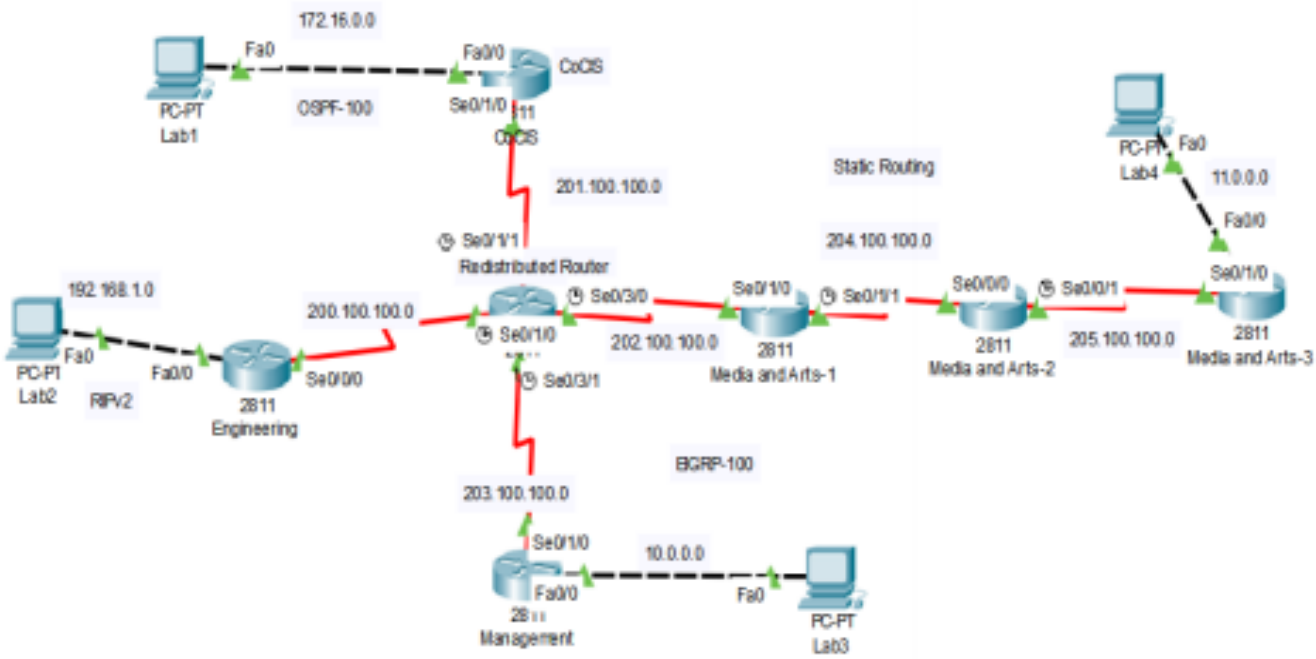

Figure 29

Route Redistribution

Route redistribution is a process that allows a network to use a routing protocol to dynamically route traffic based on information learned from a different routing protocol. Route redistribution helps increase accessibility within networks.

Route redistribution runs on the router that connects two networks. It's really the main "shared" location between the two networks that translates protocols and routes for seamless integration.

When working with routing protocols and redistribution, you might hear it referred to as mutual redistribution. Route redistribution is the process in which one shared resource maps and translates each route, regardless of the protocol used on different network segments.
Typically, route redistribution is only needed on larger networks. But even small office networks can grow into massive segments that need route redistribution.

Task 1, Assign the IP address on each Router

Router CoCIS:

CoCIS >enable

CoCIS #configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

CoCIS (config)#interface serial 0/1/0

CoCIS (config-if)#ip address 201.100.100.1 255.255.255.248

CoCIS (config-if)#no shutdown

CoCIS (config-if)#exit

CoCIS (config)#interface fa 0/0

CoCIS (config-if)#ip address 172.16.0.2 255.255.255.248

CoCIS (config-if)#no shutdown

CoCIS (config-if)#exit

RouterEngineering:

Engineering >enable

Engineering #configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Engineering (config)#interface serial 0/0/0

Engineering (config-if)#ip address 200.100.100.1 255.255.255.248

Engineering (config-if)#no shutdown

Engineering (config-if)#exit

Engineering (config)#interface fa 0/0

Engineering (config-if)#ip address 192.168.1.2 255.255.255.248

Engineering (config-if)#no shutdown

Engineering (config-if)#exit

RouterManagement:

Management>enable

Management #configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Management (config)#interface serial 0/1/0

Management (config-if)#ip address 203.100.100.1 255.255.255.248

Management (config-if)#no shutdown

Management (config-if)#exit

Management (config)#interface fa 0/0

Management (config-if)#ip address 10.0.0.2 255.255.255.248

Management (config-if)#no shutdown

Management (config-if)#exit

RouterMedia and Arts-1:

Media and Arts-1 >enable

Media and Arts-1 #configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Media and Arts-1 (config)#interface serial 0/1/0

Media and Arts-1 (config-if)#ip address 202.100.100.1 255.255.255.248

Media and Arts-1 (config-if)#no shutdown

Media and Arts-1 (config-if)#exit

Media and Arts-1 (config)#interface serial 0/1/1

Media and Arts-1 (config-if)#ip address 204.100.100.1 255.255.255.248

Media and Arts-1 (config-if)#clock rate 64000

Media and Arts-1 (config-if)#no shutdown

Media and Arts-1 (config-if)#exit

Router Media and Arts-2:

Media and Arts-2>enable

Media and Arts-2 #configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Media and Arts-2 (config)#interface serial 0/0/0

Media and Arts-2 (config-if)#ip address 204.100.100.2 255.255.255.248

Media and Arts-2 (config-if)#no shutdown

Media and Arts-2 (config-if)#exit

Media and Arts-2 (config)#interface serial 0/0/1

Media and Arts-2 (config-if)#ip address 205.100.100.1 255.255.255.248

Media and Arts-2 (config-if)#clock rate 64000

Media and Arts-2 (config-if)#no shutdown

Media and Arts-2 (config-if)#exit

Router Media and Arts-3:

Media and Arts-3>enable

Media and Arts-3 #configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Media and Arts-3 (config)#interface serial 0/1/0

Media and Arts-3 (config-if)#ip address 205.100.100.2 255.255.255.248

Media and Arts-3 (config-if)#no shutdown

Media and Arts-3 (config-if)#exit

Media and Arts-3 (config)#interface fa 0/0

Media and Arts-3 (config-if)#ip address 11.0.0.1 255.255.255.248

Media and Arts-3 (config-if)#no shutdown

Media and Arts-3 (config-if)#exit

Redistributed Router:

Redistributed Router>enable

Redistributed Router# configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Redistributed Router(config)#interface serial 0/1/1

Redistributed Router(config-if)#ip address 201.100.100.2 255.255.255.248

Redistributed Router(config-if)#clock rate 64000

Redistributed Router(config-if)#no shutdown

Redistributed Router (config-if)#exit

Redistributed Router(config)#interface serial 0/1/0

Redistributed Router(config-if)#ip address 200.100.100.2 255.255.255.248

Redistributed Router(config-if)#clock rate 64000

Redistributed Router(config-if)#no shutdown

Redistributed Router (config-if)#exit

Redistributed Router(config)#interface serial 0/3/1

Redistributed Router(config-if)#ip address 203.100.100.2 255.255.255.248

Redistributed Router(config-if)#clock rate 64000

Redistributed Router(config-if)#no shutdown

Redistributed Router (config-if)#exit

Redistributed Router(config)#interface serial 0/3/0

Redistributed Router(config-if)#ip address 202.100.100.2 255.255.255.248

Redistributed Router(config-if)#clock rate 64000

Redistributed Router(config-if)#no shutdown

Redistributed Router (config-if)#exit

Task 2, Configure Specific Routing Protocols on each Router

Router CoCIS:

CoCIS (config)#router ospf 100

CoCIS (config)#network 201.100.100.0 0.0.0.7 area 0

CoCIS (config)#network 172.16.0.0 0.0.0.7 area 0

CoCIS (config)#exit

RouterEngineering:

Engineering (config)#router rip

Engineering (config)#version 2

Engineering (config)#network 200.100.100.0

Engineering (config)#network 192.168.1.0

Engineering (config)#exit

RouterManagement:

Management (config)#router eigrp 100

Management (config)#network 203.100.100.0 0.0.0.7

Management (config)#network 10.0.0.0 0.0.0.7

Management (config)#no auto-summary

Management (config)#exit

RouterMedia and Arts-1:

Media and Arts-1 (config)#ip route 205.100.100.0 255.255.255.248 204.100.100.2

Media and Arts-1 (config)#ip route 11.0.0.0 255.255.255.248 204.100.100.2

Media and Arts-1 (config)#exit

Router Media and Arts-2:

Media and Arts-2 (config)#ip route 202.100.100.0 255.255.255.248 204.100.100.1

Media and Arts-2 (config)#ip route 11.0.0.0 255.255.255.248 205.100.100.2

Media and Arts-2 (config)#exit

Router Media and Arts-3:

Media and Arts-3 (config)#ip route 204.100.100.0 255.255.255.248 205.100.100.1

Media and Arts-3 (config)#ip route 202.100.100.0 255.255.255.248 205.100.100.1

Media and Arts-3 (config)#exit

Redistributed Router:

Redistributed Router(config)#router ospf 100

Redistributed Router(config-router)#network 201.100.100.0 0.0.0.7 area 0

Redistributed Router(config-router)#exit

Redistributed Router(config)#router rip

Redistributed Router (config-router)#version 2

Redistributed Router (config-router)#network 200.100.100.0

Redistributed Router(config-router)#exit

Redistributed Router(config)#router eigrp 100

Redistributed Router (config-router)#network 203.100.100.0 0.0.0.7

Redistributed Router (config-router)#no auto-summary

Redistributed Router (config-router)#exit

Redistributed Router(config)#ip route 204.100.100.0 255.255.255.248 202.100.100.1

Redistributed Router(config)#ip route 205.100.100.0 255.255.255.248 202.100.100.1

Redistributed Router(config)#ip route 11.0.0.0 255.255.255.248 202.100.100.1

Redistributed Router(config)#exit

Task 3, Configure Route Redistribution

Redistributed Router(config)#router ospf 100

Redistributed Router (config-router)#redistribute eigrp 100 metric 250 subnets

Redistributed Router (config-router)#redistribute rip metric 250 subnets

Redistributed Router (config-router)#redistribute static metric 250 subnets

Redistributed Router (config-router)#exit

Redistributed Router(config)#router eigrp 100

Redistributed Router (config-router)#redistribute ospf 100 metric 100 1 255 10 5

Redistributed Router (config-router)#redistribute rip metric 100 1 255 10 5

Redistributed Router (config-router)#redistribute static metric 100 1 255 10 5

Redistributed Router (config-router)#exit

Redistributed Router(config)#router rip

Redistributed Router (config-router)#version 2

Redistributed Router (config-router)#redistribute ospf 100 metric 2

Redistributed Router (config-router)#redistribute eigrp 100 metric 2

Redistributed Router (config-router)#redistribute static metric 2

Redistributed Router (config-router)#exit

Lab-11 Exercise:

Configure Route Redistribution on a hybrid network which consists of 10 routers.This network is consists of static routing on router 1 to 3, RIPv2 on router 5, 6, EIGRP on router 7, 8 and OSPF on router 9,10 while router 4 is a redistributed router. At the end of the configuration, all the devices should be able to send data packets to each other. Each student will use Process ID's (for EIGRP and OSPF) on their Student ID's.