School of Computer Science and Engineering

CSE3003- Computer Networks Lab

Ex No. 12	Simulation of RIP, OSPF and FTP protocols
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Simulation of RIP, OSPF and FTP protocols

Routing Information Protocol (RIP):

Steps :

Step 1: Create a Network of three routers with PC's connected.

Step 2: Connect the routers with serial DCE cable.

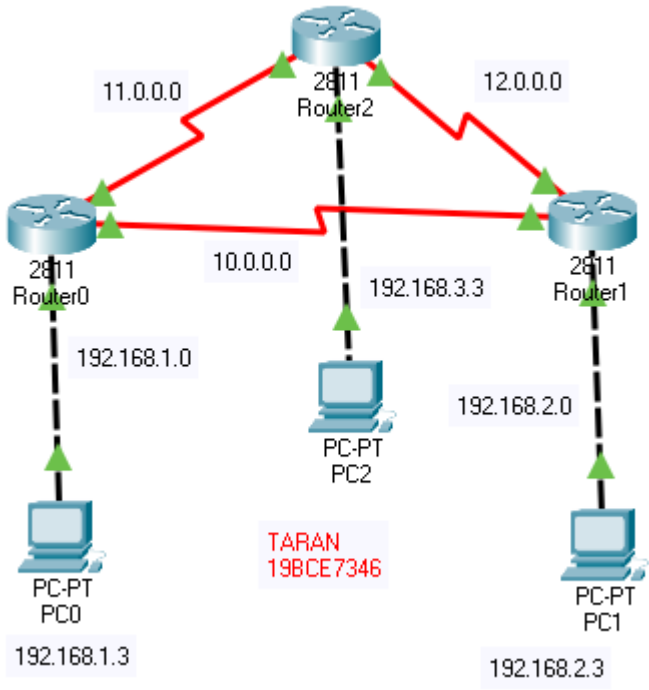
Step 3: Assign IP address and different Gateway for different networks of Pc's.

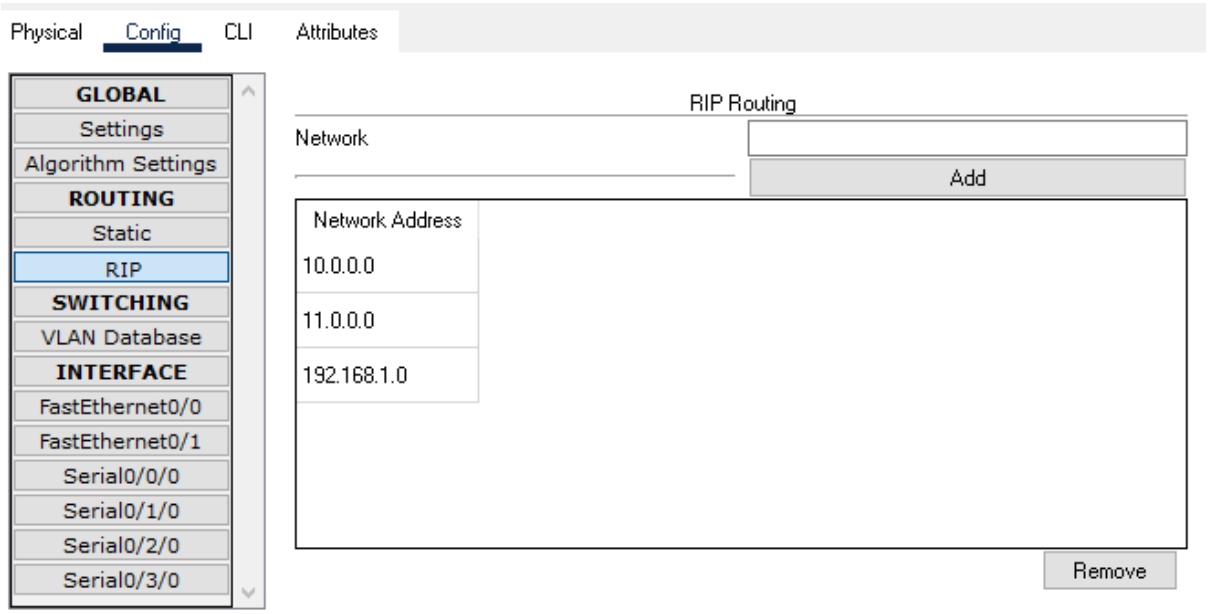
Step 4: Assign serial IP address to Routers in series.

Step 5: Assign Gateway of pc's in a network as IP address for Router in that network.

Step 6: Assign RIP to all routers with respect to their transmission.

Step 7: Check the packet transmission through different PC's, Routers.





Router 0

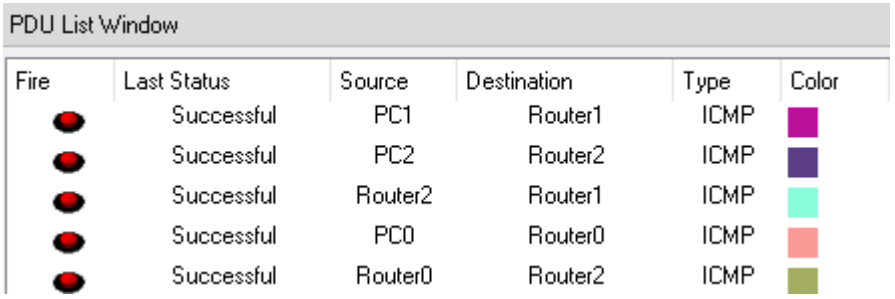
Network Address
10.0.0.0
11.0.0.0
192.168.1.0

Router 1

Network Address
10.0.0.0
12.0.0.0
192.168.2.0

Router 2

Network Address
11.0.0.0
12.0.0.0
192.168.3.0



PDU List Window

Fire	Last Status	Source	Destination	Type	Color
	Successful	PC1	Router1	ICMP	
	Successful	PC2	Router2	ICMP	
	Successful	Router2	Router1	ICMP	
	Successful	PC0	Router0	ICMP	
	Successful	Router0	Router2	ICMP	

Open Shortest Path First (OSPF):

Steps :

Step 1: Create a Network with three routers and pc's

Step 2: Connect the routers with serial DCE cable

Step 3: Assign IP address and different Gateway for different network of Pc's

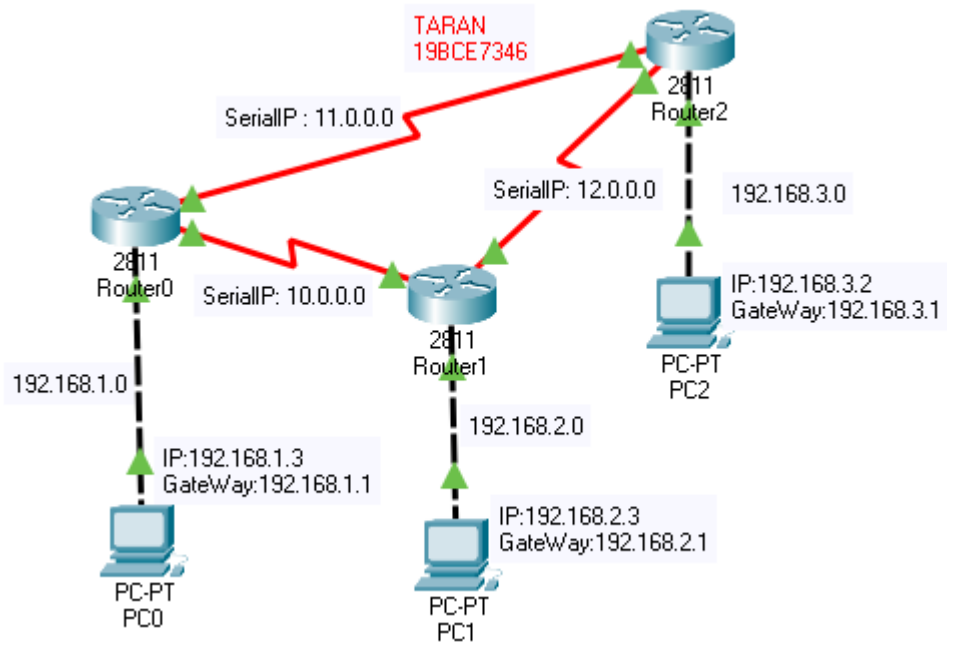
Step 4: Assign serial IP address to Routers ,which are connected with serial DCE cable

Step 5: Assign Gateway of pc's in at network as IP address for Router in that network

Step 6: implement code in IOS command line interface to different routers

And save.

Step 7: Check the packet transmission through different PC's& Routers.



Physical Config CLI Attributes

IOS Command Line Interface

```
Router(config-if)#exit
Router(config)#interface Serial0/1/0
Router(config-if)#router ospf 1
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 11.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#
Router(config)#end
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Serial0/0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/2/0
Router(config-if)#
00:44:01: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.3.1 on Serial0/0/0 from LOADING to FULL,
Loading Done

Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/2/0
Router(config-if)#
```

```
Router(config-if)#router ospf 1
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 11.0.0.0 0.255.255.255 area 0
Router(config-router)#exit
Router(config)#
Router(config)#end

Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 12.0.0.0 0.255.255.255 area 0
Router(config-router)#network 192.168.2.0 0.0.0.255 area 0
Router(config-router)#
Router(config-router)#exit
Router(config)#end

Router(config-if)#router ospf 1
Router(config-router)#network 11.0.0.0 0.255.255.255 area 0
Router(config-router)#network 12.0.0.0 0.255.255.255 area 0
Router(config-router)#network 192.168.3.0 0.0.0.255 area 0
Router(config-router)#exit
Router(config)#
Router(config)#end
```

PDU List Window

Fire	Last Status	Source	Destination	Type	Color
	Successful	Router2	PC2	ICMP	
	Successful	Router0	Router1	ICMP	
	Successful	PC0	Router0	ICMP	
	Successful	PC0	PC2	ICMP	
	Successful	PC2	PC0	ICMP	
	Successful	PC0	Router2	ICMP	
	Successful	Router1	Router0	ICMP	
	Successful	PC2	Router0	ICMP	

FTP access with Server:

Steps :

Step 1: Create a Network of pc's, router, switch and server connected

Step 2: Assign IP address and different Gateway for different network of Pc's

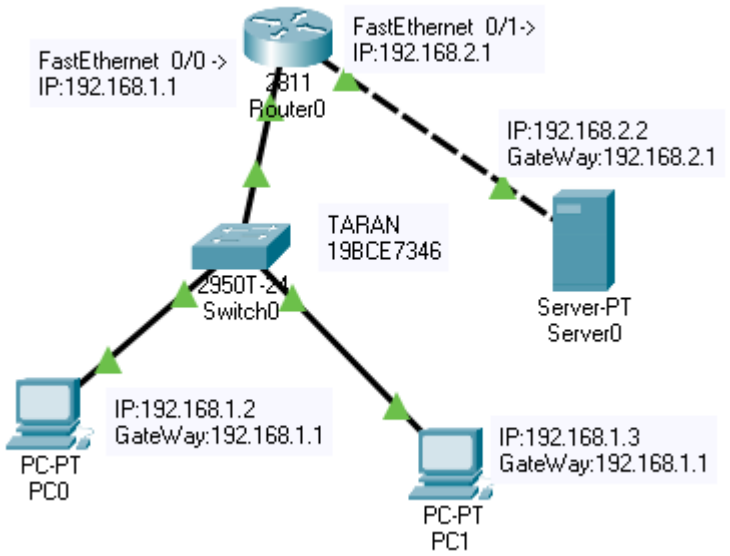
Step 3: Assign serial IP address and subnet mask for Router in series

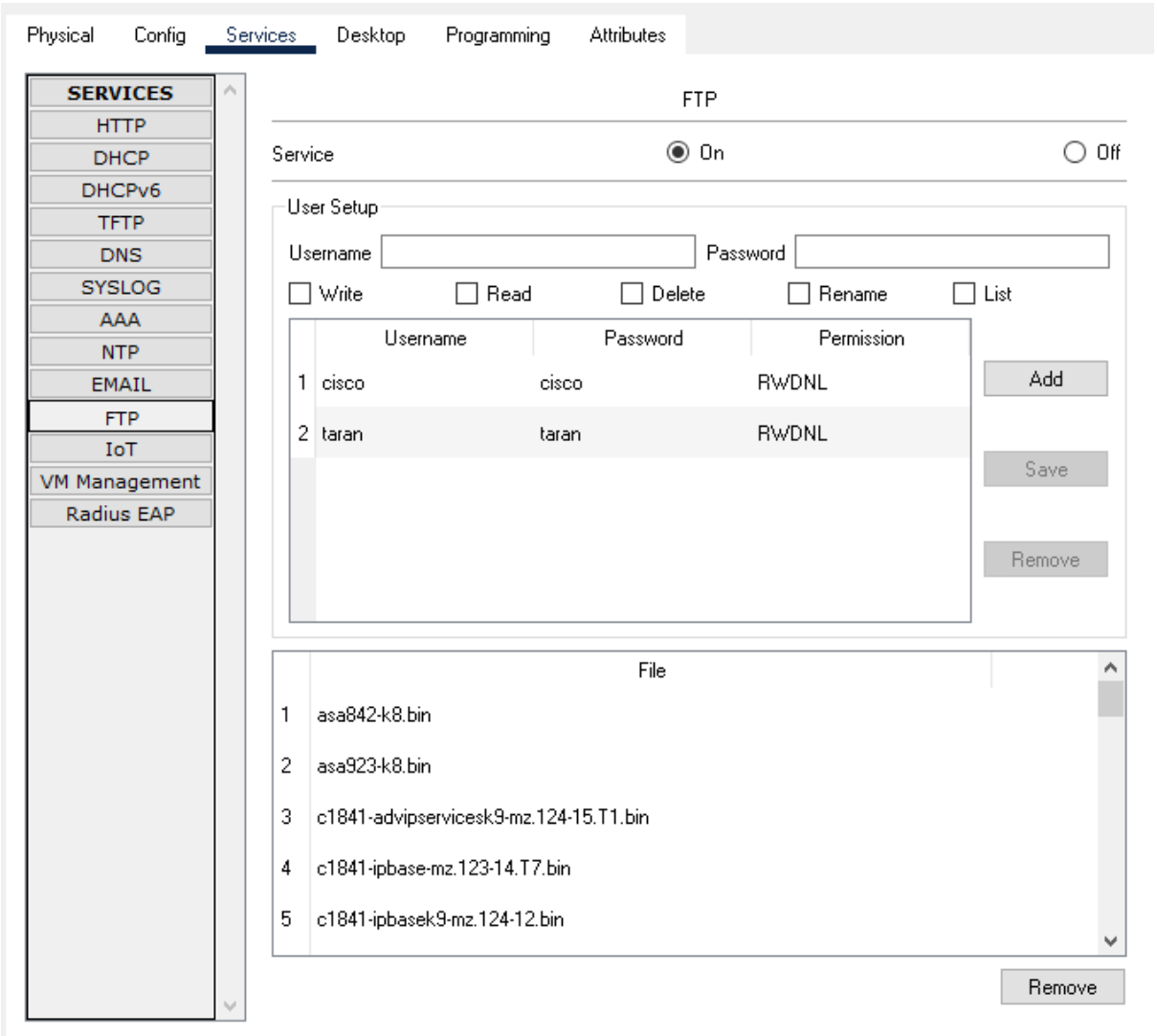
Step 4: Assign Gateway of pc's in a network as IP address for Router in that network.

Step 5: open services in router and create username and password

Step 6: open command prompt from pc to access the files located in the server.

Step 7: Check the packet transmission through different PC's, Router and Server.


FastEthernet 0/0 ->
IP:192.168.1.1
2811
Router0
FastEthernet 0/1->
IP:192.168.2.1
IP:192.168.2.2
GateWay:192.168.2.1
TARAN
19BCE7346
2950T-24
Switch0
Server-PT
Server0
IP:192.168.1.2
GateWay:192.168.1.1
PC-PT
PC0
IP:192.168.1.3
GateWay:192.168.1.1
PC-PT
PC1


Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
FTP
Service
On
Off
User Setup
Username
Password
Write
Read
Delete
Rename
List
Username
Password
Permission
1 cisco cisco RWDNL
2 taran taran RWDNL
Add
Save
Remove
File
1 asa842-k8.bin
2 asa923-k8.bin
3 c1841-advipservicesk9-mz.124-15.T1.bin
4 c1841-ipbase-mz.123-14.T7.bin
5 c1841-ipbasek9-mz.124-12.bin
Remove

```
C:\>ftp 192.168.2.2
Trying to connect...192.168.2.2
Connected to 192.168.2.2
220- Welcome to PT Ftp server
Username:taran
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>dir
```

```
24   : cgr1000-universalk9-mz.SPA.154-2.CG                159487552
25   : cgr1000-universalk9-mz.SPA.156-3.CG                184530138
26   : ir800-universalk9-bundle.SPA.156-3.M.bin           160968869
27   : ir800-universalk9-mz.SPA.155-3.M                   61750062
28   : ir800-universalk9-mz.SPA.156-3.M                   63753767
29   : ir800_yocto-1.7.2.tar                              2877440
30   : ir800_yocto-1.7.2_python-2.7.3.tar                 6912000
31   : pt1000-i-mz.122-28.bin                             5571584
32   : pt3000-i6q4l2-mz.121-22.EA4.bin                    3117390
ftp>get c2950-i6q4l2-mz.121-22.EA4.bin

Reading file c2950-i6q4l2-mz.121-22.EA4.bin from 192.168.2.2:
File transfer in progress...

[Transfer complete - 3058048 bytes]

3058048 bytes copied in 30.782 secs (99345 bytes/sec)
```

PDU List Window

Fire	Last Status	Source	Destination	Type	Color
	Successful	PC0	PC1	ICMP	
	Successful	Router0	PC1	ICMP	
	Successful	Router0	Server0	ICMP	
	Successful	PC1	Server0	ICMP	
	Successful	Server0	PC0	ICMP	
	Successful	Server0	PC1	ICMP	
	Successful	PC0	Server0	ICMP	