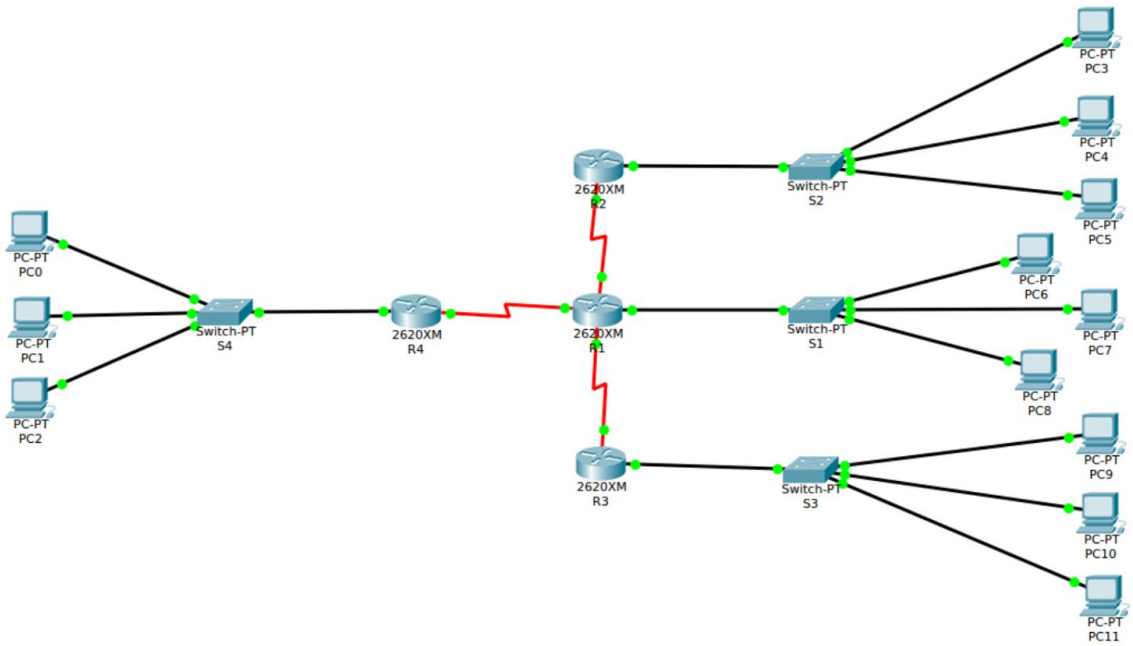
Лабараторная работа 5

Богдан Уладзіслаў
ФПМІ, 3 курс, 3 група

Варыянт 3

Рэалізацыя схемы:

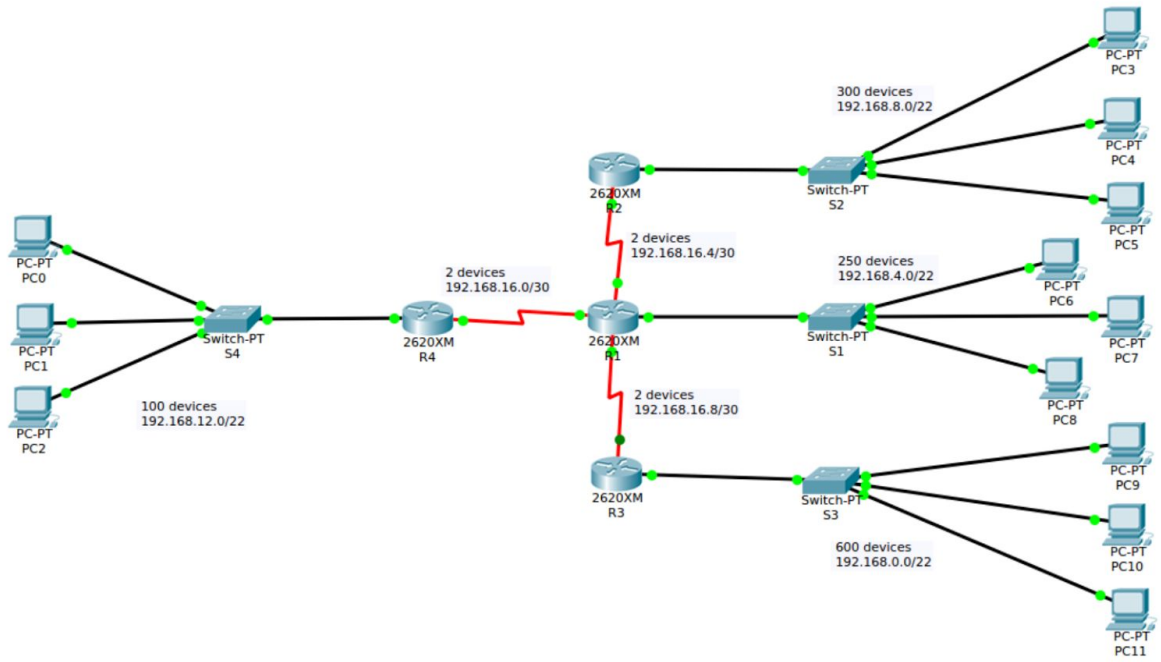


Табліца:
IP-адрас: 192.168.0.0/18
11000000.10101000.00000000.00000000 = 192.168.0.0
11111111.11111111.11000000.00000000 = 255.255.192.0 /18

Патрэбная колькасць вузлоў	/прэфікс	Колькасць вузлоў	Адрас падсеткі	Дыяпазон адрасоў	Шырока-вяшчальная рассылка
100	/22	2^10-2=1022	192.168.12.0	.12.1-15.254	.15.255
300	/22	2^10-2=1022	192.168.8.0	.8.1-11.254	.11.255
250	/22	2^10-2=1022	192.168.4.0	.4.1-7.254	.7.255
600	/22	2^10-2=1022	192.168.0.0	.0.1-.3.254	.3.255

2	/30	2	192.168.16.0	.1-.2	.3
2	/30	2	192.168.16.4	.5-.6	.7
2	/30	2	192.168.16.8	.9-.10	.11

Размеркавалі так, што ўсім хапае адрасоў.
Размяркоўваем паміж падсеткамі:



Наладжваем статычную маршрутызацыю на роўтарах R1-R4.
На прыкладзе R4:

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 192.168.16.2
Router(config)#ip route 192.168.16.4 255.255.255.252 192.168.16.2
Router(config)#ip route 192.168.16.8 255.255.255.252 192.168.16.2
Router(config)#ip route 192.168.8.0 255.255.252.0 192.168.16.2
Router(config)#ip route 192.168.4.0 255.255.252.0 192.168.16.2
Router(config)#ip route 192.168.0.0 255.255.252.0 192.168.16.2
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 192.168.16.2 to network 0.0.0.0

S    192.168.0.0/22 [1/0] via 192.168.16.2
S    192.168.4.0/22 [1/0] via 192.168.16.2
S    192.168.8.0/22 [1/0] via 192.168.16.2
C    192.168.12.0/22 is directly connected, FastEthernet0/0
     192.168.16.0/30 is subnetted, 3 subnets
C       192.168.16.0 is directly connected, Serial0/0
S       192.168.16.4 [1/0] via 192.168.16.2
S       192.168.16.8 [1/0] via 192.168.16.2
S*   0.0.0.0/0 [1/0] via 192.168.16.2
Router#
```

Задалі статычную маршрутызацыю паміж усімі падсеткамі.

Правяраем дасягальнасць канечных прыладаў з розных падсетак… Усё працуе!
Прыклад: PC1 -> PC10

```
Packet Tracer PC Command Line 1.0
PC>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Reply from 192.168.0.3: bytes=32 time=3ms TTL=125
Reply from 192.168.0.3: bytes=32 time=2ms TTL=125
Reply from 192.168.0.3: bytes=32 time=2ms TTL=125
Reply from 192.168.0.3: bytes=32 time=2ms TTL=125

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 3ms, Average = 2ms

PC>tracert 192.168.0.3

Tracing route to 192.168.0.3 over a maximum of 30 hops:

  1    1 ms      0 ms      0 ms      192.168.12.1
  2    0 ms      1 ms      0 ms      192.168.16.2
  3    1 ms      1 ms      0 ms      192.168.16.9
  4    2 ms      0 ms      2 ms      192.168.0.3

Trace complete.

PC>
```

Прыклад: PC8 -> PC3