ОТЧЁТ

Лабораторная работа №2

" Настройка протокола STP (IEEE 802.1D)"

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Ход работы

1. Для заданной на схеме schema-lab2 сети, состоящей из управляемых коммутаторов и персональных компьютеров

настроить протокол STP, назначив явно один из коммутаторов корневым настройкой приоритета

enable

configure terminal

spanning-tree vlan 1 root primary

end

show spanning-tree vlan 1

```
vIOS-L2-01#show spanning-tree vlan 1

VLAN0001
  Spanning tree enabled protocol ieee
  Root ID    Priority    24577
             Address     0c63.e5d0.0000
             This bridge is the root
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    24577  (priority 24576 sys-id-ext 1)
             Address     0c63.e5d0.0000
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
             Aging Time  15  sec

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------------------
Gi0/0               Desg FWD 4         128.1    Shr
Gi0/1               Desg FWD 4         128.2    Shr
Gi0/2               Desg FWD 4         128.3    Shr
Gi0/3               Desg FWD 4         128.4    Shr
Gi1/0               Desg FWD 4         128.5    Shr
Gi1/1               Desg FWD 4         128.6    Shr
Gi1/2               Desg FWD 4         128.7    Shr
Gi1/3               Desg FWD 4         128.8    Shr
Gi2/0               Desg FWD 4         128.9    Shr
```

2. Проверить доступность каждого с каждым всех персональных компьютеров (VPCS), результаты запротоколировать.

Настраиваем ip адреса у коммутаторов и VPCS

enable

configure terminal

interface vlan 1

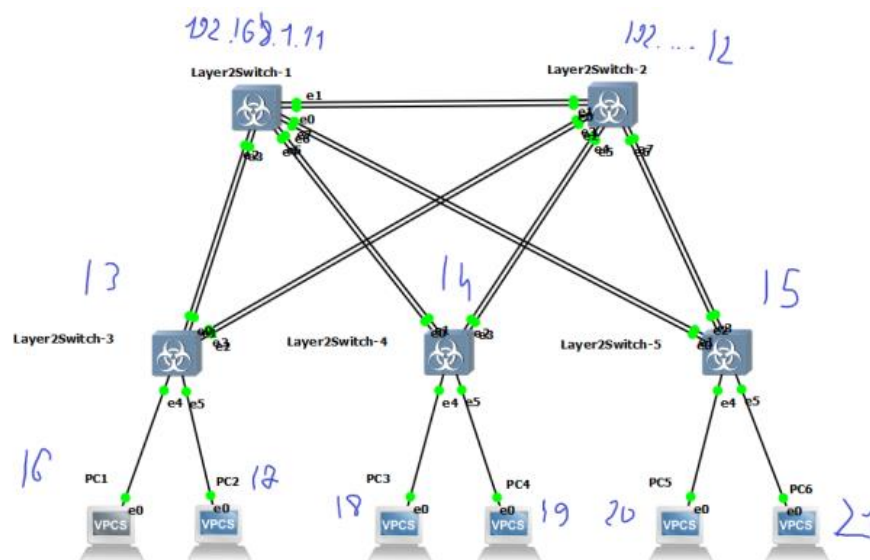ip address 192.168.1.11 255.255.255.0   //11-15

no shutdown

exit

exit

copy running-config startup-config

ip 192.168.1.16 255.255.255.0 192.168.1.13 //16-21

save

ping 192.168.1.16 //16-21

```
PC3 - PuTTY

PC3> ping 192.168.1.17

84 bytes from 192.168.1.17 icmp_seq=1 ttl=64 time=14.014 ms
84 bytes from 192.168.1.17 icmp_seq=2 ttl=64 time=3.454 ms
84 bytes from 192.168.1.17 icmp_seq=3 ttl=64 time=8.727 ms
84 bytes from 192.168.1.17 icmp_seq=4 ttl=64 time=3.526 ms
84 bytes from 192.168.1.17 icmp_seq=5 ttl=64 time=7.864 ms

PC3> ping 192.168.1.18

192.168.1.18 icmp_seq=1 ttl=64 time=0.001 ms
192.168.1.18 icmp_seq=2 ttl=64 time=0.001 ms
192.168.1.18 icmp_seq=3 ttl=64 time=0.001 ms
192.168.1.18 icmp_seq=4 ttl=64 time=0.001 ms
192.168.1.18 icmp_seq=5 ttl=64 time=0.001 ms

PC3> ping 192.168.1.19

84 bytes from 192.168.1.19 icmp_seq=1 ttl=64 time=1.766 ms
84 bytes from 192.168.1.19 icmp_seq=2 ttl=64 time=4.231 ms
84 bytes from 192.168.1.19 icmp_seq=3 ttl=64 time=0.866 ms
84 bytes from 192.168.1.19 icmp_seq=4 ttl=64 time=8.750 ms
84 bytes from 192.168.1.19 icmp_seq=5 ttl=64 time=4.117 ms

PC3> ping 192.168.1.16

84 bytes from 192.168.1.16 icmp_seq=1 ttl=64 time=7.372 ms
84 bytes from 192.168.1.16 icmp_seq=2 ttl=64 time=6.216 ms
84 bytes from 192.168.1.16 icmp_seq=3 ttl=64 time=2.600 ms
84 bytes from 192.168.1.16 icmp_seq=4 ttl=64 time=6.017 ms
84 bytes from 192.168.1.16 icmp_seq=5 ttl=64 time=11.375 ms

PC3> ping 192.168.1.20

84 bytes from 192.168.1.20 icmp_seq=1 ttl=64 time=13.289 ms
84 bytes from 192.168.1.20 icmp_seq=2 ttl=64 time=15.253 ms
84 bytes from 192.168.1.20 icmp_seq=3 ttl=64 time=2.369 ms
84 bytes from 192.168.1.20 icmp_seq=4 ttl=64 time=10.590 ms
84 bytes from 192.168.1.20 icmp_seq=5 ttl=64 time=2.106 ms

PC3> ping 192.168.1.21

84 bytes from 192.168.1.21 icmp_seq=1 ttl=64 time=24.853 ms
84 bytes from 192.168.1.21 icmp_seq=2 ttl=64 time=9.662 ms
84 bytes from 192.168.1.21 icmp_seq=3 ttl=64 time=11.629 ms
84 bytes from 192.168.1.21 icmp_seq=4 ttl=64 time=17.803 ms
84 bytes from 192.168.1.21 icmp_seq=5 ttl=64 time=11.609 ms
```
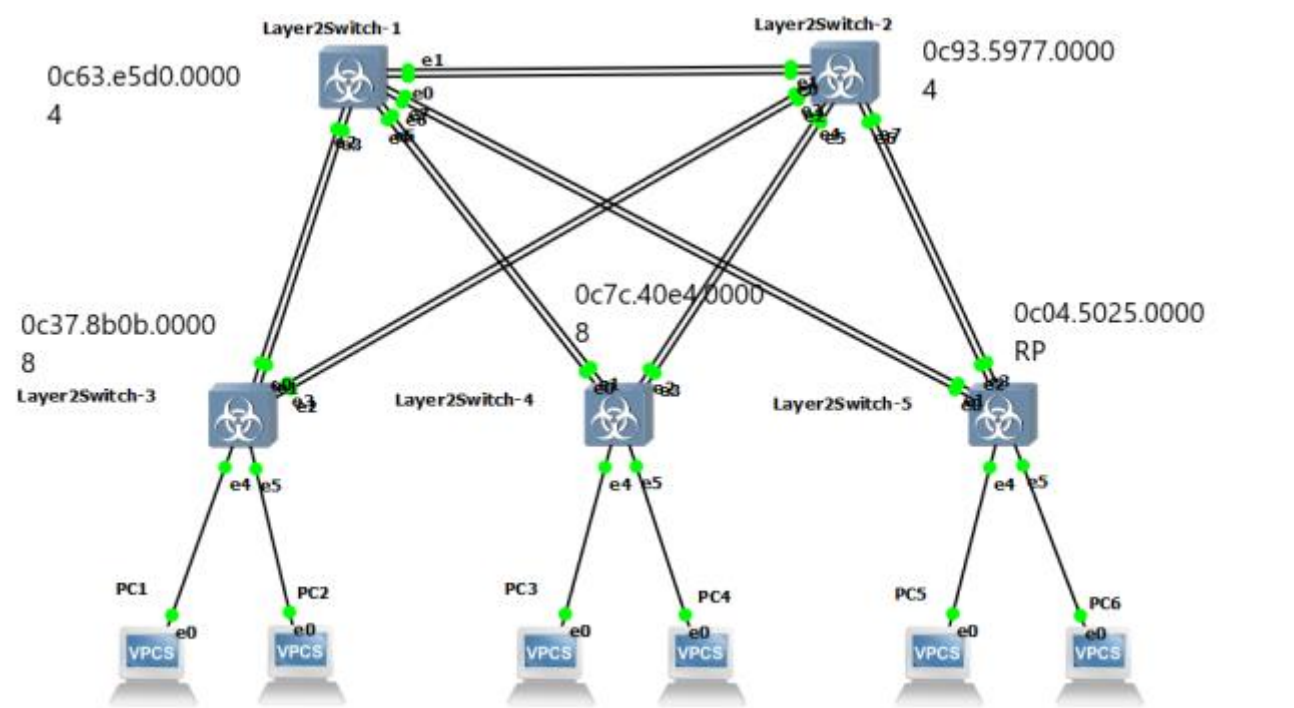
Как видим пакеты доставляются ко всем VPCS

3. На изображении схемы отметить BID каждого коммутатора и режимы работы портов (RP/DP/blocked) и стоимости маршрутов, результат сохранить в файл.

show spanning-tree vlan 1

у Layer2Switch-1

Interface	Role	Sts	Cost	Prio.Nbr	Type
Gi0/0	Desg	FWD	4	128.1	Shr
Gi0/1	Desg	FWD	4	128.2	Shr
Gi0/2	Desg	FWD	4	128.3	Shr
Gi0/3	Desg	FWD	4	128.4	Shr
Gi1/0	Desg	FWD	4	128.5	Shr
Gi1/1	Desg	FWD	4	128.6	Shr
Gi1/2	Root	FWD	4	128.7	Shr
Gi1/3	Altn	BLK	4	128.8	Shr
Gi2/0	Desg	FWD	4	128.9	Shr

y Layer2Switch-2

Interface	Role	Sts	Cost	Prio.Nbr	Type
Gi0/0	Altn	BLK	4	128.1	Shr
Gi0/1	Altn	BLK	4	128.2	Shr
Gi0/2	Desg	FWD	4	128.3	Shr
Gi0/3	Desg	FWD	4	128.4	Shr
Gi1/0	Desg	FWD	4	128.5	Shr
Gi1/1	Desg	FWD	4	128.6	Shr
Gi1/2	Root	FWD	4	128.7	Shr
Gi1/3	Altn	BLK	4	128.8	Shr
Gi2/0	Desg	FWD	4	128.9	Shr

y Layer2Switch-3

Interface	Role	Sts	Cost	Prio.Nbr	Type
Gi0/0	Root	FWD	4	128.1	Shr
Gi0/1	Altn	BLK	4	128.2	Shr
Gi0/2	Altn	BLK	4	128.3	Shr
Gi0/3	Altn	BLK	4	128.4	Shr
Gi1/0	Desg	FWD	4	128.5	Shr
Gi1/1	Desg	FWD	4	128.6	Shr

y Layer2Switch-4

Interface	Role	Sts	Cost	Prio.Nbr	Type
Gi0/0	Root	FWD	4	128.1	Shr
Gi0/1	Altn	BLK	4	128.2	Shr

Gi0/2	Altn BLK 4	128.3	Shr
Gi0/3	Altn BLK 4	128.4	Shr
Gi1/0	Desg FWD 4	128.5	Shr
Gi1/1	Desg FWD 4	128.6	Shr

у Layer2Switch-5

Interface	Role Sts Cost	Prio.Nbr Type
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Gi0/0	Desg FWD 4	128.1	Shr
Gi0/1	Desg FWD 4	128.2	Shr
Gi0/2	Desg FWD 4	128.3	Shr
Gi0/3	Desg FWD 4	128.4	Shr
Gi1/0	Desg FWD 4	128.5	Shr
Gi1/1	Desg FWD 4	128.6	Shr

4. При помощи wireshark отследить передачу пакетов hello от корневого коммутатора на всех линках (nb!), результаты включить в отчет.

14 2.989775	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/100/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
15 2.994921	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/200/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
16 3.089871	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/300/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
17 3.093174	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
18 4.090076	0c:93:59:77:00:07	Nearest-Customer-Br… STP	60 Conf. Root = 32768/100/0c:93:59:77:00:00 Cost = 0 Port = 0x8008
19 4.093615	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
20 4.109115	0c:93:59:77:00:07	Nearest-Customer-Br… STP	60 Conf. Root = 32768/200/0c:93:59:77:00:00 Cost = 0 Port = 0x8008
21 4.553149	0c:93:59:77:00:07	Nearest-Customer-Br… STP	60 Conf. Root = 32768/300/0c:93:59:77:00:00 Cost = 0 Port = 0x8008
22 4.992317	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/100/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
23 4.997377	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/200/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
24 5.092592	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/300/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
25 5.095372	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
26 5.100596	0c:93:59:77:00:07	0c:93:59:77:00:07 LOOP	60 Reply
27 6.138711	0c:93:59:77:00:07	Nearest-Customer-Br… STP	60 Conf. Root = 32768/100/0c:93:59:77:00:00 Cost = 0 Port = 0x8008
28 6.139258	0c:04:50:25:00:03	Nearest-Customer-Br… STP	60 Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8004
29 6.156935	0c:93:59:77:00:07	Nearest-Customer-Br… STP	60 Conf. Root = 32768/200/0c:93:59:77:00:00 Cost = 0 Port = 0x8008

No.	Time	Source	Destination	Protocol	Lengtl	Info
1 0.000000	0c:93:59:77:00:06	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/100/0c:93:59:77:00:00 Cost = 0 Port = 0x8007
2 0.022317	0c:93:59:77:00:06	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/200/0c:93:59:77:00:00 Cost = 0 Port = 0x8007
3 0.459680	0c:93:59:77:00:06	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/300/0c:93:59:77:00:00 Cost = 0 Port = 0x8007
4 0.715975	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
5 1.609913	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/100/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
6 1.614874	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/200/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
7 1.710837	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/300/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
8 1.715819	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
9 2.045518	0c:93:59:77:00:06	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/100/0c:93:59:77:00:00 Cost = 0 Port = 0x8007
10 2.069573	0c:93:59:77:00:06	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/200/0c:93:59:77:00:00 Cost = 0 Port = 0x8007
11 2.509932	0c:93:59:77:00:06	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/300/0c:93:59:77:00:00 Cost = 0 Port = 0x8007
12 2.715705	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
13 3.609552	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/100/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
14 3.614575	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/200/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
15 3.710587	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/300/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
16 3.715509	0c:04:50:25:00:02	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8003
17 4.054466	0c:04:50:25:00:02	CDP/VTP/DTP/PAgP/UD…	DTP	62 Dynamic Trunk Protocol
18 4.095240	0c:93:59:77:00:06	Nearest-Customer-Br…	STP	60 Conf. Root = 32768/100/0c:93:59:77:00:00 Cost = 0 Port = 0x8007

До Switch-2

No.	Time	Source	Destination	Protocol	Lengtl	Info
1	0.000000	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
2	0.004915	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
3	0.098301	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008
4	0.099053	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
5	0.100929	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
6	0.103877	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008
7	0.116224	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008
8	0.510884	0c:04:50:25:00:01	0c:04:50:25:00:01	LOOP	60	Reply
9	1.103877	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
10	2.004829	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
11	2.009586	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
12	2.105719	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
13	2.111664	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
14	2.154240	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008
15	2.158249	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008
16	2.173115	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008
17	3.113864	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
18	3.430454	0c:04:50:25:00:01	CDP/VTP/DTP/PAgP/UD...	CDP	449	Device ID: vIOS-L2-01 Port ID: GigabitEthernet0/1
19	4.009388	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
20	4.014343	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
21	4.111444	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
22	4.118966	0c:04:50:25:00:01	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8002
23	4.188384	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008
24	4.193917	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008
25	4.207689	0c:63:e5:d0:00:07	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8008

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	0c:63:e5:d0:00:06	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8007
2	0.000762	0c:04:50:25:00:00	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8001
3	0.008085	0c:63:e5:d0:00:06	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8007
4	0.022827	0c:63:e5:d0:00:06	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8007
5	0.892182	0c:04:50:25:00:00	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:04:50:25:00:00 Cost = 0 Port = 0x8001
6	0.897332	0c:04:50:25:00:00	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:04:50:25:00:00 Cost = 0 Port = 0x8001
7	0.993179	0c:04:50:25:00:00	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:04:50:25:00:00 Cost = 0 Port = 0x8001
8	1.002208	0c:04:50:25:00:00	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8001
9	1.230213	0c:63:e5:d0:00:06	CDP/VTP/DTP/PAgP/UD...	DTP	62	Dynamic Trunk Protocol
10	1.698880	0c:63:e5:d0:00:06	0c:63:e5:d0:00:06	LOOP	60	Reply
11	2.048909	0c:63:e5:d0:00:06	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/100/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8007
12	2.049419	0c:04:50:25:00:00	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8001
13	2.056927	0c:63:e5:d0:00:06	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/200/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8007
14	2.070491	0c:63:e5:d0:00:06	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/300/0c:63:e5:d0:00:00 Cost = 0 Port = 0x8007

До Switch-5

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	0c:04:50:25:00:04	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8005
2	2.000469	0c:04:50:25:00:04	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8005
3	4.003427	0c:04:50:25:00:04	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8005
4	6.006103	0c:04:50:25:00:04	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8005
5	6.410307	0c:04:50:25:00:04	0c:04:50:25:00:04	LOOP	60	Reply

До PC 5

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	0c:04:50:25:00:05	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8006
2	1.999625	0c:04:50:25:00:05	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8006
3	2.404849	0c:04:50:25:00:05	0c:04:50:25:00:05	LOOP	60	Reply
4	4.000353	0c:04:50:25:00:05	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8006
5	6.015303	0c:04:50:25:00:05	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8006
6	7.487754	0c:04:50:25:00:05	CDP/VTP/DTP/PAgP/UD...	CDP	455	Device ID: vIOS-L2-01 Port ID: GigabitEthernet1/1
7	8.015733	0c:04:50:25:00:05	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8006
8	10.018420	0c:04:50:25:00:05	Nearest-Customer-Br...	STP	60	Conf. Root = 32768/1/0c:04:50:25:00:00 Cost = 0 Port = 0x8006

До PC 6

Как видим везде COST = 0 из-за прослушивания портов с корневого коммутатора.

5. Изменить стоимость маршрута для порта RP произвольного назначенного (designated) коммутатора, повторить действия из п.3, результат сохранить в отдельный файл.

enable

configure terminal

int gi1/2

spanning-tree vlan 1 cost 15

end

copy running-config startup-config

y Layer2Switch-1

Interface	Role Sts Cost	Prio.Nbr	Type
Gi0/0	Desg FWD 4	128.1	Shr
Gi0/1	Desg FWD 4	128.2	Shr
Gi0/2	Desg FWD 4	128.3	Shr
Gi0/3	Desg FWD 4	128.4	Shr
Gi1/0	Desg FWD 4	128.5	Shr
Gi1/1	Desg FWD 4	128.6	Shr
Gi1/2	Root FWD 4	128.7	Shr
Gi1/3	Altn BLK 4	128.8	Shr
Gi2/0	Desg FWD 4	128.9	Shr

y Layer2Switch-2

Interface	Role Sts Cost	Prio.Nbr	Type
Gi0/0	Altn BLK 4	128.1	Shr
Gi0/1	Altn BLK 4	128.2	Shr
Gi0/2	Desg FWD 4	128.3	Shr
Gi0/3	Desg FWD 4	128.4	Shr
Gi1/0	Desg FWD 4	128.5	Shr
Gi1/1	Desg FWD 4	128.6	Shr
Gi1/2	Altn BLK 15	128.7	Shr

Interface	Role Sts Cost	Prio.Nbr Type
Gi1/3	Root FWD 4	128.8 Shr
Gi2/0	Desg FWD 4	128.9 Shr

y Layer2Switch-3

Interface	Role Sts Cost	Prio.Nbr Type
------------------	---- --- ---------	-------- --------------------------------
Gi0/0	Root FWD 4	128.1 Shr
Gi0/1	Altn BLK 4	128.2 Shr
Gi0/2	Altn BLK 4	128.3 Shr
Gi0/3	Altn BLK 4	128.4 Shr
Gi1/0	Desg FWD 4	128.5 Shr
Gi1/1	Desg FWD 4	128.6 Shr

y Layer2Switch-4

Interface	Role Sts Cost	Prio.Nbr Type
------------------	---- --- ---------	-------- --------------------------------
Gi0/0	Root FWD 4	128.1 Shr
Gi0/1	Altn BLK 4	128.2 Shr
Gi0/2	Altn BLK 4	128.3 Shr
Gi0/3	Altn BLK 4	128.4 Shr
Gi1/0	Desg FWD 4	128.5 Shr
Gi1/1	Desg FWD 4	128.6 Shr

y Layer2Switch-5
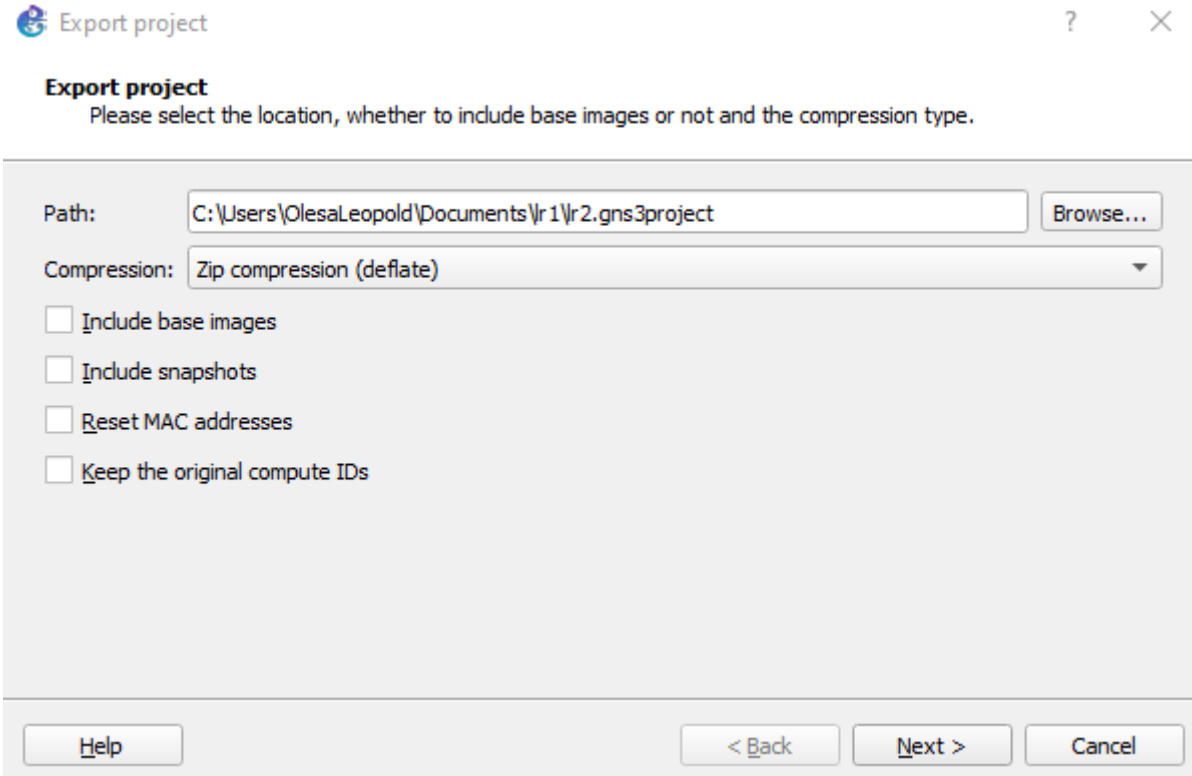
Interface	Role Sts Cost	Prio.Nbr Type
------------------	---- --- ---------	-------- -------------------------------
Gi0/0	Desg FWD 4	128.1 Shr
Gi0/1	Desg FWD 4	128.2 Shr
Gi0/2	Desg FWD 4	128.3 Shr

Gi0/3	Desg FWD 4	128.4	Shr
Gi1/0	Desg FWD 4	128.5	Shr
Gi1/1	Desg FWD 4	128.6	Shr

Как видим, после изменения стоимости у Layer2Switch-2 роль порта до корневого коммутатора перешла другому порту из-за более выгодной стоимости маршрута.

6. Сохранить файлы конфигураций устройств в виде набора файлов с именами, соответствующими именам устройств.