

Министерство образования Республики Беларусь

Учреждение образования
БЕЛОРУССКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ
ИНФОРМАТИКИ И РАДИОЭЛЕКТРОНИКИ

Факультет компьютерных систем и сетей

Кафедра электронных вычислительных машин

Дисциплина: Администрирование компьютерных сетей

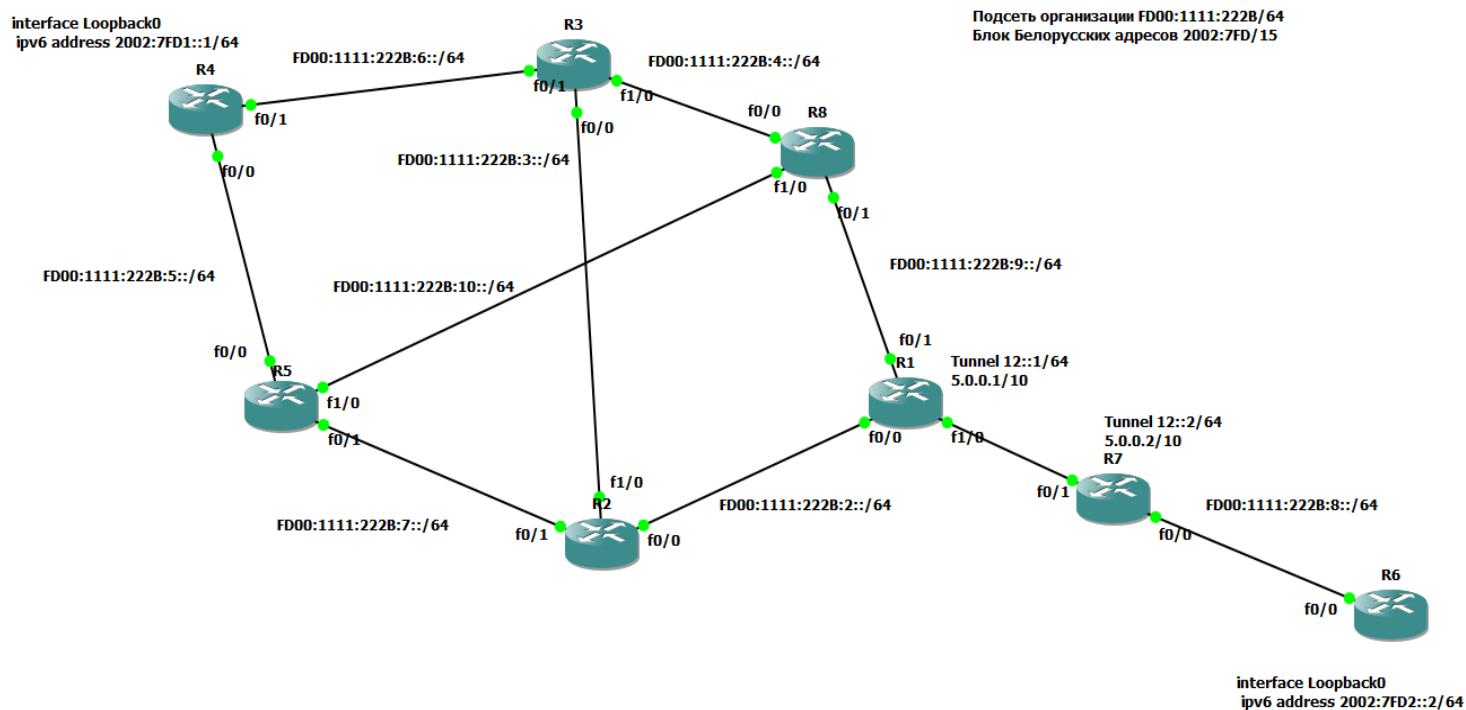
ОТЧЕТ
по лабораторной работе № 5
Вариант 112

Студент:

Преподаватель:

МИНСК 2024

1. РЕАЛИЗАЦИЯ ТОПОЛОГИИ В GNS3



2. РАССЧЕТЫ

Туннель IPv6-over-IPv4 manual был назначен между R1 и R7:

Для IPv4-адреса 5.0.0.1:

Преобразуем каждый октет в шестнадцатеричную запись: 5 (5), 0 (0), 0 (0), 1 (01).

Соберем это в 32-битное значение: 050001.

Добавим это значение после префикса 2002::/16, чтобы получить полный IPv6-адрес: 2002:0500:0000::1.

Для IPv4-адреса 5.0.0.2:

Преобразуем каждый октет в шестнадцатеричную запись: 5 (05), 0 (0), 0 (0), 2 (02).

Соберем это в 32-битное значение: 050001.

Добавим это значение после префикса 2002::/16, чтобы получить полный IPv6-адрес: 2002:0500:0000::2.

Для ND в маршрутизаторе R5 было изменено время доступности соседей (Neighbor Discovery Reachable Time) на 32100:

```
R5
*Mar  1 01:22:19.687: %SYS-5-CONFIG_I: Configured from console by co
R5#show ipv6 int
R5#show ipv6 in
R5#show ipv6 interface f0/0
FastEthernet0/0 is up, line protocol is up
  IPv6 is enabled, link-local address is FE80::CA01:55FF:FE74:0
  Global unicast address(es):
    FD00:1111:222B:5::2, subnet is FD00:1111:222B:5::/64
  Joined group address(es):
    FF02::1
    FF02::2
    FF02::1:FF00:2
    FF02::1:FF74:0
  MTU is 1500 bytes
  ICMP error messages limited to one every 100 milliseconds
  ICMP redirects are enabled
  ND DAD is enabled, number of DAD attempts: 1
  ND reachable time is 32132 milliseconds
  ND advertised reachable time is 32132 milliseconds
  ND advertised retransmit interval is 0 milliseconds
  ND router advertisements are sent every 200 seconds
  ND router advertisements live for 1800 seconds
  Hosts use stateless autoconfig for addresses.
R5#
```

Адреса Link Local Unicast были присвоены в подсети FD00:1111:222B:7::/64.

3. РАБОЧИЕ КОНФИГУРАЦИИ

R1

```
R1
!
mta receive maximum-recipients 0
!
!
!
!
interface Tunnel10
 no ip address
 ipv6 address 12::1/64
 ipv6 rip RiPoTU enable
 tunnel source 5.0.0.1
 tunnel destination 5.0.0.2
 tunnel mode ipv6ip
!
interface FastEthernet0/0
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00:1::1::222B:2::2/64
 ipv6 rip RiPoTU enable
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00:1::1::222B:9::1/64
 ipv6 rip RiPoTU enable
!
interface FastEthernet1/0
 ip address 5.0.0.1 255.192.0.0
 duplex auto
 speed auto
 ipv6 address FD00:1::1::222B:1::1/64
!
no ip http server
ip classless
!
!
ipv6 route 2002:7FD2::/64 FD00:1::1::222B:8::2
ipv6 route ::/0 FD00:1::1::222B:9::2
ipv6 router rip RiPoTU
```

R2

```
 R2  
#  
  
interface FastEthernet0/0  
no ip address  
duplex auto  
speed auto  
ipv6 address FD00::1111:222B:2::1/64  
ipv6 rip RIPoTU enable  
  
interface FastEthernet0/1  
no ip address  
duplex auto  
speed auto  
ipv6 address FD00::1111:222B:7::2/64  
ipv6 address FE80::1 link-local  
  
interface FastEthernet1/0  
no ip address  
duplex auto  
speed auto  
ipv6 address FD00::1111:222B:3::1/64  
  
no ip http server  
ip classless  
  
!  
  
ipv6 route ::0 FD00::1111:222B:2::2  
ipv6 router rip RIPoTU
```

R3

```
no voice hpi capture destination
!
!
mta receive maximum-recipients 0
!
!
!
interface FastEthernet0/0
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00::1111:222B:3::2/64
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00::1111:222B:6::2/64
!
interface FastEthernet1/0
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00::1111:222B:4::2/64
!
no ip http server
ip classless
!
!
!
ipv6 route ::/0 FD00::1111:222B:6::1
```

R4

```
R4
no voice hpi capture buffer
no voice hpi capture destination
!
!
mta receive maximum-recipients 0
!
!
!
!
interface Loopback0
 no ip address
 ipv6 address 2002::7FD1::1/64
!
interface FastEthernet0/0
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00::1111:222B:5::1/64
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00::1111:222B:6::1/64
!
no ip http server
ip classless
!
!
!
!
ipv6 route ::/0 FD00::1111:222B:5::2
```

R5

```
!
!  
!  
!  
interface FastEthernet0/0  
no ip address  
duplex auto  
speed auto  
ipv6 address FD00::1111:222B:5::2/64  
ipv6 nd reachable-time 32132  
!  
interface FastEthernet0/1  
no ip address  
duplex auto  
speed auto  
ipv6 address FD00::1111:222B:7::1/64  
ipv6 address FE80::2 link-local  
!  
interface FastEthernet1/0  
no ip address  
duplex auto  
speed auto  
ipv6 address FD00::1111:222B:10::1/64  
!  
!  
no ip http server  
ip classless  
!  
!  
!  
!  
ipv6 route ::/0 FD00::1111:222B:7::2
```

R6

```

R6
!
mta receive maximum-recipients 0
!
!
!
!
interface Loopback0
 no ip address
 ipv6 address 2002:7FD2::2/64
!
interface FastEthernet0/0
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00:1111:222B:8::2/64
 ipv6 rip RIPvTU enable
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
!
no ip http server
ip classless
!
!
!
!
ipv6 route ::/0 FD00:1111:222B:8::1
ipv6 router rip RIPvTU
!

```

R7

```

R7
no voice hpi capture buffer
no voice hpi capture destination
!
!
mta receive maximum-recipients 0
!
!
!
!
!
interface Tunnel10
no ip address
ipv6 address 12::2/64
ipv6 rip RIPoTU enable
tunnel source 5.0.0.2
tunnel destination 5.0.0.1
tunnel mode ipv6ip
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
ipv6 address FD00::1111:222B:8::1/64
ipv6 rip RIPoTU enable
!
interface FastEthernet0/1
ip address 5.0.0.2 255.192.0.0
duplex auto
speed auto
ipv6 address FD00::1111:222B:1::2/64
!
no ip http server
ip classless
!
!
!
!
ipv6 route 2002:7FD2::/64 FD00::1111:222B:8::2
ipv6 route ::/0 FD00::1111:222B:1:::1
ipv6 router rip RIPoTU

```

R8

```

!
mta receive maximum-recipients 0
!
!
!
!
interface FastEthernet0/0
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00:1111:222B:4::1/64
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00:1111:222B:9::2/64
 ipv6 rip RIPv6 enable
!
interface FastEthernet1/0
 no ip address
 duplex auto
 speed auto
 ipv6 address FD00:1111:222B:10::2/64
!
no ip http server
ip classless
!
!
!
!
ipv6 route ::/0 FD00:1111:222B:4::2
ipv6 router rip RIPv6

```