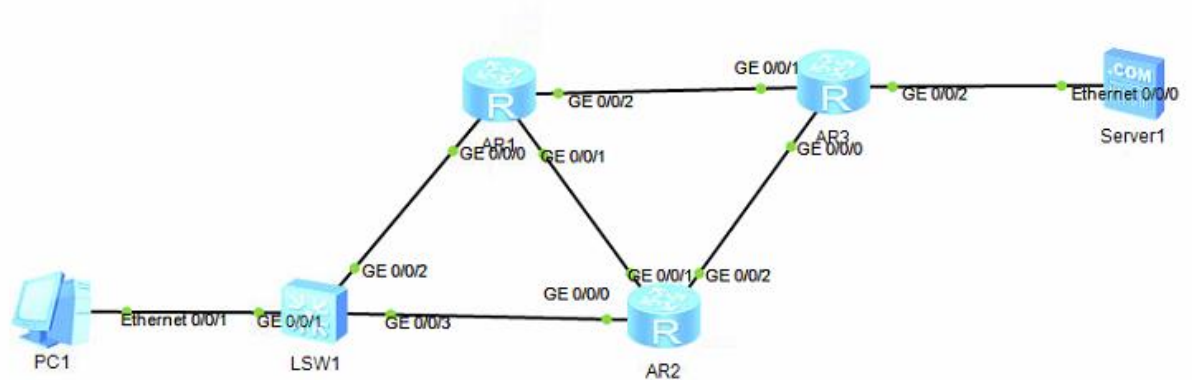


Лабораторная работа №8

- 1) Ибраев Ерлан 30.05.2000 184-1
- 2) Топология:



- 3) AR1

```
<IbraevAR1>display ip interface brief
*down: administratively down
^down: standby
(l): loopback
(s): spoofing
The number of interface that is UP in Physical is 4
The number of interface that is DOWN in Physical is 0
The number of interface that is UP in Protocol is 4
The number of interface that is DOWN in Protocol is 0

Interface                IP Address/Mask      Physical  Protocol
GigabitEthernet0/0/0      30.5.0.126/25        up        up
GigabitEthernet0/0/1      30.5.0.137/30        up        up
GigabitEthernet0/0/2      30.5.0.129/30        up        up
NULL0                    unassigned           up        up(s)
<IbraevAR1>
```

```

<IbraevAR1>display ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
      Destinations : 15          Routes : 15

Destination/Mask    Proto    Pre  Cost           Flags NextHop          Interface
30.5.0.0/25        Direct   0    0              D    30.5.0.126        GigabitEthernet
0/0/0
30.5.0.100/32      Direct   0    0              D    127.0.0.1         GigabitEthernet
0/0/0
30.5.0.126/32      Direct   0    0              D    127.0.0.1         GigabitEthernet
0/0/0
30.5.0.127/32      Direct   0    0              D    127.0.0.1         GigabitEthernet
0/0/0
30.5.0.128/30      Direct   0    0              D    30.5.0.129        GigabitEthernet
0/0/2
30.5.0.129/32      Direct   0    0              D    127.0.0.1         GigabitEthernet
0/0/2
30.5.0.131/32      Direct   0    0              D    127.0.0.1         GigabitEthernet
0/0/2
30.5.0.136/30      Direct   0    0              D    30.5.0.137        GigabitEthernet
0/0/1
30.5.0.137/32      Direct   0    0              D    127.0.0.1         GigabitEthernet
0/0/1
30.5.0.139/32      Direct   0    0              D    127.0.0.1         GigabitEthernet
0/0/1
30.5.0.140/30      Static   60    0             RD    30.5.0.130        GigabitEthernet
0/0/2
127.0.0.0/8        Direct   0    0              D    127.0.0.1         InLoopBack0
127.0.0.1/32       Direct   0    0              D    127.0.0.1         InLoopBack0
127.255.255.255/32 Direct   0    0              D    127.0.0.1         InLoopBack0
255.255.255.255/32 Direct   0    0              D    127.0.0.1         InLoopBack0

<IbraevAR1>

```

```

<IbraevAR1>display vrrp
GigabitEthernet0/0/0 | Virtual Router 3
  State : Master
  Virtual IP : 30.5.0.100
  Master IP : 30.5.0.126
  PriorityRun : 3
  PriorityConfig : 3
  MasterPriority : 3
  Preempt : YES    Delay Time : 0 s
  TimerRun : 1 s
  TimerConfig : 1 s
  Auth type : NONE
  Virtual MAC : 0000-5e00-0103
  Check TTL : YES
  Config type : normal-vrrp
  Backup-forward : disabled
  Create time : 2021-07-04 22:25:58 UTC-08:00
  Last change time : 2021-07-04 22:26:07 UTC-08:00

<IbraevAR1>

```

```
#
interface GigabitEthernet0/0/0
 ip address 30.5.0.126 255.255.255.128
 vrrp vrid 3 virtual-ip 30.5.0.100
 vrrp vrid 3 priority 3
#
interface GigabitEthernet0/0/1
 ip address 30.5.0.137 255.255.255.252
#
interface GigabitEthernet0/0/2
 ip address 30.5.0.129 255.255.255.252
#
interface NULL0
#
ip route-static 30.5.0.0 255.255.255.128 30.5.0.10
ip route-static 30.5.0.0 255.255.255.128 30.5.0.138 preference 100
ip route-static 30.5.0.140 255.255.255.252 30.5.0.130
ip route-static 30.5.0.140 255.255.255.252 30.5.0.138 preference 100
#
user-interface con 0
 authentication-mode password
user-interface vty 0 4
user-interface vty 16 20
#
```

4) AR2

```
<IbraevAR2>display ip interface brief
*down: administratively down
^down: standby
(l): loopback
(s): spoofing
The number of interface that is UP in Physical is 4
The number of interface that is DOWN in Physical is 0
The number of interface that is UP in Protocol is 4
The number of interface that is DOWN in Protocol is 0

Interface                IP Address/Mask      Physical    Protocol
GigabitEthernet0/0/0     30.5.0.125/25        up          up
GigabitEthernet0/0/1     30.5.0.138/30        up          up
GigabitEthernet0/0/2     30.5.0.133/30        up          up
NULL0                    unassigned           up          up(s)
<IbraevAR2>
```

```

<IbraevAR2>display ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
      Destinations : 15          Routes : 15

Destination/Mask    Proto    Pre  Cost           Flags NextHop          Interface
-----
      30.5.0.0/25    Direct   0     0             D    30.5.0.125         GigabitEthernet
0/0/0
      30.5.0.100/32   Direct   0     0             D    127.0.0.1          GigabitEthernet
0/0/0
      30.5.0.125/32   Direct   0     0             D    127.0.0.1          GigabitEthernet
0/0/0
      30.5.0.127/32   Direct   0     0             D    127.0.0.1          GigabitEthernet
0/0/0
      30.5.0.132/30   Direct   0     0             D    30.5.0.133         GigabitEthernet
0/0/2
      30.5.0.133/32   Direct   0     0             D    127.0.0.1          GigabitEthernet
0/0/2
      30.5.0.135/32   Direct   0     0             D    127.0.0.1          GigabitEthernet
0/0/2
      30.5.0.136/30   Direct   0     0             D    30.5.0.138         GigabitEthernet
0/0/1
      30.5.0.138/32   Direct   0     0             D    127.0.0.1          GigabitEthernet
0/0/1
      30.5.0.139/32   Direct   0     0             D    127.0.0.1          GigabitEthernet
0/0/1
      30.5.0.140/30   Static   60    0             RD   30.5.0.134         GigabitEthernet
0/0/2
      127.0.0.0/8     Direct   0     0             D    127.0.0.1          InLoopBack0
      127.0.0.1/32    Direct   0     0             D    127.0.0.1          InLoopBack0
127.255.255.255/32  Direct   0     0             D    127.0.0.1          InLoopBack0
255.255.255.255/32  Direct   0     0             D    127.0.0.1          InLoopBack0

<IbraevAR2>

```

```

<IbraevAR2>display vrrp
  GigabitEthernet0/0/0 | Virtual Router 3
    State : Master
    Virtual IP : 30.5.0.100
    Master IP : 30.5.0.125
    PriorityRun : 4
    PriorityConfig : 4
    MasterPriority : 4
    Preempt : YES    Delay Time : 0 s
    TimerRun : 1 s
    TimerConfig : 1 s
    Auth type : NONE
    Virtual MAC : 0000-5e00-0103
    Check TTL : YES
    Config type : normal-vrrp
    Backup-forward : disabled
    Create time : 2021-07-04 22:36:30 UTC-08:00
    Last change time : 2021-07-04 22:36:38 UTC-08:00

<IbraevAR2>

```

```

interface GigabitEthernet0/0/0
 ip address 30.5.0.125 255.255.255.128
 vrrp vrid 3 virtual-ip 30.5.0.100
 vrrp vrid 3 priority 4
#
interface GigabitEthernet0/0/1
 ip address 30.5.0.138 255.255.255.252
#
interface GigabitEthernet0/0/2
 ip address 30.5.0.133 255.255.255.252
#
interface NULL0
#
ip route-static 30.5.0.0 255.255.255.128 30.5.0.10
ip route-static 30.5.0.0 255.255.255.128 30.5.0.137 preference 100
ip route-static 30.5.0.140 255.255.255.252 30.5.0.134
ip route-static 30.5.0.140 255.255.255.252 30.5.0.137 preference 100
#
user-interface con 0
 authentication-mode password
user-interface vty 0 4
user-interface vty 16 20
#
wlan ac
#
return
<IbraevAR2>

```

5) AR3

```

<IbraevAR3>display ip interface brief
*down: administratively down
^down: standby
(l): loopback
(s): spoofing
The number of interface that is UP in Physical is 4
The number of interface that is DOWN in Physical is 0
The number of interface that is UP in Protocol is 4
The number of interface that is DOWN in Protocol is 0

Interface                IP Address/Mask      Physical  Protocol
GigabitEthernet0/0/0      30.5.0.134/30        up        up
GigabitEthernet0/0/1      30.5.0.130/30        up        up
GigabitEthernet0/0/2      30.5.0.141/30        up        up
NULL0                     unassigned           up        up(s)
<IbraevAR3>

```

```

<IbraevAR3>display ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
      Destinations : 14          Routes : 14

Destination/Mask    Proto    Pre  Cost           Flags NextHop          Interface
-----
      30.5.0.0/25    Static   60    0             RD   30.5.0.129         GigabitEthernet
0/0/1
      30.5.0.128/30   Direct    0     0             D    30.5.0.130         GigabitEthernet
0/0/1
      30.5.0.130/32   Direct    0     0             D    127.0.0.1          GigabitEthernet
0/0/1
      30.5.0.131/32   Direct    0     0             D    127.0.0.1          GigabitEthernet
0/0/1
      30.5.0.132/30   Direct    0     0             D    30.5.0.134         GigabitEthernet
0/0/0
      30.5.0.134/32   Direct    0     0             D    127.0.0.1          GigabitEthernet
0/0/0
      30.5.0.135/32   Direct    0     0             D    127.0.0.1          GigabitEthernet
0/0/0
      30.5.0.140/30   Direct    0     0             D    30.5.0.141         GigabitEthernet
0/0/2
      30.5.0.141/32   Direct    0     0             D    127.0.0.1          GigabitEthernet
0/0/2
      30.5.0.143/32   Direct    0     0             D    127.0.0.1          GigabitEthernet
0/0/2
      127.0.0.0/8     Direct    0     0             D    127.0.0.1          InLoopBack0
      127.0.0.1/32    Direct    0     0             D    127.0.0.1          InLoopBack0
127.255.255.255/32   Direct    0     0             D    127.0.0.1          InLoopBack0
255.255.255.255/32   Direct    0     0             D    127.0.0.1          InLoopBack0

```

```

<IbraevAR3>
interface GigabitEthernet0/0/0
 ip address 30.5.0.134 255.255.255.252
#
interface GigabitEthernet0/0/1
 ip address 30.5.0.130 255.255.255.252
#
interface GigabitEthernet0/0/2
 ip address 30.5.0.141 255.255.255.252
#
interface NULL0
#
ip route-static 30.5.0.0 255.255.255.128 30.5.0.129
ip route-static 30.5.0.0 255.255.255.128 30.5.0.133 preference 100
#
user-interface con 0
 authentication-mode password
user-interface vty 0 4
user-interface vty 16 20
#
wlan ac
#
return
<IbraevAR3>

```

6) PC1

PC1

Basic Config Command MCPacket UdpPacket Console

Host Name:

MAC Address:

IPv4 Configuration

☒ Static ☐ DHCP ☐ Obtain DNS server address automatically

IP Address: DNS1:

Subnet Mask: DNS2:

Gateway:

IPv6 Configuration

☒ Static ☐ DHCPv6

IPv6 Address:

Prefix Length:

IPv6 Gateway:

Apply

7) Server1

Server1

Basic Config Server Info Log Info

MAC Address: (Format:00-01-02-03-04-05)

IPv4 Config

Local Address: Subnet Mask:

Gateway: DNS:

Ping Test

IPv4 Address: Times:

Local State: Device boot ping success:0 failed:0

Save

8) Запуск стандартной топологией

```
PC1
Basic Config Command MCPacket UdpPacket Console

PC>tracert 30.5.0.142

tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
 1 30.5.0.125 172 ms 47 ms 47 ms
 2 * *30.5.0.134 31 ms
 3 *30.5.0.142 47 ms 47 ms

PC>tracert 30.5.0.142

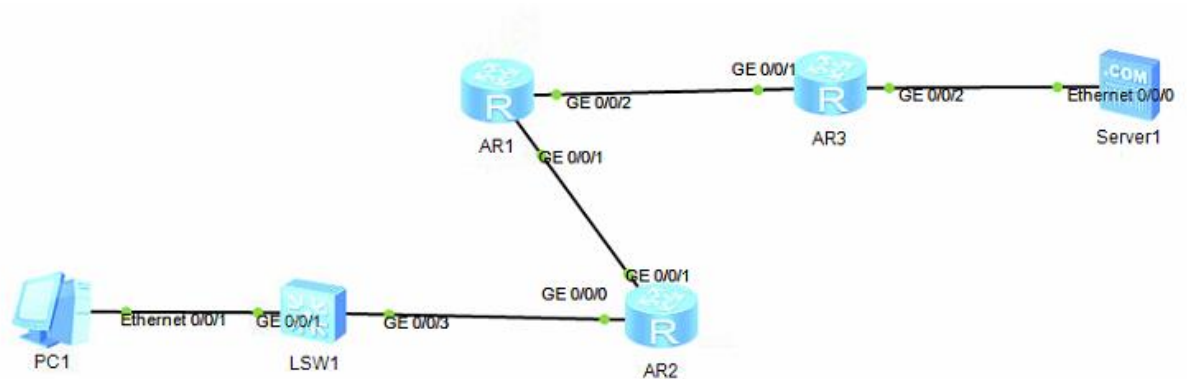
tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
 1 30.5.0.125 32 ms 47 ms 46 ms
 2 30.5.0.134 47 ms 32 ms 46 ms
 3 30.5.0.142 47 ms 47 ms 31 ms

PC>tracert 30.5.0.142

tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
 1 30.5.0.125 47 ms 31 ms 47 ms
 2 30.5.0.134 47 ms 46 ms 47 ms
 3 30.5.0.142 47 ms 31 ms 47 ms

PC>
```

9) Запуск на измененной топологии




```
PC1
Basic Config | Command | MCPacket | UdpPacket | Console
tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
 1 30.5.0.125 47 ms 31 ms 47 ms
 2 30.5.0.134 47 ms 46 ms 47 ms
 3 30.5.0.142 47 ms 31 ms 47 ms

PC>tracert 30.5.0.142

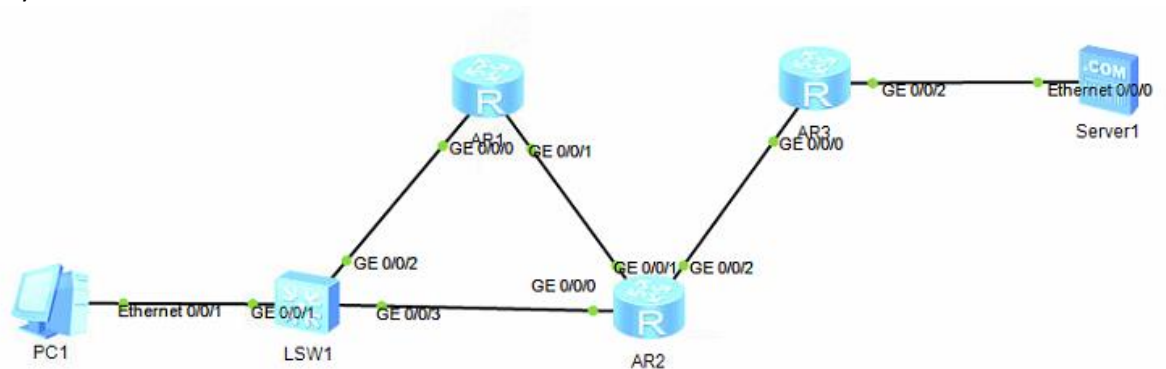
tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
 1 30.5.0.125 31 ms 32 ms 46 ms
 2 * * *
 3 30.5.0.130 63 ms 62 ms 47 ms
 4 30.5.0.142 47 ms 31 ms 47 ms

PC>tracert 30.5.0.142

tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
 1 30.5.0.125 47 ms 47 ms 31 ms
 2 30.5.0.137 63 ms 46 ms 47 ms
 3 30.5.0.130 63 ms 62 ms 63 ms
 4 30.5.0.142 47 ms 47 ms 62 ms

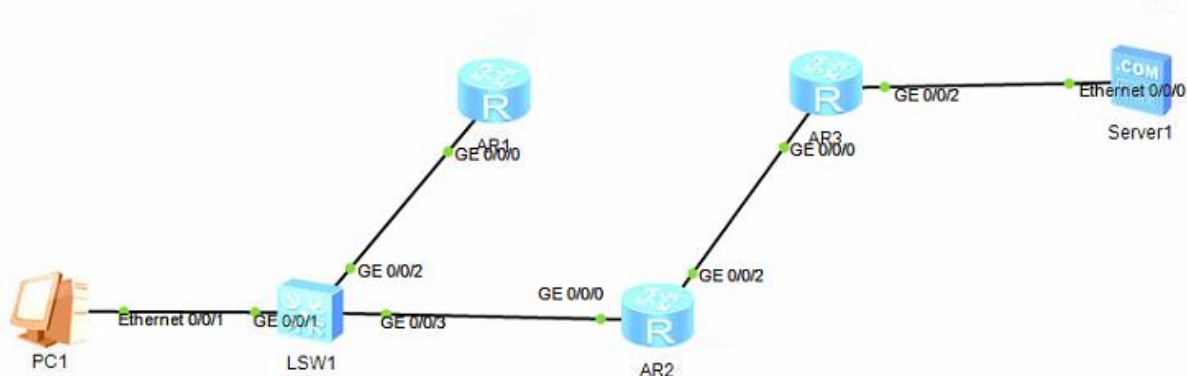
PC>
```

10) Запуск на измененной топологии



```
PC1
Basic Config Command MCPacket UdpPacket Console
2 *
PC>tracert 30.5.0.142
tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
1 * * *
2
PC>tracert 30.5.0.142
tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
1 30.5.0.125 31 ms 47 ms 47 ms
2 * * *
3 30.5.0.142 31 ms 31 ms 47 ms
PC>tracert 30.5.0.142
tracert to 30.5.0.142, 8 hops max
(ICMP), press Ctrl+C to stop
1 30.5.0.125 47 ms 47 ms 47 ms
2 30.5.0.134 31 ms 47 ms 63 ms
3 30.5.0.142 46 ms 47 ms 32 ms
PC>
```

11) Запуск на измененной топологии



PC1

Basic Config | Command | MCPacket | UdpPacket | Console

PC>ping 30.5.0.142

PC Simulator has not been started!

Welcome to use PC Simulator!

PC>tracert 30.5.0.142

tracert to 30.5.0.142, 8 hops max (ICMP), press Ctrl+C to stop

1 * * *

2 * * *

3 * 1 30.5.0.125 63 ms 31 ms 47 ms

2 *30.5.0.134 94 ms 47 ms

3 *30.5.0.142 31 ms 47 ms

PC>tracert 30.5.0.142

tracert to 30.5.0.142, 8 hops max (ICMP), press Ctrl+C to stop

1 30.5.0.125 31 ms 47 ms 47 ms

2 30.5.0.134 31 ms 47 ms 47 ms

3 30.5.0.142 47 ms 47 ms 31 ms

PC>