НИУ ИТМО
Факультет программной инженерии и компьютерных технологий

Отчет по лабораторной работе №3
по дисциплине Администрирование систем и сетей

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Желаемая оценка: 3

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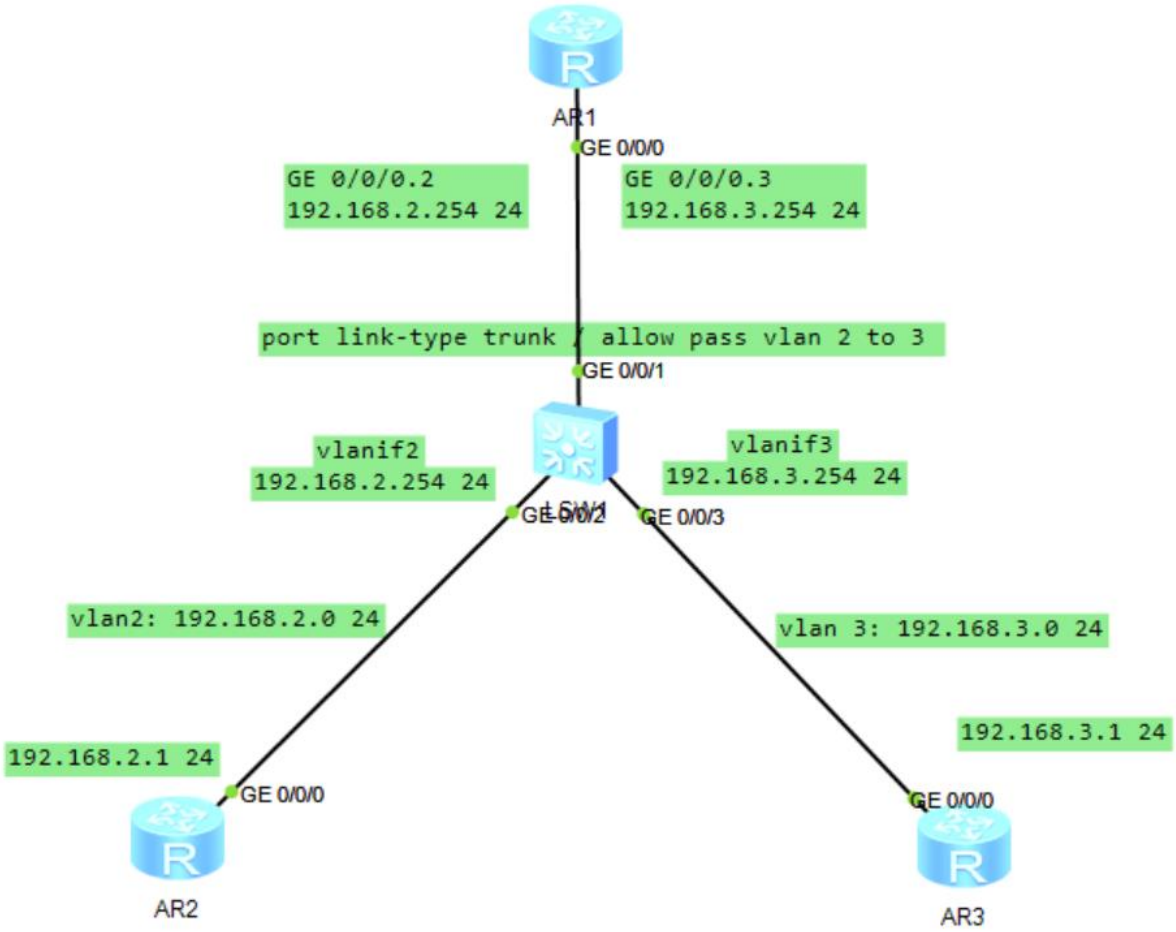
Оглавление

Топология


AR1
GE 0/0/0
GE 0/0/0.2
192.168.2.254 24
GE 0/0/0.3
192.168.3.254 24
port link-type trunk / allow pass vlan 2 to 3
GE 0/0/1
vlanif2
192.168.2.254 24
vlanif3
192.168.3.254 24
GE 0/0/2
GE 0/0/3
vlan2: 192.168.2.0 24
vlan 3: 192.168.3.0 24
192.168.2.1 24
192.168.3.1 24
GE 0/0/0
GE 0/0/0
AR2
AR3

Конфигурация

1. Настройка основных параметров

1.1 Присвоение имён

```
<Huawei>system-view
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname S1
```

```
<Huawei>system-view
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname R1
```

```
<Huawei>system-view
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname R2
```

```
<Huawei>system-view
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname R3
```

1.2 Настройка IP адресов и шлюзов для R2 и R3

```
[R2]interface GigabitEthernet 0/0/0
[R2-GigabitEthernet0/0/0]ip address 192.168.2.1 24
Sep 27 2024 19:00:44-08:00 R2 %%01IFNET/4/LINK_STATE(l)[0]:The line protocol IP
on the interface GigabitEthernet0/0/0 has entered the UP state.
[R2-GigabitEthernet0/0/0]quit
[R2]ip route-static 0.0.0.0 0 192.168.2.254
```

```
[R3]interface GigabitEthernet 0/0/0
[R3-GigabitEthernet0/0/0]ip address 192.168.3.1 24
Sep 27 2024 19:03:21-08:00 R3 %%01IFNET/4/LINK_STATE(l)[0]:The line protocol IP
on the interface GigabitEthernet0/0/0 has entered the UP state.
[R3-GigabitEthernet0/0/0]quit
[R3]ip route-static 0.0.0.0 0 192.168.3.254
```

1.3 Назначение разных VLAN на R2 и R3

```
[S1]interface GigabitEthernet 0/0/2
[S1-GigabitEthernet0/0/2]port link-type access
[S1-GigabitEthernet0/0/2]port default vlan 2
[S1-GigabitEthernet0/0/2]quit
Sep 27 2024 14:07:04-08:00 S1 DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5.25.
191.3.1 configurations have been changed. The current change number is 7, the ch
ange loop count is 0, and the maximum number of records is 4095.
[S1]int
[S1]interface Gig
[S1]interface GigabitEthernet 0/0/3
[S1-GigabitEthernet0/0/3]port link-type access
[S1-GigabitEthernet0/0/3]port default vlan 3
Sep 27 2024 14:07:24-08:00 S1 DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5.25.
191.3.1 configurations have been changed. The current change number is 8, the ch
ange loop count is 0, and the maximum number of records is 4095.
[S1-GigabitEthernet0/0/3]quit

Sep 27 2024 14:07:44-08:00 S1 DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5.25.
191.3.1 configurations have been changed. The current change number is 9, the ch
ange loop count is 0, and the maximum number of records is 4095.
```

2. Настройка подинтерфейсов терминирования dot1q

2.1 Настройка магистрального порта на S1

```
[S1-GigabitEthernet0/0/1]port link-type trunk
[S1-GigabitEthernet0/0/1]port trunk allow-pass vlan 2 to 3
```

2.2 Настройка dot1q на R1

```
[R1]interface G 0/0/0.2
[R1-GigabitEthernet0/0/0.2]dot1q termination vid 2
[R1-GigabitEthernet0/0/0.2]arp broadcast enable
[R1-GigabitEthernet0/0/0.2]ip address 192.168.2.254 24
[R1-GigabitEthernet0/0/0.2]
Sep 27 2024 19:33:28-08:00 R1 %%01IFNET/4/LINK_STATE(l)[0]:The line protocol IP
on the interface GigabitEthernet0/0/0.2 has entered the UP state.
[R1-GigabitEthernet0/0/0.2]quit
[R1]interface G 0/0/0.3
[R1-GigabitEthernet0/0/0.3]dot1q termination vid 3
[R1-GigabitEthernet0/0/0.3]arp broadcast enable
[R1-GigabitEthernet0/0/0.3]ip address 192.168.3.254 24
Sep 27 2024 19:34:08-08:00 R1 %%01IFNET/4/LINK_STATE(l)[1]:The line protocol IP
on the interface GigabitEthernet0/0/0.3 has entered the UP state.
[R1-GigabitEthernet0/0/0.3]quit
```

2.3 Проверка связи между VLAN

```
<R2>ping 192.168.3.1
  PING 192.168.3.1: 56  data bytes, press CTRL_C to break
    Reply from 192.168.3.1: bytes=56 Sequence=1 ttl=254 time=100 ms
    Reply from 192.168.3.1: bytes=56 Sequence=2 ttl=254 time=90 ms
    Reply from 192.168.3.1: bytes=56 Sequence=3 ttl=254 time=100 ms
    Reply from 192.168.3.1: bytes=56 Sequence=4 ttl=254 time=100 ms
    Reply from 192.168.3.1: bytes=56 Sequence=5 ttl=254 time=100 ms

  --- 192.168.3.1 ping statistics ---
    5 packet(s) transmitted
    5 packet(s) received
    0.00% packet loss
    round-trip min/avg/max = 90/98/100 ms
```

3. Настройка интерфейсов VLANIF

3.1 Удаление конфигурации, созданную на предыдущем шаге

```
[S1]interface G 0/0/1
[S1-GigabitEthernet0/0/1]undo port trunk allow-pass vlan 2 to 3
[S1-GigabitEthernet0/0/1]undo port link-type
```

```
[R1-GigabitEthernet0/0/0.3]quit
[R1]undo interface G 0/0/0.2
[R1]undo interface G 0/0/0.3
```

3.2 Создание интерфейса VLANIF на S1

```
[S1]interface Vlanif 2
[S1-Vlanif2]ip address 192.168.2.254 24
Sep 27 2024 14:38:41-08:00 S1 %%01IFNET/4/IF_STATE(l)[0]:Interface Vlanif2 has t
urned into UP state.
[S1-Vlanif2]quit
Sep 27 2024 14:38:53-08:00 S1 %%01IFNET/4/LINK_STATE(l)[1]:The line protocol IP
on the interface Vlanif2 has entered the UP state.
[S1]interface vlanif 3
Sep 27 2024 14:38:55-08:00 S1 DS/4/DATASYNC_CFGCHANGE:OID 1.3.6.1.4.1.2011.5.25.
191.3.1 configurations have been changed. The current change number is 20, the c
hange loop count is 0, and the maximum number of records is 4095.
[S1-Vlanif3]ip address 192.168.3.254 24
Sep 27 2024 14:39:00-08:00 S1 %%01IFNET/4/IF_STATE(l)[2]:Interface Vlanif3 has t
urned into UP state.
[S1-Vlanif3]quit
Sep 27 2024 14:39:10-08:00 S1 %%01IFNET/4/LINK_STATE(l)[3]:The line protocol IP
on the interface Vlanif3 has entered the UP state.
```

3.3 Проверка между VLAN

```
<R2>ping 192.168.3.1
  PING 192.168.3.1: 56  data bytes, press CTRL_C to break
    Reply from 192.168.3.1: bytes=56 Sequence=1 ttl=254 time=120 ms
    Reply from 192.168.3.1: bytes=56 Sequence=2 ttl=254 time=60 ms
    Reply from 192.168.3.1: bytes=56 Sequence=3 ttl=254 time=50 ms
    Reply from 192.168.3.1: bytes=56 Sequence=4 ttl=254 time=60 ms
    Reply from 192.168.3.1: bytes=56 Sequence=5 ttl=254 time=40 ms

  --- 192.168.3.1 ping statistics ---
    5 packet(s) transmitted
    5 packet(s) received
    0.00% packet loss
    round-trip min/avg/max = 40/66/120 ms

<R2>tracert 192.168.3.1

 traceroute to  192.168.3.1(192.168.3.1), max hops: 30 ,packet length: 40,press
CTRL_C to break

 1 192.168.2.254 40 ms  20 ms  30 ms

 2 192.168.3.1 40 ms  40 ms  40 ms
```