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**Отчет по лабораторной работе №3**  
**“Агрегирование каналов Ethernet”**  
**по дисциплине “Администрирование систем и сетей”**  
**Оценка 3**

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## Полученная топология



## Конфигурация

### Настройка агрегирования каналов

#### Коммутатор S1

```
[Huawei]sysname S1
[S1]interface Eth-Trunk 1
[S1-Eth-Trunk1]mode manual load-balance
[S1-Eth-Trunk1]interface GigabitEthernet 0/0/10
[S1-GigabitEthernet0/0/10]eth-trunk 1
Info: This operation may take a few seconds. Please wait for a
moment...done.
[S1-GigabitEthernet0/0/10]quit
[S1]interface GigabitEthernet 0/0/11
[S1-GigabitEthernet0/0/11]eth-trunk 1
Info: This operation may take a few seconds. Please wait for a
moment...done.
[S1-GigabitEthernet0/0/11]quit
[S1]interface GigabitEthernet 0/0/12
[S1-GigabitEthernet0/0/12]eth-trunk 1
Info: This operation may take a few seconds. Please wait for a
moment...done.
[S1-GigabitEthernet0/0/12]quit
```

#### Коммутатор S2

```
<Huawei>sys
Enter system view, return user view with Ctrl+Z.
[Huawei]sysname S2
[S2]interface Eth-Trunk 1
[S2-Eth-Trunk1]quit
[S2]interface Eth-Trunk 1
[S2-Eth-Trunk1]trunkport GigabitEthernet 0/0/10 to 0/0/12
Info: This operation may take a few seconds. Please wait for a
moment...done.
```

## Статус Eth-Trunk

```
[S1]display eth-trunk 1
Eth-Trunk1's state information is:
WorkingMode: NORMAL          Hash arithmetic: According to SIP-XOR-DIP
Least Active-linknumber: 1    Max Bandwidth-affected-linknumber: 8
Operate status: up           Number Of Up Port In Trunk: 3
-----
PortName                     Status      Weight
GigabitEthernet0/0/10       Up          1
GigabitEthernet0/0/11       Up          1
GigabitEthernet0/0/12       Up          1
```

## Настройка агрегирования каналов в режиме LACP

### Коммутатор S1

```
[S1]interface Eth-Trunk 1
[S1-Eth-Trunk1]undo trunkport GigabitEthernet 0/0/10 to 0/0/12
Info: This operation may take a few seconds. Please wait for a
moment...done.
[S1-Eth-Trunk1]mode lacp
[S1-Eth-Trunk1]trunkport GigabitEthernet 0/0/10 to 0/0/12
Info: This operation may take a few seconds. Please wait for a
moment...done.
```

### Коммутатор S2

```
[S2]interface Eth-Trunk 1
[S2-Eth-Trunk1]undo trunkport GigabitEthernet 0/0/10 to 0/0/12
Info: This operation may take a few seconds. Please wait for a
moment...done.
[S2-Eth-Trunk1]mode lacp
[S1-Eth-Trunk1]trunkport GigabitEthernet 0/0/10 to 0/0/12
Info: This operation may take a few seconds. Please wait for a
moment...done.
```

## Статус Eth-Trunk

```
[S1]display eth-trunk 1
Eth-Trunk1's state information is:
Local:
LAG ID: 1                    WorkingMode: STATIC
Preempt Delay: Disabled      Hash arithmetic: According to SIP-XOR-DIP
System Priority: 32768       System ID: 4c1f-cc4b-0118
Least Active-linknumber: 1   Max Active-linknumber: 8
Operate status: up          Number Of Up Port In Trunk: 3
-----
```

| ActorPortName         | Status   | PortType       | PortPri | PortNo | PortKey | PortState | Weight |
|-----------------------|----------|----------------|---------|--------|---------|-----------|--------|
| GigabitEthernet0/0/10 | Selected | 1GE            | 32768   | 11     | 305     | 10111100  | 1      |
| GigabitEthernet0/0/11 | Selected | 1GE            | 32768   | 12     | 305     | 10111100  | 1      |
| GigabitEthernet0/0/12 | Selected | 1GE            | 32768   | 13     | 305     | 10111100  | 1      |
| Partner:              |          |                |         |        |         |           |        |
| -----                 |          |                |         |        |         |           |        |
| ActorPortName         | SysPri   | SystemID       | PortPri | PortNo | PortKey | PortState |        |
| GigabitEthernet0/0/10 | 32768    | 4c1f-cc34-502f | 32768   | 11     | 305     | 10111100  |        |
| GigabitEthernet0/0/11 | 32768    | 4c1f-cc34-502f | 32768   | 12     | 305     | 10111100  |        |
| GigabitEthernet0/0/12 | 32768    | 4c1f-cc34-502f | 32768   | 13     | 305     | 10111100  |        |

### Настройка резервного порта

```
[S1]lacp priority 100
[S1]interface GigabitEthernet 0/0/10
[S1-GigabitEthernet0/0/10]lacp priority 40000
[S1-GigabitEthernet0/0/10]quit
[S1]interface Eth-Trunk 1
[S1-Eth-Trunk1]max active-linknumber 2
[S1-Eth-Trunk1]least active-linknumber 2
[S1-Eth-Trunk1]lacp preempt enable
```

### Статус Eth-Trunk

```
[S1-Eth-Trunk1]display eth-trunk 1
Eth-Trunk1's state information is:
Local:
LAG ID: 1                               WorkingMode: STATIC
Preempt Delay Time: 30                  Hash arithmetic: According to SIP-XOR-DIP
System Priority: 100                     System ID: 4c1f-cc4b-0118
Least Active-linknumber: 2              Max Active-linknumber: 2
Operate status: up                      Number Of Up Port In Trunk: 2
-----
ActorPortName      Status    PortType  PortPri  PortNo  PortKey  PortState  Weight
GigabitEthernet0/0/10  Unselect 1GE       40000    11      305      101000000  1
GigabitEthernet0/0/11  Selected 1GE       32768    12      305      101111100  1
GigabitEthernet0/0/12  Selected 1GE       32768    13      305      101111100  1
Partner:
-----
ActorPortName      SysPri   SystemID      PortPri  PortNo  PortKey  PortState
GigabitEthernet0/0/10  32768    4c1f-cc34-502f  32768    11      305      101100000
GigabitEthernet0/0/11  32768    4c1f-cc34-502f  32768    12      305      101111100
GigabitEthernet0/0/12  32768    4c1f-cc34-502f  32768    13      305      101111100
```

[S1]display eth-trunk 1

Eth-Trunk1's state information is:

Local:

LAG ID: 1 WorkingMode: STATIC  
Preempt Delay Time: 30 Hash arithmetic: According to SIP-XOR-DIP  
System Priority: 100 System ID: 4c1f-cc4b-0118  
Least Active-linknumber: 2 Max Active-linknumber: 2  
Operate status: up Number Of Up Port In Trunk: 2

| ActorPortName         | Status          | PortType | PortPri | PortNo | PortKey | PortState | Weight |
|-----------------------|-----------------|----------|---------|--------|---------|-----------|--------|
| GigabitEthernet0/0/10 | Selected        | 1GE      | 40000   | 11     | 305     | 10111100  | 1      |
| GigabitEthernet0/0/11 | Selected        | 1GE      | 32768   | 12     | 305     | 10111100  | 1      |
| GigabitEthernet0/0/12 | <b>Unselect</b> | 1GE      | 32768   | 13     | 305     | 10100010  | 1      |

Partner:

| ActorPortName         | SysPri | SystemID       | PortPri | PortNo | PortKey | PortState |
|-----------------------|--------|----------------|---------|--------|---------|-----------|
| GigabitEthernet0/0/10 | 32768  | 4c1f-cc34-502f | 32768   | 11     | 305     | 10111100  |
| GigabitEthernet0/0/11 | 32768  | 4c1f-cc34-502f | 32768   | 12     | 305     | 10111100  |
| GigabitEthernet0/0/12 | 0      | 0000-0000-0000 | 0       | 0      | 0       | 10100011  |

[S1]display eth-trunk 1

Eth-Trunk1's state information is:

Local:

LAG ID: 1 WorkingMode: STATIC  
Preempt Delay Time: 30 Hash arithmetic: According to SIP-XOR-DIP  
System Priority: 100 System ID: 4c1f-cc4b-0118  
Least Active-linknumber: 2 Max Active-linknumber: 2  
Operate status: down Number Of Up Port In Trunk: 0

| ActorPortName         | Status          | PortType | PortPri | PortNo | PortKey | PortState | Weight |
|-----------------------|-----------------|----------|---------|--------|---------|-----------|--------|
| GigabitEthernet0/0/10 | <b>Unselect</b> | 1GE      | 40000   | 11     | 305     | 10100000  | 1      |
| GigabitEthernet0/0/11 | <b>Unselect</b> | 1GE      | 32768   | 12     | 305     | 10100010  | 1      |
| GigabitEthernet0/0/12 | <b>Unselect</b> | 1GE      | 32768   | 13     | 305     | 10100010  | 1      |

Partner:

| ActorPortName         | SysPri | SystemID       | PortPri | PortNo | PortKey | PortState |
|-----------------------|--------|----------------|---------|--------|---------|-----------|
| GigabitEthernet0/0/10 | 32768  | 4c1f-cc34-502f | 32768   | 11     | 305     | 10110000  |
| GigabitEthernet0/0/11 | 0      | 0000-0000-0000 | 0       | 0      | 0       | 10100011  |
| GigabitEthernet0/0/12 | 0      | 0000-0000-0000 | 0       | 0      | 0       | 10100011  |

## Изменение режима балансировки

```
[S1]interface GigabitEthernet 0/0/11
[S1-GigabitEthernet0/0/11]undo shutdown
[S1-GigabitEthernet0/0/11]quit
[S1]interface GigabitEthernet 0/0/12
[S1-GigabitEthernet0/0/12]undo shutdown
[S1-GigabitEthernet0/0/12]quit
```

## Статус Eth-Trunk

```
[S1]display eth-trunk 1
Eth-Trunk1's state information is:
```

Local:

```
LAG ID: 1                      WorkingMode: STATIC
Preempt Delay Time: 30         Hash arithmetic: According to SIP-XOR-DIP
System Priority: 100           System ID: 4c1f-cc4b-0118
Least Active-linknumber: 2     Max Active-linknumber: 2
Operate status: up             Number Of Up Port In Trunk: 2
```

```
-----
ActorPortName      Status   PortType PortPri PortNo PortKey PortState Weight
GigabitEthernet0/0/10 Unselect 1GE      40000   11     305     10100000 1
GigabitEthernet0/0/11 Selected 1GE      32768   12     305     10111100 1
GigabitEthernet0/0/12 Selected 1GE      32768   13     305     10111100 1
```

Partner:

```
-----
ActorPortName      SysPri   SystemID      PortPri PortNo PortKey PortState
GigabitEthernet0/0/10 32768    4c1f-cc34-502f 32768   11     305     10110000
GigabitEthernet0/0/11 32768    4c1f-cc34-502f 32768   12     305     10111100
GigabitEthernet0/0/12 32768    4c1f-cc34-502f 32768   13     305     10111100
```