**МИНОБРНАУКИ РОССИИ**

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отчет

**по лабораторной работе №1**

**по дисциплине «Сети и телекоммуникации»**

Тема: **Настройка IP-адресов в сети**

|  |  |  |
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# **Цель работы.**

Изучение и практическое освоение основ адресации, разрешения физических адресов и простейшей маршрутизации в IP-сетях.

# **Основные теоретические положения.**

Каждый компьютер в сети TCP/IP имеет адреса двух типов: физический (или локальный) и IP-адрес. Физический адрес узла определяется техноло­гией построения отдельной сети, в которую входит данный узел. Для узлов, входящих в локальные сети, – это МАС-адрес сетевого адаптера или порта маршрутизатора. Такие адреса назначаются производителями оборудования и являются уникальными адресами, поскольку управляются централизовано. Для узлов, входящих в глобальные сети, такие, как Х.25 или frame relay, физический адрес назначается админи­стратором глобальной сети или производителем оборудования. Пример фи­зического адреса: 44-BC-89-A2-FE-00. Адрес IPv4 состоит из 4 байт. Этот адрес используется на сетевом уровне. Он назначается администратором во время конфигурирования ком­пьютеров и маршрутизаторов. IP-Адрес состоит из двух частей: номера сети и номера узла. Номер сети определяет конкретную физическую сеть, а номер узла определяет конкретную рабочую станцию, сервер и пр., включенную в сеть. Подсеть – это физический сегмент TCP/IP сети, в котором использу­ются IP-адреса с общим номером сети. Пример IP-адреса: 172.168.10.15.

Номер узла в протоколе IP назначается независимо от физического ад­реса узла. Деление IP-адреса на поле номера сети и номера узла – гибкое, и граница между этими полями может устанавливаться произвольно. Узел мо­жет входить в несколько IP-сетей. В этом случае узел должен иметь не­сколько IP-адресов (по числу сетевых связей).

Таким образом, IP-адрес характеризует не отдельный компьютер или маршрутизатор, а сетевой интерфейс (физический или виртуальный). Какая часть IP-адреса относится к номеру сети, а какая – к номеру узла, определяется двумя способами: с помощью классов (классовая адресация) или с помощью масок подсети (бесклассовая адресация). В данной работе следует настроить данную сеть.

**Ход работы.**

Вариант 13. Исходные данные: Сеть между маршрути­заторами R120, R230 и R232: 172.31.128.0. Сеть между маршрутизаторами R232 и R233: 10.10.0.0. Компьютер Remote1 имеет IP-адрес 172.31.127.0. Компьютер Remote2 имеет IP-адрес 172.31.200.1. Компьютер Remote3 имеет IP-адрес: 10.0.39.0. Обозначения в задании: K1 – Remote1, K2 – Remote2, K3 – Remote3. В данной работе дана сеть, представленная на рис.1.

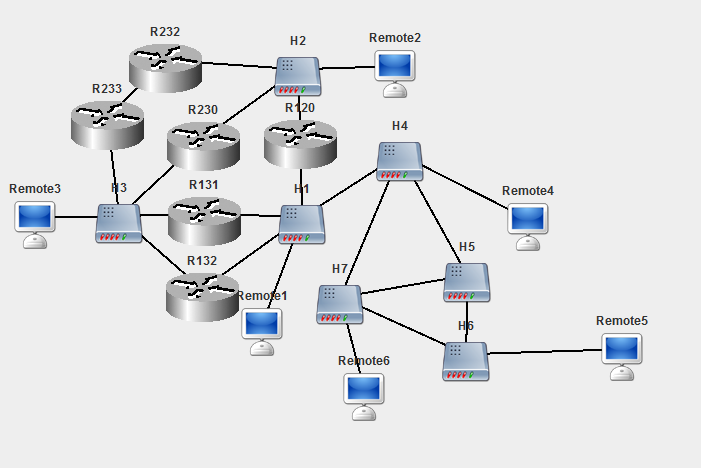


Рисунок 1 – Исходная сеть

Первым делом, удалим хаб H5, т.к. нужно исключить циклы между хабами. В ином случае пакеты могут передаваться между хабами пока у него не закончится время жизни. Исправленная сеть представлена на рис.2.

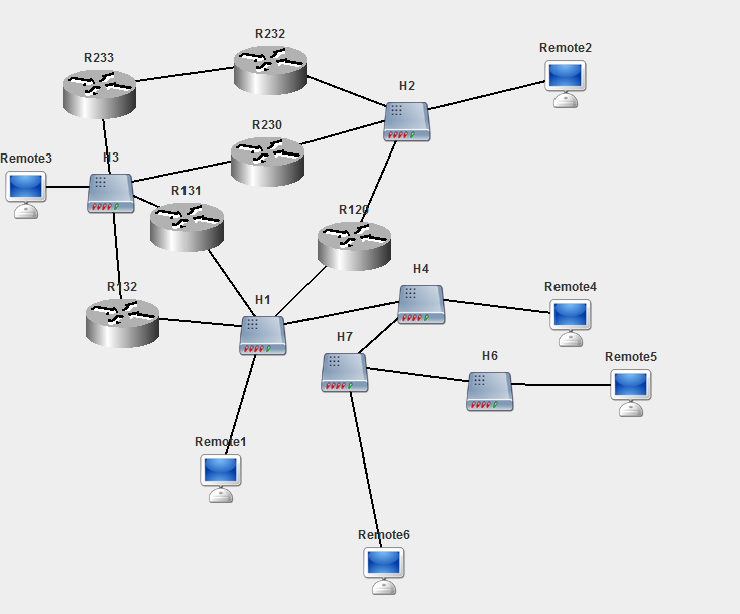


Рисунок 2 – Сеть без H5.

Далее настроим свойства TCP/IP для каждого устройства. Настройки представлены в таблицах 1 – 12.

Таблица 1 – Настройки Remote1

|  |  |
| --- | --- |
| IP Address | 172.31.127.0 |
| Subnet Mask | 255.255.128.0 |
| Default Gateway | 172.31.65.0 |

Таблица 2 – Настройки Remote2

|  |  |
| --- | --- |
| IP Address | 172.31.200.1 |
| Subnet Mask | 255.255.255.0 |
| Default Gateway | 172.31.200.4 |

Для Remote1 была использована нестандартная маска, для того чтобы сеть отличалась от сети Remote2.

Таблица 3 – Настройки Remote3

|  |  |
| --- | --- |
| IP Address | 10.0.39.0 |
| Subnet Mask | 255.0.0.0 |
| Default Gateway | 10.0.32.4 |

Таблица 4 – Настройки Remote4

|  |  |
| --- | --- |
| IP Address | 172.31.127.1 |
| Subnet Mask | 255.255.128.0 |
| Default Gateway | 172.31.65.0 |

Таблица 5 – Настройки Remote5

|  |  |
| --- | --- |
| IP Address | 172.31.127.3 |
| Subnet Mask | 255.255.128.0 |
| Default Gateway | 172.31.65.0 |

Таблица 6 – Настройки Remote6

|  |  |
| --- | --- |
| IP Address | 172.31.127.2 |
| Subnet Mask | 255.255.128.0 |
| Default Gateway | 172.31.65.0 |

Для Remote4, Remote5, Remote6 использована маска такая же как и у Remote1, т.к. они находятся в одной локальной сети.

Таблица 7 – Настройка R233

|  |  |  |
| --- | --- | --- |
|  | Eth0 | Eth1 |
| IP Address | 10.0.32.1 | 10.10.0.2 |
| Subnet Mask | 255.0.0.0 | 255.255.255.0 |
| Default Gateway | 10.0.32.2 | 10.0.32.2 |

Таблица 8 – Настройка R232

|  |  |  |
| --- | --- | --- |
|  | Eth0 | Eth1 |
| IP Address | 10.10.0.1 | 172.31.200.3 |
| Subnet Mask | 255.255.255.0 | 255.255.255.0 |
| Default Gateway | 172.31.200.4 | 172.31.200.4 |

Таблица 9 – Настройка R230

|  |  |  |
| --- | --- | --- |
|  | Eth0 | Eth1 |
| IP Address | 10.0.32.2 | 172.31.200.2 |
| Subnet Mask | 255.0.0.0 | 255.255.255.0 |
| Default Gateway | 172.31.200.4 | 172.31.200.4 |

Таблица 10 – Настройка R131

|  |  |  |
| --- | --- | --- |
|  | Eth0 | Eth1 |
| IP Address | 10.0.32.3 | 172.31.66.0 |
| Subnet Mask | 255.0.0.0 | 255.255.128.0 |
| Default Gateway | 10.0.32.2 | 10.0.32.2 |

Таблица 11 – Настройка R132

|  |  |  |
| --- | --- | --- |
|  | Eth0 | Eth1 |
| IP Address | 10.0.32.4 | 172.31.67.0 |
| Subnet Mask | 255.0.0.0 | 255.255.128.0 |
| Default Gateway | 10.0.32.2 | 10.0.32.2 |

Таблица 12 – Настройка R120

|  |  |  |
| --- | --- | --- |
|  | Eth0 | Eth1 |
| IP Address | 172.31.65.0 | 172.31.200.4 |
| Subnet Mask | 255.255.128.0 | 255.255.255.0 |
| Default Gateway | 172.31.200.2 | 172.31.200.2 |

После настройки сети с компьютера Remote1 был отправлен Echo-запрос на компьютер Remote2. На компьютер Remote1 вернулся Echo-ответ, следовательно, сеть настроена корректно. Вывод программы представлен ниже.

|  |  |  |  |
| --- | --- | --- | --- |
| Remote1 | Echo Request Packet | Network | Created Echo Request packet to 172.31.200.1 |
| Remote1 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 172.31.65.0 |
| Remote1 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| Remote1 | Ethernet Packet | Link | Sending packet from interface 6E:1E:55:42:A9:7F |
| Remote6 | Ethernet Packet | Link | Recieved and accepted packet at interface 99:6E:23:18:41:A0 |
| Remote6 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote5 | Ethernet Packet | Link | Recieved and accepted packet at interface B3:71:8E:60:C0:C0 |
| Remote5 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote4 | Ethernet Packet | Link | Recieved and accepted packet at interface 78:7A:69:13:7A:BD |
| Remote4 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 5E:4A:32:1A:35:C5 |
| R120 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R120 | ARP Response Packet | DataLink | Created ARP Response packet to 172.31.127.0 |
| R120 | ARP\_packet | Network | Sending packet from ProtocolStack (to 172.31.127.0). |
| R120 | Ethernet Packet | Link | Sending packet from interface 5E:4A:32:1A:35:C5 |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and accepted packet at interface 6E:1E:55:42:A9:7F |
| Remote1 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface BE:5F:B3:A0:36:BB |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface C5:13:A1:13:3C:9E |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.65.0). |
| Remote1 | Ethernet Packet | Link | Sending packet from interface 6E:1E:55:42:A9:7F |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 5E:4A:32:1A:35:C5 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 172.31.200.1 |
| R120 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R232 | Ethernet Packet | Link | Recieved and accepted packet at interface 4D:33:B6:30:20:B0 |
| R232 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote2 | ARP Response Packet | DataLink | Created ARP Response packet to 172.31.200.4 |
| Remote2 | ARP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.4). |
| Remote2 | Ethernet Packet | Link | Sending packet from interface 1E:83:8C:A2:A1:44 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 30:B3:36:3F:A1:58 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.1). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 30:B3:36:3F:A1:58 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote2 | Echo Reply Packet | Network | Created Echo Reply packet to 172.31.127.0 |
| Remote2 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.4). |
| Remote2 | Ethernet Packet | Link | Sending packet from interface 1E:83:8C:A2:A1:44 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.127.0). |
| R120 | Ethernet Packet | Link | Sending packet from interface 5E:4A:32:1A:35:C5 |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and accepted packet at interface 6E:1E:55:42:A9:7F |
| Remote1 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote1 | Echo Reply Packet | Network | Echo reply packet received from 172.31.200.1 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 30:B3:36:3F:A1:58 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |

Далее был отправлен Echo-запрос с компьютера Remote1 на несуществующий IP-адрес 200.100.0.1. Вывод программы представлен ниже.

|  |  |  |  |
| --- | --- | --- | --- |
| Remote1 | Echo Request Packet | Network | Created Echo Request packet to 200.100.0.1 |
| Remote1 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.65.0). |
| Remote1 | Ethernet Packet | Link | Sending packet from interface 6E:1E:55:42:A9:7F |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 5E:4A:32:1A:35:C5 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.2). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.4). |
| R230 | Ethernet Packet | Link | Sending packet from interface 30:B3:36:3F:A1:58 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.2). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.4). |
| R230 | Ethernet Packet | Link | Sending packet from interface 30:B3:36:3F:A1:58 |
| Remote1 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |

|  |  |  |  |
| --- | --- | --- | --- |
| Remote1 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote1 | ICMP Time Exceeded | Network | Recieved ICMP Time Exceeded from 172.31.65.0 |

По выводу программы можно заметить, что пакет зациклился между маршрутизаторами R230 и R120, после чего время жизни пакета закончилось.

Также для проверки корректности сети с компьютеров Remote1 и Remote2 были отправлены Echo-запросы на все узлы сети. Данная проверка показала, что сеть работает корректно. Некоторые выводы программы представлены в приложении А.

**Вывод.**

В ходе выполнения данной лабораторной работы были изучены и освоены на практике основы адресации и простейшей маршрутизации в IP-сетях.

# **ПРИЛОЖЕНИЯ**

# **ПРИЛОЖЕНИЕ А. ВЫВОДЫ ПРОГРАММЫ ПРИ ОТПРАВКЕ ECHO-ЗАПРОСОВ.**

**Echo-запросы с Remote1:**

**На Remote3:**

|  |  |  |  |
| --- | --- | --- | --- |
| Remote1 | Echo Request Packet | Network | Created Echo Request packet to 10.0.39.0 |
| Remote1 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 172.31.65.0 |
| Remote1 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| Remote1 | Ethernet Packet | Link | Sending packet from interface 6E:1E:55:42:A9:7F |
| Remote6 | Ethernet Packet | Link | Recieved and accepted packet at interface 99:6E:23:18:41:A0 |
| Remote6 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote5 | Ethernet Packet | Link | Recieved and accepted packet at interface B3:71:8E:60:C0:C0 |
| Remote5 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote4 | Ethernet Packet | Link | Recieved and accepted packet at interface 78:7A:69:13:7A:BD |
| Remote4 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 5E:4A:32:1A:35:C5 |
| R120 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R120 | ARP Response Packet | DataLink | Created ARP Response packet to 172.31.127.0 |
| R120 | ARP\_packet | Network | Sending packet from ProtocolStack (to 172.31.127.0). |
| R120 | Ethernet Packet | Link | Sending packet from interface 5E:4A:32:1A:35:C5 |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and accepted packet at interface 6E:1E:55:42:A9:7F |
| Remote1 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface BE:5F:B3:A0:36:BB |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface C5:13:A1:13:3C:9E |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.65.0). |
| Remote1 | Ethernet Packet | Link | Sending packet from interface 6E:1E:55:42:A9:7F |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 5E:4A:32:1A:35:C5 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 172.31.200.2 |
| R120 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R230 | ARP Response Packet | DataLink | Created ARP Response packet to 172.31.200.4 |
| R230 | ARP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.4). |
| R230 | Ethernet Packet | Link | Sending packet from interface 30:B3:36:3F:A1:58 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and dropped packet at interface 1E:83:8C:A2:A1:44 |
| R232 | Ethernet Packet | Link | Recieved and accepted packet at interface 4D:33:B6:30:20:B0 |
| R232 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.2). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 10.0.39.0 |
| R230 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R230 | Ethernet Packet | Link | Sending packet from interface 7A:A1:64:13:23:B2 |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface 88:9B:AD:30:32:B4 |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R233 | Ethernet Packet | Link | Recieved and accepted packet at interface 5F:8B:2B:53:97:7D |
| R233 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | Ethernet Packet | Link | Recieved and accepted packet at interface AA:4D:74:59:98:4C |
| Remote3 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote3 | ARP Response Packet | DataLink | Created ARP Response packet to 10.0.32.2 |
| Remote3 | ARP\_packet | Network | Sending packet from ProtocolStack (to 10.0.32.2). |
| Remote3 | Ethernet Packet | Link | Sending packet from interface AA:4D:74:59:98:4C |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 10.0.39.0). |
| R230 | Ethernet Packet | Link | Sending packet from interface 7A:A1:64:13:23:B2 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| Remote3 | Ethernet Packet | Link | Recieved and accepted packet at interface AA:4D:74:59:98:4C |
| Remote3 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote3 | Echo Reply Packet | Network | Created Echo Reply packet to 172.31.127.0 |
| Remote3 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 10.0.32.4 |
| Remote3 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| Remote3 | Ethernet Packet | Link | Sending packet from interface AA:4D:74:59:98:4C |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R132 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R132 | ARP Response Packet | DataLink | Created ARP Response packet to 10.0.39.0 |
| R132 | ARP\_packet | Network | Sending packet from ProtocolStack (to 10.0.39.0). |
| R132 | Ethernet Packet | Link | Sending packet from interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 7A:A1:64:13:23:B2 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| Remote3 | Ethernet Packet | Link | Recieved and accepted packet at interface AA:4D:74:59:98:4C |
| Remote3 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface 88:9B:AD:30:32:B4 |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R233 | Ethernet Packet | Link | Recieved and accepted packet at interface 5F:8B:2B:53:97:7D |
| R233 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 10.0.32.4). |
| Remote3 | Ethernet Packet | Link | Sending packet from interface AA:4D:74:59:98:4C |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R132 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R132 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.127.0). |
| R132 | Ethernet Packet | Link | Sending packet from interface BE:5F:B3:A0:36:BB |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R120 | Ethernet Packet | Link | Recieved and dropped packet at interface 5E:4A:32:1A:35:C5 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and accepted packet at interface 6E:1E:55:42:A9:7F |
| Remote1 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote1 | Echo Reply Packet | Network | Echo reply packet received from 10.0.39.0 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 7A:A1:64:13:23:B2 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and dropped packet at interface 1E:83:8C:A2:A1:44 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |

**На Remote6:**

|  |  |  |  |
| --- | --- | --- | --- |
| Remote1 | Echo Request Packet | Network | Created Echo Request packet to 172.31.127.2 |
| Remote1 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.127.2). |
| Remote1 | Ethernet Packet | Link | Sending packet from interface 6E:1E:55:42:A9:7F |
| Remote6 | Ethernet Packet | Link | Recieved and accepted packet at interface 99:6E:23:18:41:A0 |
| Remote6 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote6 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote6 | Echo Reply Packet | Network | Created Echo Reply packet to 172.31.127.0 |
| Remote6 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.127.0). |
| Remote6 | Ethernet Packet | Link | Sending packet from interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R120 | Ethernet Packet | Link | Recieved and dropped packet at interface 5E:4A:32:1A:35:C5 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and accepted packet at interface 6E:1E:55:42:A9:7F |
| Remote1 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote1 | Echo Reply Packet | Network | Echo reply packet received from 172.31.127.2 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R120 | Ethernet Packet | Link | Recieved and dropped packet at interface 5E:4A:32:1A:35:C5 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |

**На R233:**

|  |  |  |  |
| --- | --- | --- | --- |
| Remote1 | Echo Request Packet | Network | Created Echo Request packet to 10.0.32.1 |
| Remote1 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.65.0). |
| Remote1 | Ethernet Packet | Link | Sending packet from interface 6E:1E:55:42:A9:7F |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 5E:4A:32:1A:35:C5 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.2). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 10.0.32.1 |
| R230 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R230 | Ethernet Packet | Link | Sending packet from interface 7A:A1:64:13:23:B2 |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface 88:9B:AD:30:32:B4 |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R233 | Ethernet Packet | Link | Recieved and accepted packet at interface 5F:8B:2B:53:97:7D |
| R233 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R233 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R233 | ARP Response Packet | DataLink | Created ARP Response packet to 10.0.32.2 |
| R233 | ARP\_packet | Network | Sending packet from ProtocolStack (to 10.0.32.2). |
| R233 | Ethernet Packet | Link | Sending packet from interface 5F:8B:2B:53:97:7D |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote3 | Ethernet Packet | Link | Recieved and dropped packet at interface AA:4D:74:59:98:4C |
| Remote3 | Ethernet Packet | Link | Recieved and accepted packet at interface AA:4D:74:59:98:4C |
| Remote3 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 10.0.32.1). |
| R230 | Ethernet Packet | Link | Sending packet from interface 7A:A1:64:13:23:B2 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R233 | Ethernet Packet | Link | Recieved and accepted packet at interface 5F:8B:2B:53:97:7D |
| R233 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R233 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R233 | Echo Reply Packet | Network | Created Echo Reply packet to 172.31.127.0 |
| R233 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 10.0.32.2). |
| R233 | Ethernet Packet | Link | Sending packet from interface 5F:8B:2B:53:97:7D |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.4). |
| R230 | Ethernet Packet | Link | Sending packet from interface 30:B3:36:3F:A1:58 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.127.0). |
| R120 | Ethernet Packet | Link | Sending packet from interface 5E:4A:32:1A:35:C5 |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and dropped packet at interface 78:7A:69:13:7A:BD |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and accepted packet at interface 6E:1E:55:42:A9:7F |
| Remote1 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote1 | Echo Reply Packet | Network | Echo reply packet received from 10.0.32.1 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and dropped packet at interface 1E:83:8C:A2:A1:44 |
| Remote3 | Ethernet Packet | Link | Recieved and dropped packet at interface AA:4D:74:59:98:4C |
| Remote3 | Ethernet Packet | Link | Recieved and dropped packet at interface AA:4D:74:59:98:4C |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and dropped packet at interface 1E:83:8C:A2:A1:44 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |

**Echo-запросы с Remote2:**

**На Remote3:**

|  |  |  |  |
| --- | --- | --- | --- |
| Remote2 | Echo Request Packet | Network | Created Echo Request packet to 10.0.39.0 |
| Remote2 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 172.31.200.4 |
| Remote2 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| Remote2 | Ethernet Packet | Link | Sending packet from interface 1E:83:8C:A2:A1:44 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R120 | ARP Response Packet | DataLink | Created ARP Response packet to 172.31.200.1 |
| R120 | ARP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.1). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 30:B3:36:3F:A1:58 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R232 | Ethernet Packet | Link | Recieved and accepted packet at interface 4D:33:B6:30:20:B0 |
| R232 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.4). |
| Remote2 | Ethernet Packet | Link | Sending packet from interface 1E:83:8C:A2:A1:44 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 172.31.200.2 |
| R120 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R230 | ARP Response Packet | DataLink | Created ARP Response packet to 172.31.200.4 |
| R230 | ARP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.4). |
| R230 | Ethernet Packet | Link | Sending packet from interface 30:B3:36:3F:A1:58 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and dropped packet at interface 1E:83:8C:A2:A1:44 |
| R232 | Ethernet Packet | Link | Recieved and accepted packet at interface 4D:33:B6:30:20:B0 |
| R232 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.2). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 10.0.39.0 |
| R230 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R230 | Ethernet Packet | Link | Sending packet from interface 7A:A1:64:13:23:B2 |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface 88:9B:AD:30:32:B4 |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R233 | Ethernet Packet | Link | Recieved and accepted packet at interface 5F:8B:2B:53:97:7D |
| R233 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | Ethernet Packet | Link | Recieved and accepted packet at interface AA:4D:74:59:98:4C |
| Remote3 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote3 | ARP Response Packet | DataLink | Created ARP Response packet to 10.0.32.2 |
| Remote3 | ARP\_packet | Network | Sending packet from ProtocolStack (to 10.0.32.2). |
| Remote3 | Ethernet Packet | Link | Sending packet from interface AA:4D:74:59:98:4C |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 10.0.39.0). |
| R230 | Ethernet Packet | Link | Sending packet from interface 7A:A1:64:13:23:B2 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| Remote3 | Ethernet Packet | Link | Recieved and accepted packet at interface AA:4D:74:59:98:4C |
| Remote3 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote3 | Echo Reply Packet | Network | Created Echo Reply packet to 172.31.200.1 |
| Remote3 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 10.0.32.4 |
| Remote3 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| Remote3 | Ethernet Packet | Link | Sending packet from interface AA:4D:74:59:98:4C |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R132 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R132 | ARP Response Packet | DataLink | Created ARP Response packet to 10.0.39.0 |
| R132 | ARP\_packet | Network | Sending packet from ProtocolStack (to 10.0.39.0). |
| R132 | Ethernet Packet | Link | Sending packet from interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 7A:A1:64:13:23:B2 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| Remote3 | Ethernet Packet | Link | Recieved and accepted packet at interface AA:4D:74:59:98:4C |
| Remote3 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface 88:9B:AD:30:32:B4 |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R233 | Ethernet Packet | Link | Recieved and accepted packet at interface 5F:8B:2B:53:97:7D |
| R233 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 10.0.32.4). |
| Remote3 | Ethernet Packet | Link | Sending packet from interface AA:4D:74:59:98:4C |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R132 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R132 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 10.0.32.2 |
| R132 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R132 | Ethernet Packet | Link | Sending packet from interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface 88:9B:AD:30:32:B4 |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R230 | ARP Response Packet | DataLink | Created ARP Response packet to 10.0.32.4 |
| R230 | ARP\_packet | Network | Sending packet from ProtocolStack (to 10.0.32.4). |
| R230 | Ethernet Packet | Link | Sending packet from interface 7A:A1:64:13:23:B2 |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R132 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| Remote3 | Ethernet Packet | Link | Recieved and dropped packet at interface AA:4D:74:59:98:4C |
| R233 | Ethernet Packet | Link | Recieved and accepted packet at interface 5F:8B:2B:53:97:7D |
| R233 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote3 | Ethernet Packet | Link | Recieved and accepted packet at interface AA:4D:74:59:98:4C |
| Remote3 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R132 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 10.0.32.2). |
| R132 | Ethernet Packet | Link | Sending packet from interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 172.31.200.1 |
| R230 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R230 | Ethernet Packet | Link | Sending packet from interface 30:B3:36:3F:A1:58 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R232 | Ethernet Packet | Link | Recieved and accepted packet at interface 4D:33:B6:30:20:B0 |
| R232 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote2 | ARP Response Packet | DataLink | Created ARP Response packet to 172.31.200.2 |
| Remote2 | ARP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.2). |
| Remote2 | Ethernet Packet | Link | Sending packet from interface 1E:83:8C:A2:A1:44 |
| R120 | Ethernet Packet | Link | Recieved and dropped packet at interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.1). |
| R230 | Ethernet Packet | Link | Sending packet from interface 30:B3:36:3F:A1:58 |
| R120 | Ethernet Packet | Link | Recieved and dropped packet at interface 77:96:8F:3F:1C:77 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote2 | Echo Reply Packet | Network | Echo reply packet received from 10.0.39.0 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| Remote3 | Ethernet Packet | Link | Recieved and dropped packet at interface AA:4D:74:59:98:4C |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 7A:A1:64:13:23:B2 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and dropped packet at interface 1E:83:8C:A2:A1:44 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 30:B3:36:3F:A1:58 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |

**На Remote4:**

|  |  |  |  |
| --- | --- | --- | --- |
| Remote2 | Echo Request Packet | Network | Created Echo Request packet to 172.31.127.1 |
| Remote2 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.4). |
| Remote2 | Ethernet Packet | Link | Sending packet from interface 1E:83:8C:A2:A1:44 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ARP Discovery Packet | DataLink | Created ARP discovery packet to source MAC address for IP 172.31.127.1 |
| R120 | ARP\_packet | Network | Sending broadcast packet from ProtocolStack. |
| R120 | Ethernet Packet | Link | Sending packet from interface 5E:4A:32:1A:35:C5 |
| Remote6 | Ethernet Packet | Link | Recieved and accepted packet at interface 99:6E:23:18:41:A0 |
| Remote6 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote5 | Ethernet Packet | Link | Recieved and accepted packet at interface B3:71:8E:60:C0:C0 |
| Remote5 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote4 | Ethernet Packet | Link | Recieved and accepted packet at interface 78:7A:69:13:7A:BD |
| Remote4 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote4 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote4 | ARP Response Packet | DataLink | Created ARP Response packet to 172.31.65.0 |
| Remote4 | ARP\_packet | Network | Sending packet from ProtocolStack (to 172.31.65.0). |
| Remote4 | Ethernet Packet | Link | Sending packet from interface 78:7A:69:13:7A:BD |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 5E:4A:32:1A:35:C5 |
| R120 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ARP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and dropped packet at interface 6E:1E:55:42:A9:7F |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface BE:5F:B3:A0:36:BB |
| R132 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R131 | Ethernet Packet | Link | Recieved and accepted packet at interface C5:13:A1:13:3C:9E |
| R131 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote1 | Ethernet Packet | Link | Recieved and accepted packet at interface 6E:1E:55:42:A9:7F |
| Remote1 | ARP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.127.1). |
| R120 | Ethernet Packet | Link | Sending packet from interface 5E:4A:32:1A:35:C5 |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| Remote4 | Ethernet Packet | Link | Recieved and accepted packet at interface 78:7A:69:13:7A:BD |
| Remote4 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote4 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote4 | Echo Reply Packet | Network | Created Echo Reply packet to 172.31.200.1 |
| Remote4 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.65.0). |
| Remote4 | Ethernet Packet | Link | Sending packet from interface 78:7A:69:13:7A:BD |
| Remote6 | Ethernet Packet | Link | Recieved and dropped packet at interface 99:6E:23:18:41:A0 |
| Remote5 | Ethernet Packet | Link | Recieved and dropped packet at interface B3:71:8E:60:C0:C0 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 5E:4A:32:1A:35:C5 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.1). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 30:B3:36:3F:A1:58 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote2 | Echo Reply Packet | Network | Echo reply packet received from 172.31.127.1 |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and dropped packet at interface 6E:1E:55:42:A9:7F |
| R132 | Ethernet Packet | Link | Recieved and dropped packet at interface BE:5F:B3:A0:36:BB |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface C5:13:A1:13:3C:9E |
| Remote1 | Ethernet Packet | Link | Recieved and dropped packet at interface 6E:1E:55:42:A9:7F |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 30:B3:36:3F:A1:58 |

**На R132:**

|  |  |  |  |
| --- | --- | --- | --- |
| Remote2 | Echo Request Packet | Network | Created Echo Request packet to 10.0.32.4 |
| Remote2 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 172.31.200.4). |
| Remote2 | Ethernet Packet | Link | Sending packet from interface 1E:83:8C:A2:A1:44 |
| R120 | Ethernet Packet | Link | Recieved and accepted packet at interface 77:96:8F:3F:1C:77 |
| R120 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R120 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R120 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.2). |
| R120 | Ethernet Packet | Link | Sending packet from interface 77:96:8F:3F:1C:77 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 30:B3:36:3F:A1:58 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 10.0.32.4). |
| R230 | Ethernet Packet | Link | Sending packet from interface 7A:A1:64:13:23:B2 |
| R132 | Ethernet Packet | Link | Recieved and accepted packet at interface 68:69:5C:7C:4C:51 |
| R132 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R132 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| R132 | Echo Reply Packet | Network | Created Echo Reply packet to 172.31.200.1 |
| R132 | ICMP\_packet | Network | Sending packet from ProtocolStack (to 10.0.32.2). |
| R132 | Ethernet Packet | Link | Sending packet from interface 68:69:5C:7C:4C:51 |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R230 | Ethernet Packet | Link | Recieved and accepted packet at interface 7A:A1:64:13:23:B2 |
| R230 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| R230 | ICMP\_packet | Network | Packet Received: Network Layer Device is Routable forwarding packet. |
| R230 | ICMP\_packet | Network | Forwarding packet from ProtocolStack(to 172.31.200.1). |
| R230 | Ethernet Packet | Link | Sending packet from interface 30:B3:36:3F:A1:58 |
| R120 | Ethernet Packet | Link | Recieved and dropped packet at interface 77:96:8F:3F:1C:77 |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and accepted packet at interface 1E:83:8C:A2:A1:44 |
| Remote2 | ICMP\_packet | Network | ProtocolStack received packet from local Interface. |
| Remote2 | ICMP\_packet | Network | Confirmed Packet is for this Network Layer Device. |
| Remote2 | Echo Reply Packet | Network | Echo reply packet received from 10.0.32.4 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| Remote3 | Ethernet Packet | Link | Recieved and dropped packet at interface AA:4D:74:59:98:4C |
| R131 | Ethernet Packet | Link | Recieved and dropped packet at interface 88:9B:AD:30:32:B4 |
| R233 | Ethernet Packet | Link | Recieved and dropped packet at interface 5F:8B:2B:53:97:7D |
| Remote3 | Ethernet Packet | Link | Recieved and dropped packet at interface AA:4D:74:59:98:4C |
| R232 | Ethernet Packet | Link | Recieved and dropped packet at interface 4D:33:B6:30:20:B0 |
| Remote2 | Ethernet Packet | Link | Recieved and dropped packet at interface 1E:83:8C:A2:A1:44 |
| R230 | Ethernet Packet | Link | Recieved and dropped packet at interface 30:B3:36:3F:A1:58 |