ОТЧЕТ

по лабораторной работе №1

по дисциплине «Сети и телекоммуникации»

Тема: «Настройка IP-адресов в сети».

Студент гр. 1304		Байков Е.С.
Преподаватель		Ефремов М.А.

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Цель работы

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

Задание

1. Исправить структуру сети (если это необходимо), обеспечив корректную доставку кадров на физическом уровне.
2. Задать IP-адреса, маски подсети и шлюзы по умолчанию для всех узлов сети, чтобы обеспечить корректную доставку Echo-запроса К1 к К2 и Echo-ответа обратно. Обосновать свои установки.
3. Выполнить Echo-запрос с К1 на К2. Посмотреть вывод программы.
4. Добавить статическую запись APR для К3 на К1 (или для ближайшего к К1 маршрутизатора, находящегося между К3 и К1). Подождать устаревания APR-таблиц и выполнить Echo-запрос с К1 на К3.
5. Выполнить Echo-запрос на IP-адрес 200.100.0.1 с К1. Объяснить вывод программы.
6. Выполнить Echo-запросы с К1 и К2 на все узлы сети. Убедится, что Echo-ответы приходят.

Вариант 2: Файл со схемой сети: lab1_var2.jfst. Сеть между маршрутизаторами OFF_R и R2: 136.15.0.0. Компьютер BIG BOSS имеет IP-адрес 136.15.32.1. Компьютер M_CH_S имеет IP-адрес 10.10.0.2. Сеть между маршрутизаторами R2 и M_CH_S_Router: 192.178.0.0. Обозначения в задании: К1 – BIG BOSS, К2 – M_CH_S, К3 – OFFICE1_pc4 (см рис. 1).
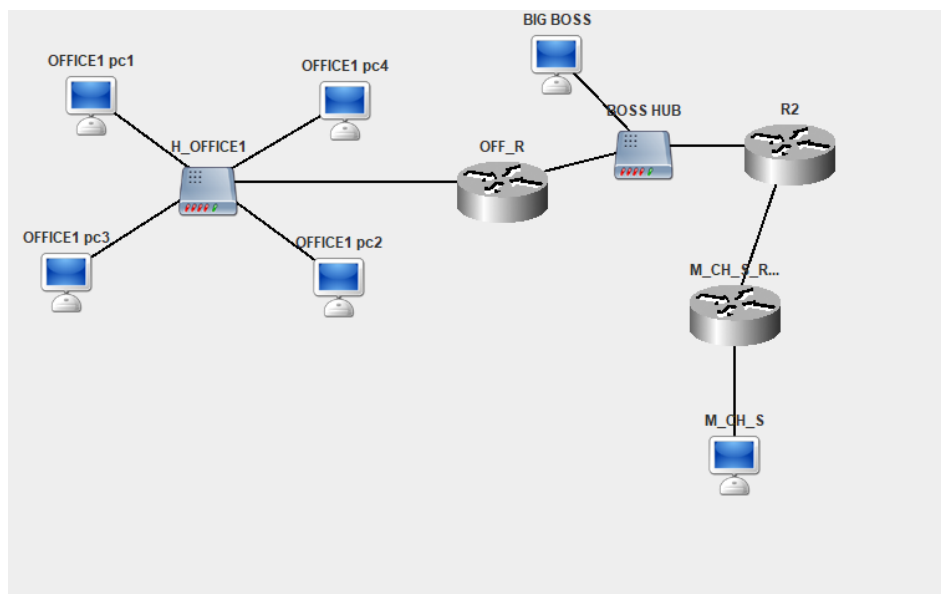

Рисунок 1 – Исходная сеть.

Выполнение работы

1. Структура была видоизменена для обеспечения корректной доставки кадров на физическом уровне, а именно был удален маршрутизатор M_CH_S_Router, так как существовала невозможность одновременной доставки пакета из BIG_BOSS и OFFICE1 pcN. Поскольку последовательность M_CH_S_Router – R2 – BOSS_HUB – OFF_R содержит в себе маршрутизаторы, у которых может быть только один шлюз по умолчанию, то из-за этого может случиться зацикливание пакета при любой настройке маршрутизаторов из-за чего пакет либо не будет доставлен, либо не будет получен ответ потому что истечет время их жизни. Поэтому принято решение удалить один из маршрутизаторов – M_CH_S_Router, и прикрепить конечный узел M_CH_S к маршрутизатору R2. В итоге получается схема, изображенная на рисунке 2.
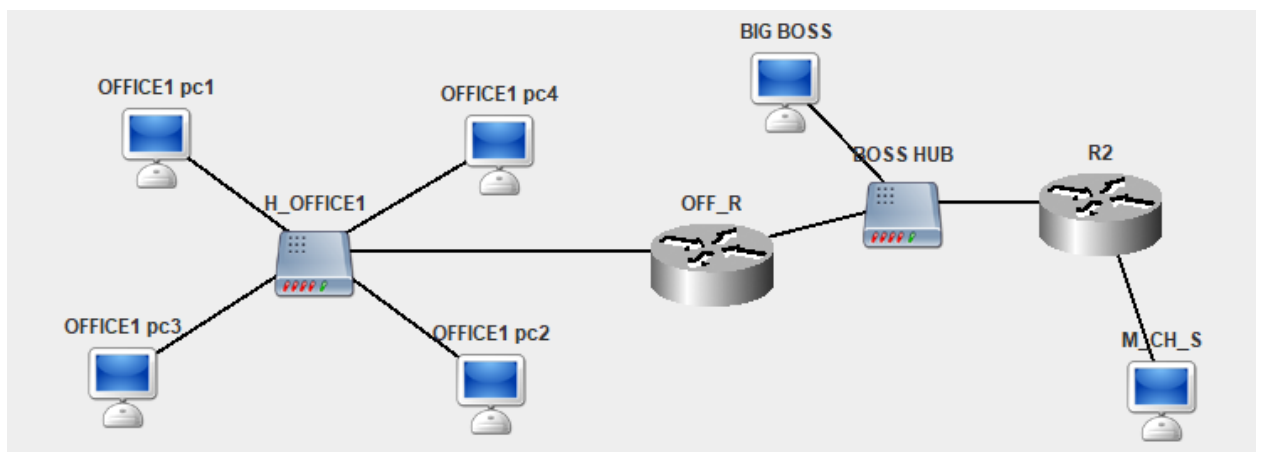
Рисунок 2 – Конечная схема.

2. Были заданы IP-адреса, маски подсети и шлюзы по умолчанию для всех узлов для обеспечения корректной доставки Echo-запросов. Ниже приведены настройки для каждого устройства (табл. 1).

Таблица 1 – Настройки устройств схемы.

Устройство	Интерфейс	IP-адрес	Маска	Шлюз по умолчанию
M_CH_S	Eth0	10.10.0.2	255.0.0.0	10.10.0.1
R2	Eth0	136.15.63.253	255.255.0.0	136.15.63.254

	Eth1	10.10.0.1	255.0.0.0	
BIG BOSS	Eth0	136.15.32.1	255.255.0.0	136.15.63.253
OFF_R	Eth0	148.92.98.1	255.255.0.0	136.15.63.253
	Eth1	136.15.63.254	255.255.0.0	
OFFICE1 pc1	Eth0	148.92.97.1	255.255.0.0	148.92.98.1
OFFICE1 pc2	Eth0	148.92.96.2	255.255.0.0	148.92.98.1
OFFICE1 pc3	Eth0	148.92.96.1	255.255.0.0	148.92.98.1
OFFICE1 pc4	Eth0	148.92.97.2	255.255.0.0	148.92.98.1

3. Выполнен Echo-запрос с K1 (BIG_BOSS) на K2 (M_CH_S). Вывод программы см. рис. 3.

16:39:59-513	R2	Ethernet Packet	Link	Sending packet from interface 6C:B1:B3:30:1E:84
16:39:59-513	OFF_R	Ethernet Packet	Link	Recieved and dropped packet at interface 9C:59:5D:A0:9C:40
16:39:59-513	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
16:39:59-513	BIG BOSS	ICMP_packet	Network	ProtocolStack received packet from local Interface.
16:39:59-513	BIG BOSS	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
16:39:59-513	BIG BOSS	Echo Reply Packet	Network	Echo reply packet received from 10.10.0.2

Рисунок 3 – вывод программы.

Согласно выводу программы, Echo-запрос осуществлен успешно.

4. Выполним Echo-запрос с K1 (BIG_BOSS) на K3 (OFFICE1 pc4) без внесения статической записи в ARP-таблицу при этом дождавшись ее устаревания. В данном случае маршрутизатор OFF_R формирует ARP-запрос поиска и рассылает его по сети. (см. рис. 4)

17:09:23-439	BIG BOSS	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:09:23-439	R2	ICMP_packet	Network	Forwarding packet from ProtocolStack(to 136.15.63.254).
17:09:23-439	R2	Ethernet Packet	Link	Sending packet from interface 6C:B1:B3:30:1E:84
17:09:23-439	OFF_R	Ethernet Packet	Link	Recieved and accepted packet at interface 9C:59:5D:A0:9C:40
17:09:23-439	OFF_R	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:09:23-439	OFF_R	ICMP_packet	Network	Packet Received: Network Layer Device is Routable forwarding packet.
17:09:23-439	OFF_R	ARP Discovery Packet	DataLink	Created ARP discovery packet to source MAC address for IP 148.92.97.2
17:09:23-439	OFF_R	ARP_packet	Network	Sending broadcast packet from ProtocolStack.
17:09:23-439	OFF_R	Ethernet Packet	Link	Sending packet from interface 55:90:38:3E:32:38
17:09:23-439	OFFICE1 pc4	Ethernet Packet	Link	Recieved and accepted packet at interface B2:C6:BC:B5:BF:5C
17:09:23-440	OFFICE1 pc4	ARP_packet	Network	ProtocolStack received packet from local Interface.

Рисунок 4 – Формирование ARP-запроса поиска.

Внесем статическую запись в таблицу отображения маршрутизатора OFF_R и повторим Echo-запрос, в данном случае потребовалось меньше шагов для отправки Echo-запроса и получения ответа, так как нет необходимости в ARP-запросах для получения физического адреса OFFICE1 pc4.

Результат данного Echo-запроса:

17:23:20-388	BIG BOSS	Echo Request Packet	Network	Created Echo Request packet to 148.92.97.2
17:23:20-388	BIG BOSS	ARP Discovery Packet	DataLink	Created ARP discovery packet to source MAC address for IP 136.15.63.253
17:23:20-388	BIG BOSS	ARP_packet	Network	Sending broadcast packet from Proto-colStack.
17:23:20-388	BIG BOSS	Ethernet Packet	Link	Sending packet from interface C0:52:89:93:86:1B
17:23:20-388	OFF_R	Ethernet Packet	Link	Recieved and accepted packet at interface 9C:59:5D:A0:9C:40
17:23:20-388	OFF_R	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	R2	Ethernet Packet	Link	Recieved and accepted packet at interface 6C:B1:B3:30:1E:84
17:23:20-388	R2	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	R2	ARP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20-388	R2	ARP Response Packet	DataLink	Created ARP Response packet to 136.15.32.1
17:23:20-388	R2	ARP_packet	Network	Sending packet from ProtocolStack (to 136.15.32.1).
17:23:20-388	R2	Ethernet Packet	Link	Sending packet from interface 6C:B1:B3:30:1E:84
17:23:20-388	OFF_R	Ethernet Packet	Link	Recieved and dropped packet at interface 9C:59:5D:A0:9C:40
17:23:20-388	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:23:20-388	BIG BOSS	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	BIG BOSS	ARP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20-388	BIG BOSS	ICMP_packet	Network	Sending packet from ProtocolStack (to 136.15.63.253).
17:23:20-388	BIG BOSS	Ethernet Packet	Link	Sending packet from interface C0:52:89:93:86:1B
17:23:20-388	OFF_R	Ethernet Packet	Link	Recieved and dropped packet at interface 9C:59:5D:A0:9C:40
17:23:20-388	R2	Ethernet Packet	Link	Recieved and accepted packet at interface 6C:B1:B3:30:1E:84
17:23:20-388	R2	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	R2	ICMP_packet	Network	Packet Received: Network Layer Device is Routable forwarding packet.
17:23:20-388	R2	ARP Discovery Packet	DataLink	Created ARP discovery packet to source MAC address for IP 136.15.63.254
17:23:20-388	R2	ARP_packet	Network	Sending broadcast packet from Proto-colStack.
17:23:20-388	R2	Ethernet Packet	Link	Sending packet from interface 6C:B1:B3:30:1E:84
17:23:20-388	OFF_R	Ethernet Packet	Link	Recieved and accepted packet at interface 9C:59:5D:A0:9C:40
17:23:20-388	OFF_R	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	OFF_R	ARP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20-388	OFF_R	ARP Response Packet	DataLink	Created ARP Response packet to 136.15.63.253

17:23:20-388	OFF_R	ARP_packet	Network	Sending packet from ProtocolStack (to 136.15.63.253).
17:23:20-388	OFF_R	Ethernet Packet	Link	Sending packet from interface 9C:59:5D:A0:9C:40
17:23:20-388	BIG BOSS	Ethernet Packet	Link	Recieved and dropped packet at interface C0:52:89:93:86:1B
17:23:20-388	R2	Ethernet Packet	Link	Recieved and accepted packet at interface 6C:B1:B3:30:1E:84
17:23:20-388	R2	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	R2	ARP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20-388	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:23:20-388	BIG BOSS	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	R2	ICMP_packet	Network	Forwarding packet from ProtocolStack(to 136.15.63.254).
17:23:20-388	R2	Ethernet Packet	Link	Sending packet from interface 6C:B1:B3:30:1E:84
17:23:20-388	OFF_R	Ethernet Packet	Link	Recieved and accepted packet at interface 9C:59:5D:A0:9C:40
17:23:20-388	OFF_R	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	OFF_R	ICMP_packet	Network	Packet Received: Network Layer Device is Routable forwarding packet.
17:23:20-388	OFF_R	ICMP_packet	Network	Forwarding packet from ProtocolStack(to 148.92.97.2).
17:23:20-388	OFF_R	Ethernet Packet	Link	Sending packet from interface 55:90:38:3E:32:38
17:23:20-388	OFFICE1 pc4	Ethernet Packet	Link	Recieved and accepted packet at interface B2:C6:BC:B5:BF:5C
17:23:20-388	OFFICE1 pc4	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-388	OFFICE1 pc4	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20-388	OFFICE1 pc4	Echo Reply Packet	Network	Created Echo Reply packet to 136.15.32.1
17:23:20-388	OFFICE1 pc4	ARP Discovery Packet	DataLink	Created ARP discovery packet to source MAC address for IP 148.92.98.1
17:23:20-388	OFFICE1 pc4	ARP_packet	Network	Sending broadcast packet from Proto-colStack.
17:23:20-388	OFFICE1 pc4	Ethernet Packet	Link	Sending packet from interface B2:C6:BC:B5:BF:5C
17:23:20-388	OFF_R	Ethernet Packet	Link	Recieved and accepted packet at interface 55:90:38:3E:32:38
17:23:20-389	OFF_R	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-389	OFF_R	ARP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20-389	OFF_R	ARP Response Packet	DataLink	Created ARP Response packet to 148.92.97.2
17:23:20-389	OFF_R	ARP_packet	Network	Sending packet from ProtocolStack (to 148.92.97.2).
17:23:20-389	OFF_R	Ethernet Packet	Link	Sending packet from interface 55:90:38:3E:32:38
17:23:20-389	OFFICE1 pc4	Ethernet Packet	Link	Recieved and accepted packet at interface B2:C6:BC:B5:BF:5C
17:23:20-389	OFFICE1 pc4	ARP_packet	Network	ProtocolStack received packet from local Interface.

17:23:20- 389	OFFICE1 pc4	ARP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20- 389	OFFICE1 pc3	Ethernet Packet	Link	Recieved and dropped packet at interface 1B:61:AF:AA:21:99
17:23:20- 389	OFFICE1 pc2	Ethernet Packet	Link	Recieved and dropped packet at interface 4D:74:44:3A:2D:C3
17:23:20- 389	OFFICE1 pc1	Ethernet Packet	Link	Recieved and dropped packet at interface 1A:32:64:11:B7:1A
17:23:20- 389	OFFICE1 pc3	Ethernet Packet	Link	Recieved and accepted packet at interface 1B:61:AF:AA:21:99
17:23:20- 389	OFFICE1 pc3	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20- 389	OFFICE1 pc2	Ethernet Packet	Link	Recieved and accepted packet at interface 4D:74:44:3A:2D:C3
17:23:20- 389	OFFICE1 pc2	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20- 389	OFFICE1 pc1	Ethernet Packet	Link	Recieved and accepted packet at interface 1A:32:64:11:B7:1A
17:23:20- 389	OFFICE1 pc1	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20- 389	OFFICE1 pc4	ICMP_packet	Network	Sending packet from ProtocolStack (to 148.92.98.1).
17:23:20- 389	OFFICE1 pc4	Ethernet Packet	Link	Sending packet from interface B2:C6:BC:B5:BF:5C
17:23:20- 389	OFF_R	Ethernet Packet	Link	Recieved and accepted packet at interface 55:90:38:3E:32:38
17:23:20- 389	OFF_R	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20- 389	OFF_R	ICMP_packet	Network	Packet Received: Network Layer Device is Routable forwarding packet.
17:23:20- 389	OFF_R	ARP Discovery Packet	DataLink	Created ARP discovery packet to source MAC address for IP 136.15.32.1
17:23:20- 389	OFF_R	ARP_packet	Network	Sending broadcast packet from Proto-colStack.
17:23:20- 389	OFF_R	Ethernet Packet	Link	Sending packet from interface 9C:59:5D:A0:9C:40
17:23:20- 389	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:23:20- 389	BIG BOSS	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20- 389	BIG BOSS	ARP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20- 389	BIG BOSS	ARP Response Packet	DataLink	Created ARP Response packet to 136.15.63.254
17:23:20- 389	BIG BOSS	ARP_packet	Network	Sending packet from ProtocolStack (to 136.15.63.254).
17:23:20- 389	BIG BOSS	Ethernet Packet	Link	Sending packet from interface C0:52:89:93:86:1B
17:23:20- 389	OFF_R	Ethernet Packet	Link	Recieved and accepted packet at interface 9C:59:5D:A0:9C:40
17:23:20- 389	OFF_R	ARP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20- 389	OFF_R	ARP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20- 389	R2	Ethernet Packet	Link	Recieved and dropped packet at interface 6C:B1:B3:30:1E:84
17:23:20- 389	R2	Ethernet Packet	Link	Recieved and accepted packet at interface 6C:B1:B3:30:1E:84
17:23:20- 389	R2	ARP_packet	Network	ProtocolStack received packet from local Interface.

17:23:20-389	OFF_R	ICMP_packet	Network	Forwarding packet from ProtocolStack(to 136.15.32.1).
17:23:20-389	OFF_R	Ethernet Packet	Link	Sending packet from interface 9C:59:5D:A0:9C:40
17:23:20-389	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:23:20-389	BIG BOSS	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:23:20-389	BIG BOSS	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:23:20-389	BIG BOSS	Echo Reply Packet	Network	Echo reply packet received from 148.92.97.2
17:23:20-389	R2	Ethernet Packet	Link	Recieved and dropped packet at interface 6C:B1:B3:30:1E:84
17:23:20-389	OFFICE1 pc3	Ethernet Packet	Link	Recieved and dropped packet at interface 1B:61:AF:AA:21:99
17:23:20-389	OFFICE1 pc2	Ethernet Packet	Link	Recieved and dropped packet at interface 4D:74:44:3A:2D:C3
17:23:20-389	OFFICE1 pc1	Ethernet Packet	Link	Recieved and dropped packet at interface 1A:32:64:11:B7:1A
17:23:20-389	OFFICE1 pc3	Ethernet Packet	Link	Recieved and dropped packet at interface 1B:61:AF:AA:21:99
17:23:20-389	OFFICE1 pc2	Ethernet Packet	Link	Recieved and dropped packet at interface 4D:74:44:3A:2D:C3
17:23:20-389	OFFICE1 pc1	Ethernet Packet	Link	Recieved and dropped packet at interface 1A:32:64:11:B7:1A
17:23:20-389	BIG BOSS	Ethernet Packet	Link	Recieved and dropped packet at interface C0:52:89:93:86:1B

5. Выполним Echo-запрос с К1 (BIG_BOSS) на IP-адрес 200.100.0.1. В данном случае запрос будет завершен с сообщением ICMP Time Exceeded так как пакет будет зациклено передаваться между OFF_R и R2 (Так как в сети нет устройства с таким IP-адресом). Результат представлен на рисунке 5.

17:26:31-897	R2	Ethernet Packet	Link	Sending packet from interface 6C:B1:B3:30:1E:84
17:26:31-897	OFF_R	Ethernet Packet	Link	Recieved and dropped packet at interface 9C:59:5D:A0:9C:40
17:26:31-897	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:26:31-897	BIG BOSS	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:26:31-897	BIG BOSS	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:26:31-897	BIG BOSS	ICMP Time Exceeded	Network	Recieved ICMP Time Exceeded from 136.15.63.253

Рисунок 5 – Результат выполнения Echo-запроса на несуществующий в сети IP-адрес.

6. Выполним Echo-запросы на все узлы сети с К1 и К2. Результаты представлены на рисунках ниже (см. рис. 6-14). Так как запрос с К1 на К3 и с К1 на К2 рассматривался в 3 и 4 пунктах ниже рассматривать снова их не будем.

17:38:47-797	R2	ICMP_packet	Network	Forwarding packet from ProtocolStack(to 10.10.0.2).
17:38:47-797	R2	Ethernet Packet	Link	Sending packet from interface 4F:72:A2:2F:B9:17
17:38:47-797	M_CH_S	Ethernet Packet	Link	Recieved and accepted packet at interface B6:BF:C6:37:91:B3
17:38:47-797	M_CH_S	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:38:47-797	M_CH_S	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:38:47-797	M_CH_S	Echo Reply Packet	Network	Echo reply packet received from 148.92.96.1

Рисунок 6 – результат Echo-запроса с M_CH_S на OFFICE1 pc3.

17:42:14-443	R2	Ethernet Packet	Link	Sending packet from interface 4F:72:A2:2F:B9:17
17:42:14-443	M_CH_S	Ethernet Packet	Link	Recieved and accepted packet at interface B6:BF:C6:37:91:B3
17:42:14-443	M_CH_S	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:42:14-443	M_CH_S	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:42:14-443	M_CH_S	Echo Reply Packet	Network	Echo reply packet received from 148.92.96.2

Рисунок 7 – результат Echo-запроса с M_CH_S на OFFICE1 pc2.

17:43:37-198	R2	Ethernet Packet	Link	Sending packet from interface 4F:72:A2:2F:B9:17
17:43:37-198	M_CH_S	Ethernet Packet	Link	Recieved and accepted packet at interface B6:BF:C6:37:91:B3
17:43:37-198	M_CH_S	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:43:37-198	M_CH_S	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:43:37-198	M_CH_S	Echo Reply Packet	Network	Echo reply packet received from 148.92.97.1

Рисунок 8 – результат Echo-запроса с M_CH_S на OFFICE1 pc1.

17:44:27-863	R2	Ethernet Packet	Link	Sending packet from interface 4F:72:A2:2F:B9:17
17:44:27-863	M_CH_S	Ethernet Packet	Link	Recieved and accepted packet at interface B6:BF:C6:37:91:B3
17:44:27-863	M_CH_S	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:44:27-863	M_CH_S	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:44:27-863	M_CH_S	Echo Reply Packet	Network	Echo reply packet received from 148.92.97.2

Рисунок 9 – результат Echo-запроса с M_CH_S на OFFICE1 pc4.

17:45:46-546	OFF_R	Ethernet Packet	Link	Sending packet from interface 9C:59:5D:A0:9C:40
17:45:46-546	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:45:46-546	BIG BOSS	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:45:46-546	BIG BOSS	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:45:46-546	BIG BOSS	Echo Reply Packet	Network	Echo reply packet received from 148.92.97.1

Рисунок 10 – результат Echo-запроса с BIG_BOSS на OFFICE1 pc1.

17:46:46-061	OFF_R	Ethernet Packet	Link	Sending packet from interface 9C:59:5D:A0:9C:40
17:46:46-061	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:46:46-061	BIG BOSS	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:46:46-061	BIG BOSS	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:46:46-061	BIG BOSS	Echo Reply Packet	Network	Echo reply packet received from 148.92.96.2

Рисунок 11 – результат Echo-запроса с BIG_BOSS на OFFICE1 pc2.

17:47:29-190	OFF_R	Ethernet Packet	Link	Sending packet from interface 9C:59:5D:A0:9C:40
17:47:29-190	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:47:29-190	BIG BOSS	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:47:29-190	BIG BOSS	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:47:29-190	BIG BOSS	Echo Reply Packet	Network	Echo reply packet received from 148.92.96.1

Рисунок 12 – результат Echo-запроса с BIG_BOSS на OFFICE1 pc3.

17:48:05-940	OFF_R	Ethernet Packet	Link	Sending packet from interface 9C:59:5D:A0:9C:40
17:48:05-940	BIG BOSS	Ethernet Packet	Link	Recieved and accepted packet at interface C0:52:89:93:86:1B
17:48:05-940	BIG BOSS	ICMP_packet	Network	ProtocolStack received packet from local Interface.
17:48:05-940	BIG BOSS	ICMP_packet	Network	Confirmed Packet is for this Network Layer Device.
17:48:05-940	BIG BOSS	Echo Reply Packet	Network	Echo reply packet received from 148.92.97.2

Рисунок 13 – результат Echo-запроса с BIG_BOSS на OFFICE1 pc4.

Выводы

В ходе выполнения лабораторной работы была настроена сеть в среде JavaNetSim, работоспособность была проверена с помощью отправления Echo-запросов между узлами. Также осуществлено добавление статической записи в ARP-таблицу и последующее сравнение процессов выполнения Echo-запросов с данной записью и без нее.