

Лабораторная работа

1. Мониторинг с помощью сниффера Wireshark

Wireshark – программа-анализатор трафика для компьютерных сетей Ethernet и некоторых других.

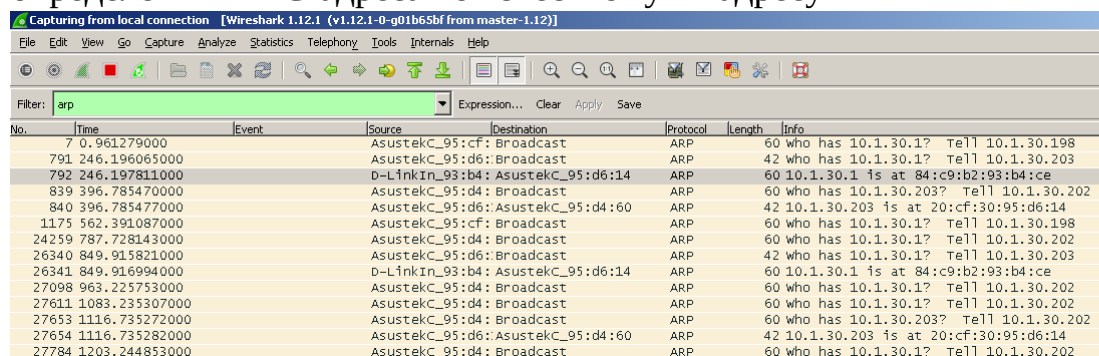
Это приложение, которое «знает» структуру самых различных сетевых протоколов, и поэтому позволяет разобрать сетевой пакет, отображая значение каждого поля протокола любого уровня.

Цель: ознакомиться с работой программы Wireshark, найти и проанализировать посылаемые запросы. Научиться составлять фильтры.

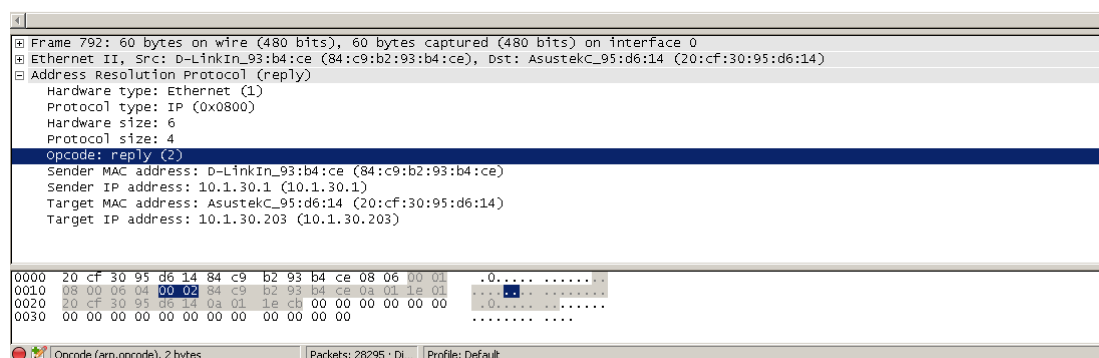
Найти следующие протоколы:

1.1 ARP;

ARP — протокол в компьютерных сетях, предназначенный для определения MAC-адреса по известному IP-адресу



No.	Time	Event	Source	Destination	Protocol	Length	Info
7	0.961279000		AsustekC_95:cf: Broadcast		ARP	60	who has 10.1.30.1? Tell 10.1.30.198
791	246.196065000		AsustekC_95:d6: Broadcast		ARP	42	who has 10.1.30.1? Tell 10.1.30.203
792	246.197811000		D-LinkIn_93:b4: AsustekC_95:d6:14		ARP	60	10.1.30.1 is at 84:c9:b2:93:b4:ce
839	396.785470000		AsustekC_95:d4: Broadcast		ARP	60	who has 10.1.30.203? Tell 10.1.30.202
840	396.785477000		AsustekC_95:d6: AsustekC_95:d4:60		ARP	42	10.1.30.203 is at 20:cf:30:95:d6:14
1175	562.391087000		AsustekC_95:cf: Broadcast		ARP	60	who has 10.1.30.1? Tell 10.1.30.198
24259	787.728143000		AsustekC_95:d4: Broadcast		ARP	60	who has 10.1.30.1? Tell 10.1.30.202
26340	849.915821000		AsustekC_95:d6: Broadcast		ARP	42	who has 10.1.30.1? Tell 10.1.30.203
26341	849.916994000		D-LinkIn_93:b4: AsustekC_95:d6:14		ARP	60	10.1.30.1 is at 84:c9:b2:93:b4:ce
27098	963.225753000		AsustekC_95:d4: Broadcast		ARP	60	who has 10.1.30.1? Tell 10.1.30.202
27611	1083.235307000		AsustekC_95:d4: Broadcast		ARP	60	who has 10.1.30.1? Tell 10.1.30.202
27653	1116.735272000		AsustekC_95:d4: Broadcast		ARP	60	who has 10.1.30.203? Tell 10.1.30.202
27654	1116.735282000		AsustekC_95:d6: AsustekC_95:d4:60		ARP	42	10.1.30.203 is at 20:cf:30:95:d6:14
27784	1203.244853000		AsustekC_95:d4: Broadcast		ARP	60	who has 10.1.30.1? Tell 10.1.30.202



Offset	Hex	ASCII
0000	20 cf 30 95 d6 14 84 c9 b2 93 b4 ce 08 06 00 01	.0.....
0010	08 00 06 04 00 02 84 c9 b2 93 b4 ce 0a 01 1e 01
0020	20 cf 30 95 d6 14 0a 01 1e cb 00 00 00 00 00 00	.0.....
0030	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Frame 792: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0
 Ethernet II, Src: D-LinkIn_93:b4:ce (84:c9:b2:93:b4:ce), Dst: AsustekC_95:d6:14 (20:cf:30:95:d6:14)
 Address Resolution Protocol (reply)
 Hardware type: Ethernet (1)
 Protocol type: IP (0x0800)
 Hardware size: 6
 Protocol size: 4
 Opcode: reply (2)
 Sender MAC address: D-LinkIn_93:b4:ce (84:c9:b2:93:b4:ce)
 Sender IP address: 10.1.30.1 (10.1.30.1)
 Target MAC address: AsustekC_95:d6:14 (20:cf:30:95:d6:14)
 Target IP address: 10.1.30.203 (10.1.30.203)

Opcode (arp.opcode), 2 bytes | Packets: 28295 | Profile: Default

1.2 HTTP (запрос и ответ);

HTTP — протокол передачи данных.

Capturing from local connection [Wireshark 1.12.1 (v1.12.1-0-g01b65bf from master-1.12)]

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Filter: **http** Expression... Clear Apply Save

No.	Time	Event	Source	Destination	Protocol	Length	Info
970	506.302584000		192.168.187.6	10.1.30.203	HTTP	1409	HTTP/1.1 407 Proxy Authentication Required (text/html)
976	506.649536000		10.1.30.203	192.168.187.6	HTTP	256	CONNECT aus5.mozilla.org:443 HTTP/1.1
981	506.701217000		192.168.187.6	10.1.30.203	HTTP	1186	HTTP/1.1 407 Proxy Authentication Required (text/html)
987	506.966830000		10.1.30.203	192.168.187.6	HTTP	272	CONNECT snippets.cdn.mozilla.net:443 HTTP/1.1
992	506.968171000		192.168.187.6	10.1.30.203	HTTP	1218	HTTP/1.1 407 Proxy Authentication Required (text/html)
998	509.139542000		10.1.30.203	192.168.187.6	HTTP	278	CONNECT shavar.services.mozilla.com:443 HTTP/1.1
1003	509.141221000		192.168.187.6	10.1.30.203	HTTP	1230	HTTP/1.1 407 Proxy Authentication Required (text/html)
1009	511.079879000		10.1.30.203	192.168.187.6	HTTP	391	GET http://detectportal.firefox.com/success.txt HTTP/1.1
1014	511.080828000		10.1.30.203	192.168.187.6	HTTP	391	GET http://detectportal.firefox.com/success.txt HTTP/1.1
1018	511.081384000		192.168.187.6	10.1.30.203	HTTP	1409	HTTP/1.1 407 Proxy Authentication Required (text/html)
1024	511.082323000		192.168.187.6	10.1.30.203	HTTP	1409	HTTP/1.1 407 Proxy Authentication Required (text/html)
1030	511.339843000		10.1.30.203	192.168.187.6	HTTP	260	CONNECT suggest.yandex.net:443 HTTP/1.1
1035	511.341734000		192.168.187.6	10.1.30.203	HTTP	1194	HTTP/1.1 407 Proxy Authentication Required (text/html)
1039	513.922570000		10.1.30.203	192.168.187.6	HTTP	260	CONNECT suggest.yandex.net:443 HTTP/1.1
1043	513.922727000		192.168.187.6	10.1.30.203	HTTP	1194	HTTP/1.1 407 Proxy Authentication Required (text/html)
1047	516.095902000		10.1.30.203	192.168.187.6	HTTP	391	GET http://detectportal.firefox.com/success.txt HTTP/1.1
1048	516.096002000		10.1.30.203	192.168.187.6	HTTP	391	GET http://detectportal.firefox.com/success.txt HTTP/1.1
1053	516.097176000		10.1.30.203	192.168.187.6	HTTP	391	GET http://detectportal.firefox.com/success.txt HTTP/1.1
1060	516.097862000		192.168.187.6	10.1.30.203	HTTP	1409	HTTP/1.1 407 Proxy Authentication Required (text/html)
1062	516.097983000		192.168.187.6	10.1.30.203	HTTP	1409	HTTP/1.1 407 Proxy Authentication Required (text/html)
1068	516.098745000		192.168.187.6	10.1.30.203	HTTP	1409	HTTP/1.1 407 Proxy Authentication Required (text/html)
1072	516.382706000		10.1.30.203	192.168.187.6	HTTP	260	CONNECT suggest.yandex.net:443 HTTP/1.1
1076	516.384454000		192.168.187.6	10.1.30.203	HTTP	1194	HTTP/1.1 407 Proxy Authentication Required (text/html)
1078	516.897553000		10.1.30.203	192.168.187.6	HTTP	260	CONNECT suggest.yandex.net:443 HTTP/1.1
1082	516.899428000		192.168.187.6	10.1.30.203	HTTP	1194	HTTP/1.1 407 Proxy Authentication Required (text/html)
1084	517.411811000		10.1.30.203	192.168.187.6	HTTP	260	CONNECT suggest.yandex.net:443 HTTP/1.1
1088	517.413345000		192.168.187.6	10.1.30.203	HTTP	1194	HTTP/1.1 407 Proxy Authentication Required (text/html)
1090	517.928211000		10.1.30.203	192.168.187.6	HTTP	260	CONNECT suggest.yandex.net:443 HTTP/1.1
1094	517.928730000		192.168.187.6	10.1.30.203	HTTP	1194	HTTP/1.1 407 Proxy Authentication Required (text/html)
1100	518.328764000		10.1.30.203	192.168.187.6	HTTP	242	CONNECT yandex.ru:443 HTTP/1.1
1105	518.330828000		192.168.187.6	10.1.30.203	HTTP	1158	HTTP/1.1 407 Proxy Authentication Required (text/html)
1121	534.344953000		10.1.30.203	192.168.187.6	HTTP	280	CONNECT blocklist.addons.mozilla.org:443 HTTP/1.1
1125	534.345615000		10.1.30.203	192.168.187.6	HTTP	208	CONNECT firefox.settings.services.mozilla.com:443 HTTP/1.1

Frame 970: 1409 bytes on wire (11272 bits), 1409 bytes captured (11272 bits) on interface 0
 Ethernet II, Src: D-Linkin_93:b4:ce (84:c9:b2:93:b4:ce), Dst: AsustekC_95:d6:14 (20:cf:30:95:d6:14)
 Internet Protocol Version 4, Src: 192.168.187.6 (192.168.187.6), Dst: 10.1.30.203 (10.1.30.203)
 Transmission Control Protocol, Src Port: 3128 (3128), Dst Port: 1092 (1092), Seq: 2921, Ack: 338, Len: 1355
 [3 Reassembled TCP segments (4275 bytes): #967(1460), #968(1460), #970(1355)]
 Hypertext Transfer Protocol
 Line-based text data: text/html

0000 20 cf 30 95 d6 14 84 c9 b2 93 b4 ce 08 00 45 00 ...0.....E.
 0010 09 73 58 a4 40 00 3e 08 3c 26 c0 a8 bb 09 0a 01 ...SV@...K.....
 0020 1e cb 0c 38 04 44 50 f9 27 5b 10 d5 42 49 50 18 ...8DP: [...]BIP.
 0030 76 40 b6 30 00 00 00 00 00 00 00 00 00 00 00
 0040 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Frame 1409 bytes [Reassembled TCP (4275 bytes)]

local connection: c:\live capture in progress> File: ... Packets: 29503 · Di... Profile: Default

1.3 DNS;

Capturing from local connection [Wireshark 1.12.1 (v1.12.1-0-g01b65bf from master-1.12)]

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Filter: **dns** Expression... Clear Apply Save

No.	Time	Event	Source	Destination	Protocol	Length	Info
915	505.418718000		10.1.30.203	10.0.0.31	DNS	69	Standard query 0x7f07 AAAA wpad.ystu
916	505.419246000		10.0.0.31	10.1.30.203	DNS	126	Standard query response 0x7f07
917	505.419326000		10.1.30.203	10.0.0.31	DNS	69	Standard query 0xf7bd AAAA wpad.ystu
918	505.419882000		10.0.0.31	10.1.30.203	DNS	126	Standard query response 0xf7bd
919	505.420353000		10.1.30.203	10.0.0.31	DNS	69	Standard query 0x16c6 A wpad.ystu
920	505.420987000		10.0.0.31	10.1.30.203	DNS	119	Standard query response 0x16c6 A 10.0.0.1
927	505.422593000		10.1.30.203	10.0.0.31	DNS	69	Standard query 0xfecd A wpad.ystu
929	505.432003000		10.0.0.31	10.1.30.203	DNS	119	Standard query response 0xfecd A 10.0.0.1
930	505.432399000		10.1.30.203	10.0.0.31	DNS	69	Standard query 0xd6c6 AAAA wpad.ystu
931	505.432899000		10.0.0.31	10.1.30.203	DNS	126	Standard query response 0xd6c6
932	505.476534000		10.1.30.203	10.0.0.31	DNS	70	Standard query 0x4b9c AAAA proxy.ystu
933	505.477137000		10.0.0.31	10.1.30.203	DNS	127	Standard query response 0x4b9c
934	505.477295000		10.1.30.203	10.0.0.31	DNS	70	Standard query 0xc166 A proxy.ystu
935	505.477653000		10.0.0.31	10.1.30.203	DNS	120	Standard query response 0xc166 A 192.168.187.6

Frame 935: 120 bytes on wire (960 bits), 120 bytes captured (960 bits) on interface 0
 Ethernet II, Src: D-Linkin_93:b4:ce (84:c9:b2:93:b4:ce), Dst: AsustekC_95:d6:14 (20:cf:30:95:d6:14)
 Internet Protocol Version 4, Src: 10.0.0.31 (10.0.0.31), Dst: 10.1.30.203 (10.1.30.203)
 User Datagram Protocol, Src Port: 53 (53), Dst Port: 1027 (1027)
 Domain Name System (response)

0000 20 cf 30 95 d6 14 84 c9 b2 93 b4 ce 08 00 45 00 ...0.....E.
 0010 00 6a 61 4d 00 00 3f 11 e7 4b 0a 00 00 1f 0a 01 ...Jam.?.K.....
 0020 1e cb 0d 35 04 03 00 56 b2 79 c1 66 85 80 00 01 ...S...V...y.F....
 0030 00 01 00 01 00 01 05 70 72 6f 78 79 04 79 73 74p roxy.yst
 0040 75 00 00 01 00 01 c0 0c 00 01 00 01 00 01 51 80 u.....Q.....
 0050 00 04 c0 a8 bb 06 c0 12 00 02 00 01 00 01 51 80Q.....
 0060 00 06 03 6e 73 31 c0 12 c0 38 00 01 00 01 00 01ns1...8.....
 0070 51 80 00 04 0a 00 00 1f c0 38 00 01 00 01 00 01 Q.....

1.4 TCP;

TCP - это протокол транспортного уровня, предоставляющий транспортировку (передачу) потока данных, с необходимостью предварительного установления соединения, благодаря чему гарантирует уверенность в целостности получаемых данных, также выполняет повторный запрос данных в случае потери данных или искажения.

Filter: tcp

No.	Time	Event	Source	Destination	Protocol	Length	Info
2	0.000017000		10.1.30.203	192.168.187.6	TCP	220	[TCP segment of a reassembled PDU]
3	0.000039000		10.1.30.203	192.168.187.6	TCP	85	[TCP segment of a reassembled PDU]
4	0.000886000		192.168.187.6	10.1.30.203	TCP	60	3128-1433 [ACK] Seq=1 Ack=1627 Win=65535 Len=0
5	0.018532000		192.168.187.6	10.1.30.203	TCP	88	[TCP segment of a reassembled PDU]
6	0.027187000		192.168.187.6	10.1.30.203	TCP	143	[TCP segment of a reassembled PDU]
7	0.027214000		10.1.30.203	192.168.187.6	TCP	54	1433-3128 [ACK] Seq=1658 Ack=124 Win=64713 Len=0
8	0.519977000		10.1.30.203	192.168.187.6	TCP	55	1491-3128 [ACK] Seq=1 Ack=1 Win=64610 Len=1
9	0.520443000		192.168.187.6	10.1.30.203	TCP	66	3128-1491 [ACK] Seq=1 Ack=2 Win=31978 Len=0 SLE=1 SRE=2
10	0.620555000		10.1.30.203	192.168.187.6	TCP	55	1490-3128 [ACK] Seq=1 Ack=1 Win=64610 Len=1
11	0.620571000		10.1.30.203	192.168.187.6	TCP	55	1489-3128 [ACK] Seq=1 Ack=1 Win=65535 Len=1
12	0.620908000		192.168.187.6	10.1.30.203	TCP	66	3128-1490 [ACK] Seq=1 Ack=2 Win=31978 Len=0 SLE=1 SRE=2
13	0.620916000		192.168.187.6	10.1.30.203	TCP	66	3128-1489 [ACK] Seq=1 Ack=2 Win=33062 Len=0 SLE=1 SRE=2
14	0.721146000		10.1.30.203	192.168.187.6	TCP	55	1492-3128 [ACK] Seq=1 Ack=1 Win=65535 Len=1
15	0.721922000		192.168.187.6	10.1.30.203	TCP	66	3128-1492 [ACK] Seq=1 Ack=2 Win=30894 Len=0 SLE=1 SRE=2

Frame 1: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface 0
 Ethernet II, Src: AsustekC_95:d6:14 (20:cf:30:95:d6:14), Dst: d-Linkin_93:b4:ce (84:c9:b2:93:b4:ce)
 Internet Protocol Version 4, Src: 10.1.30.203 (10.1.30.203), Dst: 192.168.187.6 (192.168.187.6)
 Transmission Control Protocol, Src Port: 1433 (1433), Dst Port: 3128 (3128), Seq: 1, Ack: 1, Len: 1460
 Tabular Data Stream

1.5 UDP

UDP это протокол транспортного уровня стека протоколов TCP/IP. В отличие от TCP протокол UDP надежные доставки данных не обеспечивает.

Filter: udp

No.	Time	Event	Source	Destination	Protocol	Length	Info
9379	721.797419000		10.1.30.184	10.1.30.203	UDP	112	Source port: 59777 Destination port: 2090
9380	721.797447000		10.1.30.203	10.1.30.184	ICMP	190	Destination unreachable (Port unreachable)
9382	722.799006000		10.1.30.184	10.1.30.203	UDP	112	Source port: 41217 Destination port: 2090
9383	722.799035000		10.1.30.203	10.1.30.184	ICMP	190	Destination unreachable (Port unreachable)
9385	723.799787000		10.1.30.184	10.1.30.203	UDP	112	Source port: 36680 Destination port: 2090
9386	723.799816000		10.1.30.203	10.1.30.184	ICMP	190	Destination unreachable (Port unreachable)
9389	724.801380000		10.1.30.184	10.1.30.203	UDP	112	Source port: 46404 Destination port: 2090
9390	724.801411000		10.1.30.203	10.1.30.184	ICMP	190	Destination unreachable (Port unreachable)
9392	725.802968000		10.1.30.184	10.1.30.203	UDP	112	Source port: 47166 Destination port: 2090
9393	725.802997000		10.1.30.203	10.1.30.184	ICMP	190	Destination unreachable (Port unreachable)

Frame 9389: 112 bytes on wire (896 bits), 112 bytes captured (896 bits) on interface 0
 Ethernet II, Src: AsustekC_ec:25:20 (48:5b:39:ec:25:20), Dst: AsustekC_95:d6:14 (20:cf:30:95:d6:14)
 Internet Protocol Version 4, Src: 10.1.30.184 (10.1.30.184), Dst: 10.1.30.203 (10.1.30.203)
 User Datagram Protocol, Src Port: 46404 (46404), Dst Port: 2090 (2090)
 Data (1550 bytes)

0000 20 cf 30 95 d6 14 48 5b 39 ec 25 20 08 00 45 00 .0...H[9.%...E.
 0010 00 62 cc df 00 b9 40 11 5b 6e 0a 01 1e b8 0a 01 .b....@. [n.....
 0020 1e cb f4 2c a5 c3 db 53 3e e2 e7 45 a2 72 1d 10S >..E.r...
 0030 d4 6d d8 cd 00 f0 43 62 d2 e9 15 01 e1 f5 1b f3 .m....CB
 0040 ff 03 f3 c2 90 b9 a7 a3 10 2f 8e a8 47 1a 6e 7e/.G.n...
 0050 b0 49 f9 ea 27 b4 79 51 15 d5 36 4b 1f d8 88 b2 .I...yQ ..6K....
 0060 d6 11 23 4d 0c f4 cf bb 81 bb d4 7f 1f 24 95 0e .#M.....\$....

1.6 Telnet;

Telnet — это текстовый сетевой протокол, который позволяет клиенту общаться с удаленным компьютером.

Для отправления сообщений по протоколу Telnet используйте утилиту Telnet

Filter: telnet

No.	Time	Event	Source	Destination	Protocol	Length	Info
17163	1891.504208000		10.1.30.1	10.1.30.203	TELNET	66	Telnet Data ...
17164	1891.504271000		10.1.30.203	10.1.30.1	TELNET	60	Telnet Data ...
17166	1891.505940000		10.1.30.203	10.1.30.1	TELNET	63	Telnet Data ...
17167	1891.506126000		10.1.30.1	10.1.30.203	TELNET	60	Telnet Data ...
17169	1891.507449000		10.1.30.203	10.1.30.1	TELNET	63	Telnet Data ...
17170	1891.508950000		10.1.30.1	10.1.30.203	TELNET	66	Telnet Data ...
17171	1891.508994000		10.1.30.203	10.1.30.1	TELNET	60	Telnet Data ...
17173	1891.510396000		10.1.30.203	10.1.30.1	TELNET	64	Telnet Data ...
17174	1891.532214000		10.1.30.1	10.1.30.203	TELNET	66	Telnet Data ...
17175	1891.532257000		10.1.30.203	10.1.30.1	TELNET	57	Telnet Data ...
17177	1891.745208000		10.1.30.203	10.1.30.1	TELNET	63	Telnet Data ...
17178	1891.746794000		10.1.30.1	10.1.30.203	TELNET	88	Telnet Data ...
17179	1891.746863000		10.1.30.203	10.1.30.1	TELNET	57	Telnet Data ...
17181	1891.852192000		10.1.30.203	10.1.30.1	TELNET	57	Telnet Data ...
17183	1893.130879000		10.1.30.1	10.1.30.203	TELNET	60	Telnet Data ...
17185	1893.253563000		10.1.30.1	10.1.30.203	TELNET	92	Telnet Data ...

Frame 17163: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface 0

Ethernet II, Src: D-LinkIn_93:b4:ce (84:c9:b2:93:b4:ce), Dst: AsustekC_95:d6:14 (20:cf:30:95:d6:14)

Internet Protocol Version 4, Src: 10.1.30.1 (10.1.30.1), Dst: 10.1.30.203 (10.1.30.203)

Transmission Control Protocol, Src Port: 23 (23), Dst Port: 1731 (1731), Seq: 1, Ack: 1, Len: 12

Telnet

```

0000  20 c9 30 95 d6 14 84 c9 b2 93 b4 ce 08 00 45 10  .0.....E.
0010  00 34 b2 83 00 00 40 06 77 63 0a 01 1e 01 0a 01  .4.....@. wc.....
0020  1e cb 00 17 06 c3 1e ce 1e 83 34 bd 77 63 50 18  .....4.wcP.
0030  ff ff 37 64 00 00 ff fd 18 ff fd 20 ff fd 23 ff  .7d.... ..#.
0040  fd 27

```

Найти и разобрать протоколы утилит:

2.1 ping; (изучить протокол ICMP)

Filter: icmp

No.	Time	Event	Source	Destination	Protocol	Length	Info
10	17.297341000		10.1.30.203	10.1.30.1	ICMP	74	Echo (ping) request id=0x0200, seq=2560/10, ttl=128 (reply in ...)
11	17.298464000		10.1.30.1	10.1.30.203	ICMP	74	Echo (ping) reply id=0x0200, seq=2560/10, ttl=64 (request in ...)
19	18.285753000		10.1.30.203	10.1.30.1	ICMP	74	Echo (ping) request id=0x0200, seq=2816/11, ttl=128 (no response in ...)
20	18.286874000		10.1.30.1	10.1.30.203	ICMP	74	Echo (ping) reply id=0x0200, seq=2816/11, ttl=64 (request in ...)
21	19.285720000		10.1.30.203	10.1.30.1	ICMP	74	Echo (ping) request id=0x0200, seq=3072/12, ttl=128 (reply in ...)
22	19.287200000		10.1.30.1	10.1.30.203	ICMP	74	Echo (ping) reply id=0x0200, seq=3072/12, ttl=64 (request in ...)
24	20.285706000		10.1.30.203	10.1.30.1	ICMP	74	Echo (ping) request id=0x0200, seq=3328/13, ttl=128 (reply in ...)
25	20.287217000		10.1.30.1	10.1.30.203	ICMP	74	Echo (ping) reply id=0x0200, seq=3328/13, ttl=64 (request in ...)

Frame 10: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface 0

Ethernet II, Src: AsustekC_95:d6:14 (20:cf:30:95:d6:14), Dst: D-LinkIn_93:b4:ce (84:c9:b2:93:b4:ce)

Internet Protocol Version 4, Src: 10.1.30.203 (10.1.30.203), Dst: 10.1.30.1 (10.1.30.1)

Internet Control Message Protocol

```

0000  84 c9 b2 93 b4 ce 20 c9 30 95 d6 14 08 00 45 00  .....0.....E.
0010  00 3c 55 59 00 00 80 01 94 9a 0a 01 1e cb 0a 01  .<UY.....
0020  1e 01 08 00 41 5c 02 00 0a 00 61 62 63 64 65 66  .:A...:abcde
0030  67 68 69 6a 6b 6c 6d 6e 6f 70 71 72 73 74 75 76  .ghijklmnopqrstu
0040  77 61 62 63 64 65 66 67 68 69 6a 6b 6c 6d 6e 6f  .wabcdeghij

```

C:\WINDOWS\system32\cmd.exe

```

C:\Documents and Settings\Администратор>ping 10.1.30.1

Обмен пакетами с 10.1.30.1 по 32 байт:

Ответ от 10.1.30.1: число байт=32 время=1мс TTL=64
Ответ от 10.1.30.1: число байт=32 время=1мс TTL=64
Ответ от 10.1.30.1: число байт=32 время=1мс TTL=64
Ответ от 10.1.30.1: число байт=32 время=1мс TTL=64

Статистика Ping для 10.1.30.1:
    Пакетов: отправлено = 4, получено = 4, потеряно = 0 (0% потерь).
Приведительное время приема-передачи в мс:
    Минимальное = 1 мсек, Максимальное = 1 мсек, Среднее = 1 мсек
C:\Documents and Settings\Администратор>

```