利用Wireshark进行抓包

1.实验所需软件

Wireshark

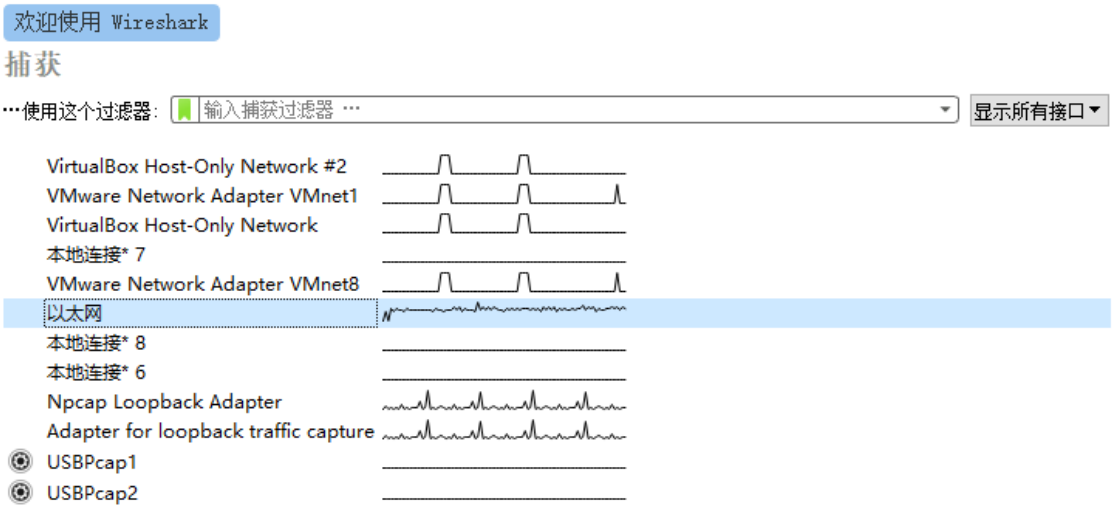
2.实验目的

使用工具Wireshark进行抓包

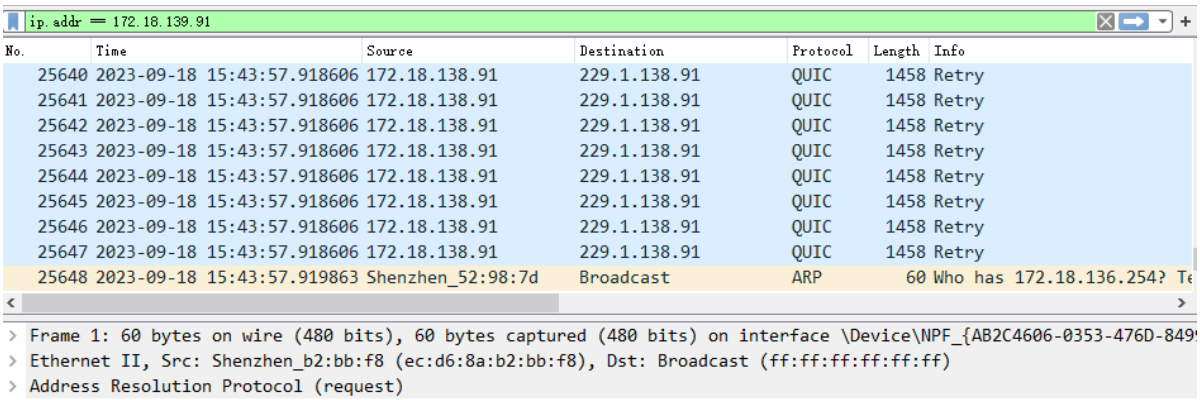
3.实验步骤

1.筛选出ip地址为172.18.139.91的数据包

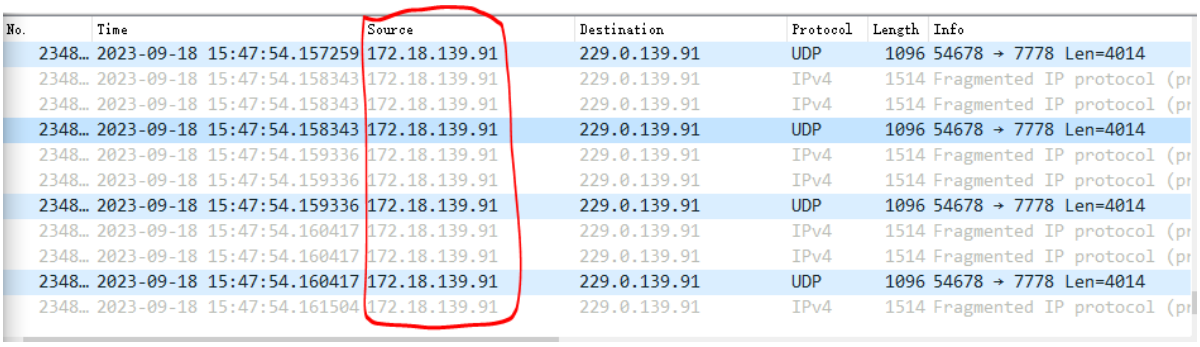
(1)打开Wireshark选择以太网



(2)搜索栏输入ip.addr == 172.18.139.91(背景为淡绿色是语法正确 否则就是语法有问题)



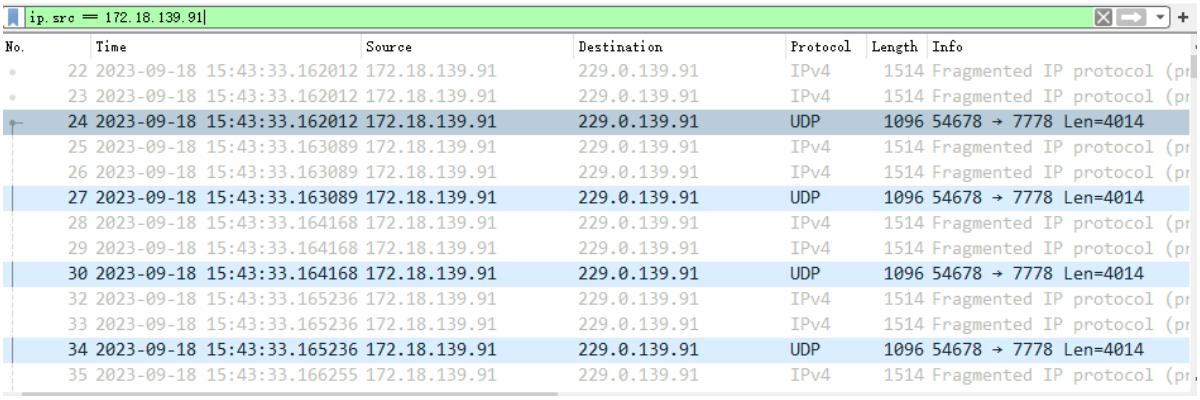
(3)输入完毕后回车查看 此时可以看见ip地址都是172.18.139.91



No.	Time	Source	Destination	Protocol	Length	Info
2348…	2023-09-18 15:47:54.157259	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
2348…	2023-09-18 15:47:54.158343	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
2348…	2023-09-18 15:47:54.158343	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
2348…	2023-09-18 15:47:54.158343	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
2348…	2023-09-18 15:47:54.159336	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
2348…	2023-09-18 15:47:54.159336	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
2348…	2023-09-18 15:47:54.159336	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
2348…	2023-09-18 15:47:54.160417	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
2348…	2023-09-18 15:47:54.160417	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
2348…	2023-09-18 15:47:54.160417	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
2348…	2023-09-18 15:47:54.161504	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr

2.筛选出源ip地址为172.18.139.91 的数据包

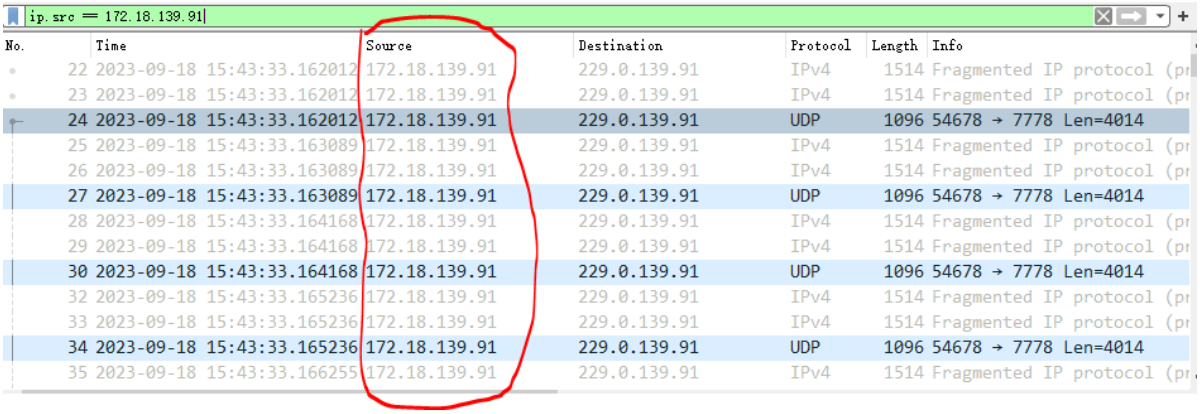
(1)搜索栏输入ip.src == 172.18.139.91 (背景为淡绿色是语法正确 否则就是语法有问题)



ip.src == 172.18.139.91

No.	Time	Source	Destination	Protocol	Length	Info
22	2023-09-18 15:43:33.162012	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
23	2023-09-18 15:43:33.162012	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
24	2023-09-18 15:43:33.162012	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
25	2023-09-18 15:43:33.163089	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
26	2023-09-18 15:43:33.163089	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
27	2023-09-18 15:43:33.163089	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
28	2023-09-18 15:43:33.164168	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
29	2023-09-18 15:43:33.164168	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
30	2023-09-18 15:43:33.164168	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
32	2023-09-18 15:43:33.165236	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
33	2023-09-18 15:43:33.165236	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
34	2023-09-18 15:43:33.165236	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
35	2023-09-18 15:43:33.166255	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr

(2)输入完毕后回车查看 此时可以看见源ip地址为172.18.139.91

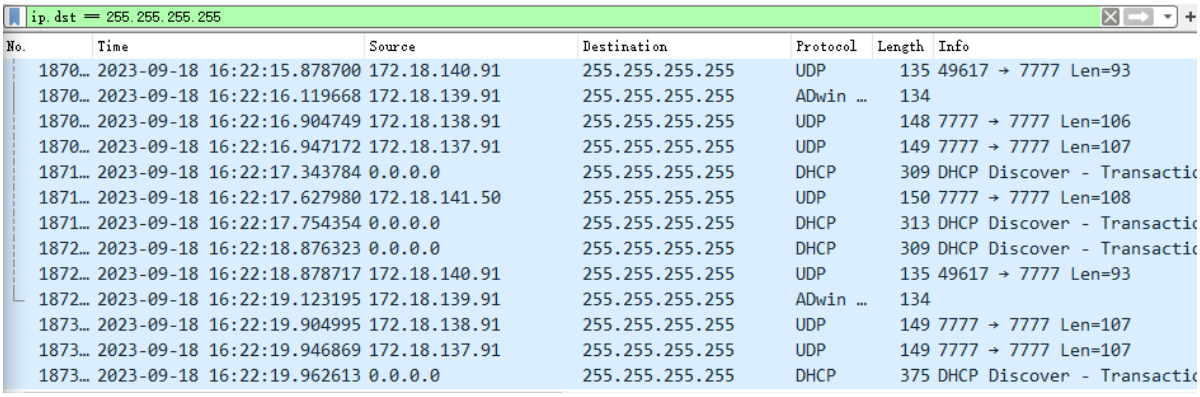


ip.src == 172.18.139.91

No.	Time	Source	Destination	Protocol	Length	Info
22	2023-09-18 15:43:33.162012	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
23	2023-09-18 15:43:33.162012	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
24	2023-09-18 15:43:33.162012	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
25	2023-09-18 15:43:33.163089	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
26	2023-09-18 15:43:33.163089	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
27	2023-09-18 15:43:33.163089	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
28	2023-09-18 15:43:33.164168	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
29	2023-09-18 15:43:33.164168	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
30	2023-09-18 15:43:33.164168	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
32	2023-09-18 15:43:33.165236	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
33	2023-09-18 15:43:33.165236	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr
34	2023-09-18 15:43:33.165236	172.18.139.91	229.0.139.91	UDP	1096	54678 → 7778 Len=4014
35	2023-09-18 15:43:33.166255	172.18.139.91	229.0.139.91	IPv4	1514	Fragmented IP protocol (pr

3.筛选出目标ip地址为255.255.255.255的数据包

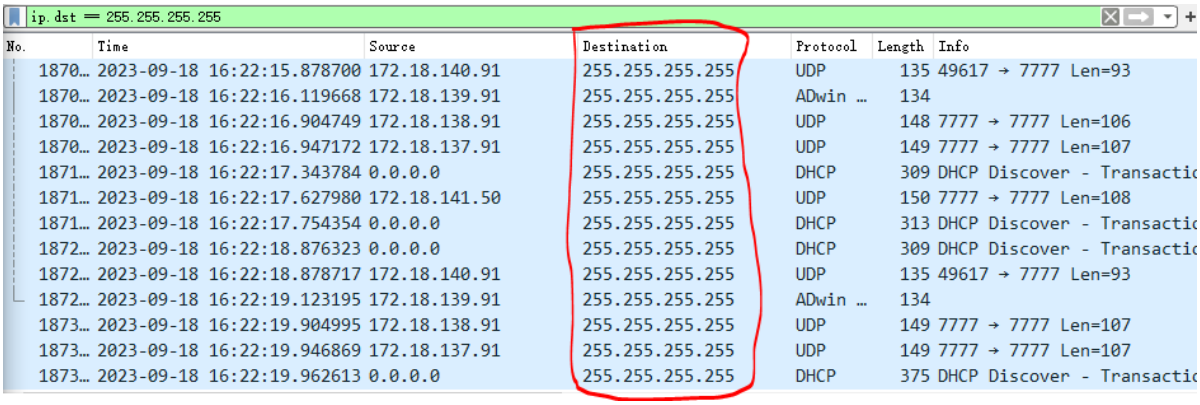
(1)搜索栏输入ip.dst == 255.255.255.255 (背景为淡绿色是语法正确 否则就是语法有问题)



ip.dst == 255.255.255.255

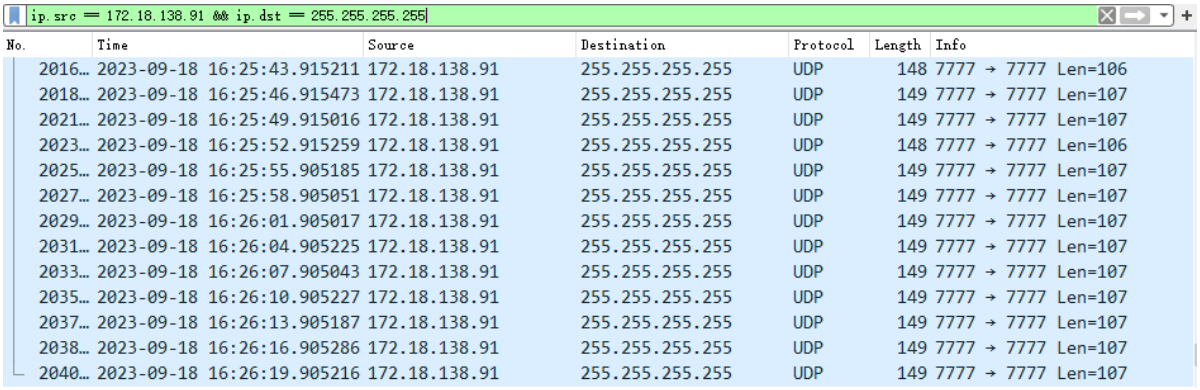
No.	Time	Source	Destination	Protocol	Length	Info
1870…	2023-09-18 16:22:15.878700	172.18.140.91	255.255.255.255	UDP	135	49617 → 7777 Len=93
1870…	2023-09-18 16:22:16.119668	172.18.139.91	255.255.255.255	ADwin …	134	
1870…	2023-09-18 16:22:16.904749	172.18.138.91	255.255.255.255	UDP	148	7777 → 7777 Len=106
1870…	2023-09-18 16:22:16.947172	172.18.137.91	255.255.255.255	UDP	149	7777 → 7777 Len=107
1871…	2023-09-18 16:22:17.343784	0.0.0.0	255.255.255.255	DHCP	309	DHCP Discover - Transactio
1871…	2023-09-18 16:22:17.627980	172.18.141.50	255.255.255.255	UDP	150	7777 → 7777 Len=108
1871…	2023-09-18 16:22:17.754354	0.0.0.0	255.255.255.255	DHCP	313	DHCP Discover - Transactio
1872…	2023-09-18 16:22:18.876323	0.0.0.0	255.255.255.255	DHCP	309	DHCP Discover - Transactio
1872…	2023-09-18 16:22:18.878717	172.18.140.91	255.255.255.255	UDP	135	49617 → 7777 Len=93
1872…	2023-09-18 16:22:19.123195	172.18.139.91	255.255.255.255	ADwin …	134	
1873…	2023-09-18 16:22:19.904995	172.18.138.91	255.255.255.255	UDP	149	7777 → 7777 Len=107
1873…	2023-09-18 16:22:19.946869	172.18.137.91	255.255.255.255	UDP	149	7777 → 7777 Len=107
1873…	2023-09-18 16:22:19.962613	0.0.0.0	255.255.255.255	DHCP	375	DHCP Discover - Transactio

(2)输入完毕后回车查看 此时可以看见目标ip地址为255.255.255.255的数据包



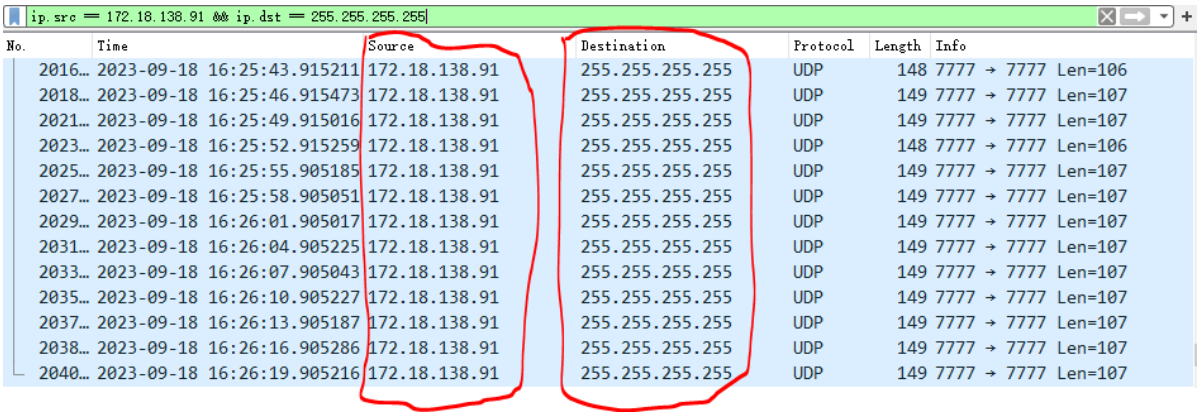
4.筛选出源ip地址为172.18.138.91 目标ip地址为255.255.255.255的数据包

(1)搜索栏输入ip.src == 172.18.138.91 && ip.dst == 255.255.255.255 (背景为淡绿色是语法正确 否则就是语法有问题)



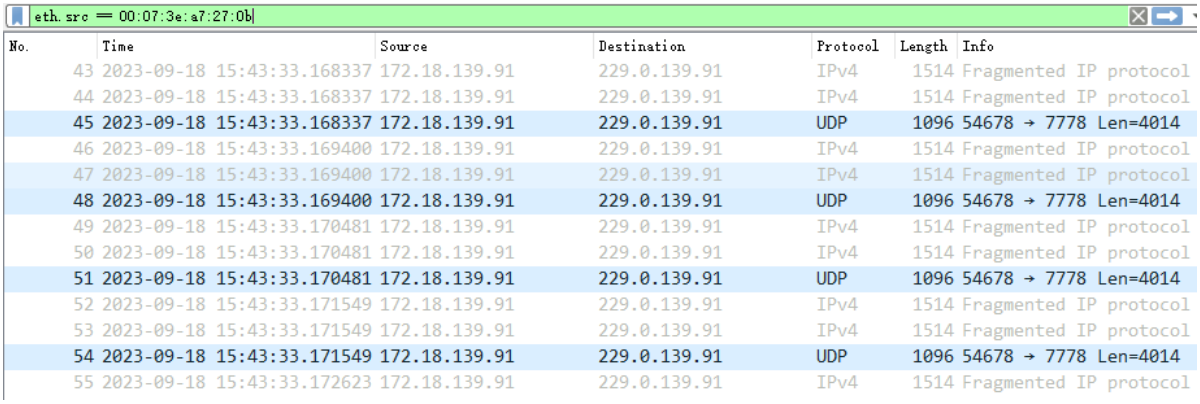
(2)输入完毕后回车查看 此时可以看见源ip地址为172.18.138.91 目标地址为255.255.255.255的数据包

![

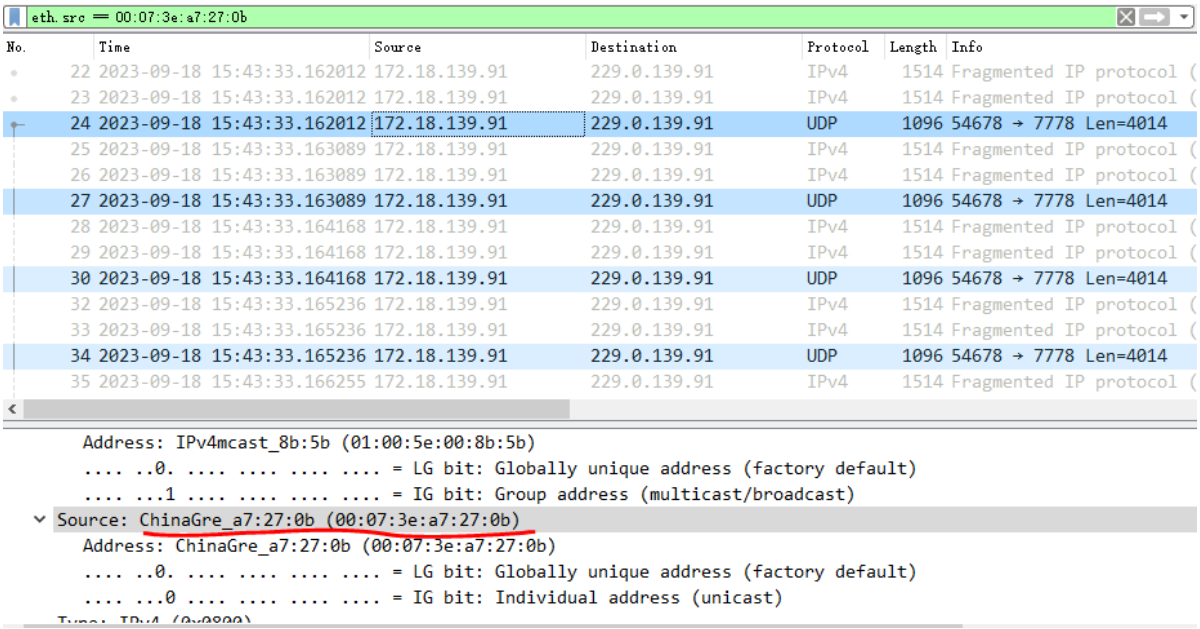


5.筛选出mac地址为eth.src == 00:07:3e:a7:27:0b的数据包

(1)搜索栏输入eth.src == 00:07:3e:a7:27:0b (背景为淡绿色是语法正确 否则就是语法有问题)

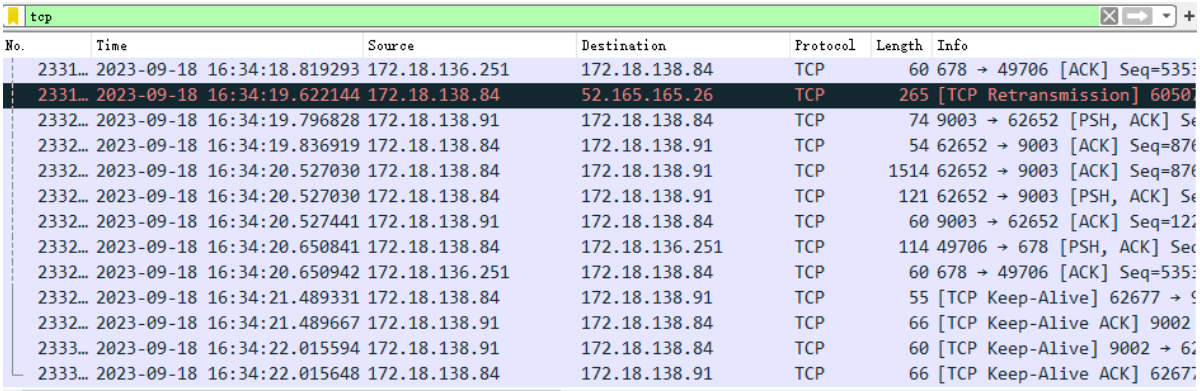


(2)输入完毕后回车查看 此时可以看见MAC地址为 00:07:3e:a7:27:0b的数据包

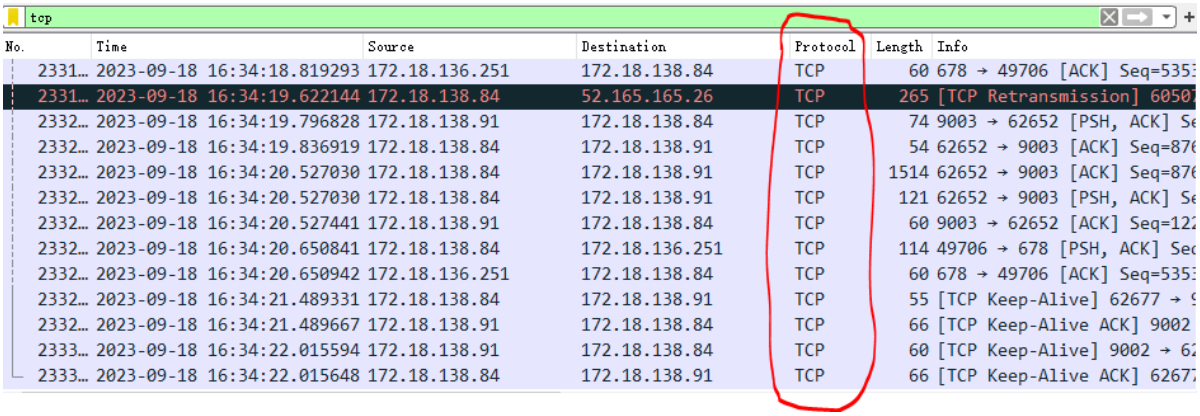


6.筛选出TCP的数据包

(1)搜索栏输入tcp (背景为淡绿色是语法正确 否则就是语法有问题)

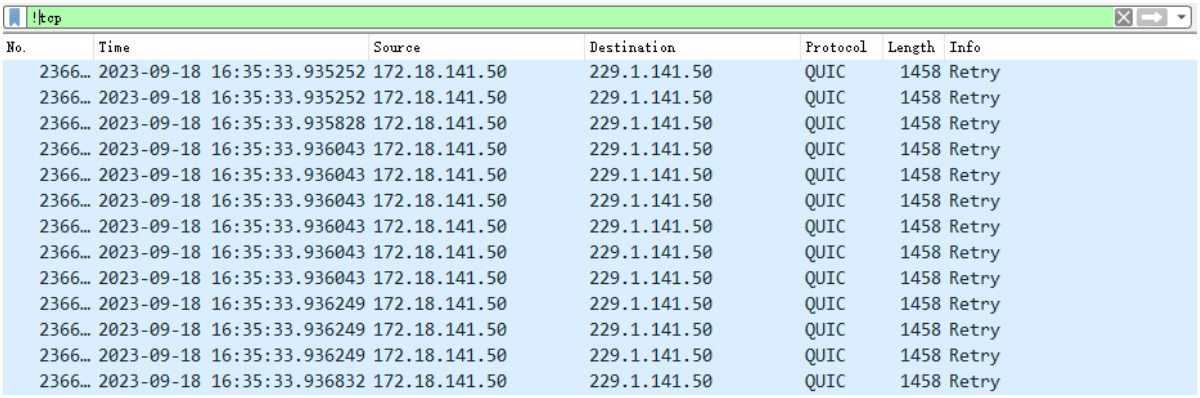


(2)输入完毕后回车查看 此时可以看见所有协议为TCP的数据包

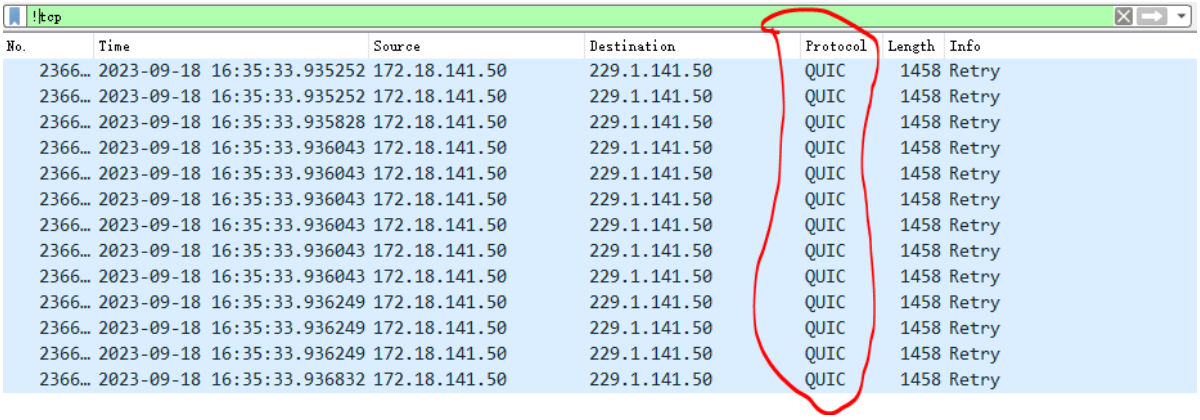


7.筛选出不是TCP的数据包

(1)搜索栏输入!tcp (背景为淡绿色是语法正确 否则就是语法有问题)

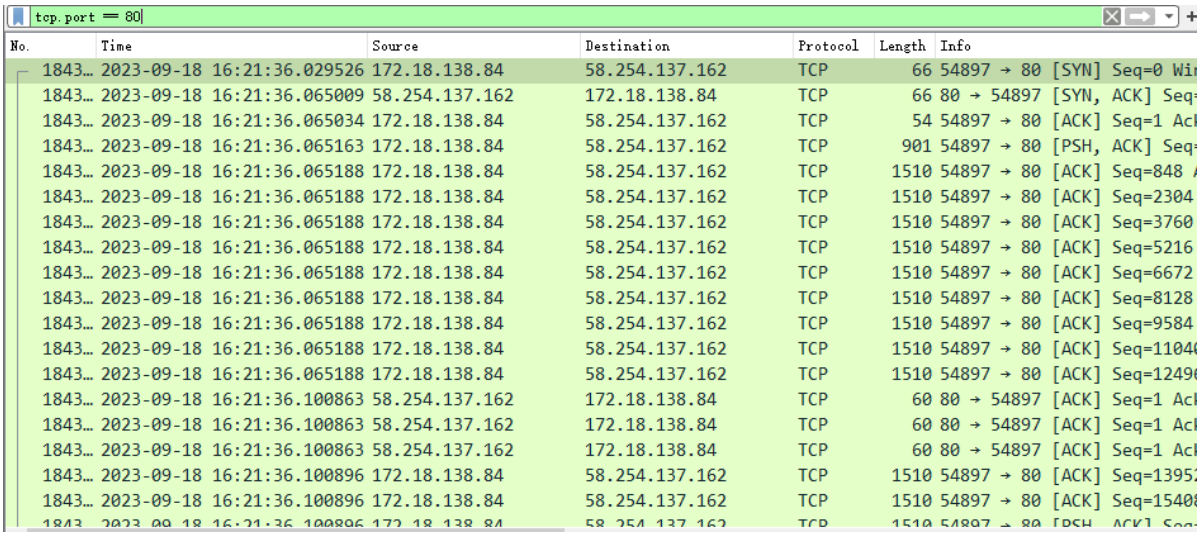


(2)输入完毕后回车查看 此时可以看见所有协议不为TCP的数据包

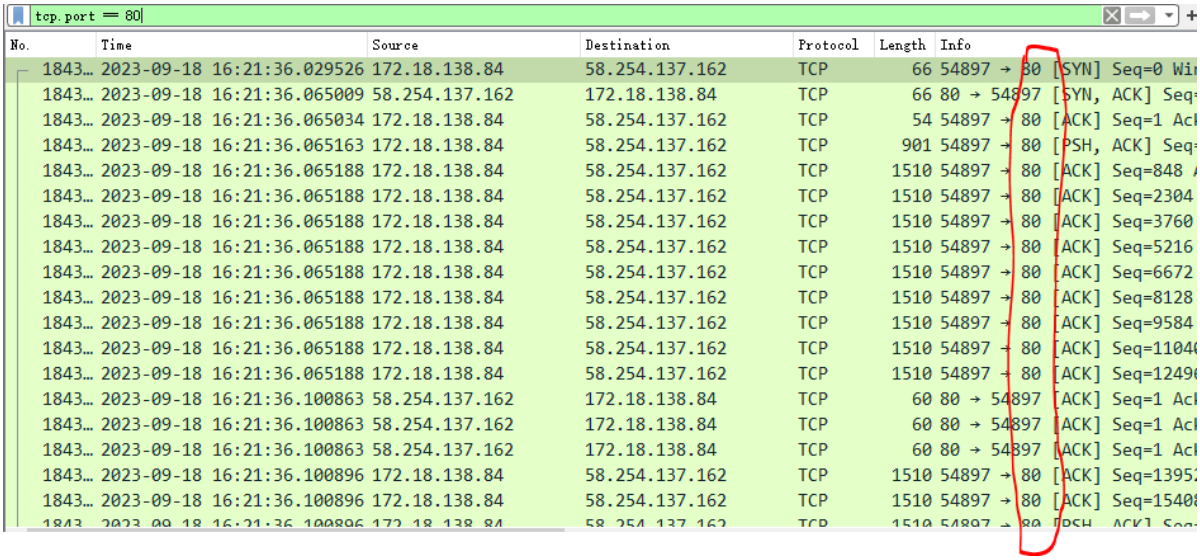


8.筛选出端口是80的数据包

(1)搜索栏输入tcp.port == 80 (背景为淡绿色是语法正确 否则就是语法有问题)

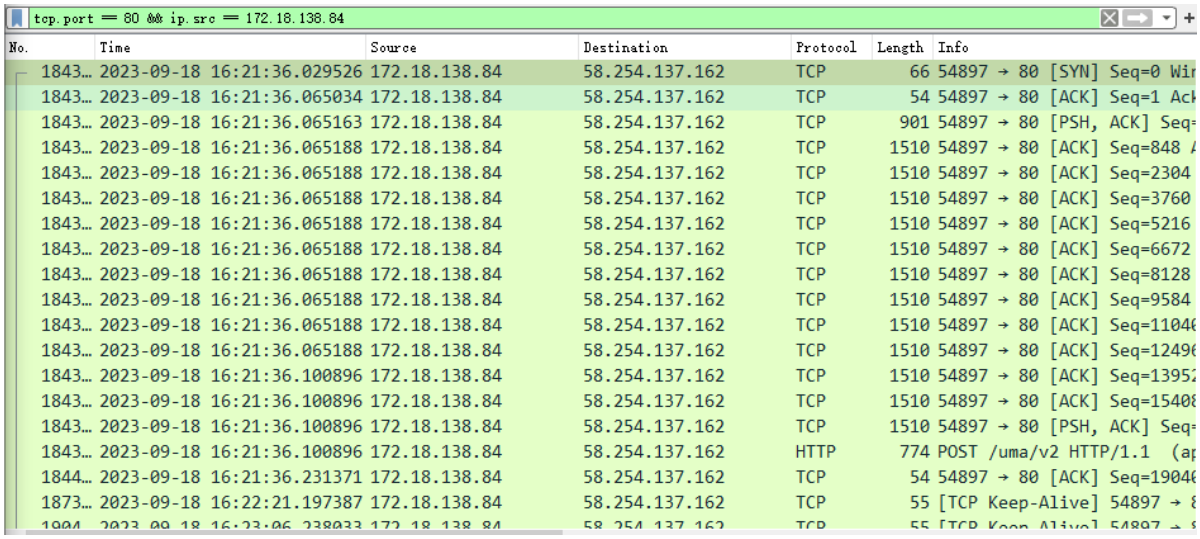


(2)输入完毕后回车查看 此时可以看见所有经过80的数据包

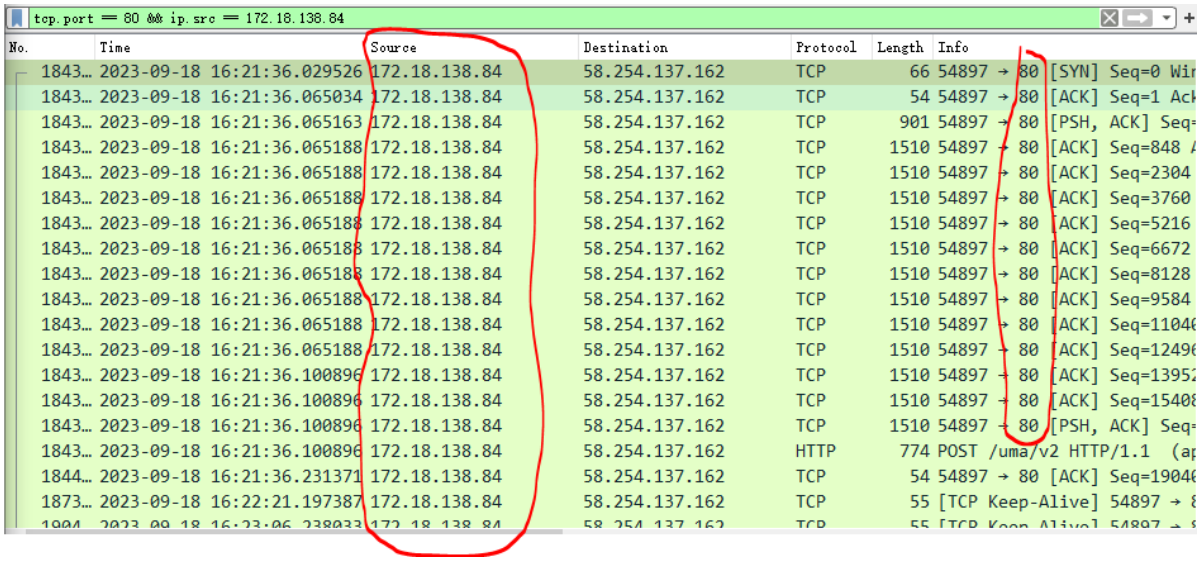


9.筛选出指定的源IP地址为172.18.138.84并且端口是80的数据包

(1)搜索栏输入tcp.port == 80 && ip.src == 172.18.138.84 (背景为淡绿色是语法正确 否则就是语法有问题)



(2)输入完毕后回车查看 此时可以看见端口是80并且源ip是172.18.138.84的数据包

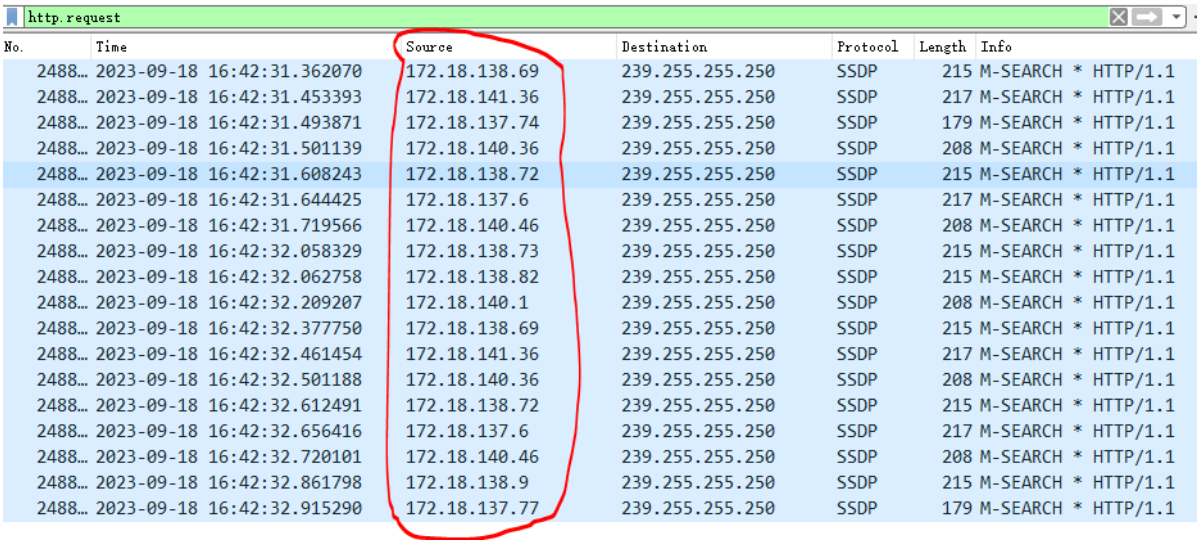


tcp.port == 80 && ip.src == 172.18.138.84

No.	Time	Source	Destination	Protocol	Length	Info
1843…	2023-09-18 16:21:36.029526	172.18.138.84	58.254.137.162	TCP	66	54897 → 80 [SYN] Seq=0 Wi
1843…	2023-09-18 16:21:36.065034	172.18.138.84	58.254.137.162	TCP	54	54897 → 80 [ACK] Seq=1 Ac
1843…	2023-09-18 16:21:36.065163	172.18.138.84	58.254.137.162	TCP	901	54897 → 80 [PSH, ACK] Seq=
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=848 A
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=2304
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=3760
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=5216
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=6672
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=8128
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=9584
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=11046
1843…	2023-09-18 16:21:36.065188	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=12496
1843…	2023-09-18 16:21:36.100896	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=13952
1843…	2023-09-18 16:21:36.100896	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [ACK] Seq=15408
1843…	2023-09-18 16:21:36.100896	172.18.138.84	58.254.137.162	TCP	1510	54897 → 80 [PSH, ACK] Seq=
1843…	2023-09-18 16:21:36.100896	172.18.138.84	58.254.137.162	HTTP	774	POST /uma/v2 HTTP/1.1 (ap
1844…	2023-09-18 16:21:36.231371	172.18.138.84	58.254.137.162	TCP	54	54897 → 80 [ACK] Seq=19046
1873…	2023-09-18 16:22:21.197387	172.18.138.84	58.254.137.162	TCP	55	[TCP Keep-Alive] 54897 → 8
1904…	2023-09-18 16:23:06.238933	172.18.138.84	58.254.137.162	TCP	55	[TCP Keep-Alive] 54897 → 8

10.应用层过滤

(1)搜索栏输入http.request (背景为淡绿色是语法正确 否则就是语法有问题)

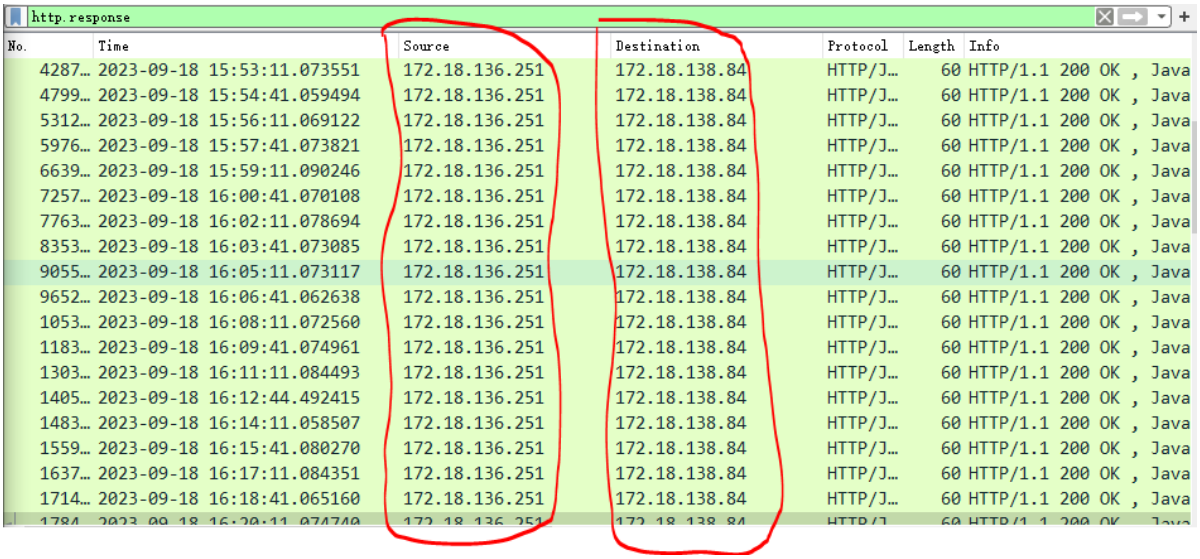


http.request

No.	Time	Source	Destination	Protocol	Length	Info
2488…	2023-09-18 16:42:31.362070	172.18.138.69	239.255.255.250	SSDP	215	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:31.453393	172.18.141.36	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:31.493871	172.18.137.74	239.255.255.250	SSDP	179	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:31.501139	172.18.140.36	239.255.255.250	SSDP	208	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:31.608243	172.18.138.72	239.255.255.250	SSDP	215	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:31.644425	172.18.137.6	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:31.719566	172.18.140.46	239.255.255.250	SSDP	208	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.058329	172.18.138.73	239.255.255.250	SSDP	215	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.062758	172.18.138.82	239.255.255.250	SSDP	215	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.209207	172.18.140.1	239.255.255.250	SSDP	208	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.377750	172.18.138.69	239.255.255.250	SSDP	215	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.461454	172.18.141.36	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.501188	172.18.140.36	239.255.255.250	SSDP	208	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.612491	172.18.138.72	239.255.255.250	SSDP	215	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.656416	172.18.137.6	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.720101	172.18.140.46	239.255.255.250	SSDP	208	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.861798	172.18.138.9	239.255.255.250	SSDP	215	M-SEARCH * HTTP/1.1
2488…	2023-09-18 16:42:32.915290	172.18.137.77	239.255.255.250	SSDP	179	M-SEARCH * HTTP/1.1

源IP地址在变化 目标ip地址都是239.255.255.250

(2)搜索栏输入http.response (背景为淡绿色是语法正确 否则就是语法有问题)

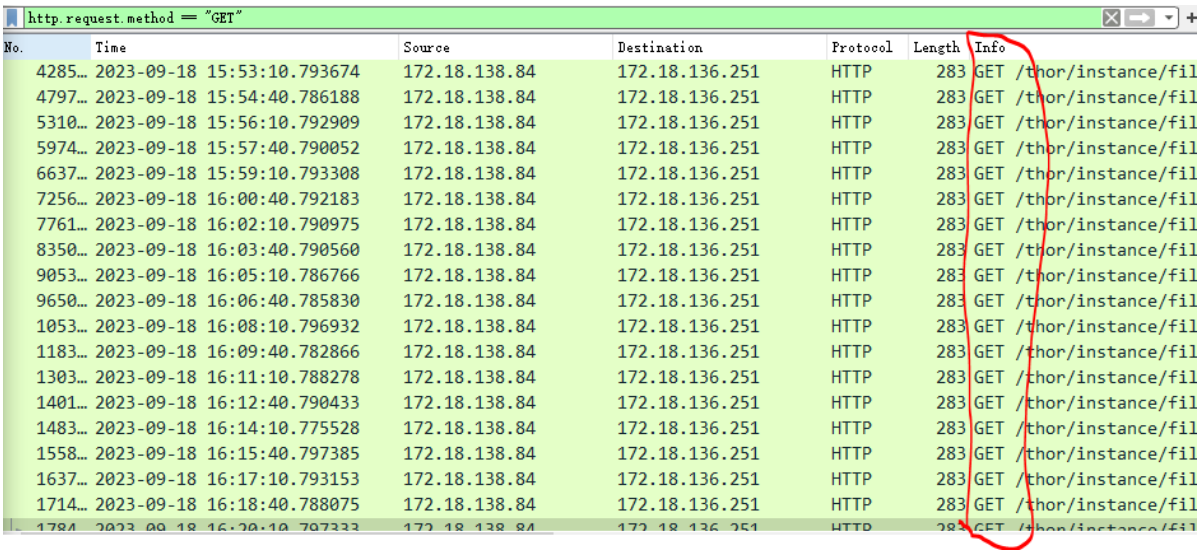


http.response

No.	Time	Source	Destination	Protocol	Length	Info
4287…	2023-09-18 15:53:11.073551	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
4799…	2023-09-18 15:54:41.059494	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
5312…	2023-09-18 15:56:11.069122	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
5976…	2023-09-18 15:57:41.073821	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
6639…	2023-09-18 15:59:11.090246	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
7257…	2023-09-18 16:00:41.070108	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
7763…	2023-09-18 16:02:11.078694	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
8353…	2023-09-18 16:03:41.073085	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
9055…	2023-09-18 16:05:11.073117	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
9652…	2023-09-18 16:06:41.062638	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1053…	2023-09-18 16:08:11.072560	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1183…	2023-09-18 16:09:41.074961	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1303…	2023-09-18 16:11:11.084493	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1405…	2023-09-18 16:12:44.492415	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1483…	2023-09-18 16:14:11.058507	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1559…	2023-09-18 16:15:41.080270	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1637…	2023-09-18 16:17:11.084351	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1714…	2023-09-18 16:18:41.065160	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java
1784…	2023-09-18 16:20:11.074740	172.18.136.251	172.18.138.84	HTTP/J…	60	HTTP/1.1 200 OK , Java

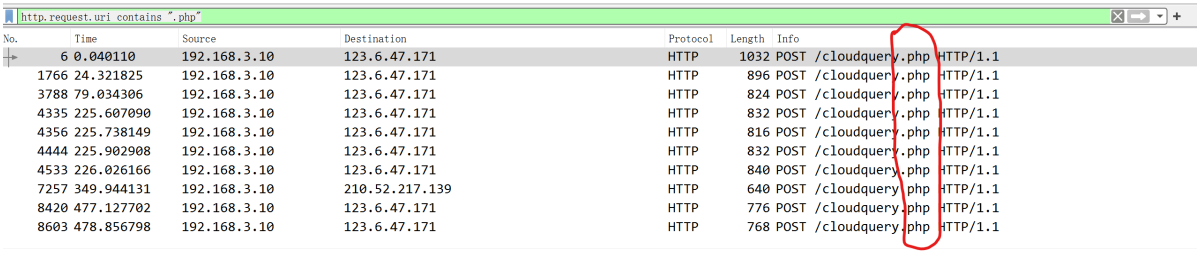
部分的源IP和目标IP相同

(2)搜索栏输入http.request.method == "GET" (背景为淡绿色是语法正确 否则就是语法有问题)



页面信息都显示HTTP GET方法的请求

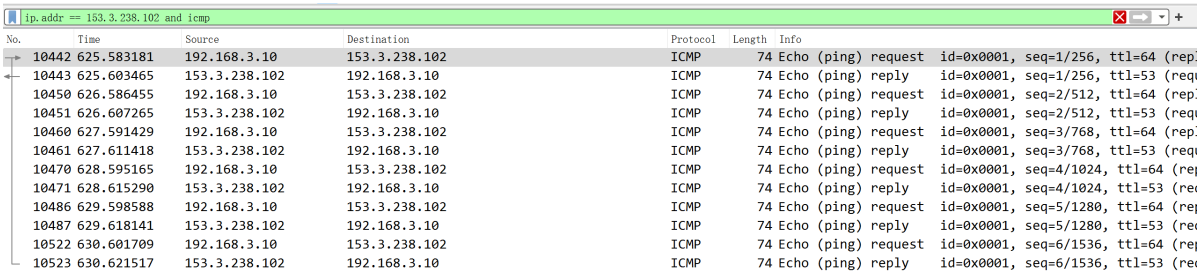
(3)搜索栏输入http.request.uri contains ".php"(背景为淡绿色是语法正确 否则就是语法有问题)

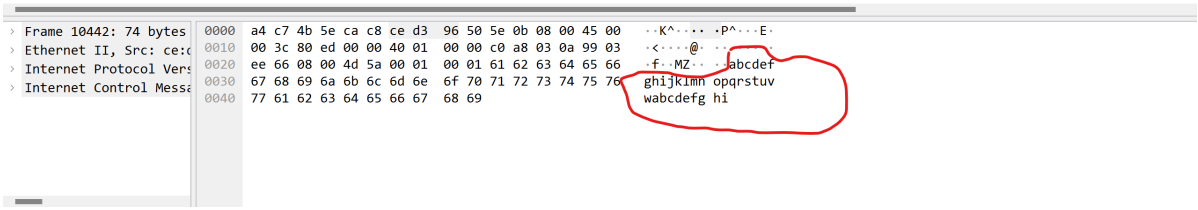


11.使用ICMP协议抓取百度的数据包

(1)在cmd下执行ping www.baidu.com -t 命令 显示百度的IP地址为153.3.238.102

(2)在Wireshark中输入 ip.addr == 153.3.238.102 and icmp





(3)单击串口左侧三角，可显示抓到的数据包的详细信息