

به نام خدا
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گزارش کار شماره 1

سوال شماره 1 :

همان طور که در خود documentary دستور نوشته شده، سوییچ 1- مربوط به تعیین ساین بسته ارسالی میباشد.

```
Command Prompt
-f Set Don't Fragment flag in packet (IPv4-only).
-t TTL Time To Live.
-v TOS Type Of Service (IPv4-only. This setting has been deprecated and has no effect on the type of service field in the IP Header).
-r count Record route for count hops (IPv4-only).
-s count Timestamp for count hops (IPv4-only).
-j host-list Loose source route along host-list (IPv4-only).
-k host-list Strict source route along host-list (IPv4-only).
-w timeout Timeout in milliseconds to wait for each reply.
-R Use routing header to test reverse route also (IPv6-only). Per RFC 5095 the use of this routing header has been deprecated. Some systems may drop echo requests if this header is used.
-S srcaddr Source address to use.
-c compartment Routing compartment identifier.
-p Ping a Hyper-V Network Virtualization provider address.
-4 Force using IPv4.
-6 Force using IPv6.

C:\Users\Arta>ping google.com

Pinging google.com [142.250.180.174] with 32 bytes of data:
Reply from 142.250.180.174: bytes=32 time=226ms TTL=105
Reply from 142.250.180.174: bytes=32 time=186ms TTL=105
Reply from 142.250.180.174: bytes=32 time=178ms TTL=105
Reply from 142.250.180.174: bytes=32 time=235ms TTL=105

Ping statistics for 142.250.180.174:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 178ms, Maximum = 235ms, Average = 206ms

C:\Users\Arta>ping google.com -l 64

Pinging google.com [142.250.180.174] with 64 bytes of data:
Reply from 142.250.180.174: bytes=64 time=186ms TTL=105
Reply from 142.250.180.174: bytes=64 time=180ms TTL=105
Reply from 142.250.180.174: bytes=64 time=190ms TTL=105
Reply from 142.250.180.174: bytes=64 time=189ms TTL=105

Ping statistics for 142.250.180.174:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 180ms, Maximum = 190ms, Average = 186ms

C:\Users\Arta>
```

سوال شماره 2 :

گفته شده نیازی به انجام این تمرین نیست

سوال شماره 3 :

همان طور که در documentary دستور (سوییچ ؟-) نوشته شده با سوییچ t- بدون توقف پیام ارسال میکند و پاسخ دریافت میکند و هنگامی که (Ctrl + C) فشار داده شود ارسال پیام متوقف می شود.

سوال شماره 4 :

خروجی مربوط به گوگل

```
Command Prompt
Reply from 142.250.180.174: bytes=32 time=187ms TTL=105
Reply from 142.250.180.174: bytes=32 time=200ms TTL=105
Reply from 142.250.180.174: bytes=32 time=172ms TTL=105
Reply from 142.250.180.174: bytes=32 time=188ms TTL=105
Reply from 142.250.180.174: bytes=32 time=177ms TTL=105
Reply from 142.250.180.174: bytes=32 time=176ms TTL=105
Reply from 142.250.180.174: bytes=32 time=175ms TTL=105
Reply from 142.250.180.174: bytes=32 time=173ms TTL=105
Reply from 142.250.180.174: bytes=32 time=323ms TTL=105
Reply from 142.250.180.174: bytes=32 time=177ms TTL=105
Reply from 142.250.180.174: bytes=32 time=184ms TTL=105
Reply from 142.250.180.174: bytes=32 time=205ms TTL=105

Ping statistics for 142.250.180.174:
    Packets: Sent = 63, Received = 63, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 172ms, Maximum = 353ms, Average = 192ms
Control-C
^C
C:\Users\Arta>
C:\Users\Arta>tracert google.com

Tracing route to google.com [216.58.206.78]
over a maximum of 30 hops:
  0  3 ms  4 ms  2 ms  192.168.43.1
  1  *      *      *      Request timed out.
  2  49 ms  35 ms  36 ms  10.218.211.65
  3  50 ms  49 ms  36 ms  10.218.212.8
  4  *      *      *      Request timed out.
  5  35 ms  35 ms  32 ms  10.218.212.65
  6  49 ms  28 ms  30 ms  10.219.103.142
  7  58 ms  35 ms  39 ms  10.220.57.142
  8  66 ms  54 ms  40 ms  10.220.58.130
  9  42 ms  38 ms  34 ms  10.21.252.142
 10 175 ms  44 ms  71 ms  10.21.21.22
 11 58 ms  41 ms  32 ms  10.21.211.20
 12 38 ms  28 ms  35 ms  10.21.21.22
 13 139 ms 129 ms 126 ms 213.202.4.172
 14 194 ms 229 ms 196 ms 213.202.5.239
 15 224 ms 173 ms 192 ms 216.239.48.87
 16 346 ms 170 ms 202 ms 108.170.246.114
 17 294 ms 212 ms 176 ms 142.251.70.119
 18 203 ms 196 ms 214 ms 74.125.245.225
 19 249 ms 173 ms 183 ms 172.253.79.29
 20 210 ms 215 ms 180 ms lhr35s11-in-f14.1e100.net [216.58.206.78]

Trace complete.
C:\Users\Arta>
```

خروجی مربوط به سایت دانشگاه :

```
Command Prompt
C:\Users\Arta>tracert google.com

Tracing route to google.com [216.58.206.78]
over a maximum of 30 hops:
  1  3 ms  4 ms  2 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  49 ms  35 ms  36 ms  10.218.211.65
  4  50 ms  49 ms  36 ms  10.218.212.6
  5  *      *      *      Request timed out.
  6  35 ms  35 ms  32 ms  10.218.212.65
  7  49 ms  28 ms  30 ms  10.219.103.142
  8  58 ms  35 ms  39 ms  10.220.57.142
  9  66 ms  54 ms  40 ms  10.220.58.130
 10  42 ms  38 ms  34 ms  10.21.252.142
 11 175 ms  44 ms  71 ms  10.21.21.22
 12  58 ms  41 ms  32 ms  10.21.211.20
 13  38 ms  28 ms  35 ms  10.21.21.22
 14 119 ms 129 ms 126 ms 213.202.4.172
 15 194 ms 229 ms 196 ms 213.202.5.239
 16 224 ms 173 ms 192 ms 216.239.48.87
 17 346 ms 170 ms 202 ms 108.170.246.114
 18 294 ms 212 ms 176 ms 142.251.70.119
 19 203 ms 196 ms 214 ms 74.125.245.225
 20 249 ms 173 ms 183 ms 172.253.79.29
 21 210 ms 215 ms 180 ms lhr35s11-in-f14.1e100.net [216.58.206.78]

Trace complete.

C:\Users\Arta>tracert aut.ac.ir

Tracing route to aut.ac.ir [185.211.88.131]
over a maximum of 30 hops:
  1  3 ms  3 ms  3 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  36 ms  26 ms  24 ms  10.218.211.65
  4  86 ms  51 ms  45 ms  10.218.212.6
  5  *      *      *      Request timed out.
  6  33 ms  33 ms  29 ms  10.218.212.65
  7  27 ms  45 ms  41 ms  10.219.103.142
  8  29 ms  37 ms  38 ms  10.220.57.142
  9  47 ms  34 ms  41 ms  10.219.119.1
 10 132 ms  46 ms  27 ms  10.201.203.65
 11  72 ms  65 ms  36 ms  212.16.72.66
 12  43 ms  49 ms  39 ms  185.211.88.131

Trace complete.

C:\Users\Arta>
```

خروجی مربوط به فیسبوک :

```
Command Prompt
C:\Users\Arta>tracert facebook.com

Tracing route to facebook.com [10.10.34.35]
over a maximum of 30 hops:
  1  3 ms  3 ms  2 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  38 ms  36 ms  34 ms  10.218.211.65
  4  25 ms  35 ms  25 ms  10.218.212.18
  5  *      *      *      Request timed out.
  6  40 ms  62 ms  61 ms  10.218.212.65
  7  27 ms  27 ms  26 ms  10.219.103.142
  8  41 ms  45 ms  29 ms  10.220.57.142
  9  36 ms  31 ms  34 ms  10.220.58.130
 10  34 ms  28 ms  38 ms  10.21.251.222
 11  39 ms 115 ms  44 ms  10.21.212.10
 12  32 ms  30 ms  38 ms  10.21.212.10
 13  53 ms  83 ms  61 ms  10.202.4.76
 14  64 ms 129 ms 148 ms 10.201.146.26
 15  28 ms  43 ms  36 ms  185.57.201.50
 16  *      *      *      Request timed out.
 17  *      *      *      Request timed out.
 18  *      *      *      Request timed out.
 19  *      *      *      Request timed out.
 20  *      *      *      Request timed out.
 21  *      *      *      Request timed out.
 22  *      *      *      Request timed out.
 23  *      *      *      Request timed out.
 24  *      *      *      Request timed out.
 25  *      *      *      Request timed out.
 26  *      *      *      Request timed out.
 27  *      *      *      Request timed out.
 28  *      *      *      Request timed out.
 29  *      *      *      Request timed out.
 30  *      *      *      Request timed out.

Trace complete.

C:\Users\Arta>
```

اولین نتیجه ای که از مقایسه میتوان گرفت این است که مسیر رسیدن به سایت aut.ac.ir کوتاه تر از google.com بود زیرا سرور آن نزدیک تر از گوگل است. اگر ip های به دست آمده در مرحله آخر را در سایت findip-address جست و جو کنیم میتوانیم اطلاعات مربوط به آن را دریابیم :

The screenshot shows a web browser window with the URL <https://www.findip-address.com>. The page displays technical details for the IP address 216.58.206.78. On the left, there is a cookie consent banner. The main content area is divided into sections: Technical details, Location of IP address, and ASN and ISP for IP address.

Technical details

IP address	216.58.206.78
Hostname	lhr35s11-in-f14.1e100.net
Type	Public
CIDR	216.58.206.78/24

Location of IP address 216.58.206.78

Lookup information about the location associated with the IP address 216.58.206.78.

City	Mountain View (20% confidence)
Metrocode	807 (California, San Francisco-Oakland-San Jose CA)
Subdivision	California (CA) (60% confidence)
Country	United States (US) (99% confidence)
Postalcode	94043 (10% confidence)
Continent	North America (NA)
Time zone	America/Los_Angeles

ASN and ISP for IP address 216.58.206.78

General traits like organisation, autonomous system number (ASN) and ISP associated with the IP address 216.58.206.78.

ISP	Google
Organization	Google
User type	business
Autonomous system number (ASN)	15169
Autonomous system organization	Google Inc.
domain	1e100.net

Anonymous proxy? No

Waiting for pagead2.googlesyndication.com...

اما در رابطه با facebook.com به علت فیلتر بودن request timeout می دهد و آخرین ip که نشان داده می شود نیز مربوط به یک آدرس محلی میباشد.

سوال شماره 5 :

ابتدا با دستور ipconfig آیپی default-gateway را پیدا میکنیم و سپس با local network discovery اطلاعات را بدست میآوریم و MAC address مربوط به ip address که در مرحله قبل پیدا کردیم جواب مورد نظر ماست.

متأسفانه دستگاه دیگری به شبکه محلی وصل نیست که آن را در گزارش بیاورم

Command Prompt

28 * * * Request timed out.
29 * * * Request timed out.
30 * * * Request timed out.

Trace complete.

C:\Users\Arta>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 2:

Media State : Media disconnected
Connection-specific DNS Suffix . :

Ethernet adapter Ethernet:

Media State : Media disconnected
Connection-specific DNS Suffix . : domain.name

Wireless LAN adapter Local Area Connection* 1:

Media State : Media disconnected
Connection-specific DNS Suffix . :

Wireless LAN adapter Local Area Connection* 3:

Media State : Media disconnected
Connection-specific DNS Suffix . :

Ethernet adapter Ethernet 5:

Media State : Media disconnected
Connection-specific DNS Suffix . :

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . :
Link-local IPv6 Address : fe80::218e:fb3c:d9a0:e1c185
IPv4 Address : 192.168.43.63
Subnet Mask : 255.255.255.0
Default Gateway : 192.168.43.1

Ethernet adapter Ethernet 4:

Media State : Media disconnected
Connection-specific DNS Suffix . :

C:\Users\Arta>

PingPlotter Pro

File Edit Tools Summaries Workspace Help
All Targets: www.google.com Local Network Discovery +

Discovery Methods
☒ Subnet Scan ☒ UPnP / SSDP
☒ mDNS / Bonjour / Zeroconf ☒ Address Resolution Protocol

Machine
Local Machine
Stop Scan

IP	MAC Address	MAC Vendor	Hostname	Ping	Protocols	Description
192.168.43.1	ec:89:14:c8:a2:01	HuaweiTe Huawei Technologies Co.,Ltd		4.1	ICMP/ARP	
192.168.43.63			DESKTOP-B80IVP9	0.34	ICMP/Ip/DNS	3

Export to CSV Add Selected to Summary Add All to Summary Start

MAC Address : ec:89:14:c8:a2:01