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1. Ping -a – преобразува адрес в име на хост и проверява връзката между устройства

```
C:\Users\Lenovo>ping -a edna.bg

Pinging edna.bg [87.120.176.26] with 32 bytes of data:
Reply from 87.120.176.26: bytes=32 time=13ms TTL=58
Reply from 87.120.176.26: bytes=32 time=15ms TTL=58
Reply from 87.120.176.26: bytes=32 time=21ms TTL=58
Reply from 87.120.176.26: bytes=32 time=12ms TTL=58

Ping statistics for 87.120.176.26:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 21ms, Average = 15ms

C:\Users\Lenovo>
```

2. Ping -n count – изпраща n на брой echo заявки

```
C:\Users\Lenovo>ping -n 6 www.edna.bg

Pinging www.edna.bg [87.120.176.26] with 32 bytes of data:
Reply from 87.120.176.26: bytes=32 time=15ms TTL=58
Reply from 87.120.176.26: bytes=32 time=17ms TTL=58
Reply from 87.120.176.26: bytes=32 time=33ms TTL=58
Reply from 87.120.176.26: bytes=32 time=18ms TTL=58
Reply from 87.120.176.26: bytes=32 time=13ms TTL=58
Reply from 87.120.176.26: bytes=32 time=18ms TTL=58

Ping statistics for 87.120.176.26:
    Packets: Sent = 6, Received = 6, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 13ms, Maximum = 33ms, Average = 19ms

C:\Users\Lenovo>_
```

3. Ping -i TTL – задава стойността на TTL(времето за живот)

```
C:\Users\Lenovo>ping -i 10 www.edna.bg

Pinging www.edna.bg [87.120.176.26] with 32 bytes of data:
Reply from 87.120.176.26: bytes=32 time=18ms TTL=58
Reply from 87.120.176.26: bytes=32 time=32ms TTL=58
Reply from 87.120.176.26: bytes=32 time=20ms TTL=58
Reply from 87.120.176.26: bytes=32 time=36ms TTL=58

Ping statistics for 87.120.176.26:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 18ms, Maximum = 36ms, Average = 26ms
```

4.Pathping- изпраща пакети до всеки рутер по пътя към крайната дестинация за определен период от време и след това изчислява резултатите, които са върнати от всеки hop.

```
C:\Users\Lenovo>pathping www.edna.bg

Tracing route to www.edna.bg [87.120.176.26]
over a maximum of 30 hops:
  0  DESKTOP-66LI4BB [192.168.1.104]
  1  192.168.1.1
  2  * * *
Computing statistics for 25 seconds...
    Source to Here   This Node/Link
Hop  RTT    Lost/Sent = Pct   Lost/Sent = Pct   Address
  0              0/ 100 = 0%        0/ 100 = 0%      DESKTOP-66LI4BB [192.168.1.104]
  1    4ms    0/ 100 = 0%        0/ 100 = 0%      192.168.1.1

Trace complete.

C:\Users\Lenovo>
```

5.Tracert- определя маршрута до крайната дестинация като изпраща echo пакети на ICMP протокола до крайната дестинация.

```
C:\Users\Lenovo>tracert www.edna.bg

Tracing route to www.edna.bg [87.120.176.26]
over a maximum of 30 hops:

  1    2 ms    2 ms    3 ms  192.168.1.1
  2    *      *      *      Request timed out.
  3    9 ms    12 ms   9 ms  0-1.tvsat.co [213.167.0.1]
  4   46 ms   17 ms  12 ms 185.148.163.97
  5   10 ms   12 ms  13 ms 87.120.7.6
  6   13 ms   28 ms  13 ms 212.73.157.185.neterra.net [212.73.157.185]
  7   36 ms   17 ms  14 ms edna.bg [87.120.176.26]

Trace complete.

C:\Users\Lenovo>_
```

6.Ipconfig /flushdns- изчиства DNS кеша

```
C:\Users\Lenovo>ipconfig /flushdns

Windows IP Configuration

Successfully flushed the DNS Resolver Cache.

C:\Users\Lenovo>
```

7.ipconfig /all – Показва пълната информация за конфигуриране(network, NIC, DHCP)

```
C:\Users\Lenovo>ipconfig /all

Windows IP Configuration

    Host Name . . . . . : DESKTOP-66LI4BB
    Primary Dns Suffix . . . . . :
    Node Type . . . . . : Hybrid
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No

Wireless LAN adapter Local Area Connection* 11:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :
    Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #3
    Physical Address. . . . . : C8-58-C0-F7-8A-DD
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 12:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :
    Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #4
    Physical Address. . . . . : CA-58-C0-F7-8A-DC
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

Ethernet adapter VMware Network Adapter VMnet1:

    Connection-specific DNS Suffix . :
    Description . . . . . : VMware Virtual Ethernet Adapter for VMnet1
    Physical Address. . . . . : 00-50-56-C0-00-01
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::db0:bb5d:8ecc:25e4%17(Preferred)
    Autoconfiguration IPv4 Address. . : 169.254.37.228(Preferred)
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . :
    DHCPv6 IAID . . . . . : 134238294
    DHCPv6 Client DUID. . . . . : 00-01-00-01-27-DF-87-B6-C8-58-C0-F7-8A-DC
    NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter VMware Network Adapter VMnet8:

    Connection-specific DNS Suffix . :
    Description . . . . . : VMware Virtual Ethernet Adapter for VMnet8
    Physical Address. . . . . : 00-50-56-C0-00-08
    DHCP Enabled. . . . . : Yes
```

```
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::855c:df14:b569:4dc2%19(Preferred)
Autoconfiguration IPv4 Address. . : 169.254.77.194(Preferred)
Subnet Mask . . . . . : 255.255.0.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 201347158
DHCPv6 Client DUID. . . . . : 00-01-00-01-27-DF-87-B6-C8-58-C0-F7-8A-DC
NetBIOS over Tcpi. . . . . : Enabled
```

Wireless LAN adapter Wi-Fi:

```
Connection-specific DNS Suffix . :
Description . . . . . : Intel(R) Wireless-AC 9560
Physical Address. . . . . : C8-58-C0-F7-8A-DC
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::250d:7a3f:145a:ad22%7(Preferred)
IPv4 Address. . . . . : 192.168.1.104(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 01 октомври 2022 г. 16:31:55
Lease Expires . . . . . : 01 октомври 2022 г. 20:16:48
Default Gateway . . . . . : 192.168.1.1
DHCP Server . . . . . : 192.168.1.1
DHCPv6 IAID . . . . . : 331897024
DHCPv6 Client DUID. . . . . : 00-01-00-01-27-DF-87-B6-C8-58-C0-F7-8A-DC
DNS Servers . . . . . : 192.168.1.1
NetBIOS over Tcpi. . . . . : Enabled
```

C:\Users\Lenovo>

8. ipconfig /release- Освобождава IPv4 адреса за посочения адаптер. Може да се използва за reset или refresh на мрежовите настройки.

```
C:\Users\Lenovo>ipconfig /release

Windows IP Configuration

No operation can be performed on Local Area Connection* 11 while it has its media disconnected.
No operation can be performed on Local Area Connection* 12 while it has its media disconnected.

Wireless LAN adapter Local Area Connection* 11:

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

Wireless LAN adapter Local Area Connection* 12:

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

Ethernet adapter VMware Network Adapter VMnet1:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::db0:bb5d:8ecc:25e4%17
    Autoconfiguration IPv4 Address. . : 169.254.37.228
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::855c:df14:b569:4dc2%19
    Autoconfiguration IPv4 Address. . : 169.254.77.194
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . :

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::250d:7a3f:145a:ad22%7
    Default Gateway . . . . . :

C:\Users\Lenovo>
```

9.netstat -a – показва всички активни TCP връзки и UDP портове, но които компютърът слуша

```
C:\Users\Lenovo>netstat -a
```

Active Connections

Proto	Local Address	Foreign Address	State
TCP	0.0.0.0:135	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:445	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:5040	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:6881	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:7070	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:7680	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:38565	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:38566	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:38567	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:49664	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:49665	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:49666	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:49667	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:49668	DESKTOP-66LI4BB:0	LISTENING
TCP	0.0.0.0:49670	DESKTOP-66LI4BB:0	LISTENING
TCP	127.0.0.1:1434	DESKTOP-66LI4BB:0	LISTENING
TCP	127.0.0.1:50147	DESKTOP-66LI4BB:0	LISTENING
TCP	127.0.0.1:55086	kubernetes:55087	ESTABLISHED
TCP	127.0.0.1:55087	kubernetes:55086	ESTABLISHED
TCP	127.0.0.1:55094	kubernetes:55112	ESTABLISHED
TCP	127.0.0.1:55107	DESKTOP-66LI4BB:0	LISTENING
TCP	127.0.0.1:55112	kubernetes:55094	ESTABLISHED
TCP	127.0.0.1:55862	DESKTOP-66LI4BB:0	LISTENING
TCP	169.254.37.228:139	DESKTOP-66LI4BB:0	LISTENING
TCP	169.254.77.194:139	DESKTOP-66LI4BB:0	LISTENING
TCP	192.168.1.102:139	DESKTOP-66LI4BB:0	LISTENING
TCP	192.168.1.102:49872	213.19.162.21:https	ESTABLISHED
TCP	192.168.1.102:49873	sof02s43-in-f1:https	ESTABLISHED
TCP	192.168.1.102:49878	146.75.2.114:https	ESTABLISHED
TCP	192.168.1.102:49880	146.75.2.114:https	ESTABLISHED
TCP	192.168.1.102:49881	104.18.225.52:https	ESTABLISHED
TCP	192.168.1.102:49882	server-54-192-235-109:https	ESTABLISHED
TCP	192.168.1.102:49883	server-54-192-235-64:https	ESTABLISHED
TCP	192.168.1.102:49885	104.18.4.81:https	ESTABLISHED
TCP	192.168.1.102:49886	151.139.128.11:https	TIME_WAIT
TCP	192.168.1.102:49889	104.17.25.14:https	ESTABLISHED
TCP	192.168.1.102:49891	server-54-192-234-71:https	ESTABLISHED
TCP	192.168.1.102:49892	146.75.2.114:https	ESTABLISHED
TCP	192.168.1.102:49896	sof02s46-in-f14:https	ESTABLISHED
TCP	192.168.1.102:49899	67.27.162.122:https	ESTABLISHED
TCP	192.168.1.102:49900	67.27.162.122:https	ESTABLISHED

10. nbtstat /n – показва таблиците с имената на NETBIOS на компютъра.

```
C:\Users\Lenovo>nbtstat /n

VMware Network Adapter VMnet8:
Node IpAddress: [169.254.77.194] Scope Id: []

        NetBIOS Local Name Table

    Name                Type             Status
    -----
    DESKTOP-66LI4BB<00>  UNIQUE          Registered
    WORKGROUP            <00>            GROUP           Registered

VMware Network Adapter VMnet1:
Node IpAddress: [169.254.37.228] Scope Id: []

        NetBIOS Local Name Table

    Name                Type             Status
    -----
    DESKTOP-66LI4BB<00>  UNIQUE          Registered
    WORKGROUP            <00>            GROUP           Registered

Wi-Fi:
Node IpAddress: [192.168.1.102] Scope Id: []

        NetBIOS Local Name Table

    Name                Type             Status
    -----
    DESKTOP-66LI4BB<20>  UNIQUE          Registered
    DESKTOP-66LI4BB<00>  UNIQUE          Registered
    WORKGROUP            <00>            GROUP           Registered

Local Area Connection* 11:
Node IpAddress: [0.0.0.0] Scope Id: []

    No names in cache

Local Area Connection* 12:
Node IpAddress: [0.0.0.0] Scope Id: []

    No names in cache

C:\Users\Lenovo>_
```

11.arp -a – показва ARP кеш таблици за всички интерфейси

```
C:\Users\Lenovo>arp -a

Interface: 192.168.1.102 --- 0x7
    Internet Address      Physical Address      Type
    192.168.1.1           50-d4-f7-3d-5e-d2     dynamic
    192.168.1.101         f4-7b-5e-a5-c6-0e     dynamic
    192.168.1.255         ff-ff-ff-ff-ff-ff     static
    224.0.0.2             01-00-5e-00-00-02     static
    224.0.0.22            01-00-5e-00-00-16     static
    224.0.0.251           01-00-5e-00-00-fb     static
    224.0.0.252           01-00-5e-00-00-fc     static
    239.192.152.143       01-00-5e-40-98-8f     static
    239.255.255.250       01-00-5e-7f-ff-fa     static
    255.255.255.255       ff-ff-ff-ff-ff-ff     static

Interface: 169.254.37.228 --- 0x11
    Internet Address      Physical Address      Type
    169.254.255.255       ff-ff-ff-ff-ff-ff     static
    224.0.0.2             01-00-5e-00-00-02     static
    224.0.0.22            01-00-5e-00-00-16     static
    224.0.0.251           01-00-5e-00-00-fb     static
    224.0.0.252           01-00-5e-00-00-fc     static
    239.192.152.143       01-00-5e-40-98-8f     static
    239.255.255.250       01-00-5e-7f-ff-fa     static
    255.255.255.255       ff-ff-ff-ff-ff-ff     static

Interface: 169.254.77.194 --- 0x13
    Internet Address      Physical Address      Type
    169.254.255.255       ff-ff-ff-ff-ff-ff     static
    224.0.0.2             01-00-5e-00-00-02     static
    224.0.0.22            01-00-5e-00-00-16     static
    224.0.0.251           01-00-5e-00-00-fb     static
    224.0.0.252           01-00-5e-00-00-fc     static
    239.192.152.143       01-00-5e-40-98-8f     static
    239.255.255.250       01-00-5e-7f-ff-fa     static
    255.255.255.255       ff-ff-ff-ff-ff-ff     static

C:\Users\Lenovo>
```

12.route print – показва цялото съдържание на таблицата за Ip маршрутизиране


```
C:\Users\Lenovo>route print
```

```
=====
```

```
Interface List
```

```
14...c8 58 c0 f7 8a dd .....Microsoft Wi-Fi Direct Virtual Adapter #3
13...ca 58 c0 f7 8a dc .....Microsoft Wi-Fi Direct Virtual Adapter #4
17...00 50 56 c0 00 01 .....VMware Virtual Ethernet Adapter for VMnet1
19...00 50 56 c0 00 08 .....VMware Virtual Ethernet Adapter for VMnet8
7...c8 58 c0 f7 8a dc .....Intel(R) Wireless-AC 9560
1.....Software Loopback Interface 1
=====
```

```
IPv4 Route Table
```

```
=====
```

```
Active Routes:
```

Network	Destination	Netmask	Gateway	Interface	Metric
	0.0.0.0	0.0.0.0	192.168.1.1	192.168.1.102	45
	127.0.0.0	255.0.0.0	On-link	127.0.0.1	331
	127.0.0.1	255.255.255.255	On-link	127.0.0.1	331
127.255.255.255	255.255.255.255		On-link	127.0.0.1	331
	169.254.0.0	255.255.0.0	On-link	169.254.37.228	291
	169.254.0.0	255.255.0.0	On-link	169.254.77.194	291
	169.254.37.228	255.255.255.255	On-link	169.254.37.228	291
	169.254.77.194	255.255.255.255	On-link	169.254.77.194	291
	169.254.255.255	255.255.255.255	On-link	169.254.37.228	291
	169.254.255.255	255.255.255.255	On-link	169.254.77.194	291
	192.168.1.0	255.255.255.0	On-link	192.168.1.102	301
	192.168.1.102	255.255.255.255	On-link	192.168.1.102	301
	192.168.1.255	255.255.255.255	On-link	192.168.1.102	301
	224.0.0.0	240.0.0.0	On-link	127.0.0.1	331
	224.0.0.0	240.0.0.0	On-link	192.168.1.102	301
	224.0.0.0	240.0.0.0	On-link	169.254.77.194	291
	224.0.0.0	240.0.0.0	On-link	169.254.37.228	291
255.255.255.255	255.255.255.255		On-link	127.0.0.1	331
255.255.255.255	255.255.255.255		On-link	192.168.1.102	301
255.255.255.255	255.255.255.255		On-link	169.254.77.194	291
255.255.255.255	255.255.255.255		On-link	169.254.37.228	291

```
=====
```

```
Persistent Routes:
```

```
None
```

```
IPv6 Route Table
```

```
=====
```

```
Active Routes:
```

If	Metric	Network	Destination	Gateway
1	331	:::1/128		On-link
7	301	fe80::/64		On-link
19	291	fe80::/64		On-link
17	291	fe80::/64		On-link
17	291	fe80::db0:bb5d:8ecc:25e4/128		