

Z:\>nslookup www.bing.com

Server: MDC04.mits.com

Address: 172.16.0.251

Non-authoritative answer:

Name: e86303.dscx.akamaiedge.net

Addresses: 2600:1417:71::75ef:8d72

2600:1417:71::75ef:8d78

2600:1417:71::75ef:8d70

2600:1417:71::75ef:8d71

2600:1417:71::75ef:8d79

23.57.76.62

23.57.76.24

23.57.76.61

23.57.76.54

23.57.76.32

23.57.76.23

23.57.76.38

23.57.76.60

23.57.76.69

Aliases: www.bing.com

www-www.bing.com.trafficmanager.net

www.bing.com.edgekey.net

Z:\>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 2:

Connection-specific DNS Suffix . : mits.com

Link-local IPv6 Address . . . . . : fe80::aedd:2dae:545a:78c0%13

IPv4 Address. . . . . : 172.16.6.44

Subnet Mask . . . . . : 255.255.128.0

Default Gateway . . . . . : fe80::e66f:13ff:fec1:d913%13  
172.16.0.199

Ethernet adapter VMware Network Adapter VMnet1:

Connection-specific DNS Suffix . :

Link-local IPv6 Address . . . . . : fe80::a215:22a4:940:3981%17

IPv4 Address. . . . . : 192.168.242.1

Subnet Mask . . . . . : 255.255.255.0

Default Gateway . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:

Connection-specific DNS Suffix . :

Link-local IPv6 Address . . . . . : fe80::c0ee:ab3c:15f8:5882%21

IPv4 Address. . . . . : 192.168.147.1

Subnet Mask . . . . . : 255.255.255.0

Default Gateway . . . . . :

Ethernet adapter Bluetooth Network Connection 2:

Media State . . . . . : Media disconnected

Connection-specific DNS Suffix . :

Z:\>arp

Displays and modifies the IP-to-Physical address translation tables used by address resolution protocol (ARP).

```
ARP -s inet_addr eth_addr [if_addr]
```

```
ARP -d inet_addr [if_addr]
```

ARP -a [inet\_addr] [-N if\_addr] [-v]

- a Displays current ARP entries by interrogating the current protocol data. If `inet_addr` is specified, the IP and Physical addresses for only the specified computer are displayed. If more than one network interface uses ARP, entries for each ARP table are displayed.

-g      Same as -a.

**-v** Displays current ARP entries in verbose mode. All invalid entries and entries on the loop-back interface will be shown.

`inet_addr` Specifies an internet address.

**-N if\_addr** Displays the ARP entries for the network interface specified by if\_addr.

**-d** Deletes the host specified by `inet_addr`. `inet_addr` may be wildcarded with `*` to delete all hosts.

-s Adds the host and associates the Internet address inet\_addr with the Physical address eth\_addr. The Physical address is given as 6 hexadecimal bytes separated by hyphens. The entry is permanent.

**eth\_addr** Specifies a physical address.

**if\_addr** If present, this specifies the Internet address of the interface whose address translation table should be modified. If not present, the first applicable interface will be used.

Example:

```
> arp -s 157.55.85.212 00-aa-00-62-c6-09 .... Adds a static entry.
```

> arp -a .... Displays the arp table.

Z:\>arp -a

Interface: 172.16.6.44 --- 0xd

Internet Address	Physical Address	Type
172.16.0.3	54-bf-64-6c-8f-e6	dynamic
172.16.0.4	64-4e-d7-6c-28-3c	dynamic
172.16.0.199	08-5b-0e-96-80-83	dynamic
172.16.0.230	00-0c-29-5b-43-47	dynamic
172.16.0.251	00-0c-29-a4-25-0c	dynamic
172.16.0.253	00-0c-29-88-c4-29	dynamic
172.16.0.254	00-0c-29-6b-82-e0	dynamic
172.16.1.103	d8-9e-f3-47-88-3d	dynamic
172.16.1.106	d8-9e-f3-48-13-be	dynamic
172.16.1.112	d8-9e-f3-47-86-69	dynamic
172.16.1.114	d8-9e-f3-45-d8-13	dynamic
172.16.1.120	d8-9e-f3-48-14-9b	dynamic
172.16.1.122	d8-9e-f3-4a-37-a0	dynamic

Interface: 192.168.242.1 --- 0x11

Internet Address	Physical Address	Type
192.168.242.255	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
224.0.2.3	01-00-5e-00-02-03	static
224.0.64.75	01-00-5e-00-40-4b	static
237.63.157.200	01-00-5e-3f-9d-c8	static
239.255.255.250	01-00-5e-7f-ff-fa	static

Interface: 192.168.147.1 --- 0x15

Internet Address	Physical Address	Type
192.168.147.255	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
224.0.2.3	01-00-5e-00-02-03	static
224.0.64.75	01-00-5e-00-40-4b	static
237.63.157.200	01-00-5e-3f-9d-c8	static
239.255.255.250	01-00-5e-7f-ff-fa	static

Z:\>trace rp

'trace' is not recognized as an internal or external command,  
operable program or batch file.

Z:\>tracerp

'tracerp' is not recognized as an internal or external command,  
operable program or batch file.

Z:\>tracert

'tracert' is not recognized as an internal or external command,  
operable program or batch file.

Z:\>tracert

Usage: tracert [-d] [-h maximum\_hops] [-j host-list] [-w timeout]  
          [-R] [-S srcaddr] [-4] [-6] target\_name

Options:

-d           Do not resolve addresses to hostnames.

-h maximum\_hops   Maximum number of hops to search for target.

- j host-list     Loose source route along host-list (IPv4-only).
- w timeout     Wait timeout milliseconds for each reply.
- R             Trace round-trip path (IPv6-only).
- S srcaddr     Source address to use (IPv6-only).
- 4             Force using IPv4.
- 6             Force using IPv6.

Z:\>tracert 172.16.6.43

Tracing route to 1641-6LAB43.mits.com [172.16.6.43]

over a maximum of 30 hops:

1   <1 ms   <1 ms   <1 ms 1641-6LAB43.mits.com [172.16.6.43]

Trace complete.

Z:\>pathping www.google.com

Tracing route to www.google.com [216.58.196.164]

over a maximum of 30 hops:

0 1642-6LAB44.mits.com [172.16.6.44]  
 1 172.16.0.199  
 2 10.10.10.1  
 3 static.ill.117.250.201.129.bsnl.co.in [117.250.201.129]  
 4 172.19.243.210  
 5 \* \* \*

Computing statistics for 100 seconds...

Source to Here   This Node/Link

Hop RTT   Lost/Sent = Pct   Lost/Sent = Pct   Address

0                           1642-6LAB44.mits.com [172.16.6.44]

0/ 100 = 0%   |

1 0ms 0/ 100 = 0% 0/ 100 = 0% 172.16.0.199

0/ 100 = 0% |

2 0ms 0/ 100 = 0% 0/ 100 = 0% 10.10.10.1

0/ 100 = 0% |

3 11ms 1/ 100 = 1% 1/ 100 = 1% static.ill.117.250.201.129.bsnl.co.in [117.250.201.129]

0/ 100 = 0% |

4 11ms 0/ 100 = 0% 0/ 100 = 0% 172.19.243.210

Trace complete.