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Command Prompt
Microsoft Windows [Version 10.0.19045.4780]
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C:\Users\VF>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

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

Wireless LAN adapter Local Area Connection* 1:

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

Wireless LAN adapter Local Area Connection* 2:

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

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fd89::2179:a099:b4d6:3b1436
    IPv4 Address. . . . . : 10.145.23.102
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . : 10.145.0.1

Ethernet adapter Bluetooth Network Connection:

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

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Select Command Prompt
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :

C:\Users\VF>ipconfig/all

Windows IP Configuration

Host Name . . . . . : DESKTOP-FBBNPF1
Primary Dns Suffix . :
Node Type . . . . . : Hybrid
IP Routing Enabled . . . . . : No
WINS Proxy Enabled . . . . . : No

Ethernet adapter Ethernet:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :
    Description . . . . . : Realtek PCIe GbE Family Controller
    Physical Address. . . . . : 38-F3-AB-8B-5F-D4
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :
    Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
    Physical Address. . . . . : 08-F3-BC-C2-39-93
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :
    Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
    Physical Address. . . . . : 8A-F3-BC-C2-39-93
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix . :
    Description . . . . . : Qualcomm Atheros QCA61x4A Wireless Network Adapter
    Physical Address. . . . . : 08-F3-BC-C2-39-93
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fd89::2179:a099:b4d6:3b1436(Preferred)
    IPv4 Address. . . . . : 10.145.23.102(Preferred)
    Subnet Mask . . . . . : 255.255.0.0
    Lease Obtained . . . . . : 23 November, 2024 03:04:31 B
    Lease Expires . . . . . : 06 November, 2024 03:56:59 B
    Default Gateway . . . . . : 10.145.0.1
    DHCP Server . . . . . : 10.148.249.3
    DHCPv6 IAID . . . . . : 81327046
    DHCPv6 Client DUID . . . . . : 00-01-00-01-20-13-87-D9-38-F3-AB-8B-5F-D4
    DNS Servers . . . . . : 8.8.8.8
    NetBIOS over Tcpip . . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :
    Description . . . . . : Bluetooth Device (Personal Area Network)
    Physical Address. . . . . : 08-F3-BC-C2-39-94
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

C:\Users\VF>
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Command Prompt - nslookup
TCP 127.0.0.1:54037 127.0.0.1:54038 ESTABLISHED
TCP 127.0.0.1:54038 127.0.0.1:54037 ESTABLISHED
TCP 127.0.0.1:54045 127.0.0.1:20000 ESTABLISHED

C:\Users\VF>nslookup
Default Server: dns.google
Address: 8.8.8.8

> iti.gov.eg
Server: dns.google
Address: 8.8.8.8

Non-authoritative answer:
Name: iti.gov.eg
Address: 156.200.98.250

> yahoo.com
Server: dns.google
Address: 8.8.8.8

Non-authoritative answer:
Name: yahoo.com
Addresses: 2001:4998:124:1507::f000
          2001:4998:44:3507::8000
          2001:4998:44:3507::8001
          2001:4998:24:120d::1:0
          2001:4998:24:120d::1:1
          2001:4998:124:1507::f001
          98.137.11.164
          98.137.11.163
          74.6.143.26
          74.6.143.25
          74.6.231.21
          74.6.231.20

> google.com
Server: dns.google
Address: 8.8.8.8

Non-authoritative answer:
Name: google.com
Addresses: 2a00:1450:4006:812::200e
          142.251.37.206

>
```

Why does the nslookup command return only one IP address when querying google.com, despite Google having multiple servers?

Because Google implements DNS load balancing, which allows its DNS servers to provide a single IP address from a pool of available servers. The returned IP address is determined by factors such as your geographic location, the current load on each server, and the proximity of the server to your network. This approach optimizes performance by directing your request to the server that is best suited to handle it, ensuring faster response times and efficient resource use.