IFCONFIG

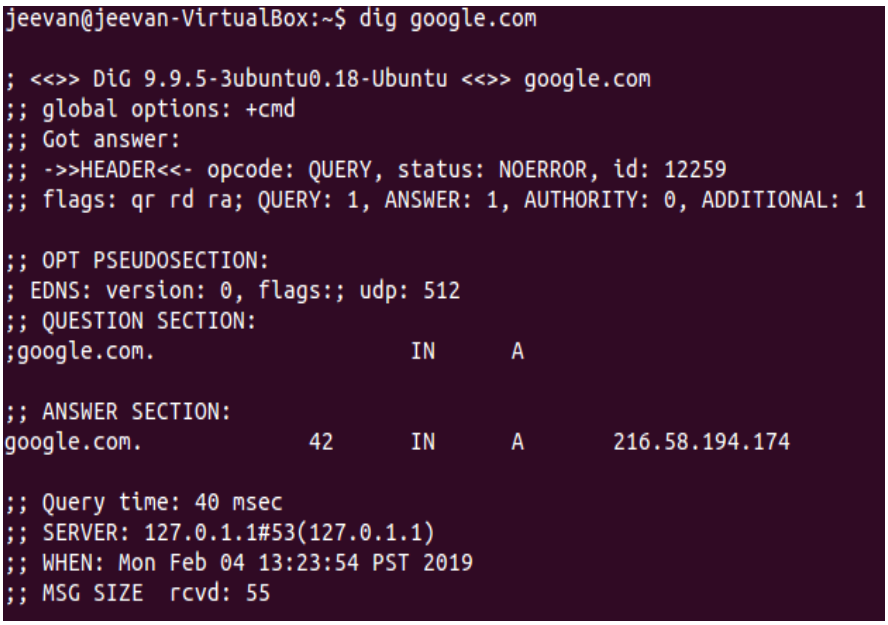
Check the ip address and configuration assigned to the system.

Traceroute

Displays the routers the packet passes on its path to the destination.

DIG command

Returns the answers returned by DNS records



Telnet

To check connectivity between two hosts.

telnet hostname portno

NSLOOKUP

To find entries on the DNS servers

```
jeevan@jeevan-VirtualBox:~$ nslookup google.com
Server:         127.0.1.1
Address:        127.0.1.1#53

Non-authoritative answer:
Name:   google.com
Address: 172.217.6.78

jeevan@jeevan-VirtualBox:~$
```

NETSTAT

Summary of all ports connected and their status

W

Summary of current activity on the host

```
jeevan@jeevan-VirtualBox:~$ w
 14:31:41 up  1:21,  2 users,  load average: 0.20, 0.16, 0.11
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
jeevan   :0       :0               13:11   ?xdm?   9:03   0.90s init --user
jeevan   pts/13   :0               13:12    5.00s  0.41s  0.02s w
jeevan@jeevan-VirtualBox:~$
```

NMAP

Checks the open ports on the server

```
jeevan@jeevan-VirtualBox:~$ nmap 10.0.0.246

Starting Nmap 6.40 ( http://nmap.org ) at 2019-02-04 14:47 PST
Nmap scan report for 10.0.0.246
Host is up (1.0s latency).
Not shown: 995 closed ports
PORT    STATE    SERVICE
25/tcp  filtered smtp
110/tcp filtered pop3
135/tcp open     msrpc
139/tcp open     netbios-ssn
445/tcp open     microsoft-ds

Nmap done: 1 IP address (1 host up) scanned in 25.38 seconds
jeevan@jeevan-VirtualBox:~$
```

https://www.tecmint.com/nmap-command-examples/

IFUP / IFDOWN

To enable or disable a network interface.

Example

Ifup eth0

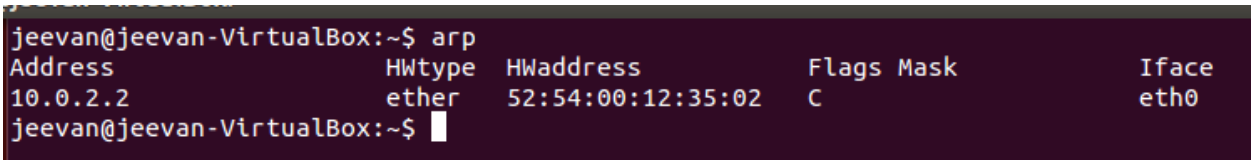
Ifdown eth0

SCP

Secure copy files from other hosts in the network

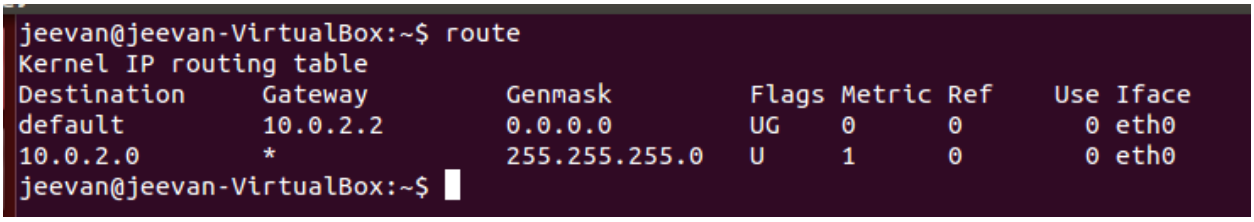
ARP command

ARP table on the host machine



Route Command

Routing table on the host machine



Adding a default gateway

route add -net <ipaddress> gw <gateway ipaddress>

default gateway

route add default gw <gateway ip address>

HOST Command

Name to ip and Ip to name

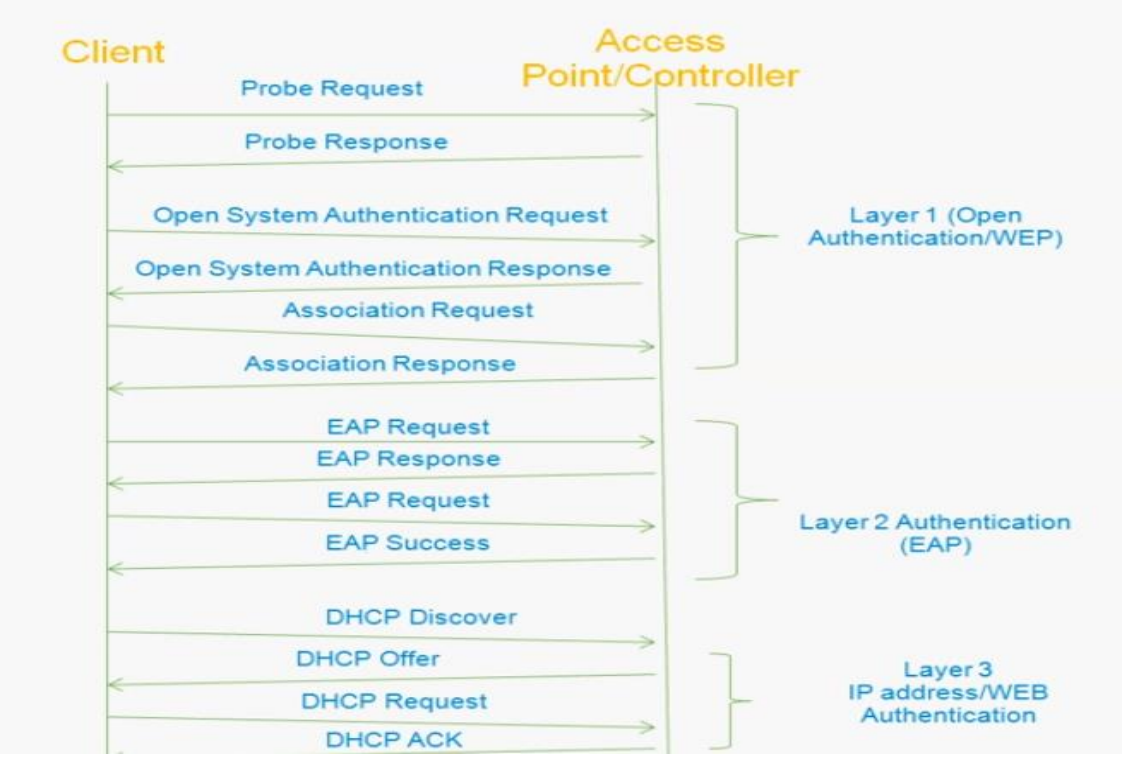
```
jeevan@jeevan-VirtualBox:~$ host www.google.com
www.google.com has address 216.58.194.196
www.google.com has IPv6 address 2607:f8b0:4005:804::2004
jeevan@jeevan-VirtualBox:~$
```

Checking Network Connectivity Issues

1. Check LAN and WAN connections
2. Verify wireless adapter
3. Verify AP and router settings.
    a. Verify SSID details (network parameters)
    b. Identify the subnet and whether the client has the ip address.
    c. Verify if the ip address of your desktop is assigned by the router.
4. Verify TCP/IP setting in the desktop.
5. Use ping to verify connectivity.
6. Check wireless specifications issue whether standards.

Client Connectivity Issues

Normal Connection Proceedure



Layer 1 Authentication: To find all the available SSIDs or Available wireless networks over the air. After the response. Association request is sent. Agreeing to IEEE formats 802.1 or any.

Layer 2 Authentication: Authentication over data link layer.

Possible problems:

Wrong EAP authentication,

Layer 3: To get an IP address.

Possible problems:

DHCP proxy enable or disable

SSID mismatch

Troubleshooting Client:

3 commands:

1. debug client <MAC address>

2. show debug → Policy manager state important one that gives status
3. debug disable-all

Client details

Show client <Mac address>

Client Connectivity

https://community.cisco.com/t5/wireless-mobility-videos/troubleshooting-client-connection-issue-on-cisco-wireless/ba-p/3102725