Day 11 Explore any 10 networking commands

ping:

- **Purpose:** Tests connectivity between devices on a network.

```
┌──(kali㉿kali)-[~/nithesh]
└─$ ping  192.168.1.1
PING 192.168.1.1 (192.168.1.1) 56(84) bytes of data.
```

ifconfig (Linux):

- **Purpose:** Displays network interface configuration information, including IP addresses, subnet masks, and default gateways.

```
┌──(kali㉿kali)-[~/nithesh]
└─$ ifconfig -a

eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.2.128  netmask 255.255.255.0  broadcast 192.168.2.255
        inet6 fe80::618d:2d82:b0c5:77e4  prefixlen 64  scopeid 0×20<link>
        ether 00:0c:29:ce:05:4e  txqueuelen 1000  (Ethernet)
        RX packets 25078  bytes 2096812 (1.9 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 22371  bytes 1668360 (1.5 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0×10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 126  bytes 10216 (9.9 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 126  bytes 10216 (9.9 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

tracert (Linux):

- **Purpose:** Traces the route packets take to reach a destination, showing intermediate hops.

```
┌──(kali㉿kali)-[~/nithesh]
└─$ traceroute 192.168.1.1
traceroute to 192.168.1.1 (192.168.1.1), 30 hops max, 60 byte packets
 1  192.168.2.2 (192.168.2.2)  0.335 ms  0.186 ms  0.242 ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
```

nslookup:

- **Purpose:** Resolves domain names to IP addresses and vice versa.

```
┌──(kali㉿kali)-[~/nithesh]
└─$ nslookup 192.168.2.128/24
Server:         192.168.2.2
Address:        192.168.2.2#53
```

netstat:

- **Purpose:** Displays network connections, routing tables, interface statistics, and more.

```
┌──(kali㊉kali)-[~/nithesh]
└─$ netstat -a

Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
udp     2560      0 192.168.2.128:54243     192.168.2.2:domain      ESTABLISHED
udp        0      0 192.168.2.128:bootpc    192.168.2.254:bootps    ESTABLISHED
raw6       0      0 [::]:ipv6-icmp          [::]:*                  7
Active UNIX domain sockets (servers and established)
Proto RefCnt Flags       Type       State         I-Node   Path
unix  3      [ ]         STREAM     CONNECTED     9593     /run/user/1000/bus
unix  2      [ ]         DGRAM      CONNECTED     10475
unix  3      [ ]         STREAM     CONNECTED     16213
unix  3      [ ]         STREAM     CONNECTED     11295
unix  3      [ ]         STREAM     CONNECTED     8122     /run/user/1000/at-spi/bus_0
unix  2      [ ]         DGRAM      CONNECTED     8659
unix  3      [ ]         STREAM     CONNECTED     404      /run/dbus/system_bus_socket
unix  3      [ ]         STREAM     CONNECTED     11705    /run/user/1000/bus
unix  3      [ ]         STREAM     CONNECTED     8635
unix  3      [ ]         STREAM     CONNECTED     11294
unix  3      [ ]         STREAM     CONNECTED     11271
unix  3      [ ]         STREAM     CONNECTED     8666     /run/user/1000/bus
unix  2      [ ]         DGRAM      CONNECTED     430
unix  3      [ ]         DGRAM      CONNECTED     1859
unix  3      [ ]         STREAM     CONNECTED     19638
unix  3      [ ]         STREAM     CONNECTED     461      /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED     11688    /run/user/1000/bus
unix  3      [ ]         STREAM     CONNECTED     11292
unix  3      [ ]         STREAM     CONNECTED     168171
unix  3      [ ]         STREAM     CONNECTED     8487     /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED     6972     /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED     17604    @/tmp/.ICE-unix/1183
unix  3      [ ]         STREAM     CONNECTED     8757     @/tmp/.X11-unix/X0
unix  3      [ ]         STREAM     CONNECTED     8680
```

arp:

- **Purpose:** Displays the Address Resolution Protocol (ARP) cache, which maps IP addresses to MAC addresses.

```
┌──(kali㊉kali)-[~/nithesh]
└─$ arp -a
? (192.168.2.2) at 00:50:56:ec:aa:a7 [ether] on eth0
? (192.168.2.254) at 00:50:56:fa:90:5f [ether] on eth0
```

route:

- **Purpose:** Manages routing tables on Windows systems.

```
┌──(kali㊉kali)-[~/nithesh]
└─$ route print

Usage: route [-nNvee] [-FC] [<AF>]          List kernel routing tables
       route [-v] [-FC] {add|del|flush} ... Modify routing table for AF.

       route {-h|--help} [<AF>]             Detailed usage syntax for specified AF.
       route {-V|--version}                 Display version/author and exit.

          -v, --verbose            be verbose
          -n, --numeric            don't resolve names
          -e, --extend             display other/more information
          -F, --fib                display Forwarding Information Base (default)
          -C, --cache              display routing cache instead of FIB

        <AF>≥Use -4, -6, '-A <af>' or '--<af>'; default: inet
       List of possible address families (which support routing):
          inet (DARPA Internet) inet6 (IPv6) ax25 (AMPR AX.25)
          netrom (AMPR NET/ROM) rose (AMPR ROSE) ipx (Novell IPX)
          ddp (Appletalk DDP) x25 (CCITT X.25)
```
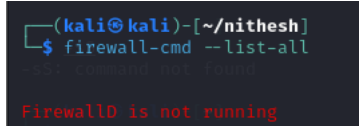
firewall (Linux):

- **Purpose:** Manages firewall rules on Linux/macOS systems.

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