Beyond ip a
Learning the ip Command

whoami

https://scriptingis.life
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00

Arguments

Like what your parents have

Arguments

-4 - Show only IPv4 addresses

-o - Print each entry on a single line

-r - Resolve IP addresses

Arguments

-d - Details

-br - Brief

-c - Basically party parrot

01

Address

There's no place like 127.0.0.1

IP Address

ip a

ip addr show

ip a show dev eth0

ip a show label eth*

IP Address

```
ubuntu@ip-172-31-4-61:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 9001 qdisc fq_codel state UP group default qlen 1000
    link/ether 0a:f2:53:ab:d0:cc brd ff:ff:ff:ff:ff:ff
    inet 172.31.4.61/20 brd 172.31.15.255 scope global dynamic eth0
       valid_lft 3565sec preferred_lft 3565sec
    inet6 fe80::8f2:53ff:feab:d0cc/64 scope link
       valid_lft forever preferred_lft forever
```

IP Address

```
ubuntu@ip-172-31-4-61:~$ ip -4 a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 9001 qdisc fq_codel state UP group default qlen 1000
    inet 172.31.4.61/20 brd 172.31.15.255 scope global dynamic eth0
       valid_lft 3487sec preferred_lft 3487sec
```

IP Address

```
ubuntu@ip-172-31-4-61:~$ ip -o a
1: lo    inet 127.0.0.1/8 scope host lo\         valid_lft forever preferred_lft forever
1: lo    inet6 ::1/128 scope host \        valid_lft forever preferred_lft forever
2: eth0    inet 172.31.4.61/20 brd 172.31.15.255 scope global dynamic eth0\        valid_lft 3407sec preferred_lft 3407sec
2: eth0    inet6 fe80::8f2:53ff:feab:d0cc/64 scope link \        valid_lft forever preferred_lft forever
```

IP Address

```
ubuntu@ip-172-31-4-61:~$ ip -br a
lo               UNKNOWN        127.0.0.1/8 ::1/128
eth0             UP             172.31.4.61/20 fe80::8f2:53ff:feab:d0cc/64
```

IP Address

```
ubuntu@ip-172-31-4-61:~$ ip -c a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 9001 qdisc fq_codel state UP group default qlen 1000
    link/ether 0a:f2:53:ab:d0:cc brd ff:ff:ff:ff:ff:ff
    inet 172.31.4.61/20 brd 172.31.15.255 scope global dynamic eth0
       valid_lft 3387sec preferred_lft 3387sec
    inet6 fe80::8f2:53ff:feab:d0cc/64 scope link
       valid_lft forever preferred_lft forever
```

02

ARP

I AM THE ROUTER NOW

Address Resolution Protocol

```
ip neighbour

ip neigh show dev eth0

ip n add 192.168.1.1 lladdr aa:bb:cc:dd:ee:ff dev eth0
```

Address
Resolution
Protocol

```
ubuntu@ip-172-31-4-61:~$ ip n
172.31.0.2 dev eth0 lladdr 0a:cf:f9:83:19:cd STALE
172.31.0.1 dev eth0 lladdr 0a:cf:f9:83:19:cd REACHABLE
```

03
Interfaces

Up, down, all around

Interfaces

```
ip link set eth0 up/down

ip link set arp off dev eth0

ip link set eth0 promisc on
```

04

Routes

"a way or course taken in getting from a
starting point to a destination."

Routes

```
ip route show

ip route add default 192.168.1.1 dev eth0

ip route get $(dig +short google.com)
```

Routes

```
ubuntu@ip-172-31-4-61:~$ ip route show
default via 172.31.0.1 dev eth0 proto dhcp src 172.31.4.61 metric 100
172.31.0.0/20 dev eth0 proto kernel scope link src 172.31.4.61
172.31.0.1 dev eth0 proto dhcp scope link src 172.31.4.61 metric 100
```

Routes

```
ubuntu@ip-172-31-4-61:~$ ip route get $(dig +short ritsec.club)
192.64.119.183 via 172.31.0.1 dev eth0 src 172.31.4.61 uid 1000
    cache
```

Thanks!

Up next….awk???

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