Linux ip COMMAND CHEAT SHEET

IP QUERIES

SUBCOMMAND	DESCRIPTIONS AND TASKS
addr	Display IP Addresses and property information (abbreviation of address) **ip addr** Show information for all addresses **ip addr show dev em1** Display information only for device em1
link	Manage and display the state of all network interfaces **ip link** Show information for all interfaces **ip link show dev em1** Display information only for device em1 **ip -s link** Display interface statistics
route	Display and alter the routing table **ip route** List all of the route entries in the kernel
maddr	Manage and display multicast IP addresses **ip maddr** Display multicast information for all devices **ip maddr show dev em1** Display multicast information for device em1
neigh	Show neighbour objects; also known as the ARP table for IPv4 **ip neigh** Display neighbour objects **ip neigh show dev em1** Show the ARP cache for device em1
help	Display a list of commands and arguments for each subcommand **ip help** Display ip commands and arguments **ip addr help** Display address commands and arguments **ip link help** Display link commands and arguments **ip neigh help** Display neighbour commands and arguments

MULTICAST ADDRESSING

SUBCOMMAND	DESCRIPTIONS AND TASKS
maddr add	Add a static link-layer multicast address **ip maddr add 33:33:00:00:00:01 dev em1** Add mutlicast address 33:33:00:00:00:01 to em1
maddr del	Delete a multicast address **ip maddr del 33:33:00:00:00:01 dev em1** Delete address 33:33:00:00:00:01 from em1

MODIFYING ADDRESS AND LINK PROPERTIES

SUBCOMMAND	DESCRIPTIONS AND TASKS
addr add	Add an address **ip addr add 192.168.1.1/24 dev em1** Add address 192.168.1.1 with netmask 24 to device em1
addr del	Delete an address **ip addr del 192.168.1.1/24 dev em1** Remove address 192.168.1.1/24 from device em1
link set	Alter the status of the interface **ip link set em1 up** Bring em1 online **ip link set em1 down** Bring em1 offline **ip link set em1 mtu 9000** Set the MTU on em1 to 9000 **ip link set em1 promisc on** Enable promiscuous mode for em1

ADJUSTING AND VIEWING ROUTES

SUBCOMMAND	DESCRIPTIONS AND TASKS
route add	Add an entry to the routing table **ip route add default via 192.168.1.1 dev em1** Add a default route (for all addresses) via the local gateway 192.168.1.1 that can be reached on device em1 **ip route add 192.168.1.0/24 via 192.168.1.1** Add a route to 192.168.1.0/24 via the gateway at 192.168.1.1 **ip route add 192.168.1.0/24 dev em1** Add a route to 192.168.1.0/24 that can be reached on device em1
route delete	Delete a routing table entry **ip route delete 192.168.1.0/24 via 192.168.1.1** Delete the route for 192.168.1.0/24 via the gateway at 192.168.1.1
route replace	Replace, or add if not defined, a route **ip route replace 192.168.1.0/24 dev em1** Replace the defined route for 192.168.1.0/24 to use device em1
route get	Display the route an address will take **ip route get 192.168.1.5** Display the route taken for IP 192.168.1.5

MANAGING THE ARP TABLE

SUBCOMMAND	DESCRIPTIONS AND TASKS
neigh add	Add an entry to the ARP Table **ip neigh add 192.168.1.1 lladdr 1:2:3:4:5:6 dev em1** Add address 192.168.1.1 with MAC 1:2:3:4:5:6 to em1
neigh del	Invalidate an entry **ip neigh del 192.168.1.1 dev em1** Invalidate the entry for 192.168.1.1 on em1
neigh replace	Replace, or adds if not defined, an entry to the ARP table **ip neigh replace 192.168.1.1 lladdr 1:2:3:4:5:6 dev em1** Replace the entry for address 192.168.1.1 to use MAC 1:2:3:4:5:6 on em1

USEFUL NETWORKING COMMANDS (NOT NECESSARILY PROVIDED FROM IPROUTE)

SUBCOMMAND	DESCRIPTIONS AND TASKS
arping	Send ARP request to a neighbour host **arping -I eth0 192.168.1.1** Send ARP request to 192.168.1.1 via interface eth0 **arping -D -I eth0 192.168.1.1** Check for duplicate MAC addresses at 192.168.1.1 on eth0
ethtool	Query or control network driver and hardware settings **ethtool -g eth0** Display ring buffer for eth0 **ethtool -i eth0** Display driver information for eth0 **ethtool -p eth0** Identify eth0 by sight, typically by causing LEDs to blink on the network port **ethtool -S eth0** Display network and driver statistics for eth0
ss	Display socket statistics. The below options can be combined **ss -a** Show all sockets (listening and non-listening) **ss -e** Show detailed socket information **ss -o** Show timer information **ss -n** Do not resolve addresses **ss -p** Show process using the socket

COMPARING NET-TOOLS VS. IPROUTE PACKAGE COMMANDS

NET-TOOLS COMMANDS	IPROUTE COMMANDS
arp -a	**ip neigh**
arp -v	**ip -s neigh**
arp -s 192.168.1.1 1:2:3:4:5:6	**ip neigh add 192.168.1.1 lladdr 1:2:3:4:5:6 dev eth1**
arp -i eth1 -d 192.168.1.1	**ip neigh del 192.168.1.1 dev eth1**
ifconfig -a	**ip addr**
ifconfig eth0 down	**ip link set eth0 down**
ifconfig eth0 up	**ip link set eth0 up**
ifconfig eth0 192.168.1.1	**ip addr add 192.168.1.1/24 dev eth0**
ifconfig eth0 netmask 255.255.255.0	**ip addr add 192.168.1.1/24 dev eth0**
ifconfig eth0 mtu 9000	**ip link set eth0 mtu 9000**
ifconfig eth0:0 192.168.1.2	**ip addr add 192.168.1.2/24 dev eth0**
netstat	**ss**
netstat -neopa	**ss -neopa**
netstat -g	**ip maddr**
route	**ip route**
route add -net 192.168.1.0 netmask 255.255.255.0 dev eth0	**ip route add 192.168.1.0/24 dev eth0**
route add default gw 192.168.1.1	**ip route add default via 192.168.1.1**