IP Command Cheat Sheet

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Syntax

$ ip [options] OBJECT COMMAND

Display the command syntax and lists all available options

$ ip help

IP Objects

OBJECTS	DESCRIPTION
address	IPv4 or IPv6 addresses on a device
link	Network interfaces for example Wi-Fi adaptors and wired connections
route	Routing table entry
maddress	Multicast address
neighbour	Neighbor entry, which contains information about a neighboring device on the network.
mroute	Multicast routing cache entry
rule	Rule in routing policy database

Quick Tip

When working with the IP command, you can save time by using shortened or abbreviated object names. For instance, instead of typing "address," you can simply use "addr" or even just "a." Give it a shot!

IP Options

OPTION	DESCRIPTION
-a	Executes specified command over all objects
-d	Output more detailed information
-j	Displays the output in JSON format
-p	Adds indentation to the JSON output for readability
-s	Display extra statistics
-6	Instructs IP to display only IPv6 Addresses
-h	Output statistics with human readable values
-c	Enable colored output
-t	Display timestamps in the output
-br	Print only basic information in a tabular format

IP Command vs Net-Tools

NET-TOOLS	IPROUTE COMMANDS (IP)
$ arp -a	$ ip neigh
$ ifconfig -a	$ ip addr
$ netstat -g	$ ip maddress
$ route	$ ip route

Manage IP Addresses

COMMAND	DESCRIPTION
$ ip addr help	Display a list of commands and arguments for the address object.
$ ip addr show	Display information about all ip addresses.
$ ip addr show dev wlan0	Display IP addresses on the specified network interface
$ sudo ip addr add 192.168.1.21/24 dev wlan0	Add IP Address to the specified interface. Note you can add multiple addresses on the same by repeating the command with a different IP Address.
sudo ip addr del 192.168.1.22/24 dev wlan0	Delete IP Address on the specified interface.

Manage Network Interfaces

COMMAND	DESCRIPTION
$ ip link help	Display a list of commands and arguments for the link object.
$ ip link show	Display information about all available network interfaces
$ ip link show dev wlan0	Display information about a specific network interface
$ ip link set dev wlan0 down	Bring the specified interface down.
$ ip link set dev wlan0 up	Bring the specified interface up.

Manage Routing Table

COMMAND	DESCRIPTION
$ ip route help	Display a list of commands and arguments for the route object.
$ ip route list	List all of the route entries in the kernel
$ ip route list 10.18.0.0/17	Display routing information for a specific network
$ ip route add 10.18.0.0/17 via 192.168.1.1	Add a new entry to the routing table
$ ip route add 10.18.0.0/17 dev wlan0	Add a new entry to the routing table via the interface wlan0
$ ip route add default via 192.168.1.1 dev wlan0	Add the default route
$ ip route del default	Delete the default route
$ ip route del 192.168.92.0/24 via 192.168.92.1	Delete the specified route

Manage Neighbour Entries

COMMAND	DESCRIPTION
$ ip neigh help	Display a list of commands and arguments for the neighbour object.
$ ip neigh show	Display neighbour table entries
$ ip neigh add 192.168.0.2 lladdr A4:C3:F0:9F:56:B9 dev wlan0	Add entry to the ARP table
$ ip neigh del 192.168.0.2 dev wlan0	Remove the ARP entry

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Important

When making changes to network interfaces, addresses, or routes, exercise extreme caution. It is simple to disconnect the server from the main network, which may require a system reboot to fix. When experimenting with new commands in a test environment or non-critical systems.

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