



Basic Network Information

IP Configuration

<code>ip addr</code>	Display IP addresses, subnet masks, and interface information. Example: <code>ip addr show eth0</code>
<code>ifconfig</code>	Display or configure network interface parameters (deprecated, but still used). Example: <code>ifconfig eth0</code>
<code>hostname</code>	Display the system's hostname. Example: <code>hostname</code>
<code>hostname -I</code>	Display all IP addresses associated with the hostname. Example: <code>hostname -I</code>
<code>nmcli</code>	NetworkManager command-line tool for managing network connections. Example: <code>nmcli device show eth0</code>
<code>ethtool</code>	Display or change Ethernet card settings. Example: <code>ethtool eth0</code>

Network Connectivity

Testing Connectivity

<code>ping</code>	Send ICMP ECHO_REQUEST packets to network hosts. Example: <code>ping google.com</code>
<code>telnet</code>	Connect to a remote system using the Telnet protocol (unencrypted). Example: <code>telnet example.com 80</code>
<code>nc</code> (netcat)	Arbitrary TCP and UDP connections and listens. Good for testing network services. Example: <code>nc -zv example.com 20-30</code>
<code>curl</code>	Transfer data from or to a server. Example: <code>curl example.com</code>
<code>wget</code>	Retrieve files from the web. Example: <code>wget https://example.com/file.txt</code>

Network Monitoring

Routing

<code>route</code>	Display or manipulate the IP routing table. Example: <code>route -n</code>
<code>ip route</code>	Show or manipulate routing, devices, policy routing and tunnels. Example: <code>ip route show</code>
<code>traceroute</code>	Traces the route packets take to a network host. Example: <code>traceroute google.com</code>

DNS Lookup

<code>nslookup</code>	Query Internet name servers interactively. <code>p</code> Example: <code>nslookup example.com</code>
<code>dig</code>	DNS lookup utility. More powerful and flexible than <code>nslookup</code> . Example: <code>dig example.com</code>
<code>host</code>	DNS lookup utility for finding the IP address associated with a hostname or vice versa. Example: <code>host example.com</code>

Traffic Monitoring

<code>tcpdump</code>	A powerful packet analyzer; it prints a description of the contents of network packets.
Example:	<pre>tcpdump -i eth0</pre>
<code>wireshark</code>	A network protocol analyzer that lets you capture and interactively browse the traffic running on a computer network. (GUI based).
Example:	Start Wireshark from the GUI or use <code>tshark</code> (command-line version). <pre>tshark -i eth0</pre>
<code>iftop</code>	Displays bandwidth usage on an interface by host.
Example:	<pre>iftop -i eth0</pre>
<code>nload</code>	Displays network usage in real-time.
Example:	<pre>nload eth0</pre>

Firewall Management

iptables

<code>iptables -L</code>	List current iptables rules.
Example:	<pre>iptables -L</pre>
<code>iptables -A INPUT -p tcp --dport 22 -j ACCEPT</code>	Add a rule to accept SSH traffic.
Example:	<pre>iptables -A INPUT -p tcp --dport 22 -j ACCEPT</pre>
<code>iptables -D INPUT -p tcp --dport 22 -j ACCEPT</code>	Delete a rule.
Example:	<pre>iptables -D INPUT -p tcp --dport 22 -j ACCEPT</pre>

Connection Monitoring

<code>netstat</code>	Displays network connections, routing tables, interface statistics, masquerade connections, and multicast memberships.
Example:	<pre>netstat -an</pre>
<code>ss</code>	<code>ss</code> is used to dump socket statistics. It allows showing information similar to <code>netstat</code> .
Example:	<pre>ss -tulpn</pre>
<code>lsof</code>	List open files. Can be used to find processes using network connections.
Example:	<pre>lsof -i :80</pre>

firewalld

<code>firewall-cmd --state</code>	Check the status of firewalld.
Example:	<pre>firewall-cmd --state</pre>
<code>firewall-cmd --zone=public --add-port=80/tcp --permanent</code>	Open port 80 for HTTP traffic permanently.
Example:	<pre>firewall-cmd --zone=public --add-port=80/tcp --permanent</pre>
<code>firewall-cmd --reload</code>	Reload firewalld to apply changes.
Example:	<pre>firewall-cmd --reload</pre>