

# Enterprise Linux 7 (RedHat, CentOS)

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Command cheat sheet for EL7. For every action, I try to give the 'canonical' command, as recommended by RedHat. That means using systemd, NetworkManager, journald, etc.

## Network configuration

Action	Command
List interfaces (and IP addresses)	<code>ip address, ip a</code>
Route table	<code>ip route, ip r</code>
DNS servers	<code>cat /etc/resolv.conf</code>
Set IP address of an interface*	<code>ip address add 192.168.56.1/24 dev vboxnet0</code>

(\*) This example is actually a workaround for a [bug](#) that causes NetworkManager 0.9.9 to manage virtual network interfaces.

## NetworkManager

Action	Command
Show available network connection profiles	<code>nmcli connection show</code>
Show active network connection profiles	<code>nmcli connection show active</code>
Show network device status	<code>nmcli device status</code>
Connect to profile CONNECTION	<code>nmcli connection up id CONNECTION</code>
Disconnect profile CONNECTION	<code>nmcli connection down id CONNECTION</code>
Query Wifi status	<code>nmcli radio wifi</code>
Turn Wifi on/off	<code>nmcli radio wifi {on,off}</code>
List available wireless networks	<code>nmcli device wifi list</code>
Refresh list of wireless networks	<code>nmcli device wifi rescan</code>
Connect to wireless network SSID	<code>nmcli device wifi connect SSID</code>

connection and device can be abbreviated to con and dev, respectively.

## Host name

There are three kinds of host names:

- Static: "traditional" host name, stored in `/etc/hostname`
- Transient: dynamic, set in kernel. Default value is the static host name, can be set by e.g. DHCP or mDNS.
- Pretty: free form, for presentation to the user. Default value is the static host name.

Action	Command
Get hosti names	hostnamectl
Set (all) host names	hostnamectl set-hostname HOSTNAME
Set specific host name	hostnamectl set-hostname --static HOSTNAME hostnamectl set-hostname --transient HOSTNAME hostnamectl set-hostname --pretty HOSTNAME

## Resources

- [RedHat Enterprise Linux 7 Networking Guide](#)
- [Fedora Wiki: Networking/CLI](#)
- [RHEL 7: How to get started with Systemd](#), at certdepot.net

## Managing services with systemctl

Action	Command
List services	systemctl list-units --type service
Query SERVICE status	sudo systemctl status SERVICE.service
List failed services on boot	sudo systemctl --failed
Start SERVICE	sudo systemctl start SERVICE.service
Stop SERVICE	sudo systemctl stop SERVICE.service
Restart SERVICE	sudo systemctl restart SERVICE.service
Kill SERVICE (all processes) with SIGTERM	sudo systemctl kill SERVICE.service
Kill SERVICE (all processes) with SIGKILL	sudo systemctl kill -s SIGKILL SERVICE.service
Start SERVICE on boot	sudo systemctl enable SERVICE.service
Don't start SERVICE on boot	sudo systemctl disable SERVICE.service

## Runlevels

Run with root privileges (sudo)

Action	Command
Go to single user mode	systemctl rescue
Go to multi-user mode (= old runlevel 3)	systemctl isolate multi-user.target systemctl isolate runlevel3.target
Go to graphical level	systemctl isolate graphical.target
Get default runlevel	systemctl get-default
Set default runlevel	systemctl set-default graphical.target
Shutdown	systemctl poweroff
Reboot, suspend, hibernate	systemctl STATE

## Resources

- [RedhHat 7 System Administrator's Guide](#)
- [Systemd for Administrators, Part IV: Killing Services](#)

## Perusing system logs with journalctl

Viewing logs requires root privileges. However, users that are members of the adm group get access as well. So, add your user to the adm group to make viewing logs easier.

Action	Command
Show log since last boot	<code>journalctl -b</code>
Kernel messages (like dmesg)	<code>journalctl -k</code>
Show latest log and wait for changes	<code>journalctl -f</code>
Reverse output (newest first)	<code>journalctl -r</code>
Show only errors and worse	<code>journalctl -b -p err</code>
Filter on time (example)	<code>journalctl --since=2014-06-00 --until="2014-06-07 12:00:00"</code>
Since yesterday	<code>journalctl --since=yesterday</code>
Show only log of SERVICE	<code>journalctl -u SERVICE</code>
Match executable, e.g. dhclient	<code>journalctl /usr/sbin/dhclient</code>
Match device node, e.g. /dev/sda	<code>journalctl /dev/sda</code>

## Resources

- [Systemd for Administrators, Part XVII: Using the journal](#)

## Configuring the firewall with firewallld

The firewallld-cmd should run with root privileges, do always use sudo.

Action	Command
Firewall state	<code>firewall-cmd --state</code>
Reload permanent rules	<code>firewall-cmd --reload</code>
Currently enabled features	<code>firewall-cmd --list-all-zones</code>
List supported zones	<code>firewall-cmd --get-zones</code>
List preconfigured services	<code>firewall-cmd --get-services</code>
Enabled features in current zone	<code>firewall-cmd --list-all</code>
Enabled features in zone	<code>firewall-cmd [--permanent] [--zone=ZONE] --list-all</code>
Enable a service in zone	<code>firewall-cmd [--permanent] [--zone=ZONE] --add-service=http</code>
Remove service from zone	<code>firewall-cmd [--permanent] [--zone=ZONE] --remove-service=http</code>
Enable a port in zone	<code>firewall-cmd [--permanent] [--zone=ZONE] --add-port=80/tcp</code>
Remove a port from zone	<code>firewall-cmd [--permanent] [--zone=ZONE] --remove-port=80/tcp</code>
Turn panic mode on	<code>firewall-cmd --panic-on</code>

Action	Command
Turn panic mode off	<code>firewall-cmd --panic-off</code>

- Configuration is stored in `/etc/firewalld` and `/usr/lib/firewalld`
- The default zone is `public`, which you don't have to specify on the command line when adding/removing rules
- Adding permanent rules

## Resources

- [Using Firewalls](#), in RHEL 7 Security Guide
- [Firewalld](#), in Fedora Project Wiki