

# Module : 20 - Linux server - Manage basic networking & Security

## 1) Using ifconfig

- View Network Interfaces
- ifconfig
- Bring Up or Down an Interface
- `sudo ifconfig eth0 up`
- `sudo ifconfig eth0 down`
- Configure an IP Address
- `sudo ifconfig eth0 192.168.1.100 netmask 255.255.255.0`
- Using ip
- View Network Interfaces
- `ip address show`
- Bring Up or Down an Interface
- `sudo ip link set eth0 up`
- `sudo ip link set eth0 down`
- Configure an IP Address
- `sudo ip address add 192.168.1.100/24 dev eth0`
- Remove an IP Address
- `sudo ip address del 192.168.1.100/24 dev eth0`

## 2) Ping an IP Address

- `ping 192.168.1.1`

### 3) Basic Firewall-cmd Commands

- `sudo firewall-cmd --get-active-zones`
- `sudo firewall-cmd --zone=public`  
`--change-interface=eth0`
- `sudo firewall-cmd --new-zone=work`
- `sudo firewall-cmd --zone=work --add-interface=eth1`
- `sudo firewall-cmd --set-default-zone=work`
- `sudo firewall-cmd --zone=work --add-service=http`
- `sudo firewall-cmd --zone=work --add-port=8080/tcp`
- `sudo firewall-cmd --reload`

### 4) Using firewall - cmd (with firewalld)

- `sudo firewall-cmd --zone=public --add-service=ssh`  
`--permanent`
- `sudo firewall-cmd --reload`
- `sudo firewall-cmd --zone=public --list-all`

### 5) Install Firewall Configuration Tool

- `sudo yum install firewall-config`
- `sudo apt install firewall-config`
- Launch Firewall Configuration
- `sudo firewall-config`
- Using the Firewall Configuration Tool
- Zones : Select the zone you want to configure (e.g., public, work).
- Services : Enable or disable services such as HTTP, SSH, etc.

- Ports : Open or close specific ports.
- Rules : Add or remove custom firewall rules.

6) Security-Enhanced Linux (SELinux) is a security architecture integrated into the Linux kernel that provides a mechanism for enforcing access control policies, including Mandatory Access Control (MAC)

## 7) Editing Network Configuration Files

- Open the Network Configuration File:
- Add the Static IP Configuration
- `sudo nano /etc/network/interfaces`
- `auto eth0`
- `iface eth0 inet static`
- `address 192.168.1.100`
- `netmask 255.255.255.0`
- `gateway 192.168.1.1`
- `dns-nameservers 8.8.8.8 8.8.4.4`
- Save and Exit
- Restart Networking Service
- `sudo systemctl restart networking`