

# CISCO IOS Command Reference for CCNA Exploration Semester 1

## Basic configuration commands for router and switch

### Router/Switch Modes:

- **Router>:** User mode = Limited to basic monitoring commands
- **Router#:** Privileged mode (exec-level mode) = Provides access to all other router commands
- **Router(config)#:** global configuration mode = Commands that affect the entire system
- **Router(config-if)#:** interface mode = Commands that affect interfaces
- **Router(config-subif)#:** subinterface mode = Commands that affect subinterfaces
- **Router(config-line)#:** line mode = Commands that affect in lines modes (console, vty, aux...)
- **Router(config-router)#:** router configuration mode

### Changing switch hostname:

```
Switch(config)# hostname SW1
```

### Configuring passwords:

```
SW1(config)# enable secret cisco      ! password stored encrypted  
SW1(config)# enable password notcisco ! password stored in clear text
```

### Securing console port:

```
SW1(config)# line con 0  
SW1(config-line)# password cisco  
SW1(config-line)# login
```

### Securing terminal lines:

```
SW1(config)# line vty 0 4  
SW1(config-line)# password cisco  
SW1(config-line)# login
```

### Encrypting all passwords stored in router/switch:

```
SW1(config)# service password-encryption
```

### Configuring banners:

```
SW1(config)# banner motd $ UNAUTHORIZED ACCESS IS PROHIBITED $
```

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## Giving the switch an IP address and enable the interface:

```
SW1(config)# interface vlan 1
SW1(config-if)# ip address 172.16.1.11 255.255.255.0      ! or DHCP
SW1(config-if)# no shutdown
```

## Setting the default gateway:

```
SW1(config)# ip default-gateway 172.16.1.1
```

## Saving configuration:

```
SW1# copy running-config startup-config
```

## Configuring switch to use SSH:

- Configure DNS domain name:

```
SW1(config)# ip domain-name example.com
```

- Configure a username and password:

```
SW1(config)# username admin password cisco
```

- Generate encryption keys:

The size of the key modulus in the range of 360 to 2048

```
SW1(config)# crypto key generate rsa
How many bits in the modulus [512]: 1024
```

- Define SSH version to use:

```
SW1(config)# ip ssh version 2
```

- Enable vty lines to use SSH:

```
SW1(config)# line vty 0 4
SW1(config-line)# login local
! You can set vty lines to use only telnet or only ssh or both as in the
example.
SW1(config-line)# transport input telnet ssh
```

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## Show and Verify Basic Configuration:

- Shows information about the switch and its interfaces, RAM, NVRAM, flash, IOS, etc.

```
SW1# show version
```

- Shows the current configuration file stored in DRAM.

```
SW1# show running-config
```

- Shows the configuration file stored in NVRAM which is used at first boot process.

```
SW1# show startup-config
```

- Lists the commands currently held in the history buffer.

```
SW1# show history
```

- Shows an overview of all interfaces, their physical status, protocol status and ip address if assigned.

```
SW1# show ip interface brief
```

- Shows detailed information about the specified interface, its status, protocol, duplex, speed, encapsulation, last 5 min traffic.

```
SW1# show interface vlan 1
```

- Shows the description of all interfaces