

### Router 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-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** nutty !MD5 hash  
SW1(config)# **enable password** 1234

### Encrypting passwords

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

### Working environment

SW1(config)# no ip domain-lookup  
SW1(config)# line vty 0 4  
SW1(config-line)# history size 15  
SW1(config-line)# exec-timeout 10 30  
SW1(config-line)# logging synchronous

### Saving configuration

SW1# **copy running-config** nutty  
! Destination filename [nutty]  
SW1# **wr**

### Description, speed and duplex

SW1(config)# interface fastEthernet 0/1  
SW1(config-if)# description LINK TO INTERNET ROUTER  
SW1(config-if)# speed 100 ! Options: 10, 100, auto  
! The range keyword used to set a group of interfaces at once.

### Description, speed and duplex (cont)

SW1(config)# interface range fastEthernet 0/5 - 10  
SW1(config-if-range)# duplex full (options: half, full, auto)

### Setting the default gateway

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

### Securing console port

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

### Aliases

! Used to create shortcuts for long commands.

SW1(config)# **alias exec** c configure terminal

### Securing terminal lines

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

### Configuring banners

SW1(config)# **banner motd** \$

### Giving the switch an IP address

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**

### 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

### 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.



## Verify Basic Configuration (cont)

### 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

### SW1# **show interfaces description**

▶ Shows the status of all interfaces like connected or not, speed, duplex, trunk or access vlan.

### SW1# **show interfaces status**

▶ Shows the public encryption key used for SSH.

### SW1# **show crypto key mypubkey rsa**

▶ Shows information about the leased IP address (when an interface is configured to get IP address via a dhcp server)

### SW1# **show dhcp lease**



By **kanisthaw**  
[cheatography.com/kanisthaw/](http://cheatography.com/kanisthaw/)

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