

User Levels | Routers & Switches

User Exec	Router Name>
Privileged Exec	Router Name# [where network devices are configured]
Global Exec	Router Name(config)# [configuration impacting the entire device]
Interface Config	Router Name(config-if)# [impacts a particular interface]
Line Config	Router Name(config-line)

Basic Config | Routers & Switches

router> enable disable	logs the user into/out of privileged exec
router# configure terminal	logs user into global config
router(config)#> hostname	re/name current device
no hostname	removes name
router(config)# exit	backs out one level to a previous level
router> reload	reboots the device
router(config)# end	Drops back to user exec mode

Basic Commands | Routers & Switches

Router(config)# interface f0/0	int f0/0
Enter interface config	
or	
Router(config)# line console 0	
or	
Router(config)# interface gigabitethernet 0/0	int g0/0
Router(config-line)# exit	
back up one step from any level	
Router(config-line)# end	
straight to user exec mode	



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Basic Security

S1(config)# **enable secret Cisco0**

| pw protects the privileged exec line

S1(config)# **line console 0**

| moves into line configuration mode

S1(config-line)# **password Cisco0**

| sets console access password to "Cisco0"

S1(config-line)# **login**

| turns on the password requirement

S1(config)# **line vty 0 15**

| moves into line configuration mode

S1(config-line)# **Password Cisco0**

| sets virtual terminal access password to "Cisco0"

S1(config-line)@ **login**

| turns on the password requirement

nt

S1(config)# **service password-encryption**

| encrypts all passwords

S1(config)# **banner motd #Authorized Access Only *#**

S1# **copy run start**

adding Pipe Commands

R1# **do show run |**

| **include interface**

| **exclude interface**

| **begin hostname**

NOTES

Securing **privileged EXEC** Only case sensitive after the pipe

Startup-Config

| regardless of current config; router will start up

Securing console port

| until the current config is saved

Vocabulary

rommon read only memory

Hints

R1># [turns off auto dns query]

Securing the Virtual Ports [~~localhost~~ & telnet]

domain-

lookup

R1(con- [Removes IP Address]

fig-if)#+

no ip

address

ctrl+a [cursor moved to the beginning of the line]

ctrl+e [cursor moved to the end of the line]

copy run start [copies running config to startup config]

show [displays startup config]

Message of the Day

start

* STOP SEARCH

ctrl+sh-

ift+6

ip host Assigns the listed ip address [1.1.1.1] to Switch1

switch1

1.1.1.1

? Open help documentation

enable Enables secret password and sets to abc123

secret

abc123

vty - virtual telnet line

Remote Access

R2# **telnet 10.1.1.1** *with PW & access allowed; you will enter the

remote router *



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CONFIGURE SERIAL PORT

```
R1(config)#  
interface serial 0/0/0 int f0/0 [moves into config for s0/0/  
0]  
  
R1(config-if)#  
ip address 192.168.1.254 255.255.255.0 [sets ip & subnet]  
  
R1(config-if)#  
no shut [powers on interface]
```

```
shut [powers off interface]
```

```
R1(config-if)#  
copy run start
```

CONFIGURE FAST ETHERNET PORT

```
R1(config)#  
interface f0/0 int f0/0 [moves into config for f0/0]  
  
R1(config-if)#  
ip address 192.168.1.254 255.255.255.0 [sets ip & subnet]  
  
R1(config-if)#  
no shut [powers on interface]  
  
shut [powers off interface]  
  
R1(config-if)#  
copy run start
```

Configure VLAN

Create and Name VLANs

```
Switch(config)# vlan 10  
moves to vlan 10 config  
  
Switch(config-vlan)# name Support  
names vlan 10, " sup por t"  
  
Switch(config)# vlan 20  
moves into vlan 20 from vlan 10  
  
Switch(config)# name Development  
names vlan 20, " dev elo pme nt"
```

Assign switchport access

Configure VLAN (cont)

```
Switch(config)# int f0/1  
enters config for f0/1  
  
Switch(config-if)# switchport access vlan 10 *  
  
Switch(config)# int f0/2  
Switch(config-if)# switchport access vlan 20 *
```

Routing Configuration

Gateway of Last Resort [restricted to edge [stub] routers only]

```
R1(config)# ip route 0.0.0.0 0.0.0.0 s0/0/0
```

Static Route admini str ative distance = 150

```
R1(config)# ip route 192.168.2.0 255.255.255.0 s0/0/0 150
```

routers only " kno w" what they are connected too
s* - default static route
c - direct connect

"Advanced" Show Commands

show	Displays the access-lists located on the device; including
access-	every line of the access-list [not which interface the list is
list	list is applied to
show	Displays info and status of VLANs [on the device] i.e.
vlan	VLAN names, numbers, and the interfaces on which
	each VLAN can be found
show ip	Displays info about Layer 3 protocols; RIP, OSPF and
protocols	EIGRP [high level overview each protocol has its own
	show command]
show	Displays all trunk ports on the device; which VLANs are
interface	allowed on which trunk, what the native VLAN is.
trunk	



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Verification Commands

R1# show ip route	displays routing table
R1# show ip interface	
R1# show ip interface brief	displays the interface configurations
R1# show running-config	
	R1# show interface s0/0/0
	R1# show interface f0/0
	R1# show interface g0/0
R1# show version	displays IOS info and previous method of restart
R1# show mac address-table	displays contents of MAC Address Table
R1# *int g0/0	displays the listed interface info
R1# show clock	
R1# clock set	09:10:01 11 December 2019

** 'Do' - in front of a command will run the command at any level i.e. my device
(config)# do show ip interface brief -OR- my device (config)# do reload
Add a Ne

Managing IOS Files (cont)

R1# **more flash:my config** ` allows you to view the config file

Storage for Operating System

IOS - Flash
startup Config - NVRAM
Running config - RAM

Error Messages

% Invalid input detected at '^' marker You are at the wrong level to run command

% Incomplete command

[command brings a null response] This is not a bad command, there is just no results to display

Your CLI command fails - are you in the right mode | level - are you on the right device

Shortcuts

ctrl+shift+6 stop current activity

ctrl+k erases from cursor to end of line

ctrl+x erases from cursor to beginning of line

tab completes the command

Misc

mydevice (config)# sdm pre dual def used if switch won't take IPv6 address

Execute Commands

Build a server w/IP **ip host Server1 1.1.1.1**

Rename the router "My Router" **hostname MyRouter**

Managing IOS Files

R1# copy run tftp	copies running config \saves to flash; names it my config
	my config
	dual def
R1# copy flash:my config start	erases startup config
R1# copy flash:my config start	copies my config and overwrites start up config
R1# copy run tftp	copies my config and overwrites start up config

requests add ip address of remote router
a
remote
host

requests add unique file name w/ data
a file
name



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