User Levels | Routers & Switches

User Exec	Router Name>
Privileged Exec	Router Name# `[where network devices are configured]`
Global Exec	Router Name(config)# `[configuration impact 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 levvel
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`

Basic Security

Securing privileged EXEC

S1(config)# *enable secret Cisc0*

```
pw protects the privileged exec line
```

Securing console port

S1(config)# *line console 0*

```
moves into line configuration mode
```

S1(config-line)# *passsword Cisc0*

```
sets console access password to "Cisc0"
```

S1(config-line)# *login*

```
turns on the password requirement
```

Securing the Virtual Ports [ssh & telnet]

S1(config)# *line vty 0 15*

```
moves into line configuration mode
```

S1(config-line)# *Password Cisc0*

```
sets virtual terminal access password to "Cisc0"
```

S1(config-line)@ *login*

```
turns on the password requirement turns on the
password requirement
```

Encrypting all Passwords

S1(config)# *service password-encryption*

```
encrypts all passwords
```

Message of the Day

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

Commands are only case sensitive after the pipe

Startup-Config

```
regardless of current config; router will start
up with this
```

```
until the current config is saved
```

Vocabulary

rommon	read only memory

Hints

R1># *no ip domain-lookup*	[turns off auto dns query]
R1(config-if)# *no ip address*	[Removes IP Address]
ctl+a	[cursor moved to the beginning of the line]
ctl+e	[cursor moved to the end of the line]
copy run start	[copys running config to startup config]
show run start	[displays startup config]
*ctl+shift+6	STOP SEARCH
ip host switch1 1.1.1.1	Assigns the listed ip address [1.1.1.1] to Switch1
?	Open help documentation
enable secret abc123	Enables secret password and sets to abc123

vty - virtual telnet line

Remote Access

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

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

By **Mary F. Smith** (boogie)
cheatography.com/boogie/

Not published yet.
Last updated 22nd December, 2019.
Page 2 of 4.

Sponsored by CrosswordCheats.com
Learn to solve cryptic crosswords!
http://crosswordcheats.com

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, "support"
```

Switch(config)# *vlan 20*

```
moves into vlan 20 from vlan 10
```

Switch(config)# *name Development*

```
names vlan 20, "development"
```

Assign switchport access

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 `administrative distance = 150`

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

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

"Advanced" Show Commands

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

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*	dispalys 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

R1# *copy run flash:my config*	`copies running config\saves to flash; names it my config`
R1# *erase start*	`erases startup config`
R1# *copy flash:my config start*	`copies my config and overwrites start up config`
R1# *copy run tftp*	
requests a remote host	`add ip address of remote router`
requests a file name	`add unique file name w/ data`
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

ctl+shift+6	stop current activity
ctl+k	erases from cursor to end of line
ctl+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*