

PRACTICAL 8

AIM: Configuration of Router

1 Booting up of the device (Note: we are using puTTY software)

- Here as mentioned in manual we can practically see the configuration in puTTY and also in cisco packet tracer

Memory has been initialized here

```
Initializing Hardware ...

Checking for PCIe device presence...done
System integrity status: 0x610
Rom image verified correctly

System Bootstrap, Version 16.7(3r), RELEASE SOFTWARE
Copyright (c) 1994-2018 by cisco Systems, Inc.

Current image running: Boot ROM0

Last reset cause: LocalSoft
Cisco ISR4331/K9 platform with 4194304 Kbytes of main memory

no valid BOOT image found
Final autoboot attempt from default boot device...
Located isr4300-universalk9.16.06.04.SPA.bin
#####
#####
Package header rev 1 structure detected
IsoSize = 550114467
Calculating SHA-1 hash...Validate package: SHA-1 hash:
      calculated 444F4D02:44C58887:D9C8942B:C557D3CF:2A14247E
      expected   444F4D02:44C58887:D9C8942B:C557D3CF:2A14247E

RSA Signed RELEASE Image Signature Verification Successful.
Image validated

Restricted Rights Legend

Use, duplication or disclosure by the Government is
```

```
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
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http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

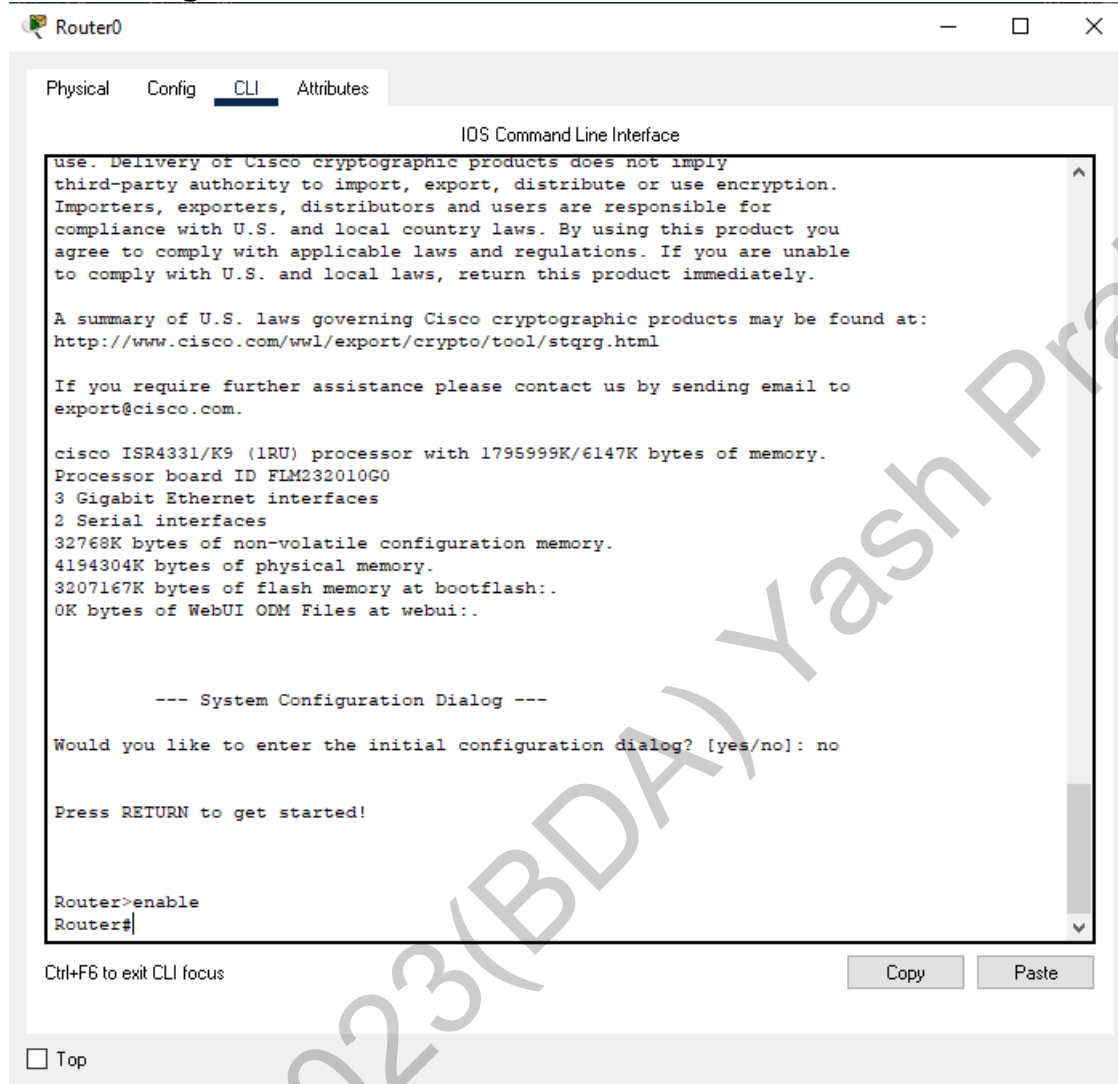
cisco ISR4331/K9 (1RU) processor with 1795999K/6147K bytes of memory.
Processor board ID FLM232010G0
3 Gigabit Ethernet interfaces
2 Serial interfaces
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
3207167K bytes of flash memory at bootflash:.
OK bytes of WebUI ODM Files at webui:.

--- System Configuration Dialog ---

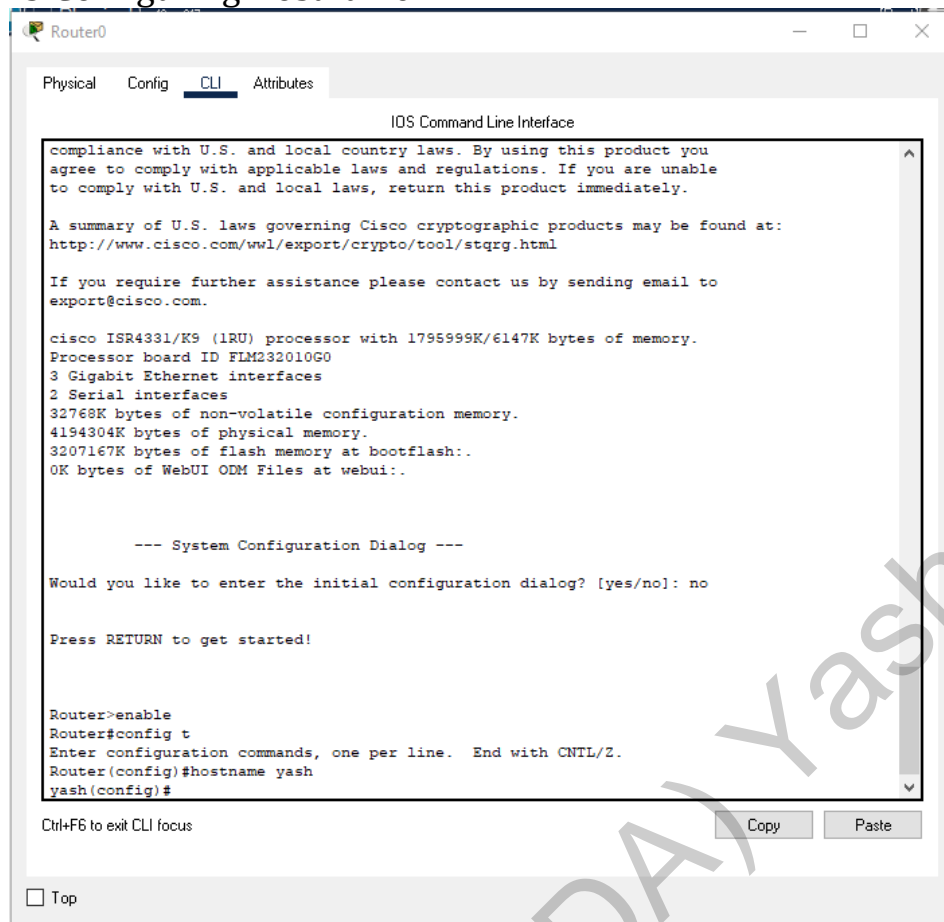
Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!
```

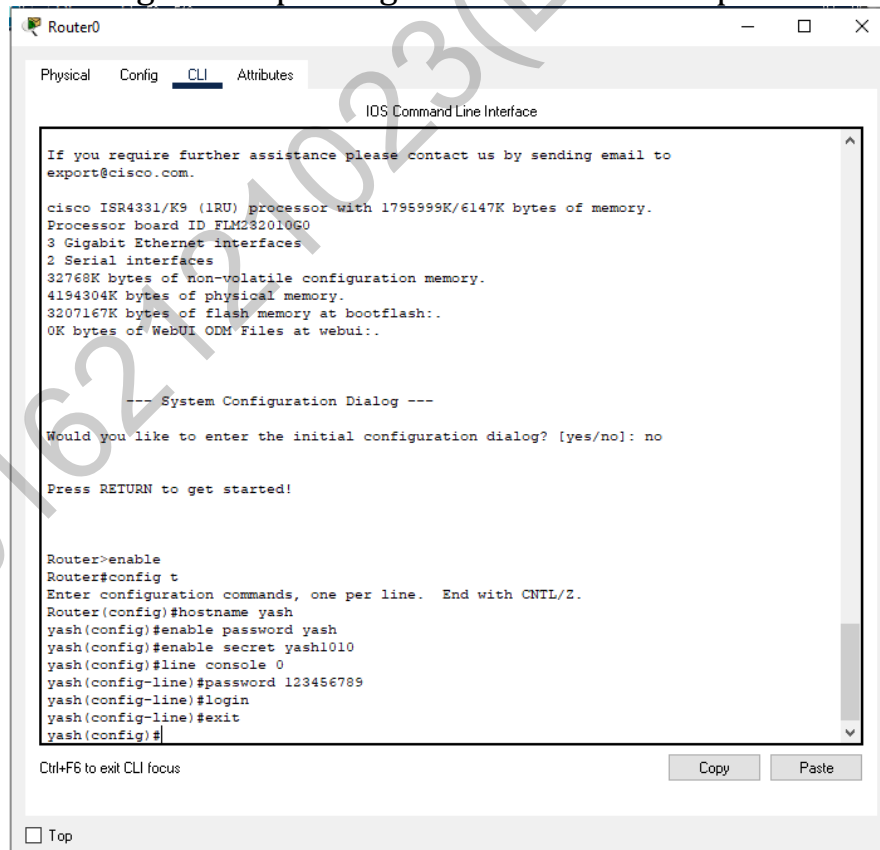
2 Entering the CLI



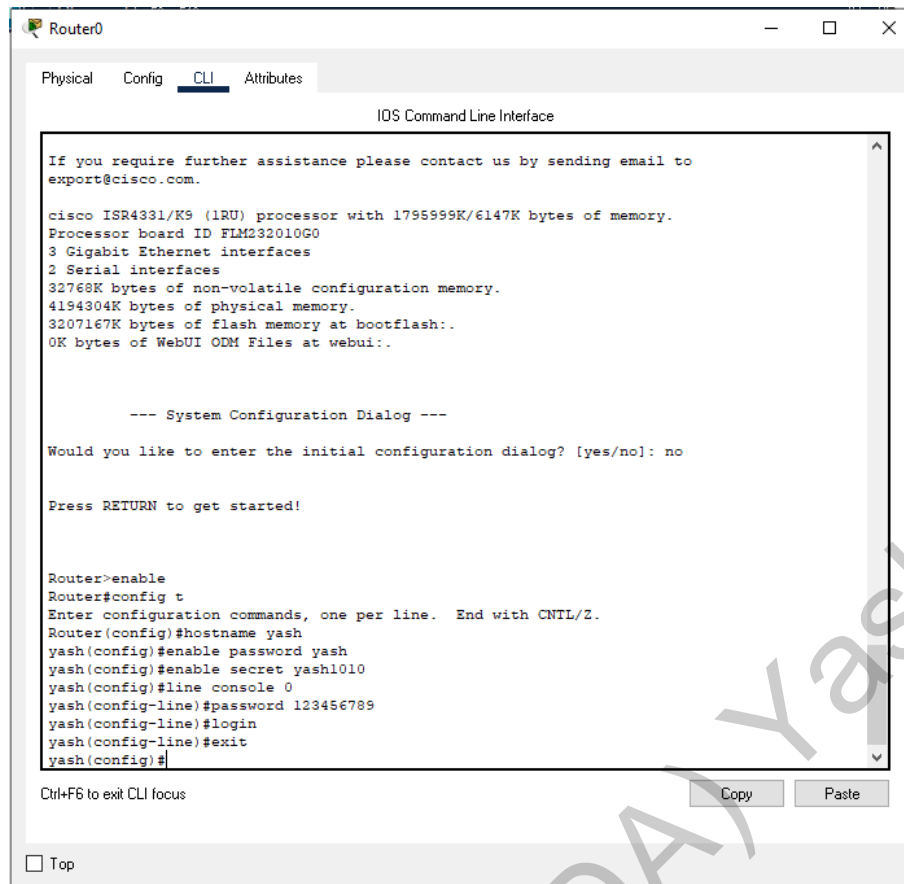
3 Configuring Hostname



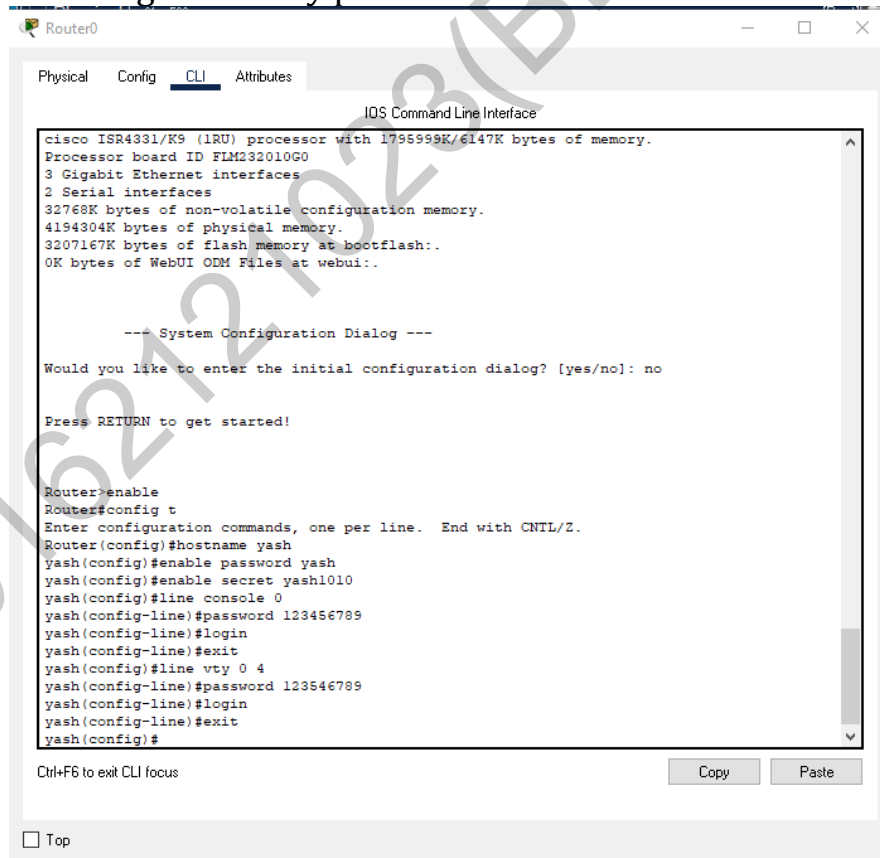
4 Configure the privileged mode and secret passwords.



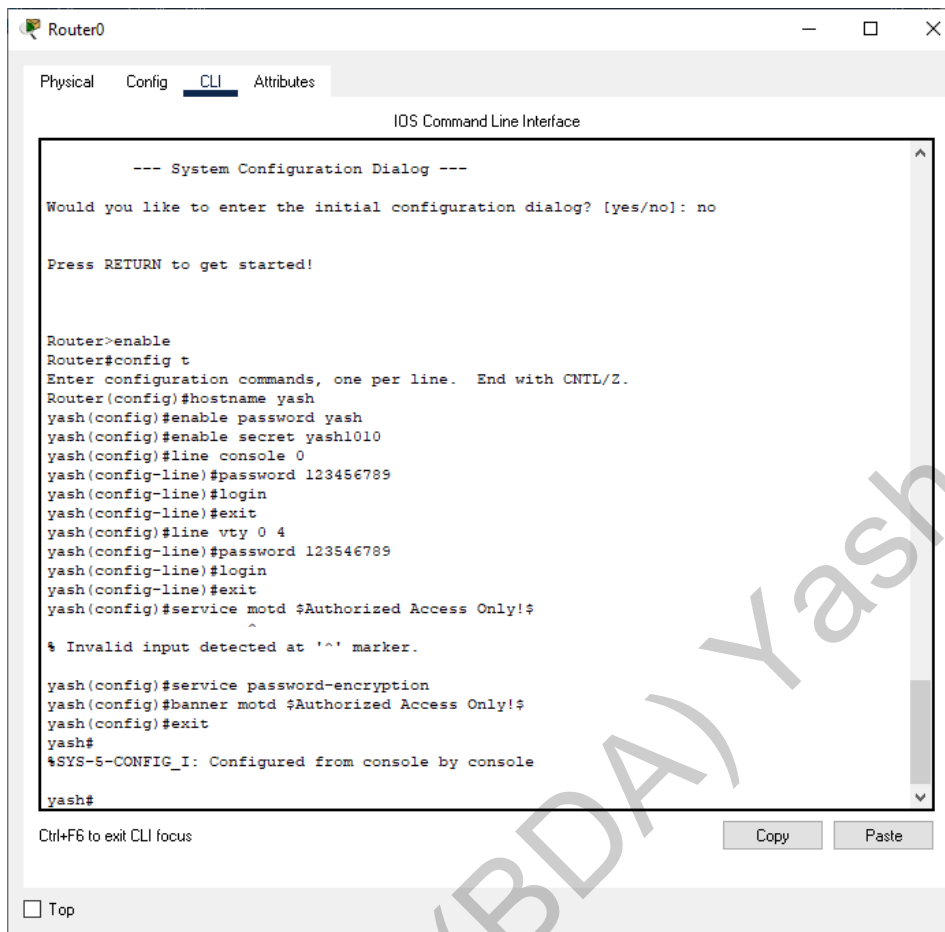
5 Configure the console password.



6 Configure the vty password to allow Telnet access to the router.



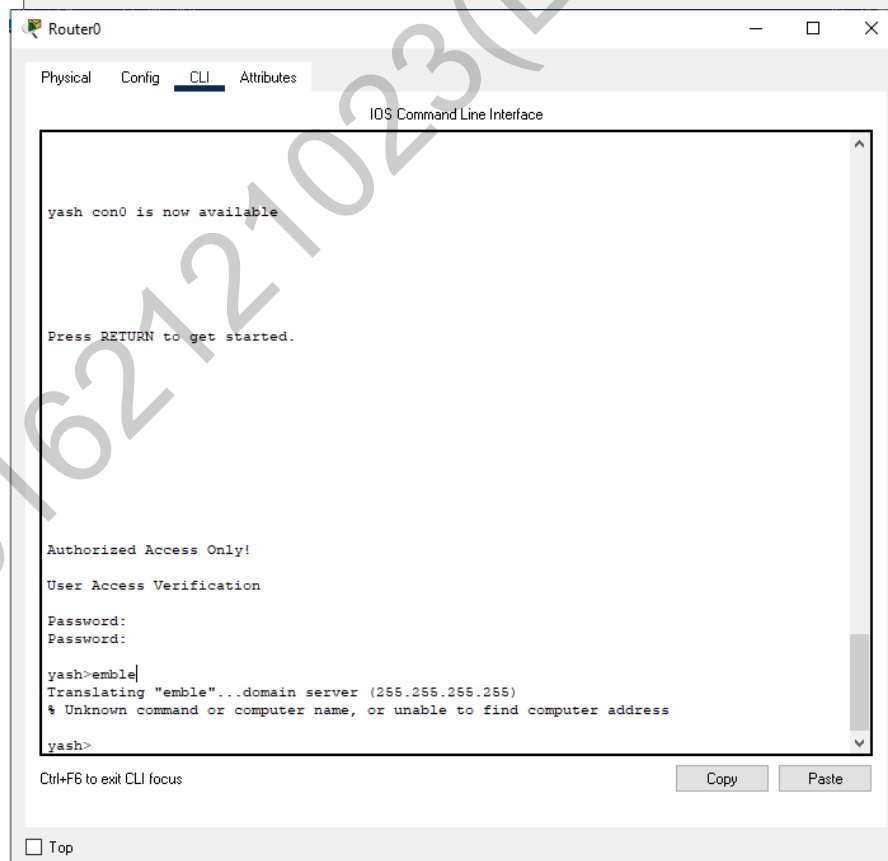
7 Configure password encryption, a MOTD banner, and turn off domain server lookup.



The screenshot shows the Router0 CLI interface with the 'CLI' tab selected. The terminal displays the following commands and output:

```
Router0>enable
Router0#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router0(config)#hostname yash
yash(config)#enable password yash
yash(config)#enable secret yash1010
yash(config)#line console 0
yash(config-line)#password 123456789
yash(config-line)#login
yash(config-line)#exit
yash(config)#line vty 0 4
yash(config-line)#password 123456789
yash(config-line)#login
yash(config-line)#exit
yash(config)#service motd $Authorized Access Only!$
^
% Invalid input detected at '^' marker.
yash(config)#service password-encryption
yash(config)#banner motd $Authorized Access Only!$
yash(config)#exit
yash#
$SYS-5-CONFIG_I: Configured from console by console
yash#
```

Below the terminal window, there is a 'Top' checkbox and 'Copy' and 'Paste' buttons.



The screenshot shows the Router0 CLI interface with the 'CLI' tab selected. The terminal displays the following output:

```
yash con0 is now available

Press RETURN to get started.

Authorized Access Only!

User Access Verification

Password:
Password:

yash>emblem|
Translating "emblem"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address
yash>
```

Below the terminal window, there is a 'Top' checkbox and 'Copy' and 'Paste' buttons.

```
Authorized Access Only!

User Access Verification

Password:
Password:

yash>emblem
Translating "emblem"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address

yash>enable
Password:
yash#
```

Ctrl+F6 to exit CLI focus

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10 Check the version of the router

Show version is used to see the detailed version of router

Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
% Unknown command or computer name, or unable to find computer address

yash>enable
Password:
yash#show version
Cisco IOS Software [Everest], ISR Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Version
16.6.4,RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2018 by Cisco Systems, Inc.
Compiled Sun 08-Jul-18 04:33 by mcpre

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documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.

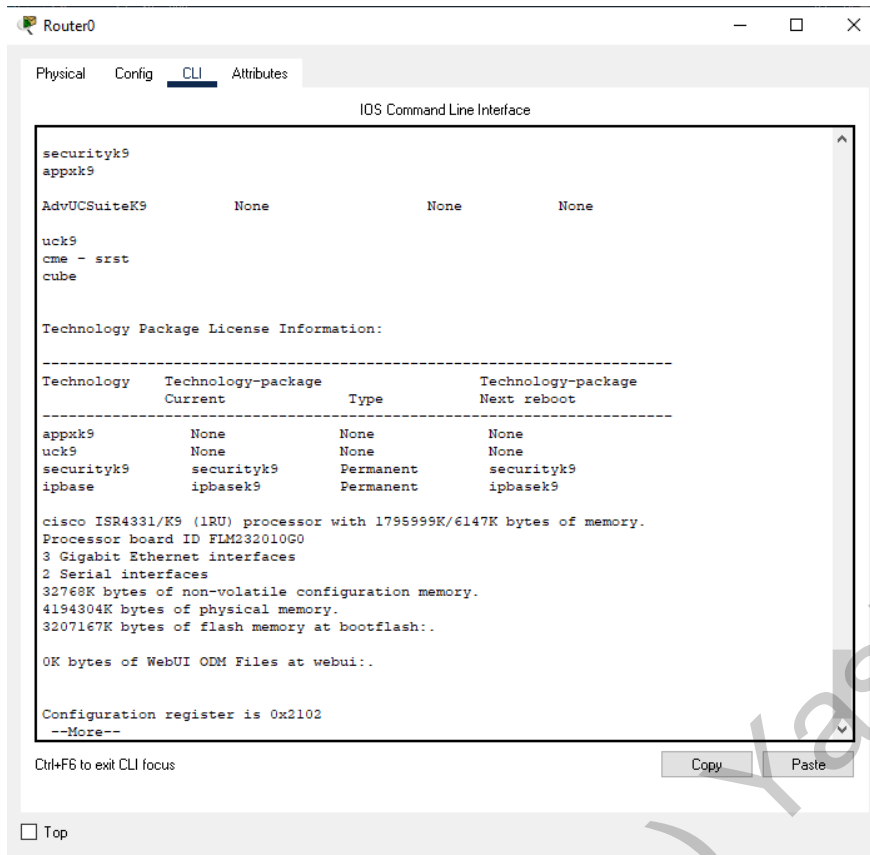
ROM: IOS-XE ROMMON

Router uptime is 24 minutes, 44 seconds
Uptime for this control processor is 24 minutes, 44 seconds
System returned to ROM by power-on
System image file is "bootflash:isr4300-universalk9.16.06.04.SPA.bin"
Last reload reason: PowerOn

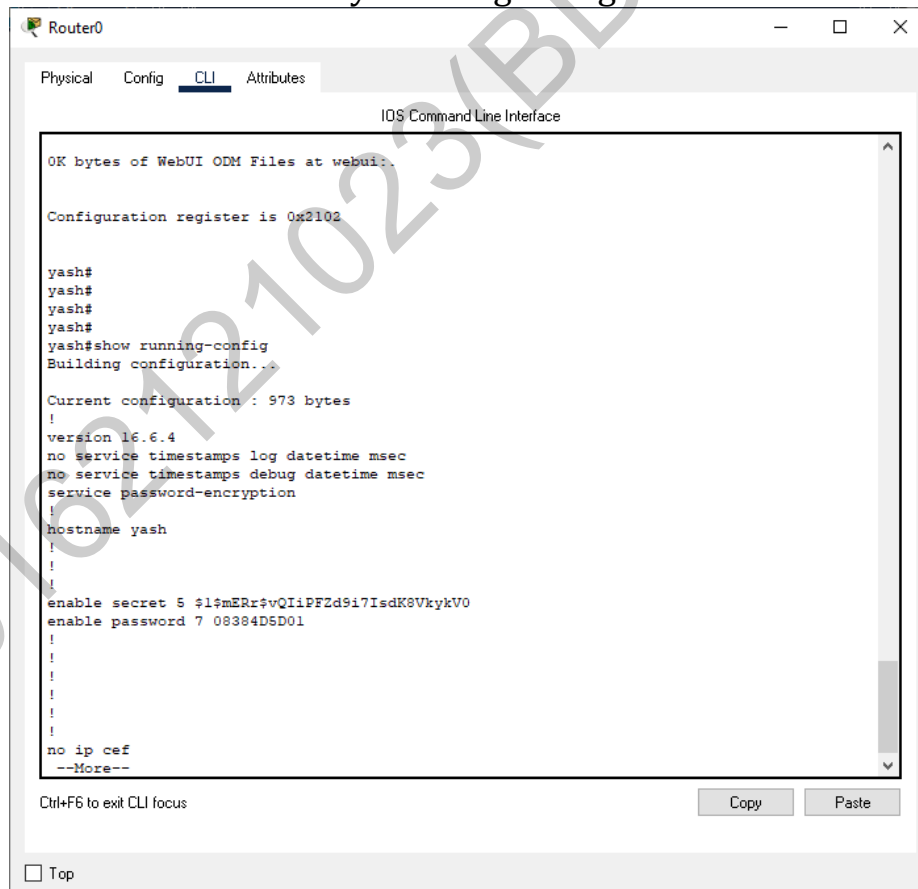
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
--More--
```

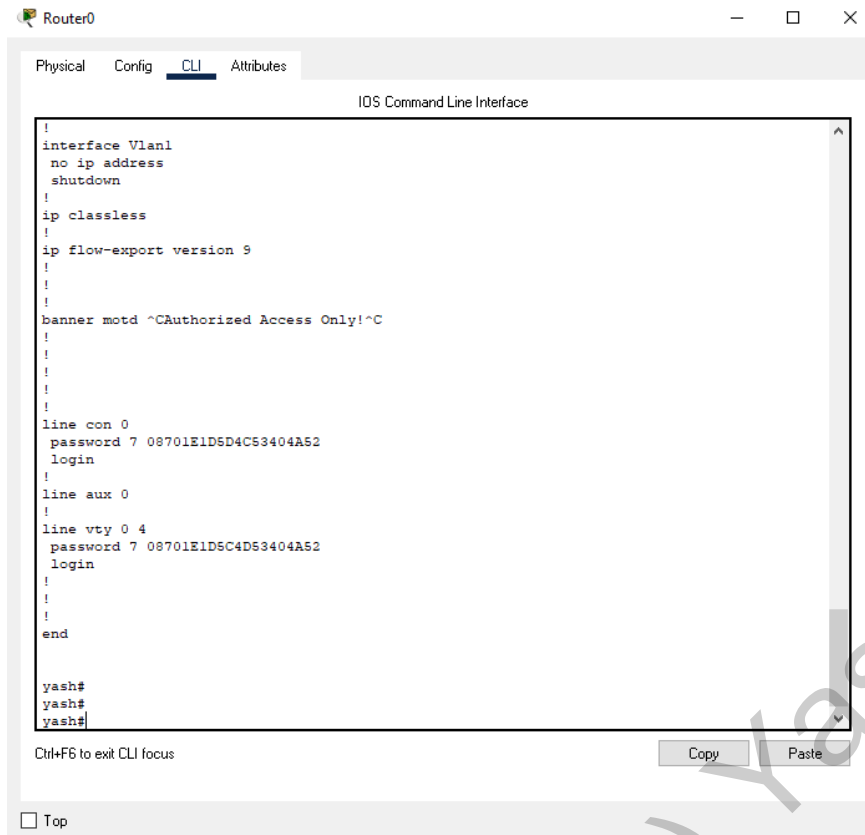
Ctrl+F6 to exit CLI focus

☐ Top



11. to check currently working configuration of router show running-config

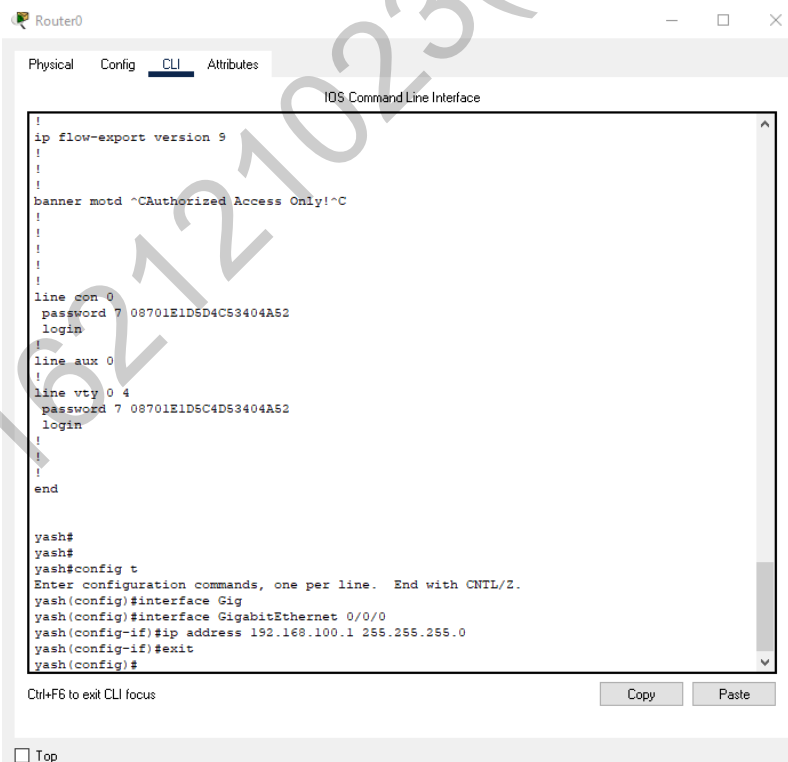




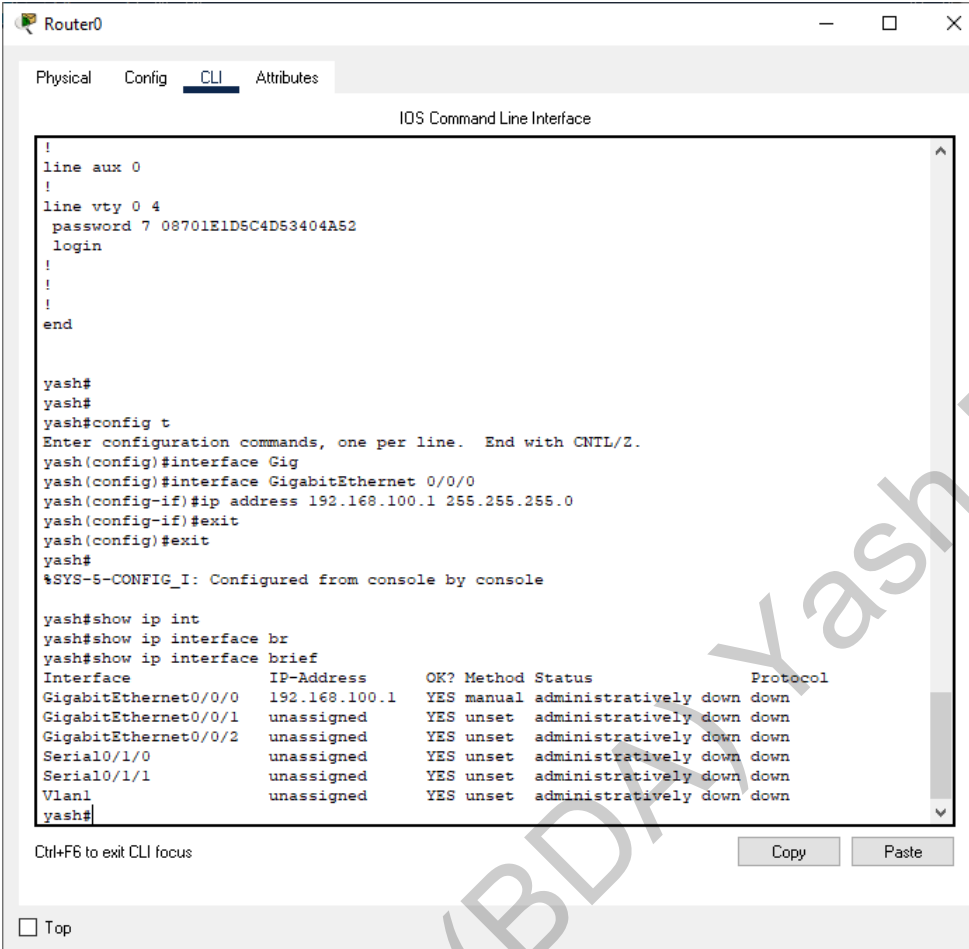
11 next step is to Configure the interface

interface GigabitEthernet0/0/0

and similarly 0/0/1 but I haven't configured ip address to second interface 1 and give(ip address 192.168.100.1 255.255.255.0) to give ip



13 check configuration with(show ip configuration brief and check that only 0/0/0 link has ip address manually and unsigned for second interface



```

Router0
Physical Config CLI Attributes
IOS Command Line Interface

!
line aux 0
!
line vty 0 4
  password 7 08701E1D5C4D53404A52
  login
!
!
end

yash#
yash#
yash#config t
Enter configuration commands, one per line. End with CNTL/Z.
yash(config)#interface Gig
yash(config)#interface GigabitEthernet 0/0/0
yash(config-if)#ip address 192.168.100.1 255.255.255.0
yash(config-if)#exit
yash(config)#exit
yash#
%SYS-5-CONFIG_I: Configured from console by console

yash#show ip int
yash#show ip interface br
yash#show ip interface brief
Interface                IP-Address      OK? Method Status              Protocol
GigabitEthernet0/0/0     192.168.100.1   YES manual  administratively down  down
GigabitEthernet0/0/1     unassigned      YES unset   administratively down  down
GigabitEthernet0/0/2     unassigned      YES unset   administratively down  down
Serial0/1/0              unassigned      YES unset   administratively down  down
Serial0/1/1              unassigned      YES unset   administratively down  down
Vlan1                    unassigned      YES unset   administratively down  down
yash#
Ctrl+F6 to exit CLI focus
Copy Paste
☐ Top

```

14 The most important command is write memory to save configuration on real router

```

yash#show ip interface br
yash#show ip interface brief
Interface                IP-Address      OK? Method Status              Protocol
GigabitEthernet0/0/0     192.168.100.1   YES manual  administratively down  down
GigabitEthernet0/0/1     unassigned      YES unset   administratively down  down
GigabitEthernet0/0/2     unassigned      YES unset   administratively down  down
Serial0/1/0              unassigned      YES unset   administratively down  down
Serial0/1/1              unassigned      YES unset   administratively down  down
Vlan1                    unassigned      YES unset   administratively down  down
yash#write memory
Building configuration...
[OK]
yash#

```

15 to check history(show history)

```
yash#show history
  emble
  enable
  show version
  show running-config
  config t
  show ip interface brief
  write memory
  show history
yash#
```

16 to erase the configuration it is used first when u want to configure router to reset

```
yash#
yash#write erase
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]
[OK]
Erase of nvram: complete
%SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
yash#
```

Ctrl+F6 to exit CLI focus

Copy

Paste

- Bringing up an interface

```
GigabitEthernet0/0/2    unassigned      YES unset  administratively down down
Serial0/1/0             unassigned      YES unset  administratively down down
Serial0/1/1             unassigned      YES unset  administratively down down
Vlan1                   unassigned      YES unset  administratively down down
yash#write memory
Building configuration...
[OK]
yash#show history
  emble
  enable
  show version
  show running-config
  config t
  show ip interface brief
  write memory
  show history
yash#write erase
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]
[OK]
Erase of nvram: complete
%SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
yash#config t
Enter configuration commands, one per line.  End with CNTL/Z.
yash(config)#int
yash(config)#interface Gi
yash(config)#interface GigabitEthernet 0/
yash(config)#interface GigabitEthernet0/0
yash(config)#interface GigabitEthernet0/0/
yash(config)#interface GigabitEthernet0/0/0
yash(config-if)#no shu
yash(config-if)#no shutdown
yash(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up
```

17 to check routing show ip route

And to add static routing (ip route network ip subnet mask next hop)

```
yasn(config)#  
yasn(config)#ip route 192.168.100.0 255.255.255.0 10.0.0.1  
yasn(config)#ip route 192.168.10.0 255.255.255.0 10.0.0.1  
yasn(config)#
```

Ctrl+F6 to exit CLI focus

Copy

Paste