Lab Task: 13

***_____786**
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Subject: Computer Networks Lab

Submitted To Respected
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Section: BCS-5B

Implement the S-NAT for web server of (flex and slate) and Dynamic-NAT for Client Systems in a single topology.(Use routers and switches).

Answer:

Procedure:

In this case we are required to implement the S-NAT for web server and Dynamic-NAT for the Client Systems.
Also in this case we are required to use a single Topology.

Implementation:

So for the implementation of the above requirement, we are going to use the following Hardware.

- PC”s
- Switch
- Router
- Server

Specifically:

Specifically we are going to use the following quantity of the above Hardware devices for our Topology.

PC’s: 2
Switch: 2
Router: 2
Server: 2

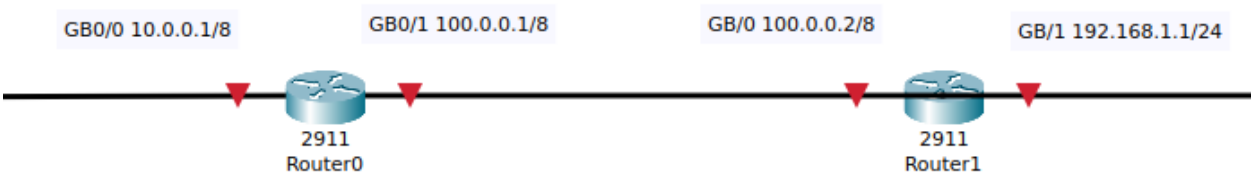
Key points:

For this specific Topology, we are going to use Copper-Straight-Through cable.

Visual Demonstration:

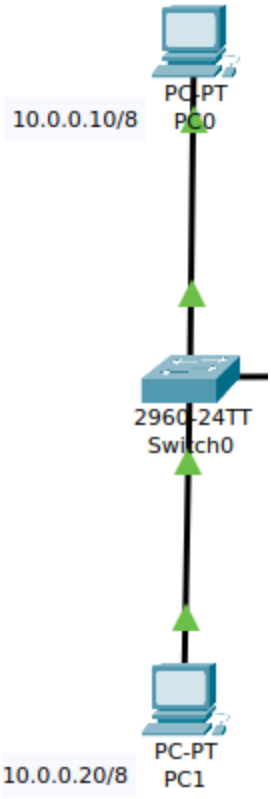
Routers:

We’ve place two routers in this case.



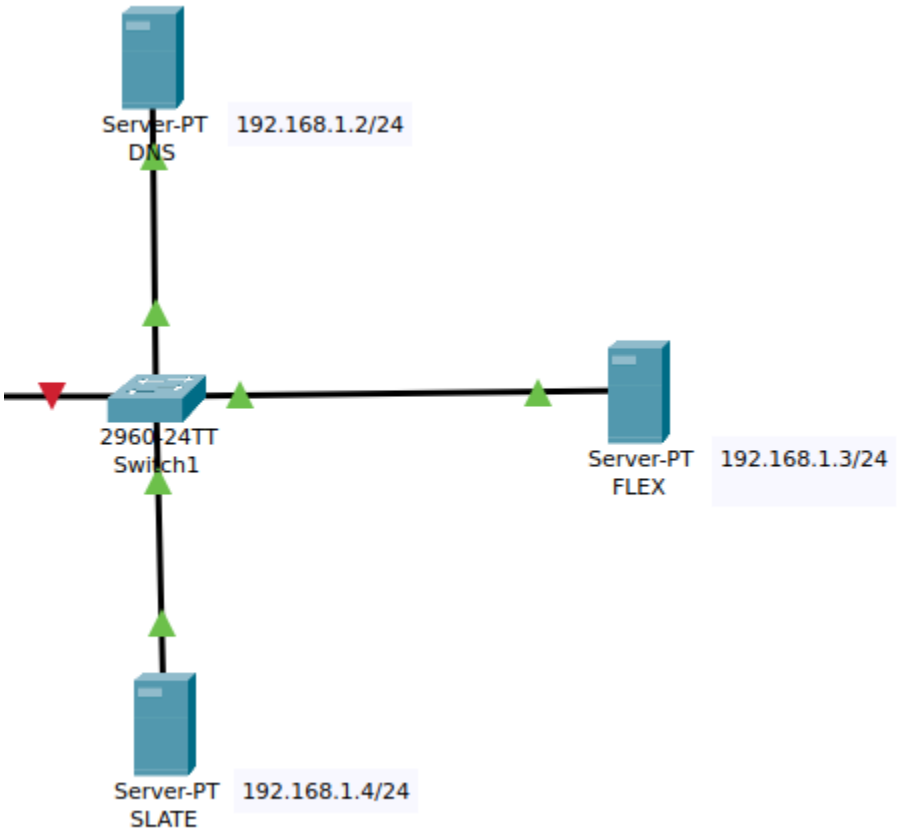
PC:

We've used two PC's in our Topology.



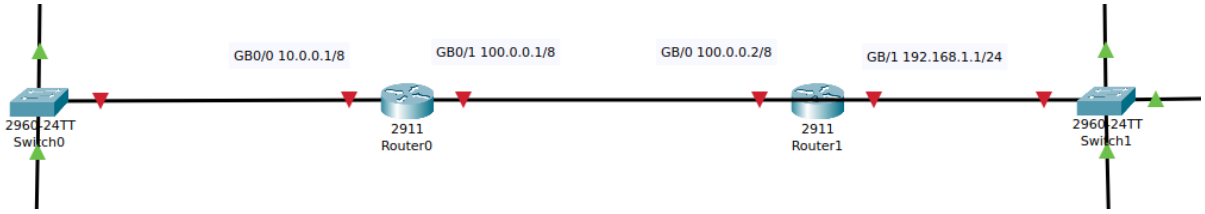
Server:

We've used three servers in our Topology.



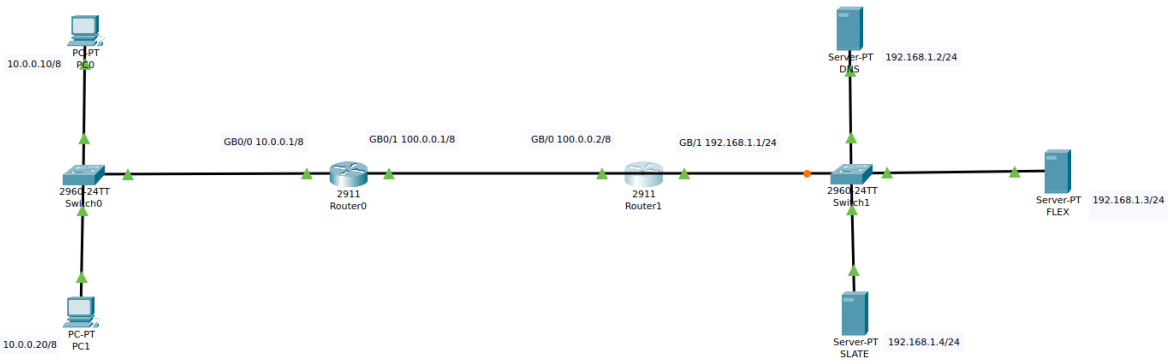
Switches:

We've used two switches in our Topology.



Visual Demonstration Of Topology As A Whole:

The whole topology is shown in the below picture.



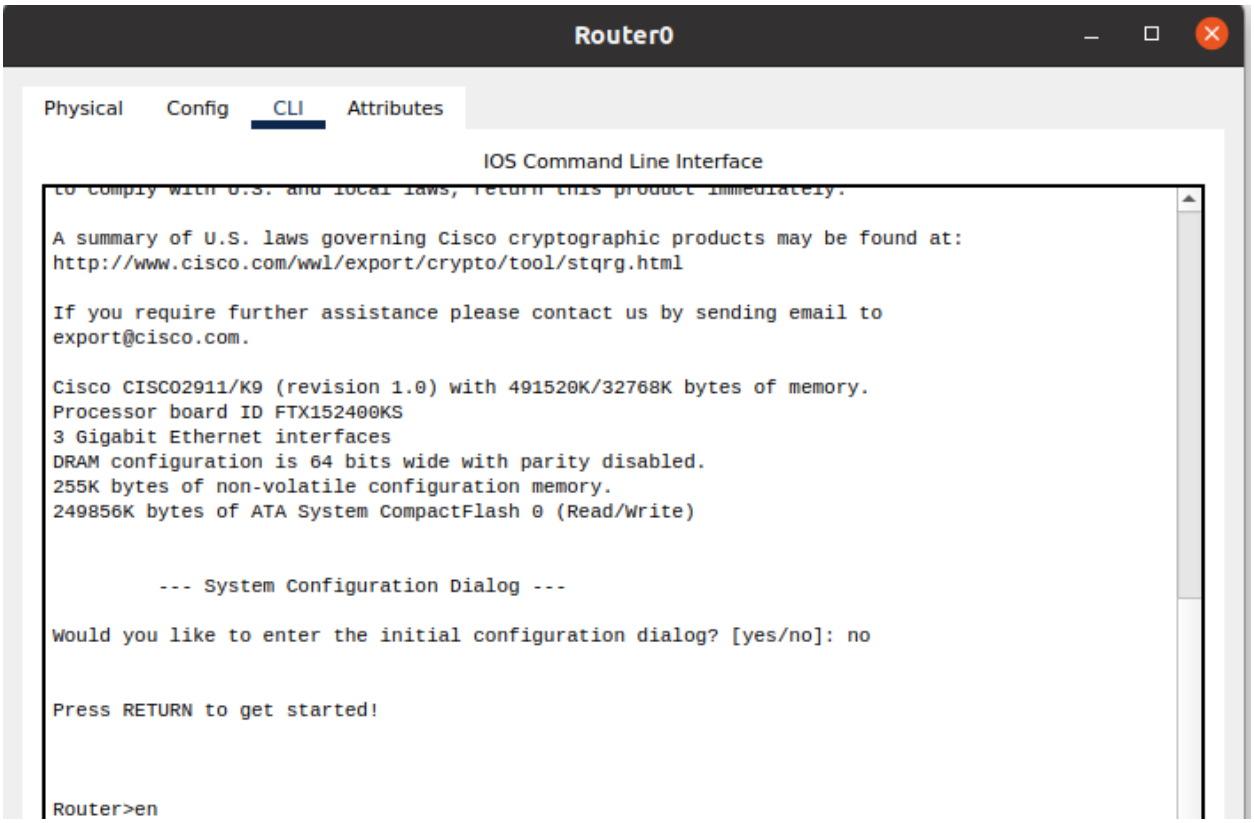
Configurations & Setup:

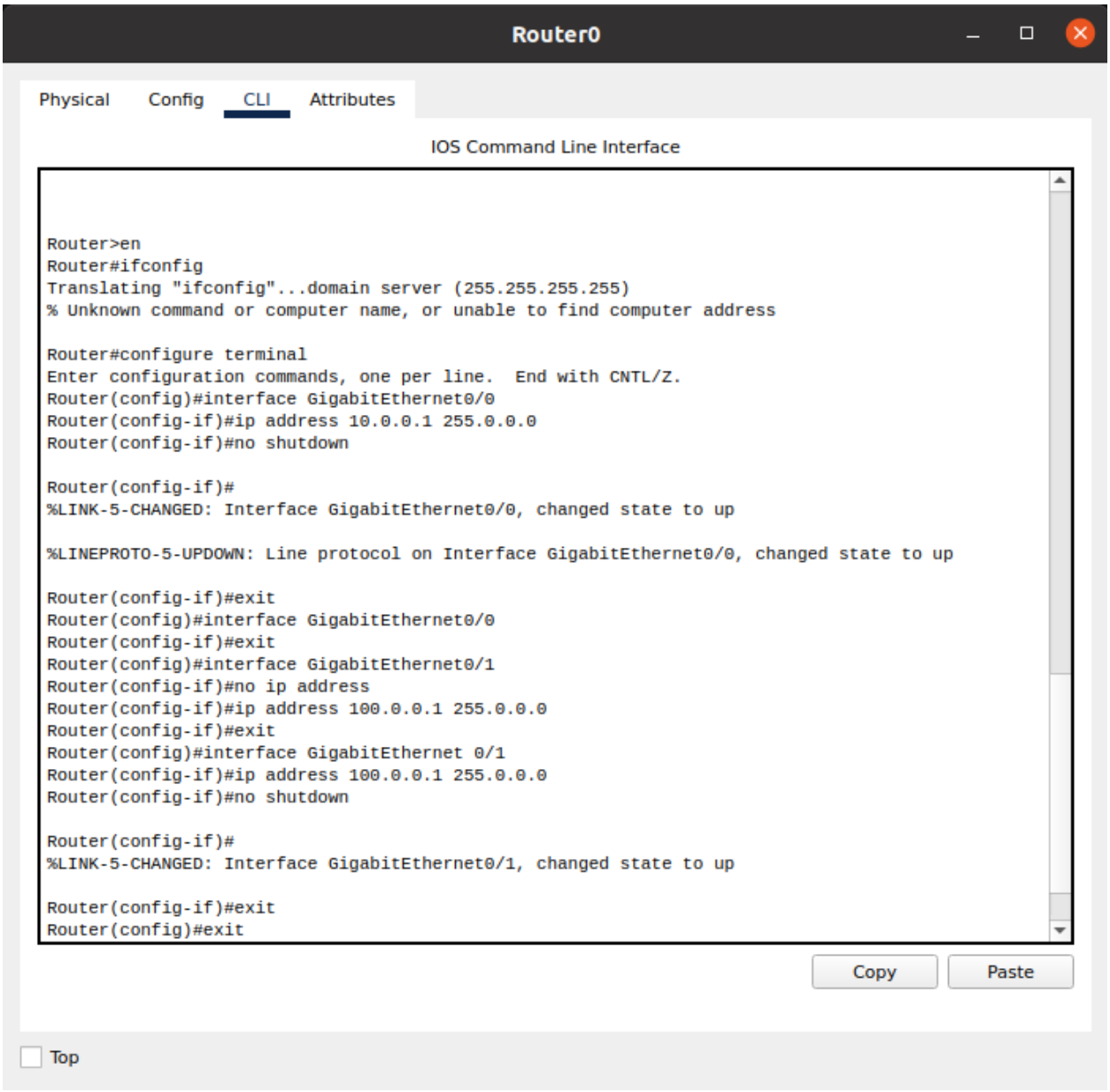
First of all we are going to configure our routers.

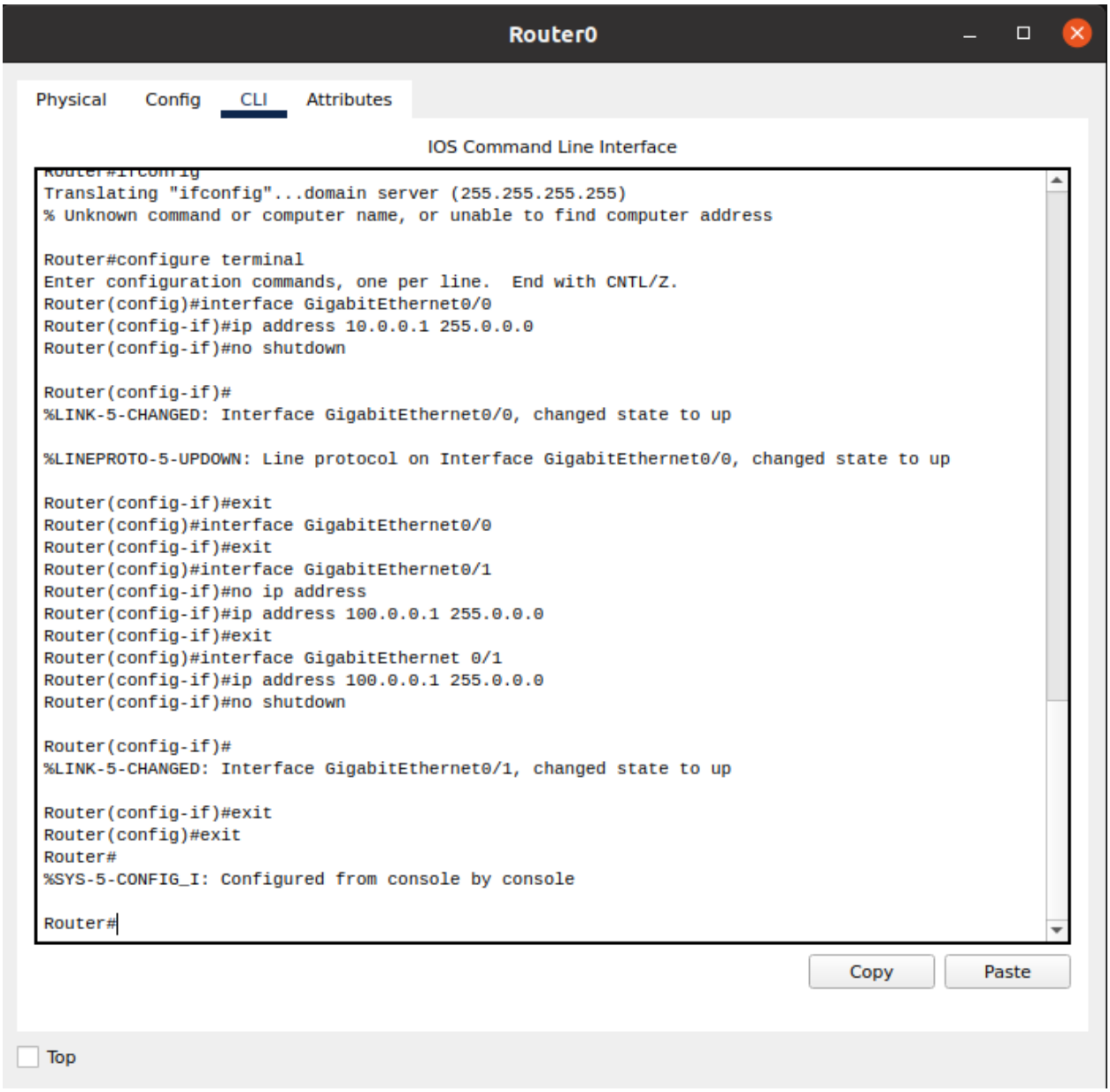
"**Router 0 & Router 1**"

For this purpose, we will go into the configuration of both one by one.

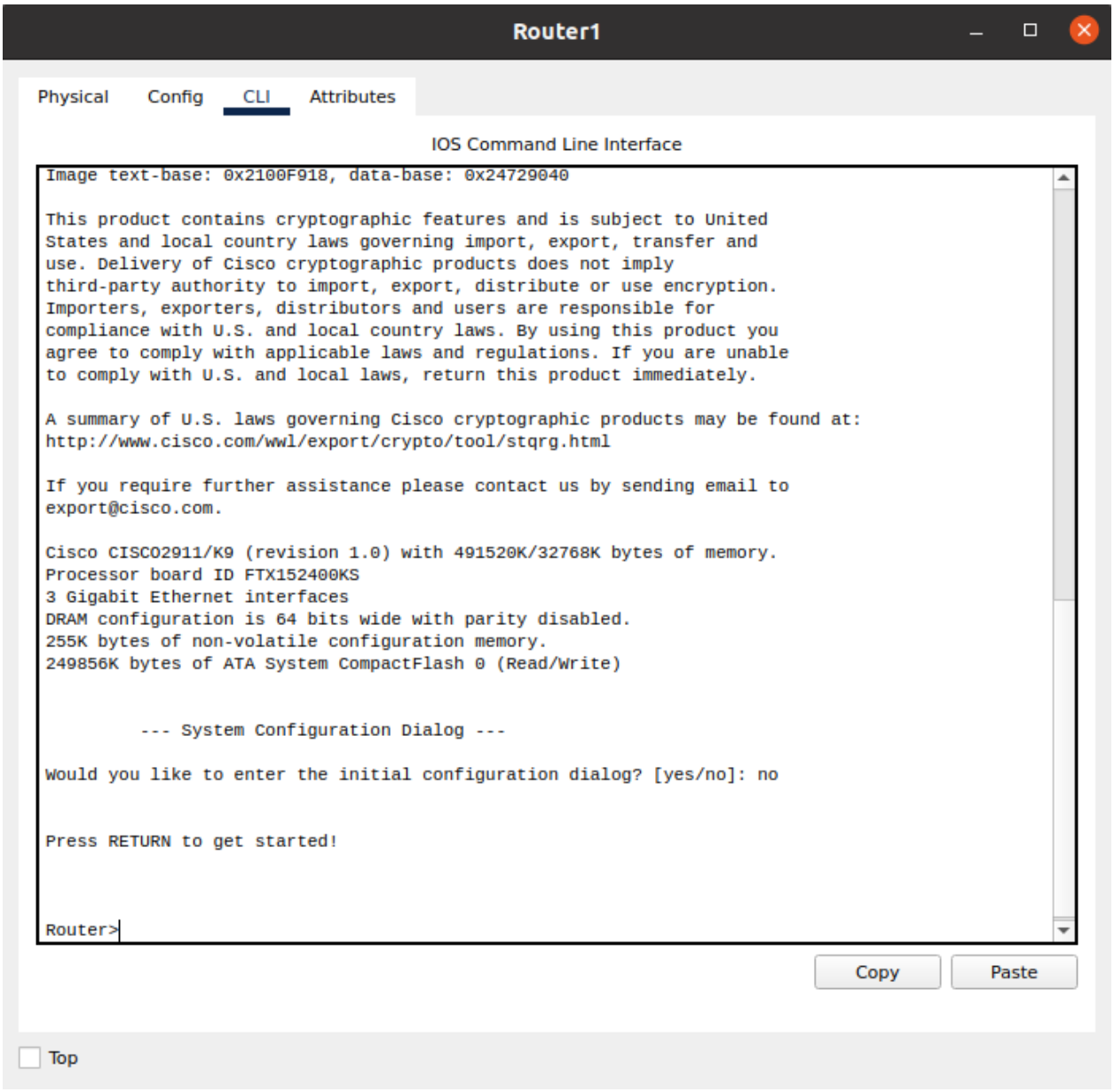
Router 0 Configuration:

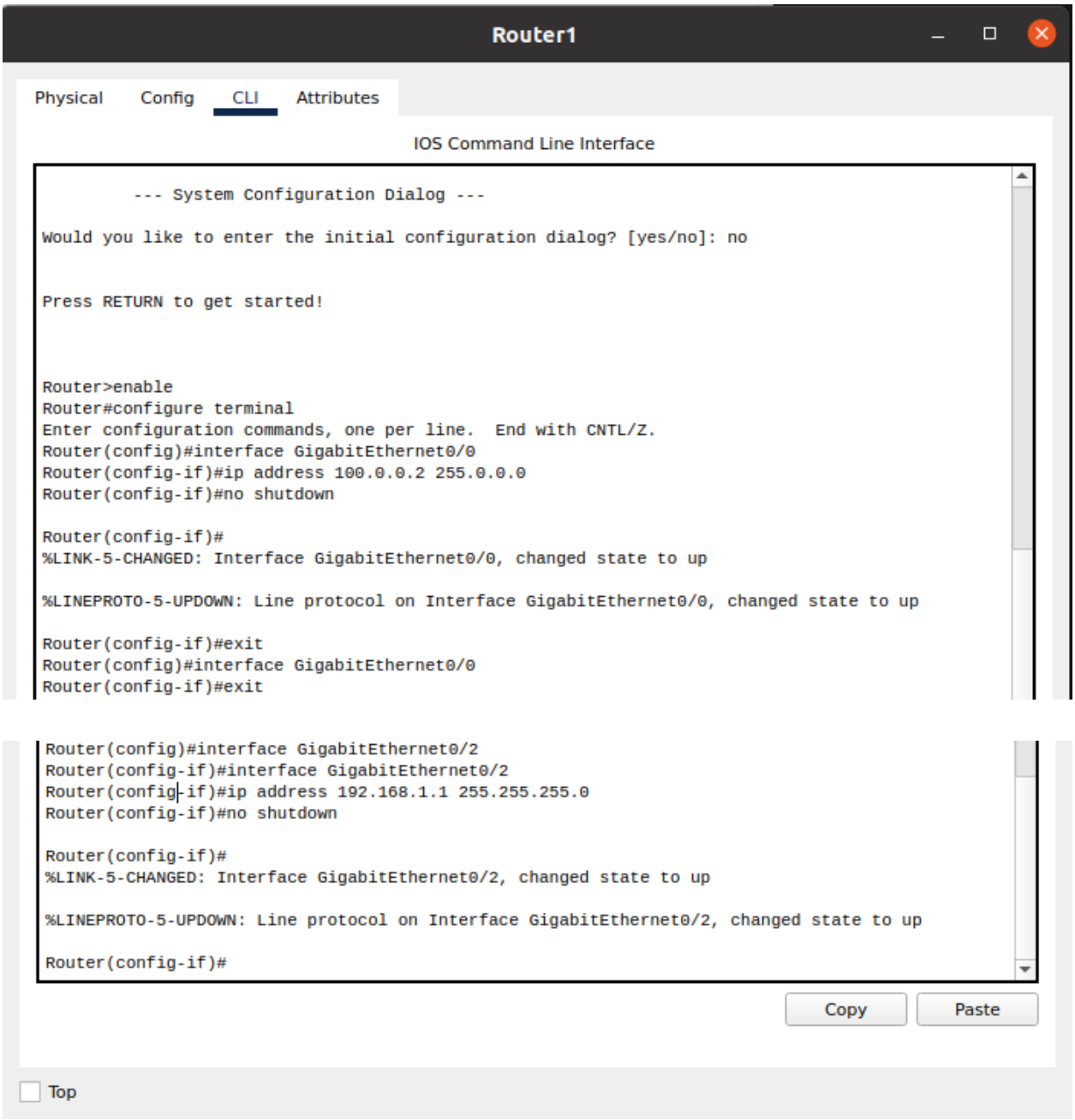



Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>en
Router#ifconfig
Translating "ifconfig"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#no ip address
Router(config-if)#ip address 100.0.0.1 255.0.0.0
Router(config-if)#exit
Router(config)#interface GigabitEthernet 0/1
Router(config-if)#ip address 100.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
Router(config-if)#exit
Router(config)#exit
Copy
Paste
Top



Router 1 Configuration:


Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Image text-base: 0x2100F918, data-base: 0x24729040
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
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.
A summary of U.S. laws governing Cisco cryptographic products may be found at:
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 CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
--- System Configuration Dialog ---
Would you like to enter the initial configuration dialog? [yes/no]: no
Press RETURN to get started!
Router>
Copy
Paste
Top

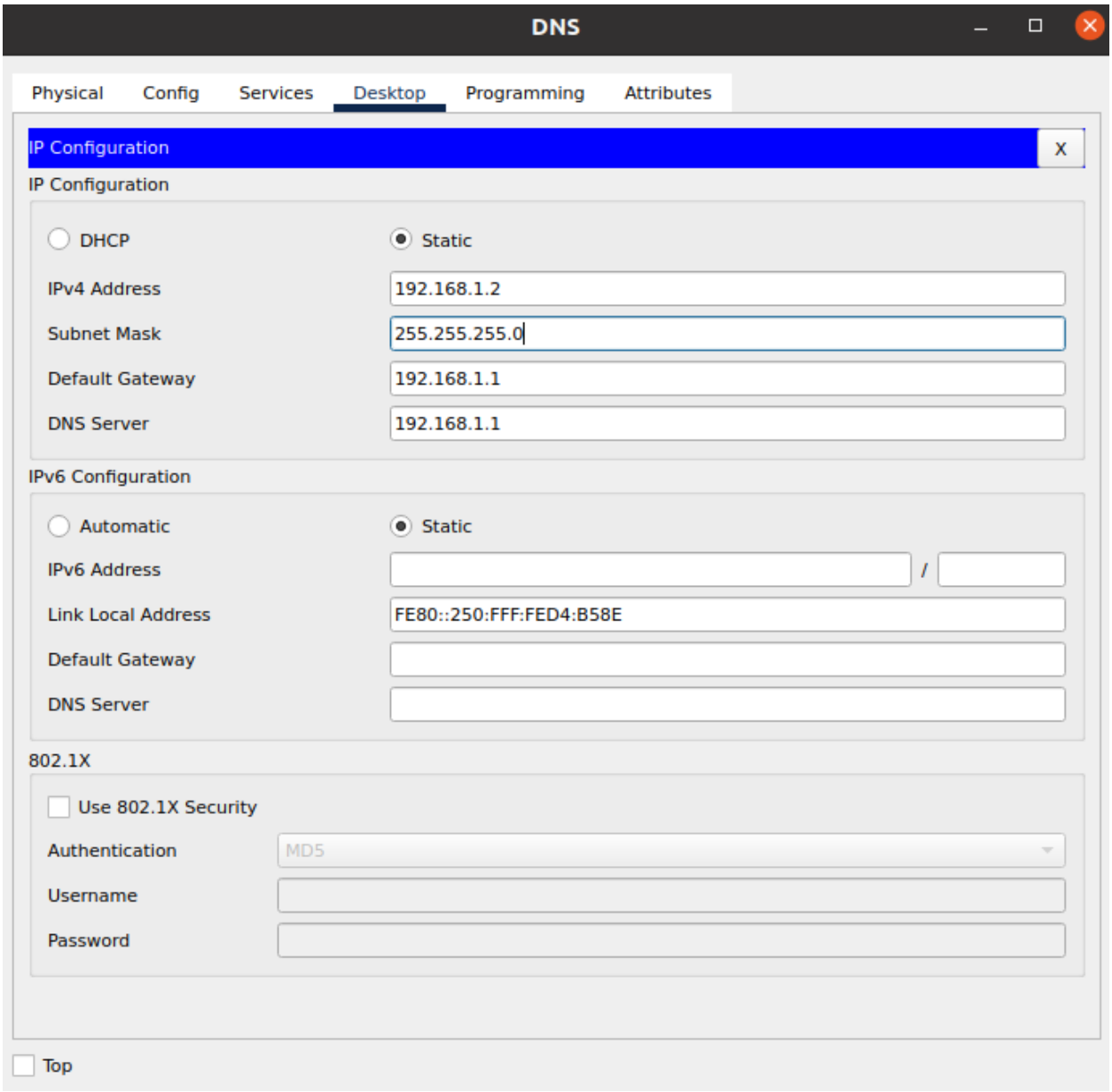


Server Configuration:

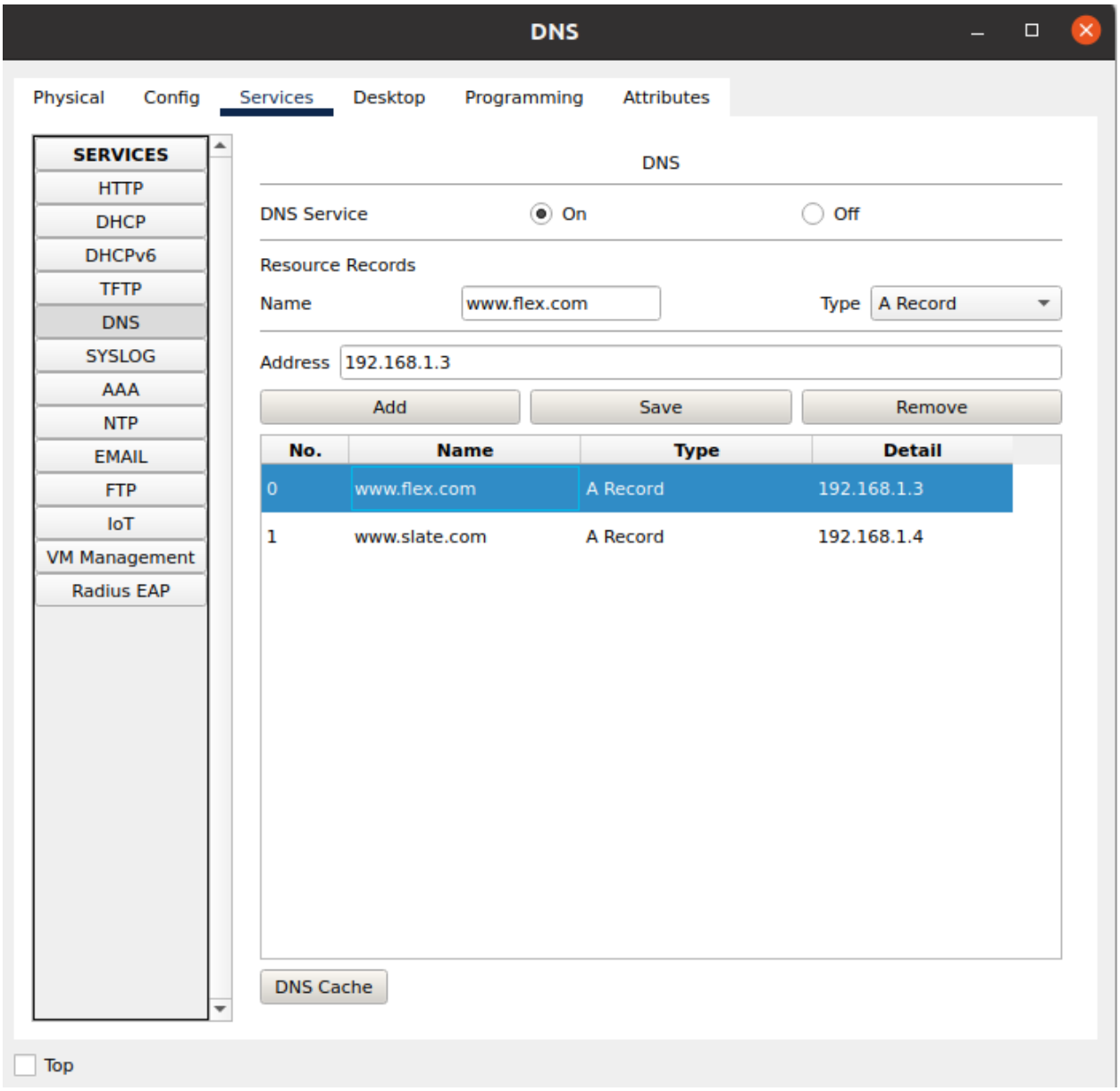
First of all we will configure the DNS Server.

DNS Server(Domain Name System Server):

IP Configuration:

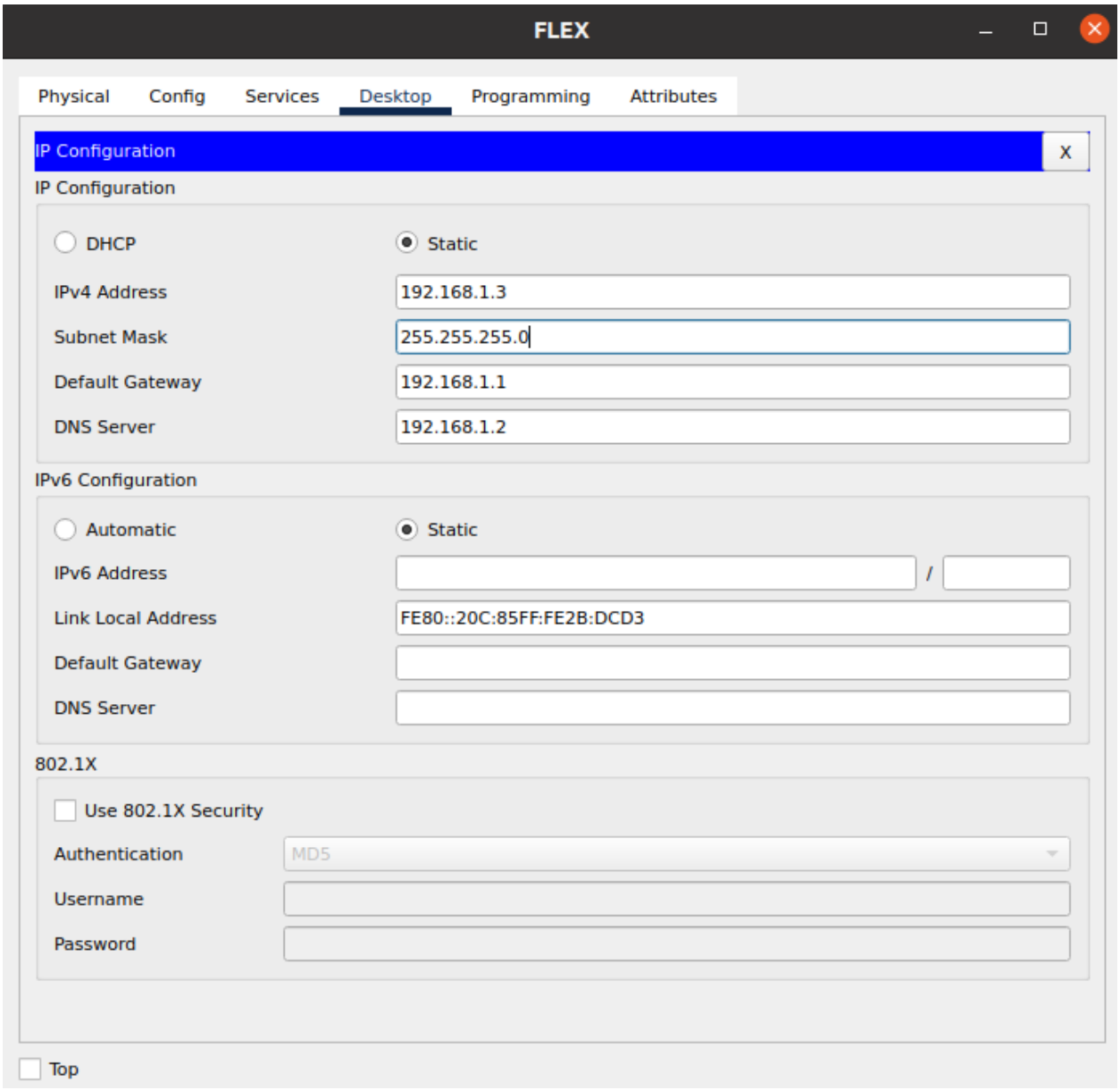


DNS Configuration:



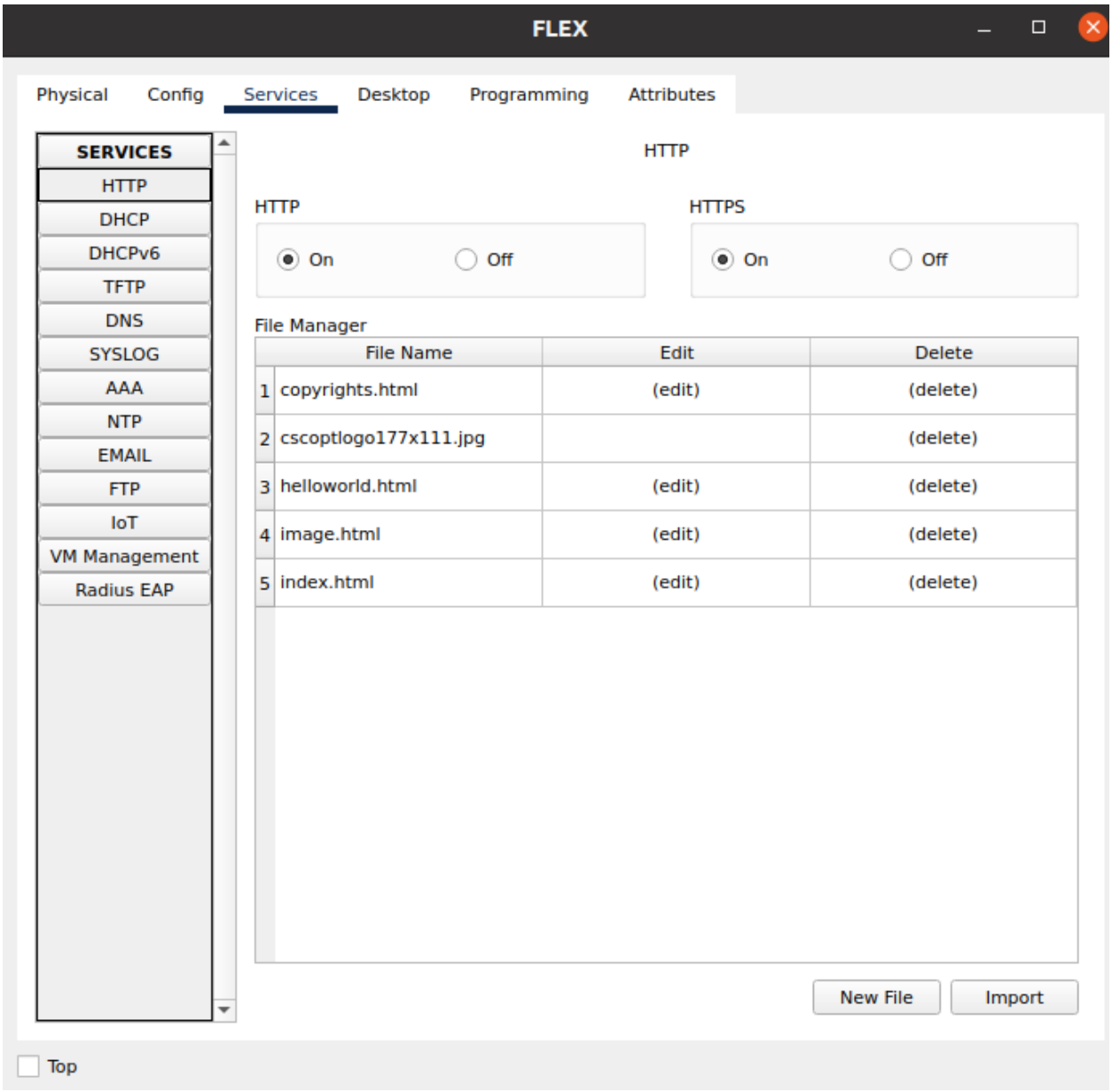
Flex Server Configuration:

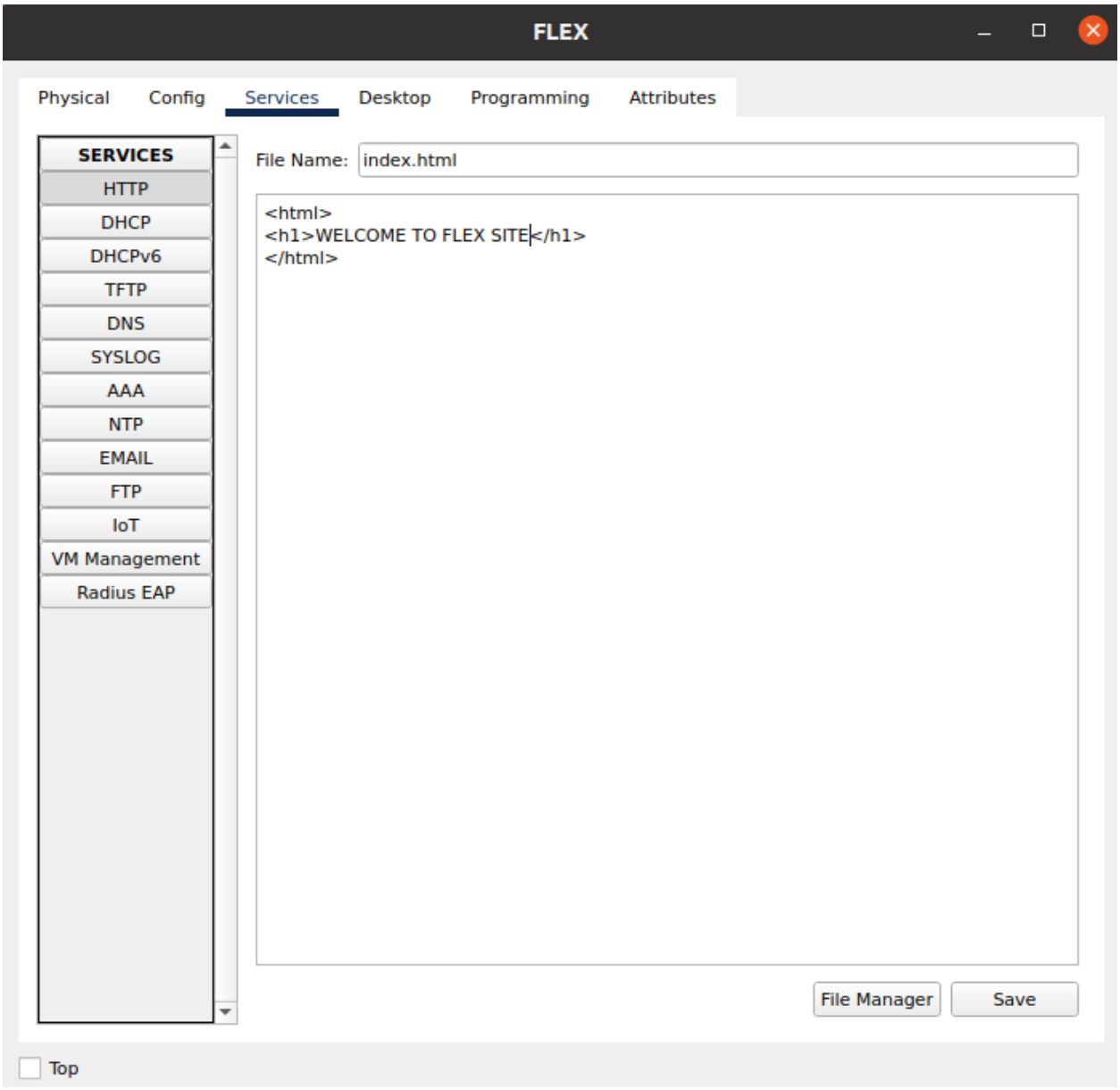
IP Configuration:



Flex HTTP Services Configuration:

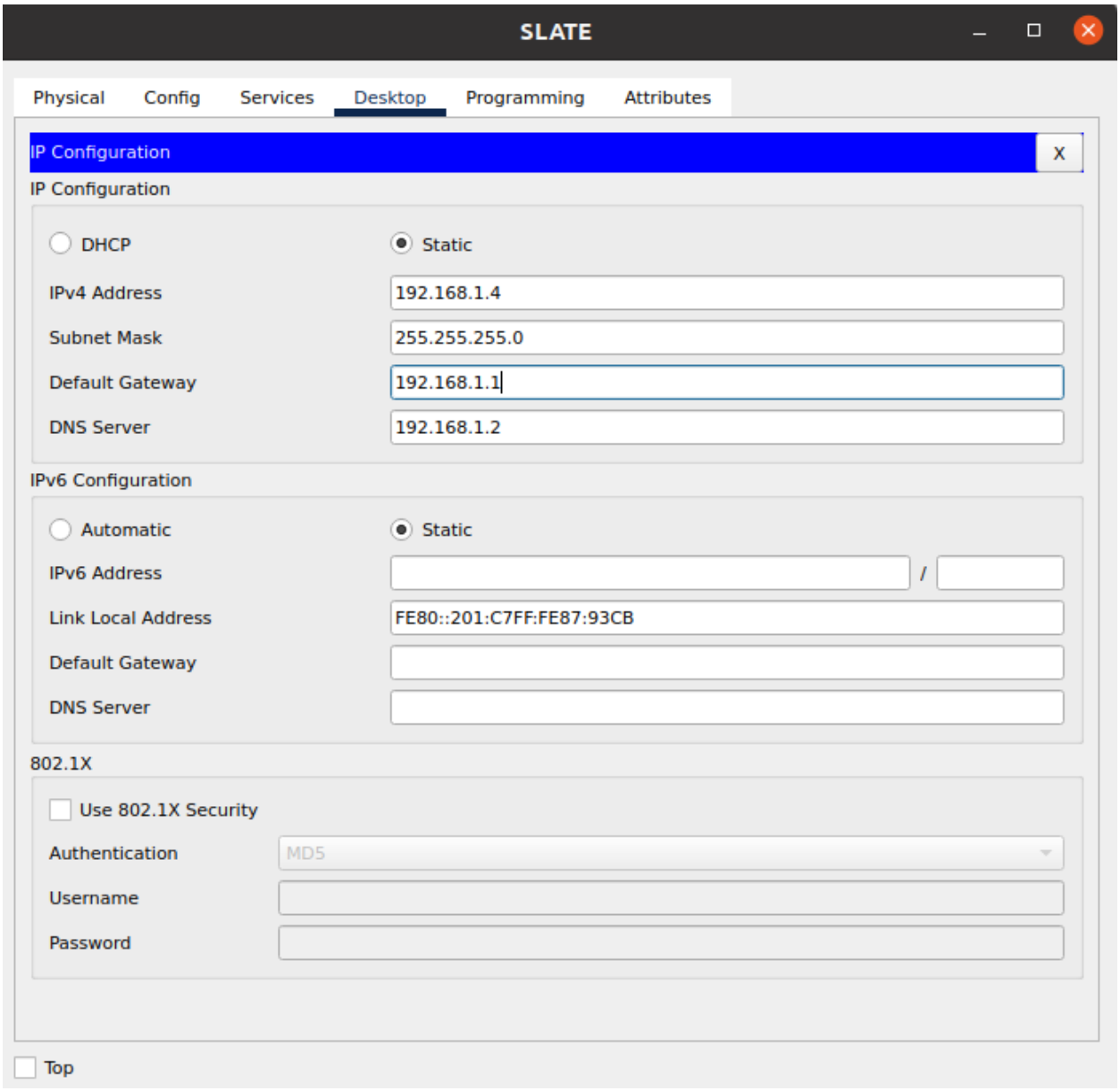
We'll edit the index.html file in HTTP settings of the Flex Server.


FLEX
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
HTTP
HTTP
On
Off
HTTPS
On
Off
File Manager
File Name
Edit
Delete
1 copyrights.html (edit) (delete)
2 cscoptlogo177x111.jpg (delete)
3 helloworld.html (edit) (delete)
4 image.html (edit) (delete)
5 index.html (edit) (delete)
New File
Import
Top



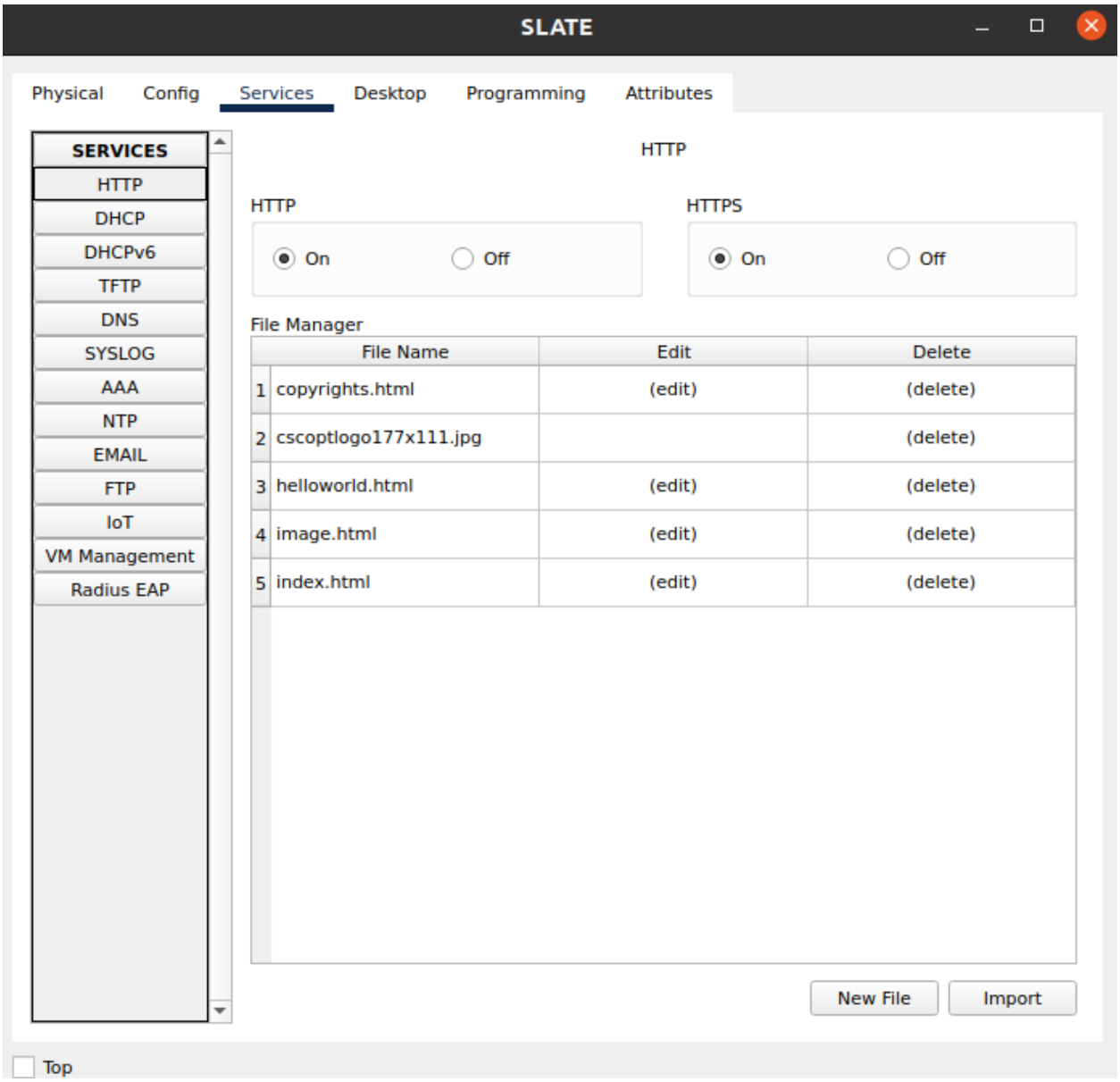
Slate Server Configuration:

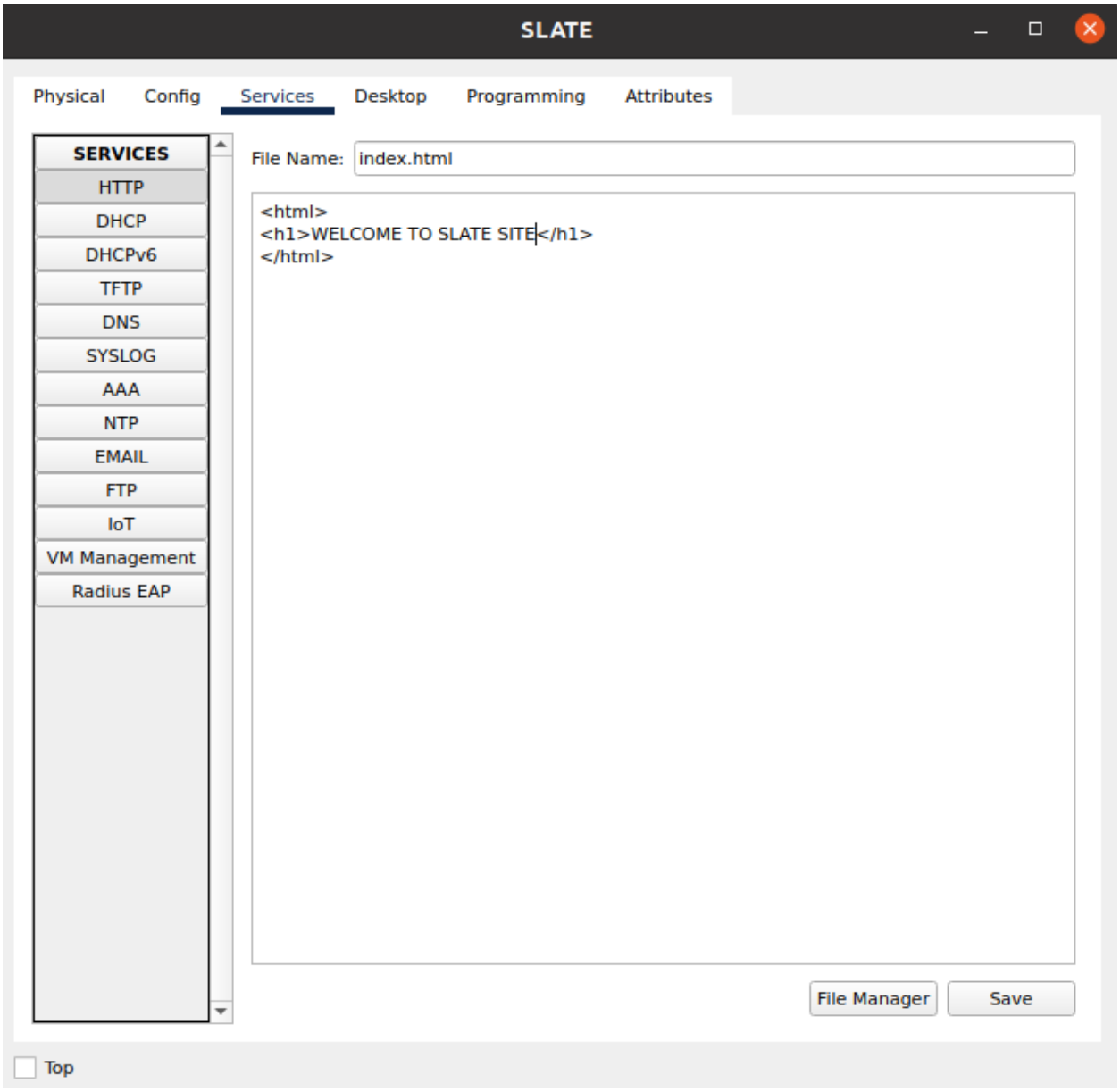
Slate Server IP Configuration:



Slate HTTP Services Configuration:

We'll edit the index.html file in HTTP settings of the Slate Server.


SLATE
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
HTTP
HTTP
On
Off
HTTPS
On
Off
File Manager
File Name
Edit
Delete
1 copyrights.html (edit) (delete)
2 cscoptlogo177x111.jpg (delete)
3 helloworld.html (edit) (delete)
4 image.html (edit) (delete)
5 index.html (edit) (delete)
New File
Import
Top

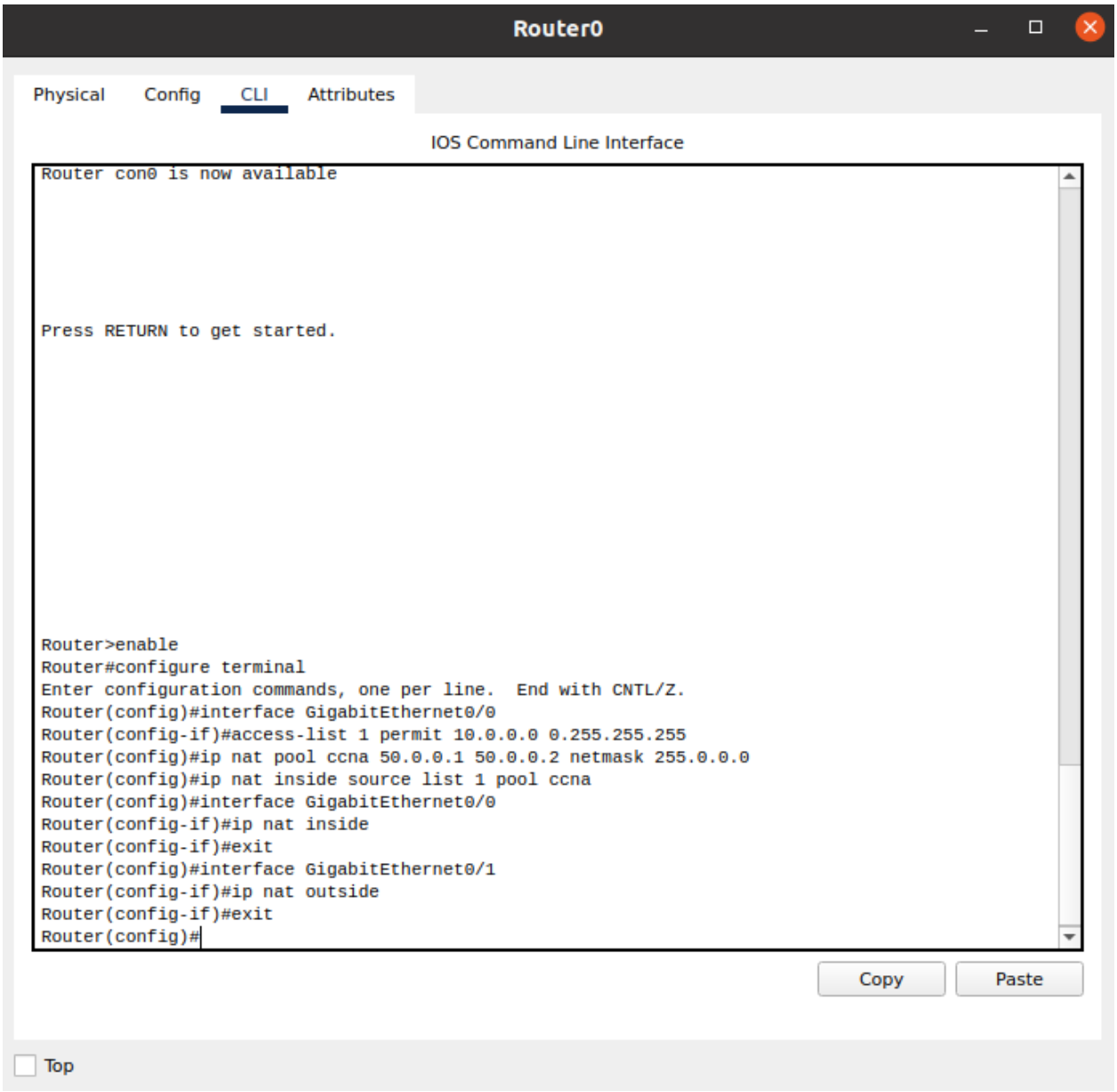


NAT Configuration:

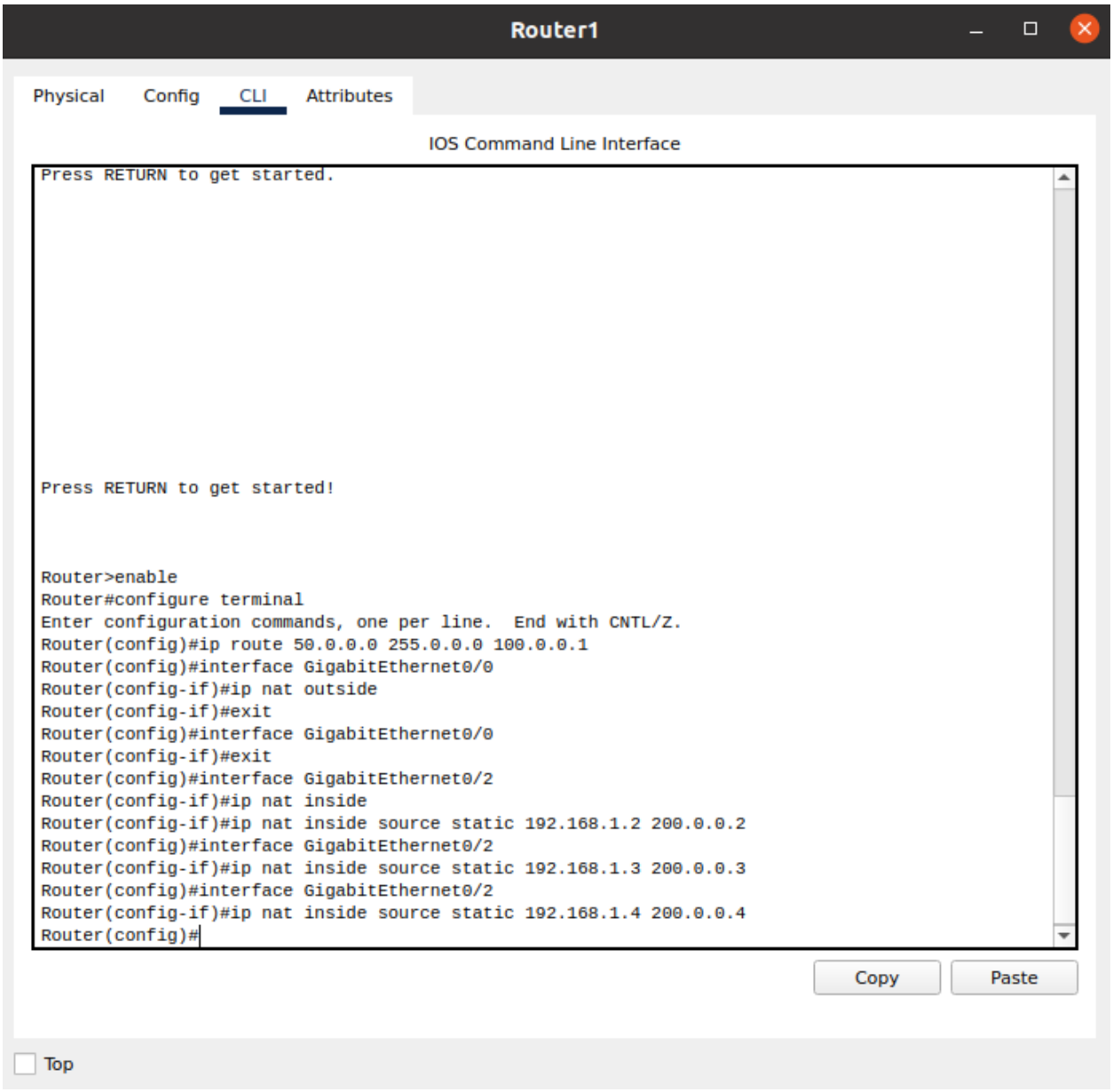
We'll do two NAT Configurations.

- NAT configuration for the Left Side Network
- NAT configuration for the Right Side Network

NAT configuration for the Left Side Network:



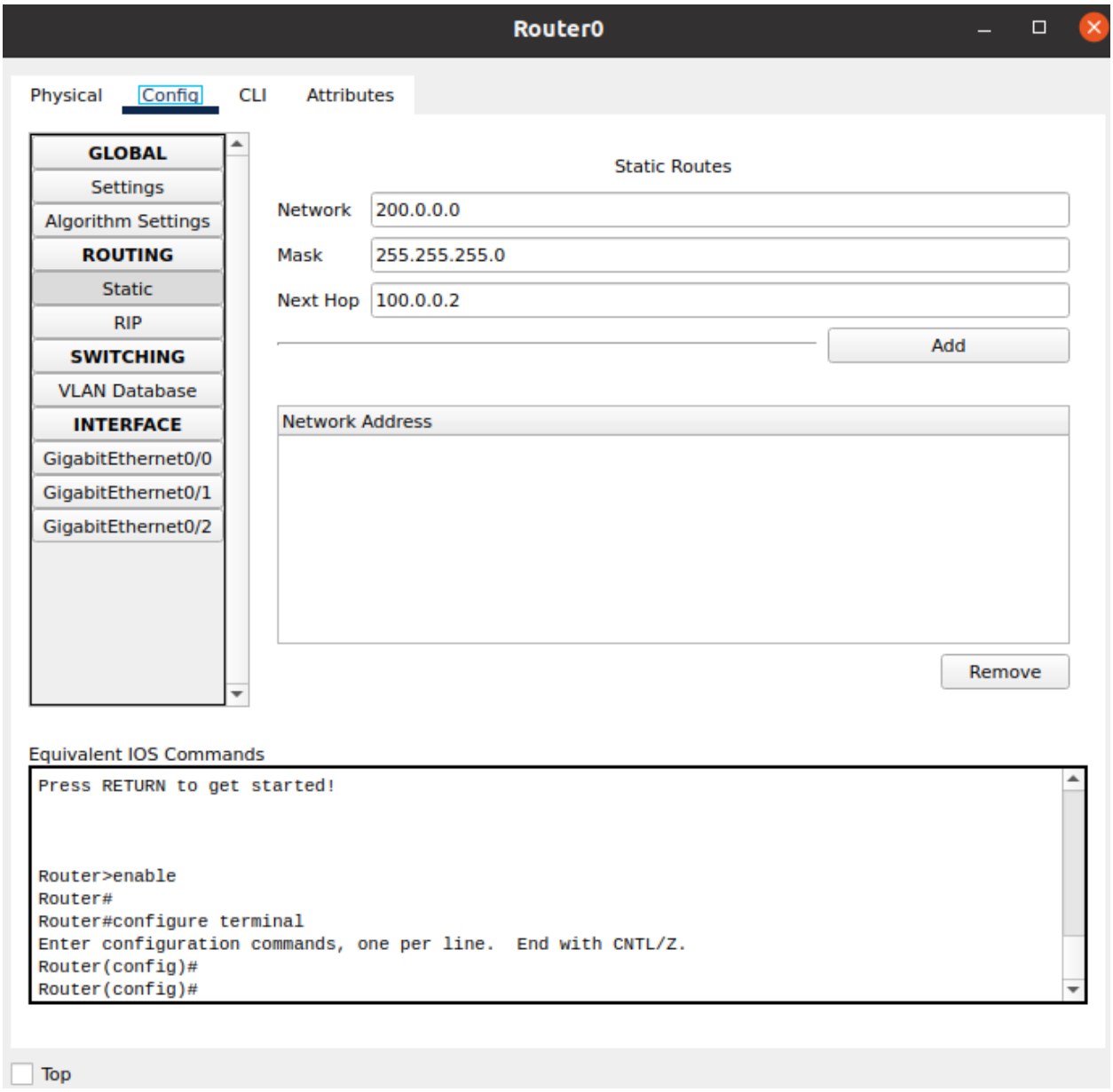
NAT configuration for the Right Side Network:



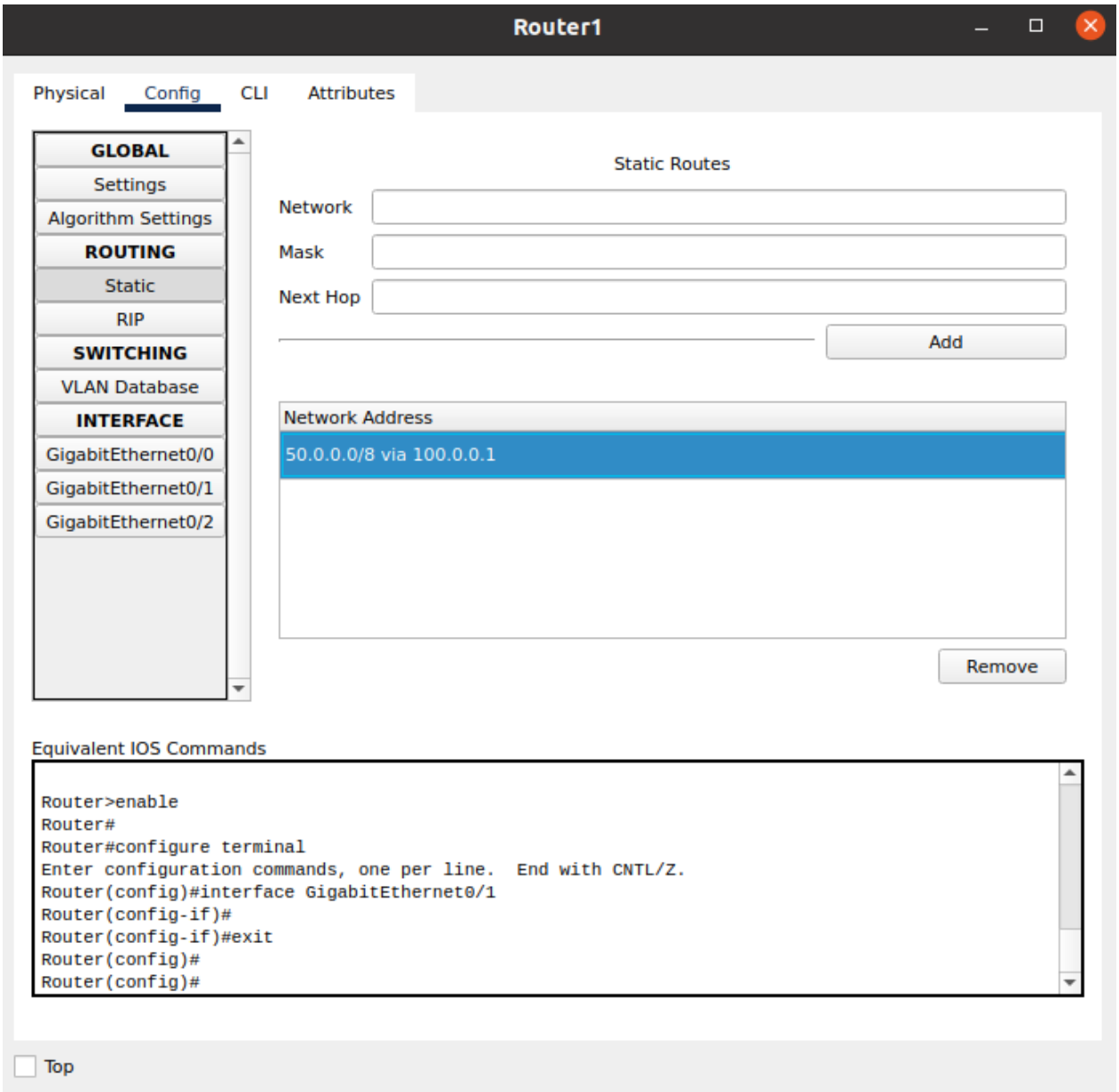
Routing Configuration:

We'll do routing for both the Routers.

Routing On Router 0:



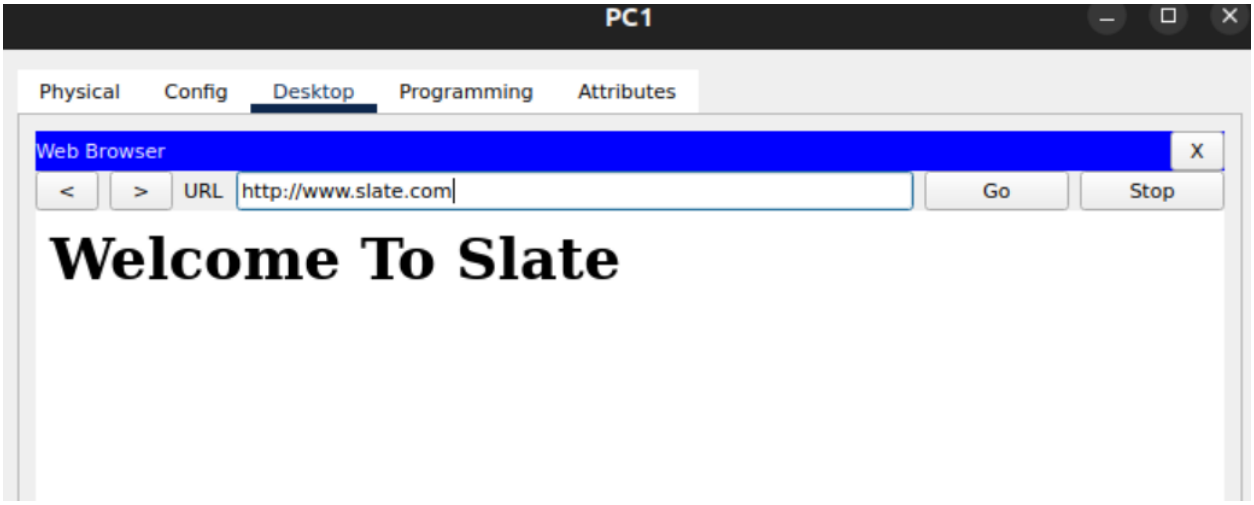
Routing On Router 1:



Validating The Topology:

Flex Testing:

Slate Testing:



Fin……..!