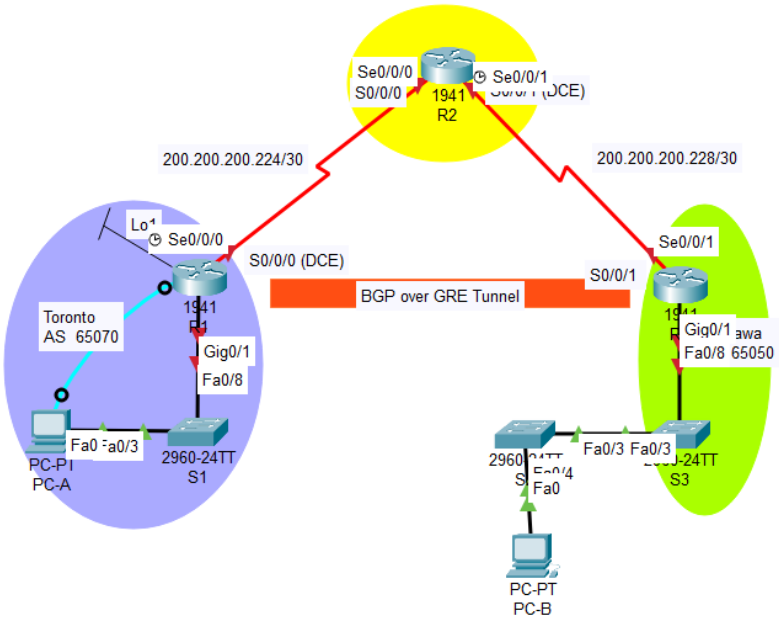
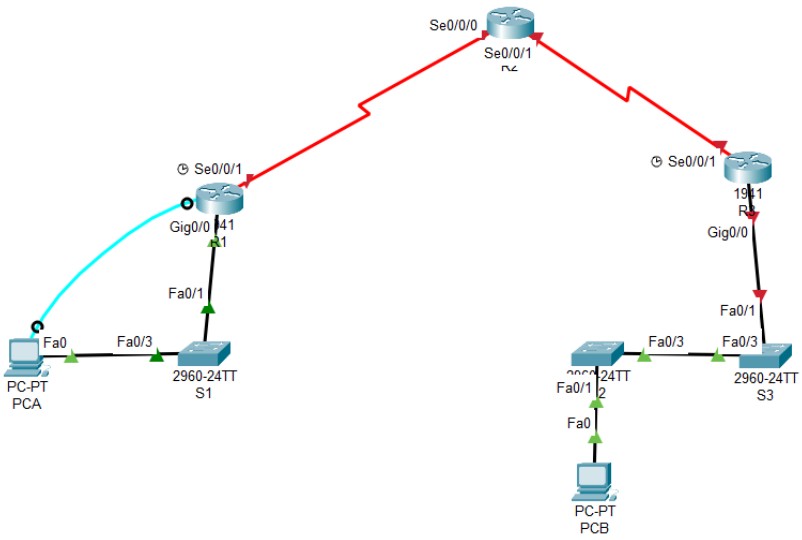
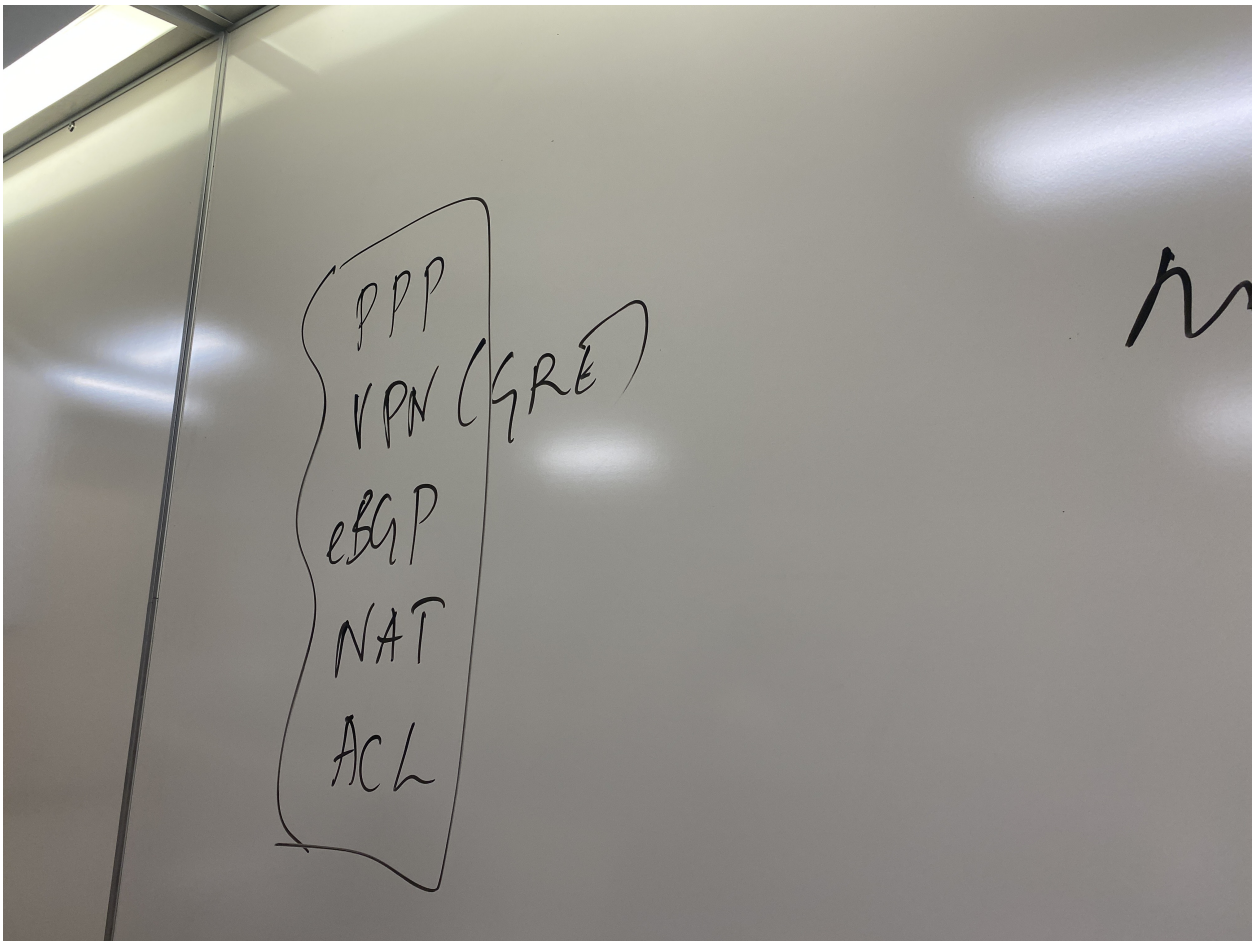
DCOM 4 final

Topology




Se0/0/0
Se0/0/1
Se0/0/1
Gig0/0
Fa0/1
Fa0
Fa0/3
PC-PT
PCA
2960-24TT
S1
Se0/0/1
Gig0/0
Fa0/1
Fa0/3
Fa0/3
Fa0/1
Fa0
PC-PT
PCB
2960-24TT
S3


PPP
VPN (GRE)
eBGP
NAT
ACL

Addressing Table (Replace xxx by last two-digit of your student number)

Devices	Ports	IP Address	Subnet mask	Default Gateway
PC-A	Ethernet	100.52.1.10	255.255.255.252	10.52.1.1
R1	G0/0	100.52.10.1	255.255.255.0	
R1	S0/0/1	100.52.1.1	255.255.255.252	
R1	Lo 10	11.52.11.11	255.255.255.0	
R2	S0/0/0 (DCE)	100.52.1.2	255.255.255.252	
R2	S0/0/1	200.52.1.2	255.255.255.252	
PC-B	Ethernet	10.52.2.10	255.255.255.0	10.52.2.1
R3	S0/0/1	200.52.1.1	255.255.255.0	
R3	G0/0	200.52.2.1	255.255.255.0	

Step1: Copy and Paste the basic configurations given for all the three routers.

Step 2: Set up PPP with CHAP

For R1

S0/0/1

- PPP w/ CHAP; Link quality as 75
  - ppp authentication chap
  - exit
  - username R2_DS5352 password cisco
- Local database for CHAP – username R2 use **cisco** as password

For R2

S0/0/0 - Appropriate configuration of PPP as relates to R1's S0/0/1

S0/0/1 - Appropriate configuration of PPP as relates to R3's S0/0/0

R3

- PPP w/ CHAP; Link quality as 75
- Local database for CHAP – username R2 use **cisco** as password

Step 3: Set up NAT using ACL

Use NAT on both R1 & R3 using the following specs:

- Permit the networks to be translated on both that are attached to their G0/0 interface (use Standard ACL 10 for R1, Standard ACL 20 for R3)
- The outside interface for R1 is S0/0/1
- The outside interface for R3 is S0/0/0

- Use PAT for translation on both using only a single address – the Serial interface of the outside interface

Step 4: Set up IP Routing

- Set up OSPF single area routing on all 3 routers with an AS number of 10
- Make OSPF routing happen between all three routers and check the interconnectivity.

Step 5: Set up GRE Tunnel with BGP Toronto & Oshawa

(Replace xx and 52 by last two-digit student number)

R1 tunnel 1 & eBGP

- Set up tunnel with IPv4 address 192.168.52.1/30
- Set the host route to tunnel destination using exit interface
- For BGP, use Autonomous Systems (AS) 65210 - Configure neighbour and network

R3 tunnel 1 & eBGP

- Set up tunnel with IPv4 address 192.168.52.2/30
- Set the host route to tunnel destination using exit interface
- For BGP, use AS 65220 – Configure neighbour and network

From PC-A, should be able to ping PC-B; **From PC-B, should be able to ping PC-A**

Step 6: IP ACLs

R1 ACL specs

- Configure an IPv4 extended ACL named ACCESS so that no one can ping any device on R1 LAN
- Everything else is allowed
- Test by pinging from PC-B to PC-A (should NOT work); PC-B to Lo10 (Should work)
- Ping PC-A to PC-B (**should** work)

Create a folder on the desktop called **yourfirstnamefinal** and copy the necessary files mentioned below as per instruction, zip it and submit via DC Connect (**FinalLabExam** assignment folder)

- Save final configurations as individual text or document for each router. (3 doc or txt or pdf)
- Save a document as **verification.doc**(pdf),
- Attach routing information for each router that shows all eBGP learned routes plus static route where applicable. (3 screenshots)
- Attach NAT translations in the routers configured. (2 screenshots)
- Attach access list information to prove your configurations (1 screenshots)
- Attach successful ping from PC-A to PC-B and unsuccessful ping from PC-B to PC-A (2 screenshots)

Wish you all the best

Here's a detailed script for configuring the routers (R1, R2, and R3) according to your requirements. This script includes setting up PPP with CHAP, NAT using ACLs, OSPF routing, GRE Tunnel with BGP, and IP ACLs.

Verification and Documentation

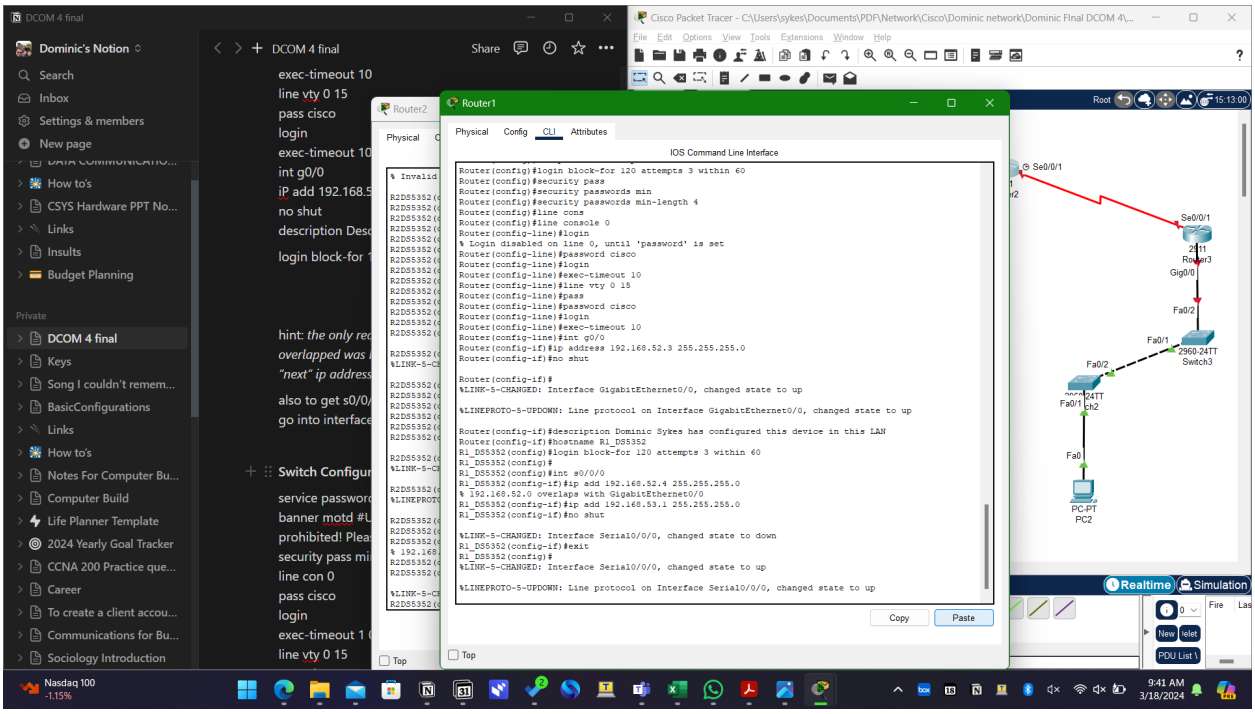
1. **Save Configurations**: Use `copy running-config startup-config` on each router to save configurations.
2. **Verification Document**:
   - **Routing Information**: `show ip route` on each router
   - **NAT Translations**: `show ip nat translations`
   - **ACL Information**: `show access-lists`
   - **Ping Results**: Use `ping` commands to capture successful and unsuccessful pings.

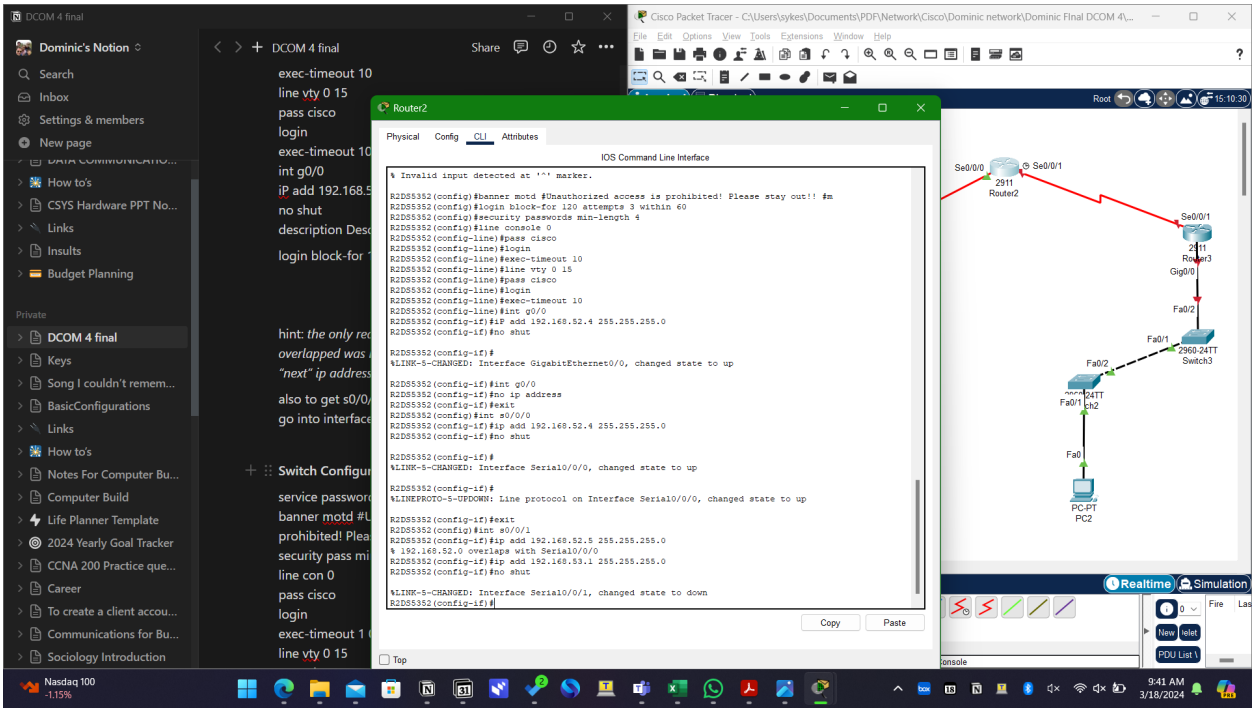
Creating the Final Folder

1. Create a folder named `yourfirstnamefinal`.
2. Save configurations as `R1_config.txt`, `R2_config.txt`, and `R3_config.txt`.
3. Create a document named `verification.doc` with screenshots and necessary verification details.
4. Zip the folder and submit it as required.

This script should cover the configurations mentioned in the video and fulfill the specified requirements. Make sure to replace placeholders with the actual IP addresses and interfaces based on your network setup.

****

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Insults
Budget Planning
Private
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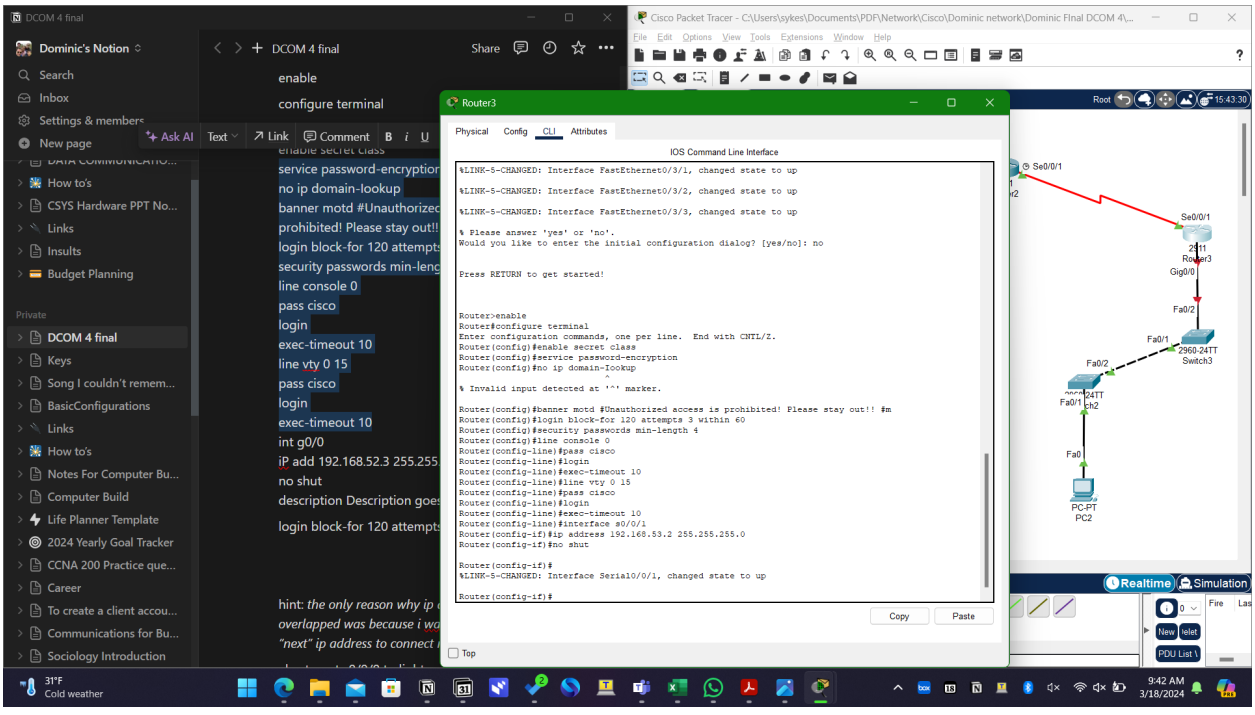
Computer Build
Life Planner Template
2024 Yearly Goal Tracker
CCNA 200 Practice que...
Career
To create a client accou...
Communications for Bu...
Sociology Introduction
Share
exec-timeout 10
line vty 0 15
pass cisco
login
exec-timeout 10
int g0/0
iP add 192.168.5
no shut
description Desc
login block-for
hint: the only rec
overlapped was
"next" ip address
also to get s0/0/
go into interface
Switch Configur
service password
banner motd #U
prohibited! Plea
security pass mi
line con 0
pass cisco
login
exec-timeout 1
line vty 0 15
Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
% Invalid input detected at '^' marker.
R2DS5352(config)#banner motd #Unauthorized access is prohibited! Please stay out!! #m
R2DS5352(config)#login block-for 120 attempts 3 within 60
R2DS5352(config)#security passwords min-length 4
R2DS5352(config)#line console 0
R2DS5352(config-line)#pass cisco
R2DS5352(config-line)#login
R2DS5352(config-line)#exec-timeout 10
R2DS5352(config-line)#line vty 0 15
R2DS5352(config-line)#pass cisco
R2DS5352(config-line)#login
R2DS5352(config-line)#exec-timeout 10
R2DS5352(config-line)#int g0/0
R2DS5352(config-if)#iP add 192.168.52.4 255.255.255.0
R2DS5352(config-if)#no shut
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
R2DS5352(config-if)#int g0/0
R2DS5352(config-if)#no ip address
R2DS5352(config-if)#exit
R2DS5352(config)#int s0/0/0
R2DS5352(config-if)#ip add 192.168.52.4 255.255.255.0
R2DS5352(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up
R2DS5352(config-if)#exit
R2DS5352(config)#int s0/0/1
R2DS5352(config-if)#ip add 192.168.52.5 255.255.255.0
% 192.168.52.0 overlaps with Serial0/0/0
R2DS5352(config-if)#ip add 192.168.53.1 255.255.255.0
R2DS5352(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to down
R2DS5352(config-if)#
Copy
Paste
Top
Cisco Packet Tracer - C:\Users\sykes\Documents\PDF\Network\Cisco\Dominic network\Dominic Final DCOM 4\...
Root
Se0/0/0
Se0/0/1
2911
Router2
Router3
Gig0/0
Fa0/2
Fa0/1
2960-24TT
Switch3
Fa0
PC-PT
PC2
Realtime
Simulation
Nasdaq 100
-1.15%
9:41 AM
3/18/2024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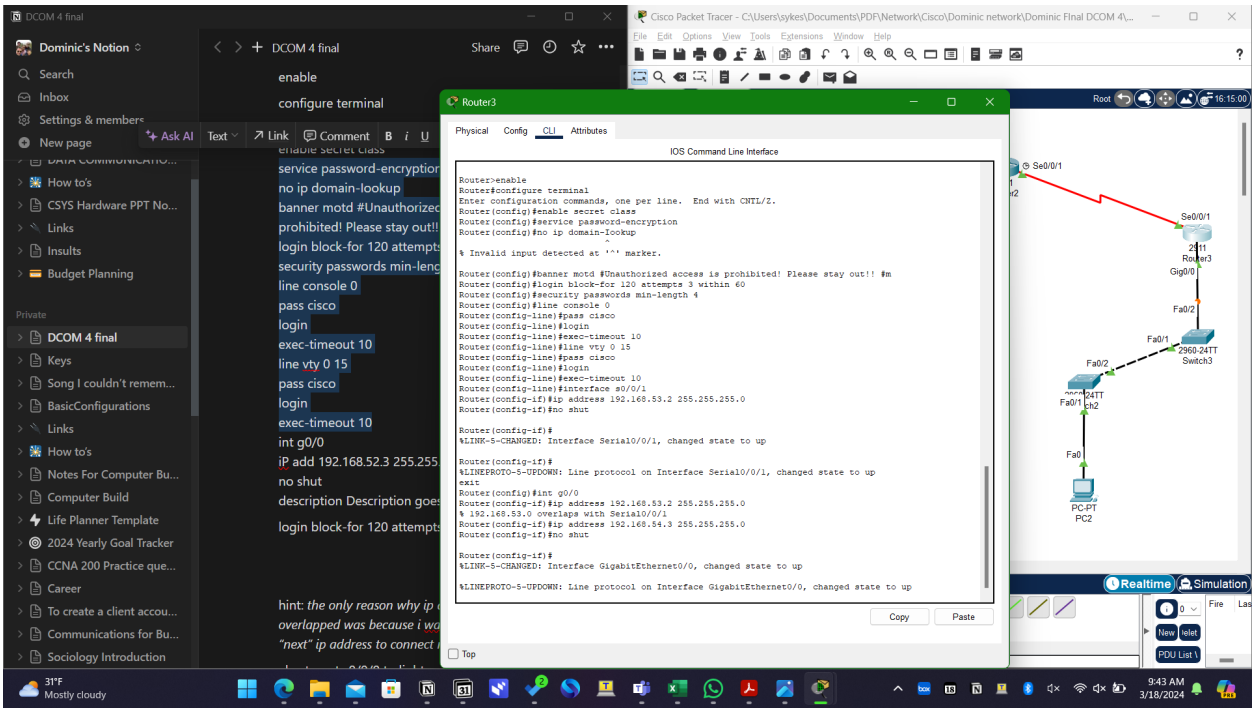
Dominic's Notion
Search
Inbox
Settings & members
New page
How to's
CSYS Hardware PPT No...
Links
Insults
Budget Planning
Private
DCOM 4 final
Keys
Song I couldn't remem...
BasicConfigurations
Links
How to's
Notes For Computer Bu...
Computer Build
Life Planner Template
2024 Yearly Goal Tracker
CCNA 200 Practice que...
Career
To create a client accou...
Communications for Bu...
Sociology Introduction
Share
enable
configure terminal
Ask AI
Text
Link
Comment
service password-encryption
no ip domain-lookup
banner motd #Unauthorized
prohibited! Please stay out!!
login block-for 120 attempts
security passwords min-leng
line console 0
pass cisco
login
exec-timeout 10
line vty 0 15
pass cisco
login
exec-timeout 10
int g0/0
iP add 192.168.52.3 255.255
no shut
description Description goes
login block-for 120 attempts
hint: the only reason why ip
overlapped was because i wa
"next" ip address to connect
Router3
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINK-5-CHANGED: Interface FastEthernet0/3/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3/3, changed state to up
% Please answer 'yes' or 'no'.
Would you like to enter the initial configuration dialog? [yes/no]: no
Press RETURN to get started!
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#enable secret class
Router(config)#service password-encryption
Router(config)#no ip domain-lookup
% Invalid input detected at '^' marker.
Router(config)#banner motd #Unauthorized access is prohibited! Please stay out!! #m
Router(config)#login block-for 120 attempts 3 within 60
Router(config)#security passwords min-length 4
Router(config)#line console 0
Router(config-line)#pass cisco
Router(config-line)#login
Router(config-line)#exec-timeout 10
Router(config-line)#line vty 0 15
Router(config-line)#pass cisco
Router(config-line)#login
Router(config-line)#exec-timeout 10
Router(config-line)#interface s0/0/1
Router(config-if)#ip address 192.168.53.2 255.255.255.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up
Router(config-if)#
Copy
Paste
Top
Cisco Packet Tracer - C:\Users\sykes\Documents\PDF\Network\Cisco\Dominic network\Dominic Final DCOM 4\...
Root
Se0/0/1
2911
Router3
Gig0/0
Fa0/2
Fa0/1
2960-24TT
Switch3
Fa0
PC-PT
PC2
Realtime
Simulation
31°F
Cold weather
9:42 AM
3/18/2024



References:

- Cisco: Configure and Understand PPP CHAP Authentication https://www.cisco.com/c/en/us/support/docs/wan/point-to-point-protocol-ppp/10241-ppp-callin-hostname.html
- [YouTube] Video tutorial on configuring PPP with CHAP for Cisco routers (YouTube: https://www.youtube.com/watch?v=VXQyNdo1TxY)

Router Configurations

Basic config R1

For R1

enable
configure terminal
hostname R1
interface G0/0
ip address 100.52.10.1 255.255.255.0
no shutdown

interface S0/0/1
ip address 100.52.1.1 255.255.255.252

no shutdown

interface Loopback10
ip address 11.52.11.11 255.255.255.0
no shutdown
exit

For R2

enable
configure terminal
hostname R2
interface S0/0/0
ip address 100.52.1.2 255.255.255.252
no shutdown

interface S0/0/1
ip address 200.52.1.2 255.255.255.252
no shutdown
exit

For R3

enable
configure terminal
hostname R3
interface G0/0
ip address 200.52.2.1 255.255.255.0
no shutdown

interface S0/0/1
ip address 200.52.1.1 255.255.255.252
no shutdown
exit

Step 2

For R1

interface S0/0/1
encapsulation ppp
ppp authentication chap
ppp quality 75
exit
username R2_DS5352 password cisco

For R2

interface S0/0/0
encapsulation ppp

ppp authentication chap
exit
username R1_DS5352 password cisco

interface S0/0/1
encapsulation ppp
ppp authentication chap
exit
username R3_DS5352 password cisco

For R3

interface S0/0/1
encapsulation ppp
ppp authentication chap
ppp quality 75
exit
username R2_DS5352 password cisco

Step 3

For R1

access-list 10 permit 100.52.10.0 0.0.0.255
interface G0/0
ip nat inside
exit
interface S0/0/1
ip nat outside
exit
ip nat inside source list 10 interface S0/0/1 overload

For R3

access-list 20 permit 200.52.2.0 0.0.0.255
interface G0/0
ip nat inside
exit
interface S0/0/1
ip nat outside
exit
ip nat inside source list 20 interface S0/0/1 overload

Step 4

For R1

router ospf 10
network 100.52.10.0 0.0.0.255 area 0
network 100.52.1.0 0.0.0.3 area 0

network 11.52.11.0 0.0.0.255 area 0
exit

For R2

router ospf 10
network 100.52.1.0 0.0.0.3 area 0
network 200.52.1.0 0.0.0.3 area 0
exit

For R3

router ospf 10
network 200.52.2.0 0.0.0.255 area 0
network 200.52.1.0 0.0.0.3 area 0
exit

Step 5

For R1

interface Tunnel1
ip address 192.168.52.1 255.255.255.252
tunnel source S0/0/1
tunnel destination 200.52.1.1 # Replace with R3 S0/0/1 IP
exit

router bgp 65210
neighbor 192.168.52.2 remote-as 65220
network 192.168.52.0 mask 255.255.255.252
exit

For R3

interface Tunnel1
ip address 192.168.52.2 255.255.255.252
tunnel source S0/0/1
tunnel destination 100.52.1.1 # Replace with R1 S0/0/1 IP
exit

router bgp 65220
neighbor 192.168.52.1 remote-as 65210
network 192.168.52.0 mask 255.255.255.252
exit

Step 6

For R1

```
ip access-list extended ACCESS
deny icmp any 100.52.10.0 0.0.0.255
permit ip any any
exit

interface G0/0
ip access-group ACCESS in
exit
```

```
show ip route

show ip nat translations

show access-lists

copy running-config startup-config
```