Success

Prac - 3.

① Implement SPAN Technologies

① → Open the cisco packet tracer → go to End devices → select 2 pc & drop in the screen

② click on Network Devices → click on switch → take 2960-24TT switch (1st switch)

③ click on connection → select copper Straigh -Through wire

④ then select PC0 → FastEthernet0 → click switch 2960-24TT switch0 → FastEthernet 0/1

⑤ take copper wire & then click on 2960-24TT switch0 → FastEthernet 0/2 → click on pc1 → FastEthernet 0

⑥ Wait for some time till connect° get green

⑦ Then configure the switch 2960-24TT → click on Switch → Click CLI →

⑧ click enter. you see
switch >en → (for enable)
Switch # conf t
o
to monitor switch →
Switch (config) # monitor session 1 source
int F0/1
↑
interface.

for next interface connect°. (call it as
~~dis~~ ~~So~~ PC_0 → source
PC_2 → destinat° → $f_0/2$)

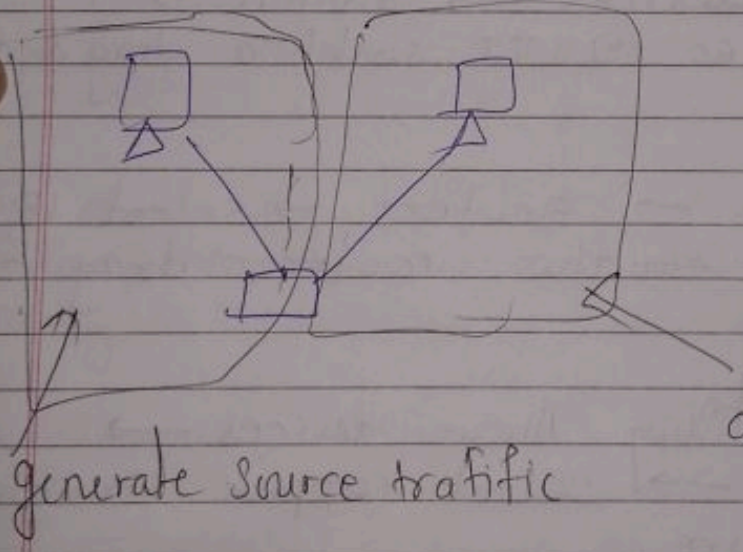
~~#~~ ~~So~~ switch (config) # monitor session 1
destination int ~~F~~ 0/2 f0/2

switch (config) # end

→ click on enter.

(9) Switch # show monitor session 1

(10) switch # show monitor detail



consider PC D & PC destinat°
source

I
click on pc0 → Desktop → Ip address →
10.0.0.2 → click on subnet mask.
II. follow same step ↑
10.0.0.3

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B.

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Implement SNMP & syslog.

SNMP → Simple n/w management protocol to manage the devices that taking part in ~~net~~ n/w

Managment → machine,
switch
router.

We can set read or write opt^n.

Code →

① Click on End devices → click on pc drag & drop in the screen

② Network devices → switch → 1st switch 2960 -24TT switch00 drag & drop it

③ N/w devices → Routers → select 1841 router → 2 ~~roo~~ this router → drag & drop

④ For connecting Those devices → connection → select copper straight-Through wire.

click on PC0 → Fastethernet 0
same to → switch0 → fastethernet 0/1

↳ ~~swit~~ copper wire → click switch0 → Fastethernet 0/2 → click on router fastethernet 0/0

↳ same for another router

wait for some time to get converted to green

(5) Then start the configuration

click

PC0 → ~~conf~~ Desktop → IP address → 172.168.1.2 → Default gateway → 172.168.1.1

~~R0~~ R0 → config → fastethernet 0/0 → IP addr → 172.168.1.1
subnet mask → enter
port status → ☑ on

same R1
IP :- 172.168.2.1 //

(7) Open R0 → CLI → enter
Router(config) #exit
Rou(config) # SNMP-server community read ro

call agent

SNMP-server ?

what type of parameter you have to pass again.

SNMP-server community ?
SNMP-server community read ??
SNMP-server community read ro
SNMP-server community write ?
SNMP-server community write rw

I assign the SNMP agent & it is working in these pind of nw

(8) PC0 → Desktop → MIB Browser
→ type Address: 172.16.1.1
→ click on [Advanced]

Read community - [1234]

Write community - [1234]

[OK]

SNMP MIBs
v MIB Tree
> router-std MIBs
> .iso
> .org
> .dod
> .internet
> .mgmt
> .private.

↳ > mgmt
> mib-2
↳ System
↳ .Sys Descr
- Sys Obj
up time
Contact
↳ Name

in upper side → [40]

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(9) End devices → PC → Desktop → MTB → Addr → 192.168.1.1

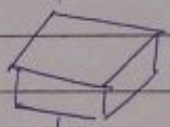
Prac - 3

c). Implement flexible Network

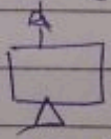
1] End devices → server (server - PT server 0) → drag & drop
then N/w devices → 1841 Router 0 → drag & drop.
then N/w devices → switch → select 4, 1st switch (2960 - 24TT switch 00) drag & drop.
→ End devices → PC → drag & drop

2] connect those n/w with --- (copper cross over line.

3] Server -- ——— -- (X) Router 0
(fastethernet 0/0) Router 0, fastethernet 0/0
fast-11 - 0/1



switch fastethernet (0/1)
(fastet1 - 0/2)



PC0 fastethernet0

Wait for some time green

Device	Interface	Ip Address
PC0		30.0.0.2
		default gateway → 30.0.0.1
R0	F0/0 server	10.0.0.1
	F0/1 PC0	30.0.0.1

(4) click pc0 → Desktop → Ip address
→ 30.0.0.2 → subnet → enter
gateway ~~subnet~~ → 30.0.0.1

(5) click on Router0 → config → Fastethernet 0/0
→ Ip → 10.0.0.1
subnet → enter
port status ☑

(6) click on Server0 → Desktop → Ip configuration
→ 10.0.0.2
Subnet → enter.
Gateway → 10.0.0.1

(7) click on Router0 → config → Fast Ethernet 0/1
→ Ipv4 address → 30.0.0.1 → subnet → enter.
port status → ☑

(8) Go to router → CLI command → in notpad
→ enter.
Router (config-if) # exist
Router (config) # service timestamps log
datetime msec
Router (config)## int ~~fa~~ f0/0.1

(9) Server-pT → services → Syslog → make
on ✓ double click.

(10) R1 → CLI →
Router (config-~~if~~subif) # exist
Router (config) # int f0/1.1

Pc, switch, server, router

Go to server → services → syslog → see the msg reflected or not → on or off

click
◉ on ✓ ○ off

R1 → CLI → ~~#exist~~
Router(config-subif) #exit
Router(config) #int f0/0.1

↳ Same step
wait for same time to get info reflected.

→ Then do some setting.
RouterR0 → config → RIP →
10.0.0.0 → Add.
30.0.0.0 → Add.

R0 → CLI →
Router(config-router) # network 30.0.0.0
Router(config-router) #exit
Router(config) #int f0/0.1
Router(config-subif) #exit

for Netflow →
Router → CLI
~~Router(config) #int.~~
Router(config-if) #exit
Router(config) #int f0/0
Router(config-if) # ip flow ingress
Router(config-if) # ip flow egress
Router(config-if) # ip flow-export destinat
10.0.0.2 99
ip addrs. port

Router> enable
Router# configure terminal

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ip

Router (config) # int flow-export source f0/0
Router (config) # end
Router #
Router # show ip cache flow

Pr-5.

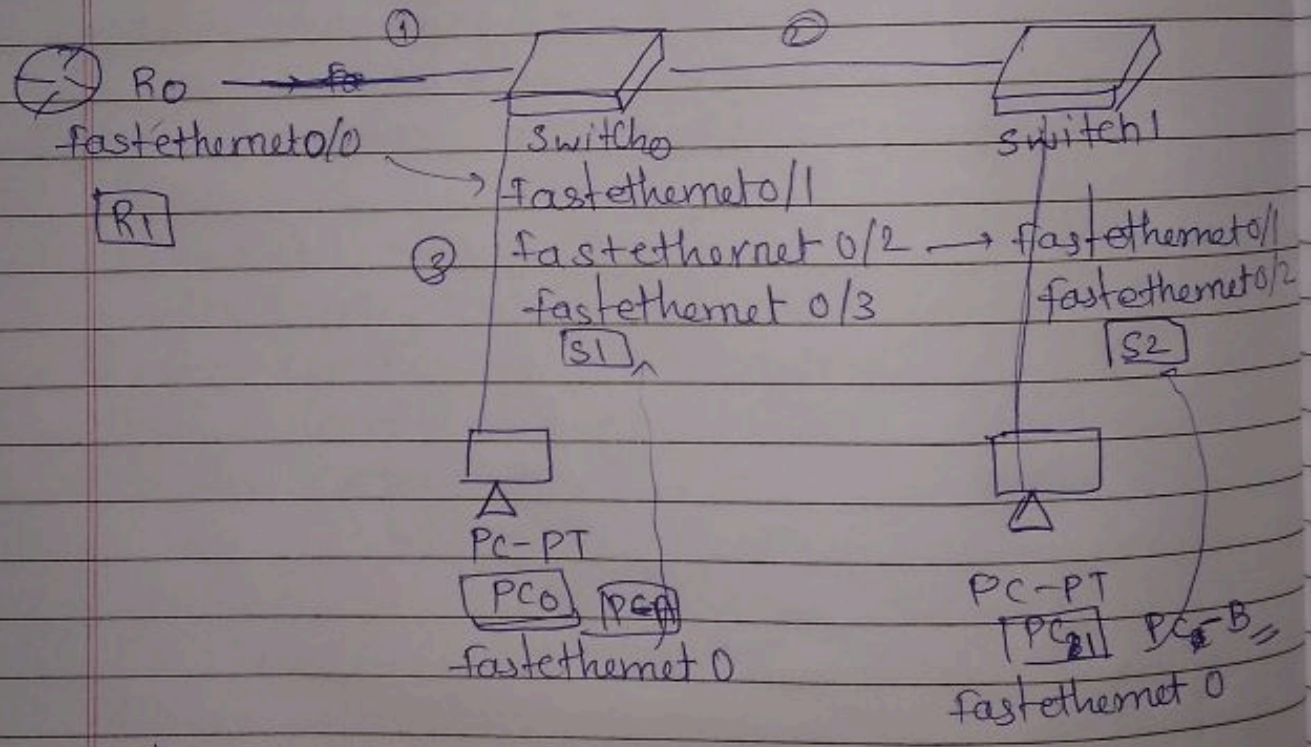
Implement Inter-VLAN Routing.

1. → Network devices → Routers → select 1841 Router drag & drop

→ N/w devices → switches → take 2 switch name 2960-24TT switch0 & 2960-24TT switch1.

→ End devices → select 2 pc → PC-PT PC0 & PC-PT PC1 drag & drop

2] for connecting all compment → click on connections → select copper straight-Through



Then write the name of n/w → ▼ ▲ → name → only drag your mouse it will show the name that name you have to write it → click these & then go ▼ → write down n/w name → (also given in dia).

LAN → All Switches

3] click on PC-PT PC0 → Desktop → IP Address
Ipaddrs ⇒ 192.168.20.3
Subnet Mask ⇒ 255.255.255.0
Default Gateway ⇒ 192.168.20.1

4] click on PC-PT PC1 → Desktop → IP address
IPaddr ⇒ 192.168.30.3
subnet Mask ⇒ click enter
Default Gateway → 192.168.30.1
5. chang name, +dia →
6. click switch0 → CLI →
click enter
Switch > en
Switch # conf t
Switch (config) # hostname S1
S1 (config) # VLAN 10 (new name)
S1 (config-vlan) # name management.
S1 (config-vlan) # exit
S1 (config) # vlan 20
S1 (config-vlan) # name sales
S1 (config-vlan) # exit.
S1 (config) # vlan 30
S1 (config-vlan) # name operations
S1 (config-vlan) # exit.
S1 (config) # vlan 999
S1 (config-vlan) # name Parking_Lot
S1 (config-vlan) # exit
S1 (config) # vlan 1000
S1 (config-vlan) # name Native
S1 (config-vlan) # exit
S1 (config) # end.
S1 # ↵
enter

S1 # show vlan br
S1 # conf t
S1 (config) # int vlan 10
(press enter)

IP
S1 (config-if) # ip address 192.168.10.11
255.255.255.0
de submask.

S1 (config) # exit
S1 (config) # ip default-gateway 192.168.10.1
S1 (config) # no shutdown
S1 (config) # int vlan 10
S1 (config-if) # no shutdown
S1 (config-if) # exit
S1 (config) # end.

(Press enter)
Check status vlan
S1 # show vlan br

→ send range of IP
TO allow all port in switch to send or receive packet.
switch 1 → S1 → CLI →
S1 (config) # int range f0/4-24, g0/1-2

S1 (config-if-range) # switchport mode access
S1 (config-if-range) # switchport access vlan 999

S1 (config-if-range) # shutdown
S1 (config-if-range) # exit
S1 (config) # end

press enter.
S1 # show vlan br

Part II

switch S2 → CLI

press enter.

switch > en

Switch # conf t

switch (config) # hostname S2

S2 (config) # vlan 10

S2 (config-vlan) # name Management

S2 (config-vlan) # exit

S2 (config) # exit

(press enter)

S2 # config conf t

S2 (config) # vlan 20

S2 (config-vlan) # name Sales

S2 (config-vlan) # exit

S2 (config) # vlan 30

S2 (config-vlan) # name Operations

S2 (config-vlan) # exit

S2 (config) # vlan 999

S2 (config-vlan) # name Parking_lot

S2 (config-vlan) # exit

S2 (config) # vlan 1000

S2 (config-vlan) # name Native

S2 (config-vlan) # exit

S2 (config) # end

(press enter)

S2 # sherw vlan br

S2 # conf t
S2 (config) # int vlan 10
(press enter)
S2 (config-if) # ip address 192.168.10.12
255.255.255.0
S2 (config-if) # exit
S2 (config) # ip default-gateway 192.168.10.1
S2 (config) # int vlan 10
S2 (config-if) # no shutdown
S2 (config-if) # exit
S2 (config) # int range f0/3-24, g0/1-2
S2 (config-if-range) # switchport mode access
S2 (config-if-range) # switchport access vlan 999
S2 (config-if-range) # shutdown

Again

S1 → ~~config~~ CLI
S1 (config) # int f0/3
S1 (config-if) # switchport mode access
— " — # switchport access vlan 20
— " — # exit
S1 (config) # end
(press enter)
S1 # show vlan br

Again
S2
S2 → CLI →
S2# conf t
S2 (config) # int f0/2
S2 (config-if) # switchport mode access

S2 (config-if) # switchport access vlan 30
—11— # exit
S2 (config) # end
(press enter)
S2 # show vlan br

Again
Switch S1 → CLI
S1 # conf t
S1 (config) # int f 0/2
S1 (config-if) # switchport mode access
—11— # switchport mode trunk
—11— # switchport trunk native vlan 1000
—11— # switchport trunk allowed vlan 1000
—11— # —11— vlan 10,20, 30, 1000

Again
G0
S2 → CLI
S2 # conf t
S2 (config) # int f0/1
S2 (config-if) # switchport mode trunk
—11— # switchport trunck native vlan 1000
—11— # switchport trunck allowed vlan 10, 20, 30, 1000
exit
end
show vlan br

int
S2 # show ^trunck

Part III
Then click on the router → R1 → CLI →
enter no → press enter →
Router > en
-11- # conf t
Router (config) # int f0/0.10
-11- (-subif) # description vlan 10
encapsulation dot1q 10
-11- # ip address 192.168.10.1
255.255.255.0
exit

→ same.

int f0/0.20
des -11- 20
encapsulation -11- 20
-11- ip address 192.168.20.1
255.255.255.0
-11- exit

same

.30
des 30
en 30.
IP 192.168.30.1
255.255.255.0
exit
int f0/0.1000
descript for NATIVE
encapsulation dot1q 1000 native
exit

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Router (config) # int fo/0

no shutdown

exit

exit

Router# show ip int br

Observe STP Topology changes & Implement RSTP

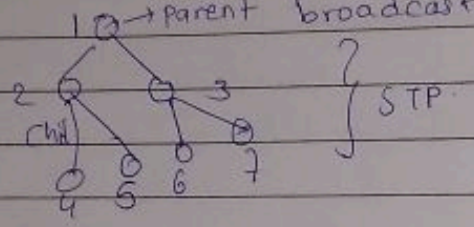
pr-6.

1] Implement Advanced STP Modificat'n's & Mechanisms.

2] Implement MST

→ STP → spanning Tree protocol
RSTP → Rapid spanning Tree protocol

with ^ the help of STP → we going to form certain type of topology in tree manner & we have some kind of backup optim



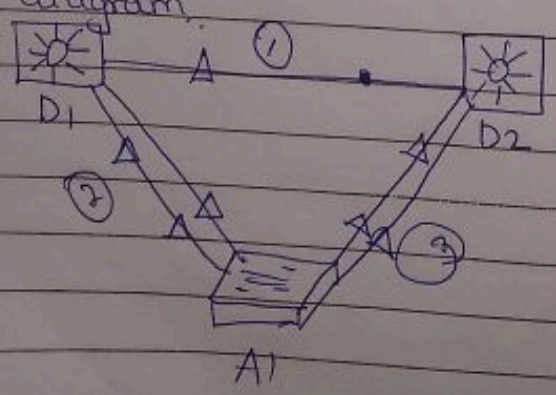
RSTP → you have some kind of fast broadcasting ~~Scee~~ ~~scheme~~ scheme

scene —— // —— // ——

1. Network Devices → switches → 3650-24PS Multilayer switch 0 (2 switches) of this ~~ees~~

N/w Devices → switches → 2960-24TT switch0

2. Give the name to the devices as per given in the diagram.



prst → find topology that is loop free

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3. connect devices → copper straight - Through wire. then select

I] click on D1 → GigabitEthernet 1/0/2 → then to connected
click on D2 → GigabitEthernet 1/0/1

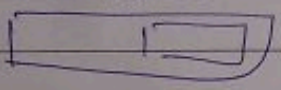
II] (1) click on D1 → Gigabit Ethernet 1/0/5 → then connected to switch → FastEthernet 0/1

(back up Links) or used to speedup connectn.

(2) click on D1 → GigabitEthernet 1/0/6 → connect to switch → FastEthernet 0/2

III. Same step II apply to D2
(1) — FastEthernet 0/3
(2) D1 → — fast ethernet 0/4.

4. Power on D1 → double click D1 → physical → downside a switch drag & connect in that power component.



do
same for D2.

5. Double click on D1 → CLI
press enter → no
switch > en
switch # conf t
switch (config) # hostname D1
D1 (config) # Spanning-tree mode ? for RSTP (rapid-pvst)
— " — # Spanning-tree mode pvst
banner motd # D1, STP Topology
change and RSTP lab #
— " — # line con 0

D1(config-line)
--11-- # exec-timeout 0 0
-11- # Logging synchronous
-11- # exit
D1(config) # int range g1/0/1-24, g1/1/1-4,
g2/0/1-2
D1(config-if-range) # shutdown

D1 -11- # int range g1/0/1, g1/0/5-6
-11- # switchport mode exit

D1(config) # vlan 2
D1(config-vlan) # name SecondVLAN
exit
D1(config) # int vlan 1
ip address 10.0.0.1 255.0.0.0
no shutdown
exit.

Same thing for D2
press enter.
Switch >en
Switch # conf t
Switch (config) # hostname D2
D2(config) # banner motd # D2, STP Topology change & RSTP Lab # and

-11- #Spanning-tree mode pvst
-11- # line con 0
D2(config-line) # exec-timeout 0 0
logging synchronous
exit
int range g1/0/1, g1/0/5-6
no shutdown

exit
vlan 2
name SecondVLAN
exit
int vlan 1
D2(config-if)# ip address 10.0.0.2 255.0.0.0
no shutdown

--//-- #
exit

III Same thing for A1
press enter
Switch >en
Switch # conf t
--//-- # hostname A1
banner motd # A1, STP Topology Change and RSTP Lab
--//-- # Spanning-tree mode pvst
line con 0
exec-timeout 0 0
logging synchronous
exit
int range fo/1-24, go/1-2
shutdown
exit
int ~~fo/1~~ range fo/1-4
switchport mode trunk
no shutdown
exit
vlan 2
name SecondVLAN
exit
int vlan 1

ip address 10.0.0.3 255.0.0.0
no shutdown
exit
end
show ip int br
show spanning-tree
show version | include MAC

↑ vertical bar

↳ For D1

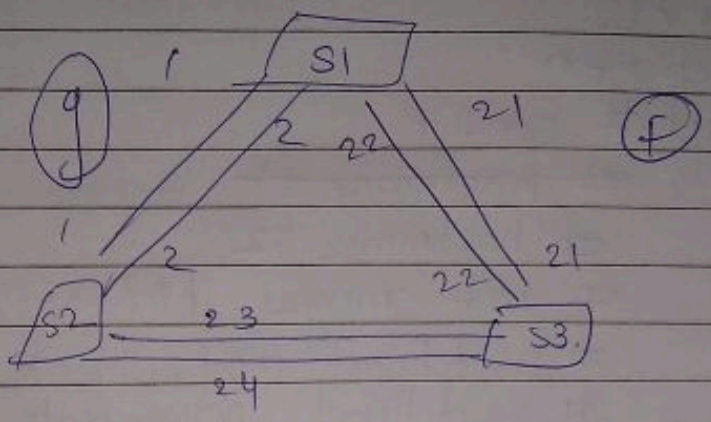
D1(config) # end
D1 # show spanning-tree active

↳ For D2

D2(config) # end
D2 #
D2 # show spanning-tree active

Pr - 7. PAgP →

Etherchannel



→ take 3 switches. → 2960-24TT → change name

→ connect copper wire.

(I) S1 → giga 0/1 to S2 → giga 0/1

S1 → giga 0/2 to S2 → giga 0/2.

(II) S1 → fastethernet 0/21 to S3 → fa fo/21
S1 → fo/22 to S3 → fo/22

(II) S2 → fo/23 to S3 → fo/23
S2 → fo/24 to S3 → fo/24

→ S1 → CLI
Switch > en
Switch # conf t
Switch (config) # hostname S1
S1 (config) # int range go/1-2, fo/21-22
—//— # switchport mode trunk.
switchport nonegotiate
#

See connect 4 ports

S2 → CLI
switch > en
switch # conf t
~~# hostname s1~~
hostname S2
int range f0/23-24, g0/1-2
switchport mode trunk
switchport nonegotiate
exit

S3 → CLI
switch > en
conf t
hostname S3
int range f0/21-24
switchport mode trunk
switchport nonegotiate
exit.

S1 → CLI
S1(config-if-range) # end
S1 #
S1 # show int trunk

Take an label & write the name.
PAgP, negotiated LACP, LACP

PAgP
G0 S1 → CLI
S1 # conf t
interface range f0/21-22
shutdown
channel-group 1 mode desirable

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no shutdown
exit

S3 → CLA
conf t
int range fo/21-22
shut down
channel-group 1 mode desirable
no shutdown

S1 → CLI
S1(config) # interface port-channel 1
S1(config-if) # switchport mode trunk
exit

S3 → CLI
S3 # exit
S3 (config) # ~~hostname~~ interface port-channel 1
switchport mode trunk
exit

S1 → CLI
S1(config) # end.
S1 #
S1 # show etherchannel summary

LACP → (S1 & S2)

S1
conf t
interface range g0/1-2
shutdown
channel-group 2 mode active
no shutdown
exit
interface port-channel 2

Same doing S2

S2
conf t
int range g0/1-2
shutdown
channel-group 2 mode active
no shutdown
exit
→ -//-

no send

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# switchport mode trunk	-11-
# exit.	-11-
# end	

S1 # show etherchannel summary

Negotiated (23-24)

LACP

S2

S2 (config) # interface range fa0/23 -24

shutdown
channel-group 3 mode passive
no shutdown
exit
interface port-channel 3
switchport mode trunk
exit.
end

S2 # show etherchannel summary

S3

same steps.

S1 → CLI

S1 # show spanning-tree active

Prac -10

Implement GRE over IPsec site-to-site VPNs

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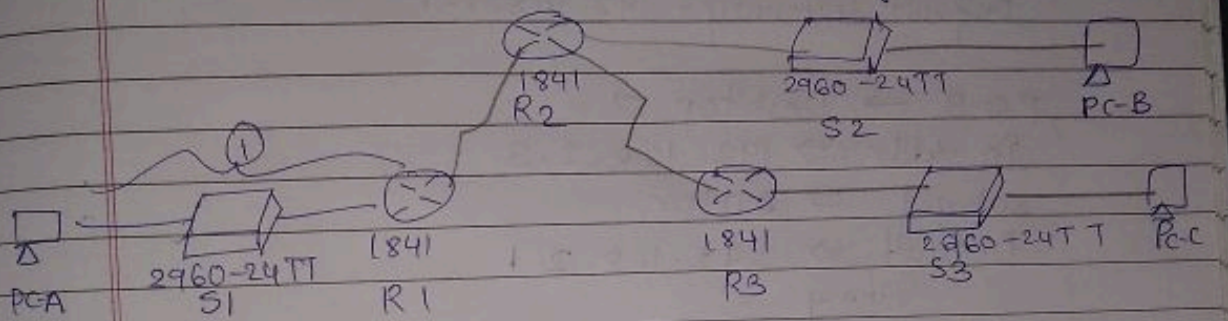
① Network Devices → Routers → take 3 routers
1841 Routers → Give name ~~mentio~~ given in dia.



2] For connection → click on connections → Take Serial ~~DTE~~ DCE

I. R1 → serial 0/0/0 → R2 → serial 0/0/0
R2 → serial 0/0/1 → R3 → serial 0/0/0

II Network Devices → switch → take 3 switches
→ 2960-24TT

III End devices → PC → 3 PC-PT pcs.

3] Take the copper wire & connect
~~PC~~ → All sides.

Use fastethernet cable for connect°

4] configure the connect° → for that
→ click on R1 → physical → off the router button.
① add HWIC-1GE-SFP ② WIC-2T

→ click on R2 → physical → off the router button
Add → ① WIC-cover ② WIC-2T
→ same step for R3 [repeat R2 steps]

5. PC-A → Desktop →
Ip Addr :- 192.168.1.3
subnet :- enter
Default Gateway = 192.168.1.1

PC-B → Desktop →
Ip Addr ⇒ 192.168.2.3
subnet ⇒ enter
Default ⇒ 192.168.2.1
Gateway

PC-C →--//-- →
Ip Addr ⇒ 192.168.3.3
sub ⇒ enter
Default Gate. ⇒ 192.168.3.1

6. click on R1 → config → Fastethernet 0/0 →
IP Addr :- 192.168.1.1
subnet mask :- press enter
port status ☑ on

R2 → config → fo/0 →
Ip Addr ⇒ 192.168.2.1
subnet ⇒ 255.255.255.0
port status ⇒ ☑ on

R3 → config → fo/0 →
Ip Addr ⇒ 192.168.3.1
Subnet ⇒ 255.255.255.0
port status ⇒ ☑ on

Conn → R1 ⟷ R2

7] R1 → Serial 0/0/0 →
IP Addr → 10.1.1.2
Subnet → 255.255.255.252
clock rate → 64000
port → ☑ on

same R2 → serial 0/0/0 →
IP → 10.1.1.1
Subnet → 255.255.255.252
⏲ → 64000
port → ☑ on

8] ~~same R3~~ conn → R2 & R3
R2 → serial 0/0/1 →
IP Addr → 10.2.2.1
subnet → 255.255.255.252
clock → 64000
Port → ☑ on

R3 → serial 0/0/0 →
IP → 10.2.2.2
→ 255.255.255.252.
⏲ → 64000
port ☑

9] RIP technique.
R1 → ~~RIP~~ → CLI → # version 2
R1 → RIP → 192.168.1.0 → Add
~~192.168.1~~
10.0.0.0 → Add.

Same thing for R2

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R2 → RIP → 10.2.2.0 → Add.
→ 192.168.2.1

~~R3 → RIP →~~

R2 → CLI → # version 2.

CLI →

R3 → # version 2

R3 → RIP → 10.0.0.0] — Add
192.168.3.0