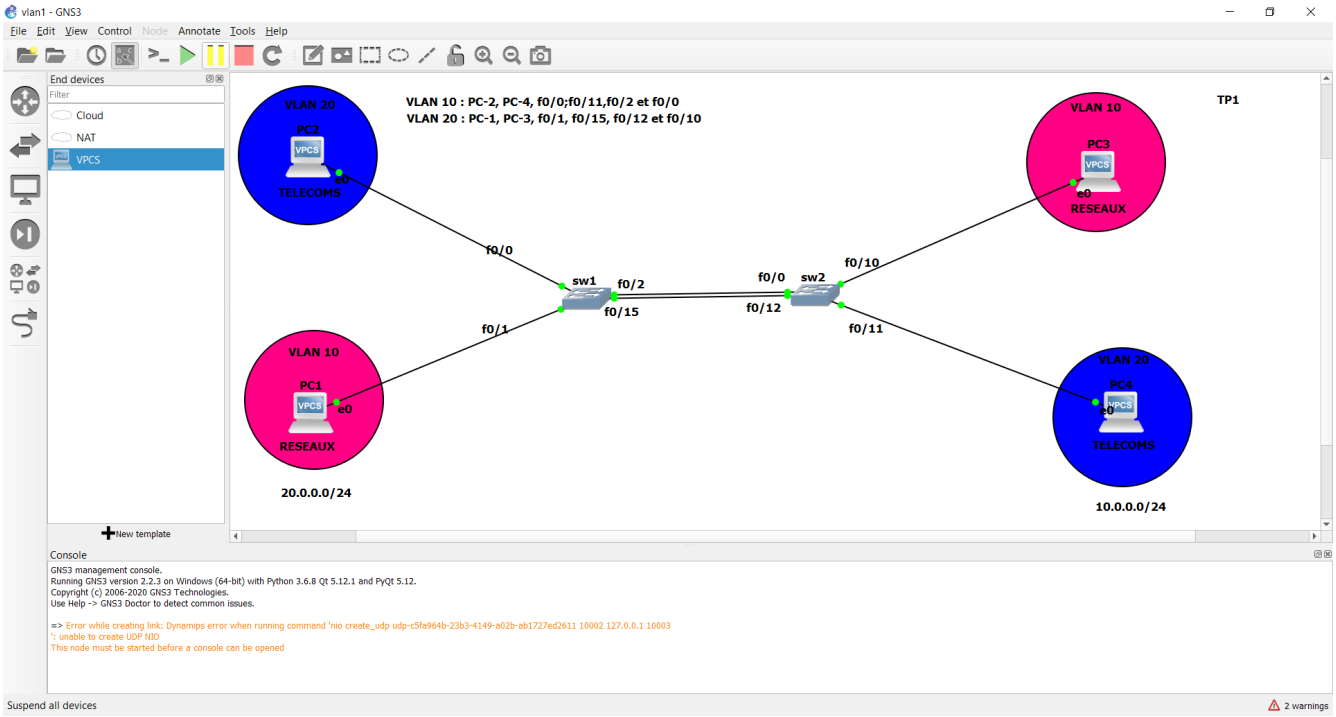
TP : COMMENT CONFIGURER LE **VLAN**

MISE EN PLACE DE VLAN SOUS GNS3 AVEC DES ROUTEURS CISCO

TP1 :

Schéma du réseau

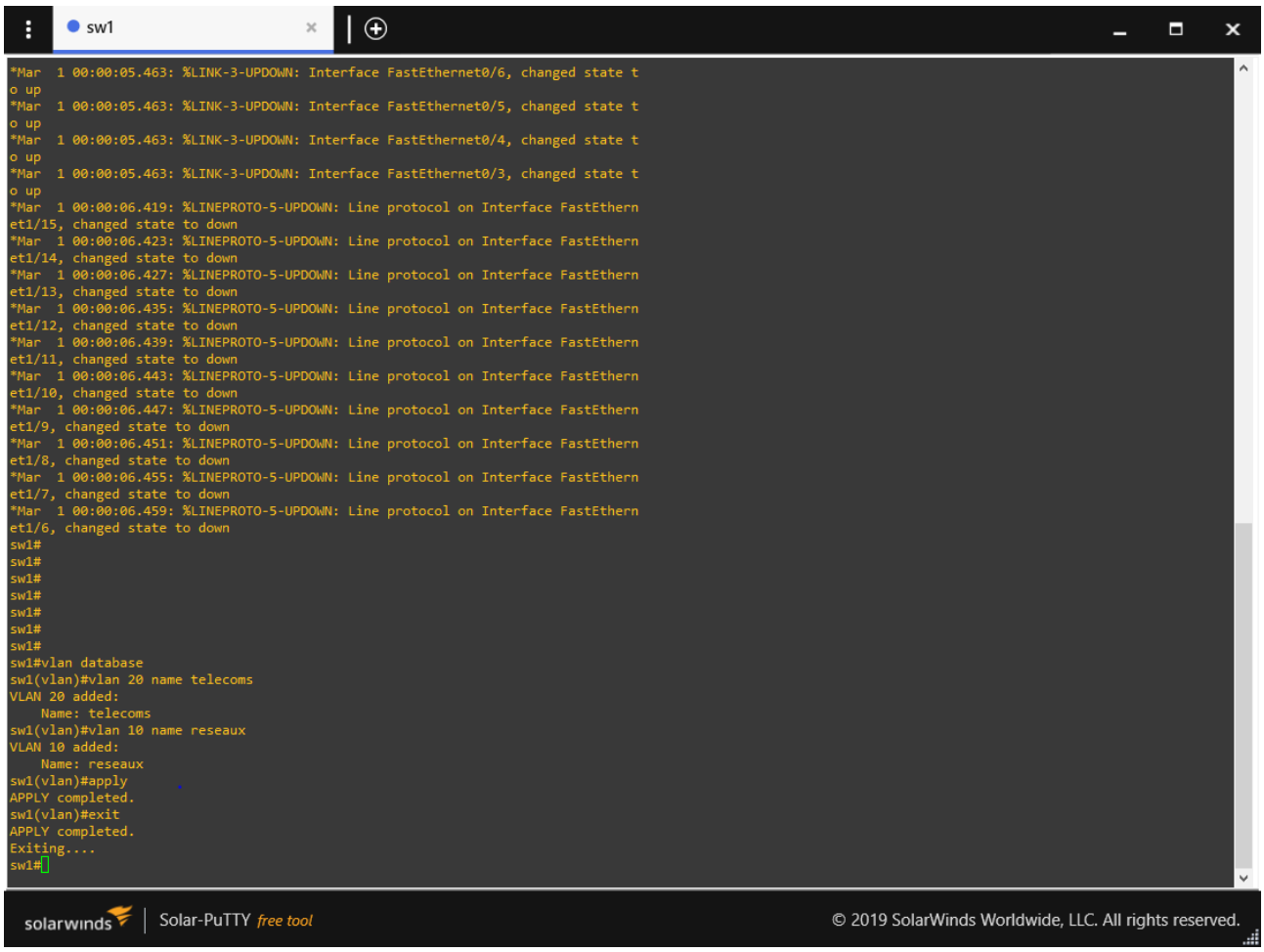


Configuration des Vlans

La première étape à suivre une fois que le câblage est en place est de créer les deux VLANS sur nos deux switchs. Pour faire simple, nous allons supposer que nous aurons deux VLANS (10 et 20) avec deux liaison et Le reste de la configuration sera détaillée et expliquée plus tard.

On lance le switch1

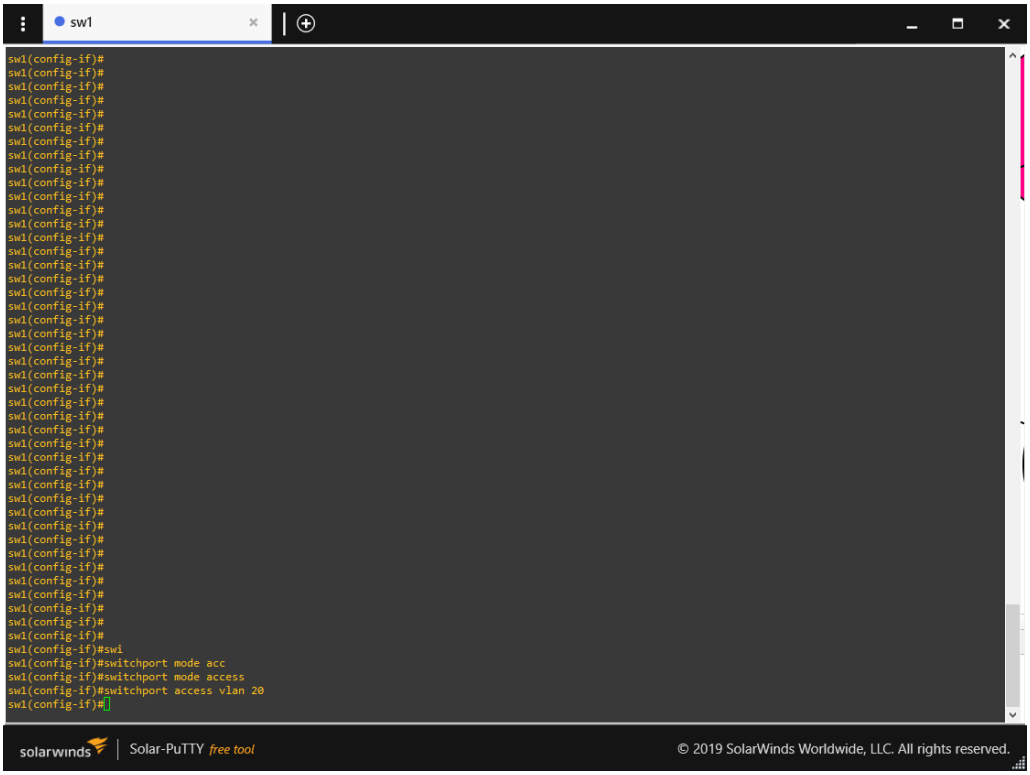
1- Nous allons ensuite créer les VLANS et les nommer comme la figure:



on va faire **show vlan-switch** pour voir les deux vlans TELECOMS et RESEAUX qu’on vient de créer :

passons a la configuration globale (switch1) pour préciser les interfaces.

On fait **conf t** :



sw1

```
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
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sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#int
sw1(config-if)#int f0/1
sw1(config-if)#sw
sw1(config-if)#switchport mo
sw1(config-if)#switchport mode acc
sw1(config-if)#switchport mode access
sw1(config-if)#sw
sw1(config-if)#switchport acc
sw1(config-if)#switchport access vlan 10
sw1(config-if)#int
sw1(config-if)#int f0/15
sw1(config-if)#sw
sw1(config-if)#switchport mode
sw1(config-if)#switchport mode acc
sw1(config-if)#switchport mode access
sw1(config-if)#swi
sw1(config-if)#switchport acc
sw1(config-if)#switchport access vlan 10
sw1(config-if)#
*Mar  1 00:18:37.863: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to down
sw1(config-if)#exit
sw1(config)#exit
sw1#
*Mar  1 00:18:58.119: %SYS-5-CONFIG_I: Configured from console by console
sw1#
```

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sw1

```
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
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sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#int
sw1(config-if)#int f0/2
sw1(config-if)#sw
sw1(config-if)#switchport mode acc
sw1(config-if)#switchport mode access
sw1(config-if)#swi
sw1(config-if)#switchport acc
sw1(config-if)#switchport access vlan 20
sw1(config-if)#
```

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on fait show **vlan-switch** pour voir les **vlans** y compris les interfaces qu’on a donné

on lance le switch2 pour sa configuration :

si on fait show **vlan-switch** on a pas les interfaces donc il faut passer au mode de configuration pour le faire :


sw1
sw2
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#sho
sw2#show vla
sw2#show vlan-
sw2#show vlan-s
sw2#show vlan-switch
VLAN Name Status Ports
1 default active Fa0/0, Fa0/1, Fa0/2, Fa0/3
Fa0/4, Fa0/5, Fa0/6, Fa0/7
Fa0/8, Fa0/9, Fa0/10, Fa0/11
Fa0/12, Fa0/13, Fa0/14, Fa0/15
Fa1/0, Fa1/1, Fa1/2, Fa1/3
Fa1/4, Fa1/5, Fa1/6, Fa1/7
Fa1/8, Fa1/9, Fa1/10, Fa1/11
Fa1/12, Fa1/13, Fa1/14, Fa1/15
10 reseaux active
20 telecoms active
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
1 enet 100001 1500 - - - - - 1002 1003
10 enet 100010 1500 - - - - - 0 0
20 enet 100020 1500 - - - - - 0 0
--More--
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sw1 sw2

```
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
sw2(config)#int f0/0
sw2(config-if)#swi
sw2(config-if)#switchport mod
sw2(config-if)#switchport mode acc
sw2(config-if)#switchport mode access
sw2(config-if)#sw
sw2(config-if)#switchport acc
sw2(config-if)#switchport access vlan 20
sw2(config-if)#
```

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sw1
sw2
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#int f0/11
sw2(config-if)#sw
sw2(config-if)#switchport mode acc
sw2(config-if)#switchport mode access
sw2(config-if)#swi
sw2(config-if)#switchport acc
sw2(config-if)#switchport access vlan 20
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#int f0/10
sw2(config-if)#sw
sw2(config-if)#switchport mode acc
sw2(config-if)#switchport mode access
sw2(config-if)#sw
sw2(config-if)#switchport acc
sw2(config-if)#switchport access vlan 10
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#int f0/12
sw2(config-if)#sw
sw2(config-if)#switchport mode ac
sw2(config-if)#switchport mode access
sw2(config-if)#sw
sw2(config-if)#switchport acc
sw2(config-if)#switchport access vlan 10
sw2(config-if)#
*Mar 1 00:29:15.235: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to down
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#exit
sw2(config)#exit
sw2#
*Mar 1 00:29:27.035: %SYS-5-CONFIG_I: Configured from console by console
sw2#
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on fait toujours la commande : show vlan-switch on constate que les interfaces sont la.

On va donner les adresses ip aux PC

on constate que le pc-1 a une adresse 20.0.0.1/24 (vlan 20)

pc-2 a une adresse de 10.0.0.1/24 (vlan 10)

pc-3 a une adresse de 20.0.0.2/24 (vlan 20)

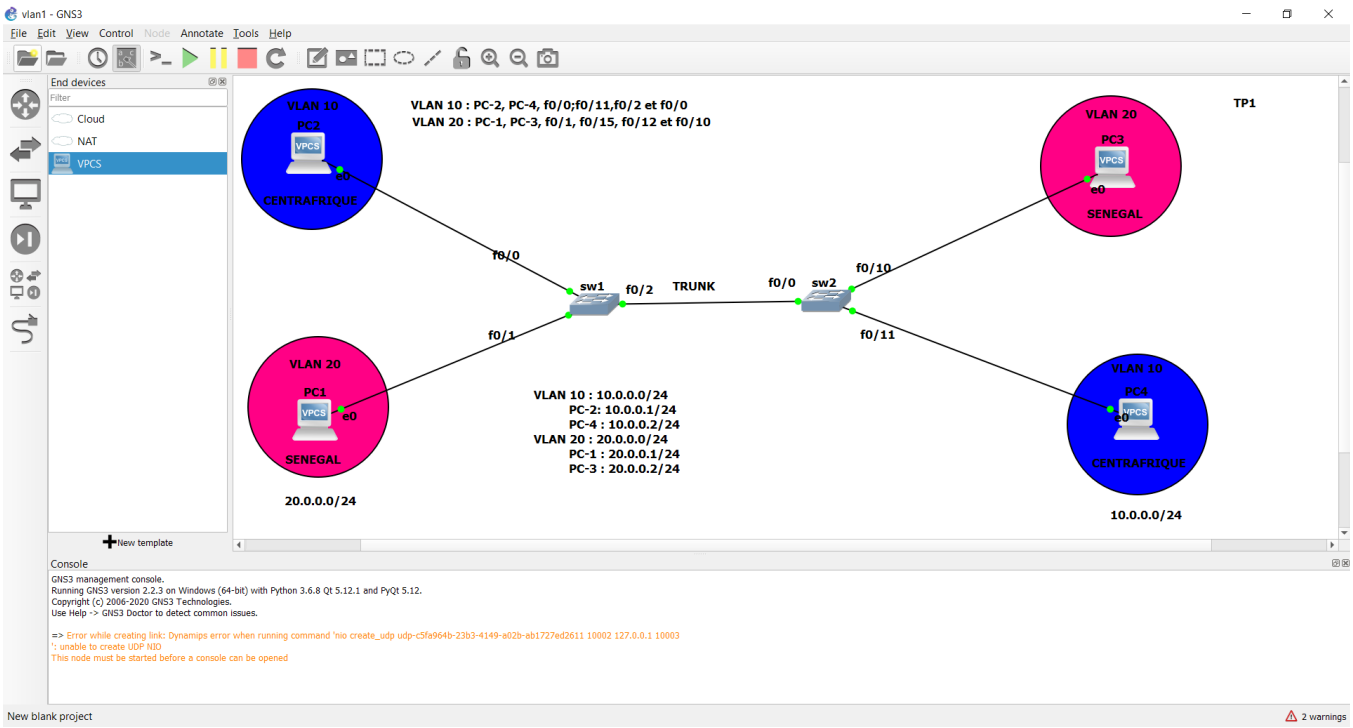
pc-4 a une adresse de 10.0.0.2/24

on constate que les deux pc qui se trouvent dans le même vlans.ils peuvent se communiquer par exemple le pc-1 va faire un ping sur le pc-4 voir la figure :

idem pour les PC-1 et PC-3

TP-2 :

La première étape à suivre une fois que le câblage est en place est de créer les deux VLANS sur nos deux switchs. Pour faire simple, nous allons supposer que nous aurons deux VLANS (10 et 20) avec une liaison par port trunk entre le switch 1 et le switch 2. Le reste de la configuration sera détaillée et expliquée plus tard.




sw1
sw2
PC2
PC1
PC3
PC3
PC4
sw1
sw1
sw1#
sw1#
sw1#
sw1#
sw1#
sw1#
sw1#
sw1#
sw1#
sw1#
sw1#
sw1#vla
sw1#vlan dat
sw1#vlan database
sw1(vlan)#vlan 10 name centrafrique
VLAN 10 modified:
Name: centrafrique
sw1(vlan)#apply
APPLY completed.
sw1(vlan)#exit
APPLY completed.
Exiting....
sw1#show vlan-s
sw1#show vlan-switch
VLAN Name Status Ports
1 default active Fa0/0, Fa0/1, Fa0/2, Fa0/3
Fa0/4, Fa0/5, Fa0/6, Fa0/7
Fa0/8, Fa0/9, Fa0/10, Fa0/11
Fa0/12, Fa0/13, Fa0/14, Fa0/15
Fa1/0, Fa1/1, Fa1/2, Fa1/3
Fa1/4, Fa1/5, Fa1/6, Fa1/7
Fa1/8, Fa1/9, Fa1/10, Fa1/11
Fa1/12, Fa1/13, Fa1/14, Fa1/15
10 centrafrique active
20 telecoms active
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
1 enet 100001 1500 - - - - - 1002 1003
10 enet 100010 1500 - - - - - 0 0
20 enet 100020 1500 - - - - - 0 0
--More--
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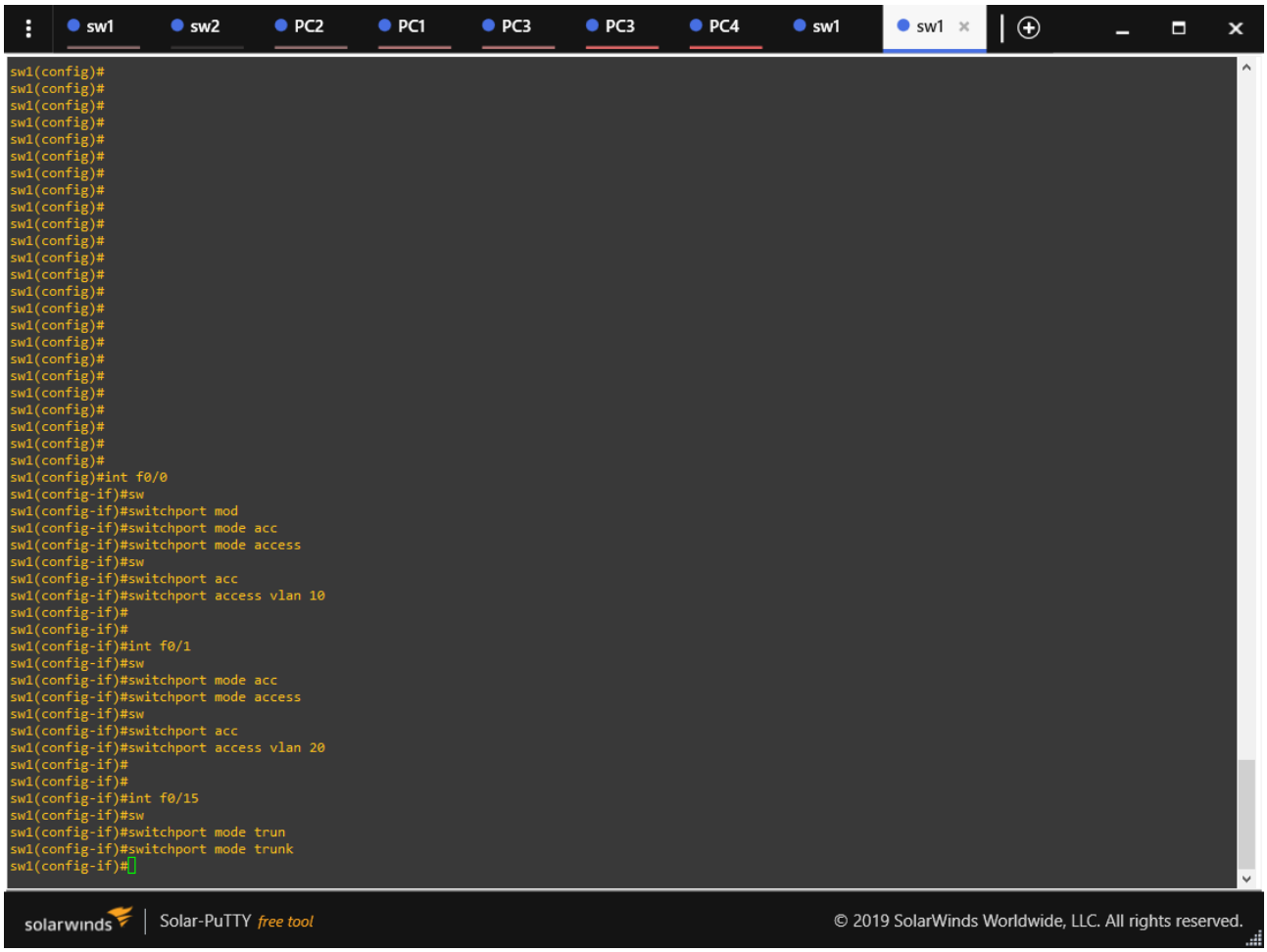
sw1
sw2
PC2
PC1
PC3
PC3
PC4
sw1
sw1
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
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sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#int f0/0
sw1(config-if)#sw
sw1(config-if)#switchport mod
sw1(config-if)#switchport mode acc
sw1(config-if)#switchport mode access
sw1(config-if)#sw
sw1(config-if)#switchport acc
sw1(config-if)#switchport access vlan 10
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#int f0/1
sw1(config-if)#sw
sw1(config-if)#switchport mode acc
sw1(config-if)#switchport mode access
sw1(config-if)#sw
sw1(config-if)#switchport acc
sw1(config-if)#switchport access vlan 20
sw1(config-if)#
sw1(config-if)#
sw1(config-if)#int f0/15
sw1(config-if)#sw
sw1(config-if)#switchport mode trun
sw1(config-if)#switchport mode trunk
sw1(config-if)#
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sw1
sw2
PC2
PC1
PC3
PC3
PC4
sw1
sw1
sw2
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#vla
sw2#vlan data
sw2#vlan database
sw2(vlan)#vlan 10 name centrafrique
VLAN 10 modified:
Name: centrafrique
sw2(vlan)#vlan 20 name senegal
VLAN 20 modified:
Name: senegal
sw2(vlan)#apply
APPLY completed.
sw2(vlan)#exit
APPLY completed.
Exiting....
sw2#
sw2#
sw2#show vlan-s
sw2#show vlan-switch
VLAN Name Status Ports
1 default active Fa0/0, Fa0/1, Fa0/2, Fa0/3
Fa0/4, Fa0/5, Fa0/6, Fa0/7
Fa0/8, Fa0/9, Fa0/10, Fa0/11
Fa0/12, Fa0/13, Fa0/14, Fa0/15
Fa1/0, Fa1/1, Fa1/2, Fa1/3
Fa1/4, Fa1/5, Fa1/6, Fa1/7
Fa1/8, Fa1/9, Fa1/10, Fa1/11
Fa1/12, Fa1/13, Fa1/14, Fa1/15
10 centrafrique active
20 senegal active
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
1 enet 100001 1500 - - - - - 1002 1003
10 enet 100010 1500 - - - - - 0 0
20 enet 100020 1500 - - - - - 0 0
--More--
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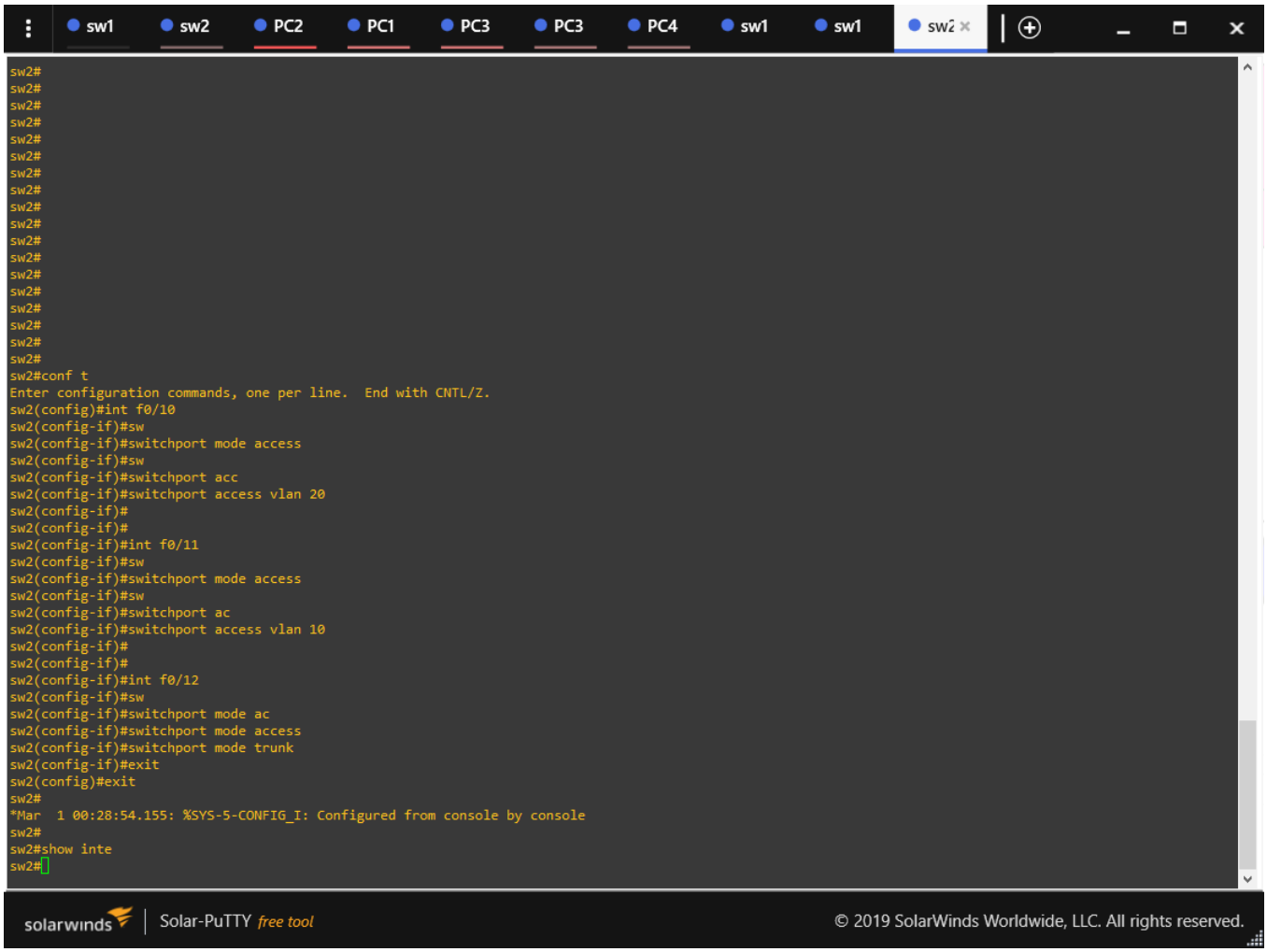
sw1
sw2
PC2
PC1
PC3
PC3
PC4
sw1
sw1
sw2
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sw2(config)#int f0/10
sw2(config-if)#sw
sw2(config-if)#switchport mode access
sw2(config-if)#sw
sw2(config-if)#switchport acc
sw2(config-if)#switchport access vlan 20
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#int f0/11
sw2(config-if)#sw
sw2(config-if)#switchport mode access
sw2(config-if)#sw
sw2(config-if)#switchport ac
sw2(config-if)#switchport access vlan 10
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#int f0/12
sw2(config-if)#sw
sw2(config-if)#switchport mode ac
sw2(config-if)#switchport mode access
sw2(config-if)#switchport mode trunk
sw2(config-if)#exit
sw2(config)#exit
sw2#
*Mar 1 00:28:54.155: %SYS-5-CONFIG_I: Configured from console by console
sw2#
sw2#show inte
sw2#
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sw1
sw2
PC2
PC1
PC3
PC3
PC4
sw1
sw1
sw2
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#
sw2#show int
sw2#show interfaces f0/12
FastEthernet0/12 is up, line protocol is down
Hardware is Fast Ethernet, address is cc02.c804.f00c (bia cc02.c804.f00c)
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Auto-duplex, Auto-speed
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 input packets with dribble condition detected
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 2 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier
--More--
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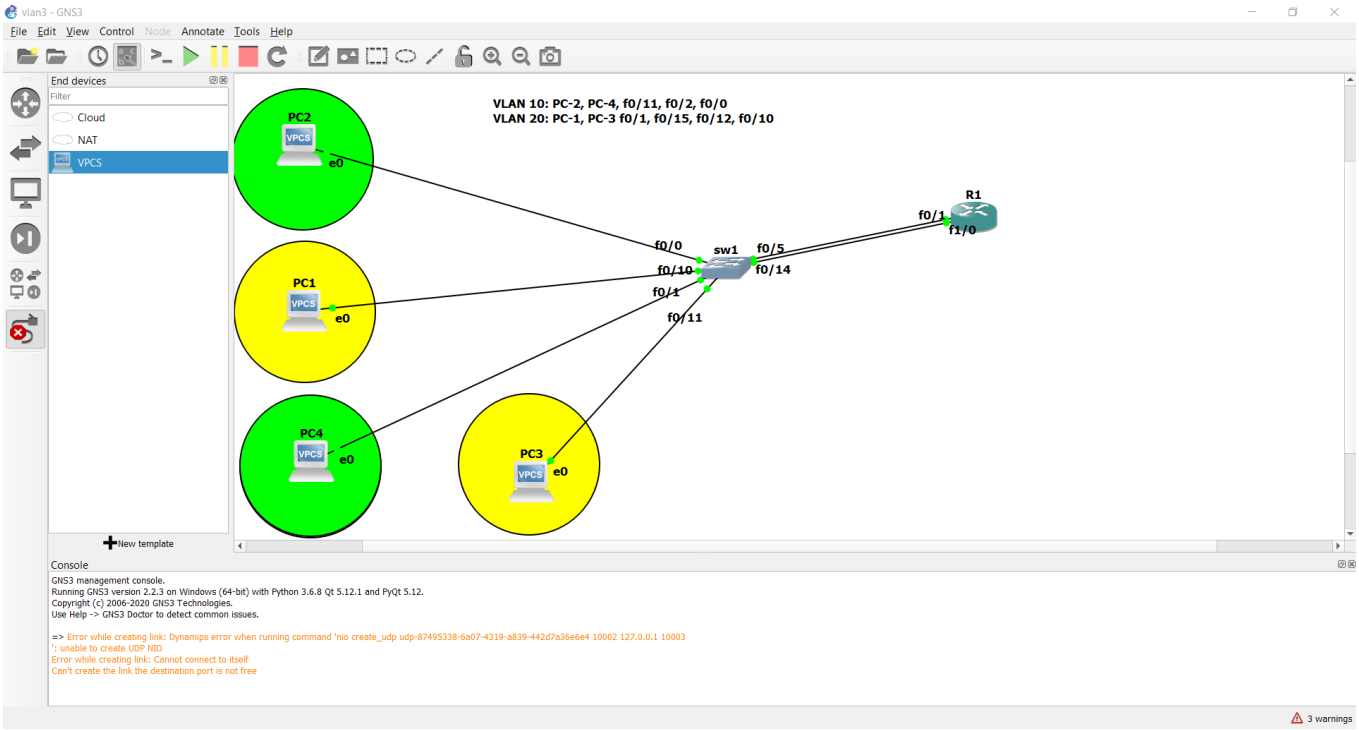
TP-3 :

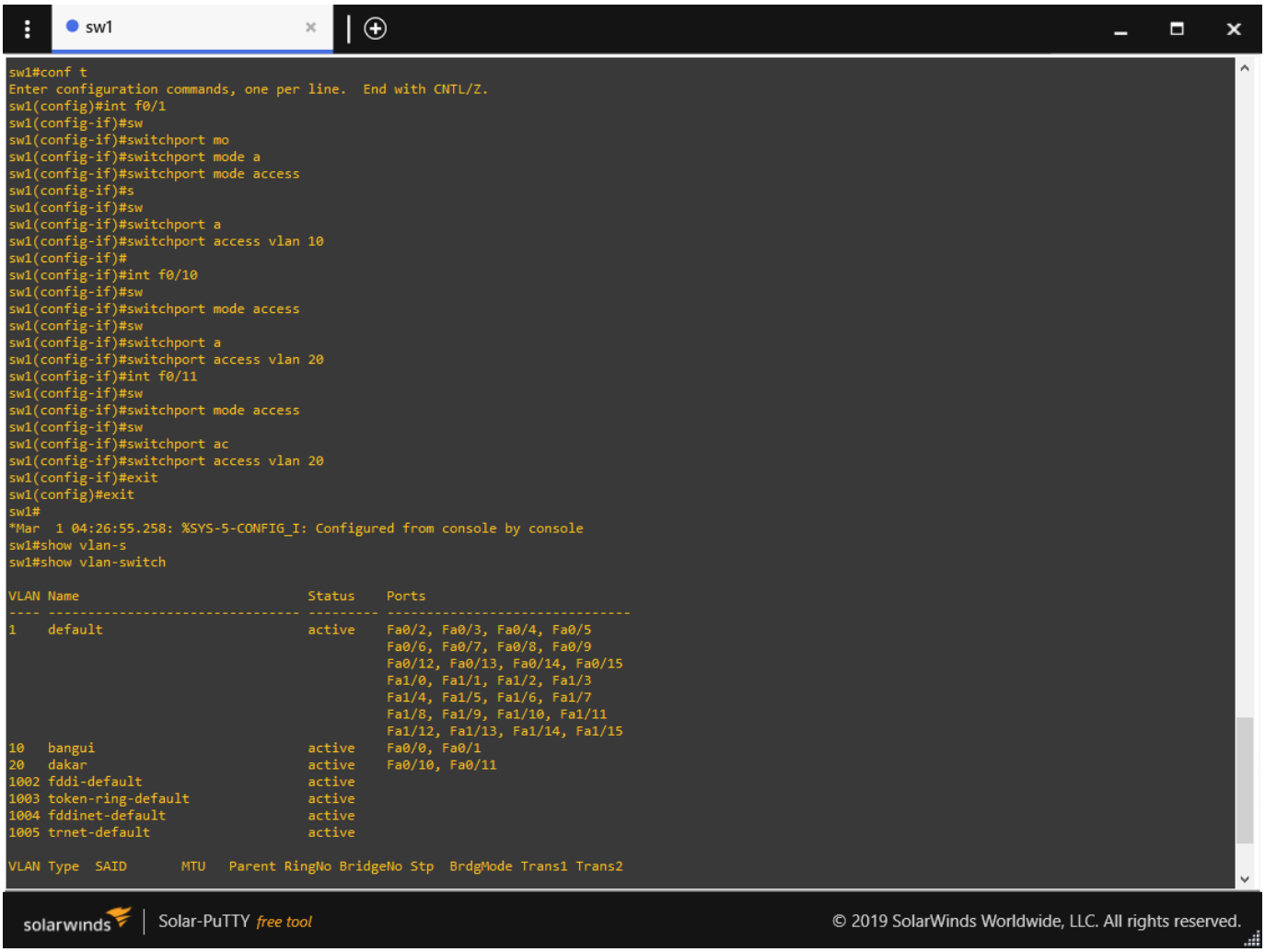
COMMENT PEUT ON FAIRE POUR COMMUNIQUER DEUX VLANS DIFFERENTS :

C’EST ÇA LE rôle DE CE TP :



1- on lance le switch

on va intégrer les ports aux vlans



on va donner les adresses aux pc

pc-1:20.0.0.1/24


sw1
PC2
PC4
PC1
PC3
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.
VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.
Press '?' to get help.
Executing the startup file
PC1> ip 20.0.0.1/24
Checking for duplicate address...
PC1 : 20.0.0.1 255.255.255.0
PC1>
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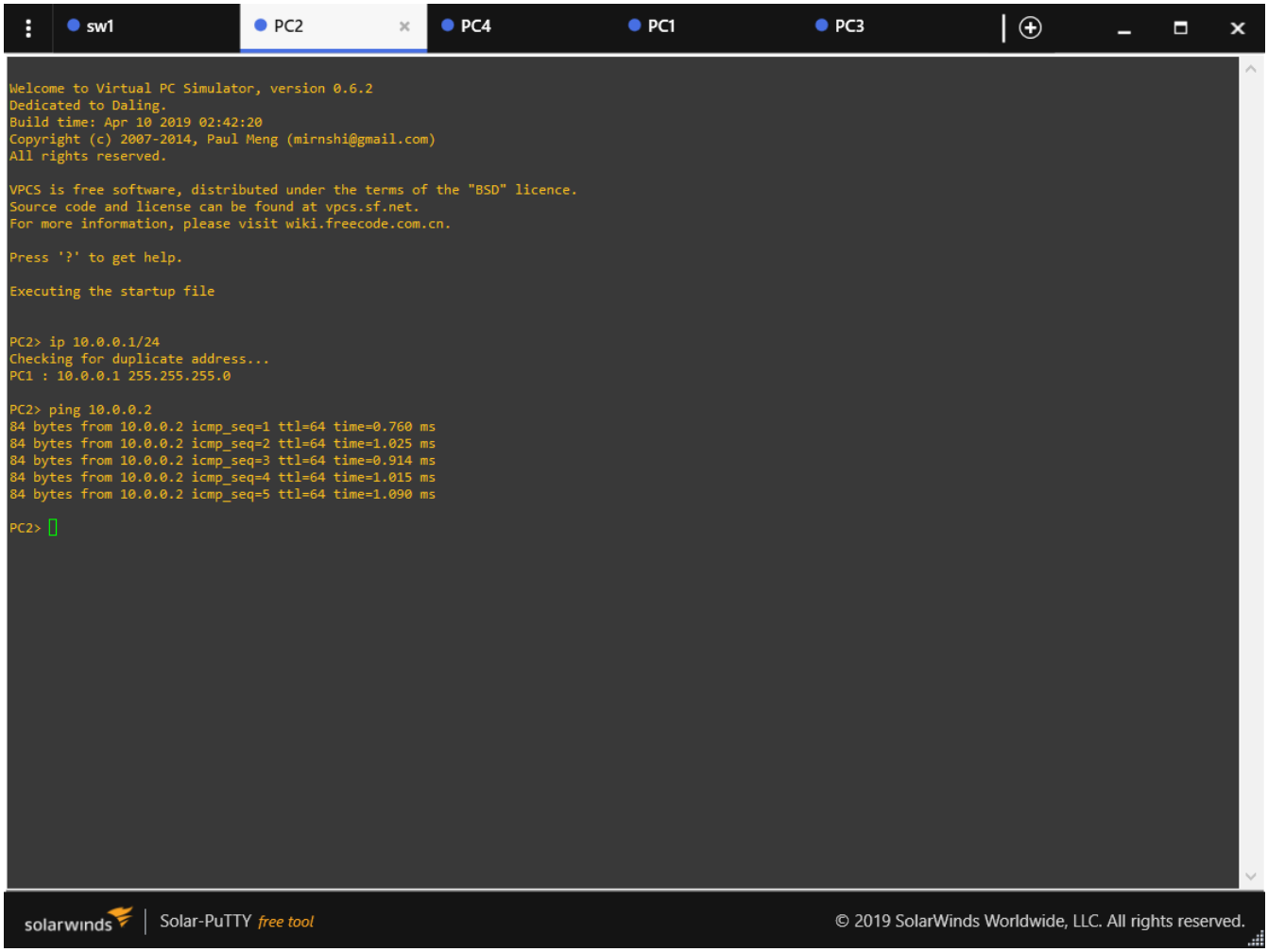
pc-2 10.0.0.0.1/24

pc-3 va faire un ping sur le pc-1 (ça marche well)

pc-4 a une adresse de 10.0.0.2/24

pc-2 va faire un ping sur le pc-4 (cool)



et si pc-1 qui se trouve dans le vlan 10 veut communiquer a pc-4 (vlan 20) ça n'a pas marché.donc en conclusion on peut dire que les pc qui se trouvent dans le meme vlans ont le droit de faire la communication.

Pour que deux vlans differents puissent communiquer.regardez la bonne démarche .

1-toujours en mode configuration sur le switch

2- on va lancer le router pour la configuration (donner l’adresse ip a nos routeur etc.)


sw1
PC2
PC4
PC1
PC3
R1
*Mar 1 00:00:06.251: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et1/7, changed state to down
*Mar 1 00:00:06.255: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et1/6, changed state to down
R1#
R1#
R1#
R1#
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#int 0/1
^
% Invalid input detected at '^' marker.
R1(config)#int f0/1
R1(config-if)#ip add
R1(config-if)#ip address 10.0.0.254 255.255.255.0
% IP addresses may not be configured on L2 links.
R1(config-if)#no sh
R1(config-if)#no shutdown
R1(config-if)#
R1(config-if)#
R1(config-if)#int f1/0
R1(config-if)#ip add
R1(config-if)#ip address 20.0.0.254 255.255.255.0
% IP addresses may not be configured on L2 links.
R1(config-if)#no sh
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#exit
R1#s
*Mar 1 04:55:44.146: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route
Gateway of last resort is not set
R1#
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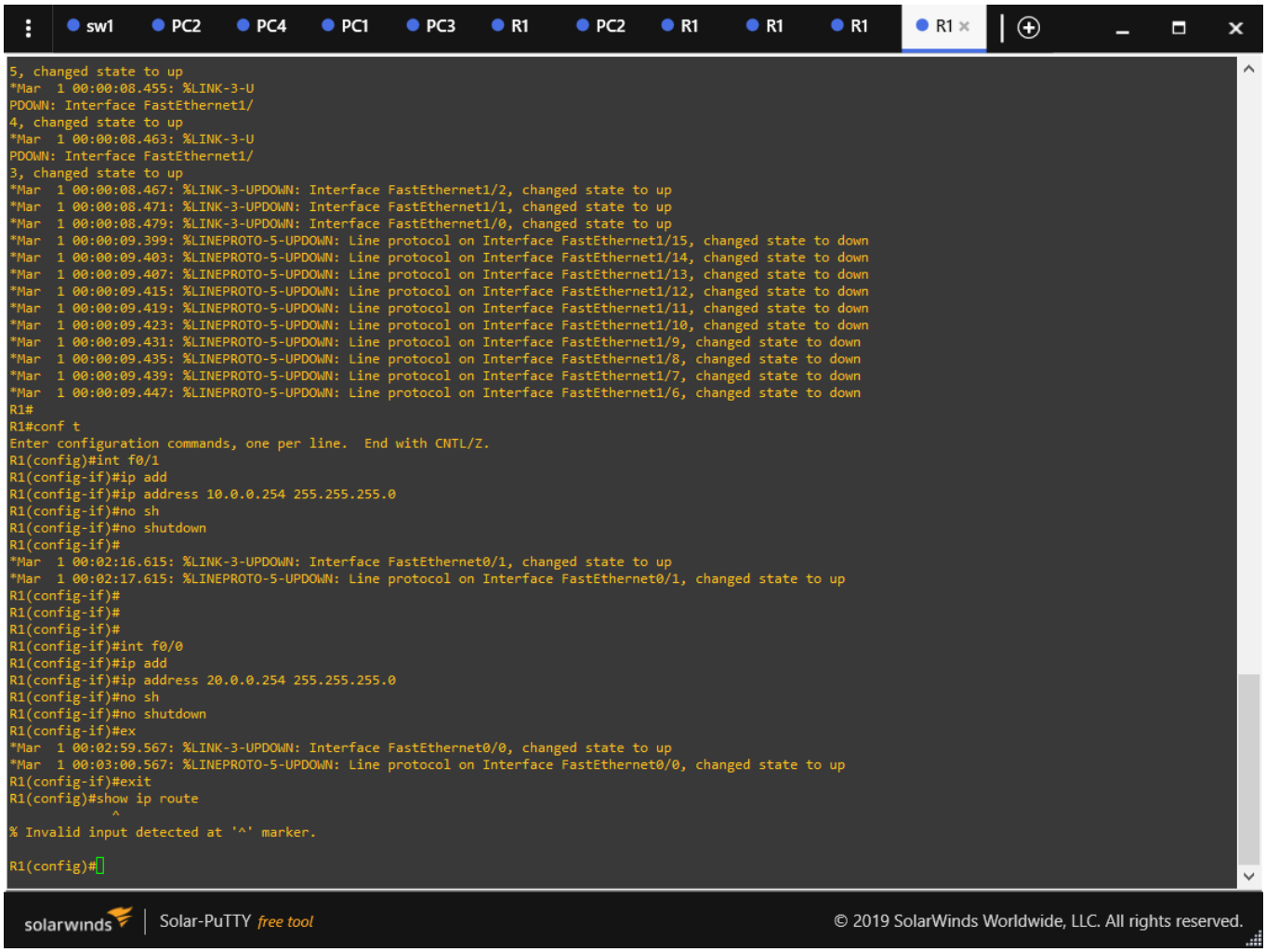
sw1
PC2
PC4
PC1
PC3
R1
PC2
R1
R1
R1
R1
5, changed state to up
*Mar 1 00:00:08.455: %LINK-3-U
PDOWN: Interface FastEthernet1/
4, changed state to up
*Mar 1 00:00:08.463: %LINK-3-U
PDOWN: Interface FastEthernet1/
3, changed state to up
*Mar 1 00:00:08.467: %LINK-3-UPDOWN: Interface FastEthernet1/2, changed state to up
*Mar 1 00:00:08.471: %LINK-3-UPDOWN: Interface FastEthernet1/1, changed state to up
*Mar 1 00:00:08.479: %LINK-3-UPDOWN: Interface FastEthernet1/0, changed state to up
*Mar 1 00:00:09.399: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/15, changed state to down
*Mar 1 00:00:09.403: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/14, changed state to down
*Mar 1 00:00:09.407: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/13, changed state to down
*Mar 1 00:00:09.415: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/12, changed state to down
*Mar 1 00:00:09.419: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/11, changed state to down
*Mar 1 00:00:09.423: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/10, changed state to down
*Mar 1 00:00:09.431: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/9, changed state to down
*Mar 1 00:00:09.435: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/8, changed state to down
*Mar 1 00:00:09.439: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/7, changed state to down
*Mar 1 00:00:09.447: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/6, changed state to down
R1#
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#int f0/1
R1(config-if)#ip add
R1(config-if)#ip address 10.0.0.254 255.255.255.0
R1(config-if)#no sh
R1(config-if)#no shutdown
R1(config-if)#
*Mar 1 00:02:16.615: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
*Mar 1 00:02:17.615: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
R1(config-if)#
R1(config-if)#
R1(config-if)#
R1(config-if)#int f0/0
R1(config-if)#ip add
R1(config-if)#ip address 20.0.0.254 255.255.255.0
R1(config-if)#no sh
R1(config-if)#no shutdown
R1(config-if)#ex
*Mar 1 00:02:59.567: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:03:00.567: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#exit
R1(config)#show ip route
^
% Invalid input detected at '^' marker.
R1(config)#
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on va donner les passerelles aux pc pour permettre de quitter un vlan vers un autre .

pc-1 (vlan 20) ping pc2 qui est dans le vlan (10)

idem pour le pc-4

« BERENGER_BENAM »