TP1 : Exercice Packet Tracer : Configuration de base d'un commutateur

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Tache 1 : connexion au commutateur : connexion du commutateur Comm1 et du PC1

- On met une switch 2950-24 et un PC, puis on connecte avec d'un câble droit.
- Avec un câble de console, on connecte l'interface RS 232 sur PC1 à l'interface de console sur le commutateur (switch) Comm1.
  - On va sur le terminal : >Switch

Tâche 2 : parcours de divers modes CLI

Etape 1 :

```
Terminal
Press RETURN to get started!


%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state t
o up


Switch>?
Exec commands:
  <1-99>      Session number to resume
  connect     Open a terminal connection
  disable     Turn off privileged commands
  disconnect  Disconnect an existing network connection
  enable      Turn on privileged commands
  exit        Exit from the EXEC
  logout      Exit from the EXEC
  ping        Send echo messages
  resume      Resume an active network connection
  show        Show running system information
  telnet      Open a telnet connection
  terminal    Set terminal line parameters
  traceroute  Trace route to destination
Switch>
```

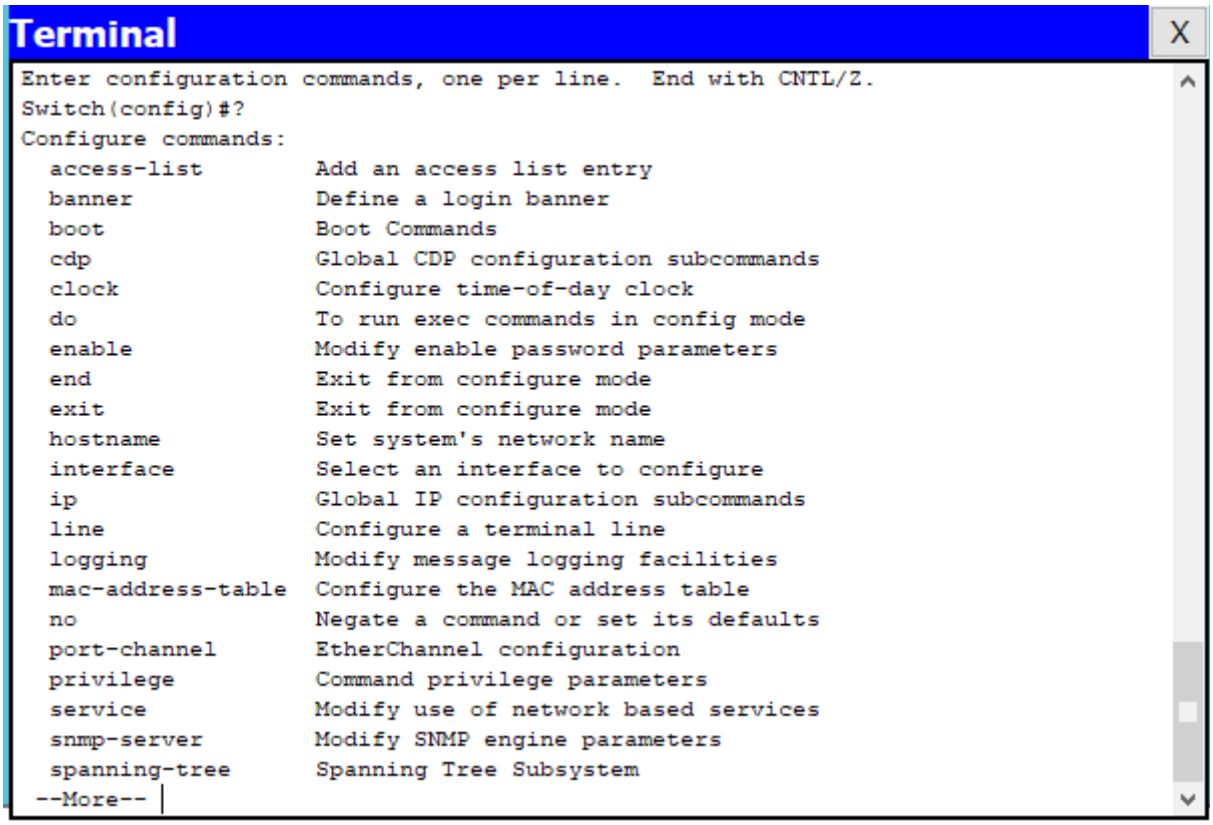
Etape2 et 3 :
- On tape enable
Switch>enable
Switch#

```
Terminal
Switch>enable
Switch#?
Exec commands:
  <1-99>      Session number to resume
  clear       Reset functions
  clock       Manage the system clock
  configure   Enter configuration mode
  connect     Open a terminal connection
  copy        Copy from one file to another
  debug       Debugging functions (see also 'undebug')
  delete      Delete a file
  dir         List files on a filesystem
  disable     Turn off privileged commands
  disconnect  Disconnect an existing network connection
  enable      Turn on privileged commands
  erase       Erase a filesystem
  exit        Exit from the EXEC
  logout      Exit from the EXEC
  more        Display the contents of a file
  no          Disable debugging informations
  ping        Send echo messages
  reload      Halt and perform a cold restart
  resume      Resume an active network connection
  setup       Run the SETUP command facility
 --More--
```

Etape 4 :

```
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#
```

Etape 5 :



Etape 6 :

```
Switch(config)#hostname Comml
Comml(config)#
```

Etape 7 :

```
Comml(config)#interface vlan 99
Comml(config-if)#
```

Etape 8 :

```
Comml(config-if)#ip address 172.17.99.11 255.255.255.0
Comml(config-if)#no shutdown
```

Etape 9 :

```
Comml(config-if)#interface fa0/18
Comml(config-if)#
```

Etape 10 :

```
Comml(config-if)#switchport mode access
Comml(config-if)#
```

Etape 11 :

```
Comml(config-if)#switchport access vlan 99

%LINK-5-CHANGED: Interface Vlan99, changed state to up
% Access VLAN does not exist. Creating vlan 99
Comml(config-if)#
```

Etape 12 :

```
Comml(config-if)#exit
Comml(config)#
```

Etape 13 :

```
Comml(config)#line console 0
Comml(config-line)#
```

Etape 14 :

```
Comml(config-line)#end
Comml#
%SYS-5-CONFIG_I: Configured from console by console

Comml#
```

Tâche 3 : suppression d'une configuration existante sur un commutateur

Etape 1 :

```
Comml#delete flash:vlan.dat
Delete filename [vlan.dat]?
Delete flash:/vlan.dat? [confirm]

Comml#
```

Etape 2 :

```
Comml#erase startup-config
Erasing the nvram filesystem will remove all configuration files! Continue? [con
firm]
[OK]
Erase of nvram: complete
%SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
Comml#
```

Etape 3 :

```
Comml#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    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, Fa0/16
                                                Fa0/17, Fa0/19, Fa0/20, Fa0/21
                                                Fa0/22, Fa0/23, Fa0/24
99   VLAN0099                         active    Fa0/18
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
Comml#
```

Etape 4 :

```
Comml#reload
Proceed with reload? [confirm]
%SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload Command.

C2950 Boot Loader (C2950-HBOOT-M) Version 12.1(11r)EA1, RELEASE SOFTWARE (fc1)
Compiled Mon 22-Jul-02 18:57 by miwang
Cisco WS-C2950-24 (RC32300) processor (revision C0) with 21039K bytes of memory.

2950-24 starting...
Base ethernet MAC Address: 0000.0C2D.585B
Xmodem file system is available.
Initializing Flash...
flashfs[0]: 1 files, 0 directories
flashfs[0]: 0 orphaned files, 0 orphaned directories
flashfs[0]: Total bytes: 64016384
flashfs[0]: Bytes used: 3058048
flashfs[0]: Bytes available: 60958336
flashfs[0]: flashfs fsck took 1 seconds.
...done Initializing Flash.

Boot Sector Filesystem (bs:) installed, fsid: 3
Parameter Block Filesystem (pb:) installed, fsid: 4


Loading "flash:/c2950-i6q4l2-mz.121-22.EA4.bin"...
################################################################################ [OK]
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           cisco Systems, Inc.
           170 West Tasman Drive
           San Jose, California 95134-1706
```

```
Cisco Internetwork Operating System Software
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4, RELEASE SOFTWARE(
fc1)
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Wed 18-May-05 22:31 by jharirba

Cisco WS-C2950-24 (RC32300) processor (revision C0) with 21039K bytes of memory.

Processor board ID FHK0610Z0WC
Running Standard Image
24 FastEthernet/IEEE 802.3 interface(s)

63488K bytes of flash-simulated non-volatile configuration memory.
Base ethernet MAC Address: 0000.0C2D.585B
Motherboard assembly number: 73-5781-09
Power supply part number: 34-0965-01
Motherboard serial number: FOC061004SZ
Power supply serial number: DAB0609127D
Model revision number: C0
Motherboard revision number: A0
Model number: WS-C2950-24
System serial number: FHK0610Z0WC

Cisco Internetwork Operating System Software
IOS (tm) C2950 Software (C2950-I6Q4L2-M), Version 12.1(22)EA4, RELEASE SOFTWARE(
fc1)
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Wed 18-May-05 22:31 by jharirba

Press RETURN to get started!


%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state t
o up


Switch>
```

Tâche 4 : vérification de la configuration par défaut du commutateur

Etape 1 :

```
Switch>enable
Switch#
```

Etape 2 :

```
Switch#show running-config
Building configuration...

Current configuration : 947 bytes
!
version 12.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Switch
!
!
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface Vlan1
 no ip address
 shutdown
!
!
line con 0
!
line vty 0 4
 login
line vty 5 15
 login
!
!
end
```

Le commutateur possède 24 interfaces Fast-Ethernet.
La plage de valeurs affichée pour les lignes vty est de 0 à 4 (réservées) et de 5 à 15, soit 0 à 15.

```
Switch#show interface vlan1
Vlan1 is administratively down, line protocol is down
  Hardware is CPU Interface, address is 0000.0c2d.585b (bia 0000.0c2d.585b)
  MTU 1500 bytes, BW 100000 Kbit, DLY 1000000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 21:40:21, 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
     1682 packets input, 530955 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicast)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     563859 packets output, 0 bytes, 0 underruns
     0 output errors, 23 interface resets
     0 output buffer failures, 0 output buffers swapped out
Switch#
```

Etape 3 :

```
Switch#show interface fastethernet 0/18
FastEthernet0/18 is down, line protocol is down (disabled)
  Hardware is Lance, address is 00d0.d30b.cd12 (bia 00d0.d30b.cd12)
 BW 100000 Kbit, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Half-duplex, 100Mb/s
  input flow-control is off, output flow-control is off
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:08, output 00:00:05, 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
     956 packets input, 193351 bytes, 0 no buffer
     Received 956 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 watchdog, 0 multicast, 0 pause input
     0 input packets with dribble condition detected
     2357 packets output, 263570 bytes, 0 underruns
```

Fast Ethernet 0/18 est désactivée.

```
Switch#show interface fastethernet 0/1
FastEthernet0/1 is up, line protocol is up (connected)
  Hardware is Lance, address is 00d0.d30b.cd01 (bia 00d0.d30b.cd01)
 BW 100000 Kbit, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s
  input flow-control is off, output flow-control is off
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops:
  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
     956 packets input, 193351 bytes, 0 no buffer
     Received 956 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 watchdog, 0 multicast, 0 pause input
     0 input packets with dribble condition detected
     2357 packets output, 263570 bytes, 0 underruns

Switch#
```

Fast Ethernet 0/1 est activée.

Etape 4 :

```
Switch#show vlan

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    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, Fa0/16
                                                 Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                 Fa0/21, Fa0/22, Fa0/23, Fa0/24
1002 fddi-default                      act/unsup
1003 token-ring-default                act/unsup
1004 fddinet-default                   act/unsup
1005 trnet-default                     act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0
```

Le nom de VLAN1 est default.
Les ports qui se trouvent dans ce VLAN sont :

```
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, Fa0/16
Fa0/17, Fa0/18, Fa0/19, Fa0/20
Fa0/21, Fa0/22, Fa0/23, Fa0/24
```

Le VLAN1 est bien actif.

Tache 5 : création d'une configuration de base du commutateur

Etape 1 :

```
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#line console 0
Switch(config-line)#password cisco
Switch(config-line)#login
Switch(config-line)#line vty 0 15
Switch(config-line)#password cisco
Switch(config-line)#login
Switch(config-line)#exit
```

Etape 2 :

```
Switch(config)#enable secret class
```

Etape 3 :

```
Switch(config)#vlan 99
Switch(config-vlan)#exit
Switch(config)#interface vlan99
Switch(config-if)#
%LINK-5-CHANGED: Interface Vlan99, changed state to up

Switch(config-if)#ip address 172.17.99.11 255.255.255.0
Switch(config-if)#no shutdown
Switch(config-if)#exit
```

Etape 4 :

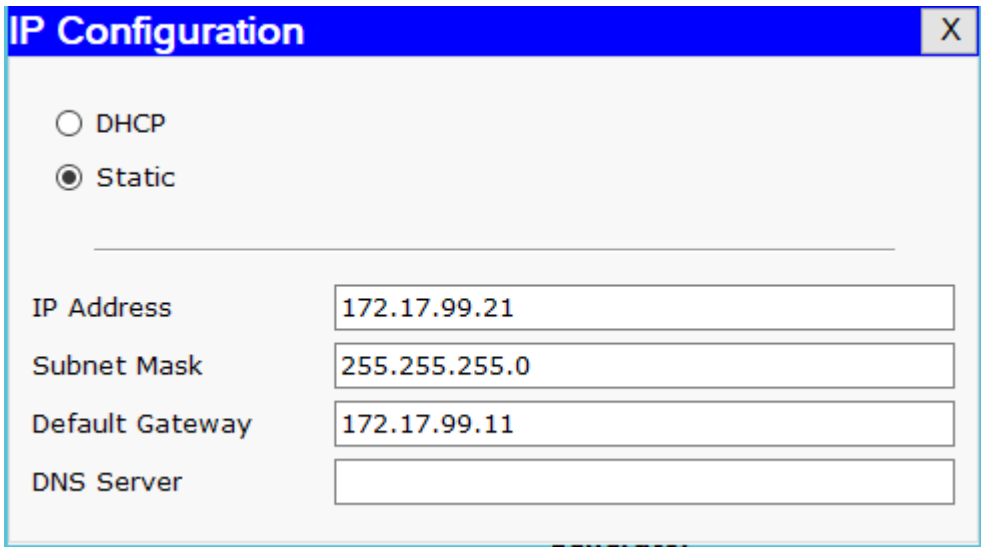
```
Switch(config)#interface fa0/1
Switch(config-if)#switchport access vlan 99

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan99, changed state to up
Switch(config-if)#exit
Switch(config)#interface fa0/8
Switch(config-if)#switchport access vlan 99
Switch(config-if)#exit
Switch(config)#interface fa0/18
Switch(config-if)#switchport access vlan 99
Switch(config-if)#exit
Switch(config)#
```

Etape 5 :

```
Switch(config)#ip default-gateway 172.17.99.1
Switch(config)#exit
```

Etape 6 :



Etape 7 :

```
Switch#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Switch#
```

Tâche 6 : gestion de la table d'adresses MAC

Etape 1 :

```
Packet Tracer PC Command Line 1.0
PC>ipconfig/all
Invalid Command.

PC>ipconfig /all

Physical Address.....: 00E0.A3D8.260D
IP Address.....: 172.17.99.21
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 172.17.99.11
DNS Servers.....: 0.0.0.0
```

Etape 2 :

```
Switch#show mac-address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
```

Etape 3 :

```
Switch#clear mac-address-table dynamic
Switch#show mac-address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
```

Etape 4 :

On envoie un ping du PC1 sur le commutateur

```
PC>ping 172.17.99.11

Pinging 172.17.99.11 with 32 bytes of data:

Request timed out.
Reply from 172.17.99.11: bytes=32 time=31ms TTL=255
Reply from 172.17.99.11: bytes=32 time=31ms TTL=255
Reply from 172.17.99.11: bytes=32 time=31ms TTL=255

Ping statistics for 172.17.99.11:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 31ms, Maximum = 31ms, Average = 31ms
```

```
Switch#show mac-address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----

  99    00e0.a3d8.260d    DYNAMIC     Fa0/1
```

Etape 5 :

```
Switch#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#mac-address-table static 0002.16E8.C285 vlan 99 interface fasteth
ernet 0/18
Switch(config)#end
```

Etape 6 :

```
Switch#show mac-address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----

  99    0002.16e8.c285    STATIC      Fa0/18
  99    00e0.a3d8.260d    DYNAMIC     Fa0/1
```

Etape 7 :

```
Switch(config)#no mac-address-table static 0002.16E8.C285 vlan 99 interface fast
ethernet 0/18
Switch(config)#end
Switch#
```

Etape 8 :

```
Switch#show mac-address-table static
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
```