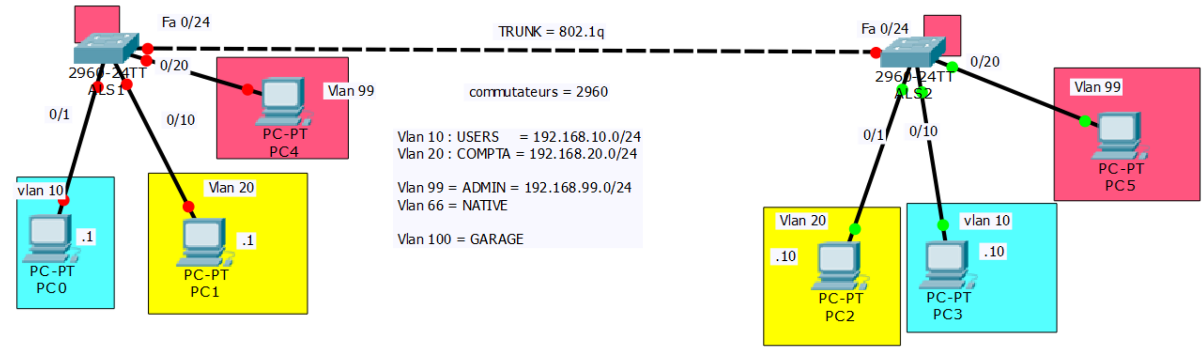


commutateurs = 2960

Vlan 10 : USERS = 192.168.10.0/24
Vlan 20 : COMPTA = 192.168.20.0/24

Vlan 99 = ADMIN = 192.168.99.0/24
Vlan 66 = NATIVE

Vlan 100 = GARAGE

```
Enable
Configure terminal
```

A) donnez un nom

```
hostname SW1
```

B) Donnez le nom du domaine

```
ip domain-name ORT
```

C) Mot de passe secret

```
enable secret class
banner motd ^CAvez-vous les droits pour vous connecter sur cet appareil^C
```

D) mot de passe console

```
line console 0
  password cisco
  login
  exec-timeout 3    30
  logging synchronous
  exit
```

E) mot de passe vty (pour application Telnet, ssh, putty,...)

```
line vty 0 15
  password cisco
  login
  exec-timeout 3 30
  logging synchronous
  exit
```

F) Service de cryptage

```
service password-encryption
```

G) Adresse IP d'administration

```
interface vlan 1
  description adresse administration distante
  ip address 192.168.10.254 255.255.255.0
  no shutdown
  end
----
```

H) ping d'essai SUR ***LUI-MEME***

```
SW1 # ping 192.168.10.254
```

I) telnet d'essai

```
SW1 # telnet 192.168.10.254
```

I) Mettre adresse(s) ip sur les ordinateurs

J) Telnet d'essai distant

```
C:/>    telnet 192.168.10.254
```

```
interface vlan 1
    description « vlan 1 » non utilisé par la suite
   no ip address
    shutdown
    end
```

Sauvegarde de la configuration courante pour le prochain démarrage

```
SW1 (config-if-range)#do write memory
SW1 (config-if-range)# end
SW1 # copy running-config startup-config
```

Building configuration...
[OK]

G°) Déclaration des Vlans

```
Vlan 10
  Name USERS
Vlan 20
  Name COMPTA
Vlan 99
  Name ADMIN
Vlan 66
  Name NATIVE
Vlan 100
  Name GARAGE
```

G°) Mise en sécurité des ports du commutateur

```
Interface range fastEthernet 0/1-24,GigaEthernet 0/1-2
   Description port dans le garage/Vlan BlackHole
   Switchport access vlan 100
   Shutdown
```

Ceci est aussi possible : **interface range f0/1-4, f0/6-9, f0/11-14, f0/24, g0/1**

H°) Vérification de l’état des ports

```
Switch# show ip interface brief
```

```
Interface IP-Address OK? Method Status Protocol
FastEthernet0/1 unassigned YES manual administratively down down
FastEthernet0/2 unassigned YES manual administratively down down
FastEthernet0/3 unassigned YES manual administratively down down
FastEthernet0/4 unassigned YES manual administratively down down
FastEthernet0/5 unassigned YES manual administratively down down
FastEthernet0/6 unassigned YES manual administratively down down
FastEthernet0/7 unassigned YES manual administratively down down
FastEthernet0/8 unassigned YES manual administratively down down
FastEthernet0/9 unassigned YES manual administratively down down
FastEthernet0/10 unassigned YES manual administratively down down
FastEthernet0/11 unassigned YES manual administratively down down
FastEthernet0/12 unassigned YES manual administratively down down
FastEthernet0/13 unassigned YES manual administratively down down
FastEthernet0/14 unassigned YES manual administratively down down
FastEthernet0/15 unassigned YES manual administratively down down

FastEthernet0/16 unassigned YES manual administratively down down
FastEthernet0/17 unassigned YES manual administratively down down
FastEthernet0/18 unassigned YES manual administratively down down
FastEthernet0/19 unassigned YES manual administratively down down
FastEthernet0/20 unassigned YES manual administratively down down
FastEthernet0/21 unassigned YES manual administratively down down
FastEthernet0/22 unassigned YES manual administratively down down
FastEthernet0/23 unassigned YES manual administratively down down
FastEthernet0/24 unassigned YES manual administratively down down

GigabitEthernet0/1 unassigned YES manual administratively down down
GigabitEthernet0/2 unassigned YES manual administratively down down
Vlan1 unassigned YES manual administratively down down
```

I) Vérification de l’état des vlans du port

Les ports dans le vlan garage/BlackHole ?

```
Switch# show vlan
```

```
VLAN Name Status Ports
---- -------------------------------- --------- -------------------------------
1 default active                                          doit être vide

10      USERS          active
20      COMTPA         active
66      NATIVE         active
99      ADMIN          active

100     GARAGE 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, Gig0/1, Gig0/2
1002 fddi-default act/unsup
1003 token-ring-default act/unsup
1004 fddinet-default act/unsup
1005 trnet-default act/unsup
```

J°) Déclaration des ports en mode Trunk (802.1q)

```
Interface fastEthernet  0/24
  Description lien SW1 vers SW2 en trunk 802.1q
! Si le commutateur accepte ISL et 802.1q faire ci-dessous
  ! switchport   trunk   encapsulation   dot1q
switchport   trunk   allowed vlan 10,20,66,99
switchport   trunk   native   vlan 66
switchport   mode trunk
switchport   nonegotiate
no shutdown
end
```

Sauvegarde de la configuration courante pour le prochain démarrage

```
        SW1 # copy running-config startup-config
```

Building configuration...[OK]

K°) Déclaration des ports en mode accès

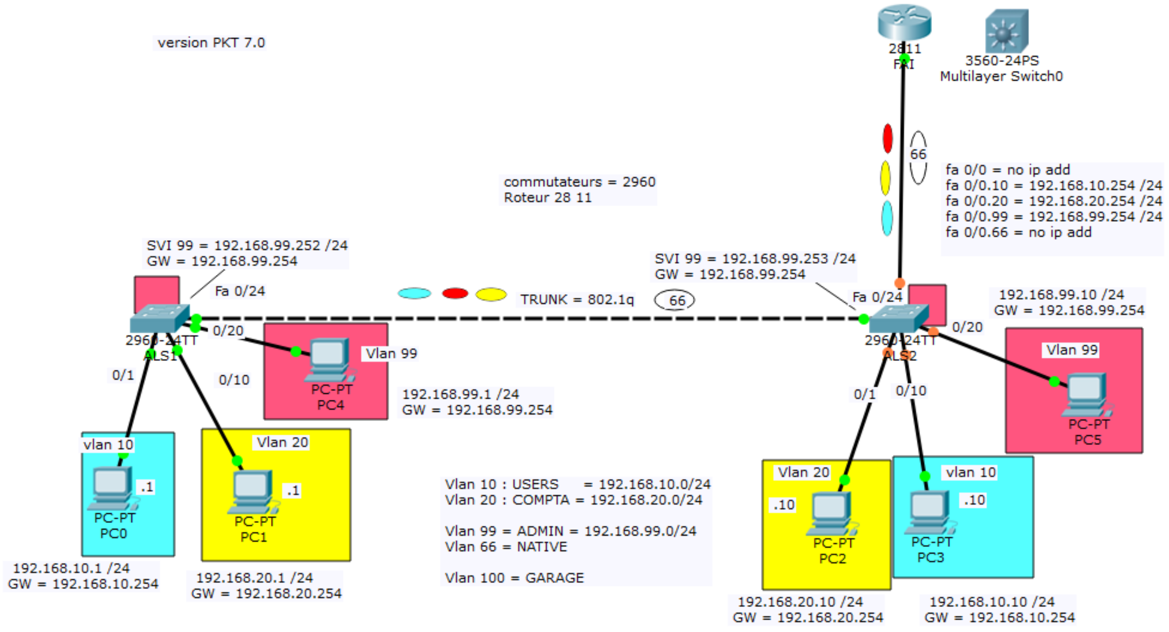
```
        Interface fastEthernet 0/1
          Description port dans le vlan 10
          Switchport mode access
          Switchport access  vlan 10
                *! port annuler   l'effet spanning-tree*
                                 Spanning-tree    portfast
         No shutdown
!
        Interface fastEthernet  0/10
          Description port dans le vlan 20
          Switchport mode access
          Switchport access  vlan 20
           Spanning-tree   portfast
         No shutdown
        End

        Interface fastEthernet  0/20
          Description port dans le vlan 99 pour admin
          Switchport mode access
          Switchport access  vlan 99
           Spanning-tree   portfast
         No shutdown
        End
```

Vérification :

```
Switch# show    vlan

VLAN Name Status Ports
---- -------------------------------- --------- -------------------------------
1 default active
10 USERS active                                   Fa0/1
20 COMPTA active                                  Fa0/10
66 NATIVE active
99 ADMIN active
100 GARAGE active                                 Fa0/2, Fa0/3, Fa0/4, Fa0/5, Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                                  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,
                                                  Gig0/1, Gig0/2
1002 fddi-default act/unsup
1003 token-ring-default act/unsup
1004 fddinet-default act/unsup
1005 trnet-default act/unsup

ALS2#show  interface trunk
Port      Mode      Encapsulation      Status            Native vlan
Fa0/24    on        802.1q             trunking          66

Port Vlans allowed on trunk
Fa0/24                    10,20,66,99

Port Vlans allowed and active in management domain
Fa0/24                    10,20,66,99

Port Vlans in spanning tree forwarding state and not pruned Fa0/24 none
ALS2#
ALS2#
```

Changer le protocole spanning-tree

```
        spanning-tree mode rapid-pvst
```



Insérez la passerelle du commutateur vers l'interface logique du routeur

ip default-gateway 192.168.99.254

Sur l'interface FastEthrenet 23

```
description liaison TRUNK 802.1q entre SW2 et le Routeur
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
```

Vérification à l'aide de **show interface trunk**

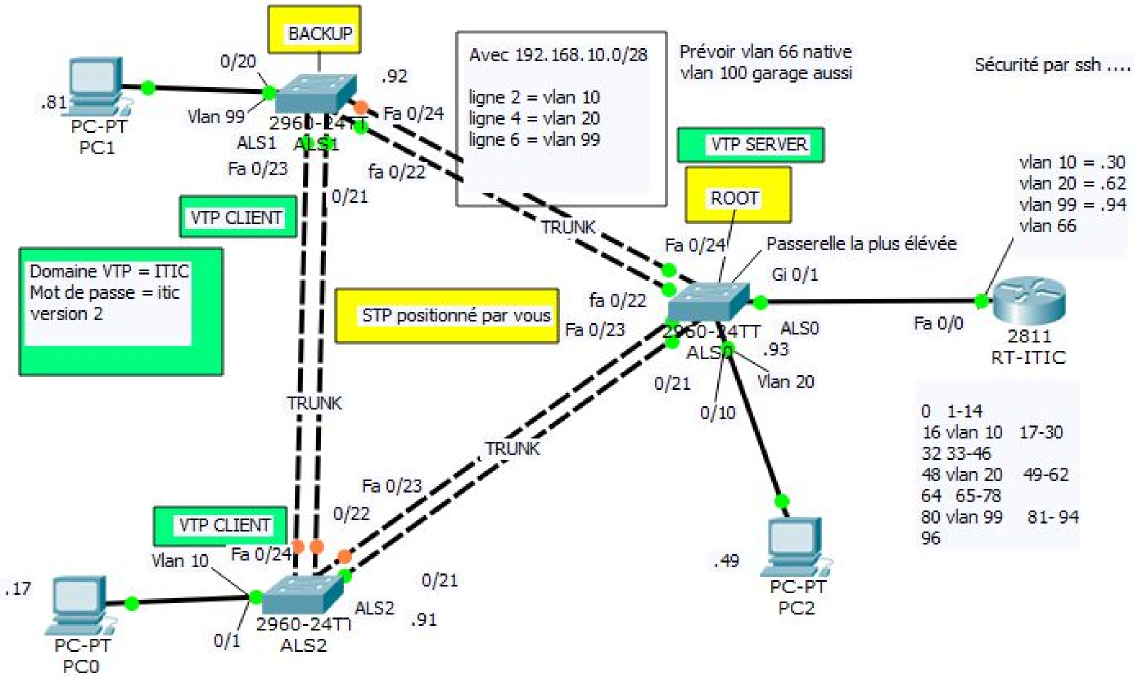
```
ALS2#show  interface trunk
Port    Mode  Encapsulation      Status        Native vlan
Fa0/23        on      802.1q     trunking             66
Fa0/24        on      802.1q     trunking             66
```

Sur le routeur (2811)

```
interface FastEthernet0/0
no ip address
duplex auto
speed auto
!
interface FastEthernet0/0.10
description vlan users
encapsulation dot1Q 10
ip address 192.168.10.254 255.255.255.0
!
interface FastEthernet0/0.20
description vlan compta
encapsulation dot1Q 20
ip address 192.168.20.254 255.255.255.0
!
interface FastEthernet0/0.66
description vlan native
encapsulation dot1Q 66  native
no ip address

! Sous interface d'administration

interface FastEthernet0/0.99
description vlan admin
encapsulation dot1Q 99
ip address 192.168.99.254 255.255.255.0
 no shutdown

interface FastEthernet0/0
no ip address
duplex auto
speed auto
no shutdown


!
```

Vérification de l'accès aux différents commutateurs et postes via leurs liaisons Trunk

```
Ping 192.168.99.254
Ping 192.168.99.253
Ping 192.168.99.252
Etc….
```



ALS1#sh run

```
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname ALS1
!
enable secret 5 $1$mERr$9cTjUIEqNGurQiFU.ZeCi1
!
ip domain-name ITIC
!
username patrice secret 5 $1$mERr$uz9Ap3gcgmbTIwvf1FKEz0
!
!
spanning-tree mode rapid-pvst
spanning-tree vlan 10,20,66,99 priority 28672
!
interface FastEthernet0/1
switchport access vlan 100
shutdown
!
interface FastEthernet0/2
switchport access vlan 100
shutdown
!
```

```
interface FastEthernet0/3
switchport access vlan 100
shutdown
!
interface FastEthernet0/4
switchport access vlan 100
shutdown
!
interface FastEthernet0/5
switchport access vlan 100
shutdown
!
interface FastEthernet0/6
switchport access vlan 100
shutdown
!
interface FastEthernet0/7
switchport access vlan 100
shutdown
!
interface FastEthernet0/8
switchport access vlan 100
shutdown
!
interface FastEthernet0/9
switchport access vlan 100
shutdown
!
interface FastEthernet0/10
switchport access vlan 100
shutdown
!
interface FastEthernet0/11
switchport access vlan 100
shutdown
!
interface FastEthernet0/12
switchport access vlan 100
shutdown
!
interface FastEthernet0/13
switchport access vlan 100
shutdown
!
interface FastEthernet0/14
switchport access vlan 100
shutdown
!
```

```
interface FastEthernet0/15
switchport access vlan 100
shutdown
!
interface FastEthernet0/16
switchport access vlan 100
shutdown
!
interface FastEthernet0/17
switchport access vlan 100
shutdown
!
interface FastEthernet0/18
switchport access vlan 100
shutdown
!
interface FastEthernet0/19
switchport access vlan 100
shutdown
!
interface FastEthernet0/20
description vlan 99
switchport access vlan 99
switchport mode access
spanning-tree portfast
!
interface FastEthernet0/21
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface FastEthernet0/22
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface FastEthernet0/23
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
```

```
interface FastEthernet0/24
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface GigabitEthernet0/1
switchport access vlan 100
shutdown
!
interface GigabitEthernet0/2
switchport access vlan 100
shutdown
!
interface Vlan1
no ip address
shutdown
!
interface Vlan99
description vlan 99 SVI
ip address 192.168.10.92 255.255.255.240
!
ip default-gateway 192.168.10.94
!
banner motd ^CAvez-vous les droits pour vous connecter sur cet appareil^C
!
!
!
line con 0
password 7 0822455D0A16
logging synchronous
login
exec-timeout 3 30
!
line vty 0 4
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login local
transport input ssh
line vty 5 15
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login local
transport input ssh
!end ALS1#
```

```
ALS2#sh run
Building configuration...

Current configuration : 3255 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname ALS2
!
enable secret 5 $1$mERr$9cTjUIEqNGurQiFU.ZeCi1
!
ip domain-name ITIC
!
username patrice secret 5 $1$mERr$uz9Ap3gcgmbTIwvf1FKEz0
!
!
spanning-tree mode rapid-pvst
!
interface FastEthernet0/1
description vlan 10
switchport access vlan 10
switchport mode access
spanning-tree portfast
!
interface FastEthernet0/2
switchport access vlan 100
shutdown
!
interface FastEthernet0/3
switchport access vlan 100
shutdown
!
interface FastEthernet0/4
switchport access vlan 100
shutdown
!
interface FastEthernet0/5
switchport access vlan 100
shutdown
!
interface FastEthernet0/6
switchport access vlan 100
shutdown
!
interface FastEthernet0/7
switchport access vlan 100
shutdown
```

```
!
interface FastEthernet0/8
switchport access vlan 100
shutdown
!
interface FastEthernet0/9
switchport access vlan 100
shutdown
!
interface FastEthernet0/10
switchport access vlan 100
shutdown
!
interface FastEthernet0/11
switchport access vlan 100
shutdown
!
interface FastEthernet0/12
switchport access vlan 100
shutdown
!
interface FastEthernet0/13
switchport access vlan 100
shutdown
!
interface FastEthernet0/14
switchport access vlan 100
shutdown
!
interface FastEthernet0/15
switchport access vlan 100
shutdown
!
interface FastEthernet0/16
switchport access vlan 100
shutdown
!
interface FastEthernet0/17
switchport access vlan 100
shutdown
!
interface FastEthernet0/18
switchport access vlan 100
shutdown
!
interface FastEthernet0/19
switchport access vlan 100
shutdown
```

```
interface FastEthernet0/20
switchport access vlan 100
shutdown
!
interface FastEthernet0/21
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface FastEthernet0/22
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface FastEthernet0/23
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface FastEthernet0/24
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface GigabitEthernet0/1
switchport access vlan 100
shutdown
!
interface GigabitEthernet0/2
switchport access vlan 100
shutdown
!
interface Vlan1
no ip address
shutdown
!
```

```
interface Vlan99
description vlan 99 SVI
ip address 192.168.10.91 255.255.255.240
!
ip default-gateway 192.168.10.94
!
banner motd ^CAvez-vous les droits pour vous connecter sur cet appareil^C
!
!
!
line con 0
password 7 0822455D0A16
logging synchronous
login
exec-timeout 3 30
!
line vty 0 4
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login local
transport input ssh
line vty 5 15
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login local
transport input ssh
!
!
end


ALS2#
```

```
ALS0#sh run
Building configuration...

Current configuration : 3448 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname ALS0
!
enable secret 5 $1$mERr$9cTjUIEqNGurQiFU.ZeCi1
!
!
!
ip domain-name ITIC
!
username patrice secret 5 $1$mERr$uz9Ap3gcgmbTIwvf1FKEz0
!
!
spanning-tree mode rapid-pvst
spanning-tree vlan 10,20,66,99 priority 24576
!
interface FastEthernet0/1
switchport access vlan 100
shutdown
!
interface FastEthernet0/2
switchport access vlan 100
shutdown
!
interface FastEthernet0/3
switchport access vlan 100
shutdown
!
interface FastEthernet0/4
switchport access vlan 100
shutdown
!
interface FastEthernet0/5
switchport access vlan 100
shutdown
!
interface FastEthernet0/6
switchport access vlan 100
shutdown
!
interface FastEthernet0/7
```

```
switchport access vlan 100
shutdown
!
interface FastEthernet0/8
switchport access vlan 100
shutdown
!
interface FastEthernet0/9
switchport access vlan 100
shutdown
!
interface FastEthernet0/10
description vlan 20
switchport access vlan 20
switchport mode access
spanning-tree portfast
!
interface FastEthernet0/11
switchport access vlan 100
shutdown
!
interface FastEthernet0/12
switchport access vlan 100
shutdown
!
interface FastEthernet0/13
switchport access vlan 100
shutdown
!
interface FastEthernet0/14
switchport access vlan 100
shutdown
!
interface FastEthernet0/15
switchport access vlan 100
shutdown
!
interface FastEthernet0/16
switchport access vlan 100
shutdown
!
interface FastEthernet0/17
switchport access vlan 100
shutdown
!
interface FastEthernet0/18
switchport access vlan 100
shutdown
!
interface FastEthernet0/19
```

```
switchport access vlan 100
shutdown
!
interface FastEthernet0/20
switchport access vlan 100
shutdown
!
interface FastEthernet0/21
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface FastEthernet0/22
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface FastEthernet0/23
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface FastEthernet0/24
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
interface GigabitEthernet0/1
description liaison TRUNK 802.1q
switchport access vlan 100
switchport trunk native vlan 66
switchport trunk allowed vlan 10,20,66,99
switchport mode trunk
switchport nonegotiate
!
```

```
interface GigabitEthernet0/2
switchport access vlan 100
shutdown
!
interface Vlan1
no ip address
shutdown
!
interface Vlan99
description vlan 99 SVI
ip address 192.168.10.93 255.255.255.240
!
ip default-gateway 192.168.10.94
!
banner motd ^CAvez-vous les droits pour vous connecter sur cet appareil^C
!
!
!
line con 0
password 7 0822455D0A16
logging synchronous
login
exec-timeout 3 30
!
line vty 0 4
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login local
transport input ssh
line vty 5 15
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login local
transport input ssh
!
!
end


ALS0#
```

Le routeur :

```
RT-ITIC#sh run
Building configuration...

Current configuration : 1456 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname RT-ITIC
!
enable secret 5 $1$mERr$9cTjUIEqNGurQiFU.ZeCi1
!
ip cef
no ipv6 cef
!
username patrice secret 5 $1$mERr$uz9Ap3gcgmbTIwvf1FKEz0
!
ip domain-name ITIC
!
spanning-tree mode pvst
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
!
interface FastEthernet0/0.10
encapsulation dot1Q 10
ip address 192.168.10.30 255.255.255.240
!
interface FastEthernet0/0.20
encapsulation dot1Q 20
ip address 192.168.10.62 255.255.255.240
!
interface FastEthernet0/0.66
encapsulation dot1Q 66 native
no ip address
!
interface FastEthernet0/0.99
encapsulation dot1Q 99
ip address 192.168.10.94 255.255.255.240
!
```

```
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Vlan1
no ip address
shutdown
!
ip classless
!
ip flow-export version 9
!
banner motd ^CAvez-vous les droits pour vous connecter sur cet appareil^C
!
line con 0
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login
!
line aux 0
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login
!
line vty 0 4
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login local
transport input ssh
line vty 5 15
exec-timeout 3 30
password 7 0822455D0A16
logging synchronous
login local
transport input ssh
!
!
!
end


RT-ITIC#
RT-ITIC#
```

Voir : http://olivier.cochard.me/reseaux/cisco/modele-de-configuration-de-routeur-ios-securisee

Gestion des logs

```
! Déclaration du fuseau horaire et du changement d'heure :
clock timezone CET 1 ! Déclaration du fuseau horaire
clock summer-time CEST recurring last Sun Mar 2:00 last Sun Oct 3:00 ! Heure été/hiver

! Synchronisation NTP de l'heure :
ntp source-interface loopback0 ! Déclare l'IP de l'interface loopback comme source
ntp server IP-ADDRESS-NTP-SERVER ! Déclaration du serveur NTP
ntp authentication key 1 md5 CLEF-NTP ! Déclaration de la clef 1 d'authentification
ntp trusted-key 1 ! Utilisation de la clef 1

! Gestion des logs interne :
logging buffered 16384 debugging ! Reserve 16384 octects pour stocker les logs en RAM
service timestamps debug datetime msec localtime show-timezone ! Marque l'heure/date dans les debug
service timestamps log datetime msec localtime show-timezone ! Marque l'heure/date dans les logs

! Gestion de logs centralisé sur un serveur SYSLOG :
logging facility local NUMERO-FACILITY ! Change la facility par défaut (à voir avec le client)
logging trap
logging IP-ADDRESS-LOG-SERVER ! Adresse IP du serveur Syslog
```

```
service timestamps log datetime msec
service timestamps debug datetime msec
ntp server 192.168.2.10

logging 192.168.2.10

logging trap debugging
ntp update-calendar
```

Protection juridique

```
banner login #
Attention !
Acces reserve au personnel du service informatique de NOM-ENTREPRISE.
Toutes activites sur ce systeme sont enregistrees.
Toutes preuves d activites non autorisees seront traitees par les autorites
competentes.
Toute intrusion sur un systeme informatique est interdite par les articles
323-1 a 323-7 du Code penal.#
banner motd #
Attention !
Acces reserve au personnel du service informatique de NOM-ENTREPRISE.
Toutes activites sur ce systeme sont enregistrees.
Toutes preuves d activites non autorisees seront traitees par les autorites
competentes.
Toute intrusion sur un systeme informatique est interdite par les articles
323-1 a 323-7 du Code penal.#
```