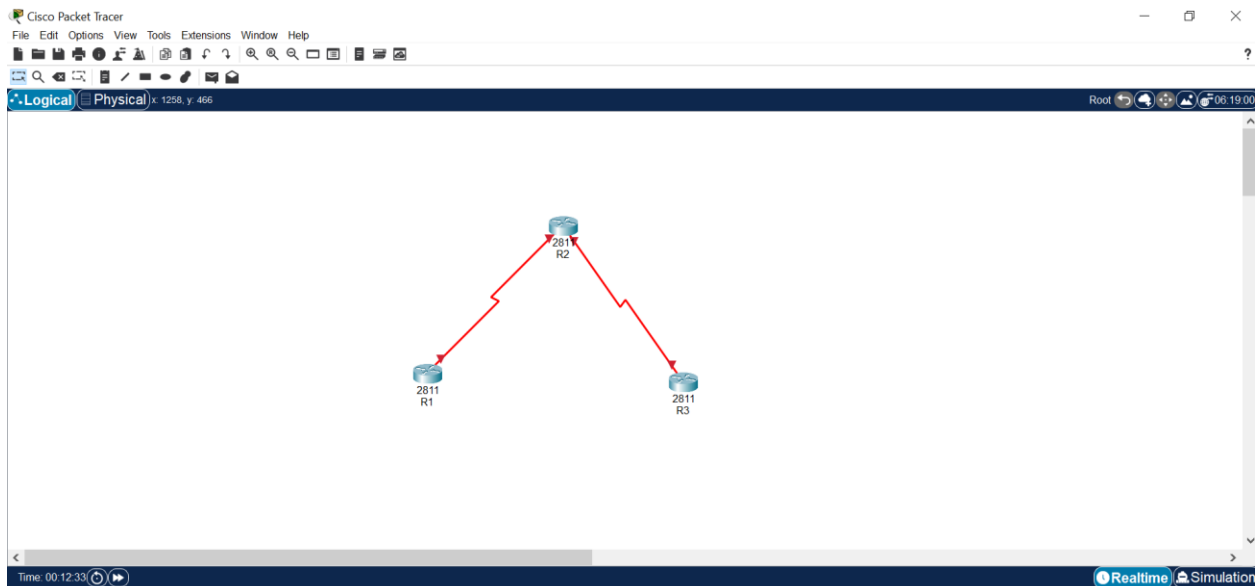


Étape 1 : Câblez le réseau conformément à la topologie.



Étape 2 : Initialisez et redémarrez les routeurs, le cas échéant.

```
----- System, boot -----
170 West Tasman Drive
San Jose, California 95134-1706

Cisco IOS Software, 2800 Software (C2800NM-ADVIPSERVICESK9-M), Version 15.1(4)M4
Technical Support: http://www.cisco.com/techsupport
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Compiled Thurs 8-Jan-12 15:41 by pt_team
Image text-base: 0x2100F918, data-base: 0x24729040

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http://www.cisco.com/wvl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

cisco 2811 (MPC860) processor (revision 0x200) with 60416K/5120K bytes of memory
Processor board ID JAD05190MT2 (4292891495)
1 Ethernet interface(s)
2 FastEthernet interface(s)
12 Low-speed serial(sync/async) network interface(s)
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory
249856K bytes of ATA System CompactFlash 0 (Read/Write)

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>
```

Étape 3 : Configurez les paramètres de base pour chaque routeur.

a. Désactivez la recherche DNS.

```
Physical Config CLI Attributes
IOS Command Line Interface

Image text-base: 0x2100F910, data-base: 0x24729040

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to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wvl/export/crypto/tool/stqrg.html

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12 Low-speed serial(sync/async) network interface(s)
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
24956K bytes of ATA System CompactFlash 0 (Read/Write)

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#no ip domain-lookup
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

b. Configurez le nom du périphérique conformément à la topologie.

```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Routeur1
Routeur1(config)#exit
Routeur1#
%SYS-5-CONFIG_I: Configured from console by console
```

c. Attribuez class comme mot de passe du mode d'exécution privilégié.

```
Routeur1#en
Routeur1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Routeur1(config)#enable password class
Routeur1(config)#exit
Routeur1#
%SYS-5-CONFIG_I: Configured from console by console
Routeur1#
```

d. Attribuez cisco comme mots de passe de console et vty.

```
Routeur1#en
Routeur1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Routeur1(config)#line console 0
Routeur1(config-line)#password cisco
Routeur1(config-line)#exit
Routeur1(config)#line vty 0
Routeur1(config-line)#exit
Routeur1(config)#
```

e. Configurez logging synchrone pour la ligne de console.

```
Routeur1#en
Routeur1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Routeur1(config)#line console 0
Routeur1(config-line)#logging synchronous
Routeur1(config-line)#exit
Routeur1(config)#
```

f. Configurez une bannière MOTD pour avertir les utilisateurs que tout accès non autorisé est interdit.

```
Routeur1#en
Routeur1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Routeur1(config)#banner login^
^
% Invalid input detected at '^' marker.
Routeur1(config)#banner login "Tout non autorise est interdit"
Routeur1(config)#exit
Routeur1#
%SYS-5-CONFIG_I: Configured from console by console
Routeur1#
```

g. Configurez les adresses IP indiquées dans la table d'adressage pour toutes les interfaces. Les interfaces DCE doivent être configurées avec une fréquence d'horloge de 128 000. La bande passante doit être de 128 Kb/s sur toutes les interfaces série.

```
Router1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router1(config)#interface s0/0/0
Router1(config-if)#ip address 192.168.12.1 255.255.255.252
Router1(config-if)#clock rate 128000
Router1(config-if)#bandwidth 128
Router1(config-if)#exit
Router1(config)#no shut
Router1(config)#
% Invalid input detected at '^' marker.
Router1(config)#no shut
Router1(config)#
% Invalid input detected at '^' marker.
Router1(config)#exit
Router1#
%SYS-5-CONFIG_I: Configured from console by console
Router1#
```

```
Router1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router1(config)#interface loopback 0

Router1(config-if)#
%LINK-5-CHANGED: Interface Loopback0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up
Router1(config-if)#ip address 209.165.200.225 255.255.255.252
Router1(config-if)#no shut
Router1(config-if)#exit
Router1(config)#interface loopback 1

Router1(config-if)#
%LINK-5-CHANGED: Interface Loopback1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up
Router1(config-if)#ip address 192.168.1.1 255.255.255.0
Router1(config-if)#no shut
Router1(config-if)#exit
Router1(config)#interface loopback 2

Router1(config-if)#
%LINK-5-CHANGED: Interface Loopback2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback2, changed state to up
Router1(config-if)#ip address 192.168.2.1 255.255.255.0
Router1(config-if)#no shut
Router1(config-if)#exit
Router1(config)#
```

h. Copiez la configuration en cours en tant que configuration de démarrage.

```
Router1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router1#
```

Étape 4 : Vérifiez la connectivité de la couche 3. Utilisez la commande **show ip interface brief** pour vérifier que l'adressage IP est correct et que les interfaces sont actives. Vérifiez que chaque routeur peut envoyer une requête ping à l'interface série de ses voisins.

```
Router3#show ip interface brief
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 unassigned YES unset administratively down down
FastEthernet0/1 unassigned YES unset administratively down down
Serial0/0/0 unassigned YES unset administratively down down
Serial0/0/1 192.168.23.2 YES manual down down
Serial0/1/0 unassigned YES unset administratively down down
Serial0/1/1 unassigned YES unset administratively down down
Serial0/2/0 unassigned YES unset administratively down down
Serial0/2/1 unassigned YES unset administratively down down
Serial0/3/0 unassigned YES unset administratively down down
Serial0/3/1 unassigned YES unset administratively down down
Ethernet1/0 unassigned YES unset administratively down down
Serial1/0/0 unassigned YES unset administratively down down
Serial1/0/1 unassigned YES unset administratively down down
Serial1/1/0 unassigned YES unset administratively down down
Serial1/1/1 unassigned YES unset administratively down down
Loopback4 192.168.4.1 YES manual up up
Loopback5 192.168.5.1 YES manual up up
Vlan1 unassigned YES unset administratively down down
Router3#ping 192.168.12.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.12.1, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)

Router3#ping 192.168.23.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.23.1, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)

Router3#
```

c. Configurez comme passives toutes les interfaces de bouclage LAN, Lo1 et Lo2.

```

Router1(config)#interface loopback 1
Router1(config-if)#ip address 192.168.1.1 255.255.255.0
Router1(config-if)#no shut
Router1(config-if)#router ospf 1
Router1(config-router)#router-id 1.1.1.1
Router1(config-router)#passive-interface
% Incomplete command.
Router1(config-router)#passive-interface loopback 1
Router1(config-router)#exit
Router1(config)#exit
Router1#

```

```

Router1>en
Password:
Password:
Router1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router1(config)#interface loopback 2
Router1(config-if)#ip address 192.168.12.1 255.255.255.0
Router1(config-if)#router ospf 1
Router1(config-router)#router-id 1.1.1.1
Router1(config-router)#passive-interface loopback 2
Router1(config-router)#exit
Router1(config)#exit
Router1#
%SYS-5-CONFIG_I: Configured from console by console
Router1#copy running-config startup-config
Router1#
% Invalid input detected at '^' marker.
Router1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router1#

```

d. Créez une route par défaut vers Internet, à l’aide de l’interface de sortie Lo0.

En

Conf t

Ip route 0.0.0.0 0.0.0.0 209.165.200.225

b. Ajoutez les réseaux pour R2 au protocole OSPF. Ajoutez les réseaux à la zone appropriée. Indiquez les commandes utilisées dans l’espace ci-dessous.

```

Router2>en
Password:
Password:
Router2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router2(config)#router ospf 1
Router2(config-router)#router-id 2.2.2.2
Router2(config-router)#passive-interface loopback 2
Router2(config-router)#exit
Router2(config)#exit
Router2#
%SYS-5-CONFIG_I: Configured from console by console
Router2#copy running-config startup-config
Router2#
% Invalid input detected at '^' marker.
Router2(config)#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router2#

```

b. Ajoutez les réseaux pour R3 au protocole OSPF. Indiquez les commandes utilisées dans l’espace ci-dessous.

```

Router3>conf t
Router3#
% Invalid input detected at '^' marker.
Router3>en
Password:
Password:
Router3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router3(config)#router ospf 1
Router3(config-router)#router-id 3.3.3.3
Router3(config-router)#network 192.168.1.0 0.0.0.255 area 3
Router3(config-router)#network 192.168.12.0 0.0.0.3 area 3
Router3(config-router)#network 192.23.0 0.0.0.3 area 3
Router3(config-router)#passive-interface loopback 4
Router3(config-router)#passive-interface loopback 5
Router3(config-router)#exit
Router3(config)#exit
Router3#
%SYS-5-CONFIG_I: Configured from console by console
Router3#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router3#

```

Quel est le type de routeur OSPF pour chaque routeur ?

R1 : internal router

R2 : Backbone Router

R3 : Router Autonomous System Boundary

Étape 6 : Configurez l'authentification MD5 sur toutes les interfaces série. Configurez l'authentification MD5 OSPF au niveau interface, avec Cisco123 comme clé d'authentification. Pourquoi est-il recommandé de vérifier que le protocole OSPF fonctionne correctement avant de configurer l'authentification OSPF ?

```
Routeur1#en
Routeur1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Routeur1(config)#interface loopback 1
Routeur1(config-if)#ip address 192.168.1.1 255.255.255.0
Routeur1(config-if)#ip ospf authentication message-digest
^
% Invalid input detected at '^' marker.
Routeur1(config-if)#ip ospf message-digest-key 1 md5 Cisco123
Routeur1(config-if)#exit
Routeur1(config)#
```

Vérifier que le protocole OSPF fonctionne correctement avant la configuration de l'authentification permet de garantir une base solide pour une configuration stable et sécurisée. Cela réduit les complexités de dépannage et les risques d'erreurs dans le réseau.

b. Répétez la commande show ip ospf database pour R2 et R3. Enregistrez les ID de liaison des « Summary Net Link States » pour chaque zone.

R2 :

```
Summary Net Link States (Area 0)
Link ID      ADV Router   Age         Seq#         Checksum
192.168.6.1  2.2.2.2      41          0x80000003  0x00558e
```

R3:

```
Routeur3#show ip ospf database
OSPF Router with ID (3.3.3.3) (Process ID 1)

Router Link States (Area 3)
Link ID      ADV Router   Age         Seq#         Checksum Link count
3.3.3.3      3.3.3.3      1263        0x80000003  0x0053f7  2
Routeur3#
```