

## TD – routage OSPF multizones

**Objectif : mettre en œuvre OSPF dans un environnement multi-zones**

Télécharger le PKT <https://mickaelangel.com/uploads/5-multiarea-OSPF.pkt>

NB. les adresses IP des routeurs sont déjà configurées

### Configuration des routeurs de la zone 20

```
RZ20-2
router ospf 1
network 3.0.0.0 0.255.255.255 area 20
network 7.0.0.0 0.255.255.255 area 20
```

```
RZ20-3
router ospf 1
network 3.0.0.0 0.255.255.255 area 20
network 5.0.0.0 0.255.255.255 area 20
```

```
RZ20-1
router ospf 1
network 7.0.0.0 0.255.255.255 area 20
```

```
network 5.0.0.0 0.255.255.255 area 20  
network 20.0.0.0 0.255.255.255 area 20
```

## Vérification des échanges dans la zone 20

```
RZ20-2#sh ip route ospf  
O 5.0.0.0 [110/2] via 3.20.0.3, 00:00:43, GigabitEthernet0/0  
[110/2] via 7.20.0.1, 00:00:43, GigabitEthernet0/2  
O 20.0.0.0 [110/2] via 7.20.0.1, 00:01:08, GigabitEthernet0/2
```

```
RZ20-3#sh ip route ospf  
O 7.0.0.0 [110/2] via 3.20.0.2, 00:02:06, GigabitEthernet0/0  
[110/2] via 5.20.0.1, 00:02:06, GigabitEthernet0/1  
O 20.0.0.0 [110/2] via 5.20.0.1, 00:02:06, GigabitEthernet0/1
```

```
RZ20-1#sh ip route ospf  
O 3.0.0.0 [110/2] via 7.20.0.2, 00:02:41, GigabitEthernet0/2  
[110/2] via 5.20.0.3, 00:02:41, GigabitEthernet0/1
```

## Configuration des routeurs de la zone 10

```
RZ10-2  
router ospf 1  
network 6.0.0.0 0.255.255.255 area 10  
network 2.0.0.0 0.255.255.255 area 10
```

```
RZ10-3  
router ospf 1
```

```
network 2.0.0.0 0.255.255.255 area 10  
network 4.0.0.0 0.255.255.255 area 10
```

#### **RZ10-1**

```
router ospf 1  
network 6.0.0.0 0.255.255.255 area 10  
network 4.0.0.0 0.255.255.255 area 10  
network 10.0.0.0 0.255.255.255 area 10
```

### **Vérification des échanges dans la zone 10**

Testez les routeurs de la zone

```
sh ip route ospf
```

### **Configuration des routeurs de la zone 0**

#### **RZ0-3**

```
router ospf 1  
network 8.0.0.0 0.255.255.255 area 0  
network 9.0.0.0 0.255.255.255 area 0
```

#### **ABR-20**

```
router ospf 1  
network 8.0.0.0 0.255.255.255 area 0  
!Déclaration pour la bordure de zone  
network 20.0.0.0 0.255.255.255 area 20
```

#### **ABR-10**

```
router ospf 1
```

```
network 9.0.0.0 0.255.255.255 area 0
!Déclaration pour la bordure de zone
network 10.0.0.0 0.255.255.255 area 10
```

## Vérification des échanges interzones

### Sur RZ20-1

```
RZ20-1#sh ip route ospf
```

#### **!Récupération des routes d'autres zones via ABR-20**

```
O IA 2.0.0.0 [110/6] via 20.0.0.1
O IA 4.0.0.0 [110/5] via 20.0.0.1
O IA 6.0.0.0 [110/5] via 20.0.0.1
O IA 8.0.0.0 [110/2] via 20.0.0.1
O IA 9.0.0.0 [110/3] via 20.0.0.1
O IA 10.0.0.0 [110/4] via 20.0.0.1
```

### Sur RZ-10

```
RZ10-1#sh ip route ospf
```

#### **!Récupération des routes d'autres zones via ABR-10**

```
O IA 3.0.0.0 [110/6] via 10.0.0.1
O IA 5.0.0.0 [110/5] via 10.0.0.1
O IA 7.0.0.0 [110/5] via 10.0.0.1
O IA 8.0.0.0 [110/3] via 10.0.0.1
O IA 9.0.0.0 [110/2] via 10.0.0.1
O IA 20.0.0.0 [110/4] via 10.0.0.1
```

Les routeurs d'échanges récupèrent bien les zones.  
Mais quid des autres ?

```
RZ20-2#sh ip route ospf
```

```
O IA 2.0.0.0 [110/7] via 7.20.0.1
O IA 4.0.0.0 [110/6]
O IA 6.0.0.0 [110/6] via 7.20.0.1
O IA 8.0.0.0 [110/3] via 7.20.0.1
```

- IA 9.0.0.0 [110/4] via 7.20.0.1
- IA 10.0.0.0 [110/5] via 7.20.0.1

```
RZ0-3#sh ip route ospf
○ IA 2.0.0.0 [110/4] via 9.0.0.1
○ IA 3.0.0.0 [110/4] via 8.0.0.1
○ IA 4.0.0.0 [110/3] via 9.0.0.1
○ IA 5.0.0.0 [110/3] via 8.0.0.1
○ IA 6.0.0.0 [110/3] via 9.0.0.1
○ IA 7.0.0.0 [110/3] via 8.0.0.1
○ IA 10.0.0.0 [110/2] via 9.0.0.1
○ IA 20.0.0.0 [110/2] via 8.0.0.1
```

Les autres aussi.

### **Voir les routeurs de bordure**

#### **Sur RZ20-1**

```
RZ20-1#sh ip ospf border-routers
```

Codes: i – Intra-area route, I – Inter-area route

```
i 20.0.0.1 [1] via 20.0.0.1, GigabitEthernet0/0, ABR, Area 20, SPF 1
```

#### **Sur RZ10-1**

```
RZ10-1#sh ip ospf border-routers
```

Codes: i – Intra-area route, I – Inter-area route

```
i 10.0.0.1 [1] via 10.0.0.1, GigabitEthernet0/0, ABR, Area 10, SPF 1
```

### **Faire un ping du routeur RZ20-2 vers RZ10-3**

```
RZ20-2#ping 2.10.0.3
```

Success rate is 100 percent (5/5)