

# Práctica

## Configuración Routing / resumen comandos

### Comandos Cisco (v1.1)

*Para entrar en modo configuration:*

```
#conf t
(config)#
```

#### 1. Habilitar IPv6 en una interfaz

```
interface xxxxx
ipv6 enable
```

#### 2. Configurar una dirección

```
interface xxxxx
ipv6 address X:X:X:X::X/<0-128> (general address)
ipv6 address X:X:X:X::X (link-local address)
ipv6 address autoconfig (auto-configuration)
```

#### Ejemplo (Interfaz LAN)

```
interface Ethernet0/0
ip address 192.168.1.254 255.255.255.0
ipv6 address 2001:db8:123:1::2/64
```

### Configurar un túnel

#### Configurar un túnel IPv6 in IPv4

```
interface tunnel x
tunnel source interface
tunnel destination X.X.X.X
ipv6 address X:X:X:X::X/<0-128>
tunnel mode ipv6ip (for direct tunneling)
tunnel mode gre ip (for gre encapsulation)
```

#### Configurar un túnel IPv6 in IPv6

```
interface tunnel x
tunnel source interface
tunnel destination X.X.X.X
ipv6 address X:X:X:X::X/<0-128>
tunnel mode ipv6 (for direct tunneling)
tunnel mode gre ipv6 (for gre encapsulation)
```

### Habilitar routing IPv6

```
ipv6 unicast-routing
ipv6 cef (activate IPv6 Cisco Express forwarding)
```

### Configurar rutas estáticas

```
ipv6 route prefix/prefixlen next_hop
ipv6 route ::/0 2001:db8:10a:1001::1
```



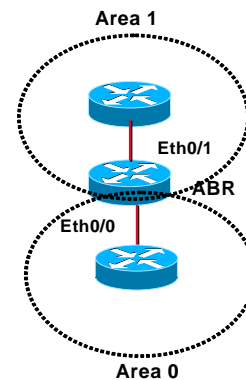
## Routing (OSPFv3)

```

ipv6 router ospf 1 # "1" is the process ID
  router-id 2.2.2.2 # loopback interface

interface Ethernet0/0
  ipv6 address 2001:db8:1:1::1/64
  ipv6 ospf 1 area 0
  !
interface Ethernet0/1
  ipv6 address 2001:db8:1:2::2/64
  ipv6 ospf 1 area 1
  !

```



## Redistribución (OSPFv3) direcciones Loopback

Hay varias maneras de conseguir esto:

### 1. Redistribución

```

Router(config)# ipv6 router ospf 1
Router(config-rtr)# redistribute connected --> LOOPBACK
Router(config-rtr)# redistribute static ---> Configuradas Estaticas

```

Nota: Las rutas de una interfaz solo se anunciarán si la interfaz está levantada, o si se añade su dirección a la table de routing, por ejemplo introduciendo una ruta estática.:

```

Router1(config)# ipv6 route 2001:DB8:CAFE:A:./64 null 0

```

### 2. Incluyéndola en OSPFv3 con passive:

```

Router(config)# interface loopback0
Router(config-if)# ipv6 ospf 1 area 0
Router(config-if)# exit
Router(config)# ipv6 router ospf 1
Router(config-rtr)# passive-interface loopback 0

```

## Routing (BGP): eMBGP Peering

```

router bgp my-as-number
  no bgp default ipv4-unicast
  [bgp router-id a.b.d.f]
  neighbor X:X:X:X::X remote-as neighbor-as
  address-family ipv6 unicast
    neighbor X:X:X:X::X activate
    network 2001:db8::/32
  no synchronization
  exit

```

## Routing (BGP): iMBGP Peering

Nota: Para los peerings iMBGP, debes especificar la dirección IPv6 utilizada para las



*actualizaciones de routing BGP*

```

router bgp my-as-number
  no bgp default ipv4-unicast
  [bgp router-id a.b.d.f]
  neighbor X:X:X:X::X remote-as my-as-number
  address-family ipv6 unicast
    neighbor X:X:X:X::X update-source Loopback 0
    neighbor X:X:X:X::X next-hop-self
    neighbor X:X:X:X::X activate
  no synchronization
exit

```

**Routing (BGP): “Inyectar” prefijos IPv6 en BGP**

```
Router(config)# ipv6 route 2001:DB8:CAFE:1::/64 Null0
```

*Nota: Recordar que solo se pueden anunciar las rutas que existan en la tabla de ruteo propia. Si una ruta no existe hay que “instalarla” en la tabla de rutas.*

```

Router(config)# router bgp 65152
Router(config-router)# address-family ipv6 unicast
Router(config-router-af)# network 2001:DB8:CAFE:1::/64

```

**Políticas de filtrado de routing**

```

ipv6 prefix-list bgp-in-6net seq 5 deny ::/0
  Significa exactamente filtrar ::/0

ipv6 prefix-list bgp-in-6net seq 10 deny 3FFE:300::/24 le 28
ipv6 prefix-list bgp-in-6net seq 15 deny 2001:db8::/35 le 41
ipv6 prefix-list bgp-in-6net seq 20 permit 2002::/16
ipv6 prefix-list bgp-in-6net seq 25 permit 3FFE::/17 ge 24 le 24
ipv6 prefix-list bgp-in-6net seq 30 permit 3FFE:8000::/17 ge 28 le 28
  Significa todos los prefijos que coincidan con 3FFE:8000::/17 con longitud 28

ipv6 prefix-list bgp-in-6net seq 35 permit 3FFE:4000::/18 ge 32 le 32
ipv6 prefix-list bgp-in-6net seq 40 permit 2001::/16 ge 32 le 35
  Significa todos los prefijos derivados de 2001::/16, con longitud entre 32 y 35

```

**Access Control Lists (ACL)**

```

ipv6 access-list vty-ipv6
  permit tcp 2001:db8:0:401::/64 any eq telnet
  deny ipv6 any any log-input

```

**Aplicar una ACL a una interfaz**

```
ipv6 traffic-filter <acl_name> in | out
```

**Restringiendo el acceso al router**

```
ipv6 access-class <acl_name> in | out
```

**Aplicar una ACL para filtrar tráfico de debug**

```
debug ipv6 packet [access-list <acl_name>] [detail]
```

## comandos show

### Interfaces IPv6:

```
show ipv6 interface
```

### Rutas estáticas IPv6:

```
show ipv6 route
```

### Comandos OSPF IPv6:

```
show ipv6 ospf  
show ipv6 ospf neighbor  
show ipv6 ospf interface  
show ipv6 ospf database
```

```
show ipv6 route  
show ipv6 route ospf
```

### Comandos BGP IPv6:

```
show bgp  
show bgp summary  
show bgp ipv6 unicast/multicast/all summary  
show bgp ipv6 neigh <addr> routes  
show ipv6 route summary
```