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)
```

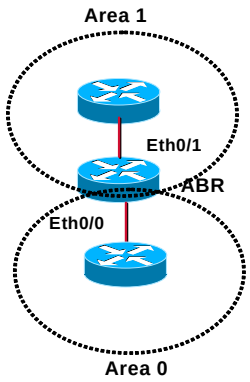
Configurar rutas estáticas

```
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 longitude 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 longitude 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
```