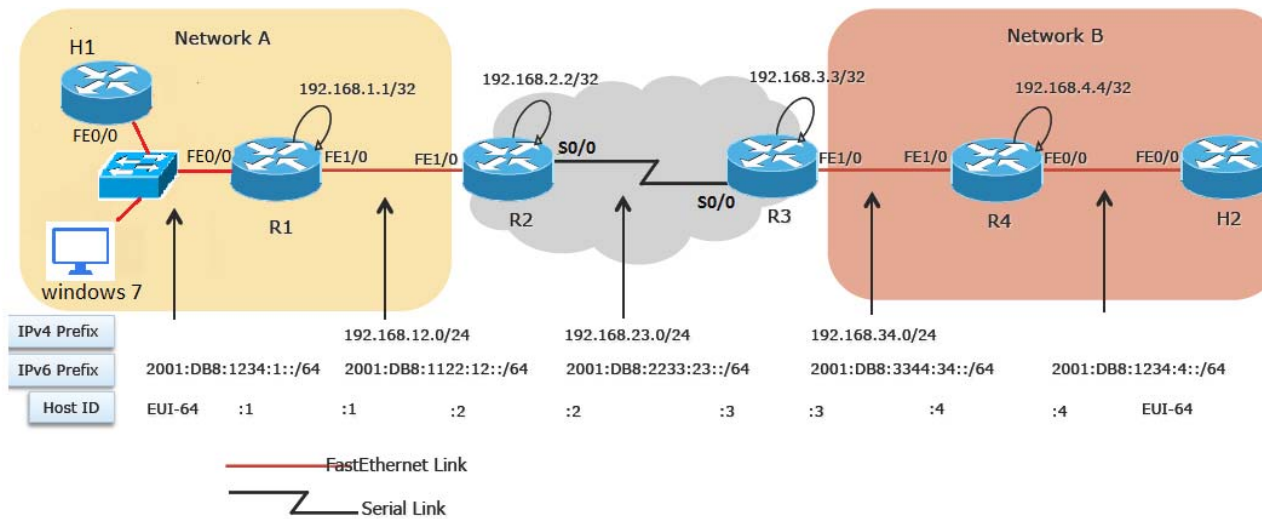


IPv6 Hands-on LABs

1. IPv6 Addressing
2. IPv6 Neighbor Discovery
3. IPv6 Static Routing
4. IPv6 OSPFv3
5. IPv6 BGP
6. IPv6 Tunneling (Manual)
7. IPv6 Tunneling (Automatic)

Network Diagram – IPv6 Lab



Required Resource Information:

Device	Access Mode	Remote Address	Credentials
Terminal Server	Telnet	grp[xx].ncp.edu.pk	Password: workshop@ncp
Windows-7	Remote Desktop	grp[xx]-win.ncp.edu.pk	Username:ncp Password:ncp123

Lab 1: IPv6 Addressing

Lab 1: Task Summary

- Enable IPv6 on all four routers (R1 to R4)
- Configure hosts (H1 and H2) to use stateless address auto-configuration for IPv6
- Configure IPv6 addresses on Fast Ethernet and Serial interfaces using addresses listed in Table 1
- Use show commands to view IPv6 configuration and addresses
- Use ping to verify IPv6 connectivity

Configuring IPv6 Interfaces

Router Number	GlobalIPv6Prefix	Unique-localIPv6Prefix
R1(F1/0)	2001:DB8:1122:12::1/64	fc00:1:2:12::1/64
R1(F0/0)	2001:DB8:1234:1::/64 eui-64	
R2(F1/0)	2001:DB8:1122:12::2/64	fc00:1:2:12::2/64
R2(S0/0)	2004:DB8:2233:23::2/64	
R3(F1/0)	2001:DB8:3344:34::3/64	fc00:3:4:34::3/64
R3(S0/0)	2004:DB8:2233:23::3/64	
R4(F0/0)	2001:DB8:1234:4::/64 eui-64	
R4(F1/0)	2001:DB8:3344:34::4/64	fc00:3:4:34::4/64

Table 1: IPv6 Prefixes for Fast Ethernet & Serial Interfaces

Task-1: Configuring the IPv6 Fast Ethernet Interface

- On Routers R1 and R4, go to global configuration mode
`#configure terminal`
- Enable IPv6 Unicast Routing on the router
`(config)#ipv6 unicast-routing`
- Configure the FastEthernet0/0 interface
`(config)#interface FastEthernet0/0`
- Enable IPv6 on the interface
`(config-if)#ipv6 enable`
`(config-if)#no shutdown`
- Quit the configure mode
`(config-if)#end`
- Verify that the FastEthernet interface is configured
`#show ipv6 interface FastEthernet0/0`
- Identify the type of addresses that are configured

Task-2: Finding the Link-Local Address of a Host

- On Hosts H1 and H2, go to global configuration mode
`#configure terminal`
- Configure the Host FastEthernet0/0 interface
`(config)#interface FastEthernet0/0`
- Enable IPv6 on the interface
`(config-if)#ipv6 enable`
`(config-if)#ipv6 address autoconfig`
`(config-if)#no shutdown`

- Quit the configure mode

```
(config-if)#end
```
- Verify that the FastEthernet interface is configured

```
#show ipv6 interface FastEthernet0/0
```

Task-3: Verifying IPv6 Link-Local Connectivity

- On Routers R1 and R4, enable console debugging of ICMP and Neighbor Discovery (ND) IPv6 packets

```
#debug ipv6 icmp
```

```
#debug ipv6 nd
```

- On the Router, ping the local FastEthernet interface of Host specifying the link local address in the ping command destination address

```
#ping fe80::<link local address of Host>
```

```
#ping ipv6 fe80::<link local address of Host>
```

On the Router, verify the list of IPv6 neighbors

```
#show ipv6 neighbors
```

Task-4 : Configuring a Static IPv6 Address with EUI-64

- On Routers R1 and R4, configure a global IPv6 address on FastEthernet 0/0 interface using the /64 prefix of your subnet and the EUI-64 format.
- Subnet = router number, e.g. **R1 = 2001:DB8:1234:1::/64 & R4 = 2001:DB8:1234:4::/64**

```
#configure terminal
```

```
(config)#interface FastEthernet0/0
```

```
(config-if)#ipv6 address 2001:DB8:1234:<router #>::/64 eui-64
```

```
(config)#end
```

- Verify the configuration
- On the Routers, disable all console debugging

```
#undebug all
```

Task-5: Configuring IPv6 addresses on FastEthernet1/0 & Serial2/0 interfaces

- On all four routers, configure a global and unique-local address on other interfaces by using the IPv6 prefix assigned. Use the router number for the host part. (Refer to Table 1 for details)
- For example, on R1:

```
#configure terminal
```

```
(config)#interface FastEthernet 1/0
```

```
(config-if)#ipv6 enable
```

```
(config-if)#ipv6 address fc00:1:2:12::<router #>/64
```

```
(config-if)#ipv6 address 2001:DB8:1122:12::<router #>/64
```

```
(config-if)#no shutdown
```

- Verify connectivity by using ping to next-hop router

```
#ping <global or unique-local address of next-hop router>
```

```
#show ipv6 neighbors
```

Lab 2: Using Neighbor Discovery

Lab 2: Task Summary

- Enable Router Advertisements (RA) for Global and Unique-Local IPv6 Prefixes on F0/0 (R1 & R4)
- Use show commands and debugs (debug ipv6 nd) to view IPv6 configuration
- Use ping to verify IPv6 connectivity
- Renumber the F0/0 interfaces on R1 & R4 by deprecating the old IPv6 prefixes and announcing a new IPv6 prefix
 - Pick a new IPv6 Global Prefix (2003:DB8:ffff:<router #>::/64)
 - Deprecate the old Prefix; Hint: change the valid and preferred lifetimes

Using Neighbor Discovery

Task-1: Configuring Router Advertisements for Global Addresses

- Look at the configuration of Hosts H1 & H2 and determine if they have received a global address?

```
#show ipv6 interface FastEthernet0/0
```
- Enable the debugging mode for IPv6 Neighbor Discovery (ND)

```
#debug ipv6 nd
```
- On Routers R1 & R4, go to configuration mode and then under FastEthernet0/0 interface

```
#configure terminal  
(config)#interface FastEthernet0/0
```
- Enable RAs by using the ND command with the subnet prefix assigned to your LAN. Because infinite lifetime is not desired, use 5 minutes (300 seconds) for lifetime (both preferred and valid)

```
(config-if)#ipv6 nd prefix 2001:DB8:1234:<router #>::/64 300 300
```

- Verify that the hosts now have an IPv6 address that was automatically configured with this subnet prefix. Note that the previously configured link-local address is still present and valid. Also look at the valid and preferred lifetimes, are they decrementing?

```
#show ipv6 interface FastEthernet0/0
```

- Verify connectivity using the ping command on the Router to the Host using the newly assigned address of the Host as the ping destination

```
#ping <global address of Host>
```

Task-2: Configuring Router Advertisements for Unique-Local Addresses

- Configure a unique-local address on FastEthernet0/0 interface of Routers R1 & R4 by using the subnet prefix for your LAN. Use EUI-64 format.

```
#configure terminal
```

```
(config)#interface FastEthernet0/0
```

```
(config-if)#ipv6 address fc00:0:0:<router #>::/64 eui-64
```

- Enable RAs by using the ND command with subnet prefix assigned to your LAN for unique-local addresses. Use 5 minutes (300 seconds) for the lifetime.

```
(config-if)# ipv6 nd prefix fc00:0:0:<router #>::/64 300 300
```

- Change the RA interval to 20 seconds

```
(config-if)# ipv6 nd ra interval 20
```

- Verify that Hosts H1 & H2 now have an IPv6 address configured with this subnet prefix.

```
#show ipv6 interface FastEthernet0/0
```

- Verify connectivity to the Host using the ping command on the Router to the Host using the newly assigned address of the Host as the ping destination address.

```
#ping <unique-local address of Host>
```

Task-3: Renumbering the Local network on the Router

- On Routers R1 & R4, configure the new address of workgroup FastEthernet0/0 interface by using the new global subnet prefix assigned to your LAN. Use EUI-64 format.

```
#configure terminal
```

```
(config)#interface FastEthernet0/0
```

```
(config-if)#ipv6 address 2003:DB8:ffff:<router #>::/64 eui-64
```

- Enable RAs by using the ND command with the new subnet prefix assigned to your LAN. Use 5 minutes (300seconds) for the lifetime.

```
(config-if)# ipv6 nd prefix 2003:DB8:ffff:<router #>::/64 300 300
```

- Verify that Hosts H1 & H2 have a new address with the new prefix

```
#show ipv6 interface FastEthernet0/0
```

- Modify the Neighbor Advertisement (NAs) for 2001:DB8:1234:<router #>::/64 (the old prefix) by making the valid and preferred lifetimes equal to 60 and 0 respectively.

```
#configure terminal
```

```
(config)#interface FastEthernet0/0
```

```
(config-if)# ipv6 nd prefix 2001:DB8:1234:<router #>::/64 60 0
```

- Verify that the hosts deprecate the use of the “old” prefix and prefers the “new” one. (Hint: Do a shut / no shut on the Host F0/0 interface if the lifetimes do not update automatically.)

```
#show ipv6 interface FastEthernet0/0
```

- Verify connectivity to the host by using the ping command on the router using the new assigned address of host.

```
#ping <new global address of Host>
```

```
#undebug all
```


Lab 3: IPv6 Static Routing

Lab 3: Task Summary

- Configure IPv6 default static routes on R1 & R4
- Configure IPv6 static routes on R3 & R4
- Use ping to verify IPv6 connectivity between R1 & R4
- Use show commands to view IPv6 routing table

IPv6 Static Routing

Task-1: Configuring IPv6 Static Routing on Routers

- Configure static default routes on R1 and R4 pointing to R2 and R3 respectively (see Table 1 for addressing details)
- On R1:

```
(config)#ipv6 route ::/0 2001:DB8:1122:12::2
```
- On R4:

```
(config)#ipv6 route ::/0 2001:DB8:3344:34::3
```
- Configure static routes on R2 pointing to R4's F1/0 network; R3 pointing to R1's F1/0 network. (see Table 1 for addressing details)
- On R2:

```
(config)#ipv6 route 2001:DB8:3344:34::/64 2004:DB8:2233:23::3
```
- On R3:

```
(config)#ipv6 route 2001:DB8:1122:12::/64 2004:DB8:2233:23::2
```

Task-2: Verifying IPv6 Connectivity using Static Routes

- Verify the routing table

```
#show ipv6 route
```

- Verify IPv6 connectivity using the ping command using the peer's IPv6 Address

`#ping <your peer's Global IPv6 Address>`

- Can you ping from R1 to R4 and vice versa? If not, troubleshoot why the ping is not working. Hint: Use “debug ipv6 icmp” and “debug ipv6 packet” on R2 & R3 to see if traffic is being forwarded.

Lab 4: Routing with OSPFv3

Lab 4: Task Summary

- Enable debugs for IPv6 Routing and IPv6 OSPFv3

```
#debug ipv6 routing
```

```
#debug ipv6 ospf event
```

- Configure OSPFv3 on all four routers

- Look at topology diagram for details

- Use 192.168.30.xx for router-id (where xx is the router number)

- Remove all IPv6 static and default routes on all routers

- Use ping to verify IPv6 connectivity between H1 & H2

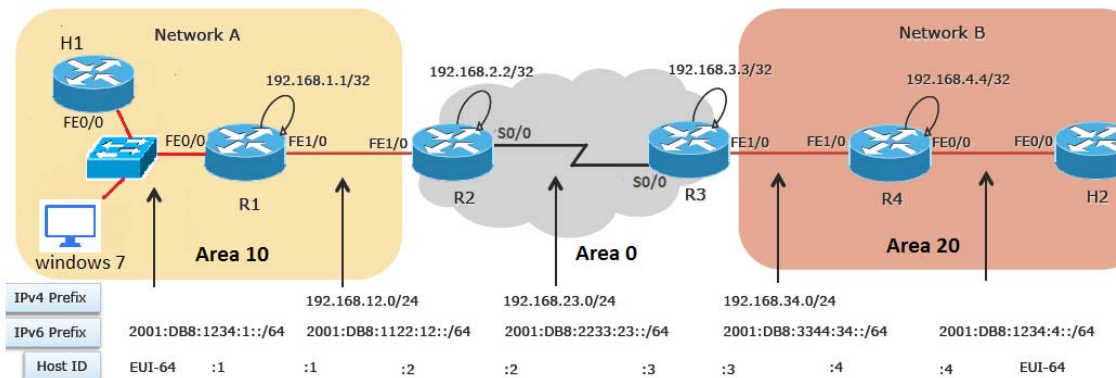
- Use show commands to view IPv6 routing table

```
#show ipv6 route
```

```
#show ipv6 ospf neighbor
```

```
#show ipv6 ospf database
```

OSPFv3 Configuration Example



Routing with OSPFv3

Task-1: Configuring OSPFv3

- Enable the debugging mode for IPv6 Routing and IPv6 OSPFv3

```
#debugs ipv6 routing
```

```
#debug ipv6 ospf event
```

- Configure an OSPFv3 process 1 on the routers with a Router-ID

```
(config)#ipv6 router ospf 1
```

```
(config-rtr)#router-id 192.168.30.xx (where xx is your router #)
```

- Enable OSPFv3 on each interface on all four routers. For example on R1:

```
(config)#interface FastEthernet0/0
```

```
(config-if)#ipv6 ospf 1 area 10
```

```
(config-if)#interface FastEthernet1/0
```

```
(config-if)#ipv6 ospf 1 area 10
```

OSPFv3 Configuration – Router R1

Router R1

```
!  
ipv6 unicast-routing  
!  
interface FastEthernet0/0  
    no ip address  
    ipv6 ospf 1 area 10  
!  
interface FastEthernet1/0  
    no ip address  
    ipv6 ospf 1 area 10  
!  
ipv6 router ospf 1  
    router-id 192.168.30.1
```

OSPFv3 Configuration – Router R2

```
Router R2
!
ipv6 unicast-routing
!
interface FastEthernet1/0
    no ip address
    ipv6 ospf 1 area 10
!
interface Serial2/0
    no ip address
    ipv6 ospf 1 area 0
!
ipv6 router ospf 1
    router-id 192.168.30.2
```

Task-2: Configuring OSPFv3

- Verify that the routing table is updated by entries coming from the other workgroup routers, OSPFv3 Neighbor, OSPFv3 database

```
#show ipv6 route
```

```
#show ipv6 ospf neighbor
```

```
#show ipv6 ospf database
```

- Do you see the OSPFv3 routes in the routing table on R2 & R3? Why or why not?
- Remove the static routes on all 4 routers

```
#no ipv6 route <network> <next hop>
```

- Verify IPv6 connectivity using the ping command on Host. Use the remote host's global IPv6 address as the destination address of the ping command

```
#ping <Global IPv6 address of the remote host>
```

```
#undebug all
```

- On R4 define a loopback4 with address 2040::4/64 and do a redistribute connected under ipv6 router ospf. Check the database of R1 and R2 with show ipv6 ospf database external. Do you see the loopback address?
- On R1 and R2 under ipv6 router ospf configure “area 10 stub”. Do you see the external routes now? Why not?

Lab 5: Routing with BGP

Lab 5: Task Summary

- Enable debugging for BGP

```
#debugs bgp ipv6 unicast
```
- Configure BGP AS number and router-id on all four routers using Table 2
- Activate iBGP peering between R1 & R2 and R3 & R4 using the FastEthernet 1/0 global IPv6 address. Announce the global prefix (F0/0) and unique-local prefix (F1/0).
- Activate eBGP peering between R2 & R3 using their global IPv6 addresses
- On R2 & R3, filter the unique-local prefix (fc00::/10) so that you do not receive them from the peers
- Use show commands to view the BGP configuration

```
#show bgp ipv6 unicast summary
```

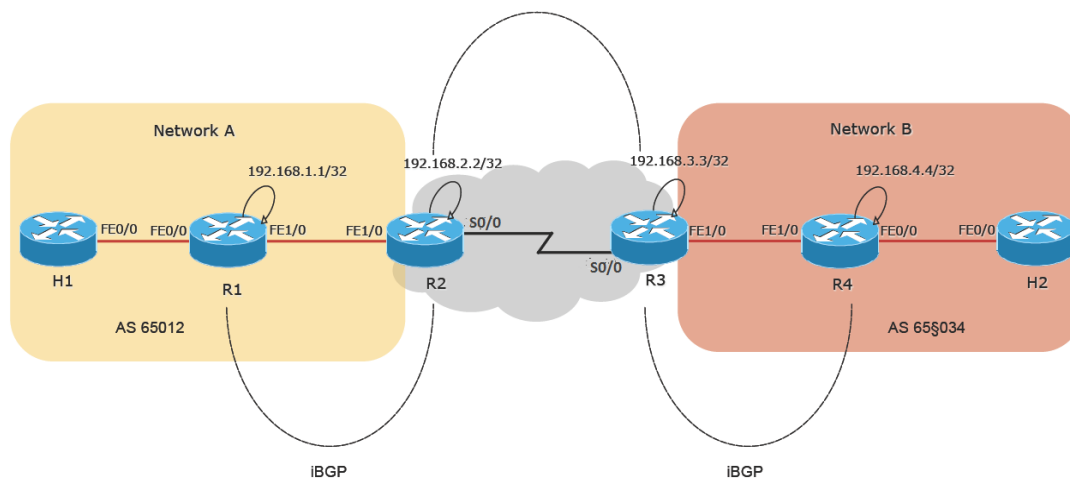
```
#show bgp ipv6 unicast neighbors <IP address> advertised-routes
```

```
#show bgp ipv6 unicast neighbors <IP address> routes
```

```
#show ipv6 route bgp
```

- Use show bgp ipv6 unicast to see the routes in the BGP table

BGP Configuration Example



Routing with BGP

Task-1: Configuring BGP

- Refer to **Table 2** for the router address and autonomous system (AS) number.
- Enable the debugging of BGP

```
#debug bgp ipv6
```

- Define your router as a BGP router with your AS number

```
(config)#router bgp <AS number>
```

- Because IPv4 has not been configured yet and BGP protocol uses the IPv4 address as an identifier, a specific command to identify the router-id is needed. Use **Table 2** to find the router-id. Then configure the router BGP router-id.

```
(config-router)#bgp router-id <your router-id>
```

- Deactivate the IPv4 default peering

```
(config-router)#no bgp default ipv4-unicast
```

Router Number	AS Number	Router ID
R1	65012	192.168.60.1
R2	65012	192.168.60.2
R3	65034	192.168.60.3
R4	65034	192.168.60.4

Table 2: Assigned AS Number and Router ID

- Activate iBGP peering between R1 & R2 and R3 & R4 using the FastEthernet 1/0 global IPv6 address. Announce your global prefix and your unique-local prefix.

```
(config-router)#neighbor <peer's F1/0 global IPv6 address > remote-as <AS number>
```

```
(config-router)#neighbor <peer's F1/0 global IPv6 address > update-source F1/0
```

```
(config-router)#address-family ipv6
```

```
(config-router-af)#neighbor <peer's F1/0 global IPv6 address> activate
```

```
(config-router-af)#network <F0/0 global network prefix>/64
```

```
(config-router-af)#network <F1/0 unique local prefix>/64
```

```
(config-router-af)#exit
```

- Look at the BGP routing table to determine if you received BGP routes from your neighbor

```
#show bgp ipv6 unicast summary
```

```
#show bgp ipv6 unicast neighbors <IP address> advertised-routes
```

```
#show bgp ipv6 unicast neighbors <IP address> routes
```

```
#show ipv6 route bgp
```

- Activate **eBGP** peering between R2 & R3 using their global IPv6 addresses.

```
(config-router)#neighbor <peer's global IPv6 address> remote-as <AS number>
```

```
(config-router)#address-family ipv6
```

```
(config-router-af)#neighbor <peer's global IPv6 address> activate
```

```
(config-router-af)#end
```

- Look at the BGP routing table to determine if you received BGP routes from your neighbor

```
#show bgp ipv6 unicast summary
```

```
#show bgp ipv6 unicast neighbors <IP address> advertised-routes
```

```
#show bgp ipv6 unicast neighbors <IP address> routes
```

```
#show ipv6 route bgp
```

Task-2: Filtering BGP Routes

- On R2 & R3, filter the unique-local prefix (fc00::/10) so that you do not receive them from the peers

```
(config)#ipv6 prefix-list lab5 deny fc00::/10 le 128
```

```
(config)#ipv6 prefix-list lab5 permit :/0 le 64
```

```
(config)#router bgp <your AS number>
```

```
(config-router)#address-family ipv6
```

```
(config-router-af)#neighbor <peer's global IPv6 address> prefix-list lab5 in
```

```
(config-router-af)#exit
```

- On R1 & R4, verify that you do not receive any unique-local routes via BGP from the remote peer. Only the global IPv6 prefixes should be received.

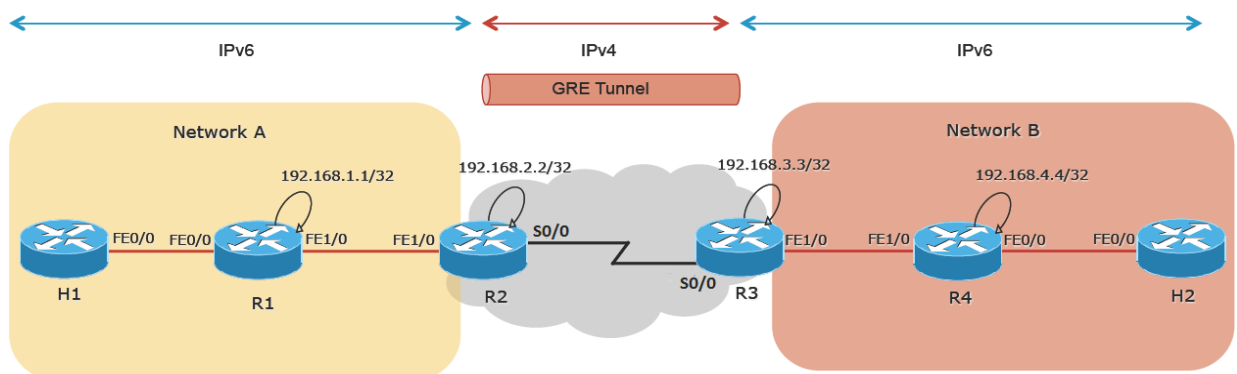

```
#clear bgp ipv6 unicast <peer AS number> in
#show bgp ipv6 unicast
#show bgp ipv6 unicast neighbors <IP address> advertised-routes
#show bgp ipv6 unicast neighbors <IP address> routes
#show ipv6 route bgp
```

Lab 6: Manual Tunneling in IPv6

Lab 6: Task Summary

- Disable IPv6 routing protocols on all router
- Remove the IPv6 addresses on Serial2/0 interface of R2 & R3
- Configure IPv4 address on Serial2/0 interface of R2 & R3, use 192.168.30.<router xx>/24
- Configure tunnel interfaces on R2 & R3 and configure them for manual tunneling
- Enable RIPng on both tunnel endpoints and other relevant interfaces on all four routers
- Enable EIGRPv6 over the tunnel
- Enable mutual redistribution between EIGRPv6 and RIPng on R2 & R3
- Use show commands to view the IPv6 routing table and tunnel interface statistics
- Use ping to verify IPv6 connectivity between H1 & H2

Manual Tunnel Configuration Example



Using Tunnels (Manual)

Task-1: Configuring the Tunnel

- First disable both OSPFv3 and BGP on all routers
- Remove the IPv6 address on Serial2/0 interface of R2 & R3

```
(config)#no ipv6 router ospf 1
(config)#no router bgp <your AS>
(config)#interface Serial2/0
(config-if)#no ipv6 address
(config-if)#no ipv6 enable
```
- Configure IPv4 address on Serial2/0 interface of R2 & R3

```
(config)#interface Serial2/0
(config-if)#ip address 192.168.30.<router #> 255.255.255.0
```
- Configure a tunnel interface using tunnel0

```
(config)#interface tunnel 0
```
- Use an IPv6 unnumbered address from the FastEthernet1/0 interface

```
(config-if)#ipv6 unnumbered FastEthernet1/0
```
- Identify the source and destination address of the tunnel, followed by the tunnel mode

```
(config-if)#tunnel source Serial2/0
(config-if)#tunnel destination <peer's IPv4 address>
(config-if)#tunnel mode gre ip
```
- Enable RIPng on all four routers

```
(config)#ipv6 router rip lab
(config-rtr)#redistribute connected
```
- Enable RIPng on FastEthernet 0/0 and FastEthernet 1/0 interfaces on R1 & R4, and FastEthernet 1/0 interfaces on R2 & R3

```
(config-if)#ipv6 rip lab enable
```

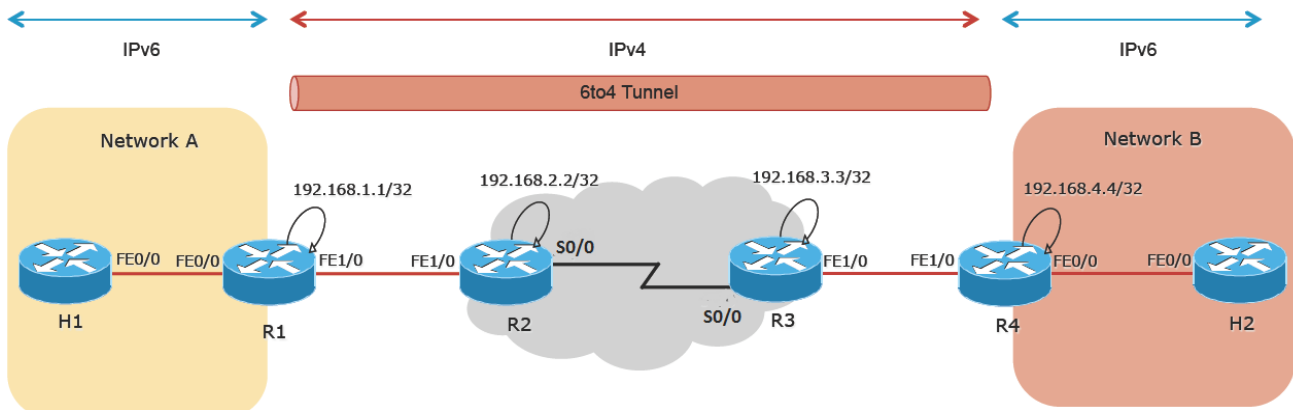
- Configure EIGRPv6 AS 1 on the routers R2 & R3 with a Router-ID
 - (config)#ipv6 router eigrp 1
 - (config-rtr)#router-id 192.168.30.xx (**where xx is your router #**)
- Enable EIGRPv6 on tunnel interfaces on R2 and R3
 - (config)#interface tunnel 0
 - (config-if)#ipv6 eigrp 1
- Enable mutual redistribution on R2 and R3 between RIPng and EIGRPv6
 - (config)#ipv6 router eigrp 1
 - (config)# no shutdown
 - (config)#redistribute rip lab metric 10000 10 255 1 1500
 - (config)#ipv6 router rip lab
 - (config)#redistribute eigrp 1 metric 5
- Verify that RIPng updates are carried over the tunnel
 - #show ipv6 route
- Look at Tunnel 0 debugs & statistics
 - #debug tunnel
 - #show interface tunnel 0 accounting
- Verify connectivity between R1 & R4 using the ping command
 - #ping <**global IPv6 address of FastEthernet0/0 of peer**>
- Verify connectivity between H1 & H2 using the ping command
 - #ping <**global IPv6 address of peer Host**>

Lab 7: Automatic Tunneling in IPv6

Lab 7: Task Summary

- Disable tunnel interfaces on R2 & R3
- Remove all IPv6 addresses on all four routers along with the IPv6 prefix advertisements on R1 & R4
- Disable IPv6 on R2 & R3
- Configure IPv4 addresses on all four routers using the addresses provided in Table 3
- Enable IPv4 routing on all routers and verify IP connectivity between R1 and R4 FastEthernet 1/0 interfaces
- Configure a 6to4 prefix on FastEthernet0/0 interface of R1 & R4 using Table 4 and enable RA for this prefix
- Configure a new tunnel interfaces on R1 & R4 and enable 6to4 tunneling
- Use show commands to view the IPv6 routing table and tunnel interface statistics
- Use ping to verify IPv6 connectivity between H1 & H2

Automatic Tunnel Configuration Example



Using Tunnels (6to4)

Task-1: Configuring a 6to4 Tunnel

- To clean up, disable the tunnel0 interface on R2 & R3

```
(config)#no interface tunnel 0
```
- Erase the global and unique-local addresses in addition to the prefix advertisements on the FastEthernet0/0 interface of R1 & R4

```
(config)#interface FastEthernet0/0
(config-if)#no ipv6 address
(config-if)#no ipv6 nd prefix 2001:DB8:1234:<router #>::/64 60 0
(config-if)#no ipv6 nd prefix 2003:DB8:ffff:<router #>::/64 300 300
(config-if)#no ipv6 nd prefix fc00:0:0:<router #>::/64 300 300
```
- Erase the global and unique-local addresses on FastEthernet 1/0 of all routers and disable IPv6

```
(config)#interface FastEthernet1/0
(config-if)#no ipv6 address
(config-if)#no ipv6 enable
```

- Disable IPv6 on R2 & R3

```
(config)#no ipv6 unicast-routing
```

- Configure IPv4 addresses on R2 & R3 (**refer to Table 3**)

```
(config)#interface FastEthernet1/0
```

```
(config-if)#ip address <address from Table 3>
```

```
(config-if)# interface Serial 2/0
```

```
(config-if)#ip address <address from Table 3>
```

- Configure IPv4 address on FastEthernet 1/0 of R1 & R4

```
(config)#interface FastEthernet1/0
```

```
(config-if)#ip address <address from Table 3>
```

- Enable IPv4 routing on all routers and verify IP connectivity between R1 and R4 FastEthernet 1/0 interfaces

RouterNumber	FastEthernet1/0	Serial2/0
R1	192.168.12.1	
R2	192.168.12.2	192.168.23.2
R3	192.168.34.3	192.168.23.3
R4	192.168.34.4	

Table 3: Assigned IPv4 Addresses

- Configure a 6to4 prefix on FastEthernet0/0 interface of R1 & R4 using **Table 4**

```
(config-if)#ipv6 address 2002:<ipv4 encoded in hex>::/64 eui-64
```

- Configure the 6to4 tunnel on tunnel1 interface using IPv6 unnumbered command to FastEthernet0/0. Add a route for 2002::/16 pointing to that tunnel interface

```
(config)#interface tunnel 1
```

```
(config-if)#ipv6 unnumbered FastEthernet0/0
```

```
(config-if)#tunnel source FastEthernet1/0
```

```
(config-if)#tunnel mode ipv6ip 6to4
```

```
(config)#ipv6 route 2002::/16 tunnel1
```

- Enable RAs on E0/0 by using the ND command with the 6to4 subnet prefix assigned to your LAN. Use 5 minutes (300 seconds) for the lifetime.

```
(config-if)#ipv6 nd prefix 2002:<ipv4 encoded in hex>::/64 300 300
```

Router Number	IPv4Address	Address in Hex	6to4Address
R1	192.168.12.1	C0A8:0C01	2002: C0A8:0C01 ::/64
R4	192.168.34.4	C0A8:2204	2002: C0A8:2204 ::/64

Table 4 : 6to4 Addresses for FastEthernet 0/0

- Verify that your Host now has an IPv6 address that was automatically configured with the 6to4 subnet prefix

```
#show ipv6 interface FastEthernet0/0
```

- Look at Tunnel 1 debugs & statistics

```
#debug tunnel
```

```
#show interface tunnel 1 accounting
```

- Verify IPv6 connectivity using the ping command on the Hosts. Use the 6to4 IPv6 address of the remote host as destination address of the ping command

```
#ping <address of remote host>
```
