

IPv6 Design and Implementation

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Agenda:

- Dual Stacking Design topology
- Installing IPv6 on Windows XP
- Configuring IPv6 on Cisco 3800 series router
- Configuring IPv6 on Cisco 1700 series router
- Defining static routes on 1700 & 3800 series router
- Checking static route connectivity
- Running RIPng on routers & checking connectivity
- Running OSPFv3 on routers & checking connectivity
- Showing Routing tables

IPv6 Dual Stacking Design

Core Layer:

Cisco 3800

S 0/2/0 13.13.13.1/8
S 0/2/1 14.14.14.1/8
S 0/2/0 19::10/64
S 0/2/1 14::10/64

Distribution Layer:

Cisco 1700

S 0 13.13.13.10/8
S 0 14.14.14.10/8
S 0 19::10/64
S 0 14::10/64

Cisco 1700

Fa 0 10.10.10.1/8
Fa 0 19::1/64

Fa 0 20.20.20.1/8
Fa 0 20::1/64

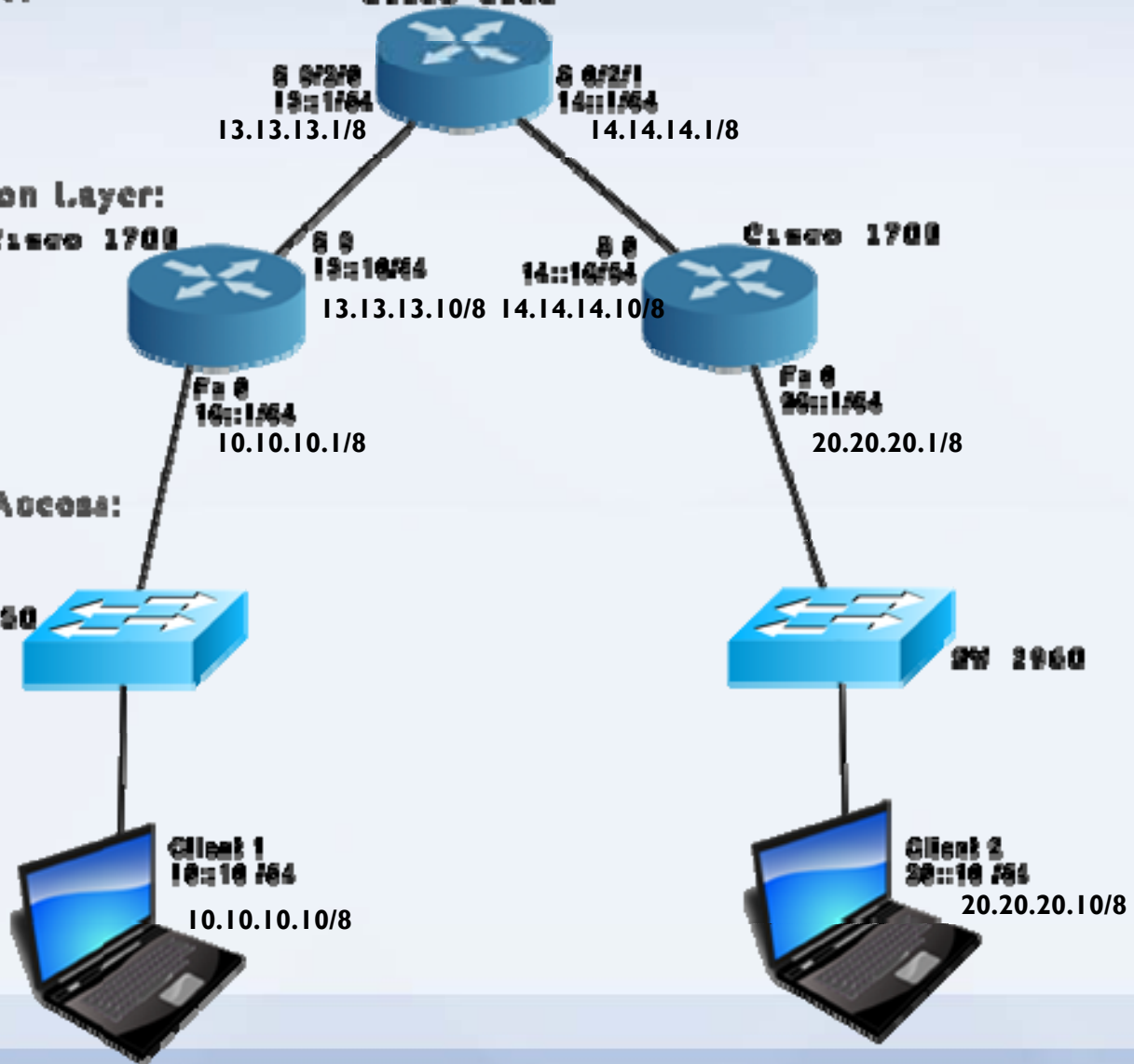
Network Access:

SW 2950

SW 2950

Client 1
10.10.10.10/8
10::10/64

Client 2
20.20.20.10/8
20::10/64



Installation of IPv6 on XP & Linux

- Install IPv6 Protocol on Window XP
 - C:\>IPv6 install
 - C:\>netsh
 - Netsh> interface
 - Netsh interface>ipv6
 - Netsh interface ipv6>
 - Netsh interface ipv6> show interfaces
 - Netsh interface ipv6> add address
- For Linux
 - Ifconfig eth2 inet6 add 2003::1/64
 - ifconfig

Configuration of IPv6 on Cisco 3800 series router:

- Enable IPv6 routing
 - 3800(config)#ipv6 unicast-routing
- Enable IPv6 on Interface and assign IPv6 address
 - 3800(config-if)#IPv6 enable
 - 3800(config-if)#IPv6 address 10::10/64
 - 3800(config-if)#IPv6 address 13::1/64
- Same configuration on 2nd side

Configuration of IPv6 on Cisco I700 series router:

- Enable IPv6 routing
 - I700(config)#ipv6 unicast-routing
- Enable IPv6 on Interface and assign IPv6 address
 - I700(config-if)#IPv6 enable
 - I700(config-if)#IPv6 address 13::2/64
 - I700(config-if)#IPv6 address 20::10/64

IPv6 routing through Static Routes

- 3800(config)#IPv6 route 20::/64 13::2
- 1700(config)#IPv6 route 10::/64 13::1

- Testing Connectivity of IPv6 Static routes:

- Ping test , trace-route test.
- Setting up IPv6 + IPv4 FTP server
- File transfer using both IPv6 and IPv4 simultaneously

Routing through RIP in IPv6

- 3800(config)#IPv6 router rip test
- 3800(config-if)#IPv6 rip test enable
- I700(config)#IPv6 router rip test
- I700(config-if)#IPv6 rip test enable

-Testing Connectivity of IPv6 RIP routes:

- Ping test , trace-route test.
- Setting up IPv6 + IPv4 FTP server
- File transfer using both IPv6 and IPv4 simultaneously

Routing through OSPF in IPv6

- 3800(config)#IPv6 router ospf 64
- 3800(config-if)#IPv6 ospf 64 area 0

-Testing Connectivity of IPv6 OSPF routes:

- Ping test , trace-route test.
- Setting up IPv6 + IPv4 FTP server
- File transfer using both IPv6 and IPv4 simultaneously

IPv6 routing tables

- 3800#Show ipv6 route
- I700#Show ipv6 route

Thank you !