رابط دورة المدخل الى شبكات سيسكو CCNA 200-301 على موقع يودمي , هذه الدورة من إعداد المدرب عبد الرحمن العلوش

File   Edit   View   Control   Node   Annotate   Tools   Help

IPv6 Connected and Local Routes

2001:2ADC:B345:**AAAA**::/64

2001:2ADC:B345:**BBBB**::/64

VPCS

PC1   SW1   R1   Fa0/1   SW2   PC2
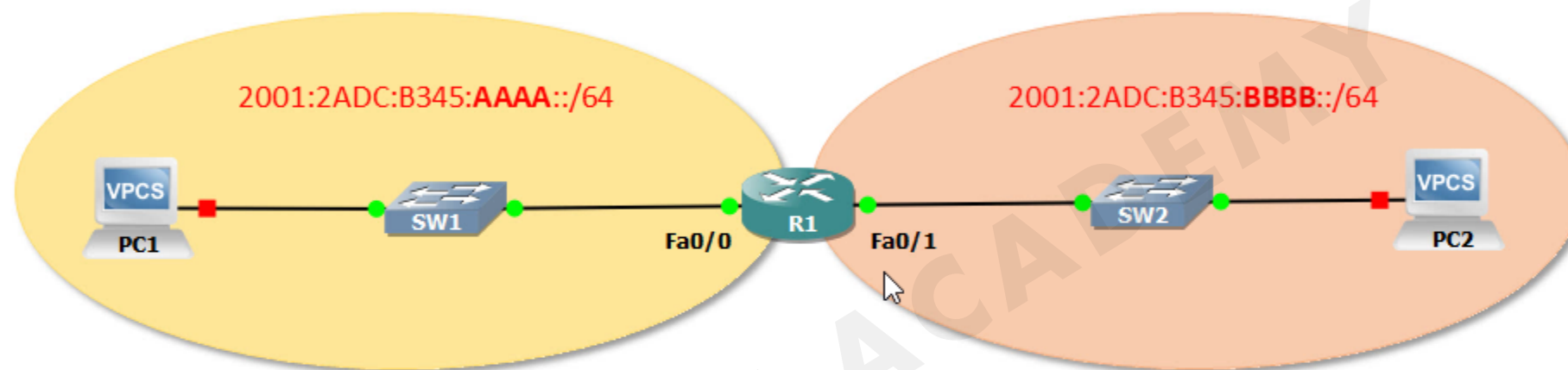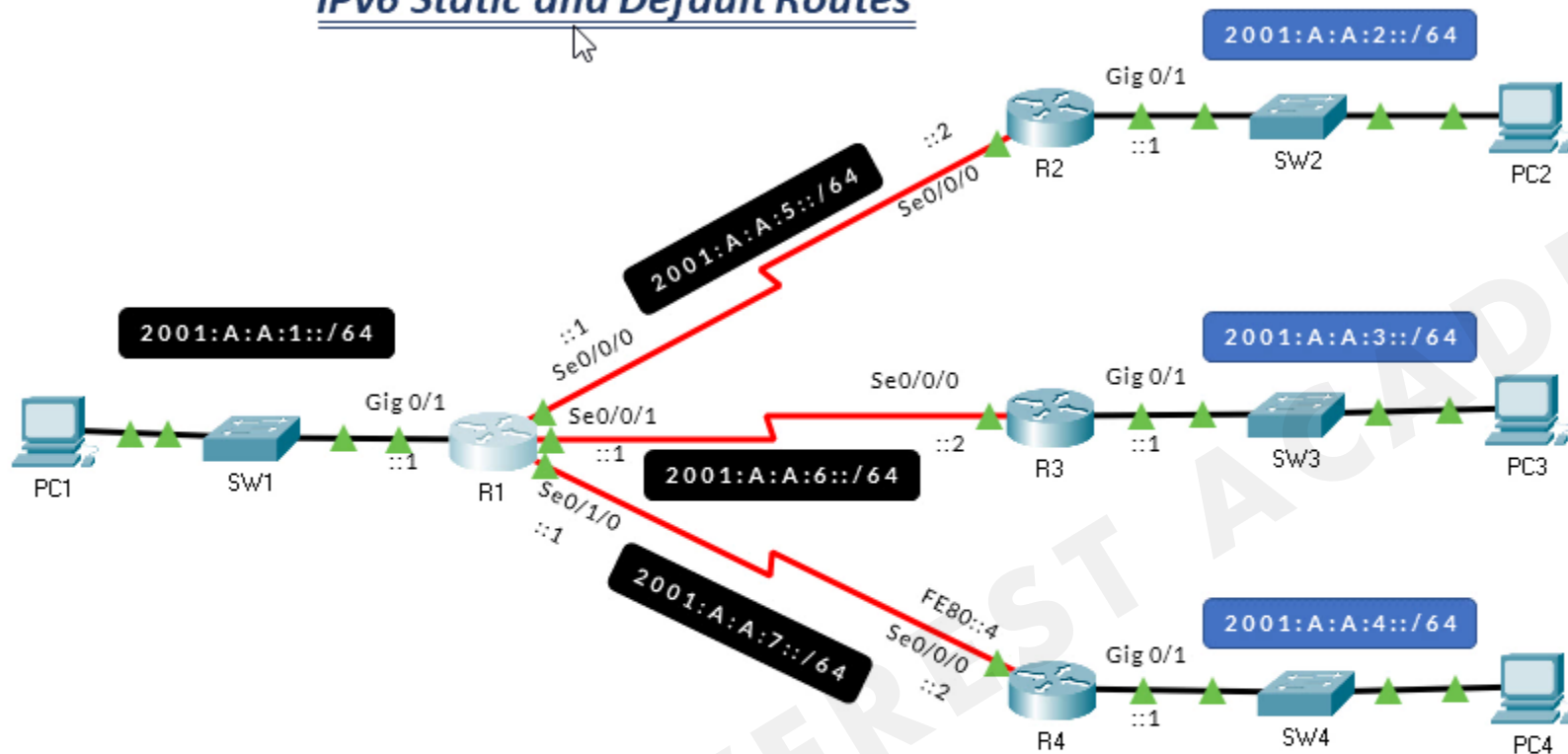   Fa0/0

```
R1> enable
R1# configure terminal
R1(config)# ipv6 unicast-routing
R1(config)# interface fastethernet 0/0
R1(config-if)# ipv6 address 2001:2ADC:B345:AAAA:1111:1111:1111:1111/64
R1(config-if)# no shutdown
R1(config-if)# exit
R1(config)#
R1(config)# interface fastethernet 0/1
R1(config-if)# ipv6 address 2001:2ADC:B345:BBBB:1111:1111:1111:1111/64
R1(config-if)# no shutdown
R1(config-if)# end
```

```
R1# show ipv6 route
IPv6 Routing Table - default - 5 entries
Codes: C - Connected, L - Local, S - Static, U - Per-user Static route
       B - BGP, HA - Home Agent, MR - Mobile Router, R - RIP
       H - NHRP, I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea
       IS - ISIS summary, D - EIGRP, EX - EIGRP external, NM - NEMO
       ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
       O - OSPF Intra, OI - OSPF Inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2, l - LISP
C   2001:2ADC:B345:AAAA::/64  [0/0]  via FastEthernet0/0, directly connected
L   2001:2ADC:B345:AAAA:1111:1111:1111:1111/128  [0/0] via FastEthernet0/0, receive
C   2001:2ADC:B345:BBBB::/64  [0/0]  via FastEthernet0/1, directly connected
L   2001:2ADC:B345:BBBB:1111:1111:1111:1111/128  [0/0] via FastEthernet0/1, receive
L   FF00::/8 [0/0]
    via Null0, receive
```

IPv6 Static and Default Routes

2001:A:A:2::/64

2001:A:A:5::/64

2001:A:A:1::/64

2001:A:A:3::/64

2001:A:A:6::/64

2001:A:A:7::/64

2001:A:A:4::/64

Gig 0/1
::2
Se0/0/0
R2
SW2
PC2

::1
Se0/0/0

PC1
SW1
Gig 0/1
::1
R1

Se0/0/1
::1
Se0/0/0
::2
Gig 0/1
::1
R3
SW3
PC3

Se0/1/0
::1

FE80::4
Se0/0/0
::2
Gig 0/1
::1
R4
SW4
PC4

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Routing Information Protocol next generation (RIPng)

| Features	RIPng
➢ Transmission	Multicast (FF02::9)
➢ UDP Port	521
➢ Update Interval	30 Seconds

Routing Information Protocol next generation (RIPng)

Features	RIPv1	RIPv2	RIPng
➢ Protocol Type	Distance Vector	Distance Vector	Distance Vector
➢ Transmission	Broadcast (255.255.255.255)	Multicast (224.0.0.9)	**Multicast (FF02::9)**
➢ Routing Protocol	Classful	Classless	Classless
➢ Support VLSM	No	Yes	Yes
➢ Metric	Hop Count (15)	Hop Count (15)	Hop Count (15)
➢ Administrative Distance	120	120	120
➢ UDP Port	520	520	**521**
➢ Authentication	No	Yes (Plain Text and MD5)	No (IPv6 IPSEC)
➢ Update Interval	30 Seconds	30 Seconds	30 Seconds
➢ Triggered Update	Yes	Yes	Yes

Routing Information Protocol next generation (RIPng)
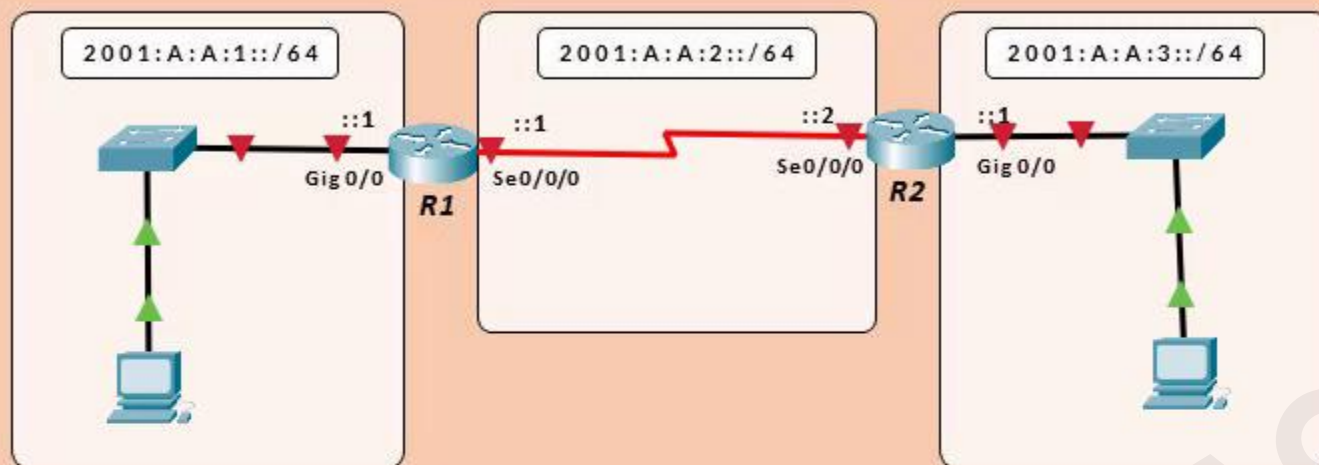

```
R1> enable
R1# conf t
R1(config)# ipv6 router rip process1
R1(config-rtr)# exit
R1(config)# interface GigabitEthernet 0/0
R1(config-if)# ipv6 rip process1 enable
R1(config-if)# exit
R1(config)# interface Serial 0/0/0
R1(config-if)# ipv6 rip process1 enable
R1(config-if)# end
R1#
```

```
R1> enable
R1# conf t
R1(config)# ipv6 unicast-routing
R1(config)# interface GigabitEthernet 0/0
R1(config-if)# ipv6 address 2001:A:A:1::1/64
R1(config-if)# no shutdown
R1(config-if)# exit
R1(config)# interface Serial 0/0/0
R1(config-if)# ipv6 address 2001:A:A:2::1/64
R1(config-if)# no shutdown
R1(config)# end
R1#
```

```
R2> enable
R2# conf t
R2(config)# ipv6 unicast-routing
R2(config)# interface GigabitEthernet 0/0
R2(config-if)# ipv6 address 2001:A:A:3::1/64
R2(config-if)# no shutdown
R2(config-if)# exit
R2(config)# interface Serial 0/0/0
R2(config-if)# ipv6 address 2001:A:A:2::2/64
R2(config-if)# no shutdown
R2(config-if)# end
R2#
```

```
R2> enable
R2# conf t
R2(config)# ipv6 router rip process1
R2(config-rtr)# exit
R2(config)# interface GigabitEthernet 0/0
R2(config-if)# ipv6 rip process1 enable
R2(config-if)# exit
R2(config)# interface Serial 0/0/0
R2(config-if)# ipv6 rip process1 enable
R2(config-if)# end
R2#
```
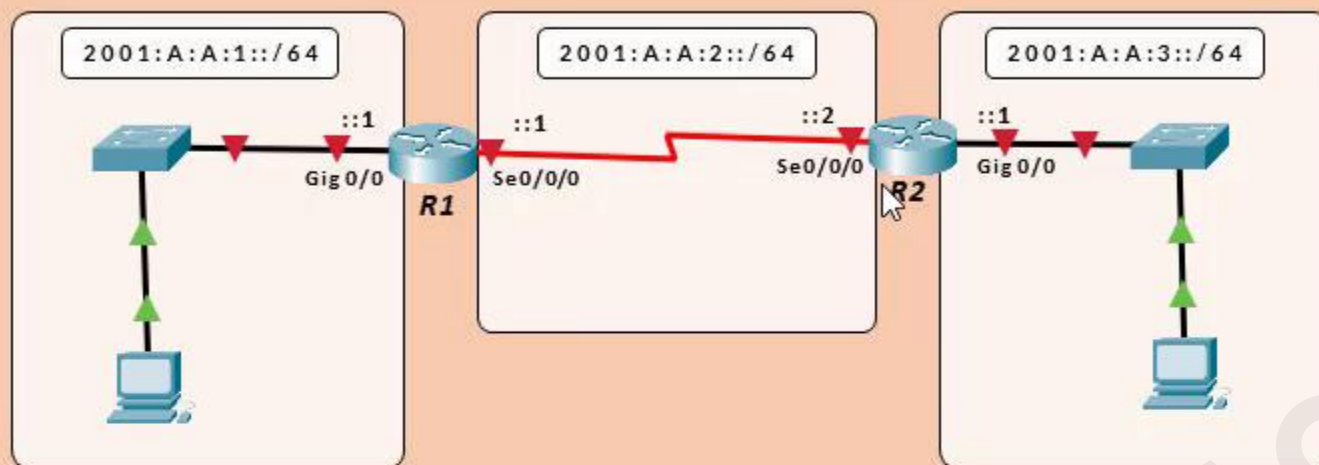
Open Shortest Path First version 3 (OSPFv3)

Features	OSPFv2	OSPFv3
➢ Protocol Type	Link-state	Link-state
➢ Transmission	Multicast (224.0.0.5, 224.0.0.6)	Multicast (FF02::5 , FF02::6)
➢ Source Address	IPv4 address	IPv6 link-local address
➢ Metric	Cost (Based on Bandwidth)	Cost (Based on Bandwidth)
➢ Administrative Distance (AD)	110	110
➢ Authentication	Yes (Plain Text, MD5)	No (IPv6 IPsec)
➢ Multiple subnets on a single link	No	Yes

Open Shortest Path First version 3 (OSPFv3)

```
2001:A:A:1::/64          2001:A:A:2::/64          2001:A:A:3::/64
```

::1   Gig 0/0   R1   Se0/0/0   ::1   ::2   Se0/0/0   R2   Gig 0/0   ::1

```
R1> enable
R1# conf t
R1(config)# ipv6 router ospf 1
R1(config-rtr)# router-id 1.1.1.1
R1(config-rtr)# exit
R1(config)# interface GigabitEthernet 0/0
R1(config-if)# ipv6 ospf 1 area 0
R1(config-if)# exit
R1(config)# interface Serial 0/0/0
R1(config-if)# ipv6 ospf 1 area 0
R1(config-if)# end
R1#
```

```
R1> enable
R1# conf t
R1(config)# ipv6 unicast-routing
R1(config)# interface GigabitEthernet 0/0
R1(config-if)# ipv6 address 2001:A:A:1::1/64
R1(config-if)# no shutdown
R1(config-if)# exit
R1(config)# interface Serial 0/0/0
R1(config-if)# ipv6 address 2001:A:A:2::1/64
R1(config-if)# no shutdown
R1(config)# end
R1#
```

```
R2> enable
R2# conf t
R2(config)# ipv6 unicast-routing
R2(config)# interface GigabitEthernet 0/0
R2(config-if)# ipv6 address 2001:A:A:3::1/64
R2(config-if)# no shutdown
R2(config-if)# exit
R2(config)# interface Serial 0/0/0
R2(config-if)# ipv6 address 2001:A:A:2::2/64
R2(config-if)# no shutdown
R2(config-if)# end
R2#
```

```
R2> enable
R2# conf t
R2(config)# ipv6 router ospf 1
R2(config-rtr)# router-id 2.2.2.2
R2(config-rtr)# exit
R2(config)# interface GigabitEthernet 0/0
R2(config-if)# ipv6 ospf 1 area 0
R2(config-if)# exit
R2(config)# interface Serial 0/0/0
R2(config-if)# ipv6 ospf 1 area 0
R2(config-if)# end
R2#
```

Time: 00:01:36   Realtime   Simulation