

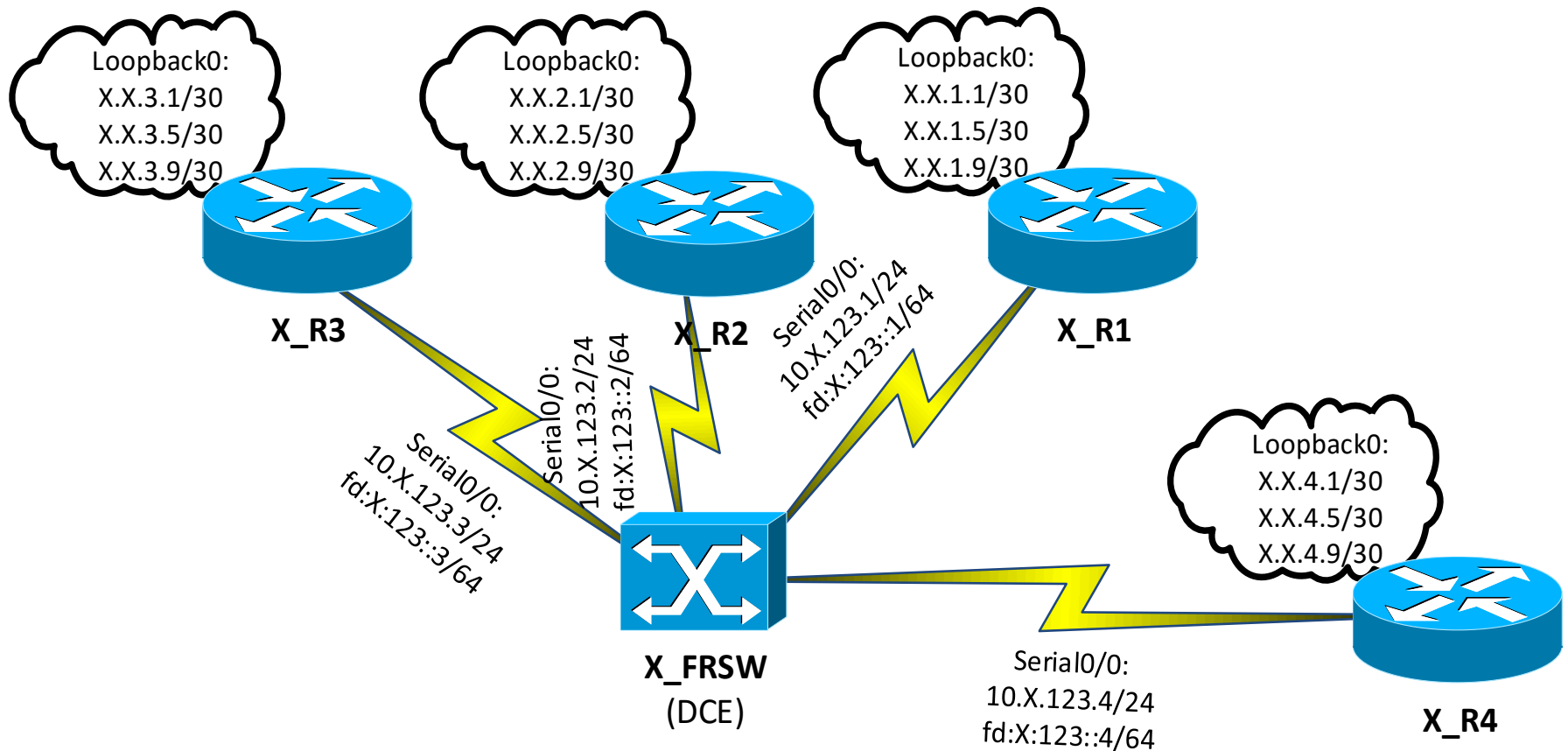


Laboratories OSPF



ROUTE Module 3

Lab 3.1: Frame-Relay Switch ①



Lab 3.1: Frame-Relay Switch ②

- R1-R4, FRSW:

```
(conf)# inte ser 0/X
```

```
encapsulation frame-relay
```

- FRSW:

```
(conf)# frame-relay switching
```

```
(conf-if)#
```

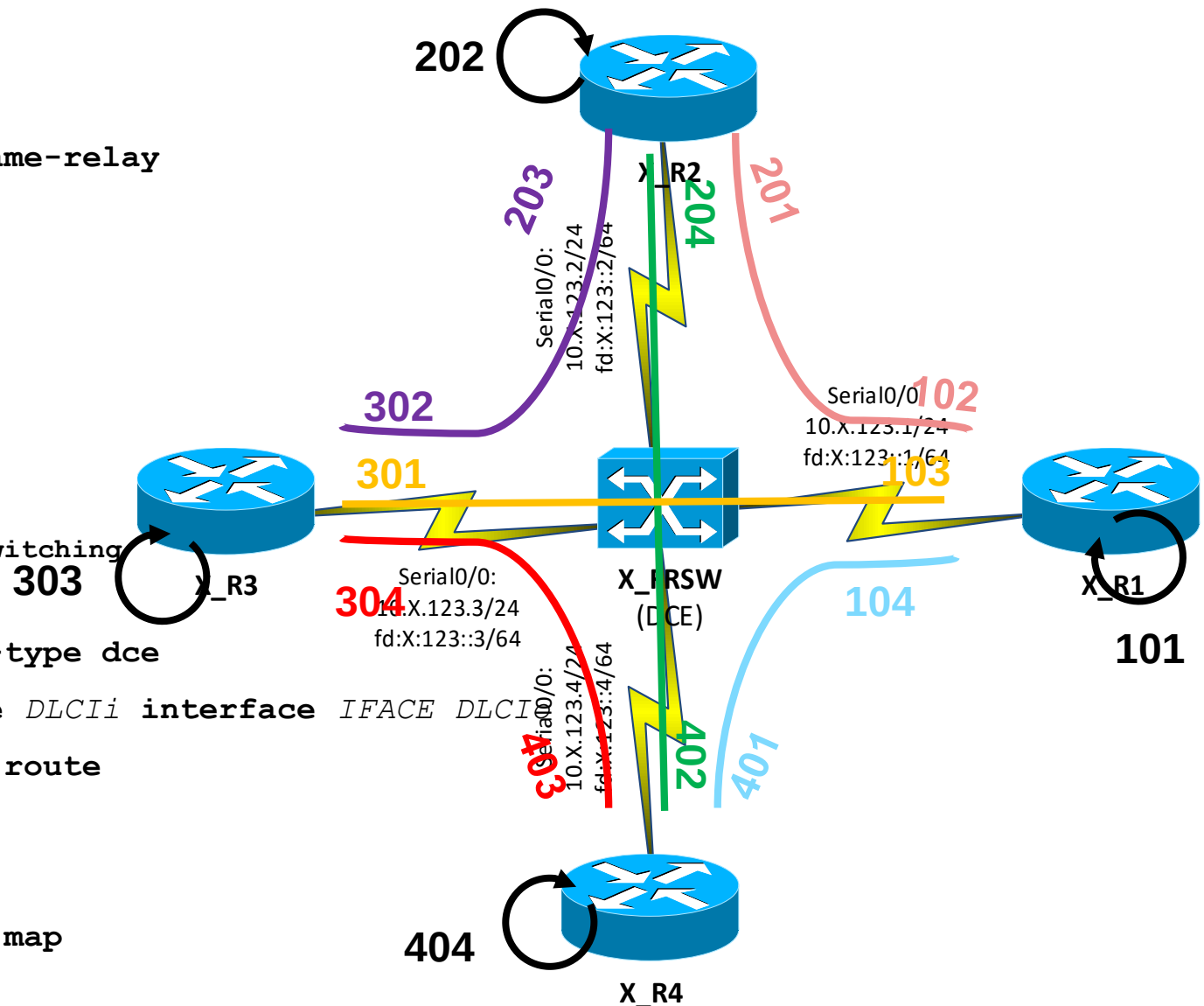
```
frame-relay intf-type dce
```

```
frame-relay route DLCIi interface IFACE DLCI
```

```
# show frame-relay route
```

- R1, R2, R3, R4:

```
# show frame-relay map
```



Lab 3.2: Basic Setup

OSPF area X

R5:

```
(conf)# ip routing
(conf)# ipv6 unicast-routing
(conf-if)# no switchport
```

R1-R4:

```
(conf)# ipv6 unicast-routing
(conf)# router ospf X
(conf)# ipv6 router ospf X
```

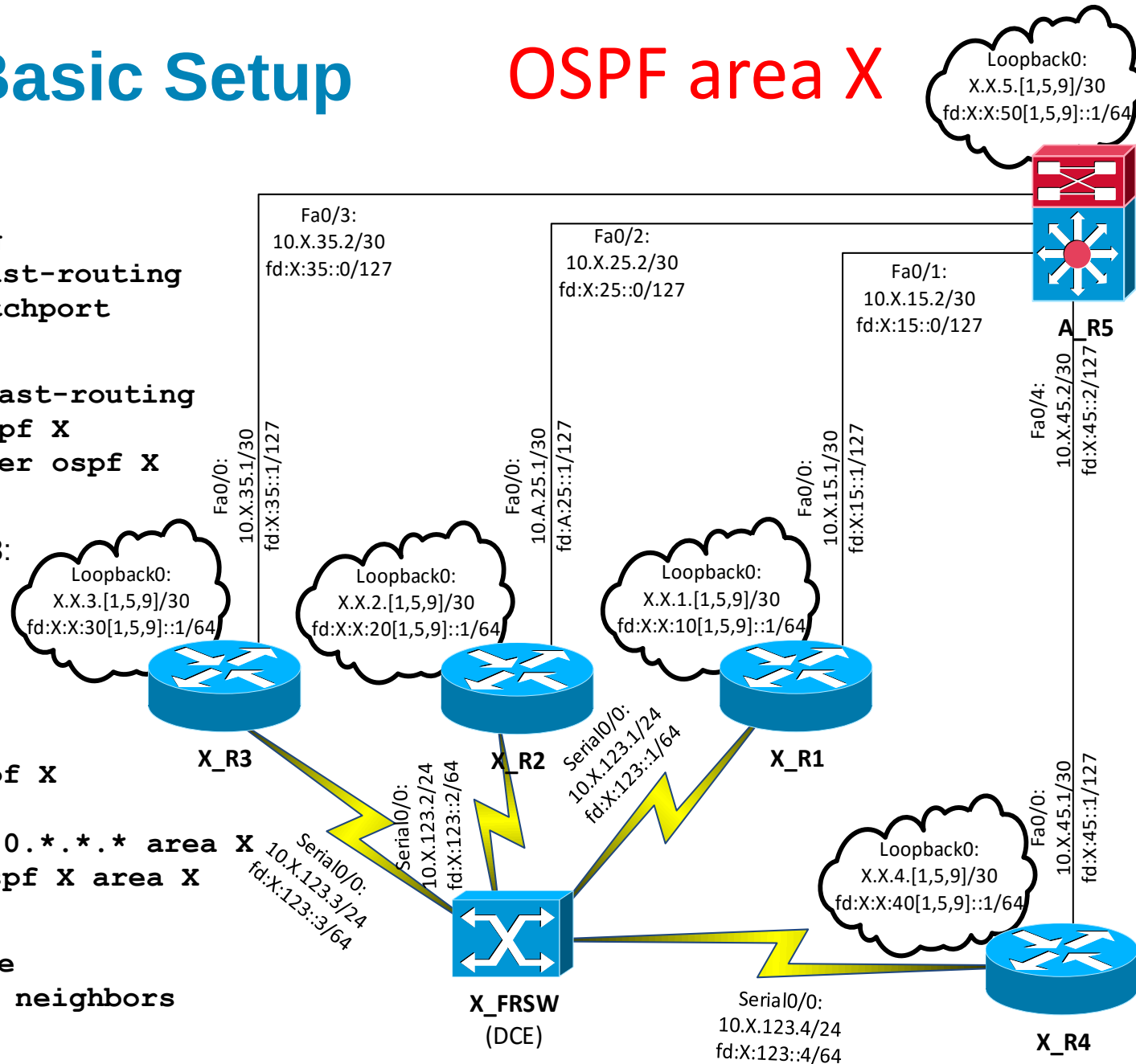
All Loopbacks except R3:

```
(conf-if)#
ip   ospf X area X
ipv6 ospf X area X
```

Serial+Ethernet R1-R5 :

```
(conf)# router ospf X
(conf-router)#
network 10.X.*.* 0.*.*.* area X
(conf-if)# ipv6 ospf X area X
```

```
# show ip[v6] route
# show ip[v6] ospf neighbors
```



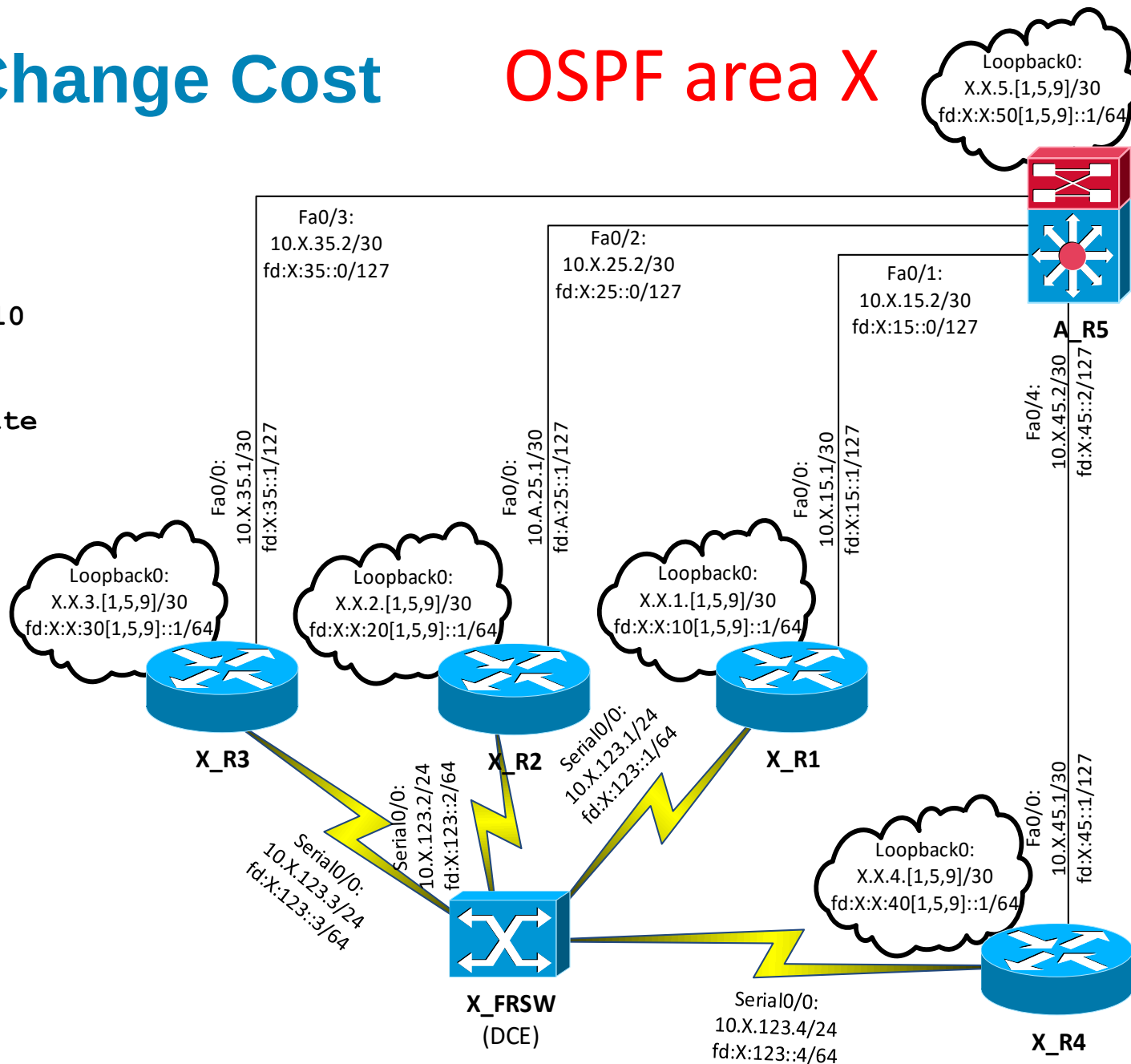
Lab 3.3: Change Cost

OSPF area X

- Interface R1-R5:

```
(conf-if) #  
ip ospf cost 10  
ipv6 ospf cost 10
```

```
# show ip[v6] route
```

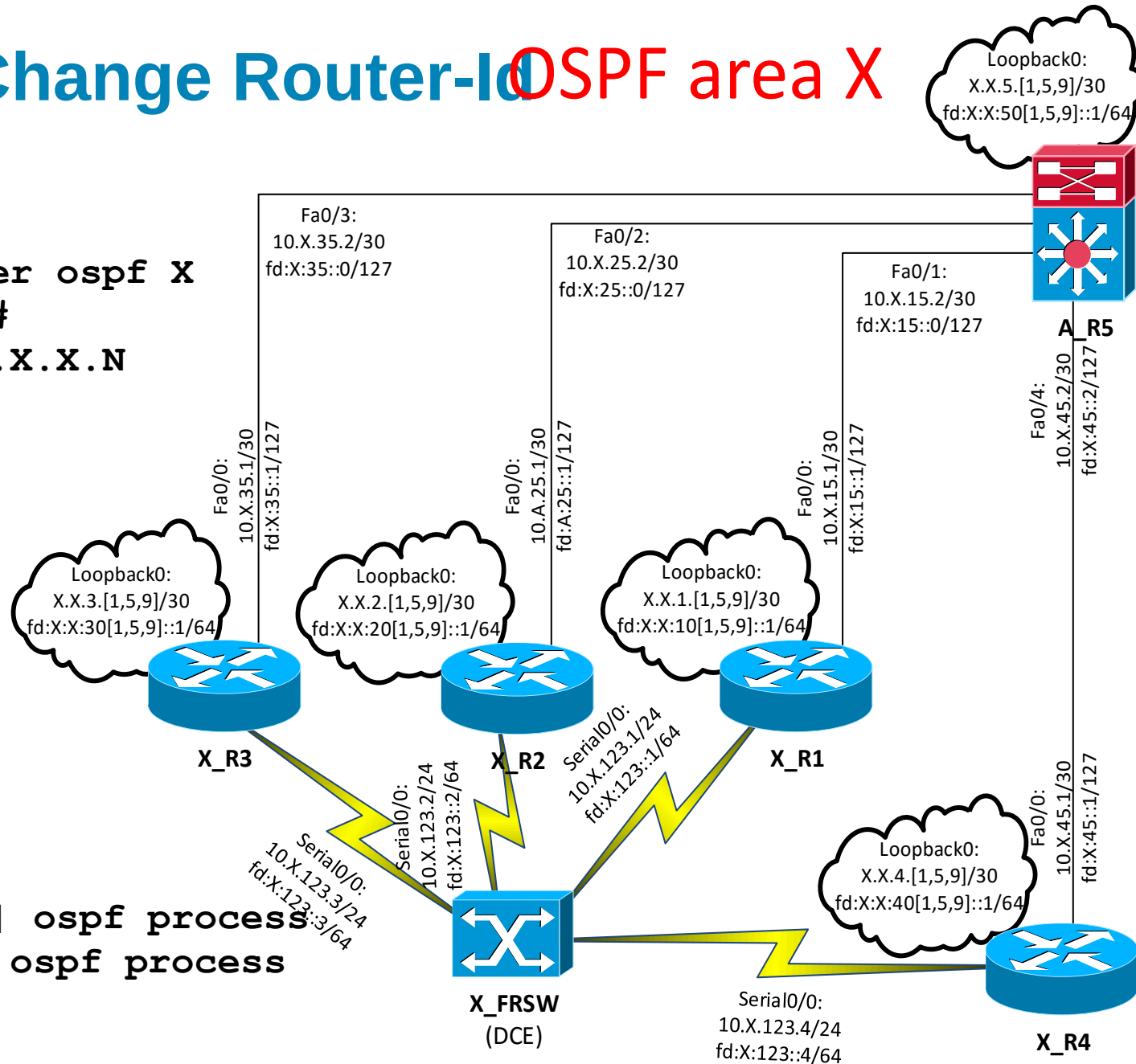


Lab 3.4: Change Router-ID OSPF area X

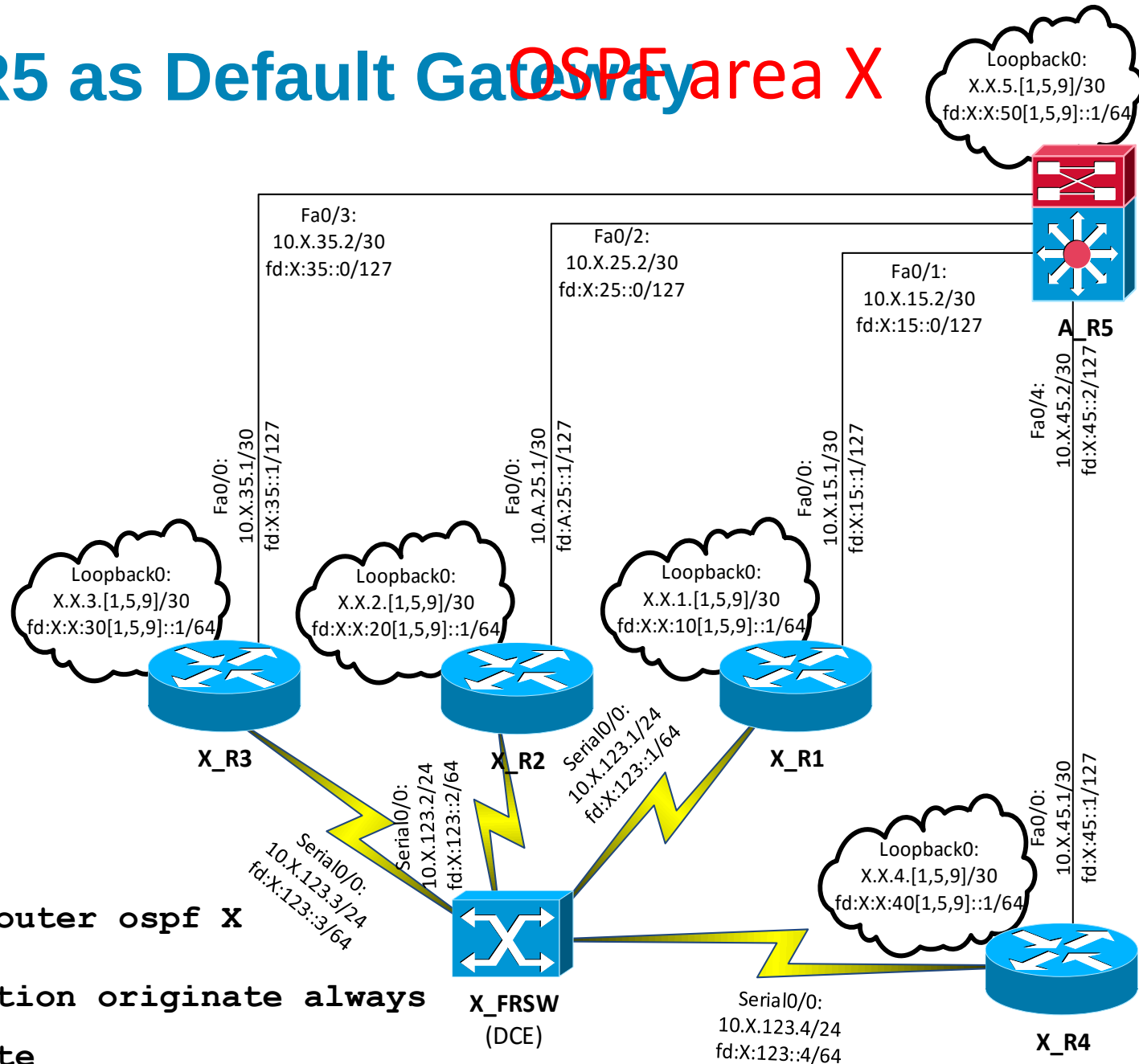
- R1-R5:

```
(conf) #  
[ipv6] router ospf X  
(conf-router) #  
router-id X.X.X.N
```

```
# clear ip[v6] ospf process  
# show ip[v6] ospf process
```



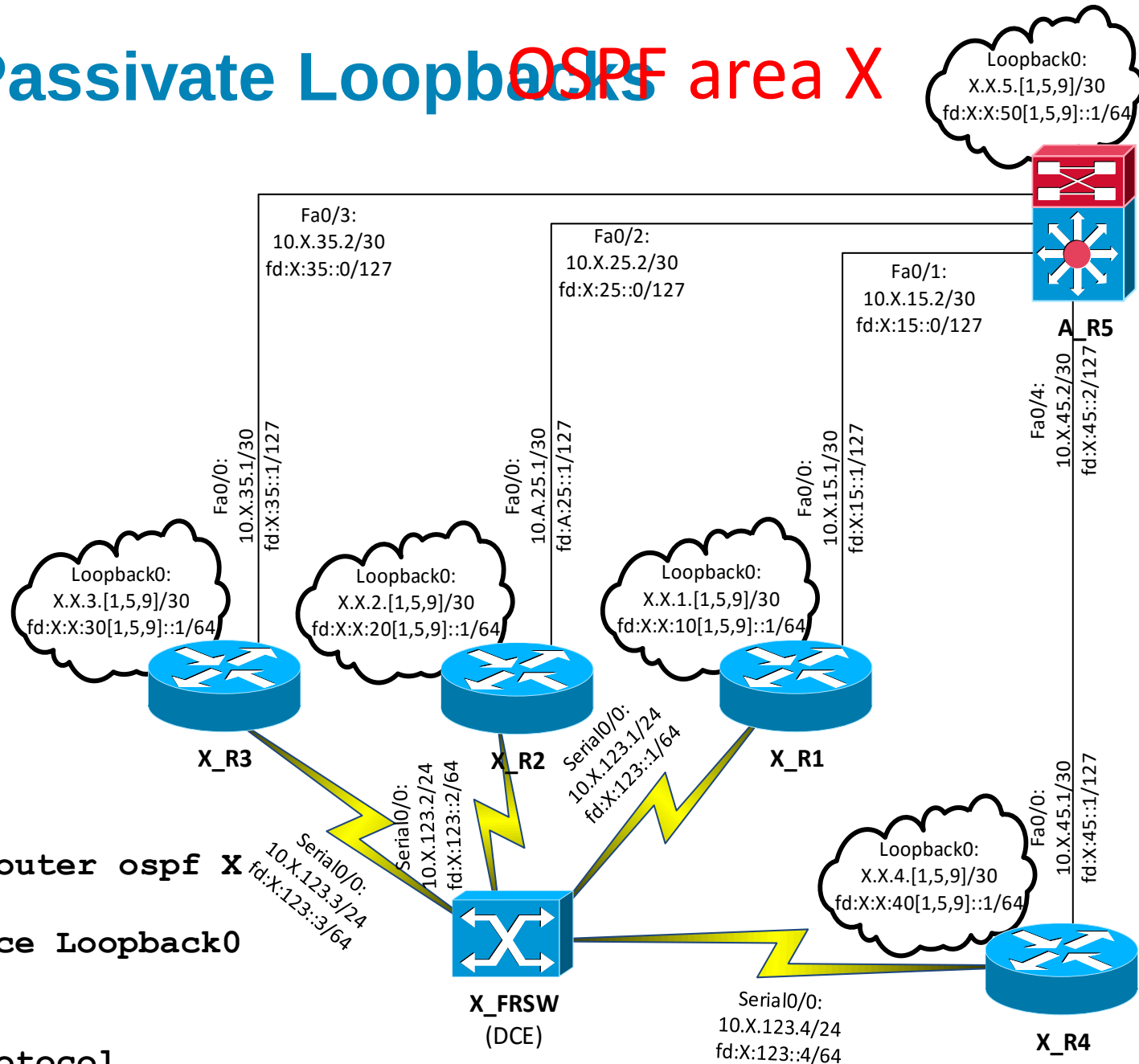
Lab 3.5: R5 as Default Gateway OSPF area X



■ R5:

```
(conf)# [ipv6] router ospf X
(conf-router)#
  default-information originate always
#show ip[v6] route
```

Lab 3.6: Passivate Loopbacks OSPF area X

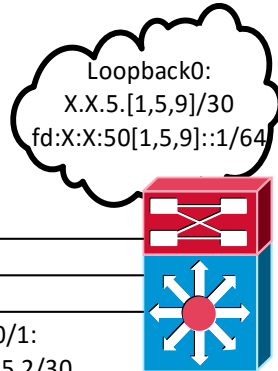


■ R1-5:

```
(conf)# [ipv6] router ospf X
(conf-router)#
passive-interface Loopback0
```

```
# show ip[v6] protocol
```


Lab 3.7: External Route OSPF area X

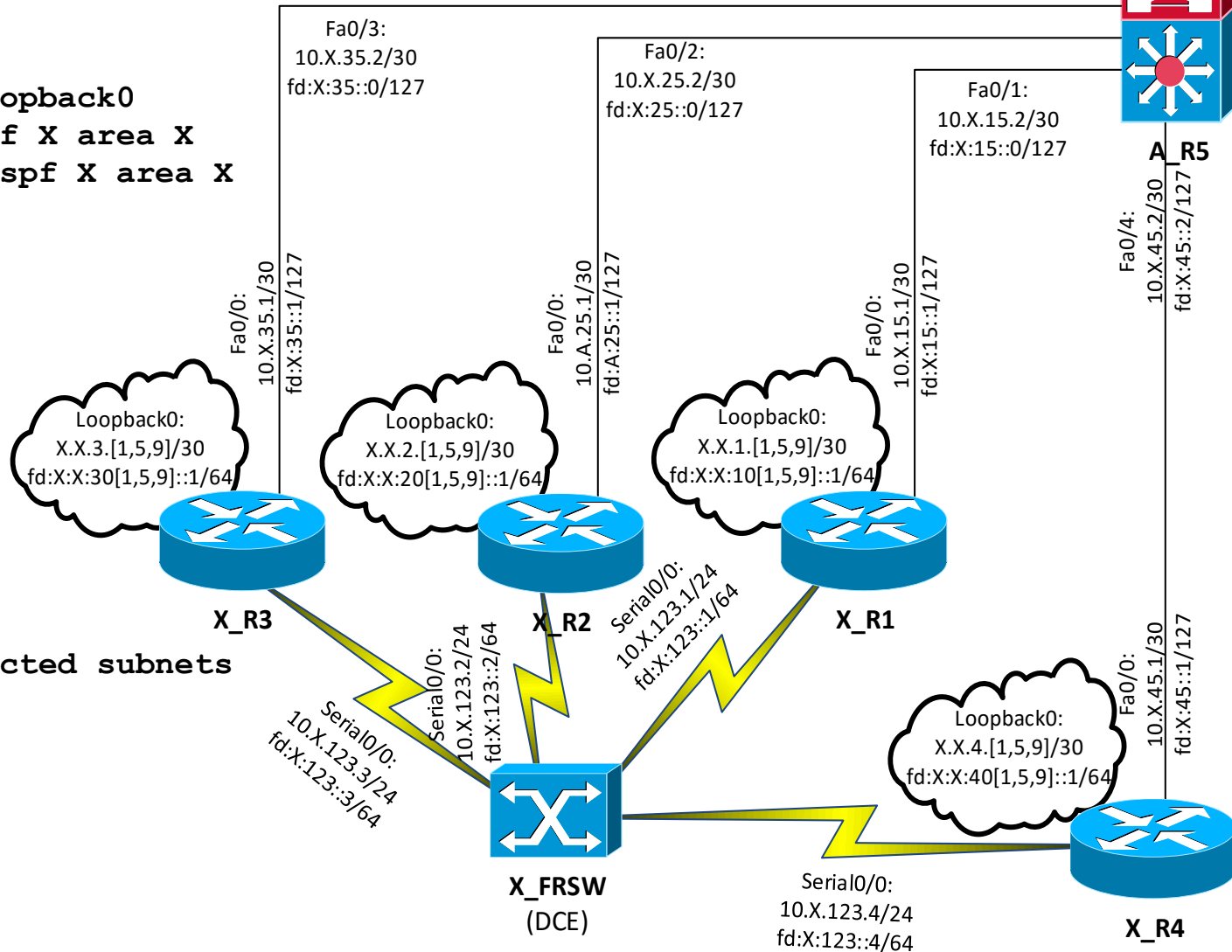


■ R3:

```
(conf)# interface Loopback0
(conf-if)# no ip ospf X area X
(conf-if)# no ipv6 ospf X area X
```

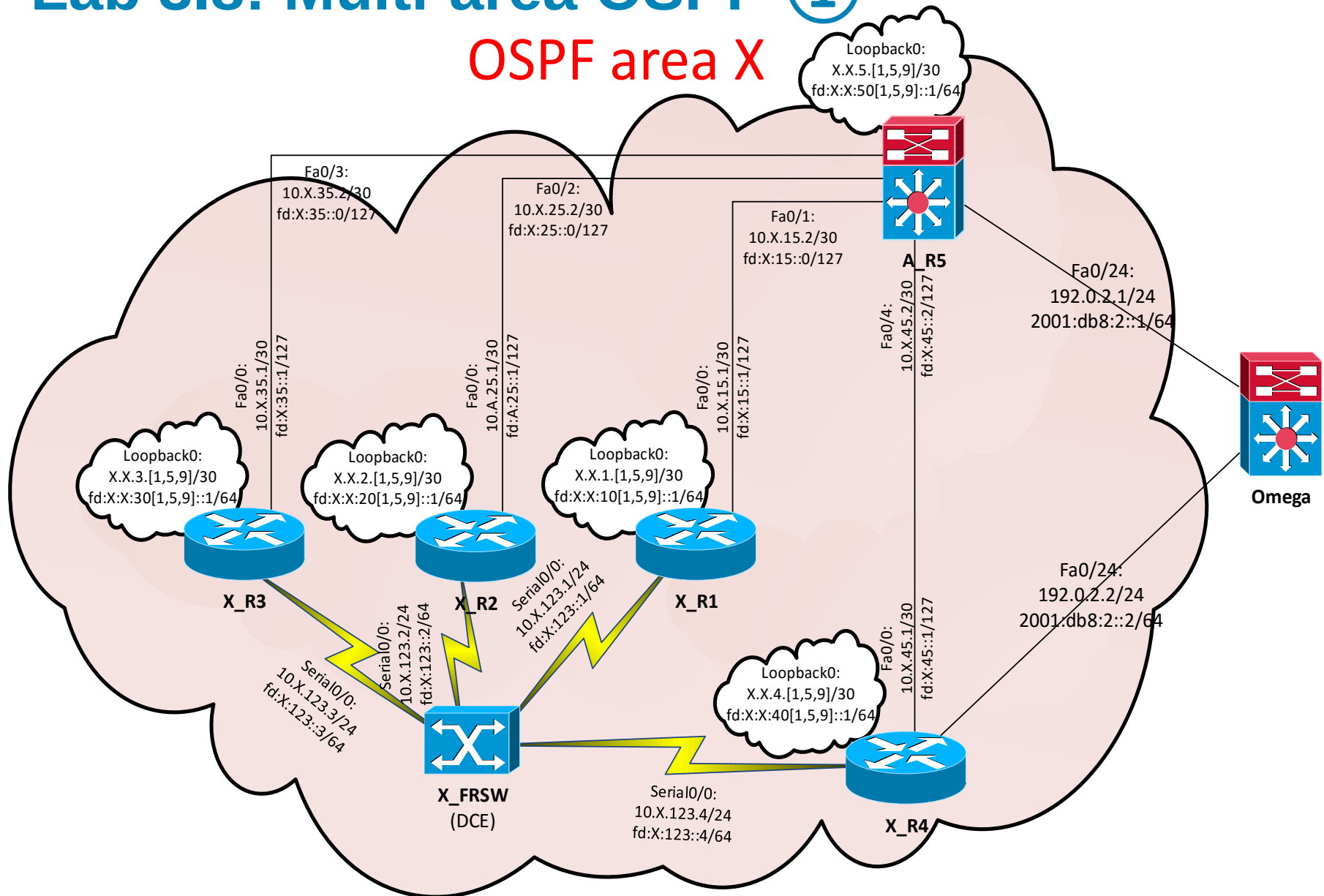
```
(conf-router)#
  redistribute connected subnets
```

```
# show ip[v6] route
```

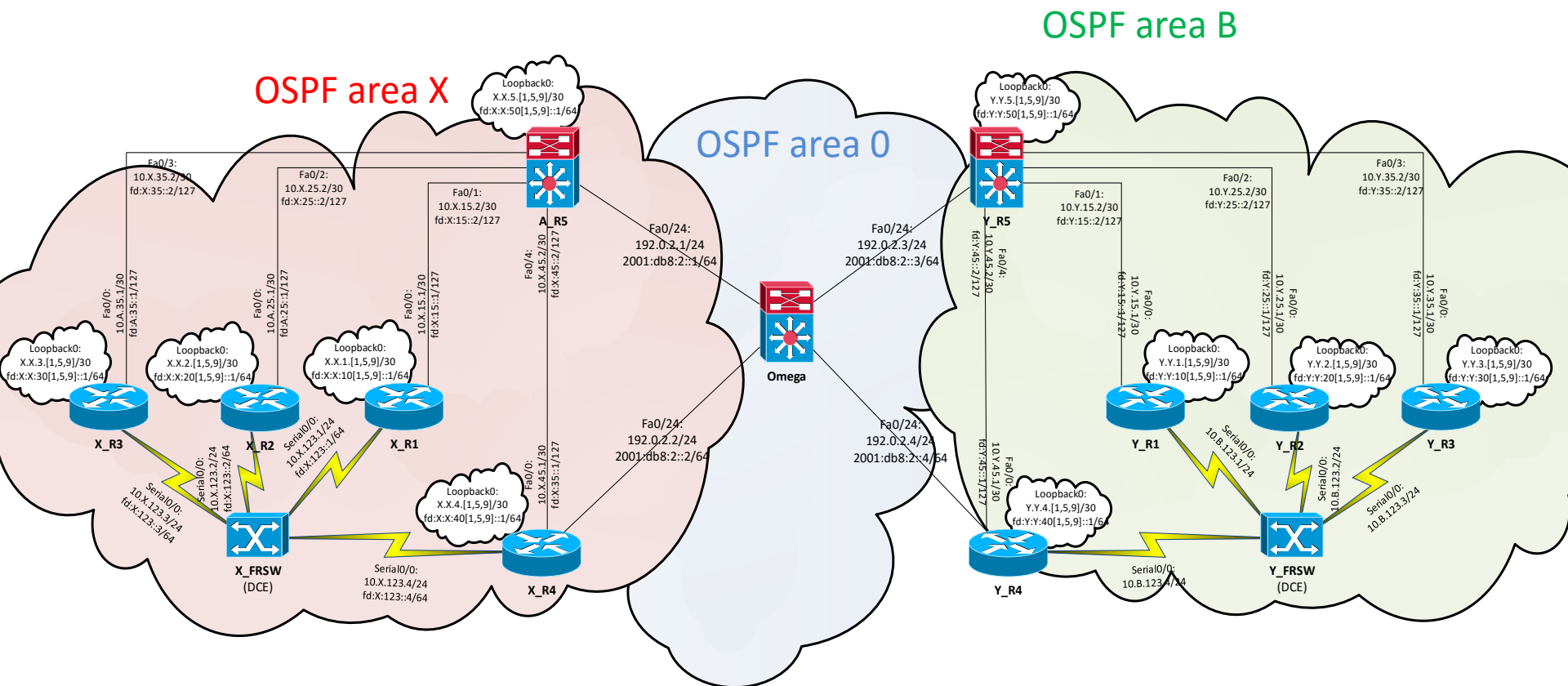


Lab 3.8: Multi-area OSPF ①

OSPF area X



Lab 3.8: Multi-area OSPF ②



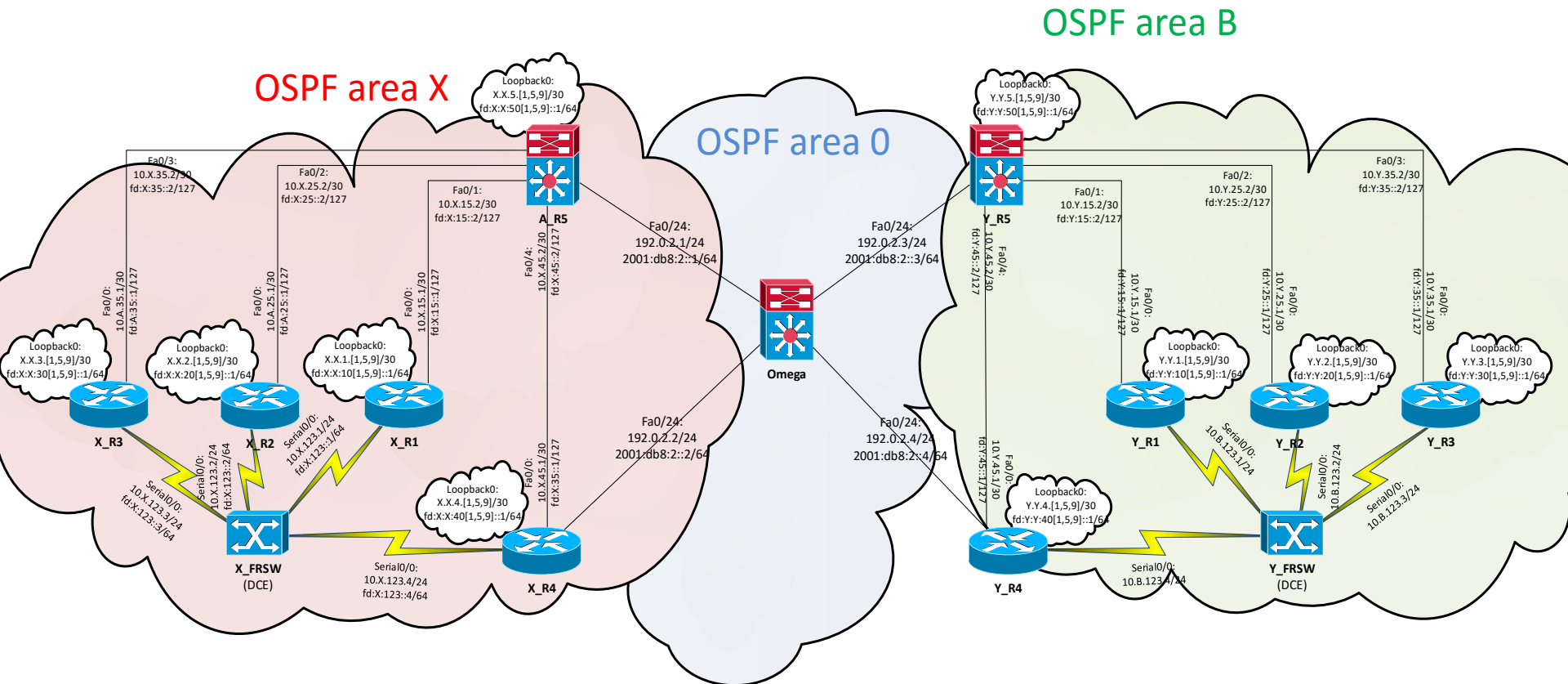
Lab 3.9: Stub Area

- R1-5:

```
(conf-router) #  
area X stub
```

- R1-3:

```
# show ip[v6] route
```



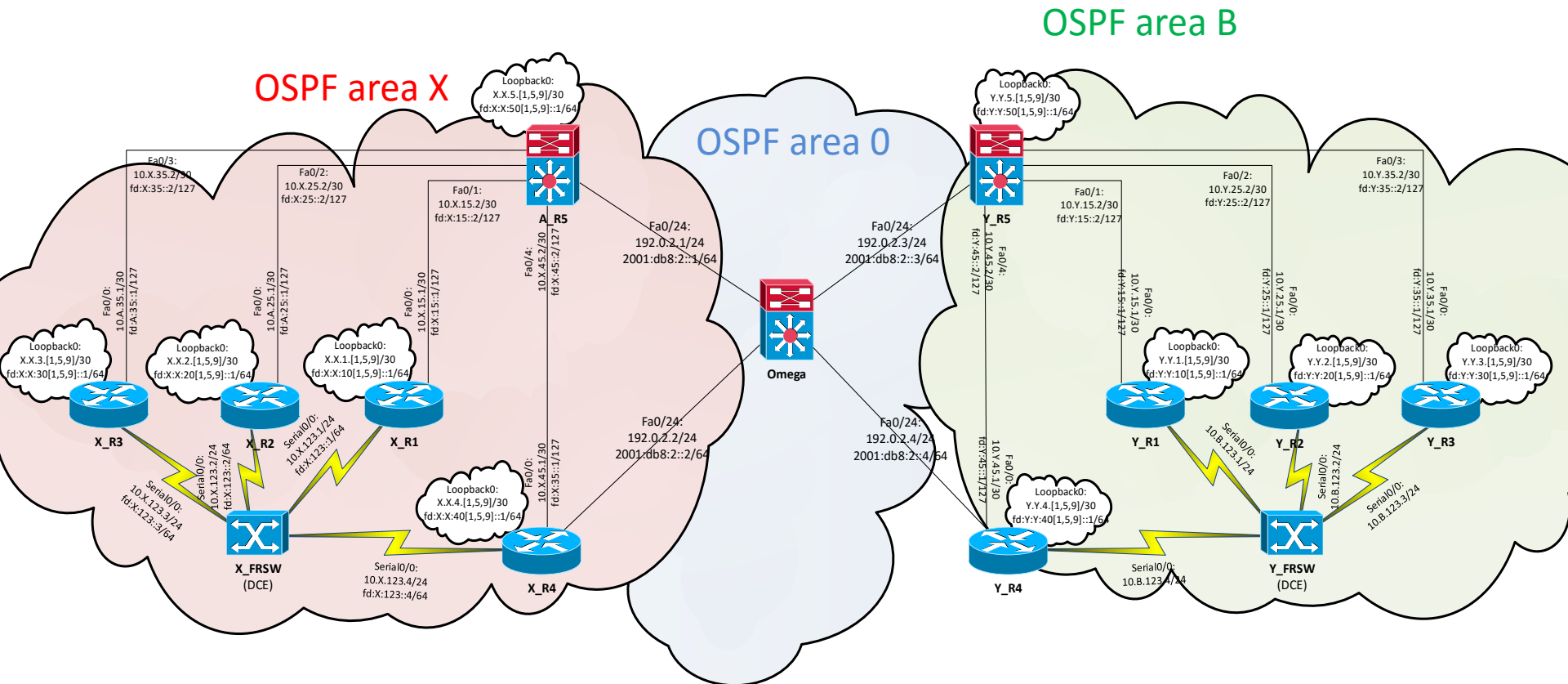
Lab: Totally Stubby Area

- R4-5:

```
(conf-router) #  
area X stub no-summary
```

- R1-3:

```
# show ip[v6] route
```



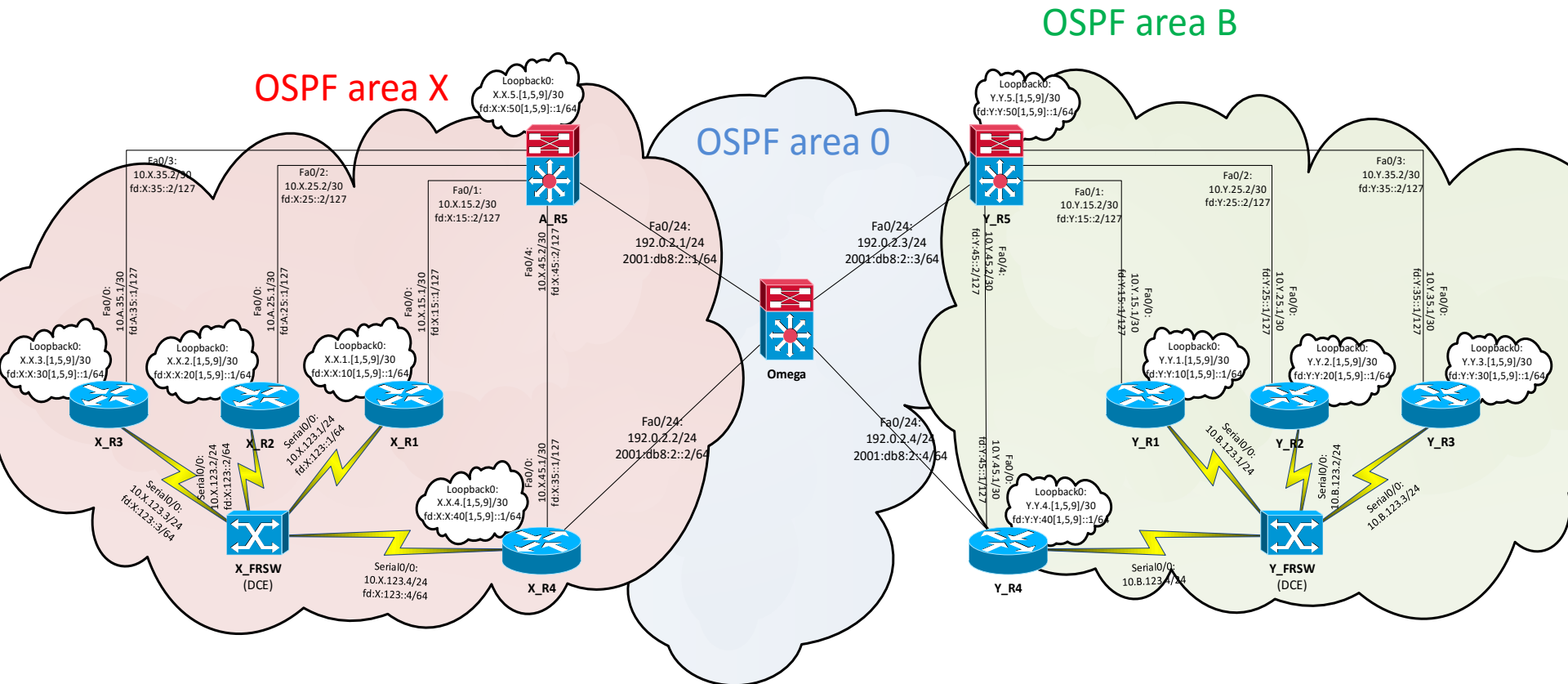
Lab: NSSA

- R1-5:

```
(conf-router) #
```

```
area X nssa default-information-originate
```

- R1-3: # show ip[v6] route



Lab 3.10: Totally NSSA

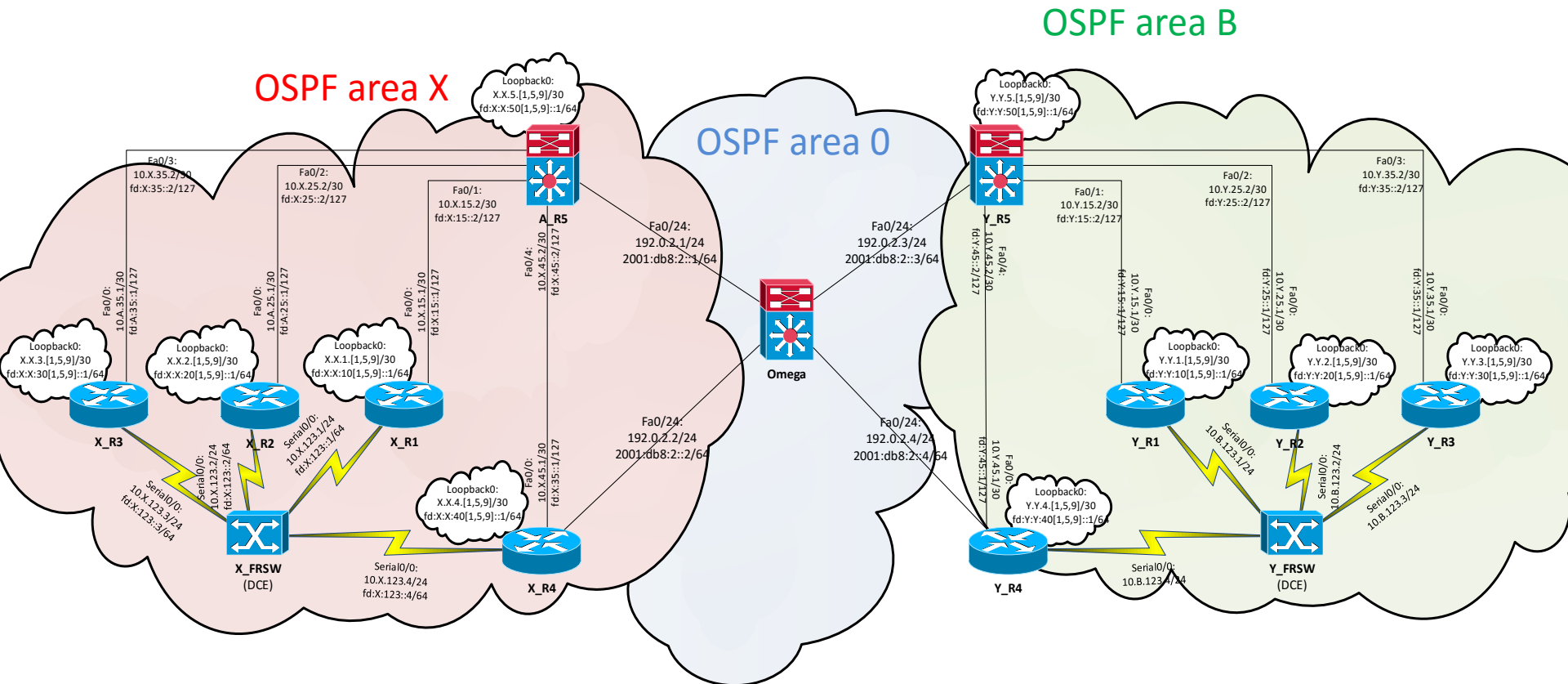
- R4, R5:

```
(conf-router) #
```

```
area Y nssa no-summary default-information-originate
```

- R1-3:

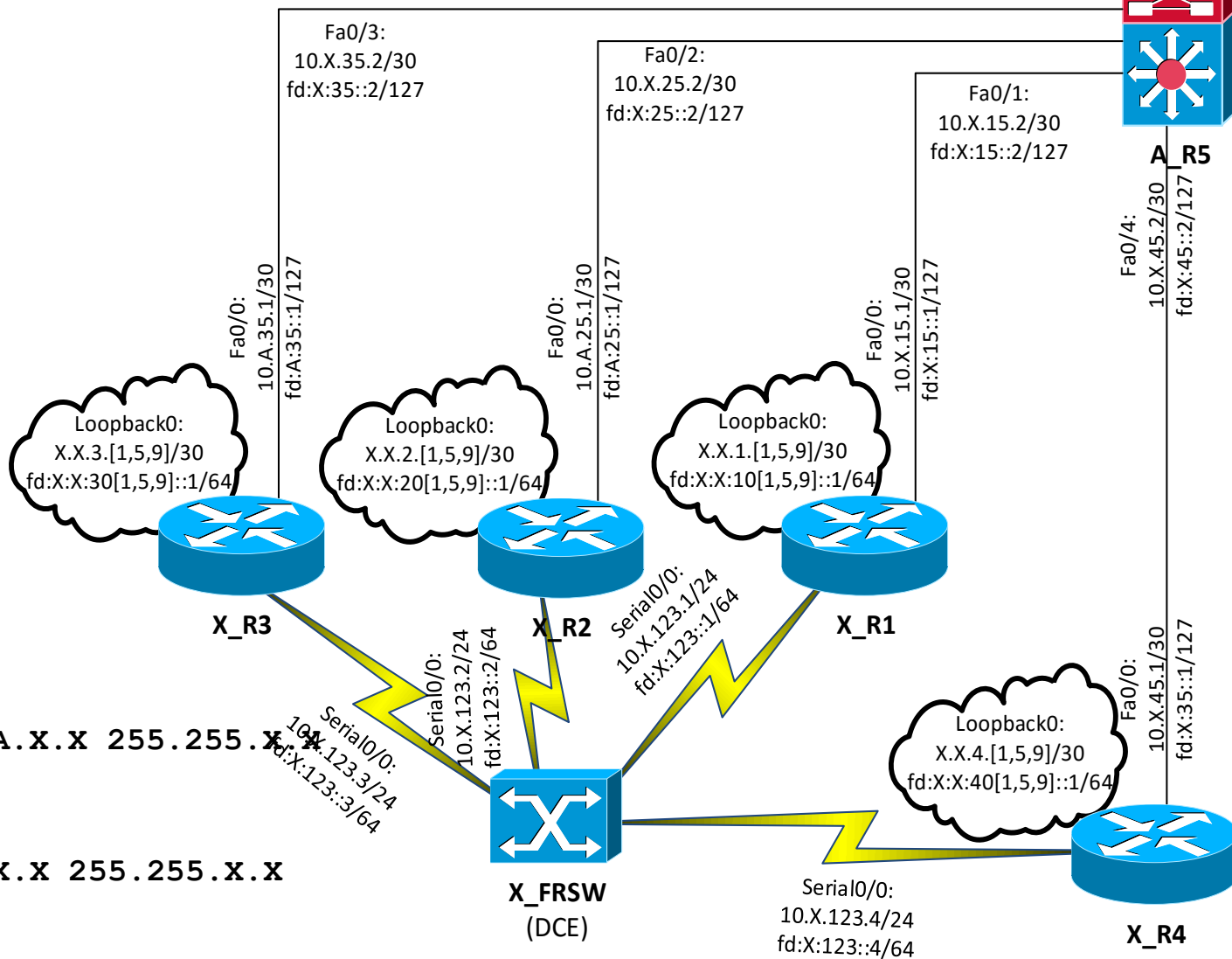
```
# show ip[v6] route
```



Lab 3.11: Loopback Summarization

OSPF area X

Loopback0:
X.X.5.[1,5,9]/30
fd:X:X:50[1,5,9]::1/64



R3:

```
(conf-router)#
```

```
summary-address A.A.X.X 255.255.X.X
```

R4, R5:

```
(conf-router)#
```

```
area X range A.A.X.X 255.255.X.X
```

```
# show ip route
```

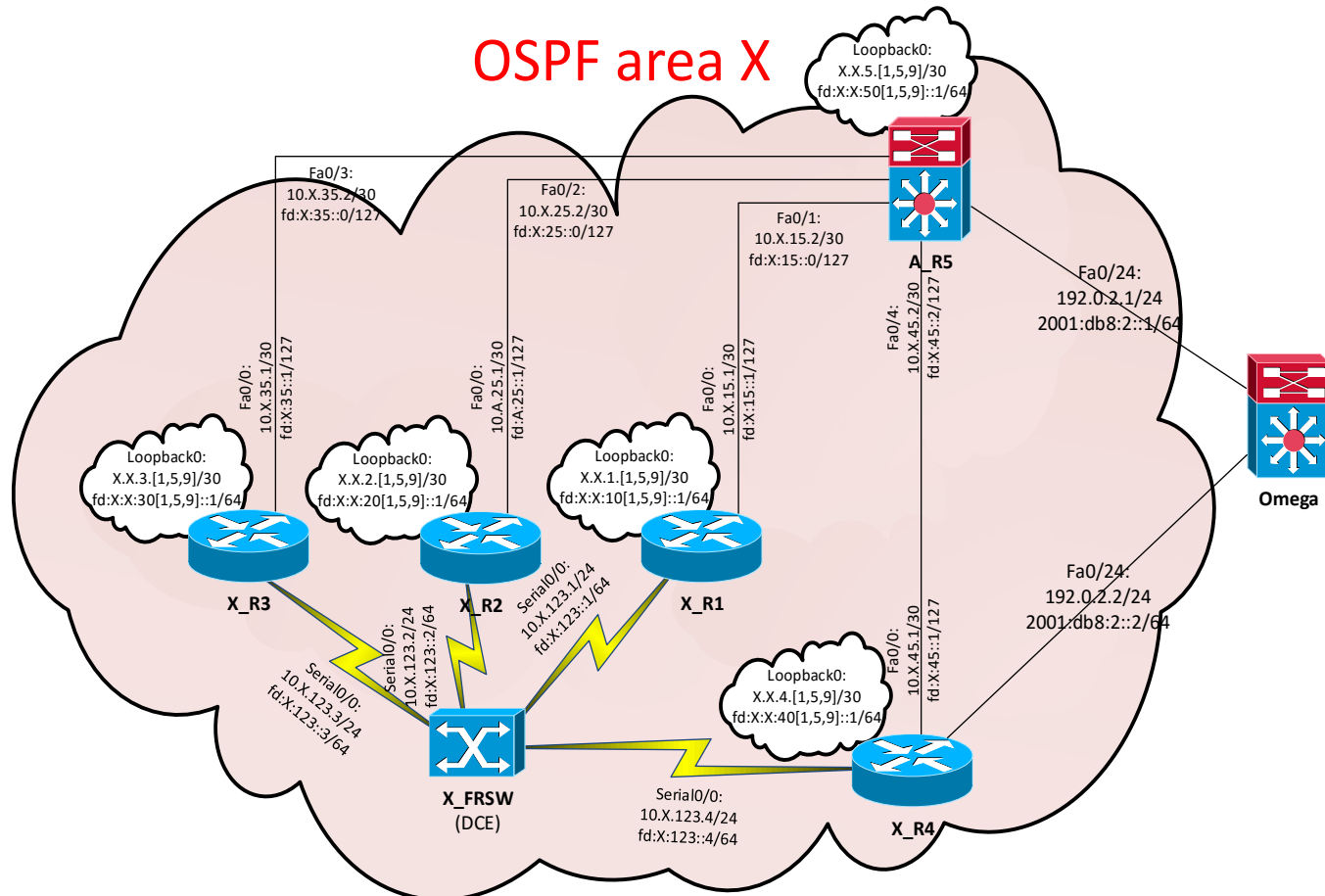

Lab 3.12: Partitioned Backbone

- R2: Change area of Loopback0 to area 0

```
(conf-router)# network X.X.2.0 0.0.0.255 area 0
```

- R2, R5:

```
(conf-router)# area X virtual-link R[2|5]-router-id
```





Labs created by [Vladimír Veselý](#) for C1P practice.

Last update: 2016-02-29