

Check Your Knowledge

IPv6 ACLs



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Module Goals



Review IPv6 Layer 2 Resolution

Review IPv4 ACL Implicit Rules

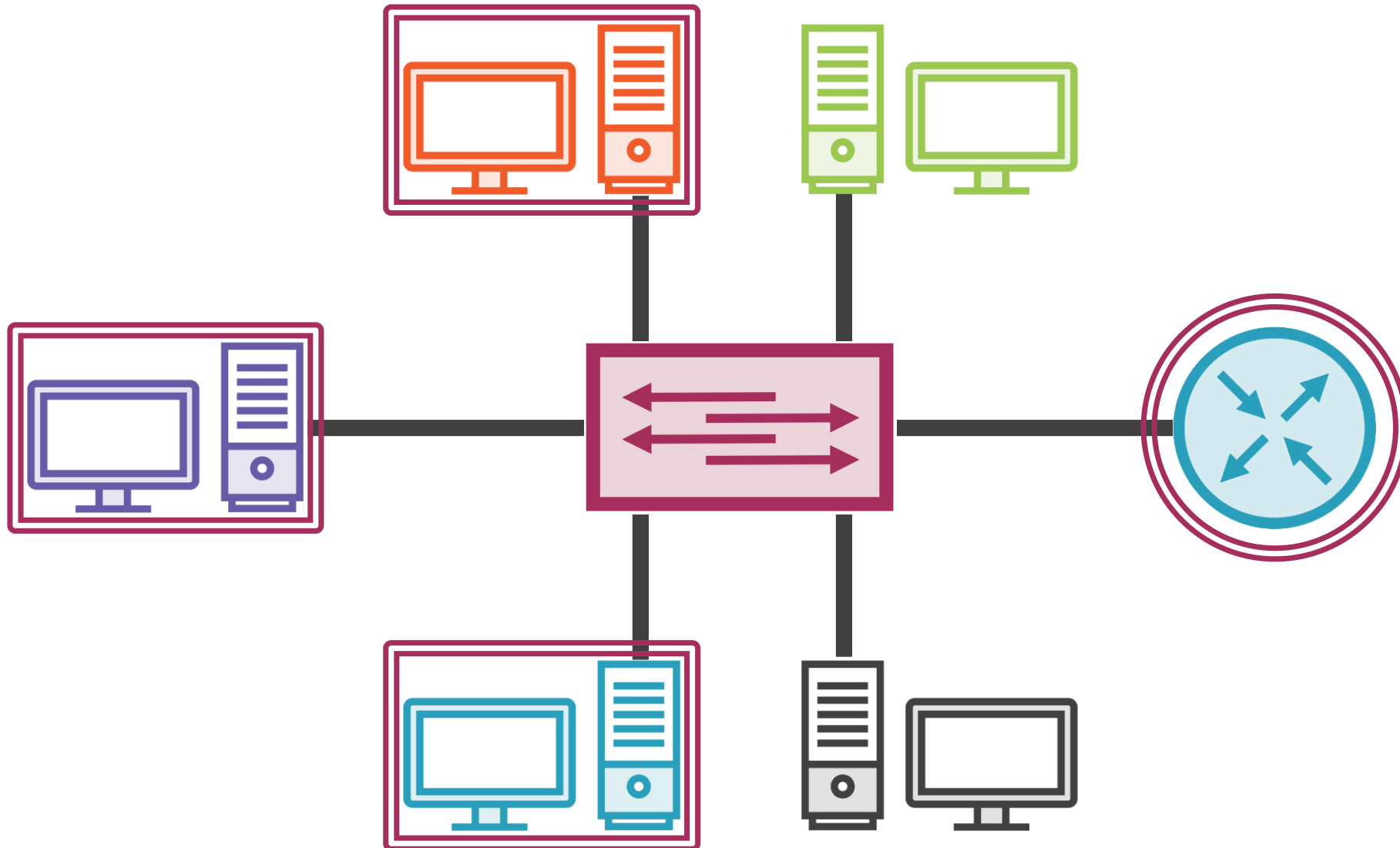
Describe IPv6 ACL Implicit Rules

Implement/Troubleshoot IPv6 ACL

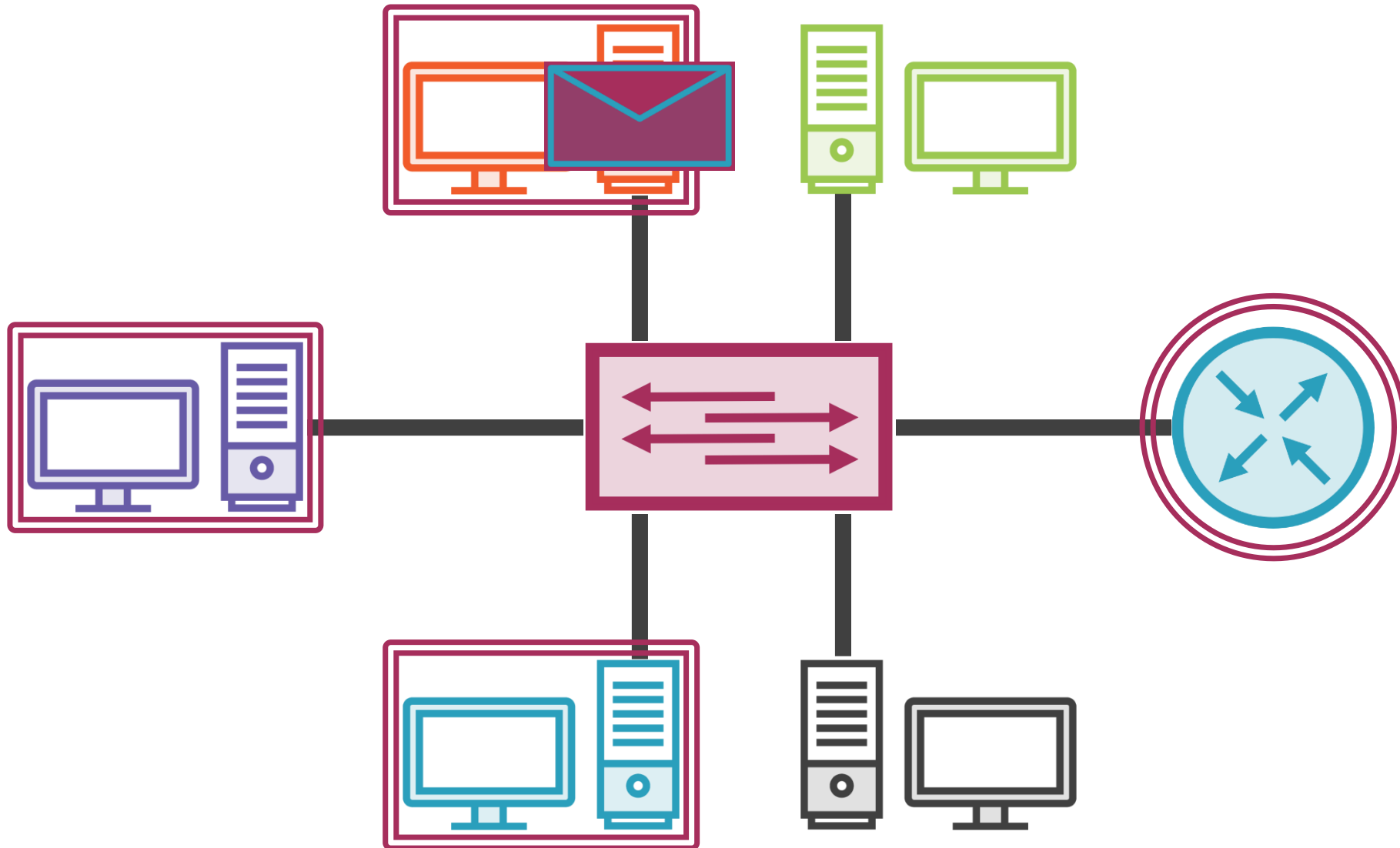
Review IPv6 Neighbor Discovery Protocol



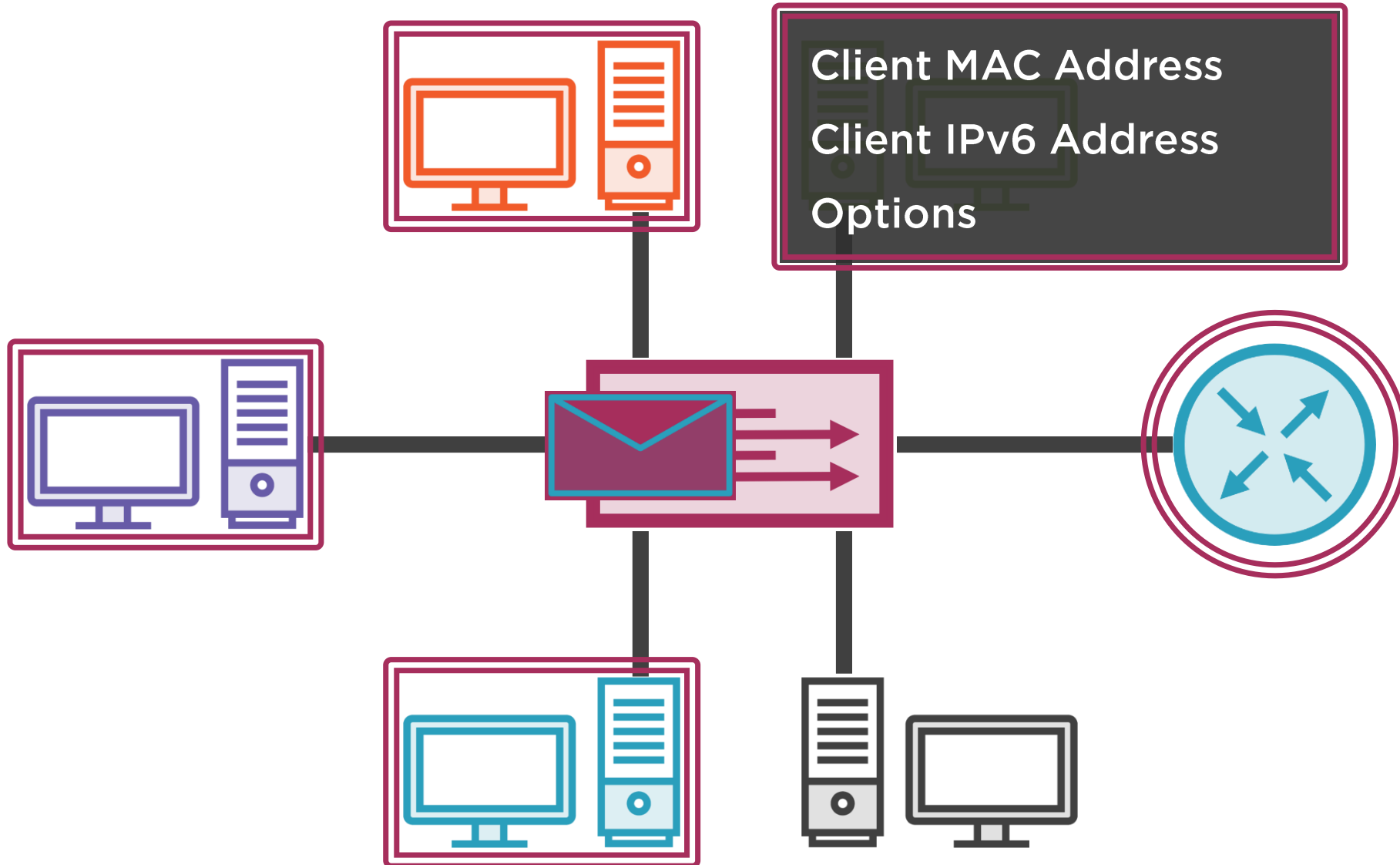
IPv6 Neighbor Discovery Protocol



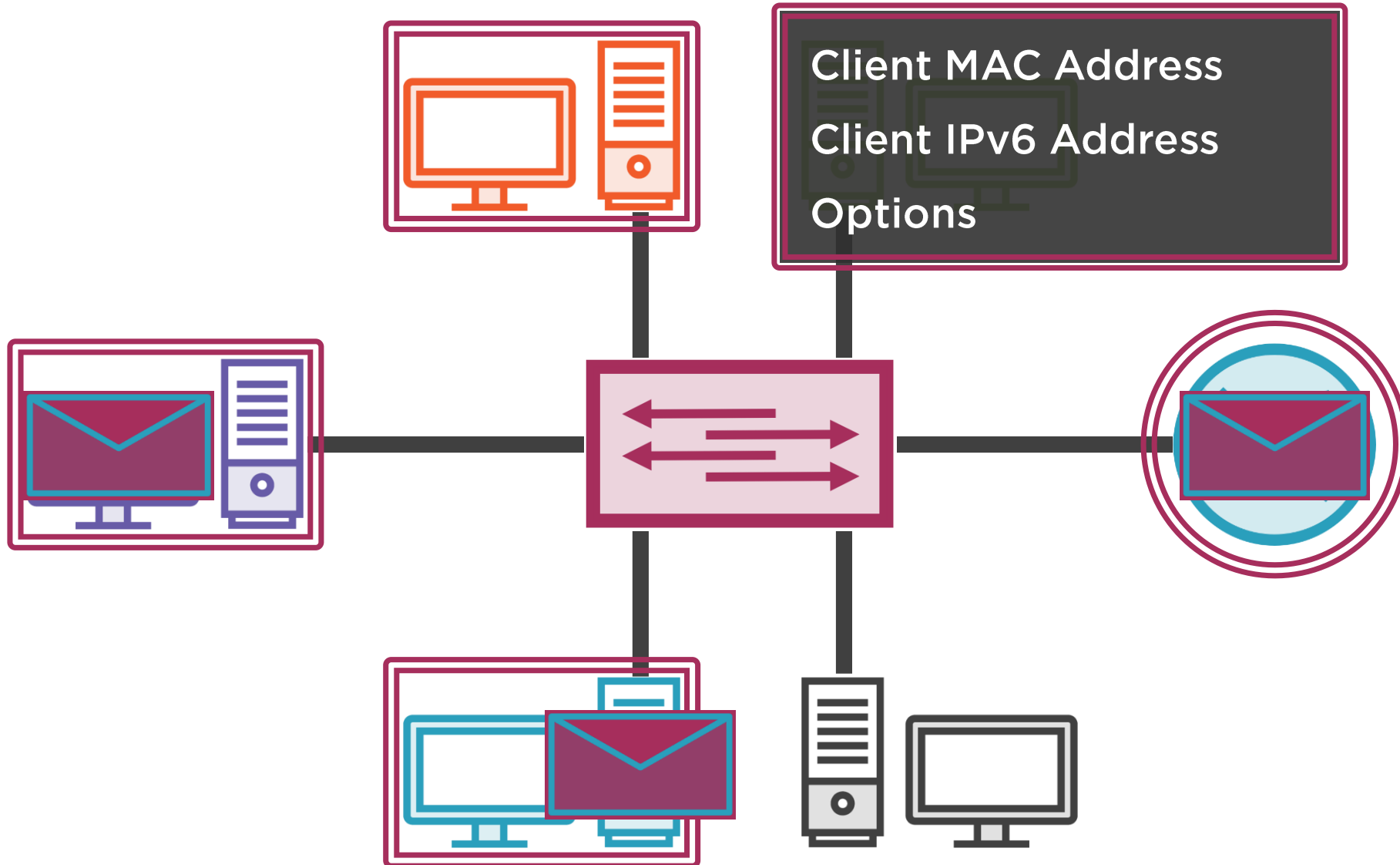
Neighbor Advertisement



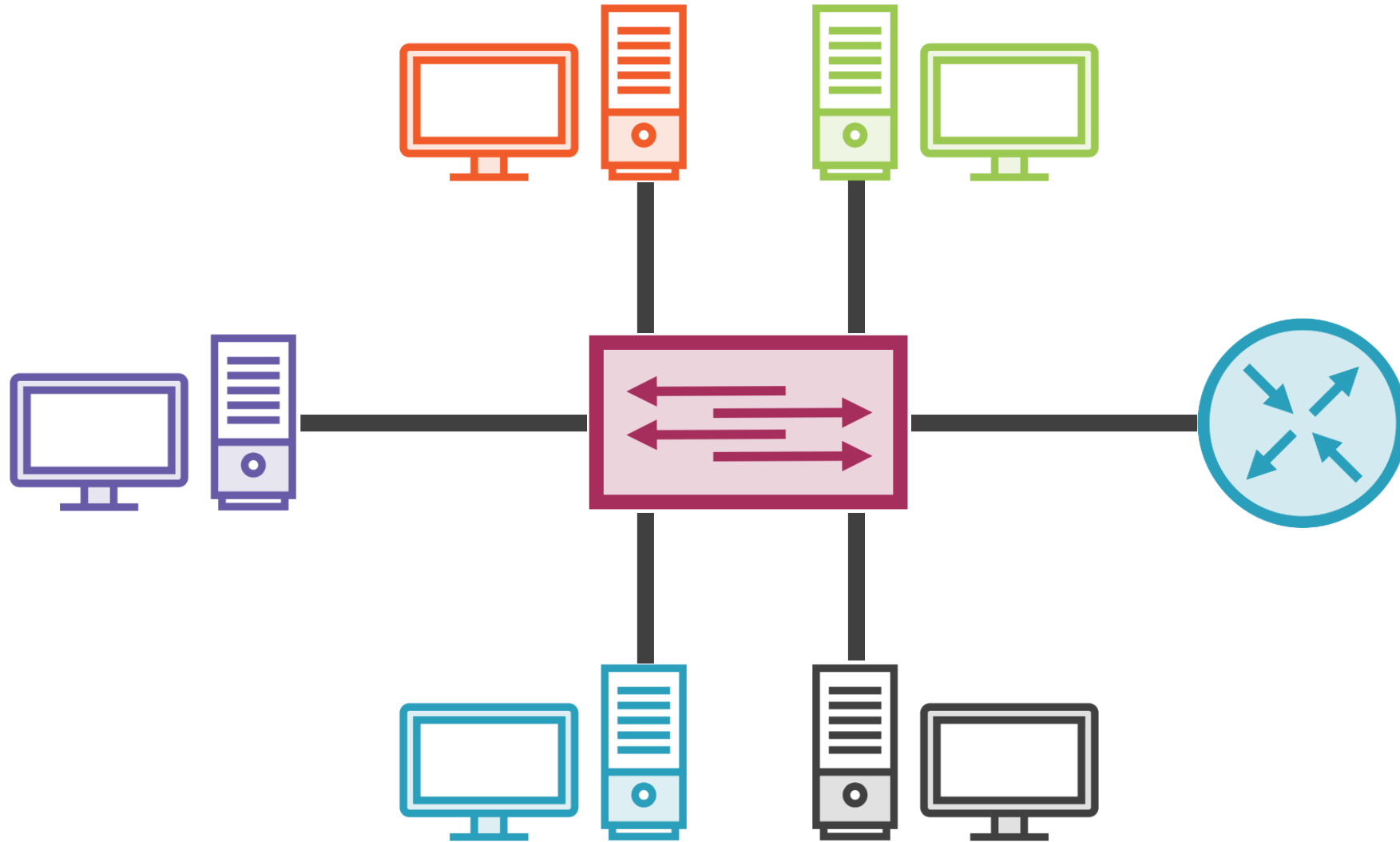
Neighbor Advertisement

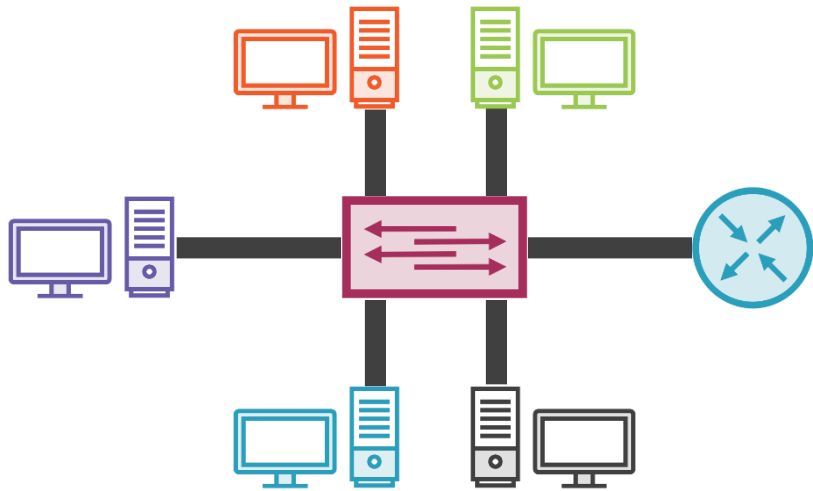


Neighbor Advertisement



Neighbor Advertisement





Devices maintain IPv6 neighbor table

- IPv6 address → MAC address

Use Neighbor Solicitation to request missing information

Behaves similar to ARP

Neighbor Solicitation

Layer 2 Address

Multicast MAC address

33:33:ff:xx:xx:xx

Layer 3 Address

Neighbor Solicitation IPv6 Address

**Link Local or
Global Unicast**



IPv4 ACL Implicit Rules



IPv4 Implicit ACL Rules

Extended Access List

```
10 permit ip host 10.0.0.10 any
```

```
20 permit tcp any host 10.0.10.80 eq 80
```



IPv4 Implicit ACL Rules

Extended Access List

```
10 permit ip host 10.0.0.10 any
```

```
20 permit tcp any host 10.0.10.80 eq 80
```

```
* deny ip any any
```



IPv6 ACL Implicit Rules



IPv6 Implicit ACL Rules

IPv6 Access List

```
10 permit ipv6 host 2001:db8:8::1 any
```

```
20 permit tcp any host 2001:db8:80::80 eq 80
```



IPv6 Implicit ACL Rules

IPv6 Access List

```
10 permit ipv6 host 2001:db8:8::1 any
```

```
20 permit tcp any host 2001:db8:80::80 eq 80
```

```
* deny ipv6 any any
```



IPv6 Implicit ACL Rules

IPv6 Access List

```
10 permit ipv6 host 2001:db8:8::1 any
20 permit tcp any host 2001:db8:80::80 eq 80
* permit icmp any any nd-na
* permit icmp any any nd-ns
* permit icmp any any router-advertisement
* permit icmp any any router-solicitation
* deny ipv6 any any
```



IPv6 Implicit ACL Rules

IPv6 Access List

```
10 permit ipv6 host 2001:db8:8::1 any
```

```
20 permit tcp any host 2001:db8:80::80 eq 80
```

```
* permit icmp any any nd-na
```

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* permit icmp any any nd-ns
```

```
* permit icmp any any router-advertisement
```

```
* permit icmp any any router-solicitation
```

```
* deny ipv6 any any
```



IPv6 Implicit ACL Rules

IPv6 Access List

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10 permit ipv6 host 2001:db8:8::1 any
```

```
20 permit tcp any host 2001:db8:80::80 eq 80
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```
30 deny ipv6 any any
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```
* permit icmp any any nd-na
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* permit icmp any any nd-ns
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```
* permit icmp any any router-advertisement
```

```
* permit icmp any any router-solicitation
```

```
* deny ipv6 any any
```



IPv6 Implicit ACL Rules

IPv6 Access List

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```
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```



IPv6 Implicit ACL Rules

IPv6 Access List

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20 permit tcp any host 2001:db8:80::80 eq 80
```

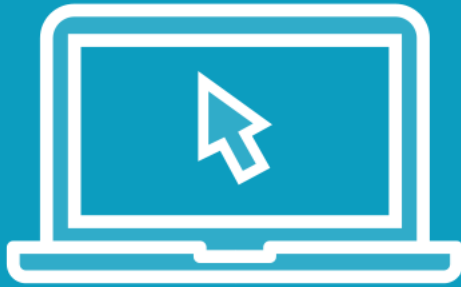
```
30 deny ipv6 any any
```

Neighbor Discovery Protocol

Blocked!



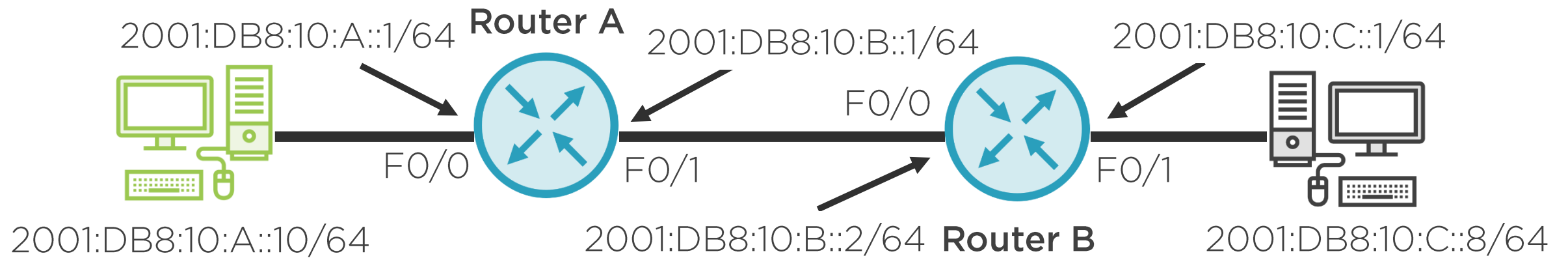
Demo



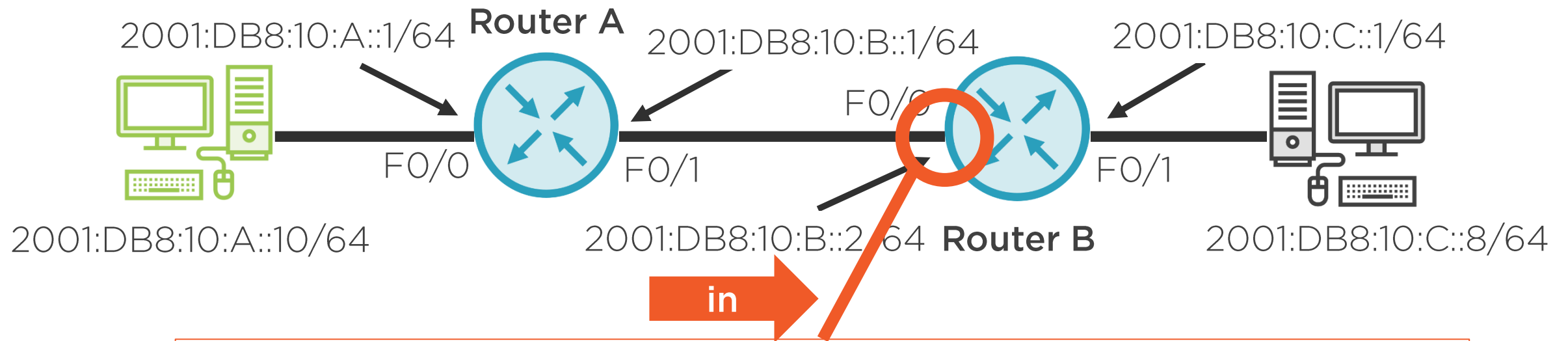
Implement/Troubleshoot IPv6 Access-Lists



IPv6 ACLs



IPv6 ACLs



ipv6 access-list Demo

```
permit ipv6 host 2001:db8:10:A::10 host 2001:db8:10:C::8
```

```
deny ipv6 any any
```



Summary



Review IPv6 Layer 2 Resolution

Review IPv4 ACL Implicit Rules

Describe IPv6 ACL Implicit Rules

Implement/Troubleshoot IPv6 ACL

