

		IPv6-		
R1	G0/0/0	2001:db8:acad:a::1	64	—
	G0/0/1	2001:db8:acad:1::1	64	—
S1	VLAN 1	2001:db8:acad:1::b	64	N/A (fe80::1)
PC-A	NIC	2001:db8:acad:1::3	64	fe80::1
PC-B	NIC	2001:db8:acad:a:: 3	64	fe80::1

1.

2. IPv6-

3.

/

Packet Tracer

IPv6-

(PTPM)
IPv6.
show.
ping and traceroute.

1.

1.



2.

```
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R1
R1(config)#
```

3.

```
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S1
S1(config)#
```

2.

IPv6-

IPv6-

1. IPv6- Ethernet R1.
- a. Ethernet R1. IPv6- ,

R1(config)# **interface g0/0/0**

R1(config-if)# **ipv6 address 2001:db8:acad:a::1/64**

R1(config-if)# **no shutdown**

R1(config-if)# **interface g0/0/1**

R1(config-if)# **ipv6 address 2001:db8:acad:1::1/64**

R1(config-if)# **no shutdown**

R1(config-if)# **end**

IPv6- 2001:DB8::/32
RFC
3849.

- b. show ipv6 interface brief, IPv6- .

R1# **show ipv6 interface brief**

GigabitEthernet0/0/0 [up/up]

FE80::201:63FF:FE06:C001

2001:DB8:ACAD:A::1

GigabitEthernet0/0/1 [up/up]

FE80::201:63FF:FE06:C002

2001:DB8:ACAD:1::1

<output omitted>

- c. IPv6- MAC- EUI-64, 128- Ethernet R1. ,

R1# **config t**

CNTL/Z.

R1(config)# **interface g0/0/0**

R1(config-if)# **ipv6 address fe80::1 link-local**

R1(config-if)# **interface g0/0/1**

R1(config-if)# **ipv6 address fe80::1 link-local**

R1(config-if)# **end**

d.

fe80::1.

R1# **show ipv6 interface g0/0/0**

GigabitEthernet0/0/0 is up, line protocol is up

IPv6 is enabled, link-local address is **FE80::1**

No Virtual link-local address(es):

Global unicast address(es):

2001:DB8:ACAD:A::1, subnet is 2001:DB8:ACAD:A::/64

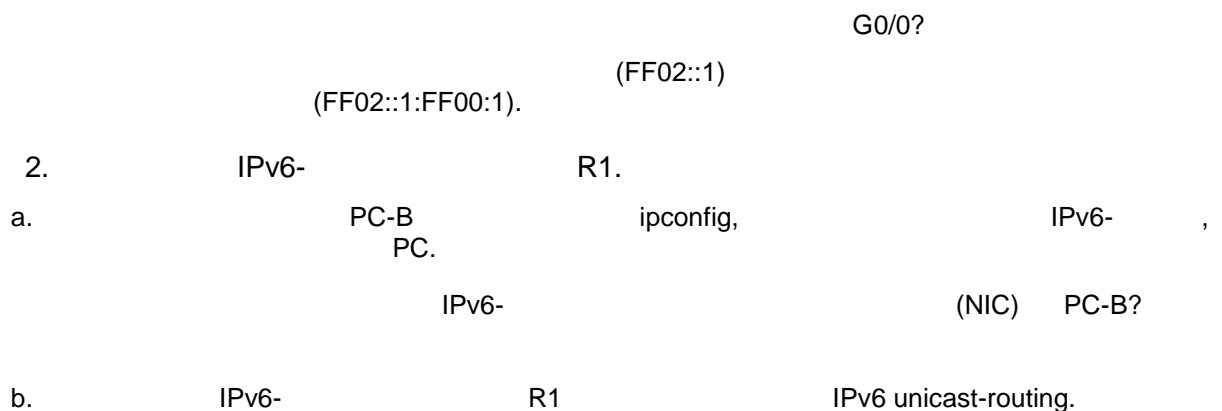
Joined group address(es):

FF02::1

FF02::1:FF00:1

MTU is 1500 bytes

<output omitted>



d. , R1
ipconfig PC-B. IPv6- ,
PC-B
R1?
R1 IPv6
, FF02::2. Router
Advertisement (RA)
, R1
fe80::1 IPv6-
RA,
.
SLAAC
/64.

3. IPv6- (SVI) S1.
- a. IPv6 S1.

S1(config)# **interface vlan 1**

S1(config-if)# **ipv6 address 2001:db8:acad:1::b/64**

S1(config-if)# **ipv6 address fe80::b link-local**

S1(config-if)# **end**

- b. RA, IPv6- RA, Packet Tracer
- b. show ipv6 interface vlan1. IPv6-

S1# **show ipv6 interface vlan1**

Vlan1 is up, line protocol is up

IPv6 is enabled, link-local address is **FE80::B**

No Virtual link-local address(es):

Global unicast address(es):

2001:DB8:ACAD:1::B, 2001:DB8:ACAD:1::/64

Joined group address(es):

FF02::1

FF02:: 1:FF00:B

MTU is 1500 bytes

ICMP error messages limited to one every 100 milliseconds

ICMP redirects are enabled

ICMP unreachablees are sent

Output features: Check hwiob

ND DAD is enabled, number of DAD attempts: 1

ND reachable time is 30000 milliseconds (using 30000)

ND NS retransmit interval is 1000 milliseconds

4. IPv6-
a. IP Configuration IPv6-
b. , IPv6. SLACC
IPv6:
3.
a. PC-A - FE80::1. , G0/1
R1.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping FE80::1

Pinging FE80::1 with 32 bytes of data:

Reply from FE80::1: bytes=32 time<1ms TTL=255
Reply from FE80::1: bytes=32 time<1ms TTL=255
Reply from FE80::1: bytes=32 time<1ms TTL=255
Reply from FE80::1: bytes=32 time=1ms TTL=255

Ping statistics for FE80::1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

- b. **tracert** PC-A, PC-B.

```
C:\>tracert 2001:db8:acad:a::3

Tracing route to 2001:db8:acad:a::3 over a maximum of 30 hops:

  1  0 ms    0 ms    0 ms    2001:DB8:ACAD:1::1|
```

- c. PC-B - PC-A.

```
C:\>ping 2001:db8:acad:1::3

Pinging 2001:db8:acad:1::3 with 32 bytes of data:

Reply from 2001:DB8:ACAD:1::3: bytes=32 time<1ms TTL=127
Reply from 2001:DB8:ACAD:1::3: bytes=32 time<1ms TTL=127
Reply from 2001:DB8:ACAD:1::3: bytes=32 time<1ms TTL=127
|
```

- d. PC-B - G0/0 R1.

```

Pinging 2001:db8:acad:1::1 with 32 bytes of data:

Reply from 2001:DB8:ACAD:1::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:ACAD:1::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:ACAD:1::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:ACAD:1::1: bytes=32 time<1ms TTL=255

Ping statistics for 2001:DB8:ACAD:1::1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

```

IPv6-

1. — FE80::1? Ethernet R1 ;
2. IPv6- 2001:db8:acad::aaaa:1234/64,
- /48?
0 () 0000 (). /48,
4- IPv6- /64
IPv6- , ,
2001:acad::aaaa:1234/64 2001:db8:acad::/64