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## Introduction

This example demonstrates ISATAP configuration on the head-end router and a simulated ISATAP client using a Cisco router.

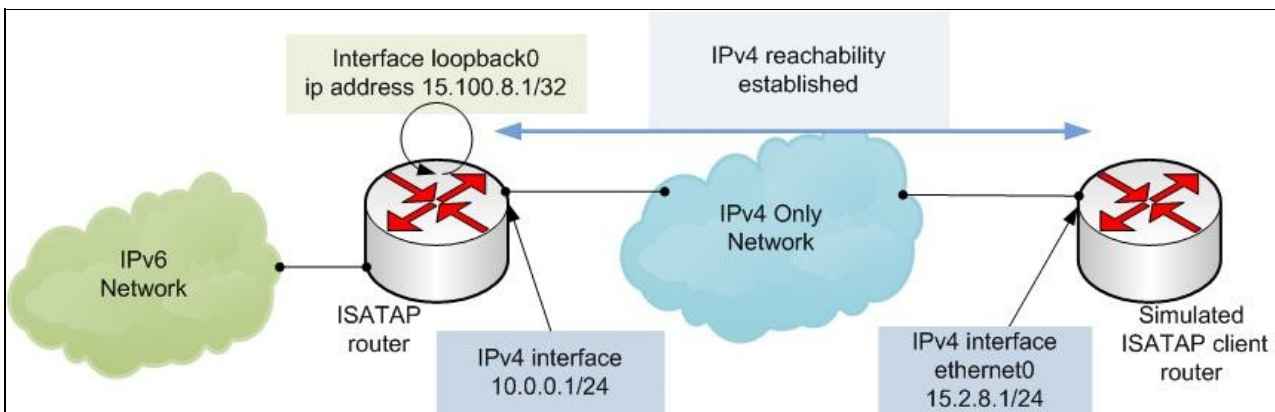
Usually the client is a Windows PC with IPv6 enabled, initiating the tunnel. For testing and verification purposes, a Cisco router closest to the clients can act as a client.

For this, we are using ISATAP tunnel at the head-end and IPv6 over IPv4 manual tunnel at the client router. IPv6 unicast routing can be disabled on the client router, so that it will behave as a true client and install a default IPv6 static route towards the head-end.

Check feature navigator to verify head-end router image supports ISATAP tunnels.

Check feature navigator to verify simulated client router supports manually configured IPv6 over IPv4 tunnels.

## Design



## Configuration

### Head-end router configuration

```

ipv6 unicast-routing
!
interface Loopback0
 ip address 15.100.8.1 255.255.255.255
!
interface Tunnell
 no ip address
 no ip redirects
 ipv6 address 2001:DB8:CAFE:65::/64 eui-64 <<<Any /64 IPv6 address will work

```

## IPv6\_ISATAP\_configuration\_example\_with\_a\_Cisco\_router\_as\_a\_client

```
no ipv6 nd ra suppress      <<< IPv6 ra is suppressed by default on tunnel. Need to re-enable for
tunnel source Loopback0
tunnel mode ipv6ip isatap
```

### Simulated ISATAP client on Cisco router

```
interface ethernet0
 ip address 15.2.8.128 255.255.255.0
!
interface Tunnell
 no ip address
 ipv6 address autoconfig
 ipv6 enable
 tunnel mode ipv6ip
 tunnel source ethernet0
 tunnel destination 15.100.8.1
```

### Related show Commands

This section provides information you can use to confirm your configuration is working properly.

Certain show commands are supported by the [Output Interpreter Tool \(registered customers only\)](#), which allows you to view an analysis of show command output.

### Show running-config

Client Tunnell should acquire IPv6 address prefix from head-end. Then client source IPv4 address is appended at the end. In this example, 15.2.8.128 => F02:880

```
show ipv6 interface tunnell
IPv6 is enabled, link-local address is FE80::F02:880
No Virtual link-local address(es):
Stateless address autoconfig enabled
Global unicast address(es):
  2001:DB8:CAFE:65::F02:880, subnet is 2001:DB8:CAFE:65::/64 [EUI/CAL/PRE] <<< Acquired IPv6 pre
    valid lifetime 2591770 preferred lifetime 604570
Joined group address(es):
  FF02::1
  FF02::1:FF02:880
MTU is 1480 bytes
ICMP error messages limited to one every 100 milliseconds
ICMP redirects are enabled
ICMP unreachable are sent
ND DAD is enabled, number of DAD attempts: 1
ND reachable time is 30000 milliseconds (using 30000)
Default router is FE80::5EFE:F64:801 on Tunnell <<< ISATAP head-end as the default router with 00
```

If IPv6 unicast-routing is disabled on the client router, it will also install a default static route pointing towards the ISATAP head-end router.

```
show ipv6 route
IPv6 Routing Table - default - 4 entries
Codes: C - Connected, L - Local, S - Static, U - Per-user Static route
```

Head-end router configuration

## IPv6\_ISATAP\_configuration\_example\_with\_a\_Cisco\_router\_as\_a\_client

B - BGP, R - RIP, I1 - ISIS L1, I2 - ISIS L2  
IA - ISIS interarea, IS - ISIS summary, D - EIGRP, EX - EIGRP external  
ND - Neighbor Discovery, L - LISP  
O - OSPF Intra, OI - OSPF Inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2  
ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2

```
S  ::/0 [2/0]
   via FE80::5EFE:F64:801, Tunnell
C  2001:DB8:CAFE:65::/64 [0/0]
   via Tunnell, directly connected
L  2001:DB8:CAFE:65::F02:880/128 [0/0]
   via Tunnell, receive
L  FF00::/8 [0/0]
   via Null0, receive
```

Head-end should be able to ping the client.

```
router#ping ipv6 2001:DB8:CAFE:65::F02:880
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2001:DB8:CAFE:65::F02:880, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms
```

## Related Information

[Technical Support & Documentation - Cisco Systems](#)