

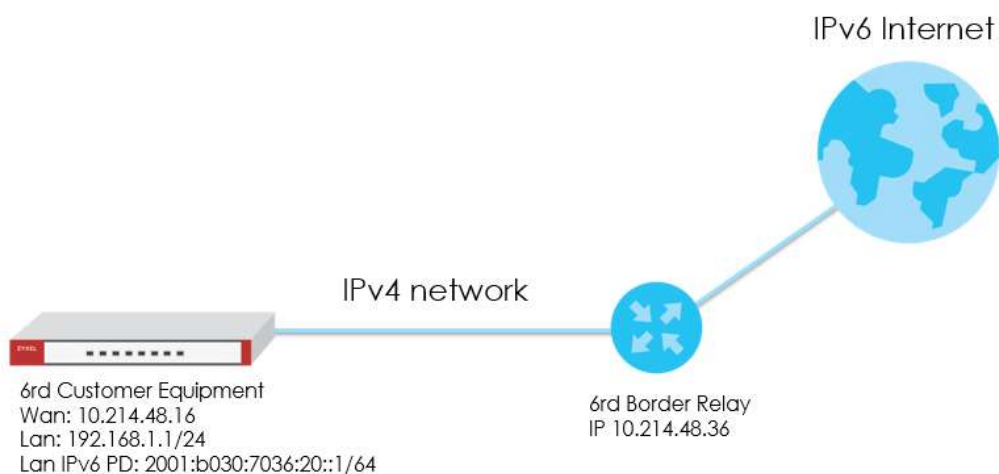
6rd on the WAN and autoconf on the LAN

This example shows how to configure your ATP/USG Flex's with 6rd (IPv6 rapid deployment) to access Internet IPv6. It is IPv6 in IPv4 encapsulation in order to transit IPv4-only network infrastructure.

In this scenario:

6rd CE (Customer Equipment) is 10.214.48.16

6rd BR (Border Relay) is 10.214.48.36, which is provided by ISP. The given prefix for LAN is 2001:b030:7036:20::1/64



Note:

All network IP addresses and subnet masks are used as examples in this article. Please replace them with your actual network IP addresses and subnet masks. This example was tested using ATP/USG Flex (Firmware Version: 5.00)

Setting Up the IPv6 tunnel for 6rd scenario

Tunnel

1. In the Configuration > Network > Interface > tunnel Configuration section, click Add to create a tunnel.

2. Fill in following information for tunnel setting in this scenario.

Interface name: Tunnel0

Zone: Tunnel

Tunnel mode: IPv6-in-IPv4

My address: Wan interface

Remote Gateway address : 10.214.48.36 (Border Relay)

The screenshot shows the 'Add corresponding' configuration window for a tunnel interface. The window is titled 'Add corresponding' and has a 'Show Advanced Settings' button. The configuration is organized into several sections:

- Interface Properties:**
 - Interface Name: tunnel0
 - Zone: TUNNEL (dropdown menu)
 - Tunnel Mode: IPv6-in-IPv4 (dropdown menu)
- IPv6 Address Assignment:**
 - IPv6 Address/Prefix Length: (empty text box) (Optional)
 - Metric: 0 (0-15)
- Gateway Settings:**
 - My Address:
 - Interface: wan (dropdown menu) DHCP client – 10.214.48.16/255.255.255.0
 - IP Address: 0.0.0.0
 - Remote Gateway Address: 10.214.48.36
- Interface Parameters:**
 - Egress Bandwidth: 1048576 Kbps
 - Advance
- Related Setting:**
 - [Configure WAN TRUNK](#)
 - [Configure Policy Route](#)

At the bottom right, there are 'OK' and 'Cancel' buttons.

Policy route

1. Go to Configuration > Network > Routing > Policy route. click Add to create a policy route for V6 routing.

Incoming interface: lan1

Destination Address: any

Next hop: Tunnel0

Edit Policy Route

Show Advanced Settings Create New Object

Configuration

Enable

Description: ((Optional))

Criteria

User: any

Incoming: Interface

Please select one member: lan1

Source Address: any

Destination Address: any

DSCP Code: any

Schedule: none

Service: any

Advance

Next-Hop

Type: Interface

Interface: tunnel0

DSCP Marking

OK Cancel

Lan

1. In the Configuration > Network > Interface > Ethernet Configuration section, double-click the LAN interface you want to modify.
2. LAN interface IPv6 address is 2001:b030:7036:20::1/64

The screenshot shows the 'Edit Ethernet' configuration window. Under the 'IPv6 Address Assignment' section, the 'IPv6 Address/Prefix Length' is set to '2001:b030:7036:20::1/' and is highlighted with a red box. Other settings include 'Interface Name: lan1', 'Port: P3, P4, P5', 'Zone: LAN1', and 'MAC Address: BC:CF:4F:B7:48:0A'. There are 'OK' and 'Cancel' buttons at the bottom right.

3. Enable IPv6 DHCP server.

The screenshot shows the 'Edit Ethernet' configuration window. Under the 'DHCPv6 Setting' section, the 'DHCPv6:' dropdown menu is set to 'Server' and is highlighted with a red box. The 'IPv6 Address/Prefix Length' is '2001:b030:7036:20::1/'. There are 'OK' and 'Cancel' buttons at the bottom right.

4. Add DHCP release object for LAN DNS setting.

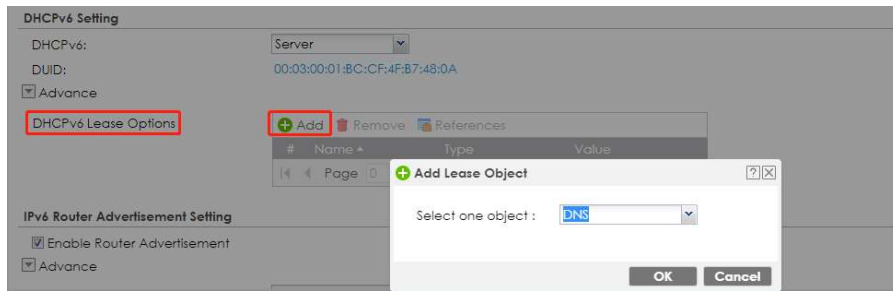
Create New Object > DHCPv6 Lease

The screenshot shows the 'Edit Ethernet' configuration window. A dropdown menu is open over the 'DHCPv6 Setting' section, showing 'DHCPv6 Lease' selected and highlighted with a red box. Other settings include 'Link-Local Address: fe80::becf:4fff:feb7:480a/64' and 'IPv6 Address/Prefix Length: 2001:b030:7036:20::1/'.

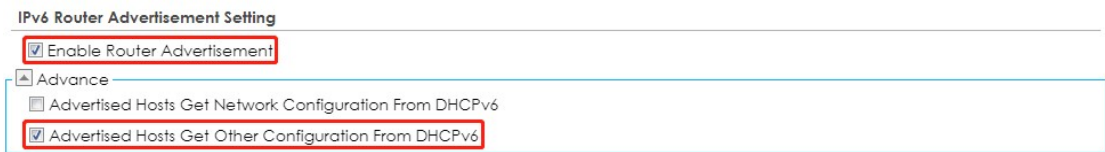
In this scenario, we use Google V6 DNS server for LAN client. Click OK to save.

The screenshot shows the 'Add Lease Object' dialog box. The 'Name:' field is 'DNS', the 'Lease Type:' dropdown is 'DNS Server', and the 'User Defined Address:' field is '2001:4860:4860::8888'. There are 'OK' and 'Cancel' buttons at the bottom.

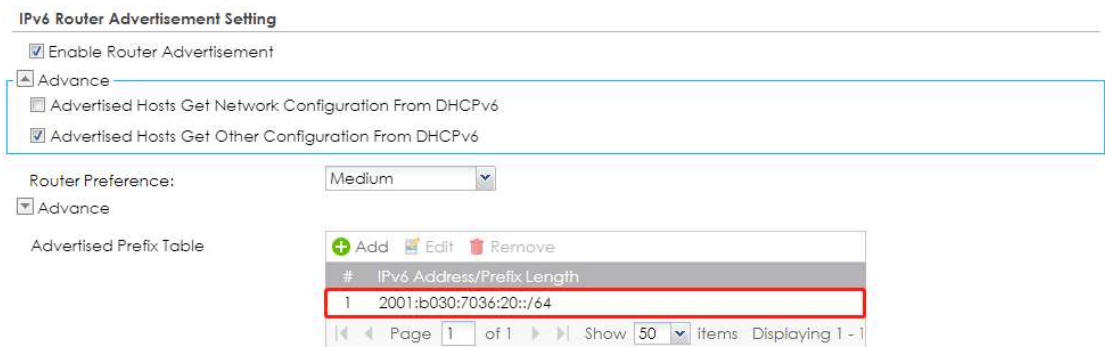
Add this Lease object in DHCPv6 Lease options.



5. Tick "Enable Router Advertisement", and "Advertised Hosts Get Other Configuration From DHCPv6".



6. Set up Advertised Prefix from DHCPv6 Prefix Delegation. In this scenario, we set 2001:b030:7036:20::/64 for LAN prefix.



Test Result

Client IPv6 address.

```
C:\Windows\System32>ipconfig

Windows IP Configuration

Ethernet adapter 乙太網路:

    Connection-specific DNS Suffix  . : 
    IPv6 Address. . . . . : 2001:b030:7036:20:79f1:f86:21e0:c44d
    Temporary IPv6 Address. . . . . : 2001:b030:7036:20:2c2e:ae4c:4082:2188
    Link-local IPv6 Address . . . . . : fe80::79f1:f86:21e0:c44d%4
    IPv4 Address. . . . . : 192.168.1.34
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::becf:4fff:feb7:480a%4
                              192.168.1.1
```

Ping to Google web site.

```
C:\Windows\System32>ping www.google.com.tw

Pinging www.google.com.tw [2404:6800:4008:802::2003] with 32 bytes of data:
Reply from 2404:6800:4008:802::2003: time=10ms
Reply from 2404:6800:4008:802::2003: time=8ms
Reply from 2404:6800:4008:802::2003: time=9ms
Reply from 2404:6800:4008:802::2003: time=12ms

Ping statistics for 2404:6800:4008:802::2003:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 12ms, Average = 9ms
```

Test Your IPv6 connection.

The screenshot shows a web browser window with the URL <https://test-ipv6.com/>. The page title is "Test your IPv6 connectivity." and it features a navigation menu with "Test IPv6", "FAQ", and "Mirrors". The main content area displays several test results:

- Your IPv4 address on the public Internet appears to be 61.222.75.14
- Your IPv6 address on the public Internet appears to be 2001:b030:7036:20:2c2e:ae4c:4082:2188
- Your Internet Service Provider (ISP) appears to be HINET Data Communication Business Group
- Since you have IPv6, we are including a tab that shows how well you can reach other IPv6 sites. [more info](#)
- HTTPS support on this web site is in beta. [more info](#)
- Your DNS server (possibly run by your ISP) appears to have IPv6 Internet access.

A progress bar indicates a "Your readiness score" of 10/10, with the text "for your IPv6 stability and readiness, when publishers are forced to go IPv6 only". Below the score, there is a link to "Click to see Test Data" and a note "(Updated server side IPv6 readiness stats)".