ubuntu 18.04,20.04 配置IPv6

使用netplan配置静态ip

```
xgc@xgc-virtual-machine:~$ sudo vim /etc/netplan/01-network-manager-all.yaml
xgc@xgc-virtual-machine:~$ cat /etc/netplan/01-network-manager-all.yaml
# Let NetworkManager manage all devices on this system
network:
  version: 2
  ethernets:
    ens192:
      dhcp4: false
      dhcp6: false
      addresses:
        - "172.16.157.71/24"
        - "2004::21/64"
      nameservers:
        addresses: [8.8.8.8,114.114.144.144]
xgc@xgc-virtual-machine:~$ sudo netplan apply
```

- **dhcp4: false，dhcp6: false**：配置静态IP，先关闭dhcp
- **ens192**：网卡标识
- **ens192.addresses**：可以同时配置IPv4地址和IPv6地址。

检查IP是否配置成功

```
xgc@xgc-virtual-machine:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group
default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: ens160: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default
qlen 1000
    link/ether 00:0c:29:10:16:18 brd ff:ff:ff:ff:ff:ff
3: ens192: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group
default qlen 1000
    link/ether 00:0c:29:10:16:22 brd ff:ff:ff:ff:ff:ff
    inet 172.16.157.71/24 brd 172.16.157.255 scope global ens192
       valid_lft forever preferred_lft forever
    inet6 2004::21/64 scope global
       valid_lft forever preferred_lft forever
    inet6 fe80::20c:29ff:fe10:1622/64 scope link
       valid_lft forever preferred_lft forever
```

ubuntu ping 其他设备，被ping ip是window10设备，需要关闭防火墙。

```
# 使用ping6命令 ping ipv6
xgc@xgc-virtual-machine:~$ ping6 2004::10
PING 2004::10(2004::10) 56 data bytes
64 bytes from 2004::10: icmp_seq=1 ttl=128 time=0.738 ms
64 bytes from 2004::10: icmp_seq=2 ttl=128 time=0.891 ms
64 bytes from 2004::10: icmp_seq=3 ttl=128 time=1.03 ms
64 bytes from 2004::10: icmp_seq=4 ttl=128 time=1.37 ms
^C
--- 2004::10 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3029ms
rtt min/avg/max/mdev = 0.738/1.010/1.378/0.237 ms

# 使用ping命令 ping ipv4
xgc@xgc-virtual-machine:~$ ping 172.16.157.29
PING 172.16.157.29 (172.16.157.29) 56(84) bytes of data.
64 bytes from 172.16.157.29: icmp_seq=1 ttl=64 time=0.761 ms
64 bytes from 172.16.157.29: icmp_seq=2 ttl=64 time=1.26 ms
64 bytes from 172.16.157.29: icmp_seq=3 ttl=64 time=0.804 ms
64 bytes from 172.16.157.29: icmp_seq=4 ttl=64 time=0.983 ms
^C
--- 172.16.157.29 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3036ms
rtt min/avg/max/mdev = 0.761/0.953/1.265/0.199 ms
xgc@xgc-virtual-machine:~$
```

操作截图

```
xgc@xgc-virtual-machine:~$ sudo vim /etc/netplan/01-network-manager-all.yaml
xgc@xgc-virtual-machine:~$ cat /etc/netplan/01-network-manager-all.yaml
# Let NetworkManager manage all devices on this system
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  version: 2
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    ens192:
      dhcp4: false
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      addresses:
        - "172.16.157.71/24"
        - "2004::21/64"
      nameservers:
        addresses: [8.8.8.8,114.114.144.144]
xgc@xgc-virtual-machine:~$ sudo netplan apply
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1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: ens160: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether 00:0c:29:10:16:18 brd ff:ff:ff:ff:ff:ff
3: ens192: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:0c:29:10:16:22 brd ff:ff:ff:ff:ff:ff
    inet 172.16.157.71/24 brd 172.16.157.255 scope global ens192
       valid_lft forever preferred_lft forever
    inet6 2004::21/64 scope global
       valid_lft forever preferred_lft forever
    inet6 fe80::20c:29ff:fe10:1622/64 scope link
       valid_lft forever preferred_lft forever
xgc@xgc-virtual-machine:~$ ping6 2004::10
PING 2004::10(2004::10) 56 data bytes
64 bytes from 2004::10: icmp_seq=1 ttl=128 time=0.738 ms
64 bytes from 2004::10: icmp_seq=2 ttl=128 time=0.891 ms
64 bytes from 2004::10: icmp_seq=3 ttl=128 time=1.03 ms
64 bytes from 2004::10: icmp_seq=4 ttl=128 time=1.37 ms
^C
--- 2004::10 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3029ms
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xgc@xgc-virtual-machine:~$ ping 172.16.157.29
PING 172.16.157.29 (172.16.157.29) 56(84) bytes of data.
64 bytes from 172.16.157.29: icmp_seq=1 ttl=64 time=0.761 ms
64 bytes from 172.16.157.29: icmp_seq=2 ttl=64 time=1.26 ms
64 bytes from 172.16.157.29: icmp_seq=3 ttl=64 time=0.804 ms
64 bytes from 172.16.157.29: icmp_seq=4 ttl=64 time=0.983 ms
```

使用IPv6登陆SSH

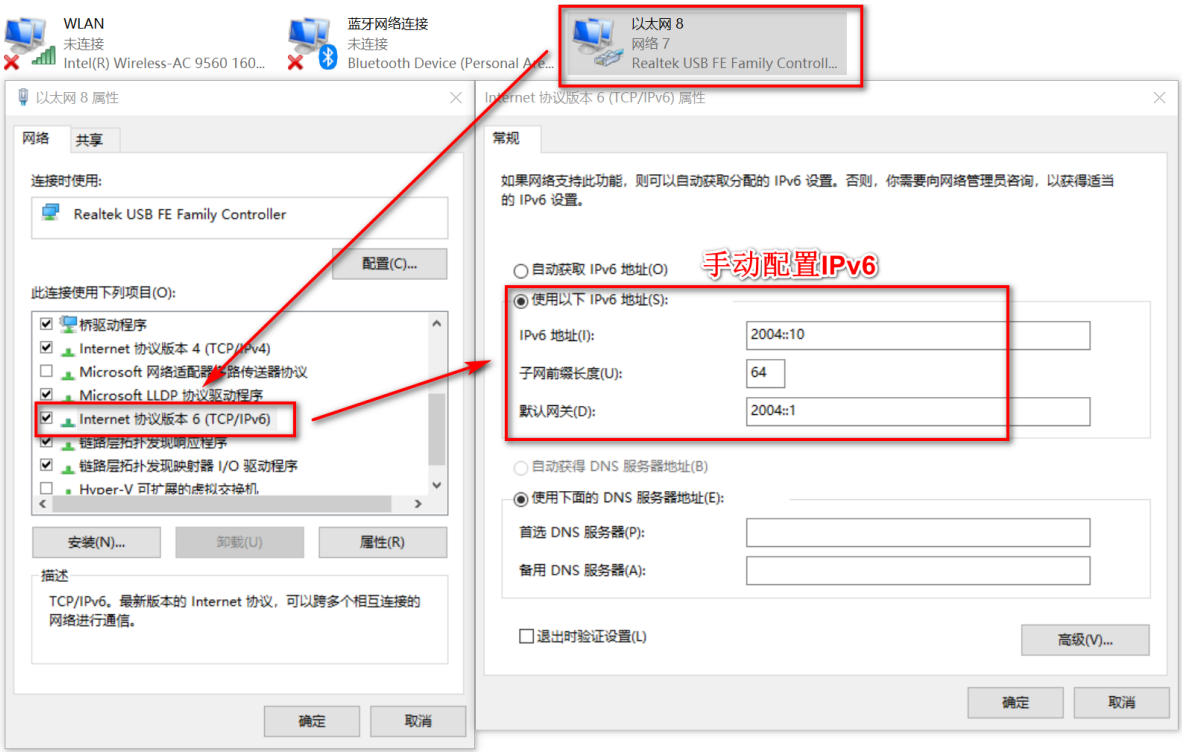
```
xgc@xgc-virtual-machine:~$ ssh xgc@2004::21
The authenticity of host '2004::21 (2004::21)' can't be established.
ECDSA key fingerprint is SHA256:5BleWs3zW9mY1XpkSne+bCwLnnDrD7TmLUxKAGtU+3s.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '2004::21' (ECDSA) to the list of known hosts.
xgc@2004::21's password:
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 5.4.0-58-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage


 * Canonical Livepatch is available for installation.
   - Reduce system reboots and improve kernel security. Activate at:
     https://ubuntu.com/livepatch

66 个可升级软件包。
20 个安全更新。

Your Hardware Enablement Stack (HWE) is supported until April 2023.
Last login: Thu Jan  7 12:12:23 2021 from 2004::10
xgc@xgc-virtual-machine:~$
```

使用IPv6 telnet

```
xgc@xgc-virtual-machine:~$ telnet 2004::10 5060
Trying 2004::10...
Connected to 2004::10.
Escape character is '^]'.
```

window配置IPv6

win10配置IPv6



win10 ping其他设备

```
C:\Users\Administrator>ping 172.16.157.71

正在 Ping 172.16.157.71 具有 32 字节的数据:
来自 172.16.157.71 的回复: 字节=32 时间<1ms TTL=64
来自 172.16.157.71 的回复: 字节=32 时间<1ms TTL=64
来自 172.16.157.71 的回复: 字节=32 时间<1ms TTL=64
来自 172.16.157.71 的回复: 字节=32 时间<1ms TTL=64

172.16.157.71 的 Ping 统计信息:
    数据包: 已发送 = 4，已接收 = 4，丢失 = 0 (0% 丢失)，
往返行程的估计时间(以毫秒为单位):
    最短 = 0ms，最长 = 0ms，平均 = 0ms

C:\Users\Administrator>ping -6 2004::21

正在 Ping 2004::21 具有 32 字节的数据:
来自 2004::21 的回复: 时间<1ms
来自 2004::21 的回复: 时间<1ms
```

```
来自 2004::21 的回复: 时间=1ms
来自 2004::21 的回复: 时间<1ms

2004::21 的 Ping 统计信息:
    数据包: 已发送 = 4，已接收 = 4，丢失 = 0 (0% 丢失)，
往返行程的估计时间(以毫秒为单位):
    最短 = 0ms，最长 = 1ms，平均 = 0ms
```

使用IPv6 telnet

```
C:\Users\Administrator>telnet 2004::21 22

欢迎使用 Microsoft Telnet Client
                        Escape 字符为 'CTRL+]'


Microsoft Telnet> quit


C:\Users\Administrator>
```

注意window系统需要关闭防火墙,否则被ping不通