



Objetivo:

- Configurar **-dualstack-** Ipv4/Ipv6
- Configuración IPv4 **server1.example.com** y **station1.example.com** Para: **enp0s3**

 ↳ **Parámetros de conexión Ipv4:** **/etc/hosts:**

 192.168.1.150 server1.example.com server1

 192.168.1.151 station1.example.com station1

↳ **server1** → interfaz Para: **enp0s8**

 ↳ **Parámetros de conexión Ipv4:**

 192.168.1.160

 ↳ **Parámetros de conexión Ipv6:**

 192.168.1.165 → Ipv4 mapped Ipv6 **decimal**

↳ **station1** → interfaz Para: **enp0s8**

 ↳ **Parámetros de conexión Ipv4:**

 192.168.1.161

 ↳ **Parámetros de conexión Ipv6:**

 192.168.1.166 → Ipv4 mapped Ipv6 **comprimido**

- Realizar **ping'ings cruzados** desde: **server1 a station1** y desde: **station1 a server1**

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(Tiempo máximo estimado → 10 minutos)...

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↳ **server1**

[root@server1 ~]# nmcli c s

| NOMBRE | UUID | TIPO | DISPOSITIVO |
|---------------------|--------------------------------------|----------------|-------------|
| Conexión cableada 1 | a009375f-7341-3a2d-a8b8-51ab7a0a1b70 | 802-3-ethernet | enp0s8 |
| enp0s3 | a315dc76-a615-4f21-b27f-69ad3ddea132 | 802-3-ethernet | enp0s3 |

[root@server1 network-scripts]# ip a

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN qlen 1
   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: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
   qlen 1000
   link/ether 08:00:27:25:35:42 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.150/24 brd 192.168.1.255 scope global enp0s3
       valid_lft forever preferred_lft forever
   inet6 fe80::8f73:7ab8:f88:794e/64 scope link
       valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state
UP qlen 1000
   link/ether 08:00:27:00:86:8f brd ff:ff:ff:ff:ff:ff
```



```
[root@server1 network-scripts]# nmcli connection add type ethernet con-name enp0s8 ifname enp0s8 ipv4.addresses 192.168.1.160/24 gw4 192.168.1.1 ipv4.method manual
```

Conexión 'enp0s8' (105a039e-f169-496a-8605-34c8dad6d343) agregada con éxito.

```
[root@server1 network-scripts]# nmcli connection modify enp0s8 ipv6.addresses ::ffff:192.168.1.165/96
```

```
[root@server1 network-scripts]# nmcli connection up enp0s8
```

Conexión activada con éxito (D-Bus active path:

/org/freedesktop/NetworkManager/ActiveConnection/19)

```
[root@server1 network-scripts]# ip a
```

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN qlen 1
```

```
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: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000
```

```
link/ether 08:00:27:25:35:42 brd ff:ff:ff:ff:ff:ff
```

```
inet 192.168.1.150/24 brd 192.168.1.255 scope global enp0s3
```

```
valid_lft forever preferred_lft forever
```

```
inet6 fe80::8f73:7ab8:f88:794e/64 scope link
```

```
valid_lft forever preferred_lft forever
```

```
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000
```

```
link/ether 08:00:27:00:86:8f brd ff:ff:ff:ff:ff:ff
```

```
inet 192.168.1.160/24 brd 192.168.1.255 scope global enp0s8
```

```
valid_lft forever preferred_lft forever
```

```
inet6 ::ffff:192.168.1.165/96 scope global tentative
```

```
valid_lft forever preferred_lft forever
```

```
inet6 fe80::3b6:2f10:d51b:ecf2/64 scope link
```

```
valid_lft forever preferred_lft forever
```

```
[root@server1 network-scripts]# ping -c2 192.168.1.160
```

```
PING 192.168.1.160 (192.168.1.160) 56(84) bytes of data.
```

```
64 bytes from 192.168.1.160: icmp_seq=1 ttl=64 time=0.037 ms
```

```
64 bytes from 192.168.1.160: icmp_seq=2 ttl=64 time=0.091 ms
```

```
--- 192.168.1.160 ping statistics ---
```

```
2 packets transmitted, 2 received, 0% packet loss, time 1006ms
```

```
rtt min/avg/max/mdev = 0.037/0.064/0.091/0.027 ms
```

```
[root@server1 network-scripts]# ping -6 -c2 ::ffff:192.168.1.165
```

```
PING ::ffff:192.168.1.165(::ffff:192.168.1.165) 56 data bytes
```

```
64 bytes from ::ffff:192.168.1.165: icmp_seq=1 ttl=64 time=0.144 ms
```

```
64 bytes from ::ffff:192.168.1.165: icmp_seq=2 ttl=64 time=0.131 ms
```



--- ::ffff:192.168.1.165 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1000ms
rtt min/avg/max/mdev = 0.131/0.137/0.144/0.013 ms

[root@server1 network-scripts]# vim /etc/sysconfig/network-scripts/ifcfg-enp0s8

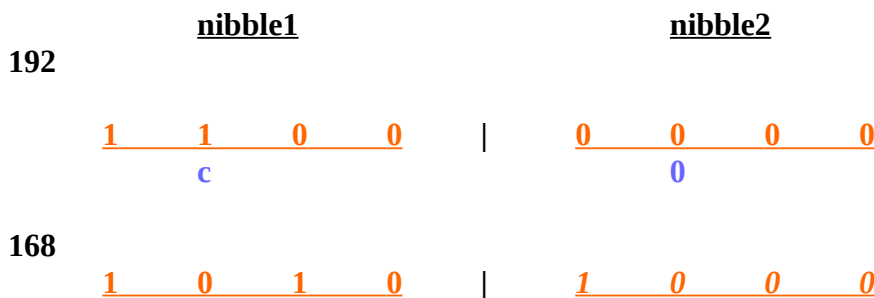
TYPE=Ethernet
PROXY_METHOD=none
BROWSER_ONLY=no
BOOTPROTO=none
IPADDR=192.168.1.160
PREFIX=24
GATEWAY=192.168.1.1
DEFROUTE=yes
IPV4_FAILURE_FATAL=no
IPV6INIT=yes
IPV6_AUTOCONF=yes
IPV6_DEFROUTE=yes
IPV6_FAILURE_FATAL=no
IPV6_ADDR_GEN_MODE=stable-privacy
NAME=enp0s8
UUID=105a039e-f169-496a-8605-34c8dad6d343
DEVICE=enp0s8
ONBOOT=yes
IPV6ADDR>:::ffff:192.168.1.165/96

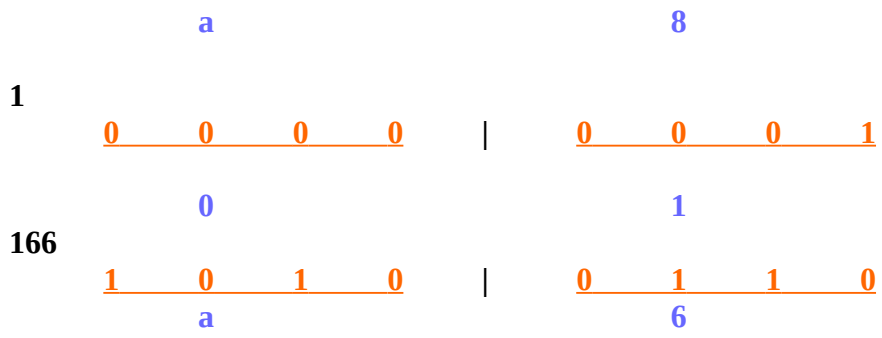
↘ [station1](#)

[root@station1 network-scripts]# nmcli connection add type ethernet con-name enp0s8
ifname enp0s8 ipv4.addresses 192.168.1.161/24 gw4 192.168.1.1 ipv4.method manual
Conexión 'enp0s8' (20c79e5c-eba2-4a69-8260-42ca94949218) agregada con éxito.

↘ Parámetros de conexión Ipv6:
192.168.1.166 → Ipv4 mapped Ipv6 comprimido

Descomposición en 'nibbles' (cuartetos) la dirección 192.168.1.166 para componer una dirección en hexadecimal: mapeada Ipv4/Ipv6:





==> Nuestro Id de Red Ipv6 -comprimido- → ::ffff:c0a8:01a6/96

```
[root@station1 network-scripts]# nmcli connection modify enp0s8 ipv6.addresses
::ffff:c0a8:01a6/96
```

```
[root@station1 network-scripts]# nmcli connection up enp0s8
```

Conexión activada con éxito (D-Bus active path:
/org/freedesktop/NetworkManager/ActiveConnection/8)

```
[root@station1 network-scripts]# ip a
```

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN qlen 1
    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: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
    qlen 1000
    link/ether 08:00:27:04:14:89 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.151/24 brd 192.168.1.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::d48e:7c3f:9c17:1f76/64 scope link
        valid_lft forever preferred_lft forever
    inet6 fe80::8f73:7ab8:f88:794e/64 scope link tentative dadfailed
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
    qlen 1000
    link/ether 08:00:27:dc:eb:2e brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.161/24 brd 192.168.1.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet6 ::ffff:192.168.1.166/96 scope global
        valid_lft forever preferred_lft forever
    inet6 fe80::f35a:a545:d787:1838/64 scope link
        valid_lft forever preferred_lft forever
```

```
[root@station1 network-scripts]# ping -c2 192.168.1.161
```

```
PING 192.168.1.161 (192.168.1.161) 56(84) bytes of data.
64 bytes from 192.168.1.161: icmp_seq=1 ttl=64 time=0.034 ms
```



64 bytes from 192.168.1.161: icmp_seq=2 ttl=64 time=0.094 ms

--- 192.168.1.161 ping statistics ---

2 packets transmitted, 2 received, 0% packet loss, time 1007ms

rtt min/avg/max/mdev = 0.034/0.064/0.094/0.030 ms

[root@station1 network-scripts]# ping -6 -c2 ::ffff:192.168.1.166

PING ::ffff:192.168.1.166(::ffff:192.168.1.166) 56 data bytes

64 bytes from ::ffff:192.168.1.166: icmp_seq=1 ttl=64 time=0.062 ms

64 bytes from ::ffff:192.168.1.166: icmp_seq=2 ttl=64 time=0.129 ms

--- ::ffff:192.168.1.166 ping statistics ---

2 packets transmitted, 2 received, 0% packet loss, time 1001ms

rtt min/avg/max/mdev = 0.062/0.095/0.129/0.034 ms

[root@station1 network-scripts]# vim ifcfg-enp0s8

TYPE=Ethernet

PROXY_METHOD=none

BROWSER_ONLY=no

BOOTPROTO=none

IPADDR=192.168.1.161

PREFIX=24

GATEWAY=192.168.1.1

DEFROUTE=yes

IPV4_FAILURE_FATAL=no

IPV6INIT=yes

IPV6_AUTOCONF=yes

IPV6_DEFROUTE=yes

IPV6_FAILURE_FATAL=no

IPV6_ADDR_GEN_MODE=stable-privacy

NAME=enp0s8

UUID=20c79e5c-eba2-4a69-8260-42ca94949218

DEVICE=enp0s8

ONBOOT=yes

IPV6ADDR>::ffff:192.168.1.166/96

↘ ↘ Test's de verificación cruzados → server1/station1

[root@station1 network-scripts]# ping -6 -c2 ::ffff:192.168.1.165

PING ::ffff:192.168.1.165(::ffff:192.168.1.165) 56 data bytes

64 bytes from ::ffff:192.168.1.165: icmp_seq=1 ttl=64 time=0.483 ms

64 bytes from ::ffff:192.168.1.165: icmp_seq=2 ttl=64 time=0.805 ms

--- ::ffff:192.168.1.165 ping statistics ---

2 packets transmitted, 2 received, 0% packet loss, time 1000ms

rtt min/avg/max/mdev = 0.483/0.644/0.805/0.161 ms

[root@server1 network-scripts]# ping -6 -c2 ::ffff:192.168.1.166

PING ::ffff:192.168.1.166(::ffff:192.168.1.166) 56 data bytes



64 bytes from ::ffff:192.168.1.166: icmp_seq=1 ttl=64 time=0.335 ms

64 bytes from ::ffff:192.168.1.166: icmp_seq=2 ttl=64 time=0.848 ms

--- ::ffff:192.168.1.166 ping statistics ---

2 packets transmitted, 2 received, 0% packet loss, time 1006ms

rtt min/avg/max/mdev = 0.335/0.591/0.848/0.257 ms

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