

RFC 3021

Why aren't we using it?

What is RFC3021

Using 31-Bit Prefixes on IPv4 Point-to-Point Links

Reducing Overhead for P2P Networks entirely (50%)

It's almost 16 Years old, it could drive a car in the US in a Month!

Typical Usage for me:

Our First /24 Block: 22 /30 Networks and 8 /31

If I move these /30 to /31: 44 IP Addresses saved.

That's 6% of the Block, or more than a /27

Implementation samples

From nice to ugly

PGP B2CB 368D 5B41 7A9E 5AA1 9719 7012 09AB 6892 4459
gebhardt@openfactory.ch <http://twitter.com/wauwuff>

• Cisco

Easy peasy, configure it, works. Warning message, works

**If OSPF is enabled: remember to set network type
(But still works anyway)**

xxx(config-if)#ip address 192.0.2.2 255.255.255.254

**% Warning: use /31 mask on non point-to-point
interface cautiously**

c7200p-adventerprisek9_sna-mz.124-24.T1.bin

~~Brocade~~Broadcom

Works almost the same as cisco, no issue on 5.8
Tested on a Netiron CER and put into production
a few weeks ago

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You have to create /32 - local address in address, remote-point in „network“ field (so no real RFC3021)

Local address can be reused over interfaces, for a meshed network of 4 routers each router only needs 1 IP for P2P - even bigger savings

```
/ip address add address=192.0.2.4/32  
network=192.0.2.10 interface=ether1
```

(note the omission of network mask in the network address)

They don't have to be consecutive if between MTIKs

Interoperability: tested with Cisco, works fine for eBGP

Linux

```
sudo ifconfig eth0:1 192.0.2.10/31
```

```
Ping 192.0.2.11
```

```
PING 192.0.2.11 (192.0.2.11) 56(84) bytes of data.
```

```
64 bytes from 192.0.2.11: icmp_seq=1 ttl=64 time=0.636 ms
```

```
ARP works fine too
```


Observations

OSPF works fine on Mikrotik & Cisco (so far observed)

The additional /31 and /32 Subnets => aggregate it

OSPF network type works fine if you leave it by default. NBMA worked too

Phpipam (Address management) does not support it

Experience in Interconnects

Cogent: NOPE

Litecom: If you ask for it

Some unnamed: „we have strategically decided against it“

Other opinions „We don't do it on the core but for interconnects (?)

Private Peering: „Yeah let's try it out, never done it before“

Discussions

Are you using it?

If yes: do you have any numbers on savings, problems?

If now: Why do you decide against it? Technical reasons or just „strategic“

Is this is as religious as using BIDI Optics?

Felt to me like editor wars or no-negotiate vs autoneg on links