

IP Allocation policy

Global pools of IP Version 4 (IPv4) addresses are now entirely consumed. While Fluency has adequate reserves for the medium term, to ensure these last as long as possible, the following policies are now in effect.

What do i get as standard with NDG Supernet circuit?

NDG Supernet intends to provide a static public IPv4 address with every circuit for as long as possible. This will be a /32 single address for products in the 'broadband' portfolio (ADSL, FTTC etc.). This is possible because these services are delivered using PPP, which allows a /32 address to be applied to the customer router without the need for a 'default gateway' address.

Where the delivery is Ethernet (EFM, EoFTTC, Fibre Ethernet), NDG Supernet will issue a /31 subnet as default (two addresses). This is known as your 'link subnet' because it establishes the link between your equipment and the NDG Supernet network, with the first address configured on the Access Node you are connected to within the NDG Supernet network, and the second your own equipment.

Customers need to setup their router with the second usable address, using the first address as the default gateway.

Example link subnet: 123.123.123.10/31 Customer Router: 123.123.123.11 Subnet Mask: 255.255.255.254 Default Gateway: 123.123.123.10

Traditionally a link subnet would be the larger size of /30 (four addresses, two usable in an Ethernet segment), however as most modern routers now support /31s where there are only two devices in the segment, these are preferred. If your equipment doesn't support /31 link subnets, NDG Supernet will issue a /30.

Example link subnet: 123.123.123.20/30 Customer Router: 123.123.123.22 Subnet Mask: 255.255.255.252 Default Gateway: 123.123.123.21

Will NDG Supernet provide me with X number of IP addresses?

The short answer is yes, if you can justify them. In principle, if you absolutely require a block of addresses, NDG Supernet will issue them and at the moment there is no additional charge for them. The justification is however very strict, and comes with a caveat:

Because NDG Supernet do not currently charge for addresses, large address blocks are issued on a discretionary basis. This will depend on the end-user business need and

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willingness by the customer to conserve addresses where possible. Where customers expect to have large blocks issued and is not supportive in providing information or making reasonable changes to their network topology to accommodate the conservation guidelines - the request will likely be denied outright.

Before you submit your request, NDG Supenet will expect you to follow good practice to keep your request as small as possible:

Use NAT (Network Address Translation) and PAT (Port Address Translation) on your router/firewall to allow multiple services to be hosted behind a single address.

If at all feasible one-to-one NAT should be employed to allow the entire IP allocation to be used (using public ranges directly assigned to an Ethernet LAN means three IPs are automatically wasted for network, broadcast and router addresses).

Where multiple services are used for staff only, VPNs should be used to mitigate the need for any of the non- public servers to have public IPs.

To start the IP justification process, you will need to:

- For each IP address required, list the devices that will be using the address with details of the purpose of the device as well as make, model and MAC address.
- For each device, provide a list of applications (with associated port numbers) that require public/external access.
- If appropriate, provide network topology diagrams to explain any need for public addresses within the network infrastructure (routers/firewalls).
- Describe in detail why you can't use any of the conservation measures above to reduce the size of the request.

What is the long-term plan?

There will be a time where IPv4 becomes completely exhausted, and hopefully IPv6 adoption will be much more prevalent. In the meantime, NDG Supenernet has plans to adopt a Carrier Grade NAT (CGN) solution, whereby customers will be given IP addresses within the reserved (non-public) range of 100.64.0.0/10, which NDG Supernet will automatically NAT at its borders