Understanding IPv6 and Prefixes

As the internet continues to grow, so does the need for more IP addresses. That's where IPv6 comes in — the next generation of Internet Protocol designed to replace IPv4. In this article, we'll explain what IPv6 is, how it works, and what IPv6 prefixes you'll see from us.

What Is IPv6?

IPv6 (Internet Protocol version 6) is a system that allows devices to communicate over the internet by assigning them unique addresses. Unlike IPv4, which uses 32-bit addresses (like 192.168.1.1), IPv6 uses 128-bit addresses, allowing for a massive number of unique IP addresses.

An IPv6 address looks like this:

2001:0db8:85a3:0000:0000:8a2e:0370:7334

To make them easier to read, IPv6 addresses are often shortened like this:

2001:db8:85a3::8a2e:370:7334

What Is a Prefix?

In IPv6, a prefix defines a range or "block" of IP addresses, similar to how postal codes help identify regions in physical addresses.

An IPv6 prefix looks like this:

2001:db8:abcd::/48

Let's break that down:

2001:db8:abcd:: is the start of the address range.

/48 tells us how many bits are used for the network portion of the address.

The shorter the prefix (e.g. /32), the more IP addresses it includes. The longer the prefix (e.g. /64), the smaller the address block.

Note: The exact prefix you receive may vary depending on your service type and location. These prefixes are dynamically assigned and routeable through our network.

What You Need to Do

In most cases, you don't need to do anything! Our network and hardware automatically configure IPv6 for you. If you're using your own router, make sure it supports IPv6 and that it's enabled in the settings. If you're a business customer or a tech-savvy home user managing custom network setups, knowing your prefix can help with setting up firewalls, routing, or DNS services.

Still Have Questions?

We're here to help. If you need assistance with IPv6 configuration or want to learn more about how it works on your service, feel free to contact our support team.

Online URL:
https://articles.spintel.net.au/article/understanding-ipv6-and-prefixes.html