Beyond IPv4: Addressing for the Future

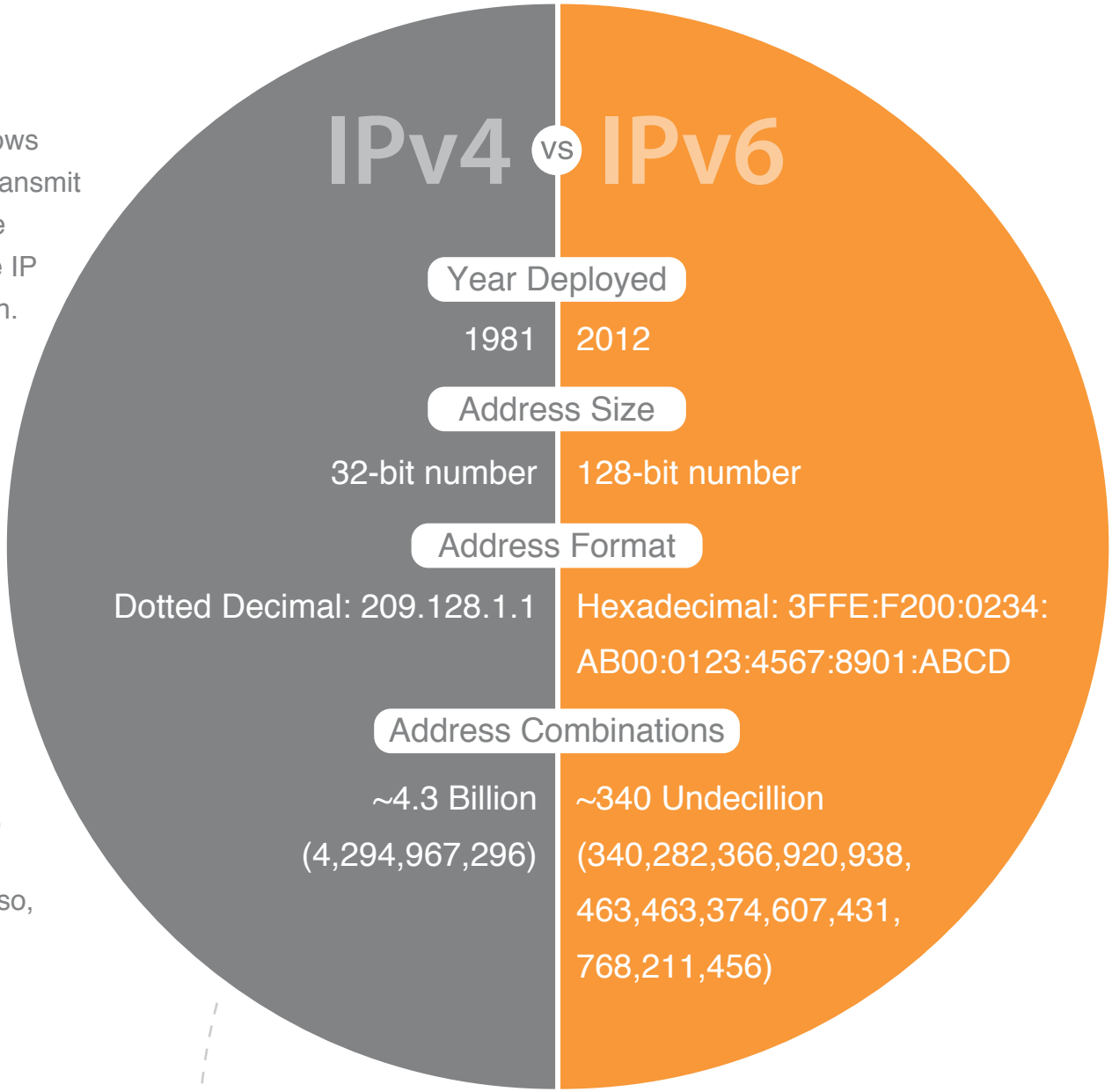
KickFire®

Addressing the Internet

Internet Protocol (IP) is the foundation that allows interconnected devices to communicate and transmit data across the internet. Similar to a telephone number, a connected device requires a unique IP address to ensure proper routing of information.

There are two versions of the Internet Protocol in use today – IPv4 and IPv6. Due to its global adoption in 1981, IPv4 remains the most commonly used address protocol and the backbone of business network infrastructure. Its successor, IPv6, was developed to address the rapid growth of the internet and the need for more IP addresses.

With the explosion of internet-connected devices (e.g., mobile phones, cars, smart TVs, and appliances), it was predicted that the IPv4 address space would soon be exhausted and so, IPv6 was born.



What are Some Examples of IPv6 Usage?

In 2008, the number of devices connected to the internet exceeded the global population. This growth is primarily due to the Internet of Things (IoT). Imagine a modern-day connected home with phones and tablets for the entire family, smart appliances, alarms and other devices, easily consuming a dozen IP addresses or more. With IPv6 adoption stemming mainly from mobile devices, IPv4 is still the foundation for the majority of the business done on the internet.

A Dutch startup called *Sparked* uses wireless sensors on cattle to monitor health, location and other vitals[1]

Smartphone users worldwide are projected to reach 2.87 billion by 2020[2]

Atmospheric measurement devices help forecast weather

82% of all cars sold by 2021 will be connected to the internet (94 million cars)[3]

Did you know?

By 2020, it is estimated that there will be 50 billion devices connected to the internet[4]

Sources:

[1]Economist.com/node/17416748

[2]Statista.com/statistics/330695/number-of-smartphone-users-worldwide/

[3]Businessinsider.com/internet-of-things-connected-smart-cars-2016-10

[4]Strategyanalytics.com/strategy-analytics/news/strategy-analytics-press-releases/strategy-analytics-press-release/2017/10/26/smart-home-will-drive-internet-of-things-to-50-billion-devices-says-strategy-analytics#.WtUQv9MbOWY

The Persistence of IPv4

In addition, while complicated in itself, IPv4 is far simpler for Network Technicians to administer than IPv6.

Another big reason for slower IPv6 adoption is Network Address Translation (NAT), which allows companies to create private Local Area Networks (LAN) to provide their employees with an unlimited number of private IP addresses that reside and operate behind a single wide area network (WAN) IPv4 IP address.

NAT is one of the biggest reasons IPv4 is still the defacto standard when it comes to corporate networks.

Given that 1.2 billion IP addresses (37.4%) in the IPv4 space are in use within the United States, there is also less pressure by US-based companies to push for a switch to IPv6.

Will IPv6 Replace IPv4?

The short answer is “no.” The long *(and super nerdy)* answer includes many reasons for slow IPv6 adoption, such as requiring immense effort with little or no economic incentive for organizations to upgrade costly and complex hardware and software to support IPv6.

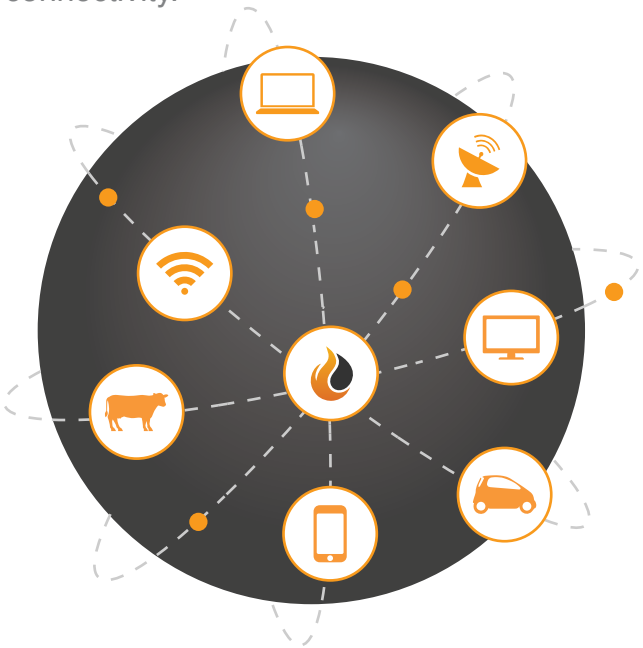
In many cases, the best course of action is to upgrade to a dual stack network in which all of a network’s nodes are both IPv4 and IPv6 enabled. This is especially important at the router, which is typically the first internal node to receive traffic from outside the network.

Many experts believe that the ultimate cure for IPv6 adoption is *time*. With aging network infrastructure and demand for scalability, the imminent implementation of IPv6 compatibility will provide more address space and serve growing global connectivity.

Discovering Business Intelligence within IPv6

Large corporations and Internet Service Providers (ISPs) are early adopters due to the very fact that the IPv4 address space has been completely allocated. Thus, the most significant driver of IPv6 adoption is in the mobile/last-mile connectivity, as well as Internet of Things (IoT). The world is becoming more and more connected, to the point that refrigerators can communicate with online retailers, smart TVs stream content from the web, etc.

With the majority of IPv6 usage being consumer-focused, the expansion into IPv6 by B2B companies is slowly growing. KickFire technology translates both IPv4 and IPv6 into business intelligence to help companies as they recognize their need to expand connectivity.



About KickFire

KickFire is the leader in cloud-based B2B automation and IP address intelligence. The KickFire solutions are powered by TWIN Caching, an advanced, proprietary IP-to-company identification technology. TWIN Caching systematically caches and analyzes over 340 undecillion IP addresses, going beyond IP association to uncover last-mile connectivity ownership. KickFire's complete suite of solutions enables companies to tap into their websites' invisible pipeline and transform anonymous visitors into actionable sales opportunities.

Questions? Connect with us
sales@kickfire.com
(408) 493-0456