Video Streaming with IPv6

Technology Brief

What is IPv6?

IPv6 is the next generation of the Internet Protocol (IP). IP addresses are required by all devices that send and receive data over the Internet including computers, routers, smartphones, and IPTV set-top boxes (STB). Usage of IPv6 is still in its infancy as most devices continue to rely on the older IPv4 protocol.

IPv6 was created by the Internet Engineering Task Force (IETF) in order to provide a greater number of IP addresses. Whereas IPv4's 32-bit length provides for 4.3 billion (232) addresses, IPv6 supports 128-bit lengths for 340 undecillion (3.4 x 1038) addresses or more than 667 quadrillion addresses per ever square millimeter of the Earth's surface; more than enough for the foreseeable future.

IPv6 address (8 x hexadecimal 16-bit blocks)

4FDE:**0000**:**0000**:**0002**:**0022**:**F376**:**FF3B**:**AB3F**

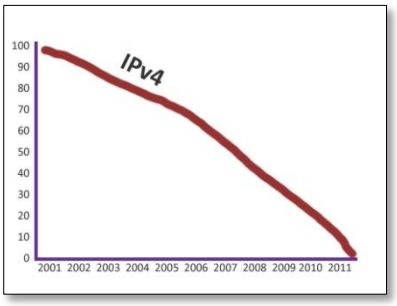
16-bit 16-bit 16-bit 16-bit 16-bit 16-bit 16-bit 16-bit

IPv4 address (4 x decimal 8-bit blocks)

192.**168**.**312**.**12**

8-bit 8-bit 8-bit 8-bit

Why do we need to use IPv6?



In February 2011 the Internet Assigned Numbers Authority (IANA), the global entity responsible for providing Internet addresses, issued the last remaining IPv4 addresses.

Though the world's five Regional Internet Registries (RIR) still have IPv4 addresses left to dispatch, it is predicted that these too will run out by the end of the decade. Telecom operators, ISPs, broadcasters, and hospitality services providers need to start thinking about how to switch over to IPv6.

How does IPv6 benefit IPTV and OTT streaming?

Apart from supporting a much great number of devices over the internet, IPv6 also introduces important features including new security mechanisms, improved quality of service (QoS), and more efficient ways of routing data. Another important benefit of IPv6 for video streaming is its native support for multicast which allows for a single or several devices working together to stream to multiple IP addresses at once.

In addition IPv6 improves upon mobility handling or the ability to communicate with different devices while roaming. Currently with IPv4, mobile devices such as smart-phones are dependent on a specific private IP address provided locally by an operator. For security reasons the device must connect to various tiers of the telecom operator's routers and firewalls before accessing the public internet

IPv6 features native support for auto-configuration to allow mobile devices with a gobal IPv6 address to directly access any other device while roaming. This will allow for a whole host of new OTT streaming services accessible from anywhere as it enables smooth transitions between home-based and on-the-road services.

Can IPv4 and IPv6 co-exist?

IPv4 and IPv6 will need to co-exist until all devices on the internet have switched over to IPv6. However, the two addressing systems are very different and not interchangeable. For this reason newer routers, computers, and set-top boxes provide for dual-stack techniques for supporting both IPv4 and IPv6 at the same time. Both Microsoft Windows and Apple OSX operating systems are capable of connecting to the Internet with an IPv6 address as long as the specific IP network it is connecting to is supporting IPv6. Where it gets complicated is when an IPv6 device is trying to communicate with an older IPv4 device over an IPv6 network. To address this issue a number of techniques exist including tunneling, which can open an IPv4 connection within an IPv6 network or encapsulation where an IPv4 address is including within an IPv6 data packet.

How is Anevia addressing IPv6?

Anevia products, including hardware and software, are IPv6 compliant. Anevia is already providing IPv6 solutions to its customers with both IPv6 and IPv4/IPv6 hybrid networks.

As Anevia continues to support IPv4, customers can migrate to IPv6 without having to switch out its DVB to IP gateways and video servers. Anevia's focus and expertise in IP streaming allows for building solutions that are adapted to specific customer migration strategies; no matter which transition technology they use.

The following Anevia products are all IPv6 compliant

	Telecoms and Broadcasting
ViaLive	DVB to IP Gateway
ViaMotion OTT	Over-the-top TV
ViaMotion IPTV	IPTV VOD server
	Hospitality
Flamingo	Live TV Streaming & Mosaic Generator
Toucan	VOD Server

About Anevia

Anevia provides video solutions and service infrastructure for the delivery of live TV and video on demand (VoD) services to TV, PC, Internet-connected and mobile devices. With over 1,000 deployments in 70 countries, representing millions of users and over 10,000 live channels, Anevia is a leader in delivering video solutions to telecom operators, broadcast service providers and the hospitality market.

For more information, please visit: http://www.anevia.com

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