It is important to note that any computer, mobile phone or any other device that connects to the internet needs a numerical IP address for it to be able to communicate with other devices. ThousandEyes (N.D) states that the original IP address scheme, called IPv4, is running out of addresses due to its widespread usage from the proliferation of so many connected devices. IPv6 solves this problem by having a larger number of IP addresses by almost 1028 times than that of IPv4. Therefore, since no device can connect without an IP address, I strongly believe that the future of the internet is based on the adoption of IPv6 and the rollout of associated security measures.

The benefits of IPv6 include more efficient routing, elimination of Network Address Translation, improved multicast routing, enabling of peer to peer communication, built in authentication and private support. All these advantages pose serious risk questions about security. However, IPv6 was designed to have its own inbuilt security protocol called IPsec. IPsec is an Internet Engineering Task force that authenticates and encrypts packets of data. With IPv4 IPsec was optional but with IPv6 it is mandatory. Therefore, because IPsec is applied at such a deep or “low” level, there is inherent protection for all higher-level protocols, such as TCP, http, proprietary application protocols, etc (IPV6, 2019)

Since all internet transactions use the DNS to translate human friendly domain names to the IP addresses, it is important to secure the DNS zone. DNSSEC would be very complementary to IPv6. IPv6 needs a more secure DNS zone, thus, DNSSEC is crucial as it strengthens authentication in DNS. The rollout of associated security measures is also critical as IPv6 does not operate exclusively of other zones or protocols. With security measures in place, it is true that the future of the internet is based on the adoption of IPv6.

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