

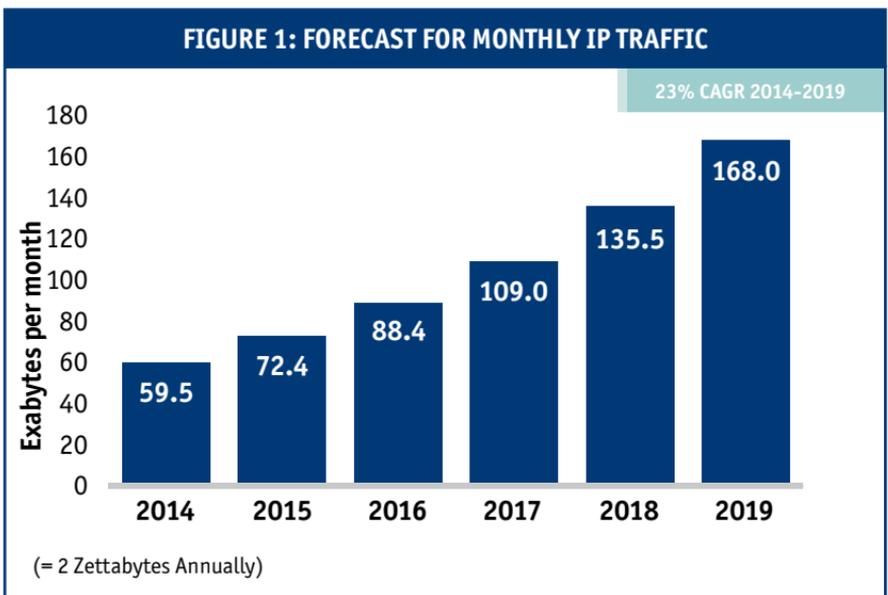
Bandwidth Explosion

By 2019, global IP traffic will pass two (2) Zettabytes annually or 168 Exabytes per month (**Figure 1**). To provide a point of reference, one (1) Zettabyte is equivalent to the amount of data that has traversed the internet since its creation.* The application that will drive the most bandwidth over the next five years is IP video. In fact, in 2019, if you were to sit down and watch one month worth of global IP video traffic, it would take you more than five (5) million years! Lastly, more and more of this IP traffic will be sent over wireless networks.

To prepare for this bandwidth explosion, a new IEEE initiative was started in 2014 to develop technology that boosts the bandwidth of existing Category 5e and Category 6 standards-based solutions. Specifically, the IEEE 802.3bz initiative is working to develop technology that allows 2.5G and 5G to work over existing Category 5e and Category 6 solutions. The thought is that by doing so, IT managers can use their existing network infrastructure to support the ramp-up of 802.11ac wireless technology.

However, there are pitfalls to this approach. First, both Category 5e and Category 6 were initially designed for only 1.0Gbps, and pushing these products to 2.5G and 5G will create alien crosstalk that they were not designed for. The consequence of this could be that bundle sizes may need to be reduced, and total channel lengths may be restricted to less than the standard 100 meters. Additionally, using the 802.11ac technology, the bandwidth required from the WAP to the IDF will ramp up to 6.9Gbps. At that point, 5.0G will not be enough. To avoid the need for costly changes down the road, we highly recommend only Category 6A be used to install WAPs.

For desktop applications, however, technology that allows Category 6 cable the ability to transmit up to 5.0G is an effective solution. Investing in a premium Category 6 product like LANmark™-2000 could certainly pay off down the road if the IEEE is successful and can transmit up to 5.0Gbps down premium Category 6 cabling. You could look at investing in a premium Category 6 solution like LANmark-2000 as a relatively inexpensive bandwidth insurance policy for the desktop.



*Source: Cisco VNI, 2015