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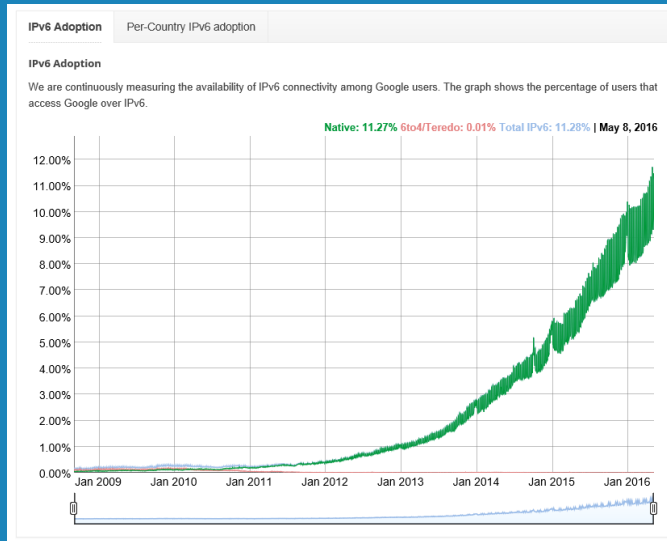


## Transitioning to Only IPv6

For the free video please see  
<http://itfreetraining.com/ipv6/transition-ipv6>

Welcome to our course on how to transition to an entirely IPv6 network. Out in the real-world environment, this day for the majority of users is a rather long way away, but this video will allow you to understand what you'll be required to do when you have to perform this conversion.

# Google IPv6 Statistics



0:17 – Currently, it’s virtually impossible to know exactly how many computer devices there are connected to the Internet that utilize IPv6. However, if I look at the statistics provided by Google, at the time of this video, it is suggested that IPv6 comprises only 11 percent of Google users. This suggests that the complete conversion to IPv6 is still a rather long way away.

# Recommendations

- Do not disable IPv6 on Windows
- Enable IPv4 and IPv6 where possible
  - Rather than use transition protocols
- IPv6 is very different to IPv4
  - Consider different ways to deploy

0:37 – Until IPv6 is completely deployed in the wild, which is still rather unlikely to be happening soon, there are some recommendations on how to use it in your environment. Firstly, do not disable IPv6 on Windows. Despite not utilising the protocol at this time, the IPv6 protocol with default configuration will not have any impact on your existing network. Some applications actually have some IPv6 capability and may be ready for the IPv6 protocol as it is and use some of the local network functions without additional configuration. Next, where possible implement both IPv4 and IPv6. The operating system will make the determination which protocol to use. This is a better option than using transition protocols. Transition protocols were designed to allow users to access IPv6 until native IPv6 support became readily available. They were not designed with the intent that they'd be used for the long term. So, when IPv6 is available, begin using it with IPv4 as a fallback when IPv6 has not been implemented completely to your destination. Recall that IPv6 differs greatly from IPv4. If you begin to deploy it, consider the varied ways in which you can deploy IPv6 that could not have been done with IPv4. For instance, a hierarchy of networks was not possible with IPv4. At the same time, you do not need to copy the existing design of your IPv4 environment.

# IPv6 Only

- All routers must support IPv6
- DNS must have IPv6 records
- All application must support IPv6
- All hosts must support IPv6

1:55 – If you do determine you'd want to convert over to an IPv6 network, remember that for this to work, your network must support and be configured for IPv6 capability. DNS servers require that they have IPv6 records created on them, otherwise network devices will be unable to utilize DNS to locate other IPv6 resources. With IPv6 implemented, all applications will need to run on IPv6. This is a huge requirement. Some applications will tout IPv6 support, however, IPv6 may not be a fully functional feature within the application. For example, Microsoft's continuous additions to IPv6 support in Group Policy. Depending on which Group Policy settings you enable, they may or may not support IPv6. To have an IPv6 only network is a lot of work and effort. Furthermore, there's always the risk that it may not work correctly. From an end user's perspective, despite the protocol used, they will access the network in the same way. The difference is transparent to the users.

# Coexistence Where Possible



3:00 – For these reasons, I would suggest that you implement both protocols wherever possible. Windows knows to default to IPv6 and then utilize IPv4 when IPv6 is not available. This provides the most effective utilisation of both protocols. It has taken over 21 years for IPv6 to reach roughly 11 percent according to Google. Due to this fact, most companies will be very hesitant to convert over to solely IPv6 with still so much IPv4 functionality remaining. We'll likely see many companies not adopting IPv6 until the percentage of the Internet using IPv6 is, or is close to, 100%. So at the present, I would personally implement both protocols whenever I can.