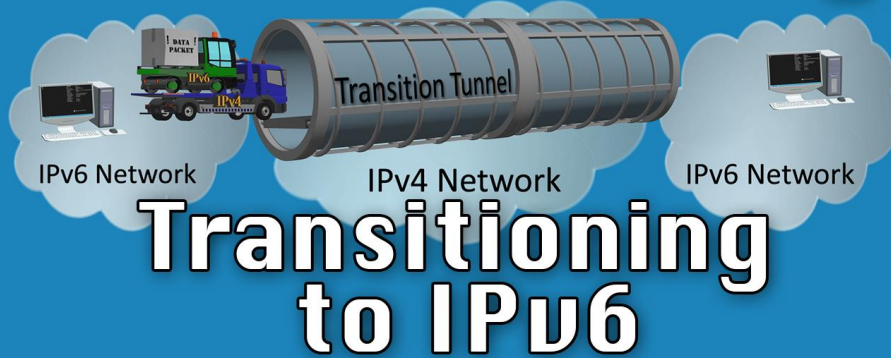


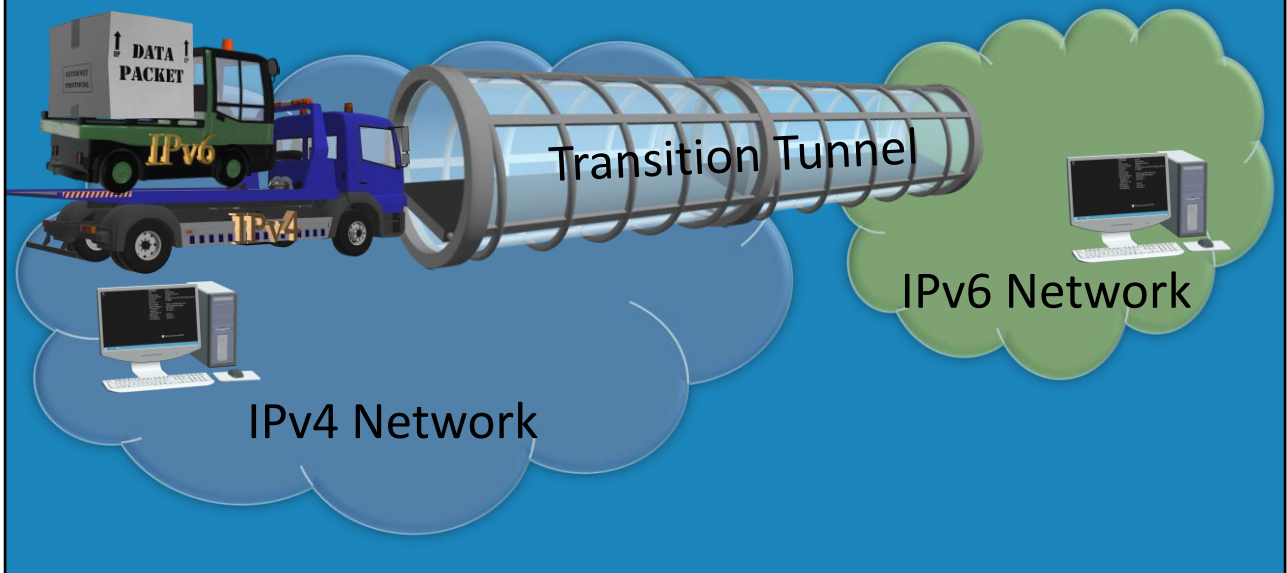
ITFreeTraining



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

This video will provide an introduction on how to transition to the IPv6 protocol. Currently it is estimated that just under 20% of the internet is IPv6 ready. In some cases, the administrator may require access to an IPv6 network when there is no native IPv6 network between them. This video looks at the basics of how these transition technologies work.

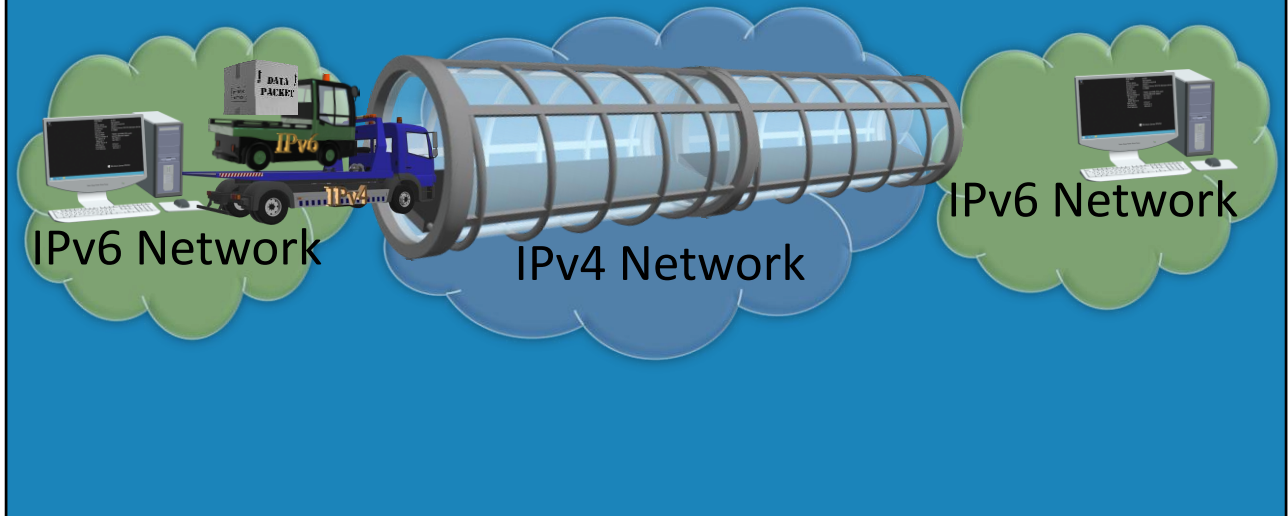
Transition Technologies



0:25 There are a number of different transition technologies which work in different ways and are used in different situations. The transition technology will depend on what networks are available and what features the user is attempting to access. In this example, the device is connected to an IPv4 only network and wants to connect to an IPv6 network. In order to achieve this, the device creates an IPv6 packet. This IPv6 packet can be routed on an IPv6 network like any other packet, however the device does not have direct access to an IPv6 network. The device, therefore places the IPv6 packet into an IPv4 packet. This will allow the packet to be routed over an IPv4 network. The device then creates a tunnel to a device that has access to both the IPv4 network and the IPv6, thus acting as a bridge. The packet can then be sent through the tunnel. Once over the bridge, the IPv4 packet is removed and then the IPv6 packet is sent to the destination. A number of IPv6 transition technologies use this approach.

Tunneling Across IPv4

- Bridges IPv6 networks using an IPv4 network



2:14 In some cases, the company may have an IPv6 network and want to connect to another IPv6 network. Between these networks is an IPv4 network. When this occurs, a router will need to be setup on each network that has a connection to both the IPv4 network and the IPv6 network. The device, will send an IPv6 packet on the network to the IPv6 router. Once at the IPv6 router, the device will place the IPv6 packet into an IPv4 packet. A tunnel will be created between the two IPv6 networks over the IPv4 network. The IPv4 packet will then be sent over this tunnel. Once the packet arrives at the second IPv6 network, the IPv4 packet is removed and the IPv6 packet will be transferred over the second IPv6 network like any other IPv6 packet.

Dual Stack

- Newer OSs support IPv4 and IPv6 installed together
- Newer OSs will use IPv6 before IPv4
- If IPv6 not available will use IPv4
- Routers can be configured with both
 - Does not effect existing networking

3:17 Support for IPv6 in Windows was added in Windows XP and thus all operating systems on the current market should have support for it. Modern operating systems and devices can run both protocols at the same time, which is known as Dual Stack. That is, the operating system will support the use of IPv4 and IPv6 at the same time. Windows XP would use IPv4 first, however every operating system after that would use IPv6 first and then use IPv4. The deployment of IPv6 does not affect existing services, thus a router can have IPv6 support added and not impact IPv4.

References

“Installing and Configuring Windows Server 2012 R2 Exam Ref 70-410” pages 212 – 213

“Measurements” <http://www.worldipv6launch.org/measurements/>

Credits

Trainer: Austin Mason <http://ITFreeTraining.com>

Voice Talent: HP Lewis <http://hplewis.com>

Video Production: Kevin Luttman <http://www.KevinLuttman.com>

Quality Assurance: Brett Batson <http://www.pbb-proofreading.uk>