North American IPv6 Summit

Optional Tutorial

Introduction to IPv6

This class is intended for anyone who wants to start learning about the Internet Protocol Version 6 (IPv6). The class will provide an introduction to the protocol and cover the basic structure of the protocol headers. Topics covered include the primary drivers for IPv6, and why businesses and organizations will want to adopt use of IPv6 in their networks. If you have little or no exposure to IPv6, then this class will teach you what you need to know about the impending industry transition to IPv6.

Session 1 - 09:00 to 10:30

Drivers for IPv6

IPv6 Features and Benefits

IPv6 Header structure, extension headers

IPv6 Addresses

Session 2 - 11:00 to 12:00

ICMPv6 (NDP, PMTUD, MLD, ...)

Stateless and Stateful address autoconfiguration

Session 3 - 13:00 to 14:30

Introduction to dual-stack concept

Introduction to tunneling and translation

Introduction to DNS for IPv6

Application impacts of IPv6

Session 4 - 14:45 to 17:00

Current Level of IPv6 Support

- Operating System and Application Support
- Service Provider Support

IPv6 Transition Planning

Basic hands-on experience with IPv6

Dual-stack enable student computer, ping/ping6, traceroute/traceroute6, DNS queries, Connect to IPv6 Internet web site, basic IPv6 packet analysis

Note: Course content subject to minor changes between now and the conference date.

Lab Equipment:

Internet access with IPv6

Multi-vendor environment

Router, switch, wireless LAN

Requirements for Student Laptop

STUDENT LAPTOP REQUIRED

IMPORTANT - BRING YOUR OWN LAPTOP TO THE CLASS

To get the most value out of the course, students are encouraged to bring their own laptop so that they can connect directly to the IPv6 workshop network. It is the students' responsibility to make sure that the computer system they are bringing is properly configured with all drivers necessary to connect to an 802.11 b/g Wireless network or an Ethernet wired network.

Windows Laptops

You are required to bring Windows 7 (Professional or Ultimate), Windows Vista (Business or Ultimate), Windows XP Pro, or Windows 2003 or 2008 Server, either a real system or a virtual machine. Windows 7 Home, Windows Vista Home, Windows XP Home, and Windows 2000 (all versions) will not work optimally for the class as they do not include all of the built-in IPv6 capabilities we need for comprehensive analysis of the system. For example, Mac OS X, Windows XP and Server 2003 do not include a DHCPv6 client and only perform DNS lookups over IPv4. Mac OS X Lion (6.7) does include a DHCPv6 client.

IMPORTANT NOTE: You may also be required to disable your anti-virus tools temporarily for some exercises, so make sure you have the anti-virus administrator permissions to do so. DO NOT plan on just killing your anti-virus service or processes, because most anti-virus tools still function even when their associated services and processes have been terminated. You will need administrative privileges to perform many of the tasks during the class so be sure you have the proper permissions on the computer you are bringing to the training.

Mandatory Laptop Hardware Requirements

- x86-compatible 1.5 Ghz CPU Minimum or higher
- DVD Drive (not a CD drive)
- 3 Gigabyte RAM minimum or higher
- Ethernet adapter
- 5 Gigabyte available hard drive space
- Any Service Pack level is acceptable for Windows XP Pro, 2003, Vista, or Win7

During the workshop, you will be connecting to a community network that other students are connecting to. This could be a potentially hostile environment and your laptop might be attacked. You should not have any sensitive data stored on the system. We are not responsible for your system if someone in the class attacks it in the workshop.

By bringing the right equipment and preparing in advance, you can maximize what you'll see and learn as well as have a lot of fun.