



IPV6 PLANNING AND DESIGN WORKSHOP



In partnership with Ivan Pepelnjak

Is your content available over IPv6? If not, do you know how to make it available? Do you know what to do when you won't be able to get public IPv4 addresses? Is your existing gear capable of running IPv6? Do you know where to start the IPv6 deployment? Can you create an IPv6 addressing plan?

If you answered YES to all of the above questions, you don't need this workshop. If not, you might consider getting fluent in the protocol that will become as ubiquitous as IPv4 is today in just a few years.

Objectives

This workshop describes the technology fundamentals of IPv6, high-level deployment guidelines, network edge and network core design, IPv6 transition mechanisms, IPv6-specific security challenges, and high-availability considerations.

Workshop Contents

IPv6 Introduction

- The need for IPv6
- IPv6 compared to IPv4
- IPv6 addressing and routing
- IPv6 neighbor discovery and autoconfiguration
- Host configuration (SLAAC and DHCPv6)
- Application-level changes

High-Level IPv6 Deployment Guidelines

- Where should I deploy IPv6 today?
- Making IPv4 content available to IPv6 clients
- VPN access considerations.

Edge Network Design And Implementation

- Design principles
- Business-grade connectivity with static routes or BGP
- Hosts on multi-access networks (Ethernet or wireless)
- Connecting consumer CPE devices
- PPPoE and DSL environments
- 6rd

Core Network Design And Implementation

- Design principles
- Native IPv6 core
- IPv6-over-MPLS (6PE)
- Layer-3 IPv6 VPNs (6VPE)

IPv6 Transition Mechanisms

- Rapid IPv6 deployment (6in4, 6to4, 6rd)
- Residual IPv4 deployment (DS-Lite, MAP-E)
- Accessing old content (NAT64, SLB64)

IPv6 Security

- Typical IPv6 security issues
- First-hop vulnerabilities

- Denial-of-service attacks
- User authentication and authorization
- Routing security
- Dual-stack- and tunneling-related exposures

IPv6 High Availability

- High availability components
- First-hop high availability
- Service endpoint high availability
- Redundant network connectivity
- End-to-end high availability

Delivering Content Over IPv6

- Why do I care?
- Legacy application challenges
- Deployment options: NAT64, DNS64, dual-stack applications, IPv6-only data centers

Course Duration

IPv6 workshop is a 2,5-day instructor-led on-site workshop. The workshop can be extended by an extra day dedicated to customer's design challenges or deployment strategy.

Audience

Network architects, designers and implementation engineers faced with imminent need to start IPv6 planning, design or deployment.

About the Author



Ivan Pepelnjak, CCIE#1354 (Emeritus), has been designing and implementing large-scale service provider and enterprise networks using advanced and emerging technologies since 1990. He's author of several Cisco Press books, prolific blogger at blog.ipospace.net and author of a series of highly successful webinars.

Ivan created a series of highly successful IPv6 webinars, delivered IPv6 workshops across Europe, and talked about the need for IPv6 deployments at Interop Las Vegas.

[More @ ipospace.net](http://blog.ipospace.net)

NIL – More Than Just a Training Company

NIL Learning delivers the leading-edge Cisco training to IT professionals and companies around the globe. Through field-proven experts — each both active engineer and instructor — NIL Learning enhances the standard learning curriculum with real-life experience and helps clients to maximize their training investment.

NIL Learning is part of NIL, a leading global IT solutions provider. Since 1992, NIL has been at the forefront of advanced contributors to strategic partner Cisco's technologies, learning curriculum and value-added solutions deployed to clients around the globe. Today, NIL has earned the highest certifications offered by Cisco, VMware, EMC, HP, IBM, Microsoft, F5, MobileIron, RSA, VCE and others. Their portfolio of solutions consists of managed services, professional services and learning services.

NIL is headquartered in Slovenia, with regional offices in Croatia, Serbia, Saudi Arabia, the U.S., South Africa, Morocco, Nigeria, Kenya and Botswana.

Why learn at NIL LEARNING?

- All NIL LEARNING instructors are **field-proven experts** - each both active engineer and instructor.
- 75% of NIL LEARNING engineers hold CCSI certifications, and 20 have already achieved the respected CCIE rank.
- NIL LEARNING enhances the standard learning curriculum with real-life experience and helps clients to maximize their training investment:
 - SDN instructors have [hands-on experience with Tail-F NCS and a few other SDN tools](#)
 - SDDC instructor **designed and implemented a production VMware NSX and Cisco ACI deployment**
 - [IPv6 instructor helped large global organizations roll out IPv6](#)
- NIL has been a Cisco Training Partner since 1993; today NIL holds **Cisco Learning Specialized** status and **Cisco Business Learning Partner** status.

- NIL was awarded the Cisco Most Business Relevant Learning Partner in MEA in 2010 and the most innovative learning partner in MEA.
- NIL received the **Innovation Award** for its Technology Led Training and its extensive contribution to Cisco learning solutions at the Cisco EMEAR Learning Partner Summit in 2012.
- NIL received the **Innovation Award** for its Technology Led Training and Advanced Engineer Program at the Cisco Global Learning Partner Summit in 2013.
- NIL LEARNING runs a centralized training schedule across the whole EMEAR region.
- NIL received **Cisco Global Learning Partner of the Year Award** in 2014

More Info

Slovenia

T: +386 1 4746 500

E: sales-support@nil.com

Saudi Arabia

T: +966 1 465 4641

E: info.nilme@nil.com

Botswana

T: +267 318 1684

E: training@it-ig.bw

Serbia

T: +381 11 2420 388

E: info-nilserbia@nil.co.rs

Croatia

T: +385 (0)51 583 255

E: info-nilcroatia@nil.com

South Africa

T: +27 (0)11 575 4637

E: mea_sales@nil.com

Kenya

T: +254 773 145 680

E: mea_sales@nil.com

Turkey

T: +386 1 474 6 500

E: sales-support@nil.com

Morocco

T: +212(0) 660 808 394

E: info-nilmorocco@nil.com

USA

T: +1 651 888 6598

E: info-nilusa@nil.com

Nigeria

T: +234 1 903 53 47

E: mea_sales@nil.com

learning.nil.com