

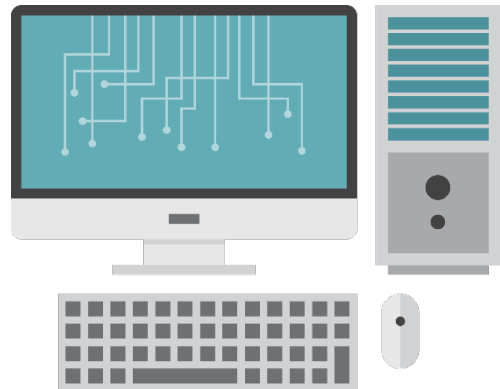
Configure IPv4 and IPv6 Addressing



Jason Helmick

@theJasonHelmick | www.pluralsight.com

What This Module Covers



Configure IP Address Options

Configure IPv4 or IPv6 Subnetting

Configure Supernetting

Configure Interoperability Between IPv4 and IPv6

Configure Intra-site Automatic Tunnel Addressing Protocol (ISATAP)

Configure Teredo

Configure IPv4 and IPv6 Subnetting

IPv4

192.168.0.3/24

11000000.10101000.00000000.00000011

11111111.11111111.11111111.00000000

255.255.255.0

Need: 16 networks

11111111.11111111.11111111.11110000

$2^4 = 16$ networks

$2^4 - 2 = 14$ hosts

IPv6

3ffe:ffff:21a5:0000:0000:00ff:fe21:5a3e

00111111111111110 11111111111111111

0010000110100101 0000000000000000

0000000000000000 0000000011111111

1111111000100001 0011101000111110

3ffe:ffff:21a5::ff:fe21:5a3e – zero compression

3ffe:ffff:21a5::/64

Classes and Subclasses

2000::/3 – Global unicast

Fe80::/64 – Equivalent to APIPA addresses

fe80::48c5:90d5:f0a1:c1e6%12

All zeros (::) – Loopback (::1) same as 127.0.0.1

Configure Interoperability Between IPv4 and IPv6 addresses

RFC 1752

Easy

IPv4 hosts can be upgraded independently of other hosts and devices

Can add IPv6 hosts without affecting other IPv4 hosts

Configure Interoperability Between IPv4 and IPv6 addresses

Intra-Site Automatic Tunnel Addressing Protocol
(ISATAP) addresses

6to4 addresses

Teredo addresses

Intra-site Automatic Tunnel Addressing Protocol

Enables connectivity between IPv6/IPv4 hosts across an intranet

ISATAP addresses are automatically configured

Address scheme:

64bit link-local, site-local, or Global prefix

32 bit 0000:5efe

32 bit IPv4 address

Fe80::5efe:192.168.0.103

Configure Interoperability Between IPv4 and IPv6 addresses

Intra-Site Automatic Tunnel Addressing Protocol
(ISATAP) addresses

6to4 addresses

Teredo addresses

Can configure additional settings using a Group Policy

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