IPv6 Knowledge Base

IPv6 Training and Learning Information

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Disclaimer: The presence of a training or learning source or resource on this list does not constitute an endorsement of that resource or of its provider.

IPv6 training and learning information is divided into the following categories:

10	
11	**1. Free IPv6-related training and learning sources**
12	**2. On-line reference documents and web sites**
13	**3. IPv6-related books in print or in electronic form**
14	**4. Archival information (published or presented in 2010 and earlier)**
15	
16	

	1. Free IPv6-related training and learning sources (in alphabetical order)	**Comments or Additional Information**
17		
18	Hurricane Electric Free IPv6 Certification Project (https://ipv6.he.net/certification)	an interactive series of tests to demonstrate knowledge of IPv6 and progressive stages of deploying IPv6. Free, although registration is required to take the tests
19	Introduction to IPv6 (CNIT 60, Computer Networking and IT Department, City College of San Francisco, Sam Bowne instructor	(http://web.archive.org/web/20131217184046/https:/samsclass.info/ipv6/60_S14.php) slides for a 6-day course with handouts and projects
20	Industry Network Technology Council (https://industrynetcouncil.org/past-webinars)	presentations (slides and videos) on a variety of topics related to IPv6, including IPv6 address planning, IPv6 transition mechanisms, DHCPv6, origins of IPv6, and IPv6 Fundamentals
21	IPv6-Only Data Centers (free but registration required) (https://www.ipspace.net/IPv6-Only_Data_Centers)	Implementing an IPv6-only data center and network core with the only IPv4 component being NAT46 translation boxes at the network edge**s at the network edge**
22	Security Onion (https://securityonion.blogspot.com/)	A Linux distro CD pre-configured to simplify installing, configuring, learning about, and testing several security software tools. Based on Xubuntu 10.04
23	Tutorials Point IPv6 Tutorial (https://www.tutorialspoint.com/ipv6/index.htm)	An on-line tutorial designed to help beginners understand the basic concepts required to work with any TCP/IP based protocols. After completing this tutorial you will find yourself at a moderate level of expertise of IPv6 from where you can take yourself to next levels.
24	Ripe Network Coordination Centre (https://www.ripe.net/support/training/material)	a variety of IPv6 courses on IPv6 theory and practice, IPv6 address planning, BGP, DNSSEC, security, and additional topics
25	Spirent Communications (https://support.spirent.com/SpirentCSC/SC_KnowledgeView?id=TRN10280)	Essentials of IPv6 Course (free on-line course)
26		
27	**2. On-line reference documents and web sites (in alphabetical order):**	**Comments or Additional Information**
28	12 steps for IPv6 Deployment in Governments and Enterprises, May, 2019, Jordi Palet (http://web.archive.org//web/20200730002449/https:/www.lacnic.net/innovaportal/file/3635/1/10-12-steps-government-ipv6-v3.pdf)	

29	Free Cisco Certified Network Associate (CCNA) Workbook (http://www.freeccnaworkbook.com/workbooks/ccna)	Section 12 Configuring IP version 6 (IPv6) is a comprehensive description of configuring IPv6 on Cisco routers
30	IPv6 Addressing and Subnetting Workbook Instructors Version, June, 2015 by Ohio College Tech Prep Center, (http://web.archive.org/web/20150915015851/https://techprepnwo.org/wp-content/uploads/2015/06/IPv6-Addressing-and-Subnetting-Workbook-Instructors-Version.pdf)	
31	IPv6 Addressing and Subnetting Workbook Student Version, June, 2015 by Ohio College Tech Prep Center, (http://web.archive.org/web/20150915011545/https://techprepnwo.org/wp-content/uploads/2015/06/IPv6-Addressing-and-Subnetting-Workbook-Student-Version.pdf)	
32	IPv6 for IPv4 Experts by Yar Tikhiy, Sept, 2013, (https://sites.google.com/site/yartikhiy/home/ipv6book)	available in both English and Russian
33	IPv6 Foundation Master Class All you need to know today! (updated Feb, 2022) (https://pall.as/what-is-ipv6/)	An 18 part on-line introduction to basics of IPv6 in operating systems, applications and hardware configuration. A video version of the class is also available (registration required to access video version)
34	IPv6 Learning Roadmap (https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2008-R2-and-2008/gg250710(v=ws.10))	An organized and sequential list of Web and print resources that you can use to learn about IPv6. Announced Nov 2, 2010. This is just one of a series of Learning Roadmaps available from Microsoft. Others may be found at (https://social.technet.microsoft.com/wiki/contents/articles/2687.learning-roadmaps-portal.aspx)
35	IPv6 Transition and Coexistence/IPv6 in Cellular Networks, Feb, 2018 by Jordi Palet (https://2018.apricot.net/assets/files/APNT806/IPv6-Transition-and-Deployment-including-IPv6-only-in-cellular-and-broadband.pdf)	Two back-to-back 90 minute tutorials. Slides cover: (1) A review of IPv6 transition mechanisms and all possible "logic" options, and the steps needed to deploy IPv6 in an operator network, and (2) The steps needed to deploy an IPv6-only network using the example of cellular networks, and then applying the same concepts to non-cellular networks
36	The IPv6-Only Network: Building Networks with DNS64/NAT64/464XLAT by Alan Whinery, Feb 2019 (https://apan.net/meetings/apan47/files/27/27-01-01.pdf) (slides) (https://www.youtube.com/watch?v=5l19jNUsFg8) (video)	
37	Managing an IPv6 Network: Deep Dive into ICMPv6 by Laura Knapp (http://rmv6tf.org/wp-content/uploads/2013/04/6-IPv6-Deep-Dive-ICMPv6-Laura-Knapp.pdf)	An in-depth presentation on ICMPv6, including messaging, ND, MLD, packet MTU, fragmentation, and other ICMPv6 functionality
38	Moving to IPv6 by Bernardo Luis Camps Palacio, June 2016 (http://web.archive.org/web/20190128200656/https://thinkincredible.intraway.com/white-paper/moving-to-ipv6/)	A comprehensive overview of technical terminology and concepts underlying IPv6, the transition to IPv6, and security concerns
39	The Rise of IPv6, a monthly series of 9 articles published by Mark A. Miller, P.E. (https://telecomreseller.com/?s=the+rise+of+ipv6)	
40	Using and Migrating to IPv6 by Sumon Huque, Univ of Pennsylvania (https://www.huque.com/talks/2013-11-ipv6-tutorial-huque.pdf)	A wide-ranging presentation on IPv6, including protocol basics, ISP support, O/S and applications support, troubleshooting, transition techniques, and configuration examples

41	(https://training.apnic.net/)	This site is hosted by the Asia Pacific Network Information Center (APNIC) to facilitate live and pre-recorded IPv6 training via APNIC Academy
42	(https://www.internetsociety.org/deploy360/ipv6/)	The Deploy360 Programme web site is hosted by the Internet SOCiety (ISOC). A wide variety of training and tutorials, including videos, are available
43	(https://www.ipv6resource.com)	A general introduction to and overview of the capabilities of IPv6. The web site content is provided by World Wide Technology, Inc. and Cisco.
44		
45	(https://www.nanog.org/resources)	This site is hosted by the North American Network Operators Group (NANOG) and provides an on-going series of reports and in-depth tutorials on IPv6 deployment topics
46	(http:/www.6deploy.eu)	Extensive set of training and knowledge pointers to IPv6 reference information, from the Sixth Framework Programme of the European Union. The earlier www.6diss.org/tutorials/ site is comprehensive, though dated. The ([www.6deploy.eu/index.php?page=tutorials)](www.6deploy.eu/index.php?page=tutorials) is more up-to-date. (The 6NET project completed Jun 2005, followed by the 6DISS project which completed Sept 2007; followed by 6DEPLOY and 6DEPLOY-2 (www.6deploy.eu) which completed Feb 2013. A more recent European IPv6 project was Governments Enabled with IPv6 (GEN6, http://www.gen6-project.eu/) which completed May 2015. Deliverables and Presentations under the Publications tab of the GEN6 website provide additional material. The current European IPv6 project is IPv6 Framework for European Governments, ([ipv6gov.eu/](ipv6gov.eu/)).
47		
48	**3. IPv6-related books in print or in electronic form (in alphabetical order):**	**Comments or Additional Information**
49	The Accidental Administrator: Cisco Router Step-by-Step Configuration Guide -- Understanding and Configuring IPv6 by Don R. Crawley, published 2012 by soundtraining.net ASIN B009R6FYWW	
50	A Complete Guide on IPv6 Attack and Defense by Atik Pilihanto, Nov, 2011	([https://www.sans.org/reading-room/whitepapers/detection/complete-guide-ipv6-attack-defense_33904)](https://www.sans.org/reading-room/whitepapers/detection/complete-guide-ipv6-attack-defense_33904)
50	Day One: Exploring IPv6, Second Edition, Nov, 2010, by Chris Grundemann, Juniper Networks, Inc. (https://www.juniper.net/documentation/en_US/day-one-books/ExploringIPv6.zip)	Overview and tutorial on basic IPv6, including numerous examples of router configuration details. A preview is publicly available. Additional books in the Day one series are available here (https://www.juniper.net/documentation/jnbooks/en_US/day-one-books/#cat=book_bundles).
51	DNS and BIND on IPv6 DNS for the Next-Generation Internet by Cricket Liu, published 2011 by O'Reilly Media ISBN 1-4493-0519-9	
52	Easy IPv6: The Lookup Book by Kate Lance, 2nd Edition, published 2011 by Lancewood Research for IPv6 Now Pty Ltd., ISBN 978-0-9872113-0-9	Preview of book is publicly available. (http://web.archive.org/web/20110424124514/http:/www.ipv6now.com.au/lookup.php)
53	Enterprise Network Testing: Testing Throughout the Network Lifecycle to Maximize Availability and Performance, April, 2011, by Andy Sholomon, Tom Kunath, Cisco Press ISBN 978-1-58714-127-0	A sample chapter "Crafting the Test Approach" is available. (http://www.ciscopress.com/articles/article.asp?p=1706355&seqNum=5)
54	Enterprise IPv6 Deployment: Experience Report from Google by Haythum Babiker, Irena Nikolova, and Kiran Kumar Chittimaneni, published Oct 2011 by the USENIX Association ISBN 978-1-931971-89-8	To purchase printed or electronic copies, see (http://www.sage.org/pubs/25_ipv6/)

55	Guide to TCP/IP: IPv6 and IPv4, 5th Edition by James Pyles, Jeffrey Carrell, Ed Tittel, published June 2016 by Course Technology ISBN 1-3059-4695-2	Introduces students to the concepts, terminology, protocols, and services that both the Transmission Control Protocol/Internet Protocol (TCP/IP) version 6 and TCP/IP version 4 suites use.
56	Guidelines for the Secure Deployment of IPv6, Dec, 2010, by Sheila Frankel, Richard Graveman, John Pearce, and Mark Rooks (https://csrc.nist.gov/publications/nistpubs/800-119/sp800-119.pdf)	An overview and tutorial on basic IPv6, including comprehensive security and deployment planning information
57	IP Subnetting - From Zero to Hero, Nov, 2018, by Paul Browning, published Nov, 2018 ISBN 978-1731241740	This book is an update to Subnetting Secrets written in 2006
58	IPv4/6 Multicast Operation and Troubleshooting by Ipexpert, Inc., published Feb 2012 ASIN B0084NZPBE	
59	IPv6 Address Planning: Designing an Address Plan for the Future, Nov 2014, by Tom Coffeen, published by O'Reilly & Associates, ISBN 1-49190-276-0	A presentation and video "An Enterprise IPv6 Address Planning Case Study" are also available. (https://www.rmv6tf.org/wp-content/uploads/2017/04/03-2017-NAv6TF-Summit_4-21-2017-min.pdf) (presentation) (https://www.youtube.com/watch?v=7Tnh4upTOC4) (video)
60	IPv6 Deployment and Management by Michael Dooley, Timothy Rooney, published 2013 by Wiley-IEEE Press ISBN 978-1-118-38720-7	A sample chapter "IPv6 Network Management Planning" is available. (Registration required) (https://onlinelibrary.wiley.com/doi/pdf/10.1002/9781118590447.ch07)
61	IPv6 Essentials: Integrating IPv6 into Your IPv4 Network 3rd Edition by Silvia Hagen, published 2014 by O'Reilly & Associates ISBN 978-1-449-319212	
62	IPv6 for Enterprise Networks by Shannon McFarland, Muninder Sambi, Nikhil Sharma, Sanjay Hooda, published 2011 by Cisco Press ISBN-10: 1-58714-227-9	Chapter 8 "Deploying IPv6 in WAN/Branch Networks" is available at (http://www.informit.com/articles/article.aspx?p=1697883)
63	IPv6 Fundamentals: A Straightforward Approach to Understanding IPv6 Second Edition by Rick Graziani, published June 2017 by Cisco Press ISBN-10: 1-58714-477-8	Slides and videos to accompany book are available (http://web.archive.org/web/20170812201922/http:/www.cabrillo.edu/~rgraziani/ipv6-presentations.html)
64	IPv6 Security for IPv4 Engineers (http://web.archive.org/web/20190320213523/https://www.internetsociety.org/wp-content/uploads/2019/03/deploy360-ipv6-security-v1.0.pdf) with separate Table of Contents (http://web.archive.org/web/20190314041621/https://www.internetsociety.org/resources/deploy360/ipv6/security/ipv4-engineers) by Internet Society Deploy360, March, 2019	
65	IPv6 Tactical Network Management, Feb 2012, by John F. Dobrydney, published by Amazon Digital Services LLC ASIN: B0075FPDX2	
66	Migrating to IPv6: A Practical Guide to Implementing IPv6 Networks, 2nd edition, by Marc Blanchet, published 2019 by John Wiley & Sons, Inc. ISBN: 978-1119950141	A companion web site for the "Migrating to IPv6" 1st edition may be found at (http://www.ipv6book.ca)
67	Planning for IPv6 by Silvia Hagen, published 2011 by O'Reilly Media, Inc. ISBN 978-1-4493-0539-0	
68	Real World IPv6 for Network Managers and SysAdmins by Michael Spalter, published 2012 by SEG Communications, ASIN B008KRMIN2	

69	**Sams** Teach Yourself TCP/IP in 24 Hours by Joe Casad, 6th Edition, published 2017 by Sams, ISBN 0-67233-789-4	
70	TCP/IP Fundamentals for Microsoft Windows, Joseph Davies, version 2 published 2013 by Microsoft Corporation	(https://www.microsoft.com/en-us/download/details.aspx?id=8781)
71	Understanding IPv6 by Joseph Davies, Third Edition, published 2012 by Microsoft Press ISBN-13 978-0-7356-5914-8	A copy of the first edition of this book published 2005 is available at: https://flylib.com/books/en/2.223.1
72	**NOTE**: Older materials can still be useful for training and learning. Given a choice prefer materials published or presented in 2010 or later. The following will use terminology current when they were written. Terminology for IPv6 addresses has changed over time. Three changes of note in the terminology are: (1) RIR policy for default prefix allocations changed from /35 to /32 in March 2002, (2) site-local addresses were deprecated in September 2004 by RFC 3789, and (3) unique local addresses were adopted in October 2005 by RFC 4193.	
73		
74	**4. Archival information (published or presented in 2010 and earlier)**	**Comments or Additional Information**
75	Application Aspects of IPv6 Transition, RFC 4038, March 2005, by Shin, Hong, Hagino, Savola, and Castro	(https://www.ietf.org/rfc/rfc4038.txt)
76	The Case for IPv6, draft version 06, 25 June 2000, by King, Fax, Haskin, Ling, et al	(https://tools.ietf.org/html/draft-iab-case-for-ipv6-06) (Also contained in the CD-ROM accompanying Understanding IPv6 by Davies)
77	Cisco Self-Study: Implementing Cisco IPv6 Networks (IPV6) edited by Régis Desmeules, published 2003 by Cisco Press ISBN 1-58705-086-2	
78	Configuring IPv6 for Cisco IOS by Brown, Brown, Chen, Fong, Harrell, Knipp, Sayers, Webber, and Parenti et al, published 2002 by Syngress Media ISBN 1-92899-484-9	
79	Deploying IPv6 Networks by Ciprian Popoviciu, Eric Levy-Abegnoli, Patrick Grossetete, published 2006 by Cisco Press ISBN 1-58705-210-5	
80	Deploying IPv6 in Broadband Access Networks by Adeel Ahmed, Salman Asadullah, published 2009 by Wiley ISBN 978-0-470-19338-9	
81	Global IPv6 Strategies: From Business Analysis to Operational Planning by Patrick Grossetete, Ciprian Popoviciu, and Fred Wettling, published May, 2008 by Cisco Press ISBN 1-5870-5343-8	A sample chapter "IPv4 or IPv6 – Myths and Realities" is available. (http://web.archive.org/web/20150919054610/https://cdn.ttgtmedia.com/searchNetworking/downloads/IPv4_or_IPv6.pdf)
82	Handbook of IPv4 to IPv6 transition by John J. Amoss, Daniel Minoli, Sohraby Kazem, published 2007 by CRC Press ISBN 0-84938-516-4	
83	Handbook of IPv4 to IPv6 Transition: Methodologies for Institutional and Corporate Networks, by Alcatel-Lucent, published Dec 2007 by Auerbach Publications ISBN 0-84938-516-4	
84	Hands-On IPv6 Introduction Workshop, October 2007, by Jordi Martinez (https://www.arin.net/vault/participate/meetings/reports/ARIN_XX/premeeting.html)	a very good, comprehensive overview and tutorial on IPv6, including enabling software, applications, and routers

85	The Illustrated Network: How TCP/IP Works in a Modern Network by Walter Goralski, published 2009 by Morgan Kaufman ISBN 0-12374-541-1	
86	Implementing IPV6: Supporting the Next Generation Internet Protocols by Mark A. Miller, 2nd edition, published 2000 by Wiley ISBN 0-76454-589-2	
87	Internetworking IPv6 with Cisco Routers by Silvano Gai, published 2008 by McGraw-Hill Computer Communications ISBN 0-07022-836-1	This book is available at (https://ip6.com/index-book.htm)
88	IP Addressing and Subnetting, Including IPv6 by J.D.Wegner, Robert Rockell, published 1999 by Syngress Media ISBN 1-92899-401-6	
89	IPv6 Advanced Protocols Implementation by Qing Li, published 2007 by Morgan Kaufmann ISBN 0-12370-479-0	
90	IPv6 Core Protocols Implementation by Qing Li, published 2006 by Morgan Kaufmann ISBN 0-12447-751-8	
91	An IPv6 Deployment Guide, The 6Net Consortium Sept 2005, Ed. By Martin Dunmore published Sept 2008	A pdf of this book may be downloaded from (https://www.6diss.org/publications/info/deployment-guide.pdf)
92	IPv6 Economic Impact Assessment (Planning Report #05-2), October 2005, by RTI International for the Commerce Department's National Institute of Standards and Technology (NIST)	(https://www.nist.gov/sites/default/files/documents/director/planning/report05-2.pdf)
93	IPv6 for All by ISOC Argentina Chapter, published 2009 (https://www.hpc.mil/images/hpcdocs/ipv6/ipv6forall_english_2009.pdf)	
94	IPv6 in Practice: A Unixer's Guide to the Next Generation Internet by Benedikt Stockebrand, published 2007, Springer ASIN B01A1MPXYO	
95	IPv6 Mandates: Choosing a Transition Strategy, Preparing Transition Plans, and Executing the Migration of a Network to IPv6 by Karl Siil, published 2008 by John Wiley & Sons, Inc. ISBN 0--47019-119-8	
96	IPv6 Network Administration by David Malone and Niall Richard Murphy, published 2005 by O'Reilly Media, Inc. ISBN 0-59600-934-8	
97	IPv6 Notice of Inquiry, 14 January 2004, by the Commerce Department's National Institute of Standards and Technology (NIST) and the National Telecommunications and Information Administration (NTIA)	(https://www.ntia.doc.gov/federal-register-notice/2004/internet-protocol-version-6-ipv6)
98	IPv6 Security: Information Assurance for the Next Generation Internet Protocol by Scott Hogg, Eric Vyncke, published 2008 by Cisco Press ISBN 1-58705-594-5	Chapter 3 "IPv6 Internet Security" is available. (http://web.archive.org/web/20200624224301/https://ptgmedia.pearsoncmg.com/images/9781587055942/samplepages/1587055945_Sample.pdf)
99	IPv6: Theory, Protocol, and Practice, 2nd edition by Pete Loshin, published 2004 by Morgan Kaufmann Publishers ISBN 1-55860-810-9	
100	IPv6 Security, SEC-2003, Cisco Networkers 2006	This tutorial presents IPv6 security as contrasted with IPv6 from a threat and mitigation perspective. It includes topics like transition options and dual stack IPv4/IPv6 environments

	(http://web.archive.org/web/20140912110845/www.cu.ipv6tf.org/pdf/cdccont_0900aecd8057a244.pdf)	
101	Lead or Follow: The Next Generation Internet and the Transition to IPv6, hearing before the House of Representatives Committee on Government Reform held 29 June 2005	(https://www.gpo.gov/fdsys/pkg/CHRG-109hhrg22510/pdf/CHRG-109hhrg22510.pdf)
102	(https://www.maawg.org/activities/training/ipv6-video-list)	A tutorial on IPv6, with both slides and video, emphasizing e-mail and web browsers. Presented at a Messaging Anti-Abuse Working Group (MAAWG) conference in Oct, 2010.
103	Mobile Inter-networking with IPv6: Concepts, Principles and Practices by Rajeev S. Koodli, published 2007 by Wiley-Interscience ISBN: 0-47168-165-2	
104	Mobile IPv6: Mobility in a Wireless Internet by Hesham Soliman, published 2004 by Addison-Wesley Professional ISBN 0-20178-897-7	
105	Mobile IPv6: Protocols and Implementation by Qing Li, Jinmei Tatuya, and Keiichi Shima, published 2009 by Morgan Kaufmann Publishers ISBN 0-12375-075-X	
106	Net Centricity and Technological Interoperability in Organizations: Perspectives and Strategies 1st Edition by Supria Ghosh, published 2009 by Information Science Reference, ISBN: 978-1-6056-6854-3	
107	Report of the DoC Task Force on the New Internet Protocol (IPv6), January 2006, by the Commerce Department's National Institute of Standards and Technology (NIST) and the National Telecommunications and Information Administration (NTIA)	(https://www.nist.gov/director/planning/upload/IPv6-final.pdf)
108	Running IPv6 by Iljitsch van Beijnum, published 2005 by Apress ISBN 1-59059-527-0	
109	The Second Internet (Reinventing Computer Networking with IPv6), July 2010, by Lawrence Hughes	One web site where the pdf is available is (http://www.ipv6forum.org/dl/books/the_second_internet.pdf)
110	Security in an IPv6 Environment by Daniel Minoli, Jake Kouns, published 2008 by Auerbach Publications ISBN 1-42009-229-4	Chapter 5 "Basic IPv6 Security Considerations". (http://web.archive.org/web/20120615225456/http:/www.infosectoday.com/Articles/Basic_IPv6_Security_Considerations.htm)
111	TCP/IP Protocol Suite, 4th edition, by Behrouz A Forouzan, published 2009 by McGraw Hill Computer Communications ISBN 0-07108-420-7	
112	The TCP/IP Guide: A Comprehensive, Illustrated Internet Protocols Reference by Charles Kozierok, published 2005 by No Starch Press ISBN 1-59327-047-X	
113	Understanding IPv6 by Youngsong Mun, Hyewon K. Lee, published 2005 by Springer ISBN 0-38725-429-3	
114	Voice Over IPv6: Architectures for Next Generation VoIP Networks by Daniel Minoli, published 2006 by Newnes ISBN 0-75068-206-X	
115	An archive copy of the original website www.sixxs.net:80/presentations/ is available: (http://web.archive.org/web/20031208013715/http://www.sixxs.net:80/presentations/)	An on-going series, mostly non-English. In English, see Steve Deering's IPv6 Masterclass, April 18, 2002

| 116 | Application Aspects of IPv6 Transition, RFC 4038, March 2005, by Shin, Hong, Hagino, Savola, and Castro | (https://www.ietf.org/rfc/rfc4038.txt) |