

IPv6 Neighbor Discovery Lab

SLAAC, NEIGHBOR DISCOVERY, MULTICAST LISTENER DISCOVERY

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Collaborative Project

- India Internet Engineering Society (IIEsoc) and Industry Network Technology Council (INTC)
- Funding: Grant from ISIF Asia
- Thank you!



<https://www.iiesoc.in/>

<https://industry.netcouncil.org/>

Vision

Multi-year project: IPv6 deployment at enterprises.

Collaboration with American Registry for Internet Numbers (ARIN)

- Provide training,
- Analysis of security and application conversion,
- Help enterprises plan their IPv6 deployment.

Classes

- Introduction to IPv6 : Feb 4, 2021 ✓
- Lab: IPv6 basics : Feb 11, 2021 ✓
- Neighbor Discovery: March 4, 2021 ✓
- Lab: Neighbor Discovery: March 18, 2021
- IPv6 Address Planning: April 8, 2021
- Lab: IPv6 Address Planning: April 15, 2021
- IPv6 Transition Mechanisms: May 6, 2021
- Lab: IPv6 Transition Mechanisms: May 13, 2021

- DHCPv6: June 3, 2021
 - Lab: DHCPv6: June 10, 2021
 - IPv6 and Cloud: June 17, 2021
 - Lab: IPv6 and Cloud: June 24, 2021
 - Introduction to IPv6 Security July 8, 2021
- The next sessions are sponsored by a generous grant from ARIN.
- Trace Reading: August 12, 2021
 - Troubleshooting: August 19, 2021

A few words about me

- President: Industry Network Technology Council
- Founder & CEO: Inside Products, Inc.
- Advisory Board: India Internet Engineering Society
- RFCs: RFC8250 (Embedded performance and diagnostics for IPv6) and others
- Product developer (OEMed by IBM and others)
- Working with IPv6 for 15 years
- Working with network management, diagnostic, performance issues at large brick-and-mortar enterprises for over 30 years



Mike Ackermann

- Michael Ackermann is the **Lead Network Engineer of the System Management and Monitoring Team, at Blue Cross Blue Shield of Michigan.**
- He is responsible for all aspects of **planning, engineering, deployment and administration** for all enterprise wide Management, Monitoring and Diagnostic activities.
- Mike also serves as a **chief architect** for all Plan related IT issues. He has been a member of the BluesNet and Network Advisory Group committees since their inception and has served as committee and subcommittee chair on numerous occasions. Mike has also been a member of several advisory boards and is currently **active in the IETF and INTC.**



Agenda

- SLAAC on Windows / Linux
- Neighbor Discovery
 - ✓ Neighbor Solicitation / Advertisement
 - ✓ Router Solicitation / Advertisement
- Multicast Listener Discovery

Now, off to Mike!

NEIGHBOR DISCOVERY ON LINUX

Commands to disable IPv6

➤ (on Linux)

➤ `sysctl -w net.ipv6.conf.all.disable_ipv6=1`

➤ `sysctl -w net.ipv6.conf.default.disable_ipv6=1`

➤ `sysctl -w net.ipv6.conf.lo.disable_ipv6=1`

Commands to enable IPv6

➤ (on Linux)

➤ `sysctl -w net.ipv6.conf.all.disable_ipv6=0`

➤ `sysctl -w net.ipv6.conf.default.disable_ipv6=0`

➤ `sysctl -w net.ipv6.conf.lo.disable_ipv6=0`

Commands to show Addresses

➤ (on Linux)

➤ IFConfig

➤ Ip -6 addr

➤ (on Windows)

➤ IPConfig

Summary

- Stateless autoconfiguration has benefits
- Creating an IPv6 address automatically is complicated
- Neighbor Discovery and Multicast Listener Discovery are very important to understand

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Next Steps

- Will publicize initial results of discussions with enterprises and universities
- Initial discussions with folks signed up in Call for Participation
- Stay tuned!
- IETF was last week. You can attend remotely.

Questions?

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More webinars at:

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