



# IPv6 Application Conversion, Security and Training at Enterprises

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# What is the problem?

- Many (most!) “brick-and-mortar” enterprises (managed private networks) have not deployed IPv6
- Nor do they have any plans to do so!
- This creates a problem for the Internet as a whole



# What was our goal?

- Raise implementation priority of IPv6 at enterprises
- Look at what the most critical problems will be when enterprises finally do move
- Three area: application conversion, security and training

# What did we do?

- Created following surveys / templates:
  - IPv4 Application Conversion
  - IPv6 Security
- Gave following webinars:
  - IPv6 Trace Reading
  - IPv6 Troubleshooting

<https://industriynetcouncil.org/past-webinars>



# APNIC Partnership

- Working with partner in Asia Pacific region (India Internet Engineering society – IIESOC.in) to extend work to APAC
  - Grant received from ISIF (APNIC Foundation)
  - Nearly 1,000 attendees for series (large enterprise, ISPs, academia, etc.)
- 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
  - Informal discussion on IPv6 Address Planning: April 29, 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
  - Trace Reading: August 12, 2021
  - Troubleshooting: August 19, 2021

# IPv4 to IPv6 Application Conversion

1. Application Hosting/Access/Platforms
2. Internet Access
3. Internet Proxy
4. Stand-Alone Socket Applications
5. IP Address Embedding
6. Operational Changes
7. Disaster Recovery, Mirroring, or Hot/Cold Standby (DRMHCS)
8. Customized Screens
9. Multi-Tier Topology
10. Business Partners



# IPv6 Security

Many things to think about!

- Audits/Compliance,
- Threat detection,
- Risk analysis,
- Root cause determination,
- Encryption,
- Privacy,
- Confidentiality, and
- Penetration testing

# It is the migration itself...

It will likely take many years to completely switch from an IPv4-only network to an IPv6-only network. The changeover itself may be difficult or create problems.





# Surveys Continue

Please help us!

<https://www.surveymonkey.com/r/IPv6Security>

<https://www.surveymonkey.com/r/INTCIPv6ApplicationSurvey>

Preliminary results show that transition issues are shared by large to small enterprises

# What is next?

- Case studies! Organizations talking about deployment!
- More webinars! Continuing grant from APNIC (IPv6 and IoT, IPv6 and mainframe)



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