

Routing & Route Origin Validation Workshop

Agenda

3rd – 6th December

<https://wiki.apnictraining.net/advrourpki-pacnog25/agenda>

BGP, Peering & Routing Security workshop

Agenda

3rd – 6th December

<https://www.pacnog.org/pacnog25/>

Agenda

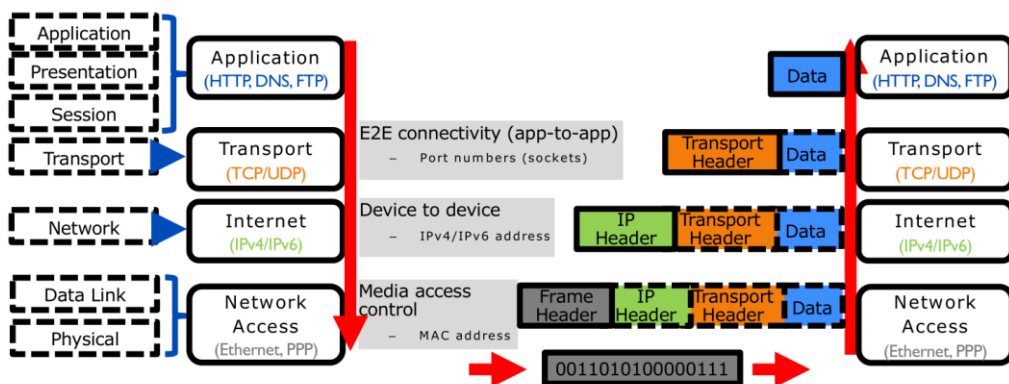
- Day 1
 - Internet Routing Fundamentals (recap)
 - Address Planning (IPv6) & Traffic Engineering
 - BGP Fundamentals (recap)
 - BGP Scaling
 - BGP Attributes
- Day 2
 - OSPFv2 & v3 Labs
 - BGP Policy Control
 - BGP Operations & Security best practices
 - IPv4 & IPv6 iBGP Labs

Agenda

- Day 3
 - RR IPv4 & IPv6 Lab
 - IPv4 iBGP and eBGP Lab
 - IPv6 iBGP and eBGP Lab
 - IPv4 BGP Route Filtering Lab
 - IPv6 BGP Route Filtering Lab
- Day 4
 - Internet Multihoming Techniques
 - IPv4 Multihoming Lab
 - IPv6 Multihoming Lab
 - Resource PKI & Route Origin Validation
 - BGP Filtering with ROA Lab

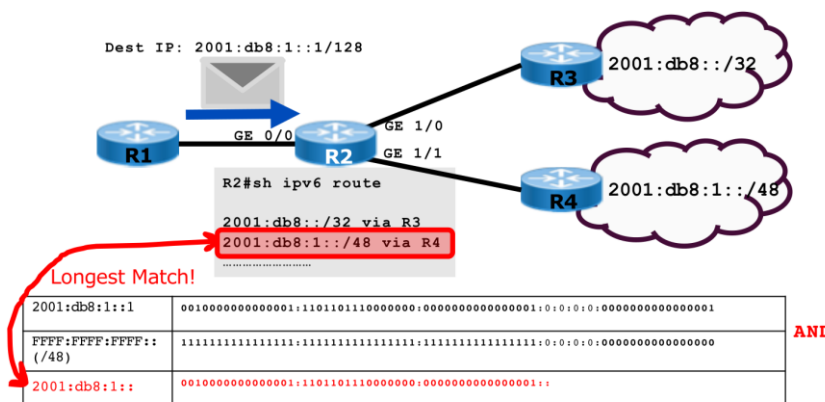
Day 1 – lots of theory

Back to basics ☺

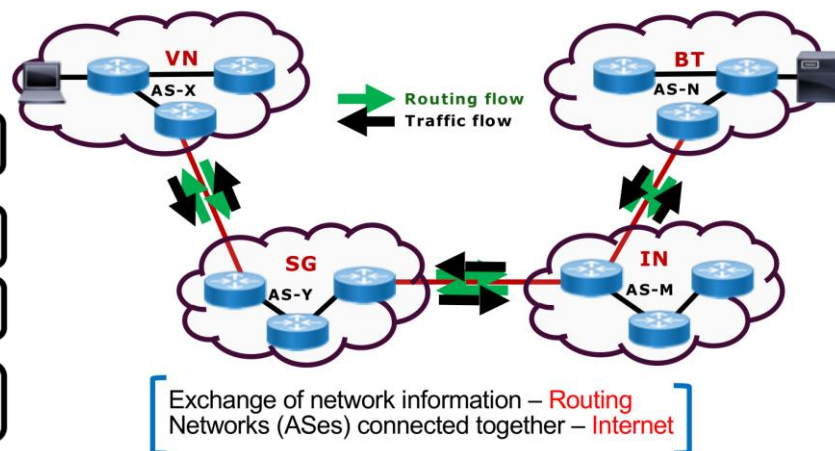


Address

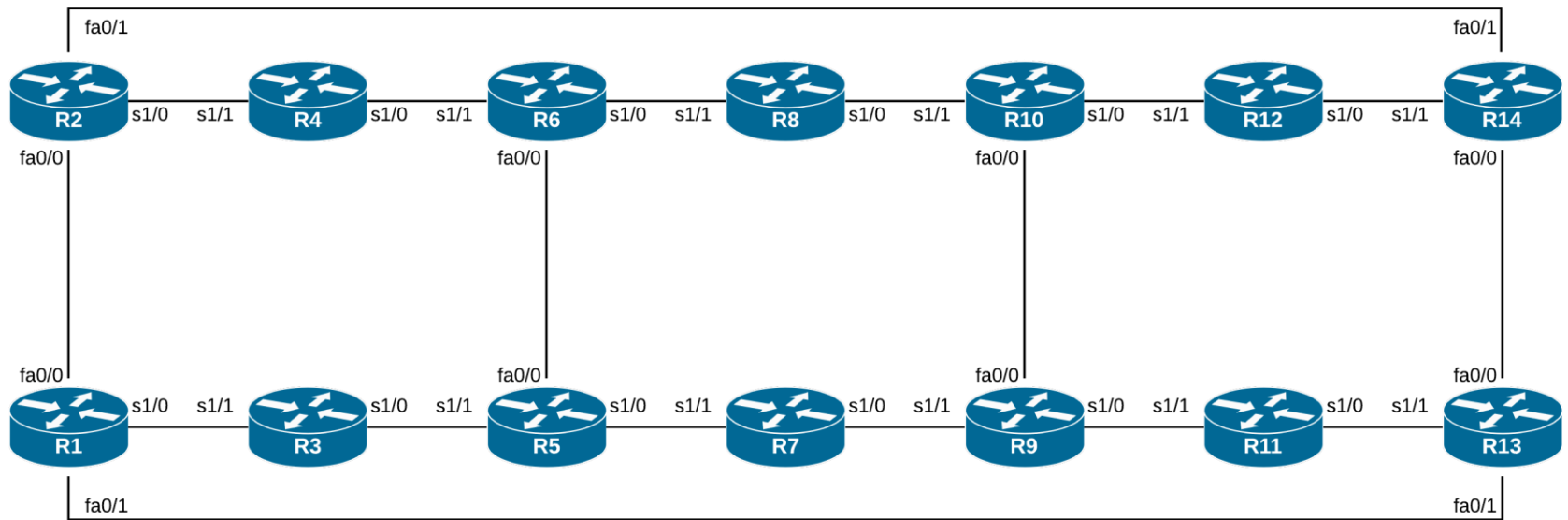
Best path (route) lookup



Internet Routing



Day 2 – labs



Day 3 – labs

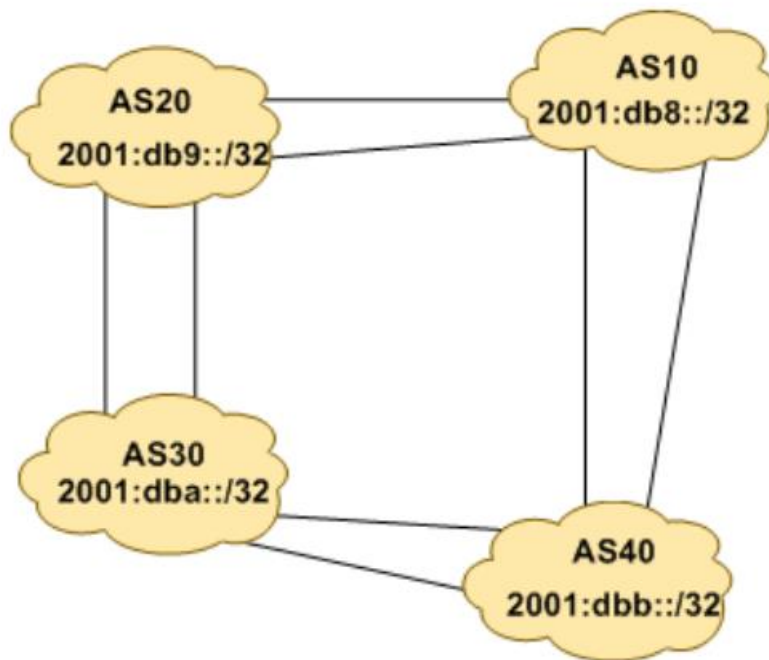


Figure 4 – Aggregates for each ASN

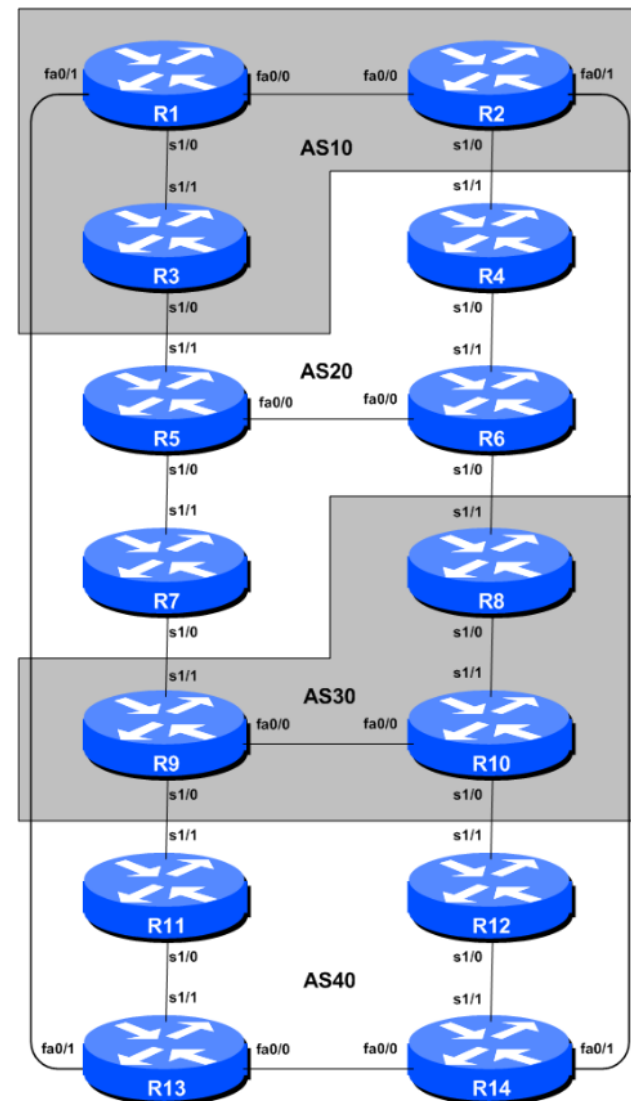
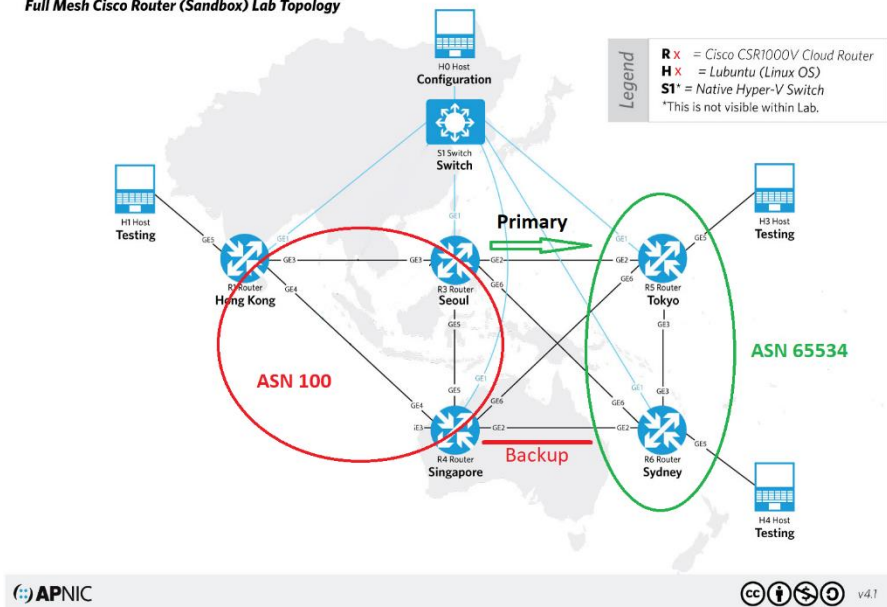


Figure 1 – BGP AS Numbers

Day 4 – More labs

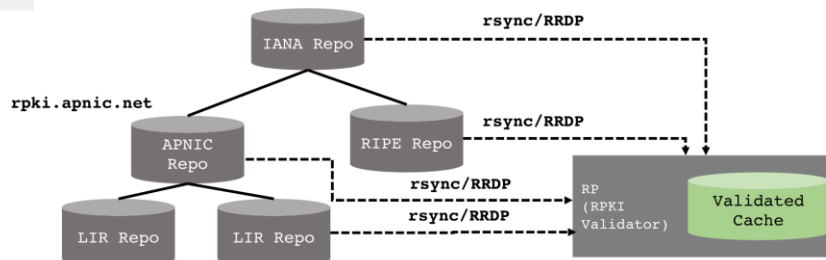
Full Mesh Cisco Router (Sandbox) Lab Topology



Components

RP Party (RP)

A validator tool that gathers data (ROA) from the distributed RPKI repositories and verifies each entry's signature against the TA to build a "Validated cache"



Day 4 – Route Origin Authorisation

- Check whois for details
 - `whois -h whois.apnic.net as131107`
 - `whois -h rr.ntt.net as131107`
 - `whois -h rr.ntt.net 202.125.96.0/24`
- # RPKI check
- ### VALID ###
 - `whois -h whois.bgpmon.net " --roa 131107 202.125.96.0/24"`
 - `whois -h whois.bgpmon.net " --roa 131107 2001:df2:ee00::/48"`

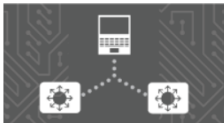
Day 4 – Install a validator



APNIC Academy / Hands-on X +

academy.apnic.net/en/virtual-labs/

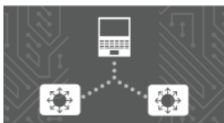
★ +



Signature and Sessions Analysis Lab

Learn step-by-step how to use open source tools for network security monitoring using the Security Onion open source Linux distribution.

English 2h 00m



RPKI Lab

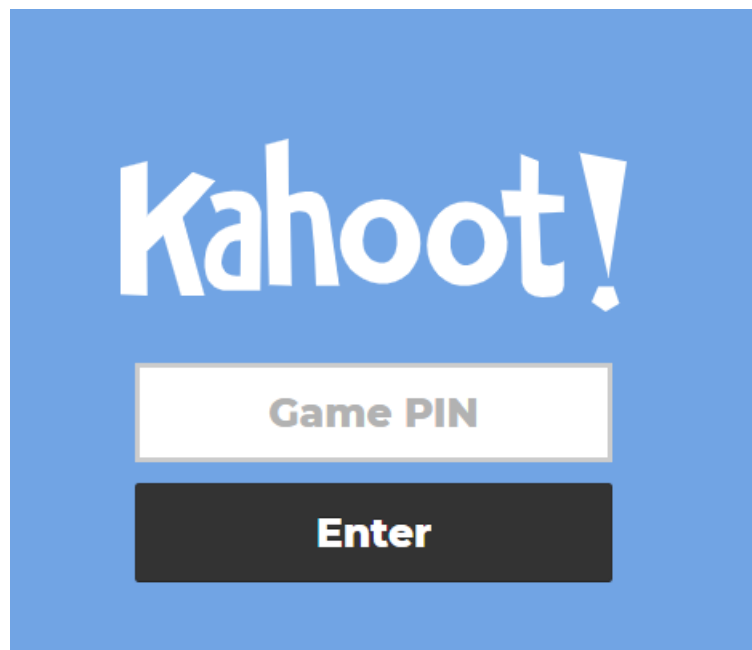
Learn about RPKI in this new test lab.

English 2h 00m

<https://github.com/NLnetLabs/routinator>

Game time

- Browse to <https://kahoot.it>



Further resources

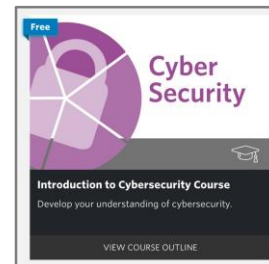
- <https://academy.apnic.net/>
- <https://learn.nsrc.org/bgp/>
- <http://www.bgp4all.com/>
- <https://stats.apnic.net/vizas>
- <https://www.apnic.net/get-ip/faqs/rpki/>

Online learning – free to the public

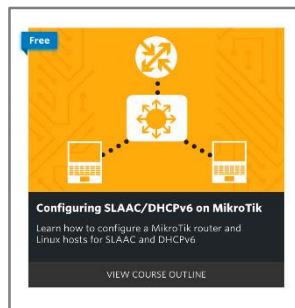
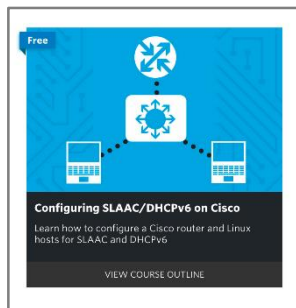


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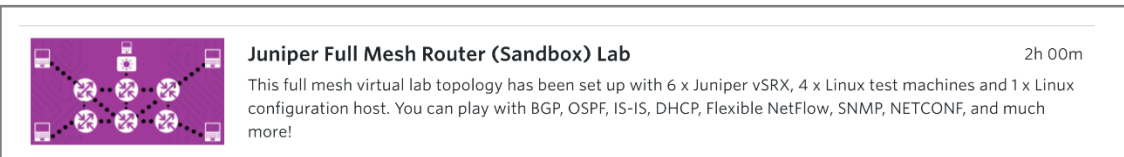
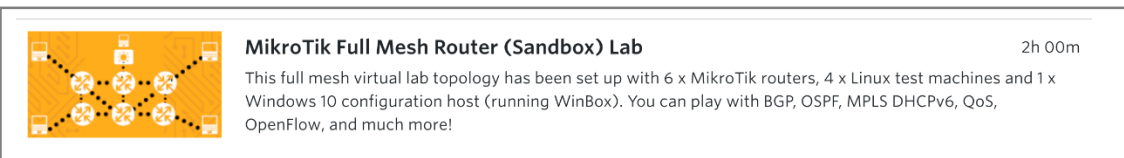
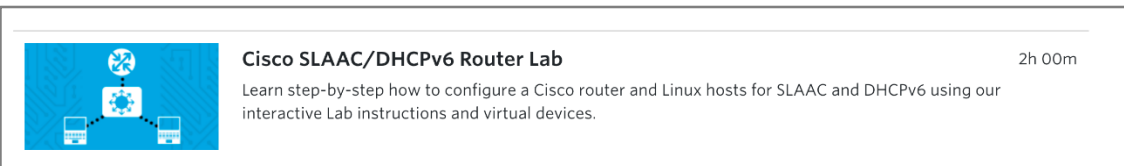
ONLINE COURSES



VIDEO TUTES



VIRTUAL LABS



Stay up-to-date

<http://info.apnic.net/229772/2017-11-01/shgx>