

# **Workshop Development Notes**

Needs to cover the following topics.

# **Setting up IS-IS**

- NSAP address plan
- setting metrics, level-2, wide metrics
- selecting DIS
- multi-topology
- point-to-point ethernets
- Notes:
  - all done in existing IS-IS Lab

Securing IS-IS (with OSPF side example)

- neighbour authentication
- no IS-IS outside ASN
- Notes:
  - all done in existing IS-IS Lab
  - need to add OSPF footnote example

## Setting up BGP securely

- RFC8212 filters in and out on eBGP
- passwords on eBGP and iBGP sessions
- RIR checks on assigned address space of customers jwhois
- RFC6890 filtering of bogons & Team Cymru bogon BGP feed
- Notes:
  - 8212 needs to be explicitly mentioned in eBGP lab
  - the rest all covered in BGP Best Practices slide deck

## BGP scalability & stability features

- iBGP between loopbacks & next-hop-self
- route reflector
- deterministic-med
- BGP distance > IGP distance
- stable announcement of covering aggregates out of all eBGP peers
- Notes:
  - All done in existing BGP materials & labs

## BGP security features

- maxas-limit
- max-prefix
- ttl-security aka GTSM
- community propagated for iBGP by default, eBGP selective
- strip private ASNs
- Notes:
  - Needs a new lab "Securing BGP Lab"

## Setting up Communities for BGP scaling

security feature → consistent policies across the ASN

# Control plane security

- · setting up SSH on routers
- protecting VTYs with access filters

#### uRPF

show how to set up on access interfaces

#### **RTBH**

- set up within an AS
- set up between ASNs
  - need to have done communities for this

## **BGP SEC**

- Creating ROAs (RIR dependent, but explain the process)
- Installing and operating NLnet Labs Routinator
  - Note: need containers on VTP for this
- Setting up RPKI support on a router
- Implementing route origin validation & related policies
  - Note: Need address space that has been validated APNIC offered their blocks, but longer term we should have our own.
- propagating validation state across iBGP
  - standards which vendors aren't supporting, or DIY?

# Troubleshooting BGP Security Operations

- · RouteViews: for analysis, monitoring, troubleshooting
- Looking Glasses supporting ROA/ROV
  - ∘ SEACOM
  - HE BGP Tool: bgp.he.net
- RIPE NCC: bgpplay

## **MANRS**

conclude with summary of MANRS and what it is about

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