Workshop Development Notes

Needs to cover: * 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

* 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
    - need containers on VTP for this
- Setting up RPKI support on a router
- Implementing route origin validation & related policies
    - 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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Last update: **2019/07/04 11:37**