



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 ethernet
 - 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
 - max-as-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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