



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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