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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