

A BCOP document:
MANRS Implementation Guide

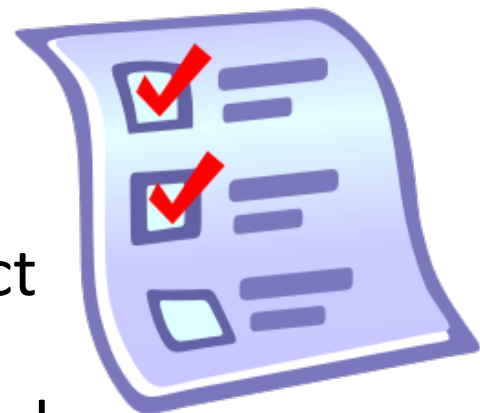
HAVE YOU HEARD OF MANRS?

Mutually Agreed Norms for Routing Security (MANRS)

- MANRS builds a visible community of security-minded operators
 - Promotes culture of collaborative responsibility
- Defines four concrete actions that network operators should implement
 - Technology-neutral baseline for global adoption



Good MANRS

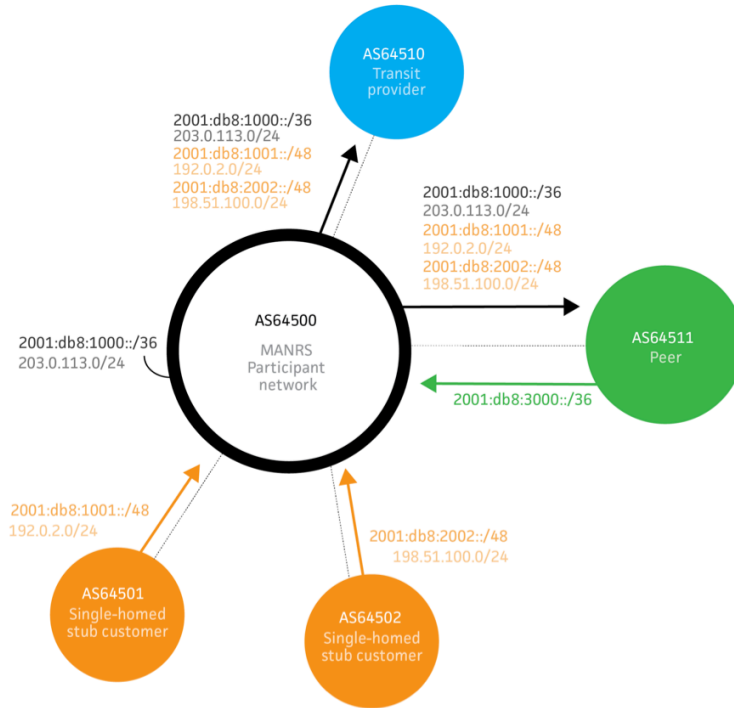


1. Filtering – Prevent propagation of incorrect routing information.
2. Anti-spoofing – Prevent traffic with spoofed source IP addresses.
3. Coordination – Facilitate global operational communication and coordination between network operators.
4. Global Validation – Facilitate validation of routing information on a global scale.

BCOP DOCUMENT

<http://tinyurl.com/jlulren>

The network and topology



Details – Action 3

- Maintain globally accessible up-to-date contact information
 - In Regional Internet Registries (RIRs): AFRINIC, APNIC, RIPE, LACNIC, ARIN
 - Various needed types of objects clarified
 - In IRRs
 - In PeeringDB
 - Company website – a checklist

Details – Action 2

- Enable source address validation for at least single-homed stub customer networks, ISP's own end-users and infrastructure.
 - uRPF – should we just say – strict?
 - ACLs, also dynamic (borrowed examples from RIPE-431)
 - ip verify source (other vendors?)
 - Cable source-verify

Details – Action 4

- Publicly document routing policy, ASNs and prefixes that are intended to be advertised to external parties.
 - Through the IRR system
 - Through the RPKI system (hosted)
 - Routing policy documentation with RPSL

Details – Action 1

- Ensure correctness of ISP's own announcements and announcements from their customers to adjacent networks with prefix and AS-path granularity
 - Using the IRR
 - Needed objects
 - Prefix filter configuration tools and examples (BGPQ3, IRRPT)
 - Using RPKI

Almost final

- Rearranged the sections:
 - 4.1. Communications – Action 3
 - 4.2. Anti-spoofing – Action 2
 - 4.3. Facilitating global validation – Action 4
 - 4.4. Clean up your side of the street – Action 1
- Provided config examples as much as possible

Challenges

- Security is hard
 - Basic practices != single config line
- Vendor-specific examples
 - A wiki repository?
- No “specific network type” view
 - E.g. BB, enterprise/stub, transit
 - Post-production in the web space?

Questions

- Is it good to go?
 - A stable version for referencing
 - Missing things?
- Form of publication
 - RIPE document – too rigid?
 - MANRS website and a reference from a BCOP repo?

Many thanks!

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