

INTERNET2

2022
TECHNOLOGY
exchange

A New MANRS Program for the R&E Community

Andrew Gallo



MANRS Today

- MANRS is a collaborative initiative of Internet operators
- The MANRS Participants are the Internet operators that meet the requirements of the (currently) 4 MANRS programmes:

Network Operators – [746 participants](#) (899 ASNs)

IXPs – [107 participants](#)

CDN/Cloud Providers – [22 participants](#)

Vendors – [6 participants](#)



A New Program for the Global Research & Education Community

WHY?

- The challenges arise when some REN's try to comply with the "Filtering" and "Global Validation" actions.
- Massive mutual backup and multihoming (Makes IRR / record keeping difficult)
- There are currently 120 research and education networks in the world today, with over 25,000 universities behind these networks.
- Address space delegation makes ROA generation difficult
- Legacy Address space (yes, we're still talking about this, but the good news is that it's getting better)



Goals of a New Program?

Proactively encourage all research and education networks to reach MANRS compliance (both Internet Facing and R&E Network facing)

Contribute towards improved techniques and tools to support this goal

Publicize MANRS globally and encourage universal participation

Other Areas of Investigation

The goal of the program is to bring R&Es into the MANRS community by acknowledging their uniqueness, not just relax requirements.

R&E Networks should continue to be network *leaders*

Generalized TTL Security Mechanism (GTSM), RFC 5802

Route Leak Prevention and Detection Using Roles in UPDATE and OPEN Messages, RFC 9234

Extended BGP Administrative Shutdown Communication, RFC 9003

The TCP Authentication Option (TCP-AO), RFC 5925

Advertise and use Max prefix on eBGP sessions

Participation in shared troubleshooting and research data collection programs (eg, NLNOGRing, RIPE Atlas/Anchor, PerfSONAR, RouteViews)

ASPA (Autonomous System Provider Authorisation), draft RFC

Enhanced uRPF, RFC 8704



Have ideas or comments?

agallo@gwu.edu

