

SUBNETTING/BGP FILTER TOOLS

- **sipcalc** - IPv4 and IPv6 subnet calculator (apt install sipcalc)
- **bgpq3** - bgp filtering automation - <https://github.com/snar/bgpq3>
- **bgpq4** - updated version of 'bgpq3' - <https://github.com/bgp/bgpq4>

RESOURCES

- **SFIA**: Skills Frameworks for the Information Age: <https://sfia-online.org/>
- **The Rumsfeld Matrix Explained**: <https://www.theschoolofknowledge.net/p/the-rumsfeld-matrix-explained>
- **MANRS**: Mutually Agreed Norms for Routing Security: <https://www.manrs.org/> - Tutorials, training etc.
- **BCP 38** – Anti Spoofing: <https://tools.ietf.org/html/bcp38>
- **BCP 214** – IXP Session Culling: <https://tools.ietf.org/html/bcp214>
- **PeeringDB**: Global database of networks, facilities, IXPs. <https://www.peeringdb.com/>
- **BGP Filter Guide**: <https://bgpfilterguide.nlnog.net/>
- **RPKI Documentation**: Implementing RPKI in your own network: <https://rpki.readthedocs.io/>
- **LONAP Route Server Guide** (inc. RPKI, supported communities): <https://www.lonap.net/tech/route-servers>
- **Route Server Looking Glass**: <https://portal.lonap.net/lg/>
- **RIPE RPKI Dashboard**: <https://my.ripe.net/#/rpki> (requires LIR Portal Login)
- **Euro-IX** : <https://www.euro-ix.net/en/>
- **RIPE BGPlay**: Visual tool to show BGP path changes: <https://stat.ripe.net/special/bgplay>
- **IRR Explorer**: <https://irrexplorer.nlnog.net/> - useful tool for checking/debugging IRRdb/BGP announcements
- **BGP.tools**: <https://bgp.tools/> - Browse BGP and network information in one place
- **Recent Innovations in BGP**: <https://ripe75.ripe.net/presentations/58-ripe75-recent-bgp-innovations.pptx>
- **Doug Madory**: Excessive BGP AS Path Prepending is a Self-Inflicted Vulnerability: <https://ripe79.ripe.net/archives/video/187/>
- **Geoff Huston: 30 Years of BGP** – A Lesson in Protocol Evolution: <https://ripe79.ripe.net/archives/video/188>

FURTHER READING / TRAINING

- **RIPE Training Courses**, (Free courses for RIPE LIR members) Covering IPv6, BGP Security, LIR Training, RIPE Database, RPKI...<https://www.ripe.net/support/training/courses>
- **Juniper Day One Guide: Deploying BGP Routing Security** - Up-to-date routing security guide RPKI etc. excellent reference even if you are not using Juniper routers.
- **>> NEW! NUOVO! BGP, from theory to practice**, (Tofoni, Luciani, Prado) Our friends at NAMEX (IXP in Italy) and Reiss Romoli have produced a new book! The book has many practical configuration examples based on Cisco IOS XE/XR and Juniper JUNOS. Case studies are mixed technology, showing interworking between devices from different vendors.
- **Why Is It Taking So Long to Secure Internet Routing?** - (Sharon Goldberg). Great overview of examples of routing security incidents and efforts to address them.
- **The All-New Switch Book**, (Seifert, Edwards - Wiley) – Everything you could ever want to know about LAN switching, topologies. Seifert was involved in development of the IEEE 802.1D standards (for Ethernet Switching)
- **Internet Routing Architectures**, (Halabi/McPherson, - Cisco Press) – Quite an old book (also [downloadable via O'Reilly](#)) but an excellent in-depth look at designing service provider networks with BGP. There's no IPv6 and some newer features won't be mentioned, but it's still a very comprehensive guide.
- **Network Programmability and Automation**, (Edelman, Lowe, Oswalt - O'Reilly) - Skills for the Next-Generation Network Engineer. Traditional "command line" network engineers are being replaced with robots! Learn how to program the robots and automate network configuration. Eliminate manual config errors. (So you get to do more interesting and fun stuff!)
- **Automate the Boring Stuff with Python** - <https://automatetheboringstuff.com/>
- **Python Crash Course** - <https://nostarch.com/pythoncrashcourse2e>
- <https://bgp4all.com/> - Dr Philip Smith – workshops and training materials on many aspects of networking
- <https://www.open.edu/openlearn/> - Many free short courses and "taster" courses.
<https://www.open.edu/openlearn/digital/free-courses>

If you have any questions and would like to contact us: training@lonap.net - Rob