

Regional Internet Blocking Considerations

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- For those not familiar with IETF processes: this document is an individual contribution and does not represent the IETF consensus

Motivation/Purpose of this Doc

- Recent discussions on blocking Internet connectivity for regions
- Describe well-known approaches for blocking connectivity and the implications of each (positive/negative/advantages/disadvantages)
- Intended audience:
 - Policy makers
 - General public
- Good policy depends on good, unbiased info
 - What is technically possible, how it works, efficacy
 - Potential intended/unintended consequences

What this Doc is NOT

- Advocacy for/against any particular policy or position
- Political opinion
- Analysis on the ethics of regional Internet blocking
- Applicable only to a single geopolitical episode
- Guide for blocking to protect against security threats
- How-to guide on weaponizing the Internet
 - Limited to describing well-known approaches that operators occasionally use for legitimate blocking purposes
- Survey of malicious attack methods- not in scope for this doc

Blocking Techniques

- Physical Layer
 - Disconnecting cables
- Routing Layer (Control Plane)
 - De-Peering
 - Route filtering- prefix-based, ASN-based
- Packet Layer (Data plane)
 - GeoIP ACLs
- DNS
 - Removing delegations to ccTLD and other relevant domains
 - Blocking resolution requests from resolving nameservers or end hosts in a region

Gaps in Efficacy

- Blocking connectivity for a region may be counterproductive
 - Policy maker may want some messages to get into/out of a region
 - Or may want certain parties to be able to freely communicate and coordinate activities
 - Blocking connectivity may empower a party targeted for sanction
- The network doesn't discriminate between "good" and "bad" bits
- ASNs/Prefixes are not allocated based on geopolitical bounds
 - Registry info may be inaccurate
- Decentralized nature of the Internet makes it is nearly impossible to totally block a region
 - But connectivity and throughput can be inhibited at certain chokepoints

Related Work

- RFC7754 Technical Considerations for Internet Service Blocking and Filtering
 - More focused on blocking content at app/transport/host level than prefix/ASN/TLD
 - Purpose- focus on restricting content for security, objectionability and business arrangement, not sanction
 - Overlapping themes: efficacy and importance of specificity
- Draft-irtf-pearg-censorship
 - More focused on censorship by regimes within their borders than blocking a region as sanction of such a regime (directionality)
 - Overlap: consideration of service disconnection

Open Questions/Next Steps

- Is this document useful?
- Other blocking techniques we missed?
- Adoption by INTAREA?
- BCP vs Informational
- Review and comments welcome