

Being a good Netizen

GRNOG 9

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National Infrastructures for Research and Technology

- Connect Research and Educational Community in Greece
- GRIX operators
- Network infrastructure
 - Optical, MPLS/L2-L3, Access, Internet/GEANT
- Computing infrastructure
 - 5 DCs
 - Cloud services
 - HPC
- Digital transformation
 - Services across the public sector

Good Network Practices in GRNET

- Series of norms an ISP should follow in order to secure network as possible
- Not “rocket science”
- Easy to implement
- Great benefit for ISP and community in general

Good Network Practices in GRNET

grnet
Διασυνδέοντας την Έρευνα και την Εκπαίδευση

- Hostmaster
 - Online form for collecting all customer info
 - Abuse mail, contact details (admin and tech)
 - Strict policy for network assignments (/27's, /48's)
 - Efforts to regain unused IP space
 - Significant IP space has been returned to GRNET
 - Internal IPAM
 - Getting rid of IPv4 network management
 - Promote IPv6

Good Network Practices in GRNET

- Keep Databases (RIPE, PeeringDB) clean
 - Updated entries (inetnum, route objects)
 - Based on route objects we build BGP filters
 - Valid Abuse mails contacts
 - ROAs for every prefix
- Maintain private whois database
 - For private AS numbers

Good Network Practices in GRNET

- RPKI
 - Deployed RPKI infrastructure more than three years ago
 - Two RPKI validators in use (both RIPE NCC solution)
 - Until recently just changing Local Preference preferring GRIX over upstream
 - Since mid October started dropping invalid RPKI prefixes on upstream and GRIX peerings
 - Dropped traffic was less than 50Mbps (peak)
 - Evaluate other validators (ie routinator)

Good Network Practices in GRNET

- Management plane
 - Same firewall filters across network
- Control Plane (BGP)
 - AS path filtering
 - Prefix list filtering
 - Announce only aggregates to GRIX and Upstream
 - TTL security mechanism
- Data Plane
 - Drop bogons, martians
 - Antispoofing (Customers & DC)
 - Forbid NAT in BGP p2p subnets

Good Network Practices in GRNET

- MANRS (www.manrs.org)
 - Mutually Agreed Norms for Routing Security
 - Filtering
 - Antispoofing
 - Coordination
 - Global Validation

Good Network Practices in GRNET

- Defending our Network
 - Abuse IO tool (automated tool for sending abuse reports to IP space holders)
 - Firewall on Demand (BGP flowspec rules)
 - Scrubbing tools
 - Upstream protection (subscribed already)
 - Testing internal tools (XDP)
 - Promote Firewall as a Service
 - Permanent Firewalling for customers
 - Alerting (Peakflow appliance)
 - ROA alerts (RIPE NCC portal)
 - RIS live (<https://ris-live.ripe.net/>)

Thank you Questions?

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