

# CGN Log Reduction

draft-donley-behave-deterministic-cgn

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1) describe the problem to be solved and show that there is widespread demand for a solution

- CGN Logging Generates Huge Data Volumes
- Subscribers generate around 33,000 connections/day
  - 150-byte log messages x 33,000 connections/day= 5MB/day/sub
  - 1M-sub ISP will generate 150 TB of data/month (1.8 PB/yr)
  - Assuming 50,000 subs/CGN => 23 Mbps of logging traffic
- Conclusion: per-connection CGN logging is not scalable
- Significant interest from service providers and public safety officials in a solution

2) demonstrate that the problem can not be solved  
with existing Technologies

- Two existing approaches to CGN logging
  - per-connection logging
  - bulk-port logging
- Bulk-port logging reduces log volumes, but still poses search impact on ISPs/public safety
  - Logging infrastructure
  - Timestamp alignment
  - DB Search time

## Proposed solution: Deterministic CGN

- Supports both v4 and v6
- Uses an algorithm to allocate ports per subscriber
  - Abuse Response reverses algorithm to identify inside address
  - Eliminates the need for most logging (except for power users)
  - Reduces privacy impact on subscribers
- Logging only required for subs that exceed predefined port ranges
  - Uses bulk port logging for overflow log
- Reduces logging volumes 100 K – 1 M x vs. per-connection logging

## Will not harm/delay v6 transition

- Carrier Grade NAT/NAT444 is already occurring
- Requirements documented in [draft-ietf-behave-lsn-requirements-08](#)
- Solution optimizes port reservation/logging; does not introduce new v4-v6 transition technologies
- Supports incremental cgn approach (RFC 6264)

# Changes since -02

- Reviewed in BEHAVE and v6ops
- Reviewed with public safety community
- Incorporated feedback from both working groups and public safety officials
- Updated to fit within sunset4 charter
- Minor cleanup

# Next Steps

- WG draft?