

Protocol and Engineering Effects of Consolidation

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Background

- <https://datatracker.ietf.org/doc/draft-lazanski-consolidation/05/>
- Version 5 - originated November 2020.
- Current state of consolidation open and to discuss potential outcomes

Consolidation Issues

- Overall
 - <https://datatracker.ietf.org/doc/draft-mcfadden-consolidation-taxonomy/>
 - Differing views
- Economic
 - Economies of scale
 - Lack of market competition
- Security
 - E2E encryption forces data to the endpoints
 - Consolidation through development choices

Implications of Consolidation

- Changing Architecture of the Internet
 - DNS resolution, access service, transit provision, content distribution and authorization
 - Consolidation in these areas has a direct effect on engineering and protocol design
- End-to-End Principle
 - Reliability and trustworthiness at the end nodes
 - But network and devices act as consolidators
 - Edge-to-edge – single point of failure through protocols doing all things

Risks

- Examples highlight the risks including
 - Decentralized to centralized Internet
 - Decreased stability, increased fragility
 - Increased security issues - fewer providers, less redundancy
 - Loss of security threat visibility
 - Lack of diversity for resilience

Options

- Continued discussions – DINRG
- Options (??)
 - IRTF measurement of consolidation metrics
 - Consideration of consolidation in RFCs
 - Human rights review of protocol design
- Further thoughts?

Thank you!

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