Protocol and Engineering Effects of Consolidation

Dominique Lazanski
Mark McFadden

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Background

• [https://datatracker.ietf.org/doc/draft-lazanski-consolidation/05/](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
  • 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!

Dominique Lazanski
dml@lastpresslabel.com

Mark McFadden
Mark@internetpolicyadvisors.com