IETF 120

IRTF
Decentralization of the Internet Research Group

2024-07-24

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Internet Engineering Task Force
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Goals of the IRTF

- The Internet Research Task Force (IRTF) focuses on longer term research issues related to the Internet while the parallel organisation, the IETF, focuses on shorter term issues of engineering and standards making

- **The IRTF conducts research; it is not a standards development organisation**

- While the IRTF can publish informational or experimental documents in the RFC series, its primary goal is to promote development of research collaboration and teamwork in exploring research issues related to Internet protocols, applications, architecture, and technology

- See “An IRTF Primer for IETF Participants” – RFC 7418

DINRG Administrativia

- IRTF RG on Decentralized Internet Infrastructure
- Mailing list: din@irtf.org
- Web: https://irtf.org/dinrg
- Chairs
  - Dirk Kutscher, HKUST(GZ)
  - Lixia Zhang, UCLA
- This meeting
  - **Note taker:**

DINRG publications

- Research outcome should be published via research channels
  - Already published RFCs, if any, are grandfathered
- Everyone is welcome to add contributions and relevant materials to DINRG wiki

https://wiki.ietf.org/en/group/dinrg

DIN RG - IRTF Decentralized Internet Infrastructure

IRTF Decentralized Internet Infrastructure (DIN RG)

Decentralization of the Internet Research Group (DINRG) Wiki

The Decentralization of the Internet Research Group (DINRG) aims to provide for the research and engineering community, both an open forum to discuss the Internet centralization phenomena and associated potential threats, and a platform to facilitate the coordination of efforts in identifying the causes of observed consolidations and the mitigation solutions.

DINRG Administrative Information

- Official DINRG web page
- Mailing list
- Charter
- Previous Meetings
- Current chairs dinrg-chairs@ietf.org
  - Dirk Kutscher
  - Lixia Zhang

KEY SUBJECTS

Groups

Meetings

POPULAR PAGES

IETF 118 Hackathon

IETF 118 Meeting Wiki

HELP

Contributing to this wiki

Sandbox

Please Contribute

Research Resources

Active Documents

- M. McFadden, Ed. "A Taxonomy of Internet Consolidation", October 2023.
  https://datatracker.ietf.org/doc/draft-mcfadden-consolidation-taxonomy/

Obvservations and Measurements

- Christian Huitema, Geoff Huston, Dirk Kutscher, and Lixia Zhang.
  "Report of 2021 DINRG Workshop on Centralization in the Internet"
  ACM Computer Communication Review 53, 2 (April 2023), 31–39. https://doi.org/10.1145/3610381.3610386
- Leonhard Balduf, Maciej Korczyński, Onur Ascigil, Navin V. Keizer, George Pavlou, Björn Scheuermann, and Michał Król
  "The Cloud Strikes Back: Investigating the Decentralization of IPFS" In Proceedings of 2023 ACM on Internet Measurement Conference (IMC '23). Association for Computing Machinery, New York, NY, USA, 391–405.
  https://doi.org/10.1145/3618257.3624797
- Gautam Akiwate, Kimberly Ruth, Rumaisa Habib, Zakir Durumeric; On the Centralization and Regionalization of the Web; 2024; https://arxiv.org/abs/2406.19569

New Designs and Technology

- Martin Kleppmann, Adam Wiggins, Peter van Hardenberg, and Mark McGranaghan. 2019. Local-first software: you own your data, in spite of the cloud. In Proceedings of the 2019 ACM SIGPLAN International Symposium on New Ideas, New Paradigms, and Reflections on Programming and Software (Onward! 2019). Association for Computing Machinery, New York, NY, USA, 154–178. https://doi.org/10.1145/3359591.3359737
- Navin V. Keizer, Onur Ascigil, Michał Król, Dirk Kutscher, and George Pavlou; A Survey on Content Retrieval on the Decentralised Web; ACM Computing Surveys; (March 2024; https://doi.org/10.1145/3649132
- Ash Wilson, Shumon Huque, Olle E. Johansson, Michael Richardson; An Architecture for DNS-Bound Client and Sender Identities; Internet Draft draft-ietf-dance-architecture (Work in Progress); May 2024;
  https://datatracker.ietf.org/doc/draft-ietf-dance-architecture/06/
- Tianyuan Yu, Xinyu Ma, Varun Patil, Yekta Kocaogullar, Yulong Zhang, Jeff Burke, Dirk Kutscher, Lixia Zhang; Secure Web Objects: Building Blocks for Metaverse Interoperability and Decentralization; IEEE MetaCom 2024; August 12-14 2024; Hong Kong, China; pre-print
- Tianyuan Yu, Xinyu Ma, Varun Patil, Yekta Kocaogullar, Lixia Zhang; Exploring the Design of Collaborative Applications via the Lens of NDN Workspace; IEEE MetaCom 2024; August 12-14 2024; Hong Kong, China; pre-print

Regulation

Economics

CoNEXT 2024

The 20th International Conference on emerging Networking EXperiments and Technologies

Los Angeles, California, USA

December 9-12, 2024

Workshop on the Decentralization of the Internet (DIN)

Recent years have witnessed the consolidation and centralization of the Internet applications, services, as well as the infrastructure. This centralization has economic aspects and factors as well as technical ones. The effects are often characterized as detrimental to the original goals of the Internet, such as permissionless innovation, as well as to society at large, due to the amount of (personal) data that is obtained and capitalized on by large platforms.

This workshop is intended to provide a forum for academic researchers to present and discuss on-going work on this topic and to create greater awareness in the larger community for this topic.

Organizers:

- Dirk Kutscher, HKUST(GZ)
- Lixia Zhang, UCLA

Important Dates

Workshop Date

December 9, 2024

Decentralization of the Internet (DIN)

Paper submission:
August 9, 2024

Camera ready:
September 27, 2024

Agenda

1	DINRG Chairs' Presentation: Status, Updates	Chairs	05 min
2	Exploring Decentralized Digital Identity Protocols	Kaliya Young	20 min
3	DNS-Bound Client and Sender Identities	Michael Richardson	20 min
4	Internet Fragmentation	Sheetal Kumar	20 min
5	SOLID: Your Data, Your Choice	Hadrian Zbarcea	20 min
6	Panel Discussion: Internet Decentralization – Next Steps	Panelists and Chairs	50 min
7	Wrap-Up	Chairs	05 min

Presentations

DINRG Future Meetings

- ACM CoNEXT DIN Workshop in December 2024
  - Please submit your work and consider participating
- Planning to meet at IETF-121 (Dublin)
  - Your input wanted