IETF 112 – Side Meeting

https://datatracker.ietf.org/doc/draft-jia-intarea-scenarios-problems-addressing/

https://datatracker.ietf.org/doc/draft-jia-intarea-internet-addressing-gap-analysis/

Internet Addressing -

PROBLEM Statement and GAP Analysis

IETF 112 – Online

2021.11.08

Note Well

This is a reminder of IETF policies in effect on various topics such as patents or code of conduct. It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

As a reminder:

- By participating in the IETF, you agree to follow IETF processes and policies.
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- As a participant in or attendee to any IETF activity you acknowledge that written, audio, video, and photographic records of meetings may be made public.
- Personal information that you provide to IETF will be handled in accordance with the IETF Privacy Statement.
- As a participant or attendee, you agree to work respectfully with other participants; please contact the ombudsteam (https://www.ietf.org/contact/ombudsteam/) if you have questions or concerns about this.

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- BCP 9 (Internet Standards Process)
- BCP 25 (Working Group processes)
- BCP 25 (Anti-Harassment Procedures)
- BCP 54 (Code of Conduct)
- BCP 78 (Copyright)
- BCP 79 (Patents, Participation)
- https://www.ietf.org/privacy-policy/(Privacy Policy)

IETF

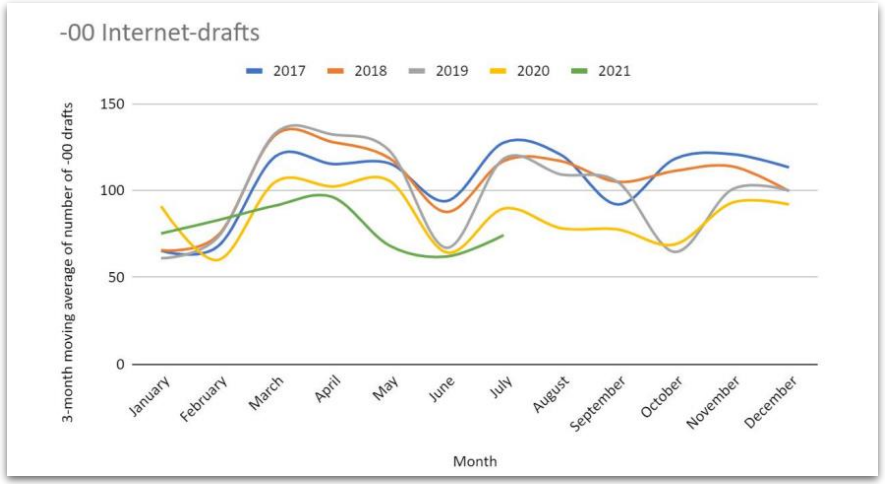
Logistics

This meeting is publicly streamed and recorded

- 60-minute in Total
- Webex
  - https://htf-paris.my.webex.com/htf-paris.my-en/j.php?MTID=me5c3296ffa38c59d4b010c5a81567410
  - Please keep yourselves on mute
- Interaction
  - Questions – Raise your hand in WebEx, moderator will call on you to speak
  - Chat Window: Feel free to chat there and speakers may be able to respond
  - Question and discussion – INTAREA Mailing List
    - https://www.ietf.org/mailman/listinfo/int-area
- Live stream
  - https://youtu.be/vwtoCvluREA
- Materials
  - https://github.com/Iannone-Luigi/Addresing

WHY are we here anyway?

- Technical points will be overviewed in the next slides…



- But in the meantime:
  - New work and discussion is slowing down …
    - (due to online-only events)
  - Can we use side meetings to cope with the situation?
    - Consider this meeting kind of an **experiment**

Some Observations on Available Data

2020

- Email & total drafts seemed to broadly track previous years.
- New work (-00) drafts was slightly down (~ 15-20%).
- Inline with on-line communications and no f2f interaction.

2021

- Emails trending slightly lower
- Drafts, and particularly new drafts are noticeably down.

The IESG will continue to monitor this data

- This meeting **IS NOT ABOUT** setting the stage for a BoF
- This meeting **IS ABOUT** promoting **broader thinking** of a new work in IETF

WHO is here?

You all: thank you for coming ☺

- A group of panelist invited to share their experience and opinion (special thanks to them)
    - Dino Farinacci
    - Vasileios Giotsas
    - Dirk Kutscher
    - Robert Moskowitz
    - Michael Richardson
    - Nirmala Shenoy
    - Laurent Toutain
  - But the mic is open to everybody
- Agenda:
  - Introduction (this very presentation)
    - 15 Minutes – Luigi Iannone
  - Open Discussion
    - 45 Minutes – Animator: Dirk Trossen

WHAT is the topic: Internet Addressing Problems and Gaps

- There are many scenarios in which current Internet addressing shows **shortcomings**
- Internet community has recognized those shortcomings to the original properties of Internet addressing, and thus developed **point extensions** to fix them.
- There are a number of **compounding issues** with those extensions, particularly **fragility** when considering point extensions in coexistence
- Doing point extensions to addressing, possibly over any existing or new header field imaginable, may be seen as a powerful tool for extending the Internet
- But developing point solutions may lead to further issues being identified, most importantly it may increase the **complexity** as well as **fragility** of the overall system

PROBLEM STATEMENT Draft

- Provides **example** scenarios that the existing **Internet addressing structure itself** is a potential hindrance for service provisioning

  - Communication in Constrained Environments (IoT)
  - Communication within Dynamically Changing Topologies
  - Communication among Moving Endpoints
  - Communication Across Services
  - Steering Communication Traffic
  - Communication with built-in security
  - Communication in Alternative Forwarding Architectures

- Revolves around following **question**:

  > Should limited domains purely rely on IP addresses and therefore deal with the complexity of translating any semantic mismatch themselves, or should flexibility for supporting those limited domains be a key focus for an evolved Internet addressing?

GAP ANALYSIS Draft: Main Flow of the Document

- Focus on 3 key properties for Internet Addressing
  - **Fixed Address length** through 32/128 bit length
  - **Ambiguous Address Semantic** with explicit locator and implicit identifier
  - **Limited Address Semantic Support** with mainly prefix-based only semantics

Section 2

- Outline extensions to those key properties
  - Position those extensions as attempts to fill **identified gaps** in properties through point solutions to overcome them

Section 3

- Identify issues with those extensions
  - Which may be solved with an evolved addressing

Section 5

OPEN QUESTIONS to the Panelists and the Community

- Have the extensions shown that **gaps to addressing** have been identified by the Internet community?
- Are the identified issues worth thinking of **different approaches** to addressing the identified gaps?
  - Do we think we can avoid the issues or just uncover others?
- Do you agree that an architectural approach is required that makes **extensibility** of addressing a key principle to future Internet addressing?
  - Or can we afford to continue doing what we have done so far?
- Are there **contributors to this discussion** who would want to work with us to push the discussion and associated material further?

DISCUSSION

Internet Addressing - Problem Statement and Gap Analysis

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Drafts can be Reviewed at INTAREA WG:

1) Internet Addressing: Problem statements (https://datatracker.ietf.org/doc/draft-jia-intarea-scenarios-problems-addressing/)
2) Internet Addressing: Gap analysis (https://datatracker.ietf.org/doc/draft-jia-intarea-internet-addressing-gap-analysis/)

THANKS!

Welcome **Feedback** in the **INTAREA WG Mailing-List**

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