Contractual Networking

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IETF 112 side meeting

Tuesday, Nov. 9, 2021: 10am – 11:30am (Pacific)

18:00 – 19:30 UTC

10am – 11:30am Eastern

Agenda - preliminaries

- Introduction
- Each speaker has 15 minutes. After the presentations, we will have general discussion

- Please Note Well https://www.ietf.org/about/note-well/
  - This is not an official IETF WG meeting
  - This is not intended to be a WG-forming meeting

- Recordings
  - This meeting will be recorded.
  - It is intended that links will be made available after the meeting

Contractual Networking

- This session offers discussion about how to enforce agreements at the network layer between different parties in a communication. We could use in-band or out-of-band solutions, solutions at layer 3, 3.5, or layer 4. We would like to discuss the potential mechanism to provide/negotiate a contract. Should these be introduced as data within Internet packets to provide the contractual context to the flow, or should this be kept in the control plane? How should we ensure that the agreement is complied with? Is IP with some label option enough? Should IP be evolved? Alternatively, should compliance mechanisms reside in the control plane, or in virtual network/network slices?

Mechanisms to support flow-level agreements
Ken Calvert, University of Kentucky

- This talk will give an overview of some mechanisms that came out of research on active networking and future internet architectures, which could be relevant to “contractual networking”.
- Both in-band and control plane approaches have been considered and will be discussed.

Network contracts: Lessons from network verification
Ratul Mahajan, CEO Intentionet & U. of Washington

- Network verification aims to provide mathematical guarantees about network behavior, including how it will (or not) carry different types of traffic. This technology has come of age in the last decade and is now employed by many real-world networks. In this talk, I will share lessons from the network verification domain as they apply to specification and enforcement of network contracts.

Extensible In band Processing (EIP)
Stefano Salsano, Univ Rome “Tor Vergata”

- 6G is projected to impose new network layer requirements. This presentation will outline the Hexa-X project and summarize network layer gaps and requirements, including the AI/ML components.

Open Discussion

- Any interesting new directions to be considered within IETF or IRTF?