**Application Layer**

**Aim**
To provide a viable alternative to today's third party centralised services, by utilising existing devices on the edge network.

**Motivation**
Your digital life is out of control and out of your control.
- opaque terms of service
- mass surveillance
- government censorship
- data breaches
- content manipulation for profit
- targeted advertising
- no service guarantees

**Databox**

**Problem**
Users want to take back control of their personal data.

**Solution**
A self-hosted platform to enable users to engage with the collection, management and consumption of their personal data.

**Unanimous**

**Problem**
Distributed algorithms are designed for the datacenter. They assume a fixed network topology with redundancy and well understood link characteristics, homogeneous hosts and management by knowledgeable sysadmins.

**Solution**
A new distributed consensus algorithm, designed specifically to tolerate edge network failures and whose configuration parameters reflect application needs such as caching, consistency and dynamic membership.

**Signposts**

**Problem**
Establishing authenticated identities and secure channels between edge network devices.

**Solution**
Give every device a user friendly domain name. Channels between devices are created as a side effect of DNS resolution and devices appears as if local thus supporting legacy devices & applications.

**Edge Network**

**Challenges**
- heterogeneous & often resource constrained hosts
- asymmetric and nontransitive reachability
- diverse & unpredictable link characteristics
- mobile hosts and networks
- layer violations by poorly understood middleboxes
- network externalities and high switching costs

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**Read more**
Heidi Howard, Malte Schwarzkopf, Anil Madhavapeddy and Jon Crowcroft. Raft Refloated: Do We Have Consensus? SIGOPS Operating Systems Review