draft-wendt-modern-drip-01

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Overview

- DRiP is a HTTP based protocol for sharing registry type of information between interconnected nodes across a network

- It uses a gossip protocol for complete distribution across interconnected nodes

- It incorporates a voting mechanism to avoid conflicting data updates or race conditions

Similarities to existing projects

- Beyond distributed databases in general, two existing open source projects that specifically support a RESTful HTTP interface and pass around updatable JSON objects are CoreOS etcd and Hashicorp Consul.

- These use raft and serf based protocols for doing distributed consensus (gossip based).

- DRiP is a pure gossip protocol, with voting phase borrowed from Paxos.

- However, all share gossip based fundamentals.

Differences from existing implementation

- Many current distributed system implementations incorporate a leader or master role

- In DRiP we explicitly avoid any leader with the intension that each node is owned by different registry parties and there is no single leader or single owner

- Model is simpler, first-to-update-wins consensus

- This simplicity implies that consensus must be absolute, all nodes vote their consensus

- So, trade off of speed versus highly consistent data across all nodes

Updates for 01

- Completed all TBDs with API examples

- Added a security/auth mechanism - authorization header with basic certificate based JWT to validate every node to node transaction

- Propose a separate draft for the Auth/Security framework for managing and protecting the DRiP network, API credentials/tokens, revoking access, etc.

- Added heartbeat mechanism for node to validate that it is connected to at least one other peer node.