

Orbit

Distributed, Real-time Web3 Application
with IPFS and Ethereum

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Orbit



DEMO



Home Stream

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a minute ago

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17 hours ago

hello friend

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HELLO! 🐼 🎩

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What's up?

Frank pinned



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orbit-db

**P2P Database for Distributed
Applications**

Eventlog

Feed

Key Value Store

Counters

Indexed Document DB

ipfs-log

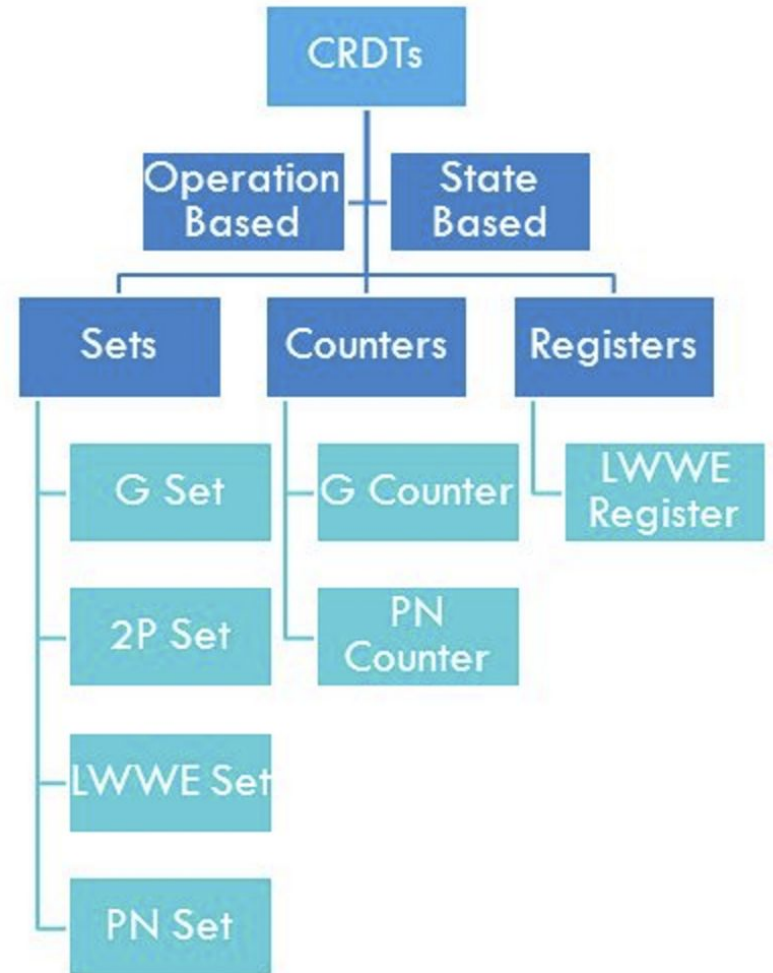
Append-only log, partially ordered,
eventually consistent merkle tree of
database operations

```
{
  "payload": {
    "op": "ADD",
    "key": null,
    "value": "hello friend",
    "meta": {
      "ts": 1474275078834
    }
  },
  "hash": "QmVKZZbAfVbSBex4KMb7cVgBvCwfCXbAGRQt62wZqXuNC8",
  "next": [
    "QmdcxmLCeT86ppkYvXc1fmXr2Vp9MnumtECJvfgesWgmn3"
  ]
}
```


CRDTs

Conflict Free Replicated Datatypes

```
class G-Counter {  
    constructor(id, payload) {...}  
  
    get value() {...}  
  
    increment(amount) {...}  
  
    merge(other) {...}  
  
    compare(other) {...}  
}
```



```
/* orbit-db-counterstore */
```

```
updateIndex(oplog, added) {  
  if(this._counter) {  
    added.filter((f) => f && f.payload.op === 'COUNTER')  
      .map((f) => Counter.from(f.payload.value))  
      .forEach((f) => this._counter.merge(f))  
  }  
}
```

Pubsub

Publish / Subscribe

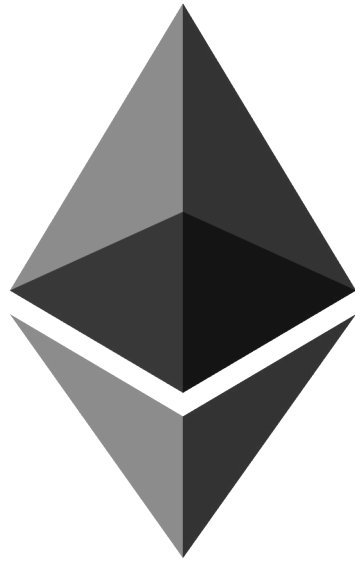
// sending peer

```
const db = orbitdb.eventlog('#devcon2')  
const hash = Post.create('hello friend', signKey)  
db.add(hash)
```

// receiving peer

```
const db = orbitdb.eventlog('#devcon2')  
db.events.on('data', (channel, message) => {  
  const post = Post.verify(message)  
  console.log(post.content) // 'hello friend'  
})
```

Snapshot it on the blockchain







CRDTs



Ethereum

Pubsub

CRDTs

Append-Only Log

IPFS

With great powers

comes great responsibility

Offline First

No Centralized Services

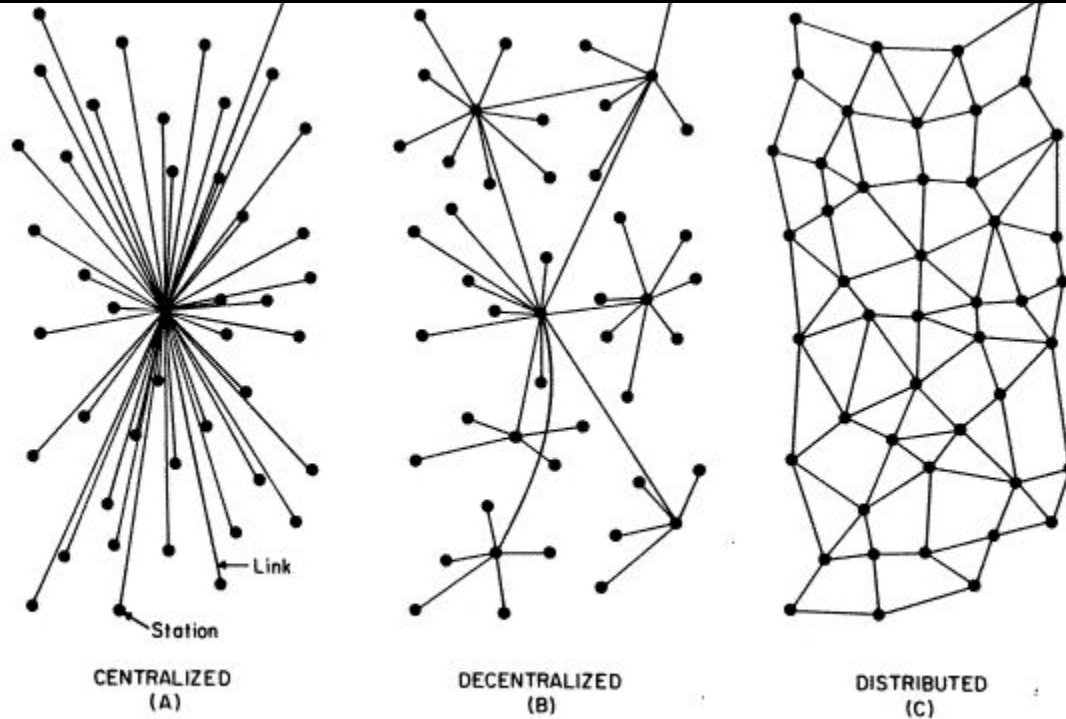


FIG. 1 — Centralized, Decentralized and Distributed Networks

No Data Silos

Provide Integration Path

What's Next?

uPort for Permissions

Mobile

Going Interplanetary

A photograph of the International Space Station (ISS) in orbit above Earth. The station's complex structure, including its large solar panel arrays, is visible against the blue and white clouds of the planet. The Earth's horizon is visible at the top of the frame.

Orbit in orbit

Thank you!

谢谢

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<https://github.com/haadcode/orbit> (branch: devcon2)