

Egocentric Architecture

You are so worth it!

Me

- bigbluehat@apache.org (woot!)
- Apache CouchDB committer
- 7 years in the CouchDB community
- 15+ years doing open source
 - built 6k+ page Apache Cocoon site in 2000-2001
 - fell in love with pipelines
 - lost appetite for XSLT
 - kept love for document centric development
- Building Annotation Awesomeness at Hypothes.is



Egocentric Architecture

You in the Middle

- Data spirals away from us
- Leaving us spread across the planet
- With little hope to “pull yourself together”

That panicky feeling when you
realize...

THERE'S NO WIFI!!!!?



No WiFi. No me.

Really?!

I'm elsewhere

My photos live...

My contacts live...

My documents live...

...somewhere else...

Bringing it back

My Powers

- Make anything
- Always keep a copy close
 - By default
- Send *copies* elsewhere
- Store multiple places (optional)
 - My phone
 - My laptop
 - That Cloud thing

Cloud Powers

- Backup
- Sharing
- Connecting
- Collaborating
- Conferencing
- Communicating
- Processing super powers

Wait?!

Did you just describe Email?! O.o

Yes....yes I did.

Work locally. Sync globally.

Everything else is just skipping the most important first step.

Egocentric

For the good of all.

Doing this now

More have than you might think.

Dimagi CommCareHQ

solution for community health and extension workers that provides case management, data collection, and data management

[MedicMobile.org](https://www.MedicMobile.org)

Mobile & web tools that help health workers reach everyone

Military

Wait on WiFi? Not if my life depends on it.

Application Areas

- Airplanes
- Rural
- Disaster Relief
- Mountains
- Valleys
- Oceans
- Planets
- Pluto
- Privately
- Ad hoc
- At home (sans Internet)
- Airstream Trailers (not a joke)
- Anywhere ^.^

Remember

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Cloud Powers

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The Problem Space

- Data movement / Replication
- Identification
 - Of you
 - Of your stuff
 - Of your storage
 - Of your friends (storage)
- Conflict resolution & consistency
- ~~Data Shape / Format~~

Some Solutions

- Email
- Linked Data Web (getting there!)
- Lotus Notes o.O
- ipfs.io (early days, but promising)
- CouchDB, PouchDB, & Friends

Decentralized Information Group

<http://dig.csail.mit.edu/>

Redecentralize.org

Quietly, some geeks are decentralizing the net. Again.

Unhosted.org

freedom from web 2.0's monopoly platforms

OfflineFirst.org

See also: hood.ie and noBackend.org

“offline is not an error” -- [@caolan](#)

Cozy.io

a Personal Cloud you can host, customize and fully control

Apache CouchDB

- [Why CouchDB?](#) Because replication.
- PouchDB
- Couchbase Mobile (formerly TouchDB)
- Cloudant Sync
- Drupal Replication module
- Find others at replication.io

Gettin' Practical

Sync Sans Login (sort of)

done.gd demo

done.gd app user flow

1. Load app
2. Use it—it's offline first!
3. When ready....click "sync"
4. Enter email address
5. Click "validate" link
6. (re)open's app in your browser
7. Now it auto-syncs with the server

pouch.host

- Creates token in `token-storage` database
- Sends email with single use validation link
 - `?token=...`
 - `&user={email}`
 - `&host={origin}`
- `/validate/`
 - Stores cookie associating the current browser with the correct db
 - DB name is a hash of e-mail address + origin of the app
- `/logout/`
 - Removes that cookie

done.gd HTML5 Offline App

- Simple Single Page App
- Uses Appcache Manifest
 - Lists files for the browser to cache
 - Reload the app takes change to `manifest.appcache`
 - ...and Shift+R
 - Shipping stuff the browser already knows? >.<
- Uses PouchDB for client-side storage
 - Via IndexedDB or WebSQL

Packaged apps

- Mobile
 - Cordova
 - Ionic
- Desktop
 - nw.js
 - Breach.cc?

The future?

- You and your data. Together again (at last)!
- Send out content when it needs to get to someone else
- Get “Cloud Powers” as needed
- Keep what you need on hand

How do we get there?

- Lots of love for the ideas
 - But lots of rough edges
 - Time goes to “the old way” of doing things
 - And not to the future
-
- Showing the promise.
 - Smoothing out the mountains.
 - Shipping the simple super sauce.

Thanks!

- bigbluehat.com
- [@bigbluehat](https://twitter.com/bigbluehat)
- github.com/BigBlueHat
- bigbluehat on irc.freenode.net
 - #couchdb #pouchdb #hypothes.is
- bigbluehat@apache.org
- byoung@bigbluehat.com
- bigbluehat@hypothes.is



HTTPIe Example Requests

GET /login/

```
http --verbose -j --session='pouchhost' POST http://127.0.0.1:3030/login/ email='byoung@bigbluehat.com'
```

```
POST /login/ HTTP/1.1
```

```
Accept: application/json
```

```
Accept-Encoding: gzip, deflate
```

```
Connection: keep-alive
```

```
Content-Length: 34
```

```
Content-Type: application/json
```

```
Host: localhost:3030
```

```
User-Agent: HTTPie/0.9.2
```

```
{  
  "email": "byoung@bigbluehat.com"  
}
```

```
HTTP/1.1 200 OK
```

```
Access-Control-Allow-Credentials: true
```

```
Access-Control-Allow-Headers: Content-Type, Content-Length
```

```
Access-Control-Allow-Methods: GET,PUT,POST,DELETE
```

```
Access-Control-Allow-Origin: undefined
```

```
Connection: keep-alive
```

```
Content-Length: 11
```

```
Content-Type: application/json; charset=utf-8
```

```
Date: Sun, 12 Apr 2015 20:11:38 GMT
```

```
ETag: W/"b-a7d45f90"
```

```
X-Powered-By: Express
```

```
{  
  "ok": true  
}
```

GET /validate/?...