

A CouchDB Replication Endpoint in PHP

PHP User-Group Berlin

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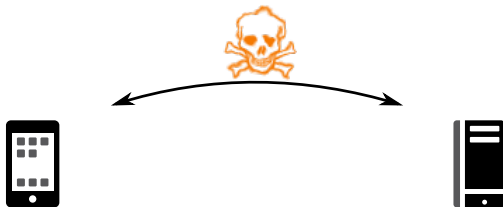
The Idea



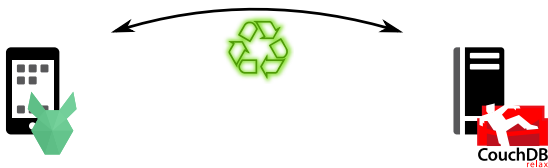
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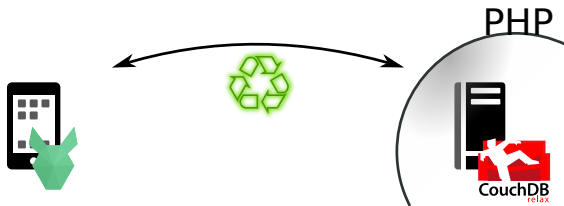
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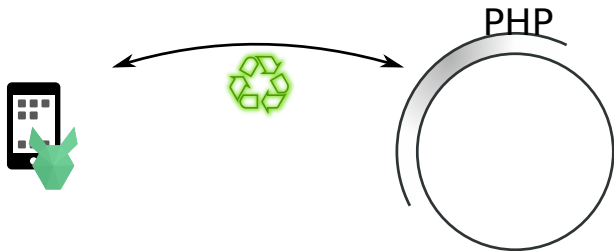
The Idea



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Implementations

- ▶ Client
 - ▶ PouchDB
 - ▶ Hood.ie
 - ▶ TouchDB
- ▶ Server
 - ▶ Apache CouchDB
 - ▶ Cloudant
 - ▶ PouchDB Server
 - ▶ Replipy (Python)
- ▶ Replicator
 - ▶ Replicate (JavaScript)
 - ▶ Replipy (Python)

Use Cases

- ▶ Make your (PHP)-App offline-capable

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- ▶ **Adapt data before syncing to mobile**

Outline

Replication Protocol

Implementation

Single Source of Truth

Truth



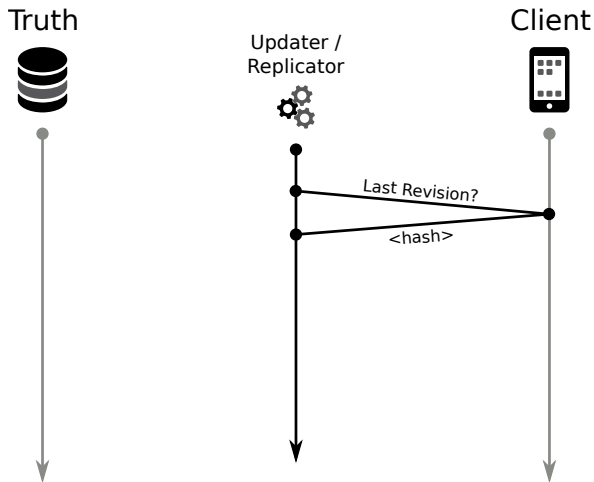
Updater /
Replicator



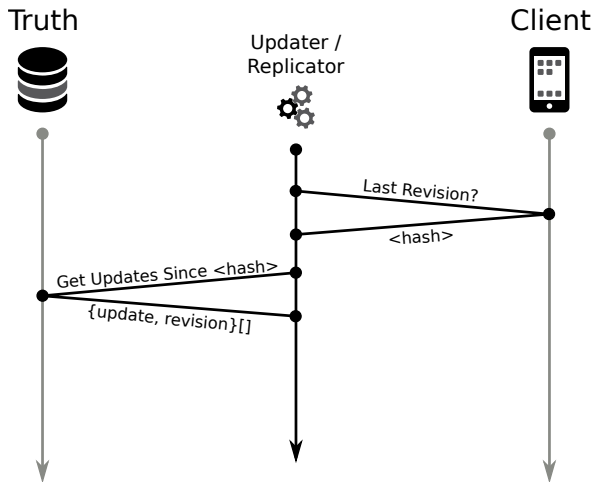
Client



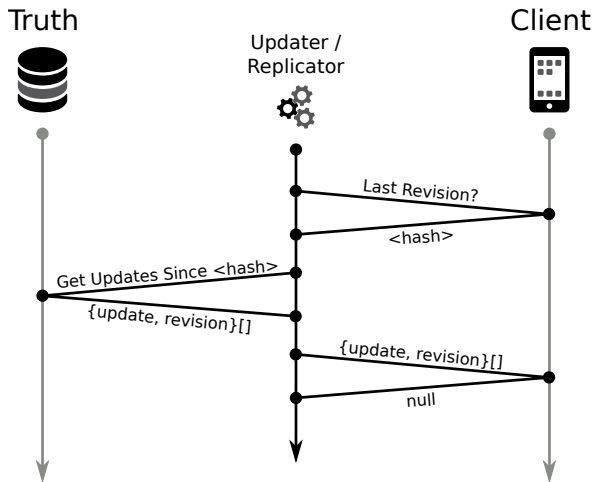
Single Source of Truth



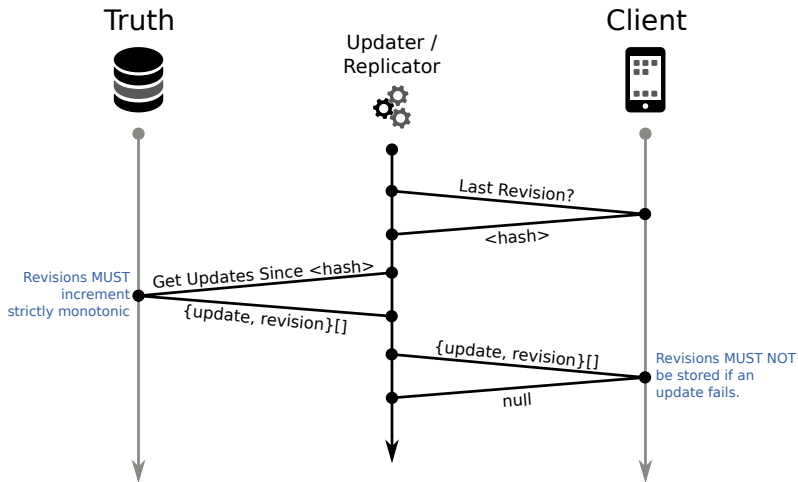
Single Source of Truth



Single Source of Truth



Single Source of Truth



CouchDB (simplified)

Source



Updater /
Replicator



Target



CouchDB (simplified)

Source



Updater /
Replicator



Get Replication Status

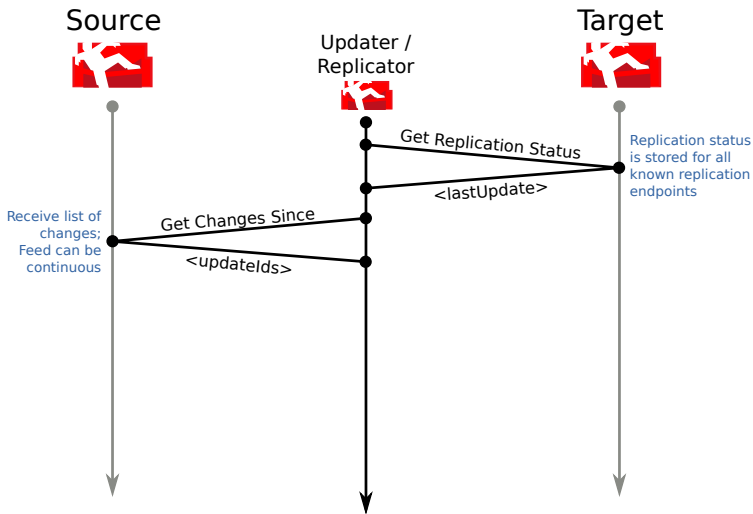
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Target

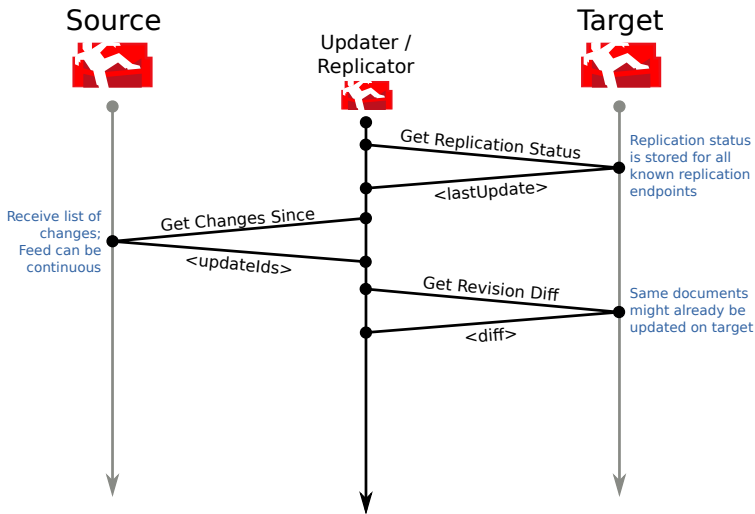


Replication status
is stored for all
known replication
endpoints

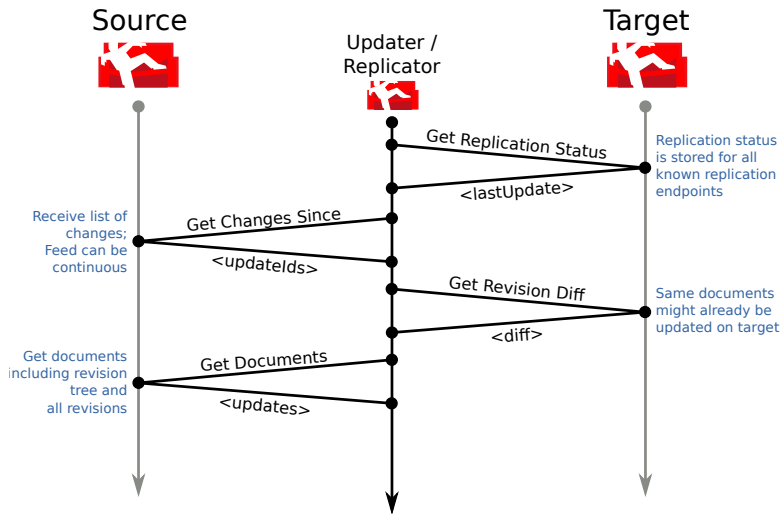
CouchDB (simplified)



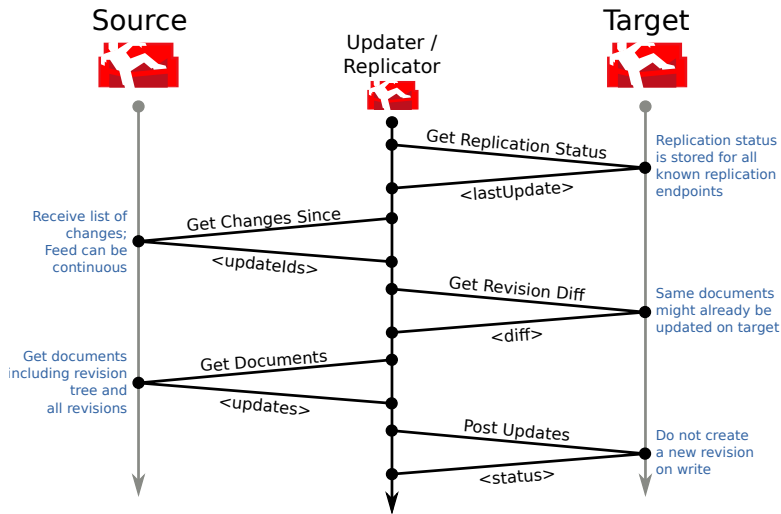
CouchDB (simplified)



CouchDB (simplified)



CouchDB (simplified)



Eventual-Consistent Multi-Master Replication over HTTP

Outline

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1. Record real replication (mitmdump)

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 - ▶ <http://mitmproxy.org/doc/mitmdump.html>
 - ▶ <https://github.com/Kagency/http-replay>

Disclaimer:
We will still need Unit Tests to test some of the algorithms dedicatedly.

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- ▶ Using Symfony2 as a HTTP Framework
 - ▶ All logic implemented in framework agnostic controllers / services / repositories

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 - ▶ Currently only an in-memory backend is actively used / tested
- ▶ <https://github.com/Kagency/couchdb-endpoint>

Replicate a CouchDB database into MySQL

Conclusion

- ▶ Offline-First Eventual-Consistent HTML5 Mobile Apps are the future!

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- ▶ Try Hood.ie for prototyping Offline-First Apps
- ▶ Use custom implementations to add some sauce



THANK YOU

Rent a quality expert
qafoo.com