

# The State of GeoCouch

Volker Mische  
Couchbase

Free and Open Source Software for Geospatial  
September 12–16 2011  
Denver

# About me

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- Loves open source (CouchDB, MapQuery, OpenLayers, Rockbox)
- Working for Couchbase
- Came in touch with free and open source for geospatial in 2008
- CouchDB fan since 2008
- Raver

# What is GeoCouch?

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Images: Greg Habermann, NASA

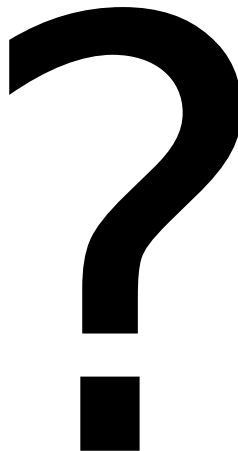


Image: Apache Software Foundation

# Document



# Document

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```
{
  "_id": "Station-2942_001",
  "_rev": "3-77f17a55f6ab11f7f6668e63a75f2281",

  "name": "Station-2942",
  "date": "2011-09-15",
  "loc": [-104.984722, 39.739167],
  "state": "Colorado",
  "temperature": 28,
  "rainfall": 0
}
```

# How did it all start?



<http://poetrybox.info/>

## Portland Poetry Posts

A map of poetry boxes, poems, and poems

### What are Poetry Posts?

Leave a Poem near other Poets for easy to find and find your

"A poetry post (or poetry post) is a small, portable, weather-resistant, and green-painted, box that is easy to find. The top of the post is a shelf, with a glass or clear box and lid. Inside the box is a sheet of paper containing a poem for someone to see, or a photograph. Sometimes the post is a book, the first poem is a note. That's it."

Click a post to view details below

It's called an area

- Geography
- Great Post
- Home Site
- Website
- All of Main-Portland

About this map

Concept by Ben Gannell

Design and Development by Ben Gannell

Questions? Suggestions? Poems to add? [Email us](#)

Please note: This site does not work in Internet Explorer or this site. We recommend Firefox, Google Chrome, or Safari for best results.

### About This Post



Photo by Louise G. Poets

1934 NE 36th Ave  
Portland, OR 97232



Publish fast



Image: Derek Tam

# Traditional GIS vs. Neogeography

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# Traditional GIS vs. Neogeography

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Image: Frank Warmerdam

# Traditional GIS vs. Neogeography

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# VS

Image: Frank Warmerdam

# Traditional GIS vs. Neogeography

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# VS

Images: Frank Warmerdam, Max Ogden

# CouchDB is more than a database



Image: NASA

http:// + { }

# Replication



# No connection



# There was a connection



Image: Naval Air Crewman 1st Class Jay Okonek

# Replication

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# Replication

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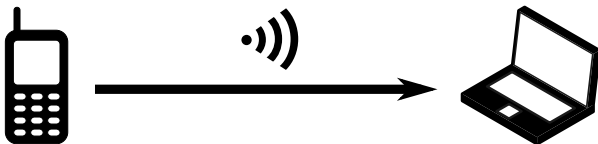
# Replication

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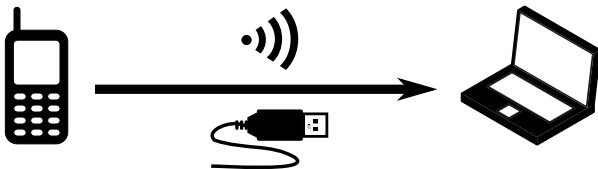
# Replication

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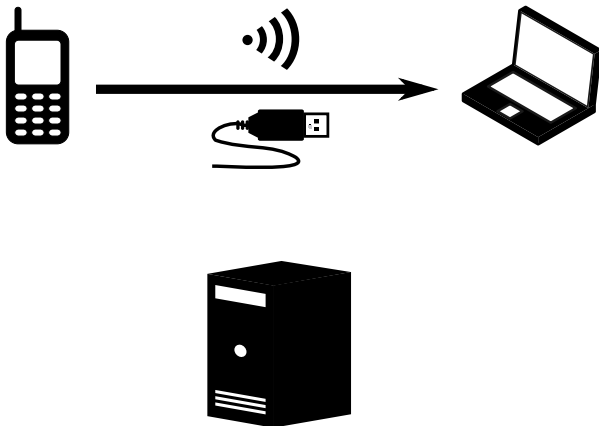
# Replication

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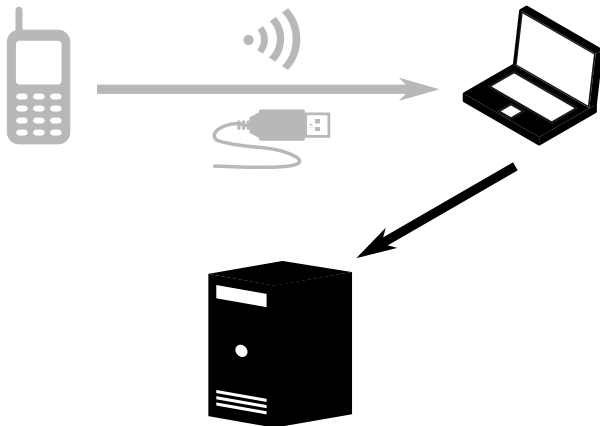
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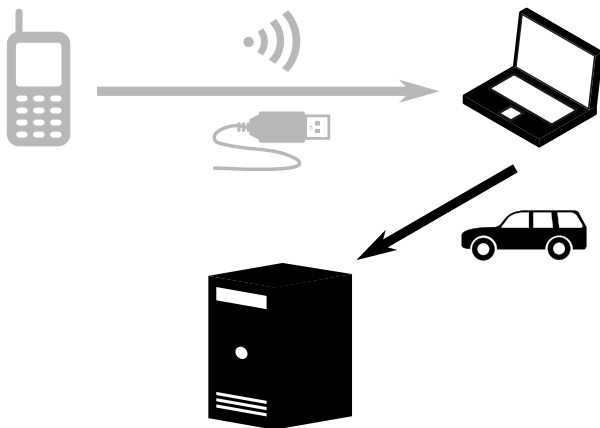
# Replication

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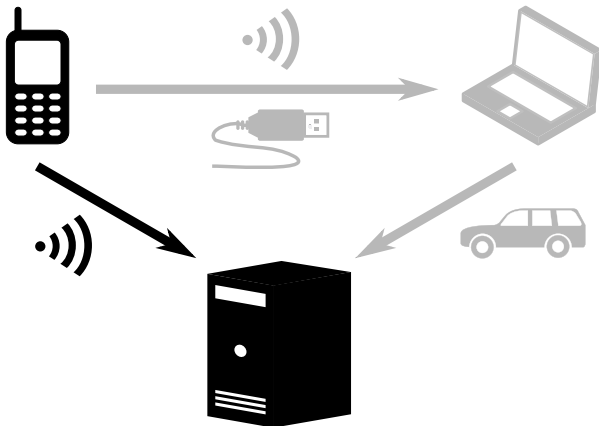
# Replication

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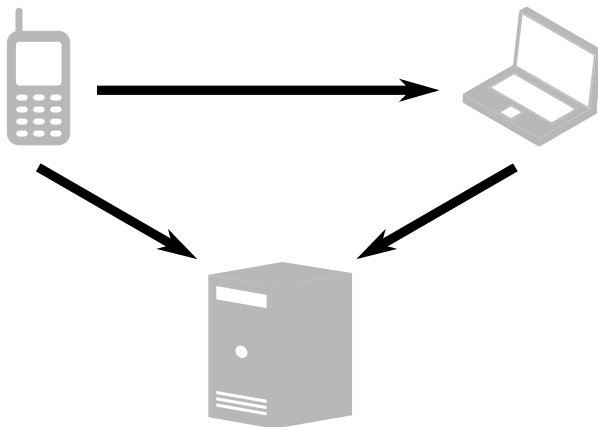
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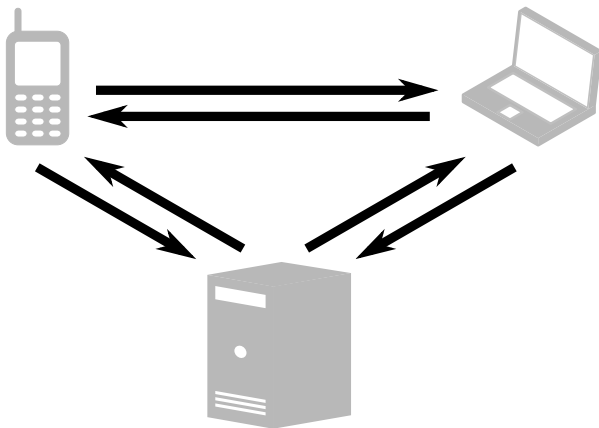
# Replication

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# Replication

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# CouchApps

# CouchApps

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## Server

# CouchApps

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## Server



Images: W3C, Apache Software Foundation



# CouchApps

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Client

Server



Images: W3C, Apache Software Foundation

# CouchApps

---

Client



Server



Images: W3C, Apache Software Foundation

# Couch\*

# Couchbase

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**Couchbase**



**Couchbase  
Single**



**Couchbase  
Mobile**

# Back to GeoCouch



# OpenSearch Geo

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<http://localhost:5984/>

# OpenSearch Geo

---

<http://localhost:5984/>

...



# OpenSearch Geo

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`http://localhost:5984/`

`...`

`?bbox=-110,-60,-30,15`

# Use GeoCouch

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- Tile cache (TileCache, MapProxy)

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- Backend:
  - ▶ **GDAL** ( $\geq 1.9.0$ ): [http://www.gdal.org/ogr/drv\\_couchdb.html](http://www.gdal.org/ogr/drv_couchdb.html)
  - ▶ **GeoTools**: <https://github.com/ischneider/Geotools-CouchDB-DataStore>
  - ▶ **Deegree**:  
<https://svn.wald.intevation.org/svn/deegree/deegree3/trunk/deegree-datastores/deegree-featurestores/deegree-featurestore-geocouch/>

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<https://svn.wald.intevation.org/svn/deegree/deegree3/trunk/deegree-datastores/deegree-featurestores/deegree-featurestore-geocouch/>
- All projects are in early stages, I'm sure they'd love to see some funding

# Future

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- More complex searches (Polygon search, radius, etc)
  - ▶ GEOS vs. Boost.Geometry
- Multidimensional indexing:
  - ▶ BUB-tree, SH-tree, X-tree, DBM-tree, your index structure

# Benchmarks

# It's not always about performance



Image: Tabbo107



# Use the right tool for the right job



Image: Tabbo107

# Thanks!

# Get in touch with me

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- Website: <http://vmx.cx/>
- IRC: vmx @ freenode
- Email: [volker@couchbase.com](mailto:volker@couchbase.com)
- Jabber: [volker@vmx.cx](mailto:volker@vmx.cx)
- Twitter: @vmische
- GeoCouch:
  - ▶ Source: <https://github.com/couchbase/geocouch/>
  - ▶ Binaries: <http://www.couchbase.org/>

# Demo

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[http://tinyurl.com/  
geocouchdemo002](http://tinyurl.com/geocouchdemo002)