

Distributed Ushahidi

Imagine a world where any computer can run a complete copy of an Ushahidi instance during a disaster, and these computers can even talk to each other when the Internet is down. With a few tweaks, this is already possible.

[Couchbase](#) is a distributed database system that gracefully decays in the absence of a network connection. It is battle-tested and ideal for powering a distributed system. By changing some of the backend code, it becomes possible to run many copies of Ushahidi that stay in sync with each other across spotty network connections. One instance of Ushahidi could be run in each neighborhood, or even on individual computers.

[Byzantium](#) is a project to make mesh networks easy to deploy in any situation. It is a variant of Linux that does all of the necessary work to set a machine up as a mesh router.

The current plan is to port one table to Couchbase as a test, then gradually transfer more over until Ushahidi is capable of working in a distributed fashion. In the long term it may make sense to replace MySQL entirely, but for now just moving some core functionality into a distributed form would be a big win.

- Ushahidi fork for this is https://github.com/bodaceaa/Ushahidi_Web (Sara: you need to do git push -u origin couchahidi for this!)
- Installing ushahidi on a Wamp server: [Installing Ushahidi v2.X on a WAMP Server](#)

Current stack is:

- Ushahidi 2.7, based on [Kohana 2.3.1](#), over mysql

Components (new and old) are:

- [Couchbase](#)
- Theoretically, Ushahidi controllers call models call `ORM::` functions, call mysql... except it's not quite that tidy.
 - There are 215 mysql calls in Ushahidi 2.7. (see file [dbcalls.txt](#) in ushahidi fork above) - but many of these are in the database controllers.
 - There are lots of `ORM::` calls in Ushahidi 2.7, spread across the models and controller.
- CouchDb modules for Kohana - [GitHub list](#) - Kerkness one looks useful.
- Couchbase modules for Kohana - [Kerkness](#) again

Things to do:

- Connect Byzantium to Couchdb - done.
- Convert Ushahidi Mysql database format into CouchDb format - Bryce, ongoing.
- Prepare Ushahidi code:
 - Move all sql and `ORM::` calls in Ushahidi 2.7 into the model layer (preferably also converting sql calls into `ORM::` calls).
 - Move all non-model code out of the models and back into the controllers.
 - Add Couchbase library to Ushahidi install.
 - Replace `ORM::` calls with Couchbase:: calls in the models.
 - See what breaks, and fix it.
 - But before all that, test the above on a small subset of the system, connecting that subset to a CouchDb database to see what breaks - have chosen the User database table for this.
- Rejoice and throw a wild Skype party.