

# THE SHAPE OF CLOUD KIT

...or, what can we build now?

# ABOUT ME

gNAT

AN AUSPICIOUS START

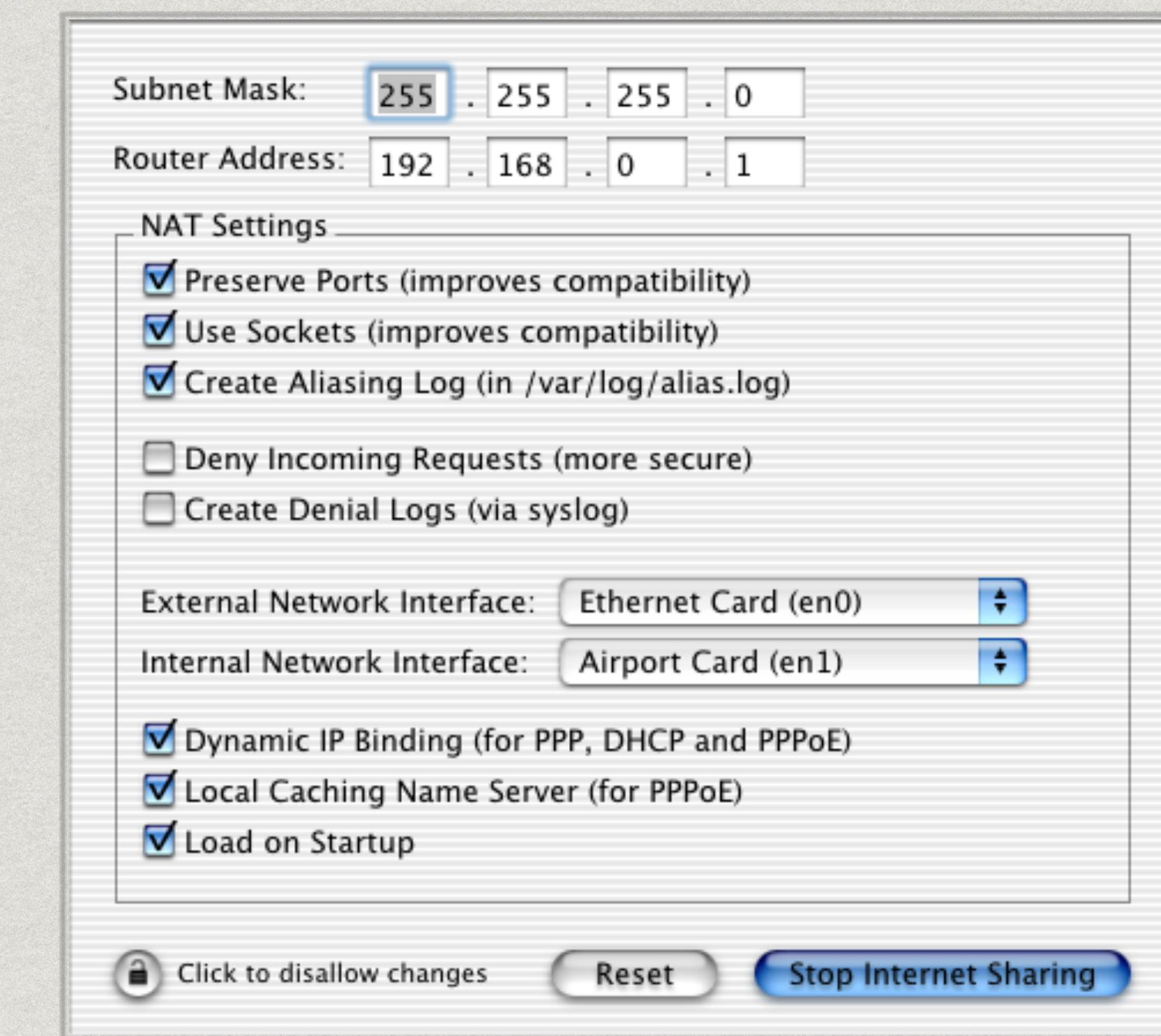
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# gNAT

AN AUSPICIOUS START

- \* GUI front end for natd
- \* Shipped <1 month after 10.0
- \* Sold it before freshman year of college (win!)



# SousChef

YOUR DIGITAL COOKING ASSISTANT

- \* Originally Mac
- \* Later iPhone, and iPad versions
- \* 100K+ Users
- \* 300K+ User Contributed Recipes
- \* Acquired by a UK Company



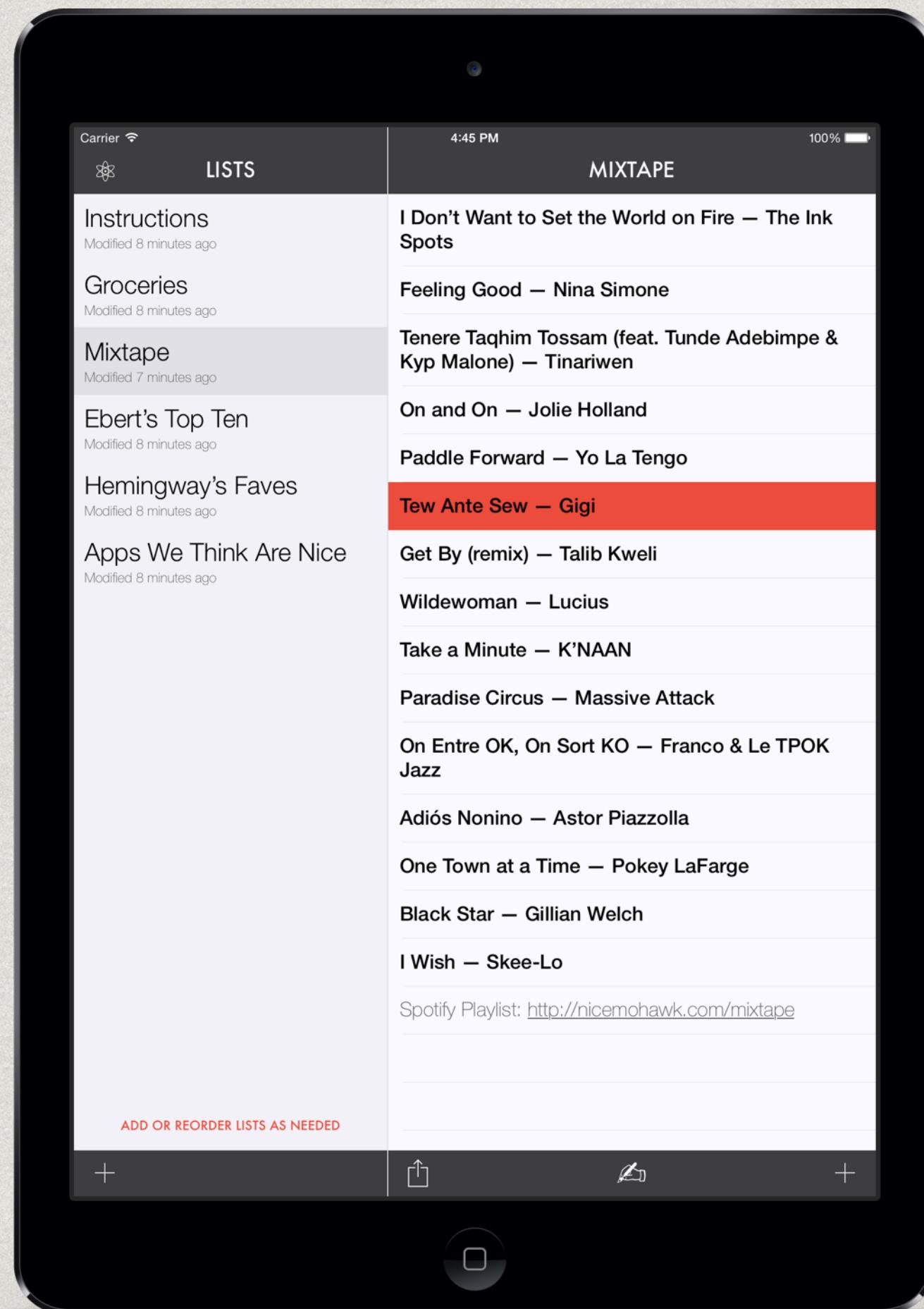


NICE MOHAWK

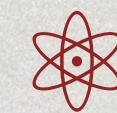
# Ita 2

A FINE LIST-MAKING APP

- \* iOS 7/8 redesign
- \* Quick “inline editing” interaction
- \* Built on Text Kit
- \* In-app settings



# THE FINE EDGE



[nicemohawk.com/blog](http://nicemohawk.com/blog)

# CLOUDKIT

# What we're talking about today.

- \* Quick Overview of CloudKit
- \* Case Studies
- \* Implementation Demo Attempt
- \* Idea time!

# Idea Time!

Hey Ben, you said that was going to be at the end!

# WHAT IS CLOUDKIT?

# Data Storage & Transport Service

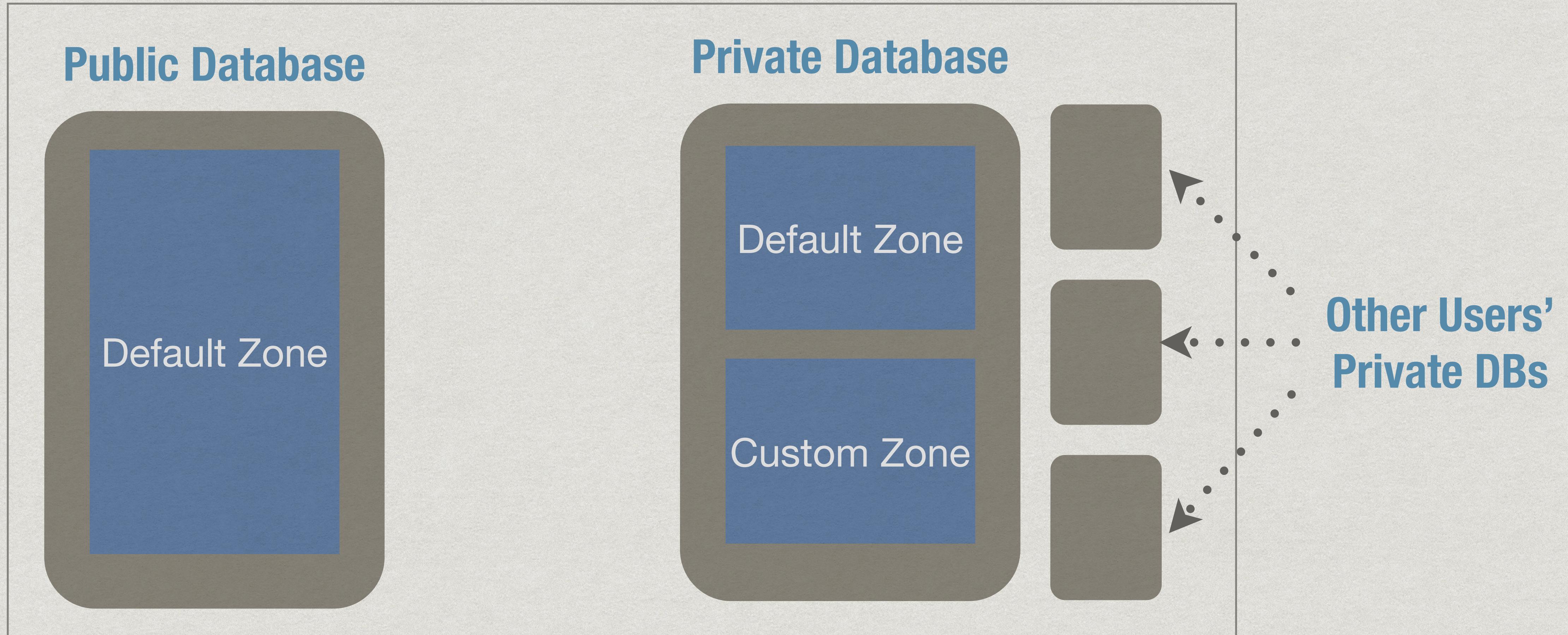
# CloudKit Architecture

## Records

### CKRecord

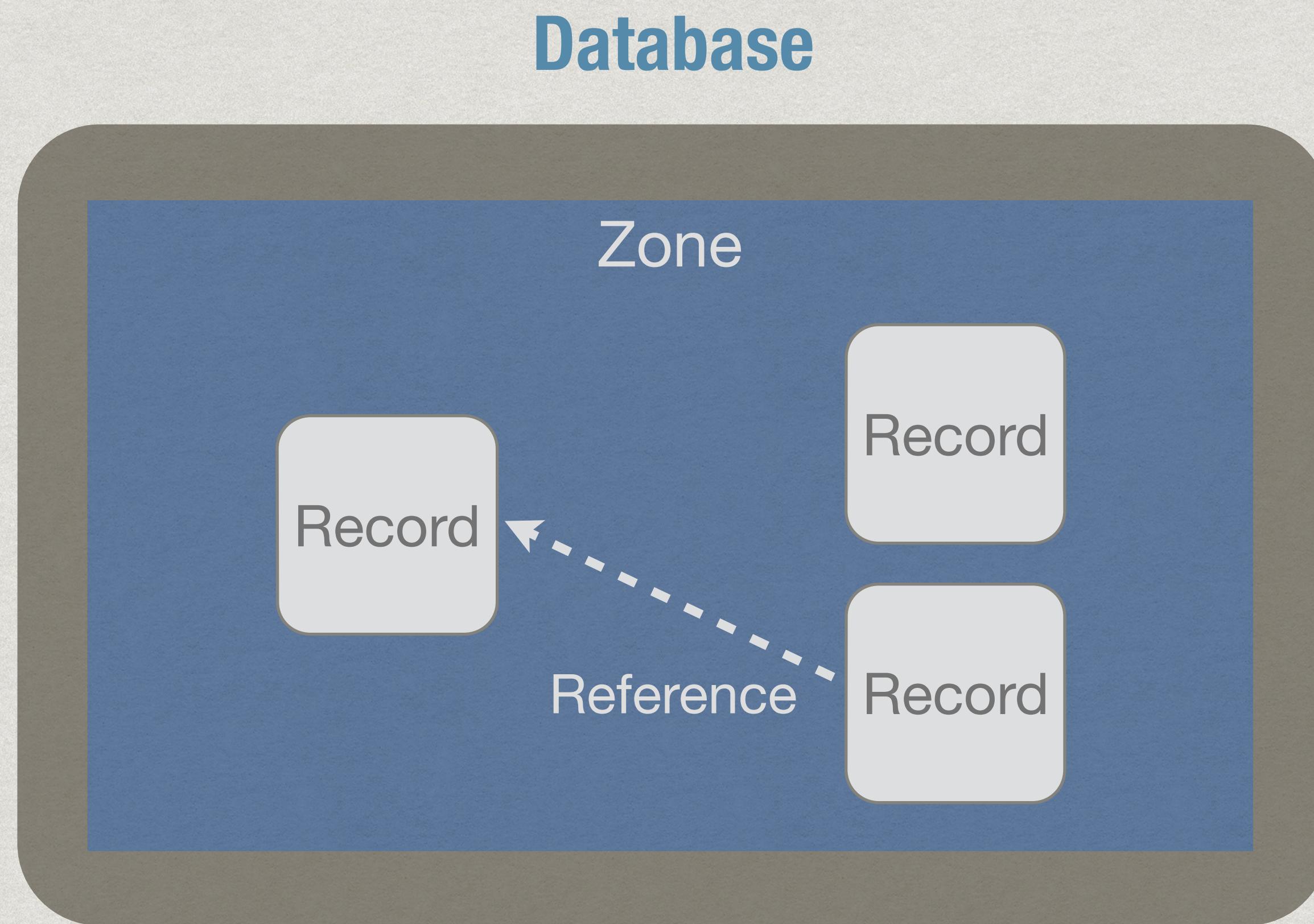
- Metadata
- Key/Value pairs
  - NSNumber
  - NSString
  - NSData
  - NSArray
  - NSDate
  - CLLocation
  - CKAsset
  - CKReference

# CloudKit Architecture



CloudKit Container

# CloudKit Architecture



# Private Database

- \* Multiple Zones for logical partitioning of data
- \* Custom Zones
  - \* Atomic writes for graph subtrees
  - \* Delta downloads
- \* No cross-zone references

# Public Database

- \* No atomic writes, so be careful with assumptions when writing multiple objects at once.
- \* Public is really Public. Data is world readable by your app, no iCloud account necessary
- \* Seems like a good place for large seed data among other things

# Data Storage & Transport Service

- \* NSOperation based API is the normal way to interact with CloudKit
- \* Convenience API for single record interactions
- \* Block/Closure based API looks super nice in Swift

```
database.deleteRecordWithID(thingToDelete.recordID) { (deletedRecord, error) in
    if error != nil {
        ...
    } else {
        ...
    }
}
```



# SO WHAT'S IT GOOD FOR?

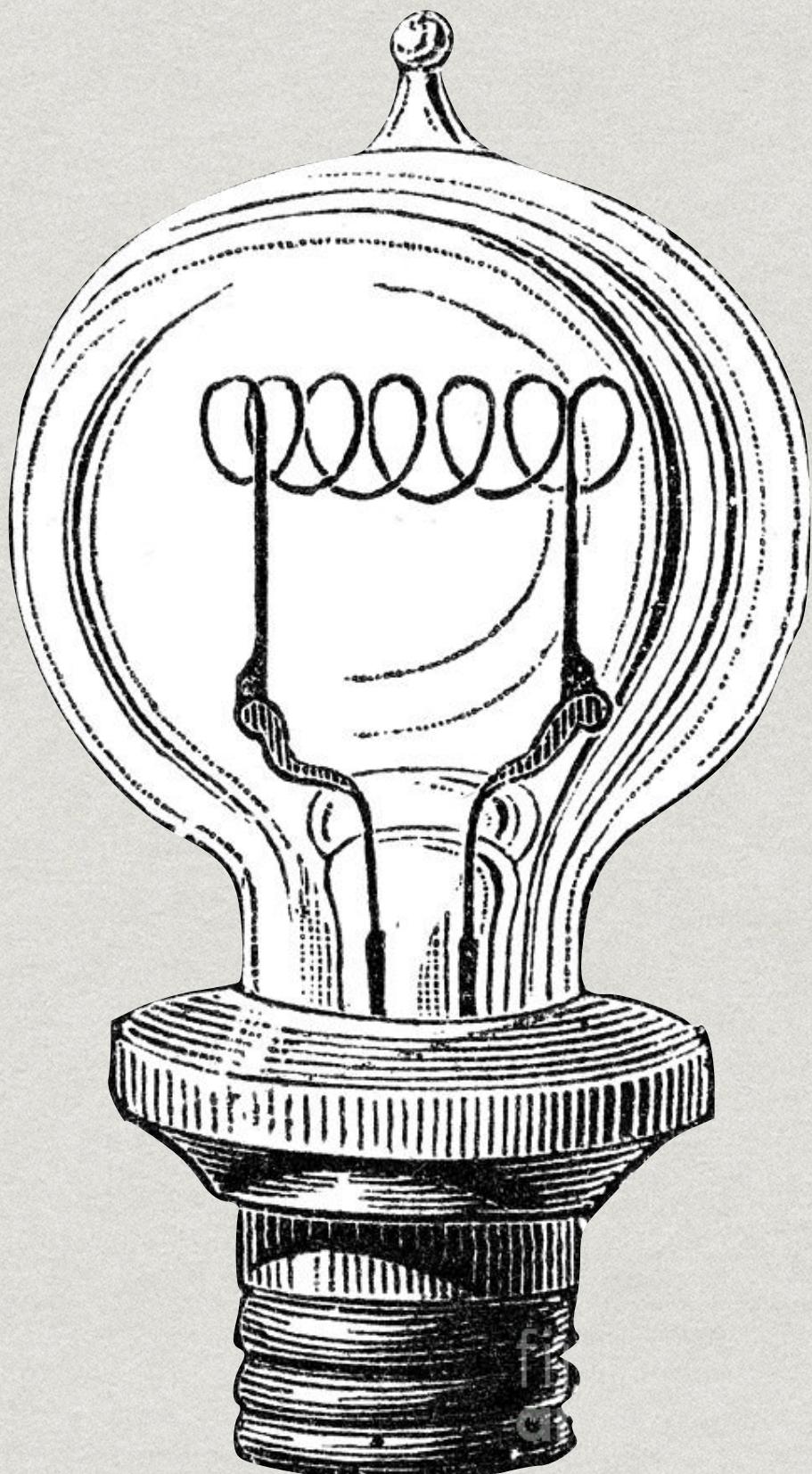
CASE STUDIES IN CLOUDKIT

# WattsApp

## Chat with friends about light bulbs

- \* No clear sense of groups
- \* All public database records are really public
- \* Hot 1-on-1 electricity chats aren't secure!
- \* Doesn't make sense to layer custom encryption on top of CloudKit

Suitability for CloudKit?



# Instapram

## For sharing photos of strollers

- \* No asset URL sharing
- \* Favoriting problematic in public database
- \* Might bump up against asset limits

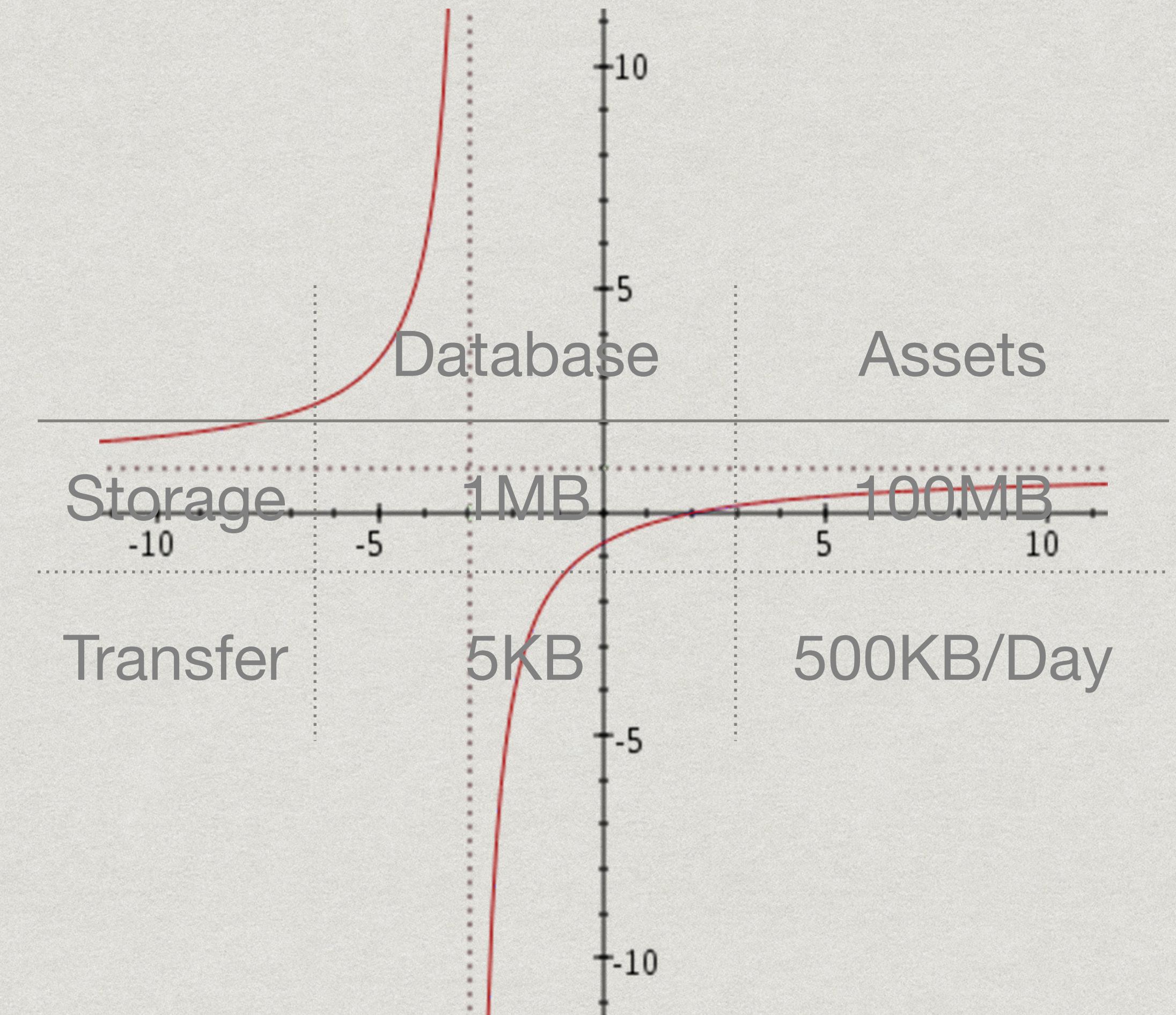
Suitability for CloudKit?



Image source: commons.wikimedia.org/wiki/File:An\_Early\_Silver\_Cross\_Coach-Built\_Pram.jpg#mediaviewer/File:An\_Early\_Silver\_Cross\_Coach-Built\_Pram.jpg

# Feature: Limits

- \* Grows with your user base.
- \* Transfer limits are unclear as to how they will be enforced.
  - \* Likely via rate limiting
- \* Seems to be built for high download apps.



# Gulp

## Crowdsourced reviews of local watering holes

- \* Is it ok for your data to be siloed with only Apple?
- \* No sharing reviews on the web
- \* You might want to let users gain admin roles.



Suitability for CloudKit?



# Feature: Roles

- \* Only accessible via iCloud Dashboard
- \* Creation
- \* Assignment
- \* General permissions control access rights on a record type level



# Digress

## A sequential location based multiplayer game

- \* Support for location-based queries
- \* Limits: Mostly database queries + subscriptions.
- \* iCloud Identity for easy community and growth potential

Suitability for CloudKit?

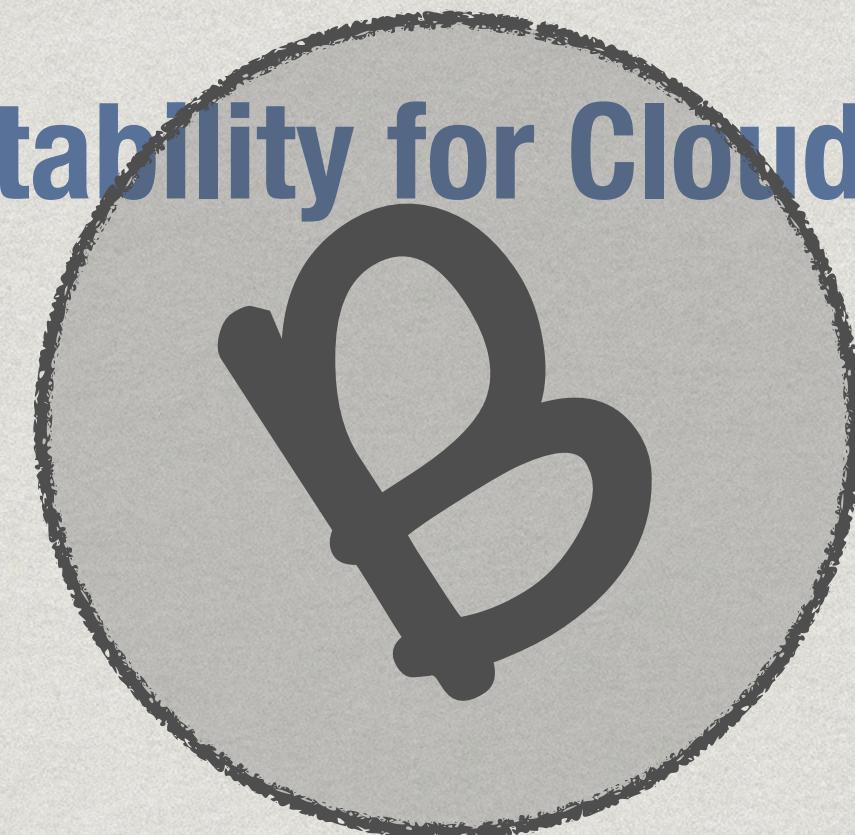
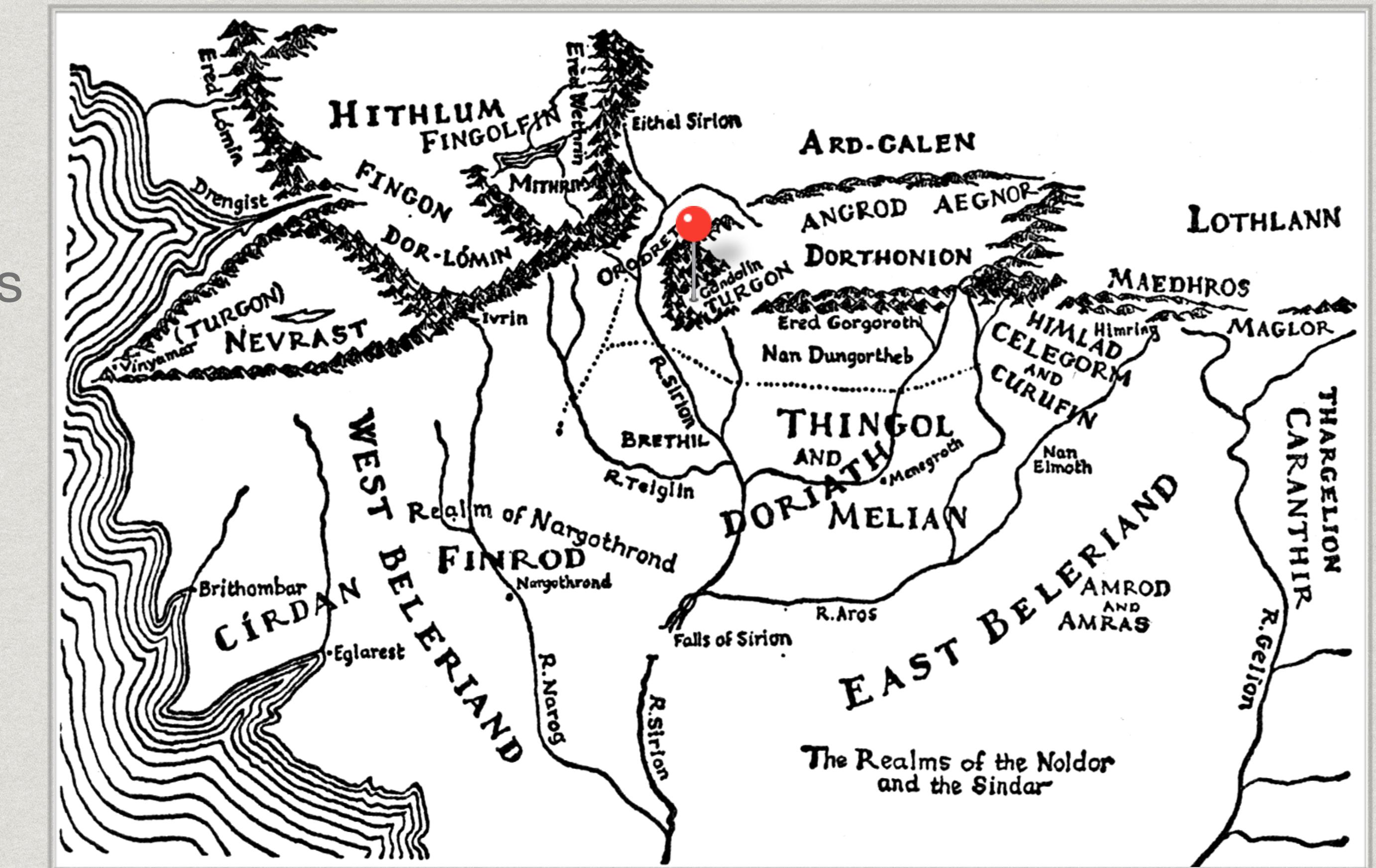


Image source: [weneverlookup.tumblr.com/post/80213614746/stow-lake-golden-gate-park-san-francisco](http://weneverlookup.tumblr.com/post/80213614746/stow-lake-golden-gate-park-san-francisco)

# Feature: Location

- \* CloudKit supports CLLocations as a first class value
- \* You can query on location
- \* Currently only support radius based queries



# SourChef

## A place to share your cooking failures

- \* Limits good fit. Database + Images (but not a huge number).
- \* Data generally not sensitive.
- \* Identity makes sharing easy within app context.

Suitability for CloudKit?

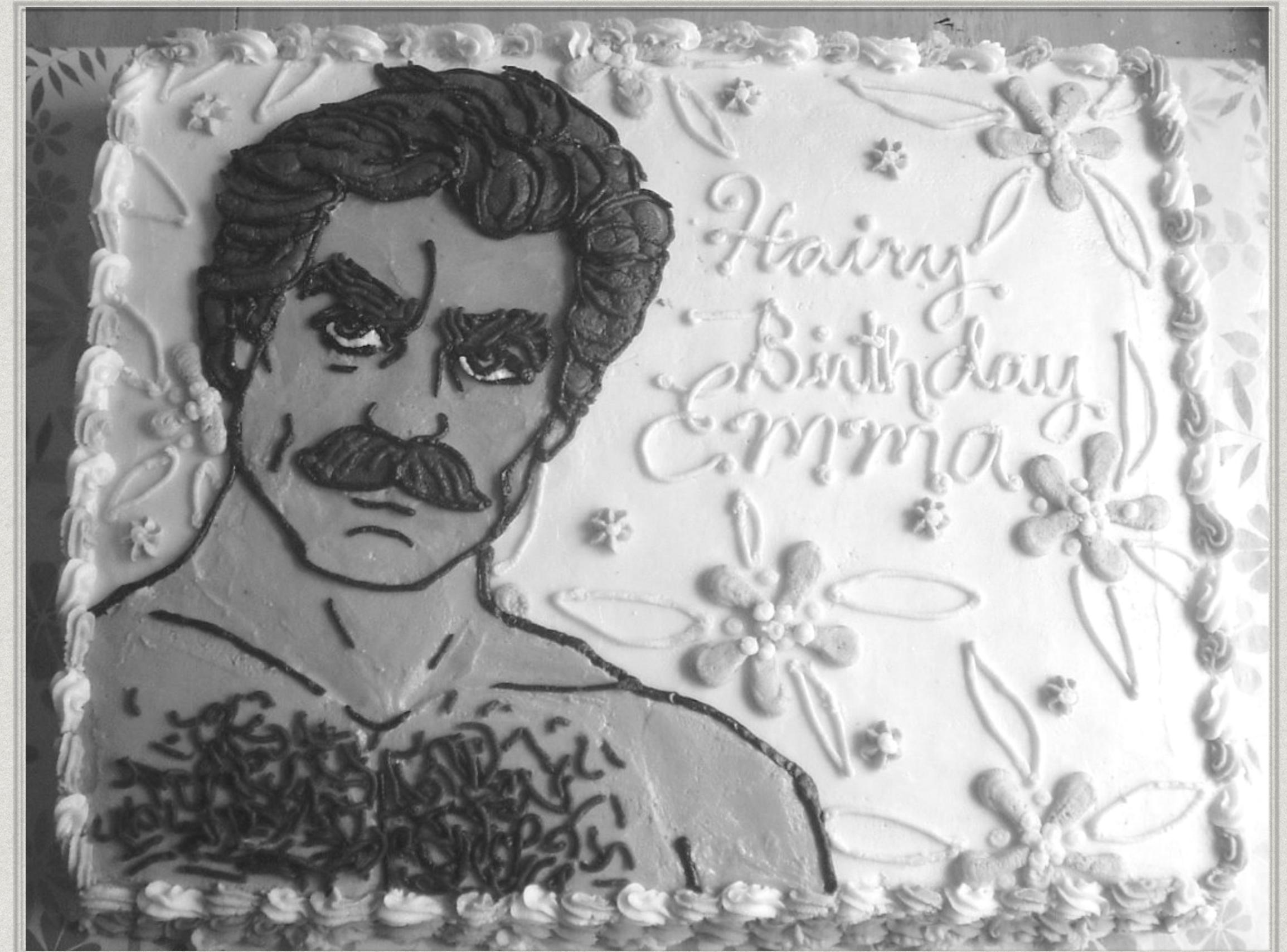


Image source: [www.idealb2b.com/unique-cake-wrecks-design-ideas/lovely-white-cake-wrecks-design-idea-with-brown-man-motive-pink-floral-motive-and-white-pink-cream](http://www.idealb2b.com/unique-cake-wrecks-design-ideas/lovely-white-cake-wrecks-design-idea-with-brown-man-motive-pink-floral-motive-and-white-pink-cream)

# Feature: Identity

- \* CKUserRecord can store arbitrary user metadata.
- \* User info is anonymized such that you can't harvest identifying information.
- \* Supports a full Address book search
- \* Do get First & Last names\*
- \* WWDC14 Session 208, Introducing CloudKit

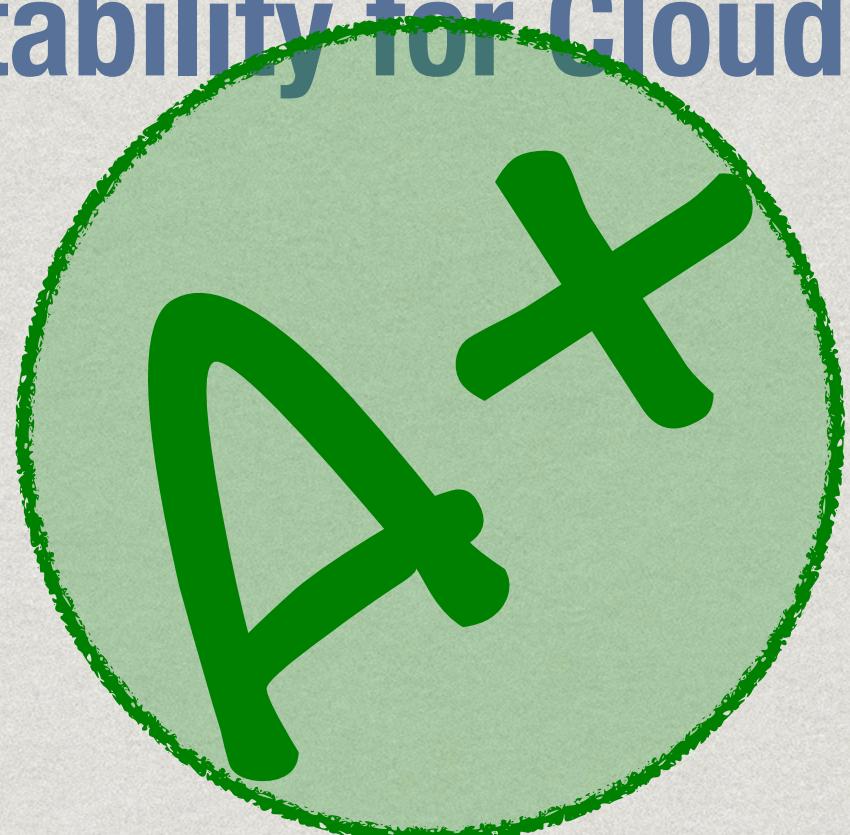


# Jam

**Ask Questions, get annoying Answers. It's fun!**

- \* Can you guarantee a large enough user base to make your community work on a single siloed platform
- \* Works well with Back References (Answers -> Questions)

**Suitability for CloudKit?**



# Feature: Back References

- \* [Many] to One relationship
- \* Cascades deletes from “parent” to “child”
- \* Important for shared data in the public database
- \* Can’t traverse zone boundaries.

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# DEMO



Idea Time!

# Idea Time!

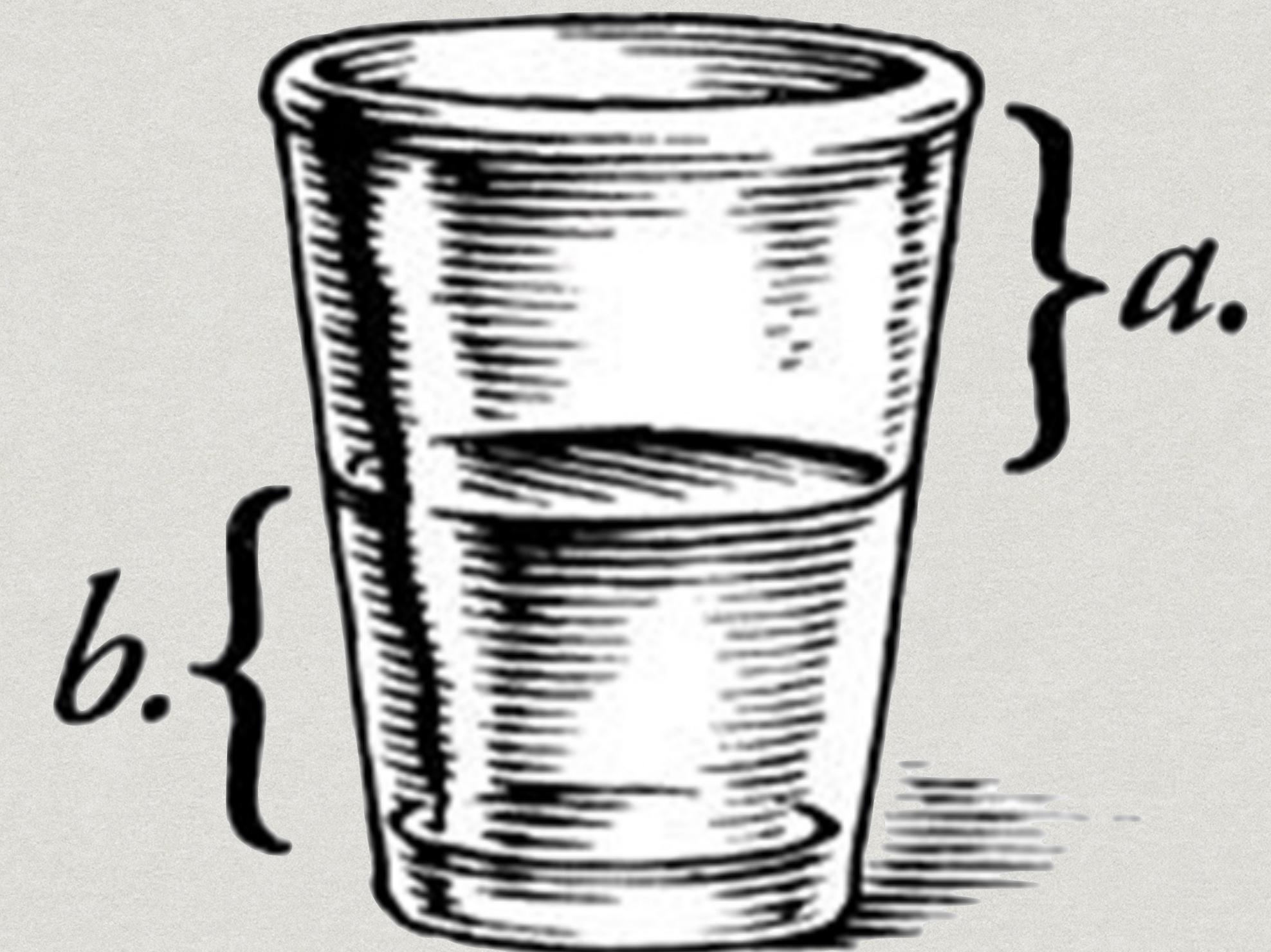
- \* Think of an idea.
- \* Write it down.
- \* Share it and we'll talk it through.
- \* Everybody ready?

Idea Time!

# WHAT IS CLOUDKIT?

# Half a BaaS (Backend as a Service)

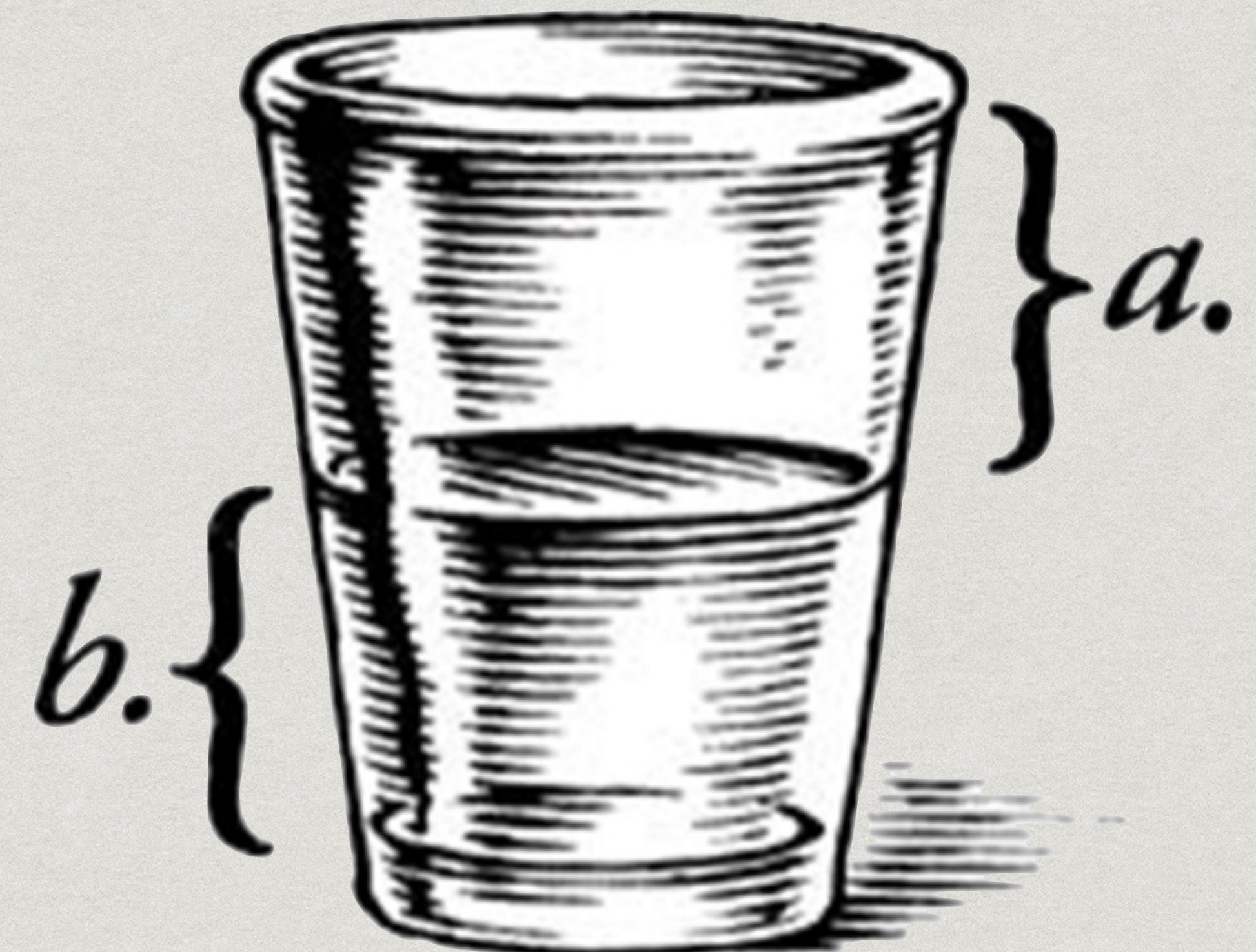
- \* No multi-platform support  
(*Web, Android, Windows Phone*)
- \* No server-side code  
(*Node.js or Swift*)
- \* No flexible push notification support  
(*a la Azure, Urban Airship, Parse*)



**Hey. Remember, this is a 1.0**

# But is it at least half Full?

- \* Subscriptions: Server-side ongoing queries
- \* Lots of good features when working with the Private Database:
  - \* Multiple Zones
  - \* Delta Downloads
  - \* Atomic Writes
- \* Free!



# Q&A

Talk notes: <http://nicemohawk.com/talks/cloud-kit>



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