Connecting Millions of Mobile Devices to the Cloud

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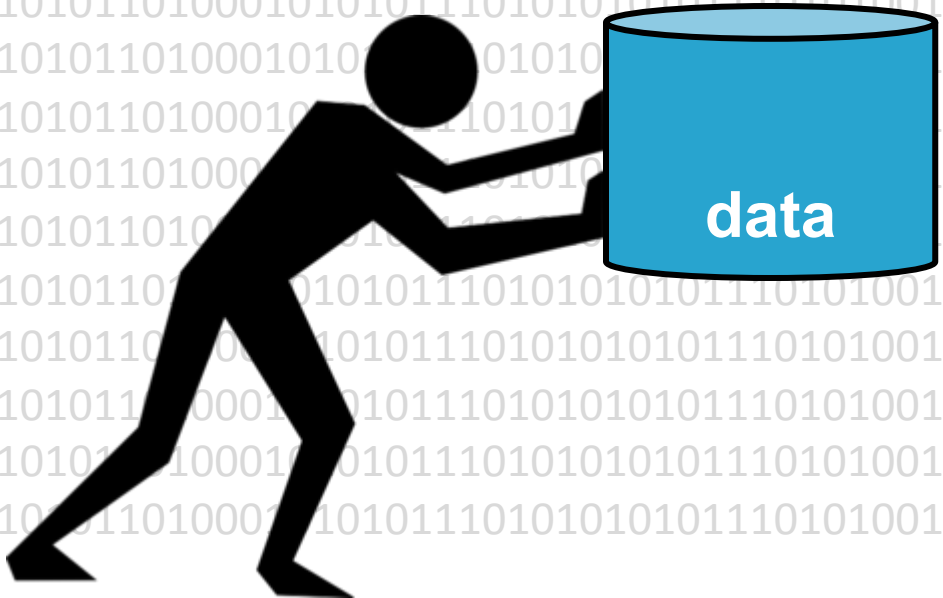
COUCHBASE

PHYSICS

So you want to take your data with you?

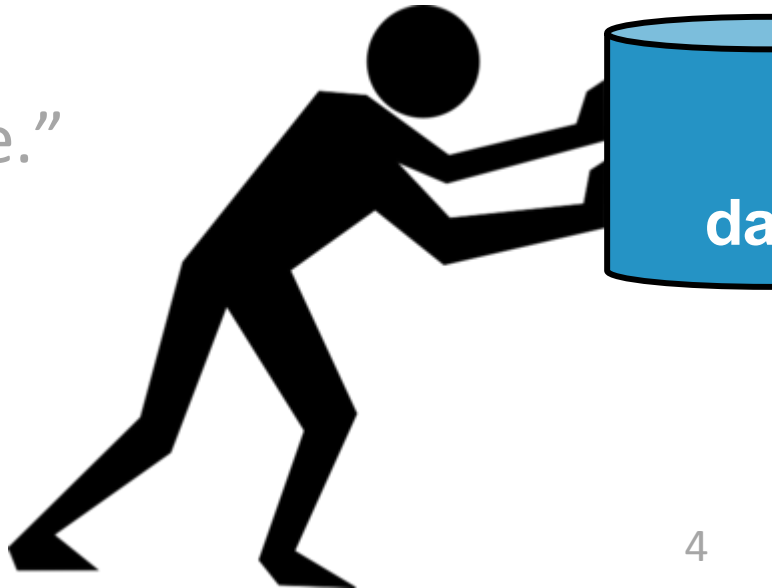


…then you are going to have to move it.

$$\text{work} = \text{force} \cdot \underline{\text{distance}}$$

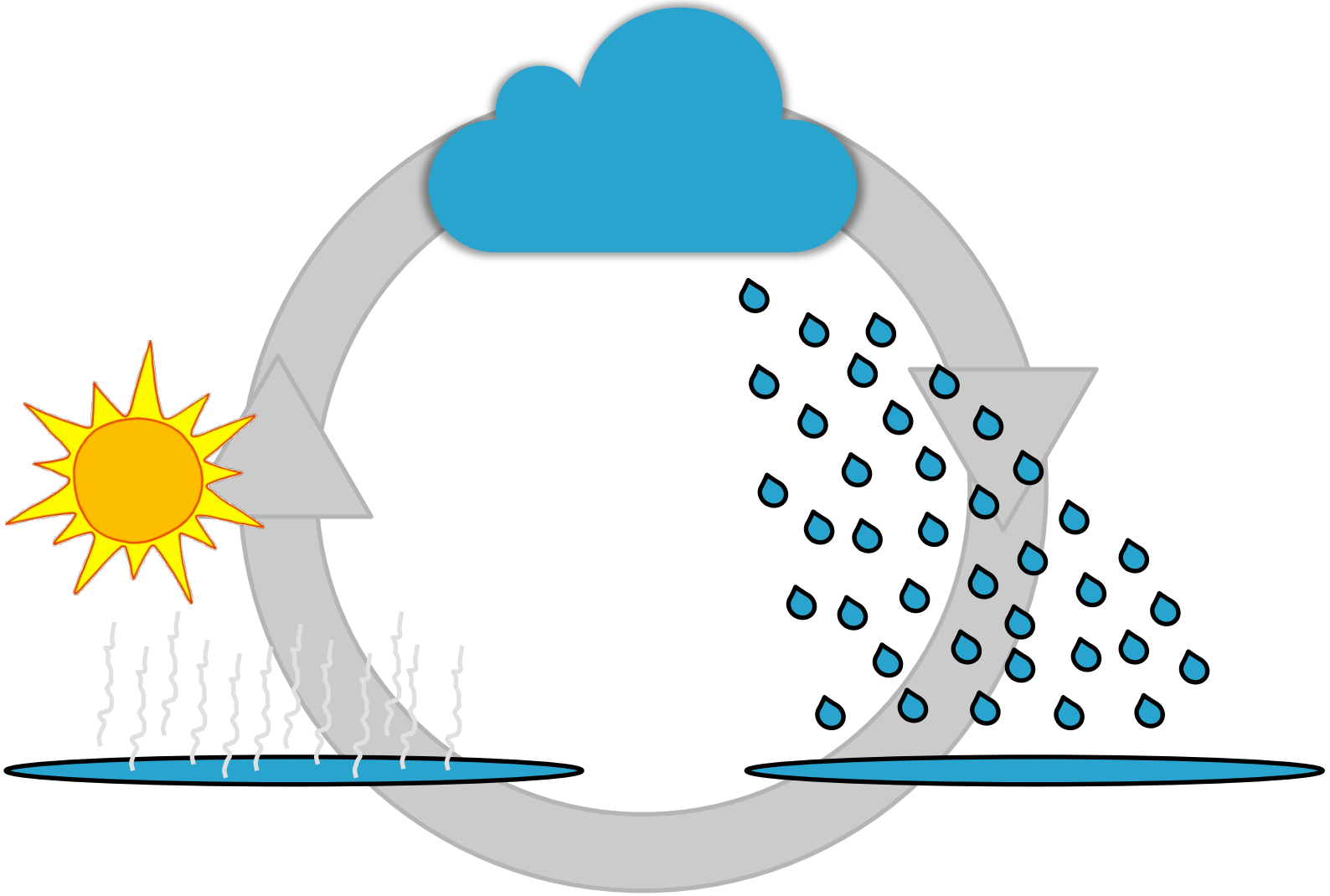
"That's physics. It's inevitable."

- Les Grossman



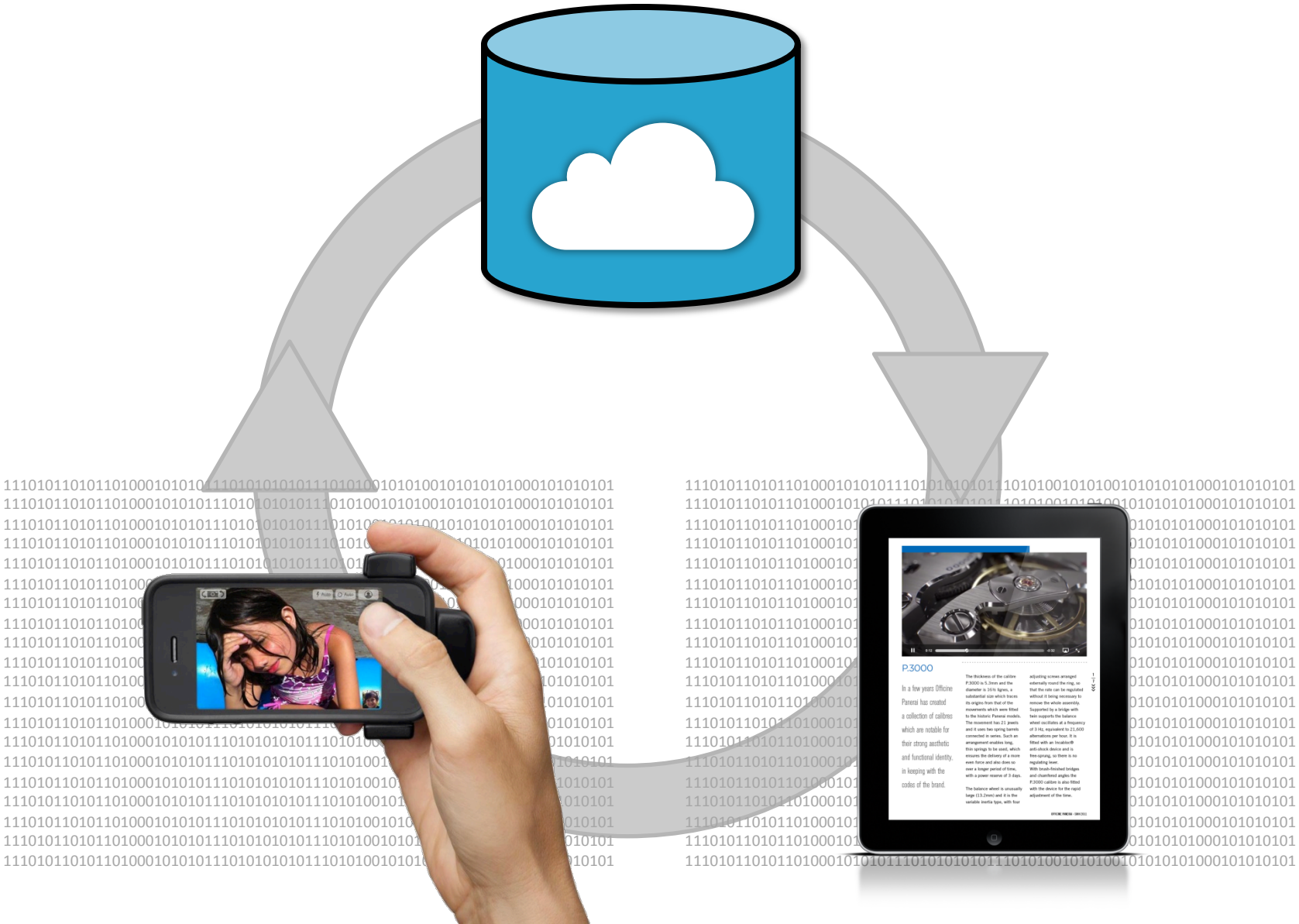
THE WATER CYCLE

The water cycle

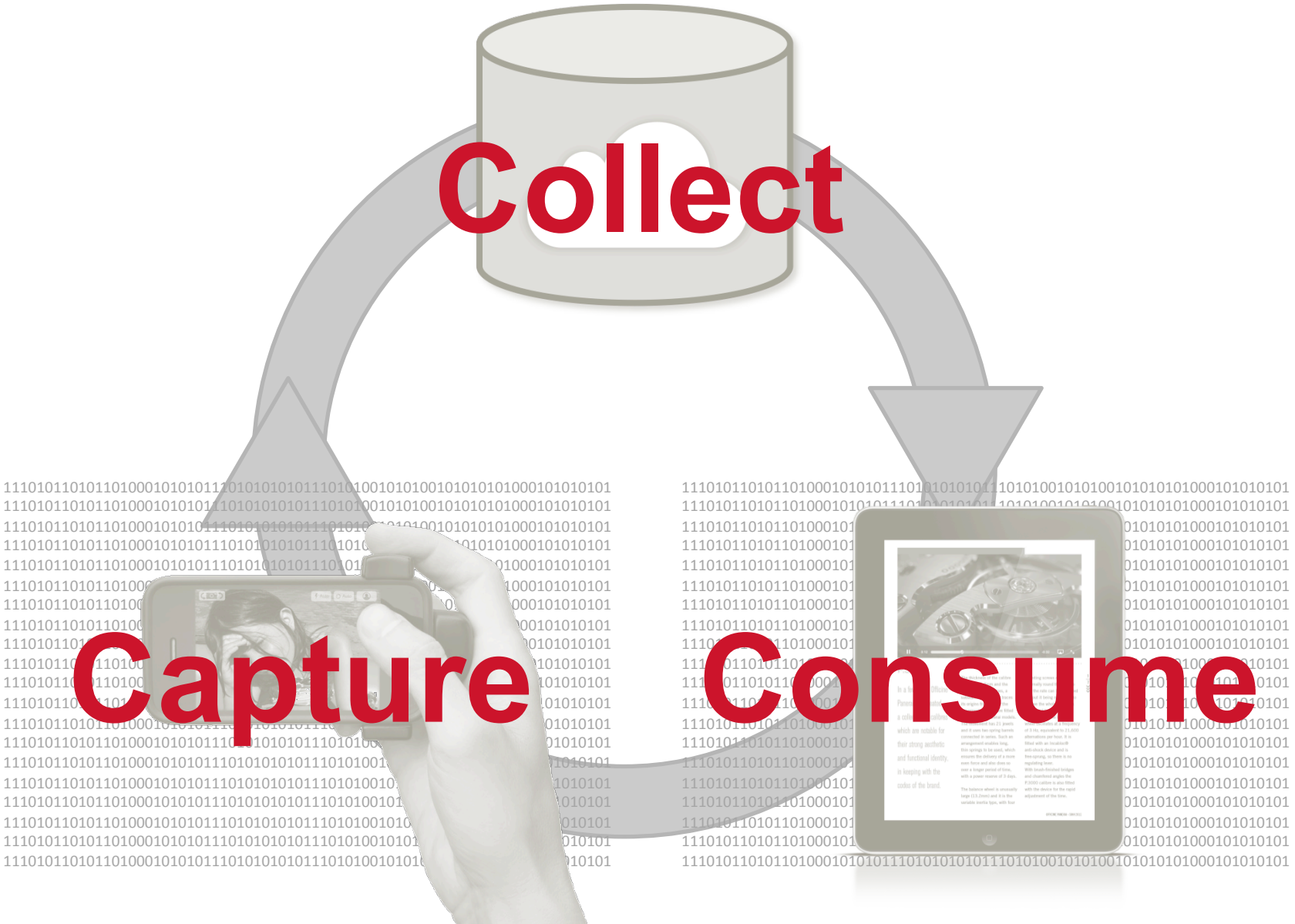


Fun fact: In 20 minutes, one thunderstorm can drop 125,000,000 gallons of water.

The ~~water~~ data cycle



Increasingly, it starts and ends with a mobile device



Actually, it starts and ends with a LOT of mobile devices

Mobile-broadband subscriptions have grown 45% annually over the last four years and today there are **twice as many mobile-broadband** as fixed-broadband subscriptions.

The number of mobile-connected devices will **exceed the world's population** in 2012; and monthly global mobile data traffic will **surpass 10 exabytes** in 2016.

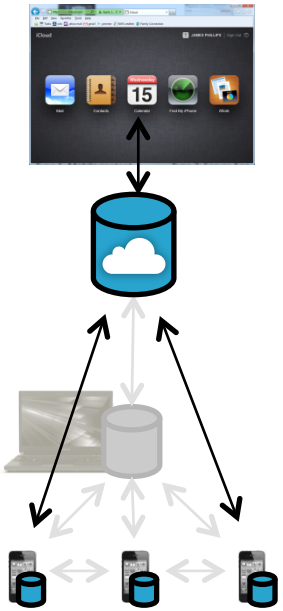
Fun Fact: By the end of 1999, the sum of human-produced information (including all audio, video recordings and text/books) was about 12 exabytes of data, according to Berkeley study.

GUNS, GERMS AND STEEL

Make farming data work

Make intelligence data work

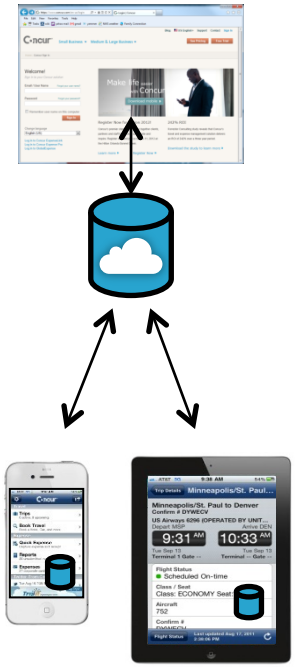
Connecting millions of mobile devices to the cloud



Type 1

backup and sync

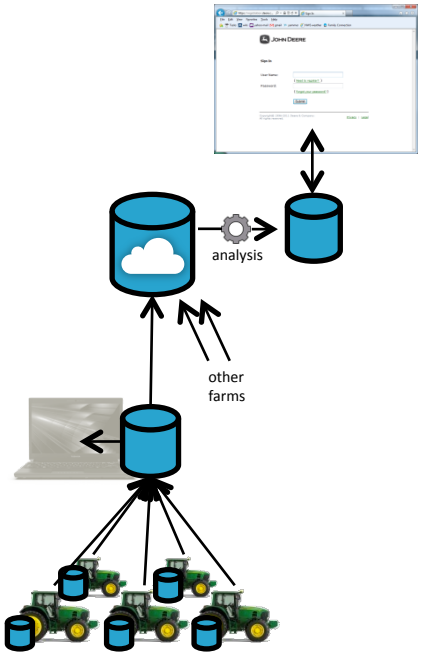
my stuff



Type 2

sync relevant portion

of a **database**

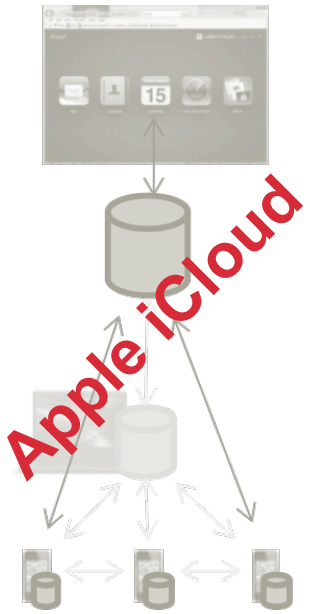


Type 3

collect machine-

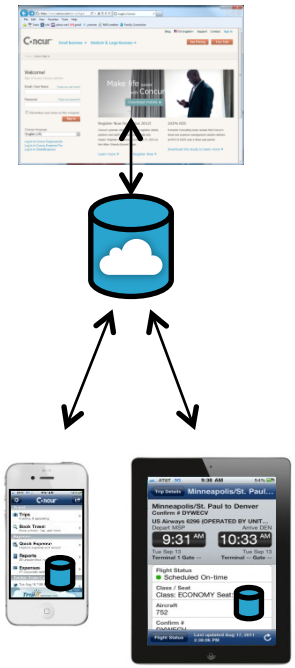
generated data

We'll focus on Type 2



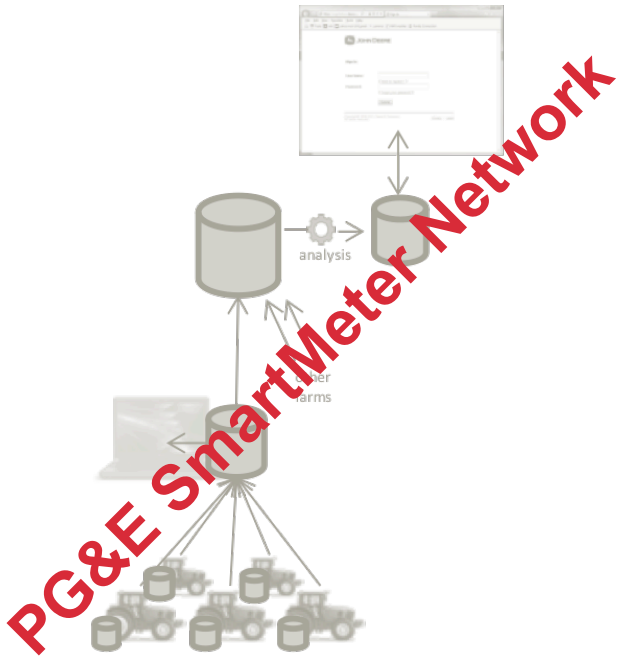
Type 1

backup and sync
my stuff



Type 2

sync relevant portion
of a **database**



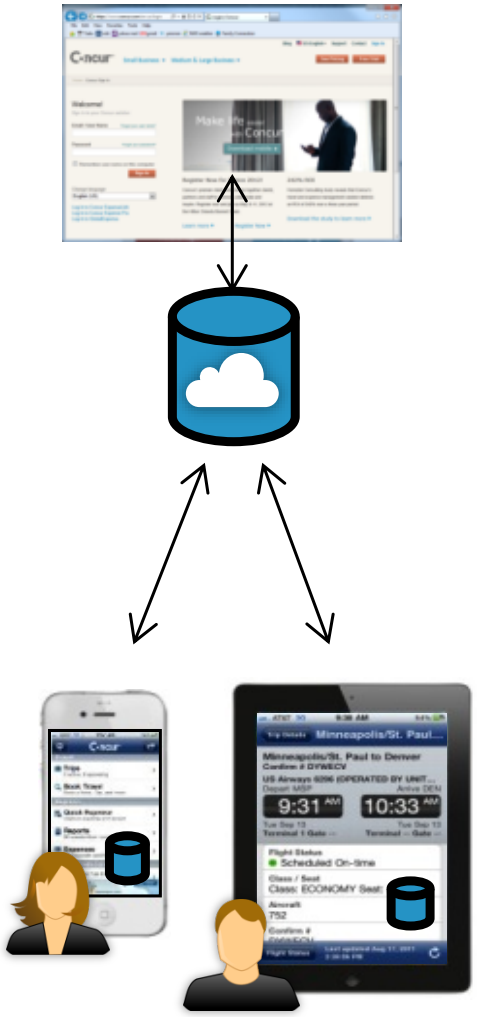
Type 3

collect machine-
generated data

Most applications combine patterns.

SLAYING DRAGONS

Type 2 Mobile Sync



The ultimate home of the data for a business application is not on the device, but is a central data store in the cloud.

Here there be dragons

Schema evolution

Security

Scalability of consolidated store

Selection performance

Bandwidth conservation

Referential integrity on interruption

Battery and memory conservation

Deletion propagation

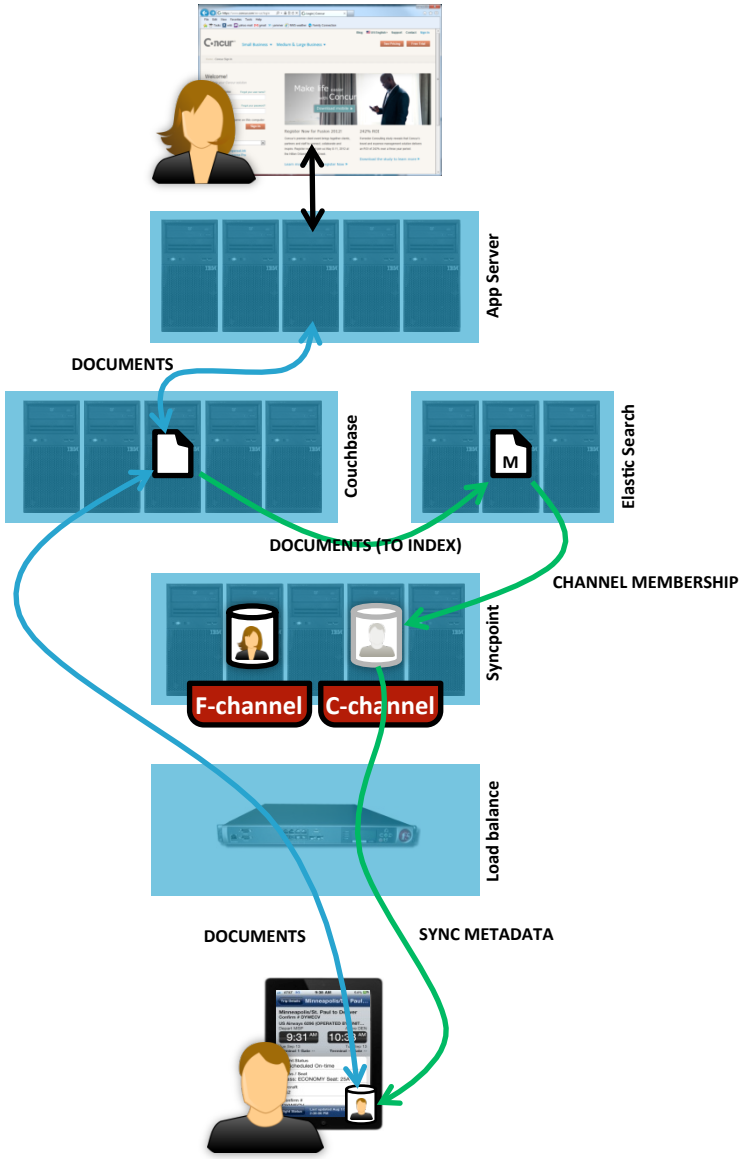
New user provisioning

Which data – temporal, spatial, user?

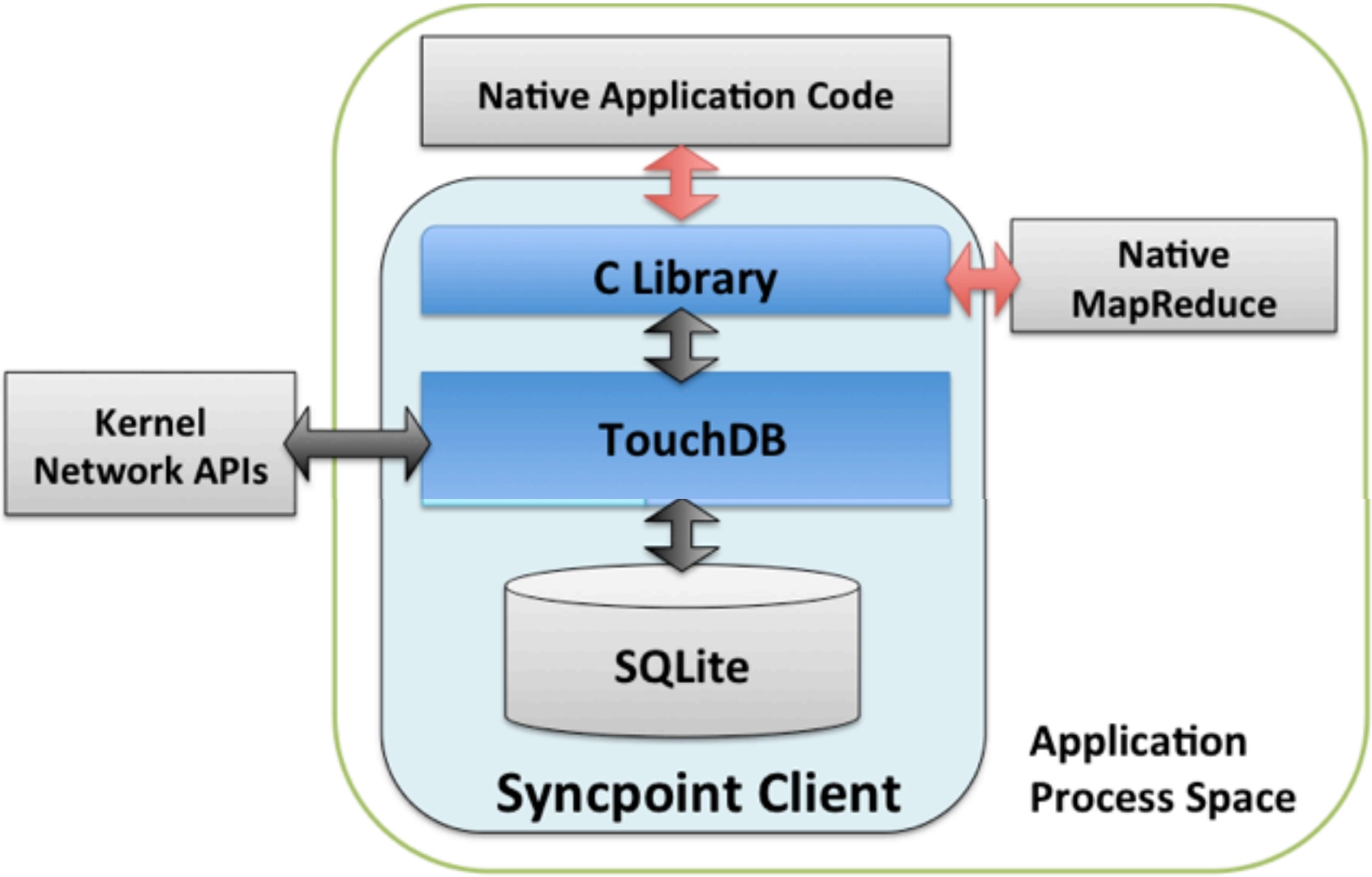
Conflict detection and resolution

Hard at “enterprise scale.” Excruciating at “web scale.”

A multi-tier, scalable type 2 sync architecture



TouchDB – Foundation for Syncpoint



TouchDB Betas – Works with CouchDB Today

TouchDB for iOs

TouchDB for Android

Not a complete product but a functional open source projects with production deployments. Open source, and available from Couchbase labs.

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