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2,000,000



Dim Sum



Accepting a payment



Authorization



Capture

Persistent Queues



ACID

- Atomicity
- Durability

Filesystem Promises

- Renaming is atomic
- Fsync is durable*
- Segment/block writes

Traditional Strategies

- Write, fsync, rename, fsync
- Rollback log
- Journal



Tape

github.com/square/tape

Header

Elements

Header (16 bytes)

- File length
- Element count
- First offset
- Last offset

Element

- Length
- Data

Enqueueing

- 1 Write data
- 2 Fsync
- 3 Write header
- 4 Fsync

Dequeueing



Read data



Write header



Fsync

Expansion

- 1 Set file length
- 2 **Fsync**
- 3 Copy data
- 4 Write header
- 5 Fsync

What's next?

- Tape on the server
- Elide the filesystem

Server Stack



Ruby



Java



One Repository



One-Jar



Self Executing Jars

```
#!/usr/bin/java -Xmx2G -jar  
[jar file]
```

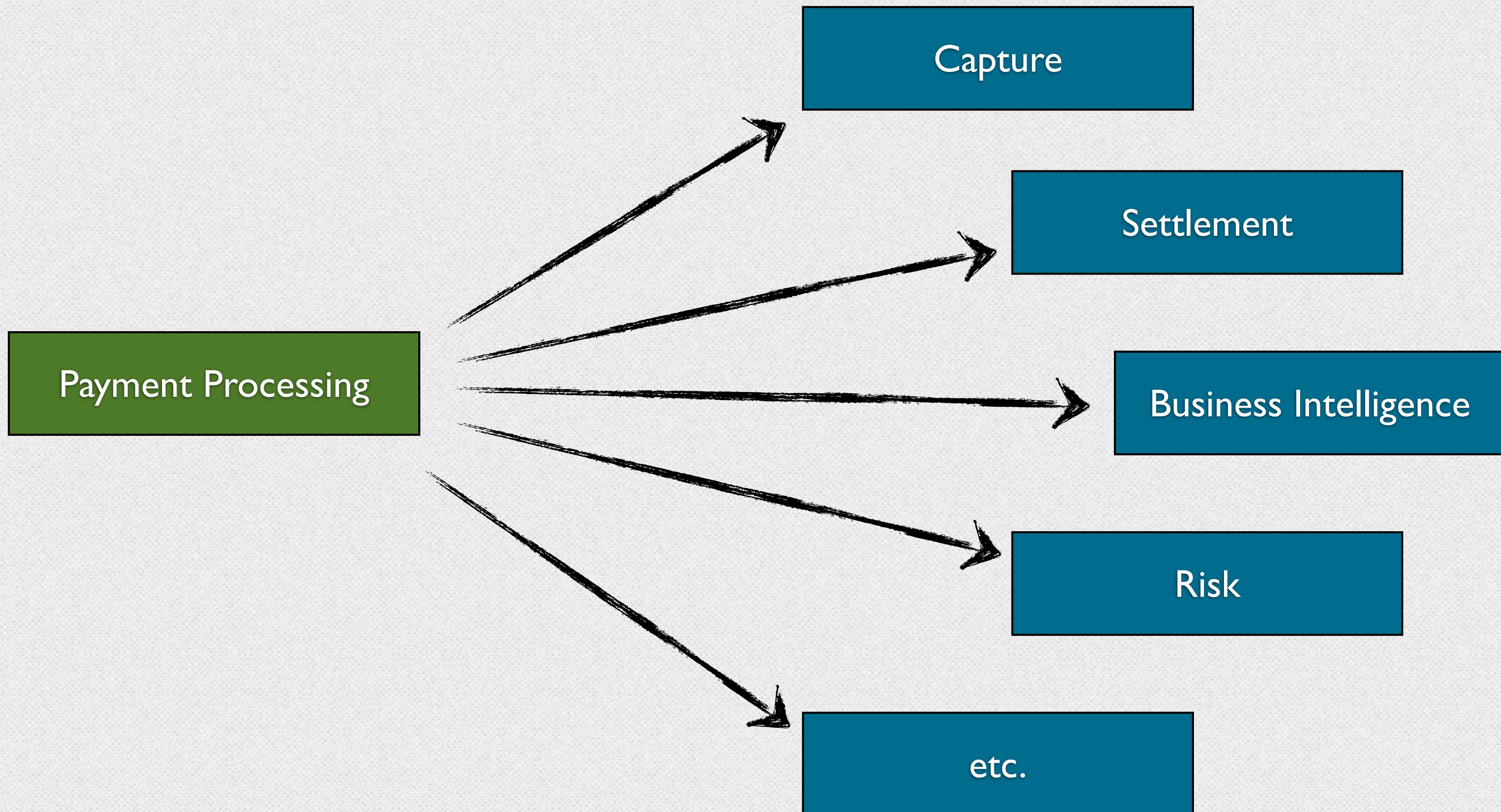
Java Stack

- Jetty
- JAX-RS (Jersey)
- JPA (Hibernate)
- Guice
- *Dropwizard*

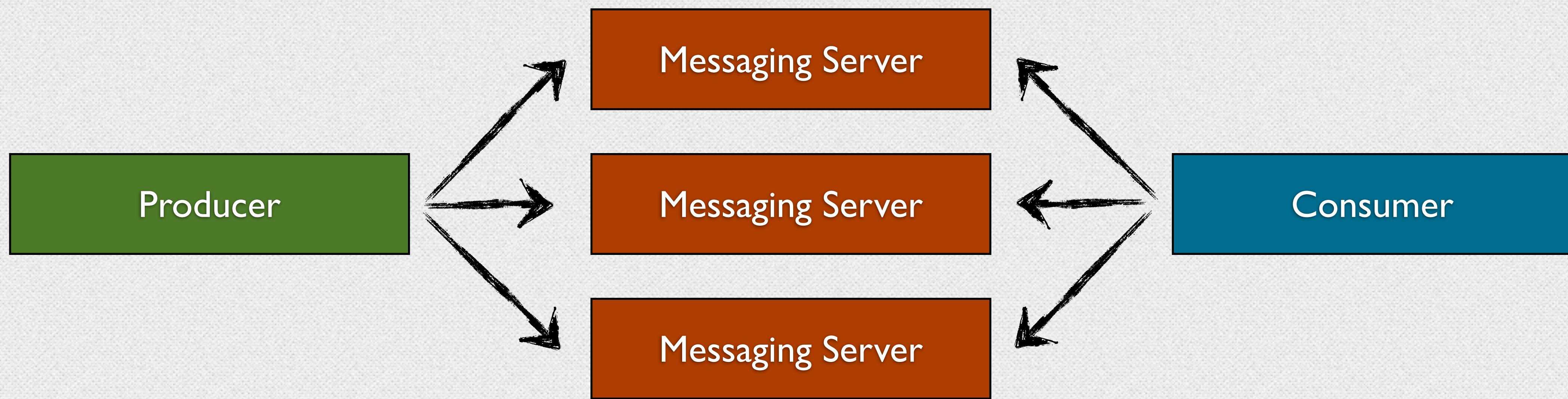


Rethinking Pub/Sub











Synchronization Feeds



Constraints

- Immutable sequence of events
- Total order
- Centralized server

Benefits

- Email vs. RSS
- Stateless
- Fewer moving parts
- Free bootstrapping!

Further Ideas

- Partitioning feeds
- Caching and replicating feeds
- Pubsubhubbub

Dependency Injection



Guice

- Launched in '06
- Used by Google, Facebook, Twitter, etc.
- On version 3

- Supports JSR-330
- Provider methods only
- Uses code generation
- Compile time validation
- No custom scopes
- No circular dependencies

corner.squareup.com



github.com/square





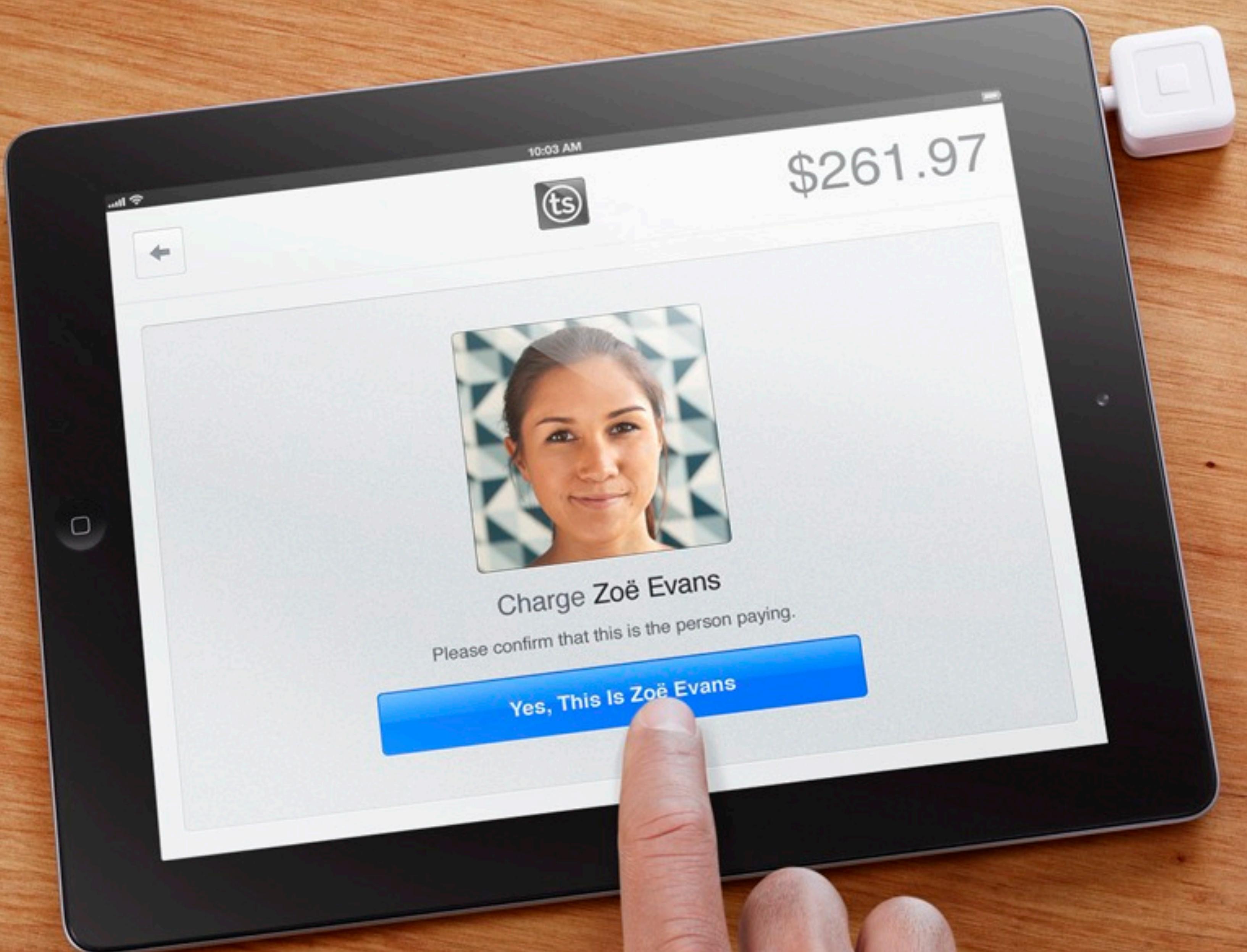
10:03 AM

Search



Sightglass Coffee

- Baker's Dozen OPEN
- Sugarlump OPEN TONIGHT
- Grand Coffee 0.5 mi
- Mission Minis 0.6 mi



@crazybob



Questions

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Thank You