

Square: The Tech Behind the eCommerce Giant

Square Inc., is a technology company that began when CEO Jack Dorsey built a device that could be plugged into smartphones and used as a card reader for handling credit and debit card transactions. They also have developed and released two mobile applications to go along with their physical product: Square Register and Square Wallet. The company has met with much success was worth over 3 billion dollars at the end of last year.

As far as their website goes, the front end uses mostly HTML enhanced with jQuery and also Ember.js. The back end services use Ruby and Java, but according to Zach Brock, an Engineering Manager at Square, they're "moving all of our services to the JVM" (Java virtual machine) because of scalability problems.

For storing data, the company uses Postgres, MySQL, and log files. They also use Redis for transient information that they are fine with losing. Square hosts their own servers for security reasons and have done a lot of work to allow them to easily spin new servers and services, distribute configurations and maintain security. According to CTO Bob Lee, they employ their Java servers by using the "main method" and then using an embedded server and then the application starts up the server when it is run. They also use the open source application called One-Jar that allows them to package a java application along with it's dependency Jars into a single Jar file and lets them use Jars within Jars, which Java doesn't allow. Their Java stack uses Jetty, JAX-RS (Jersey), JPA (Hibernate), Guice, and Dropwizard, which integrates Jetty, Jersey, and Hibernate as well as some other services.