CabFriendly: A cloud-based mobile web application stack Sergey Karayev, Harold Pimentel, and Adam Roberts Computer Science Division, University of California, Berkeley {sergeyk, hpimentel, adarob}@cs.berkeley.edu **Web Server** Amazon **Arhictecture Example Workflow** Simple Email[≤] Service Adam logs in via Facebook and inputs 5 🛇 45 🛇 PM 🛇 search parameters for a desired trip. **View My Current Rides Event-Driven Amazon Elastic Chat Server** Load Balancer nodeJS Store When no matching ride is found in the database, he **Abstract** enters a description and submits a new ride ··· **View My Current Rides** We have developed a cloud-based mobile web request. application to match users who request similar CabFriendly trips and would like to share a cab. The application is hosted on Amazon's EC2 service and combines several open-source frameworks (Django, PostgresQL, Redis, Welcome sergey! Sergey logs in and Node.js, Jquery Mobile) with social networking Performance Analysis Search for New Ride inputs his search (Facebook), mapping, and location-awareness View My Current Rides parameters. (Google) APIs. The modularity of our design **Best Case Single Instance** allows the service to easily scale in the cloud 90pct as the user base grows. 80pct Simple Email Service Adam's ride matches the request. Sergey views the Sergey adds himself Depart Time: 5:50 PM 11/09/2011 ride details including map, to the ride, updating rider Facebook profiles, and ergey has joined a ride you are a part of a the database and 250 pdated details and coordinate the ride. 300 chats with Adam in real time. causing an e-mail Elapsed Time in Test (s) notification to be Response times for 50 simulated clients, ramped up at a rate of 1 thread **♦ Back ♦ Join** sent to Adam. every 5 seconds. The clients generate random ride parameters to simulate nodeJS the "best case" where matches are minimized. 95 Percentile Response Time vs. Number of Web Servers Inbox (2) 1 of 50 Map Data - Terms of Depart Time: 5:50 PM 11/09/2011 Separate-instance DB Harold joins the ride, Welcome sergey Same-instance DB Sergey leaves prompting notifications the ride, and orry, but sergey has left a ride you ar to Adam and Sergey Search for New Ride sergey: Hey have you left yet? Adam: Not yet, want to share a ride? **View My Current Rides** updated details and coordinate the ride

who can view the

updated ride details

and chat with Harold.

Number of Instances

sergey kara...

the ride, and Adam and Harold are notified.