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** dango Amazon Architecture **Example Workflow** Simple Email⁴ Service Adam logs in via Facebook and inputs amazon webservices search parameters for a desired trip. **View My Current Rides Event-Driven Amazon Elastic Chat Server** nodeJS Store When no matching ride is found in the database, he **Abstract** enters a description and Search for New Ride **View My Current Rides** submits a new ride · We have developed a cloud-based mobile request. web application to match users who request CabFriendl similar 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! 5 🛇 50 🛇 PM 🛇 Sergey logs in and Node.js) with social networking (Facebook), Performance Analysis Search for New Ride inputs his search mapping, and location-awareness (Google) parameters. **Best Case Single Instance** APIs. The modularity of our design allows the service to easily scale in the cloud as 90pct **⊘** Back Next Back Next the user base grows. Amazon Avg Simple Email Adam's ride matches the request. Sergey views the Meet Dist: 0.00 mi. Sergey adds himself with the others to meet and share the fare! Dest Diff: 1.10 mi. Description: Going to ride details including map, Number of people: to the ride, updating rider Facebook profiles, and ergey has joined a ride you are a part of a the database and abFriendly.com. Go to 200 250 pdated details and coordinate the ride. 150 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 **Chat Serve ♂** 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 🛕 🔻 CabFriendly Time (s) Separate-instance DB Harold joins the ride, Welcome sergey! Same-instance DB Sergey leaves prompting notifications uccess! You were removed from the rid the ride, and Sorry, but sergey has left a ride you are part of at <u>CabFriendly.com</u>. Go to to Adam and Sergey Search for New Ride sergey: Hey have you left yet? Adam and Adam: Not yet, want to share a ride? View My Current Rides updated details and coordinate the ride who can view the Harold are updated ride details Logout notified. and chat with Harold. Number of Instances