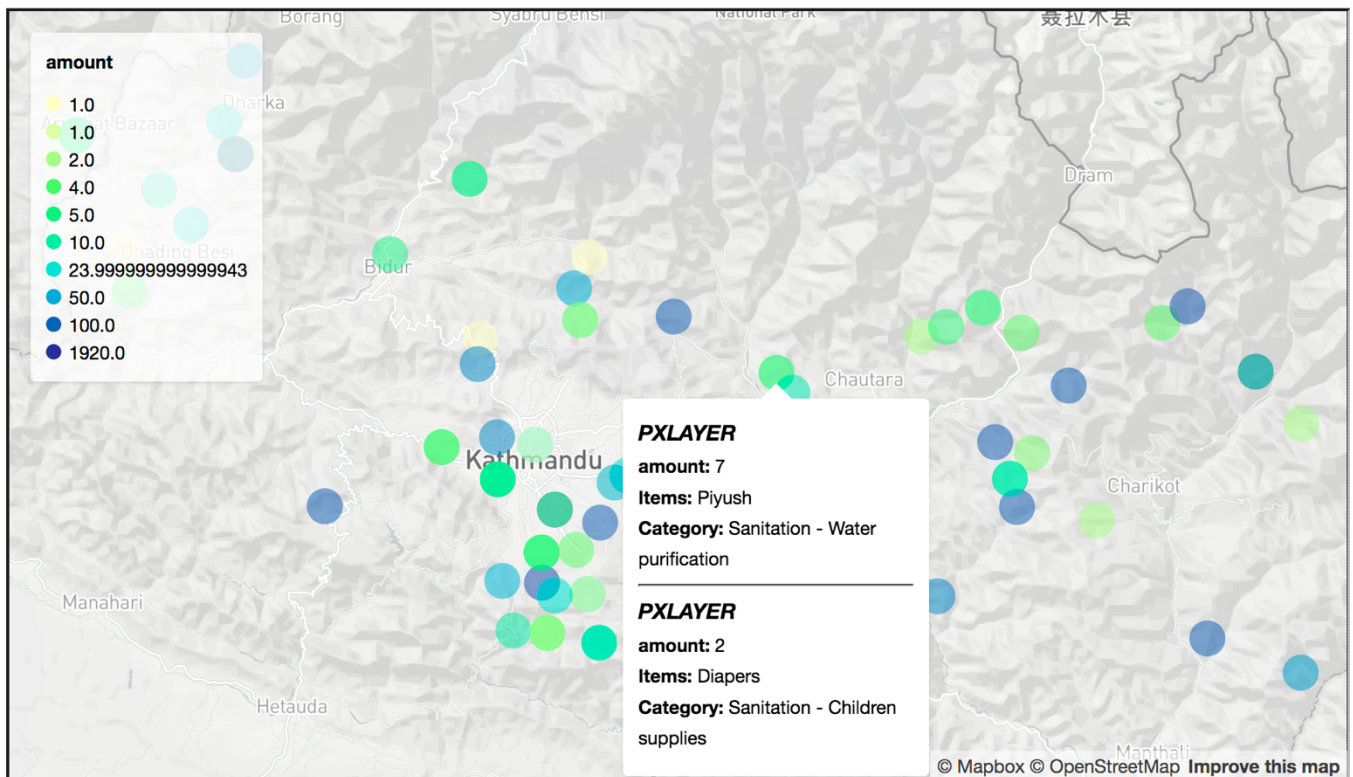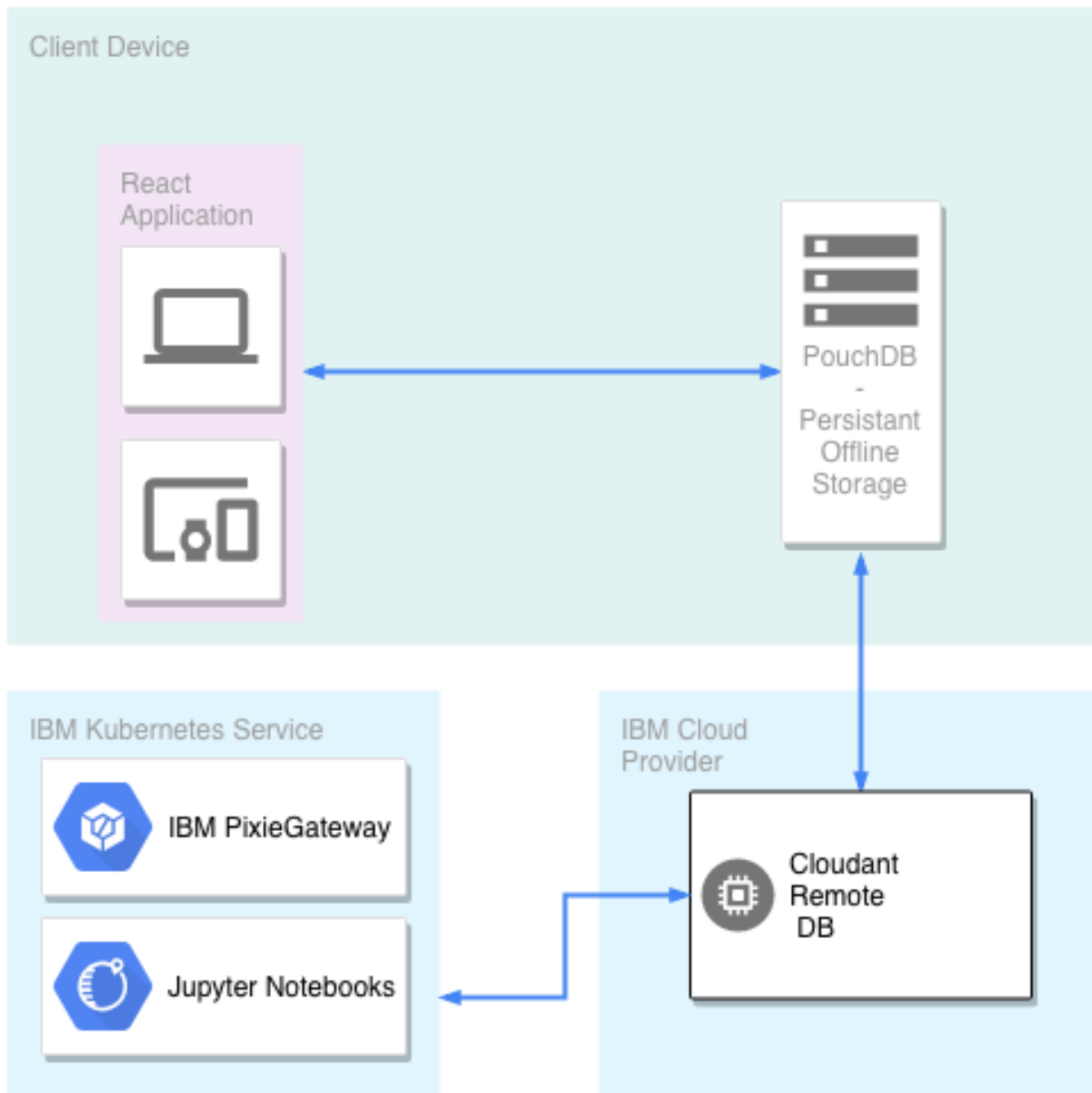# Architecture Diagram

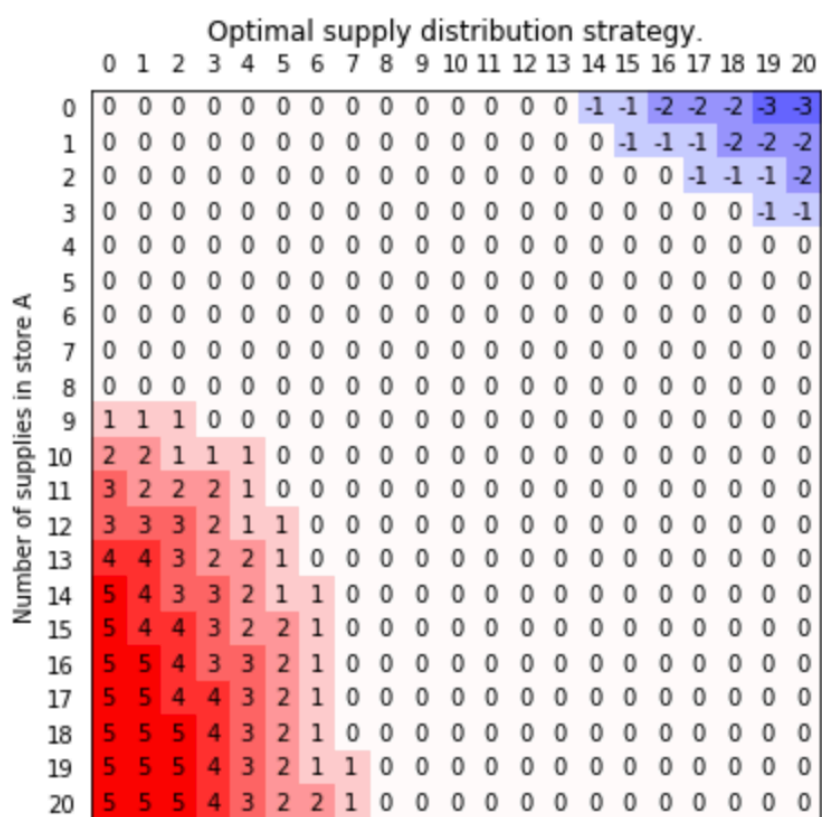**Design Philosophy and Current Status**

aLocate was developed with the open source community in mind. As it is with most data aggregation applications, the limits of the product are set entirely by the users. With the easy to use PixieGateway map, current disaster relief professionals can quickly set up a supply distribution visualization. As responders learn more about how to prepare for disasters, these new data points and layers can be plotted to improve understanding and response time.

The client app for relief workers was built using ReactJS which ports easily to all devices, so no additional hardware would need to be purchased for the first responders. The data is stored using the offline-first ideology as demonstrated in the IBM Watson Labs progressive web app coding pattern. Information is sent from the app to the local

pouchDB. Data can persist locally in pouchDB until it can sync with the remote Cloudant DB. This allows relief workers to continue working when strong winds, rain, or other events take down the local or emergency networks.

Our application was built to scale with user data. We are currently using a sample dataset from the Nepal Himalayan Disaster Relief Volunteer Group Dataset provided by amerigeoss.org. Our models are speculative at best, and until we can put our application in the hands of aid workers, we will be unable to gauge its full potential.

One of the worst problems we heard about talking to relief workers was people being separated. With our app, patients have an option, when prompted by a relief worker, to share their location and health status with others. Currently, we use a legal snippet to waive the user's rights, but we will likely need actual legal consulting in order to ensure the protection of user data.

Optimal supply distribution strategy.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	-2	-2	-2	-3	-3
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	-1	-2	-2	-2
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	-1	-2
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	3	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	3	3	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	4	4	3	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	5	4	3	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	5	4	4	3	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	5	5	4	3	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	5	5	4	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	5	5	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	5	5	5	4	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
20	5	5	5	4	3	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Number of supplies in store A

Future goals
Aside from our current features, other experts from the field could provide insight into some of the less understood areas of disaster response. For instance, we know that many workers have claimed they received inadequate psychological treatment immediately after working on Hurricane Katrina. Without expert insight, it's hard for us to

pinpoint the exact reasons a worker is more likely to need additional psychological care and evaluation after working on a disaster site. Once these points are identified, it's a trivial task to add tracking of those data points to our offline-first app and find out if there is a useful way to map those new data points.

The Team

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