

CPRE 492 WEEKLY REPORT 23

Project Molecule

29 – 4 April 2017

May1739

may1739@iastate.edu

Dr. Arun Somani

Ryan Wade – Team Leader

Nathan Volkert – Communications Lead

Daniel Griffen – Key Concept Holder

Alex Berns – Webmaster & Scribe

1 CONTENTS

2	Weekly Summary	2
3	Past week accomplishments	2
4	Individual contributions	2
5	Comments and extended discussion	3
5.1	Device.....	3
5.2	State	3
5.3	REdis.....	3
5.4	Running Device	3
6	Plan for coming week.....	4
7	Summary of weekly advisor meeting.....	4

2 WEEKLY SUMMARY

This week saw the integration of the Networking an atomic layer and the start of the writing the final report. We have set up a plan from now to the final presentation of the steps needed.

3 PAST WEEK ACCOMPLISHMENTS

All Members:

- Weekly Group and Advisor meeting

Ryan Wade:

- Skeleton of permission layer
- Launch particles

Nathan Volkert:

- Work on design doc
- Finished permission integration

Daniel Griffen:

- Set up device discovery

Alex Berns:

- Work on design doc and project plan
- Created notes for Poster
- First draft of final report

4 INDIVIDUAL CONTRIBUTIONS

NAME	Weekly Sum	Semester Total	Cumulative
Ryan Wade	21	183	303
Nathan Volkert	15	143	245
Daniel Griffen	12	131	265
Alex Berns	13	146	245

5 COMMENTS AND EXTENDED DISCUSSION

5.1 DEVICE

Three IDs unique to each device.

ID of device

ID of atom

ID of network layer

5.2 STATE

State is a key value pair. Value and key are strings. Value shall be deSerialized into actual data. It's a tree like structure stored as a flat view. AKA, file directory.

Format is:

Self: Defines what is in atom need to know things

Group: defines things like what particles are running on what devices. Combination of permissions and service discover.

Every Particle:

Every uuid particle, store shared state, name spaced to each particle (each part can only access to their own state)

5.3 REDIS

Setting up Redis

Configure Atom + other: _____.toml (address to the DB) _____.toml (init config) init_config -> create / overwrite redis

Run Atom + other: _____.toml (address to the DB) -> read / write to redis

The initial config will say there is a command line god particle at start, can be deleted at a later point. This helps with getting initial communication to atom.

5.4 RUNNING DEVICE

1. Creates an atom
2. Starts networking layer
3. Launches particles as defined from redis state, who's address is defined in arguments

5.5 REDIS HISTORY

1. History is stored as an identical copy of the state under the versioning namespace
2. Versioning stores the key value pairs of what has changed
3. Create a tag at every meeting with a set of devices in the meeting
4. Versioning state may be cleared after a full consensus, leaving it in would enable checkpointing

6

7 PLAN FOR COMING WEEK

Alex + Nat: Poster Done Monday Night, send to Somani

Ryan + Dan: Particles working, testing adding multiple atoms

Dan: Sync start working, finish by following week

8 SUMMARY OF WEEKLY ADVISOR MEETING

No Advisor meeting next week. We will still meet. We need a poster for next week by Monday so we can get feedback from Somani by Monday.

Testing – Nathan and Alex will be performing test alongside the user manual

Non-functional requirement is that failure of use moves on, not crash

Find out final report format