

Major Changes:

No major changes regarding to the updated milestone. (except that the database for experiments is Postgres instead of MySQL)

What You Have Accomplished Since Your Last Meeting:

- 1) I finished the OtterTune system pipeline bootstrapping and fixed some edge cases in the pipeline, e.g. generating random knobs configurations according to pre-defined range when there is not enough user data.
- 2) The server side of OtterTune, which has the ML pipeline for tuning knobs configurations, must know the database version in order to get the knobs information (type and name) specific to a certain version. However, the current server supports only Postgres 9.6. In order to carry out research in cross-version knobs configurations tuning, I added knobs information of Postgres 9.2~9.5 to the server's side. So now the server supports all 9.x versions of Postgres.
- 3) We decided to carry out the experiments on Amazon AWS machines because those machines have previous workload for database tuning, which could be used as a solid baseline. The PhD student I'm working with, Dana, is helping me set up an account and using her code for collecting results from AWS machine and store the results into a local database. The experiment is hopefully to be officially kicked off today.

Meeting Your Milestone:

Yes. I'm following the new milestone.

Surprises: No surprises found so far.

Looking Ahead:

I will collect around 2000 samples of knobs and metrics collected from queuing Postgres on a AWS machine as my baseline for improvement.

If the experiment results are satisfactory, I'll start automatically tuning the configuration knobs of Postgres on a AWS machine with current methods. I'll tune the knobs for an older version of Postgres and directly use the tuned knobs for a newer version (discarding those deprecated one

and retuning only those knobs specific to a new version) to compare the performance compared against directly tuning the new Postgres.

Revisions to Your Future Milestones:

No major changes.

Resources Needed:

Yes. I have got all the resources I need.