Project Plan for Antidote Benchmark

Plan for each Module

1. Docker Client Interface (Kevin Bartik)

1. Finish implementation of the basic Docker Interface
2. Implement the management of Dockerfiles and Images so that multiple branches/commits of the Antidote database can be benchmarked
3. Use a Java Git Interface to check out the Antidote repository on the host and switch between branches/commits
4. Test the image building process on a local system with different Antidote versions
5. Extend the Docker Client Interface with all required methods for basic benchmarking configuration
6. Extend the Docker Client Interface with all required methods for using multiple Antidote Clients concurrently in benchmarks
7. Make the Docker Client Interface ready for non-local deployments of Antidote containers
8. Extend the Docker Client Interface to allow more advanced configuration

2. Antidote Client Wrapper (Alka Scaria)

1. Finish implementation of the basic Antidote Client Wrapper
2. Check that the Antidote Client Wrapper can handle every data type except sets and maps
3. Document the Antidote Client Wrapper for YCSB
3. Connect the Antidote Client Wrapper to the YCSB interface (just Counter)
4. Add some basic configuration to the Antidote Client Wrapper for benchmarking
5. Extend Antidote Client Wrapper to support sets and maps
6. Think about implementing different nodes in a single Antidote Client (datacenter)
7. Think about implementing the connection between Antidote Clients and if communication is useful for benchmarking

3. YCSB Interface (Vishnu)

1. Create a Document that explains the YCSB Benchmark.
2. Describe the Interface that must be implemented.
3. Describe the configuration file that is used.
4. Create the basic implementation of the YCSB interface.
5. Finish the YCSB interface for the datatype Counter by using the methods provided by the Antidote Client Wrapper
5. Create different configurations and test them with Counter
6. Think about how different datatypes can be used in a single benchmark (configuration)
7. Implement the YCSB interface for all basic datatypes (no set and no maps) and add configurations
8. Implement the YCSB interface for all datatypes
9. Find out how we can benchmark replication and multiple Antidote Clients

4. Antidote GUI (Kevin Bartik)

1. Finish implementation of the basic GUI.
2. Extend the GUI to support new functionality in Benchmarking
3. Extend the GUI so that it can handle all configurations and show results

5. Results Visualization (Maxime)

1. Research existing implementations for Results Visualization (Java)
2. Implement examples for evaluation
3. Find out how to export the graph to pdf or image
3. Write a document about how the data must be structured to be visualized
4. Integrate the Visualization in the GUI

6. Benchmark Configuration and Configuration Handler

1. Define possible Benchmark Configurations for Antidote (Data Centers, Nodes, Connections, ...)
2. Implement additional Benchmark Configurations

7. Other Tasks

Implement the storage of keys (and their datatype) in MapDB for Usability purposes

Planned Progress

..... This year

..... Beginning of next year

..... 2-3 weeks before the end of the project