Module Description

1. Docker Client Interface

This module is the connection to Docker which is used to create, start and stop containers in which Antidote is running. We use the Java Docker Interface from Spotify which interacts with Docker over the HTTP interface. We use it because we can directly interact with Docker servers with Java and do not need to use the console. It allows communication with local and non-local Docker hosts and deploying containers anywhere. It is also used for operations on the antidote clients (running in containers) which are not provided by the Antidote Java Client e.g. connecting Antidote Clients or special configurations of Antidote. Also, the Docker Client Interface handles the building of different Antidote Images based on commits and branches. -> See specific document

Spotify Docker Client Interface -> https://github.com/spotify/docker-client

2. Antidote Client Wrapper

This module wraps the Antidote Java Client to simplify the use of its methods. It is helpful when interacting with the YCSB Benchmark and implements the configuration that is necessary. Multiple Antidote Client Wrapper can be started and used for benchmarking and the underlying container can run any version of the Antidote database (commit, branch). The Antidote Client Wrapper just connects to an IP and Port from an Antidote container that is started by the Docker Client Interface. Most database interaction is performed by the Antidote Java Client and only special operations require the use of our Docker Client Interface.

Antidote Java Client -> https://github.com/SyncFree/antidote-java-client

3. YCSB Interface

This module provides the YCSB connection to our Antidote Client Wrapper. It is used by YCSB to run Benchmarks on the Antidote database. It uses the methods provided by the Antidote Client Wrapper to perform the operations. -> see specific document

YCSB -> https://github.com/brianfrankcooper/YCSB

4. Antidote GUI

This module will provide a basic GUI for the Antidote database and benchmark. It can be used to set up Antidote datacenters and modify their values. It is especially useful when starting multiple

Antidote Clients and setting up the connection. It can also be used to configure the Antidote benchmark and run them.

5. Results Visualization

This module provides the Visualization of Results that are given by YCSB. It draws graphs with the benchmark output of various Antidote versions so that they can be compared. It will be integrated into the GUI but also available as a separate window that can be called from the console. We will also try to provide several export options so that the results can be saved.

6. Benchmark Configuration and Configuration Handler

This module will handle configuration processing and allows to store configuration for the Antidote database and the benchmark.