EEL4930/5930: Principles of Computer System Design

FAMU-FSU College of Engineering, Department of Electrical and Computer Engineering

Project 4

Assigned: 11/04/13 Due: 12/02/13

This is the final implementation step of the class project. In this assignment, you will extend the client/server implementation of PR03 to deal with two additional requirements:

1. The storage system in this assignment operates at a block granularity -puts/gets now are constrained by blocks of 1024 bytes. This changes the put/get interface as follows:
    - put() fails if the value more than 1024 bytes in size
    - the return value of get() is at most 1024 bytes
2. The storage system is distributed across multiple servers – going from a single hash table to a distributed hash table. This changes the put/get interface as follows:
    - put() must now specify an integer identifier (putID) that is used to select which server will store the data. Each server has a unique identifier (serverID). The (key,value) pair is stored in the server whose serverID is closest to putID. Both identifiers are drawn from a large integer namespace with 160 bits.
    - As in PR03, your design should provide the same file system functionality of memory.py – it should be functionally equivalent from the perspective of a user mounting the file system, while storing all data and meta-data on servers.

Submit your source code and a brief document (1-2 pages) describing your design.

- Your source code should be named pr4.py
- Your document should be named pr4_<bb_id> and must be **PDF** or **plain text only**
- Late work will not be accepted