CS 138: PuddleStore
Copy on Write (2)
Tapestry

• Inodes, indirect blocks, and data blocks
  – stored in Tapestry
  – identified by GUIDs
  – replicated
Copy on Write (1)

Parent Inode

Indirect Block

replicated

Inode

Indirect Block

Data Block 1

Data Block 2

Data Block 3

Indirect Block

Data Block 4

Modified Data Block 4

Modified Data Block 3

Indirect Block
Copy on Write (1)
Copy on Write (2)
Raft

- The map is handled by Raft
  - inodes referred to by *Active GUIDS* (AGUIDs)
  - mapped to *Version GUIDs* (VGUIDs)
Membership Server

• Well known server
  – i.e., all clients know how to contact it
• Identifies Tapestry and Raft nodes
• Identifies root directory’s AGUID
• Facilitates adding nodes to Raft and Tapestry
Required API

- Open
- Read
- Write
- Create
  - both file and directory
- List
  - contents of directory
- Remove
  - deletes file or empty directory
Tapestry and Raft

- Your choice
  - use your own
    - you own your project
      - (please don’t post it publicly on github!)
    - use the TA version
      - you don’t own your project
      - you must sign an NDA
Final PuddleStore

• You put all this together
  – we give you (most of) the B design
    - if you implement it completely: you get a B
    - if you improve it (reasonably well): you get an A
    - you’re encouraged to discuss your design with other teams

• Due May 9
Design Document

• Due Friday, April 22
  – hand it in earlier, you’ll get it back earlier
• Describes A-level features (if any)
  – what is required to implement them?
• Describes API
• How will you test the API?
• What else will you do to test your code?