File System API

CS333 :: Storage Systems

Williams College

Unit Overview/What to Look For

- This unit gives a high-level overview of the "file" abstraction
  - How the operating system represents a file
    - Identifiers
    - Structures/representations/types
    - Management
  - How applications interact with files
    - Key "system calls"
    - Guarantees (or lack thereof)
- Some useful "scaffolding" that you may or may not have picked up along the way
  - Unix manual pages
  - Small "shell" utilities and bash syntax

Strategy

- Watch the video first
- Set up your programming environment (or make sure you have access to the lab environment via ssh)
  - You should be able to write and compile code
  - You should be able to run commands in the terminal
- When you read the textbook, please
  - try out the commands in the examples that have a `prompt > ...`
  - read the manual pages for the system calls that are shown
  - make sure the diagrams make sense:
    - they aren't "pretty", but they pack a *lot* of information in each table
  - read the "grey boxes", especially the summary at the end

Demo: Manual Pages

We will explore the manual pages for many things during conference meetings, but you shouldn't wait until then to use this useful tool.

At a *very* high level:

- at the command line, type `man <functionname>`
- navigate up and down using the arrows
- type `q` to quit

There are different "sections" in the manual, and you can distinguish between them using a number:

- `man stat` vs. `man 2 stat`

Terms and Jargon

- Process
- Address space
- Fork
- System call
- Flag