CS199-6: Wide Area Application Design, Deployment, and Management

`http://cs199.planet-lab.org/`

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Assignment Post-Mortem

- Perl: 3 teams
  - 260, 86, & 266 lines
- Java and Perl: 2 teams
  - 410, 313 lines
- C: 1 team
  - 378 lines
- Java only: 1 team
  - 105 lines

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Clients

- 2 solutions provided a tree view
- 4 (of 7) solutions actually handled server failures
- Parallelism:
  - 2 solutions were fully parallel
  - 2 solutions had parallel reads, sequential connects (why?)

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Servers

- 5 (all but 2) servers could handle parallel requests
  - This rapidly becomes critical
- None of the 5 parallel servers had resource limits
  - Consider DoS attack repeatedly sending requests
- Only one was not vulnerable to a trivial argument format exploit!
  - tracerouteclnt \
    '192.168.1.1; nc –l –p 31337 –e /bin/bash &'

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Lessons:

- ## Consider resource limits
  - What happens when a very rapid stream of requests comes in?

- ## Consider breakins
  - Hint: ^\w{1,3}\.\w{1,3}\.\w{1,3}\.\w{1,3}$

- ## Consider failures
  - They are the norm

- ## Consider performance
  - Sequential processing is slower than the centralized case
  - Learn about threads *and* select/poll

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