BenchLab  http://benchlab.cs.umass.edu/
Realistic Internet Scale Benchmarking with Real Web Browsers

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Motivation
- Lack of open benchmarks for research in cloud, virtualization, and data centers.
- Few available commercial benchmarks are closed or require licenses.
- Our goal: an open, flexible benchmarking framework available for researchers to use.

Overall approach and Goals
- Focus on real browsers playing workloads from real traces targeting a suite of application backends or real web-sites.
- BenchLab for desktop with Wikipedia site and traces already available on sf.net
- mBenchLab for Android mobile devices native browsers
- Video BenchLab for video streaming workloads in browsers
- Green BenchLab to support energy-efficiency research in servers is planned

BenchLab Client Runtime (BCR)
- Replay traces in Web browsers
- Collect detailed response times and GPS coordinates on mobile devices
- Can record HTML and page snapshots
- Easy deployment in the cloud for Internet scale benchmarks

BenchLab WebApp
- JEE WebApp with embedded database
- Repository of benchmarks and traces
- Schedule and control experiment execution
- Results repository
  - Can be used to distribute / reproduce experiments and compare results

Current achievements
- BenchLab for desktop supports for latest browsers
- mBenchLab lite for Android 5.0
  - SpeedTest like functionality for Web sites
  - Performance analytics for Android devices
- Green Bench Lab for Android
  - Power monitoring library for Android 5
  - Power debugging library for developers
- GreenSort Benchmark
  - Measures energy-agility – work per joule of energy available to platform
  - Targeted for servers operating under dynamic power constraints
    - From renewable energy or utility demand response programs
  - Distinct from energy-efficiency metric

Future plans
- Integrate power monitoring in mBenchLab to benchmark web site energy efficiency
- Distribute mBenchLab through the Google Play store for large scale analytics
- Release power monitoring SDK for Android developers
- GreenSort Benchmark
  - Release benchmark
  - Execute it on server platforms to quantify energy-agility