



# BenchLab

<http://benchlab.cs.umass.edu/>

## Realistic Internet Scale Benchmarking with Real Web Browsers

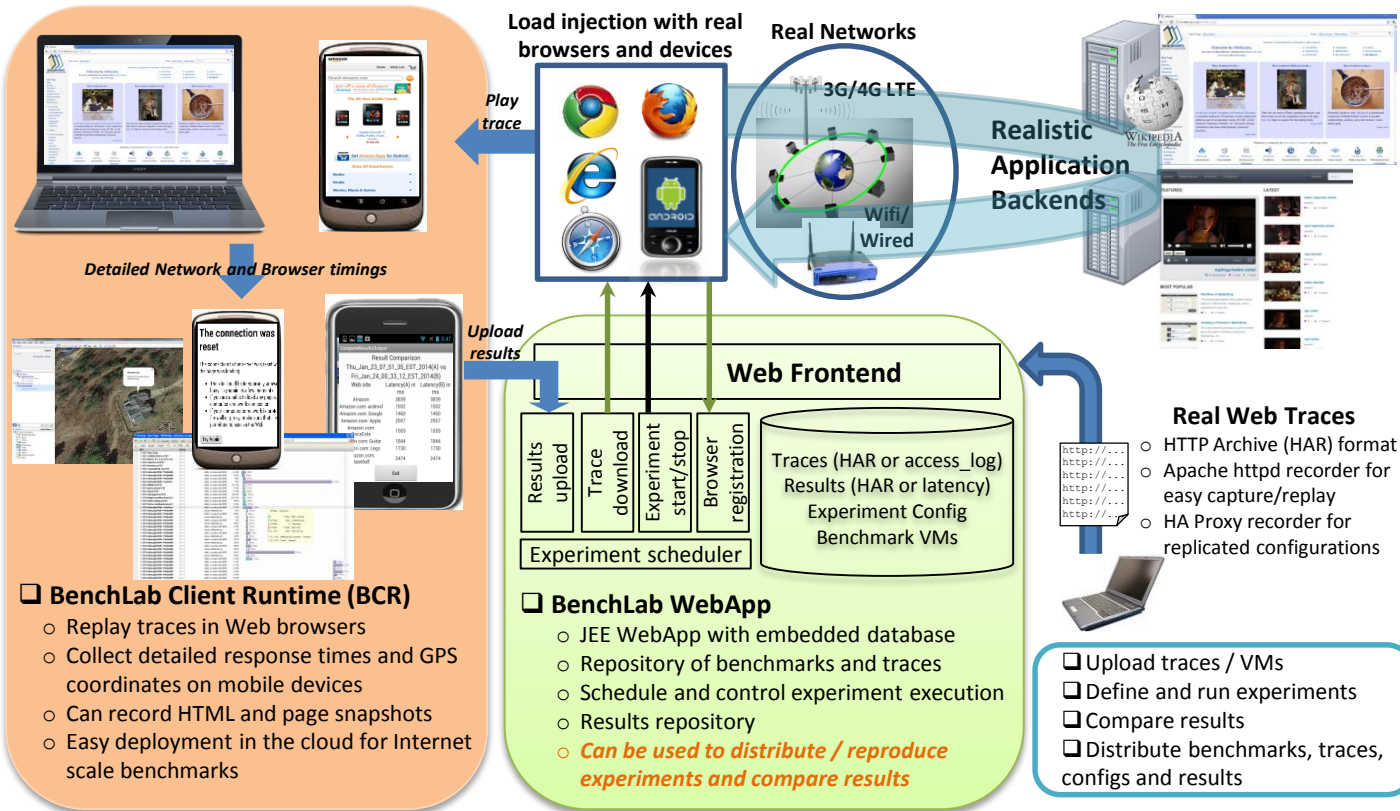
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### Motivation

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

### Overall approach and Goals

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



### Current achievements

- o BenchLab for desktop supports for latest browsers
- o mBenchLab for Android 4.0+
- o Video BenchLab
  - o Mediadrop VM with SD/HD videos and workloads
  - o Browser instrumentation for HTML5 and YouTube video players
  - o Video lag/skip analysis in WebApp
- o GreenSort Benchmark
  - o Measures *energy-agility* – work per joule of energy available to platform
  - o Targeted for servers operating under dynamic power constraints
    - o From renewable energy or utility demand response programs
  - o Distinct from energy-efficiency metric



### Future plans

- o mBenchLab lite for Android using Webkit providing SpeedTest like functionality
- o Support for video streaming QoE measurements on mobiles
- o Advanced analytics
  - o Automate performance anomaly detection
- o GreenSort Benchmark
  - o Release benchmark
  - o Execute it on server platforms to quantify energy-agility