Project Progress Report

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Performance Gains from Apache's mod_deflate

Our project seeks to investigate potential performance gains from using Apache's compression module. Our intention is to show that sacrificing CPU processing for web resource compression will lower the bandwidth and hence the latency of requests made to a web server. We are certain our results will show that overall network bandwidth will be decreased, however we are hoping that we can also show a noticeable improvement in general website use when many clients are using the website. If these benefits are prevalent, it may be concluded that compression of this kind is a valid mitigation strategy against wasted bandwidth.

Testing & Implementation Progress

We will be measuring performance metrics when on-the-fly compression is enabled, disabled on a text heavy website, an image heavy website, and a general website with balanced amounts of text and images. Test statistics will be obtained using Apache's status module which displays web server performance measures. Web use simulating will be done using a Python library called Selenium that is commonly used for web user interface testing and will run in many threads on many machines in the university's lab.

Development Progress

1. Project Goals
   (a) Explore on-the-fly web compression
   (b) Explore current solutions
   (c) Employ scientific method
   (d) Achieve conclusion
2. Testing Framework
   (a) Three unique websites
   (b) Apache in Docker
   (c) Python's Selenium
   (d) Automate script deployment
   (e) Automate statistic gathering
3. Analyze Statistics
   (a) Make inferences
   (b) Tweak compression parameters
   (c) Increase user count
   (d) Repeat testing
4. Document Conclusions
   (a) Support or disprove hypothesis
   (b) Wrap up conclusions with evidence
5. In Class Demo / Presentation
   (a) Demo testing process
   (b) Present conclusions