Performance Characterization of the Pentium III Using Web Workloads
Project Milestone Report

Shuchi Chawla, Rose Hoberman, Bianca Schroeder
{shuchi, roseh, bianca}@cs.cmu.edu

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http://www.cs.cmu.edu/~bianca/architecture/project.html

Progress made so far

In our project, we proposed to measure the performance of modern architectures when running a web server. This entailed setting up a web server on a Pentium III hardware platform running Linux, generating web requests and measuring the performance of hardware in terms of stall times, cache misses and branch mispredictions.
As mentioned in our proposal, we have accomplished the following tasks:

- Set up the perfctr software with our kernel and learn its API.
- Learn the meanings of the processor counters.
- Understand the Flash and Apache web server source code.
- Instrument the Flash and Apache web server source code.

In addition, we wrote some experiments to test the working of the PAPI counters. The code and some results are available on the webpage.

Subsequent work

The coding part of our project is almost done and we are ready to start experimenting on the web server. It turns out that the Pentium III has only 2 hardware counters but there are 17 events that we need to count to obtain all the numbers we want regarding stall times, cache misses and branch mispredictions. This means we will have to repeat every experiment many times to measure all the events (and also to get consistent measurements).
For the remainder of the project, we plan to work by the following schedule:

4 days: Run trial experiments and debug.

6 days: Run final experiments on Flash.
If time permits, repeat experiments on Apache.

4 days: Evaluate results and writeup.