

Visualize-it

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Abstract

Developed by Bradley Johnson Stahlhut during his undergraduate career at Earlham College, Visualize-it bridges a gap between the storage of data in a computer-readable database and the observation of that data in a human-readable format. A Visualize-it ready for use can be found at <http://cluster.earlham.edu/~carrick/dbvis/petakit.php>

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1 Overview

The Visualize-it was originally designed as the front end for PetaKit. PetaKit, a system for collecting performance scaling data, outputs all its information into a PostgreSQL relational database on a computer at Earlham College. The Visualize-it allows a user to pick dependent and independent variables and compare one set of PetaKit's results to another using only a web browser(see Figure 1). The most common use of the graph is to compare shared memory parallelism performance to distributed memory

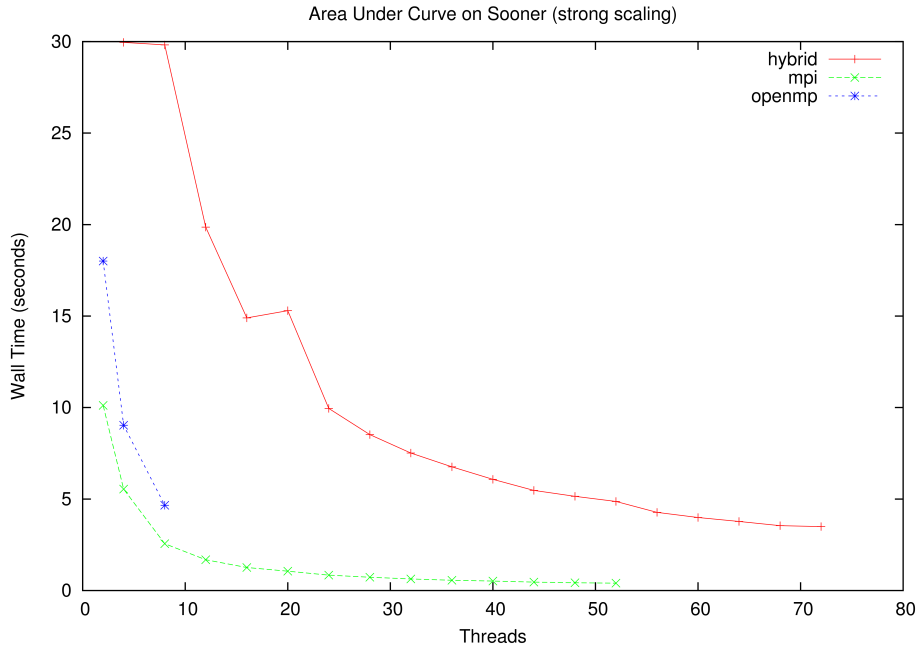


Figure 1: An example graph generated by Visualize-it

performance to the performance of a hybrid of the two by plotting the three threads vs. walltime.

2 Visualize-it infrastructure

Visualize-it is a php-based system. As soon as the user opens the web page it reads the PostgreSQL database and produces a list of tags of the available sets of runs. Then the user selects via drop box an independent variable, a dependent variable, and a variable over which to split to get multiple lines for comparison in the graph. Once Visualize-it has all its parameters, it begins to build its graph. First it builds from the data a text file in a format readable by graphing software GNUplot. Then it calls GNUplot, which generates a temporary postscript (image) file. Then Visualize-it shows the generated image in the browser. The user may add labels to this image, and may download it to their computer for use wherever.