Intro to Parallel Programming

Project n°0 – Simple openMP Experiment

Amine Gaizi

gaizia@oregonstate.edu

Student ID: 934-044-900

Which machine was this run on ?

This project was run on the university's flip server (using a ssh connection). The load average at that moment was: 1,20   1,26   1,45.

What is the performance for 1 and 4 threads ?

Number of threads	Peak Performance	Execution Time
1	172.41 MegaMult/S	95.146uS
4	624.25 MegaMult/S	26.680uS

These results give us the 1-thread-to-4 Speedup result:

$$S = \left(\frac{Execution\ Time\ 1\ thread}{Execution\ time\ 4\ threads}\right) = \frac{95.146*10^{-6}}{26.680*10^{-6}} \approx \left(\frac{Performance\ 4\ threads}{Performance\ 1\ thread}\right) = \frac{624.25}{172.41} = 3.62$$

Why is the 4-thread-to-1-thread speedup inferior to 4 ?

The code consists of two parts. The first part takes care of filling the arrays and the second part takes care of the multiplication operation. The speedup ratio is inferior to 4 because the 1st part is not parallelized.

What is the Parallel Fraction value ?

The parallel fraction value computed is Fp = 0.956.