OpenMP: Numeric Integration with OpenMP

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1. Introduction

Bezier surfaces are a way of sculpting shapes. Because they are analytically defined, they can be computed to any precision desired. Using some number of subdivisions in X and Y, NUMNODES x NUMNODES, we're going to find NUMNODESˆ2 height samples.

We will think of each height sample as sitting on a 2D tile. That really makes that height sample act as a volumen, where the tile is extruded vertically from the bottom to the top. The tiles in the middle of the floor are full-sized, the tiles along the edges are half-sized, and the tiles in the corners are quarter- sized. The volume contribution of each extruded height tile needs to be weighted accordingly.

2. Machine and Run Parameters

Machine: OSU Rabbit (32 cores)

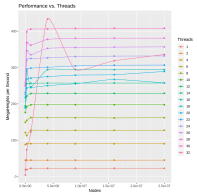
Run parameters:

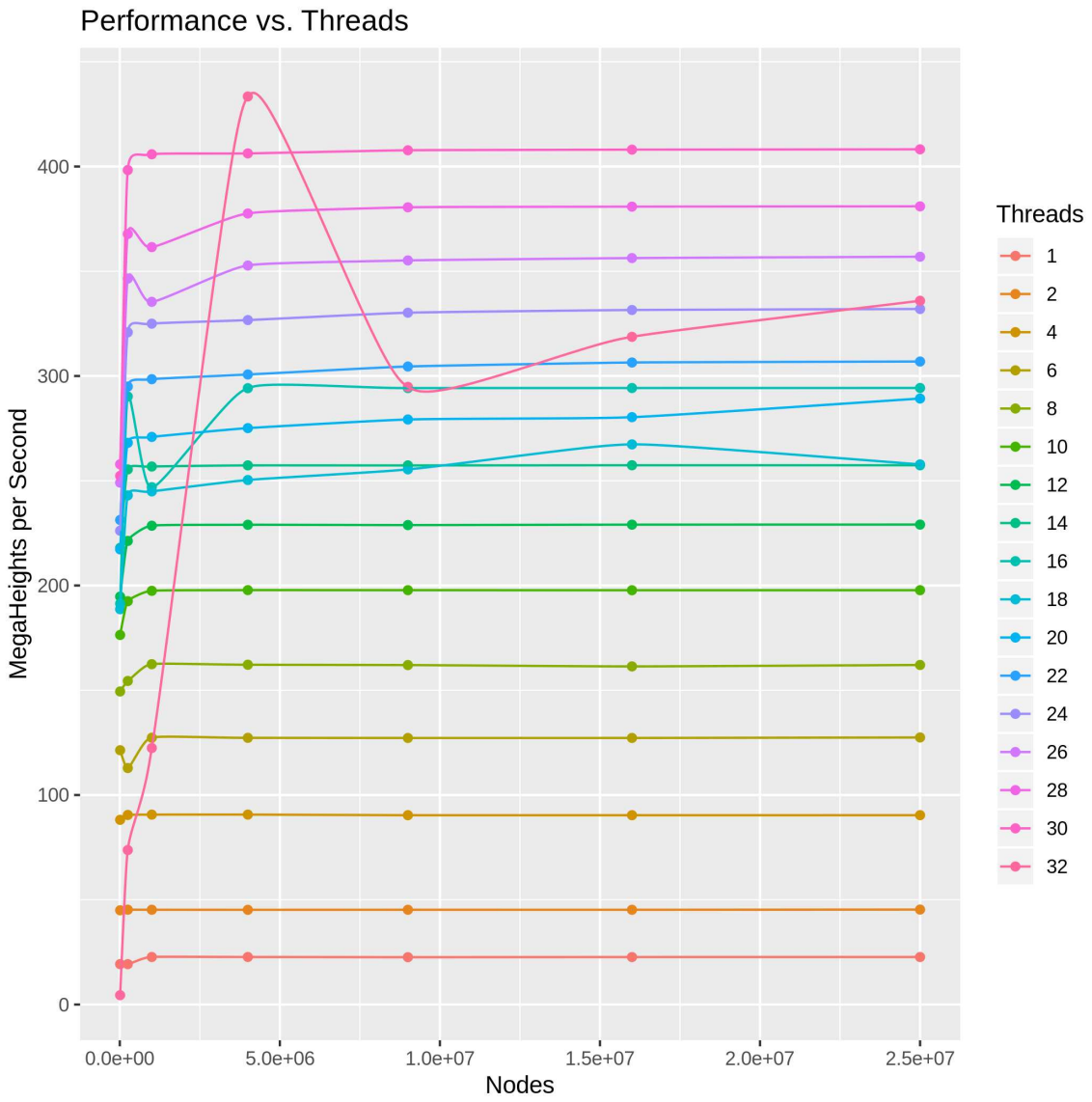
- Threads: 1, [2..32:2]
- NUMNODES: 100, 500, 1000, 2000, 3000, 4000, 5000

3. Caclculated Volume

28.699 cubic units

4. Performances





5. Patterns Observered

6. Reasoning for Observed Behaviors

7. Parallel Fraction

8. Maximum Possible Speed-up