

PERFORMANCE EVALUATION OF TERAPIXEL RENDERING IN CLOUD COMPUTING

The main objective of this report is to evaluate the performance of supercomputers which perform tile-wise rendering of Newcastle city aerial visuals. The results of this study will assist the stakeholders in analysing, optimising, and improving the performance by altering the current existing cloud architecture or by increasing resource availability.

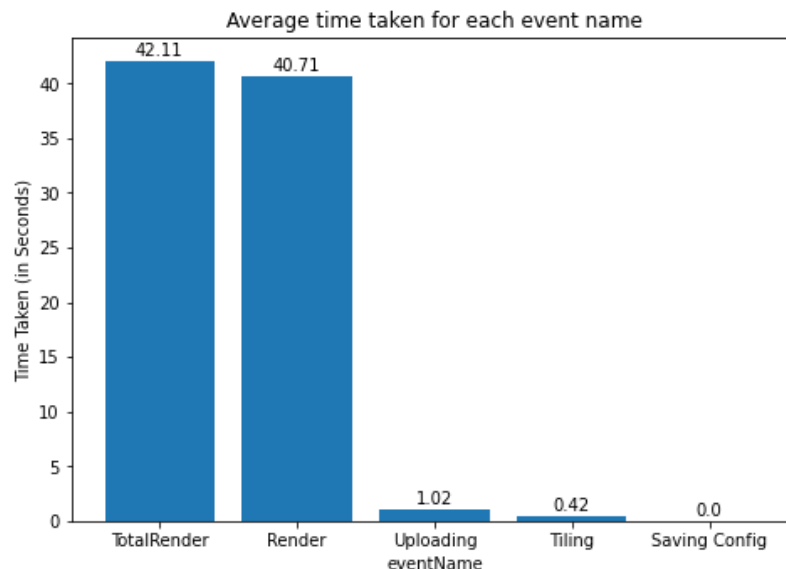
Exploratory data analysis is implemented with the help of the CRISP-DM method to generate sensible information from the raw data provided. For conveying the ideas easily to stakeholders, different visualization strategies were used. The study primarily focuses on the following areas.

1. Time consumed by each event.
2. Analysis based on hostname, and task Id regarding the GPU resources and the properties.
3. The relationship between tiles or task id to the GPU attributes and rendering time.

Some questions were formulated on these topics and answering the questions directly will give the necessary information.

The above analysis provided the following conclusions.

1. Rendering is the task which took the highest time compared to all other tasks which is about 40.7 Seconds (average) at the same time saving configuration consumes the least time.



2. The total time taken for rendering the whole image is about 48 Minutes and 45 Seconds. On average 64 tiles were rendered by each 1024 virtual machine.

3. There is a significant relation between the colour depth of the features in the image and the corresponding render time as well as the GPU properties especially GPU Memory Utilization.

