RACE: Resource Aware Cost-Efficient Schedulerfor Cloud Fog Environment

ABSTRACT:

Fog Computing is one of the new computing structures which takes the Cloud to the verge ofthe network. The structure is formulated for applications that need low latency. Fog Computing has beenprojected to improve the disadvantages of Cloud Computing. The system is confronted with the variabilityof dynamic resources that are heterogeneous and distributed. Hence, efficient scheduling and resourceallocation are necessary to maximize the use of these resources and the satisfaction of users. In this paper,a resource-aware scheduler RACE (Resource Aware Cost-Efficient Scheduler) is proposed to distribute theincoming application modules to Fog devices that maximize resource utilization at the Fog layer, reducesthe monetary cost of using Cloud resources with minimum execution time of applications and minimumbandwidth usage. This RACE comprises of two algorithms. The ModuleScheduler in RACE categorizesthe incoming application modules according to their computation and bandwidth requirements which arethen placed by CompareModule. Comprehensive experimental results obtained from the simulation by usingIfogsim simulator show that our approach performs better in most of the cases as compared to the TraditionalCloud placement and the baseline algorithm.

SYSTEM REQUIREMENTS:

HARDWARE REQUIREMENTS:

- System : Pentium i3 Processor.
- Hard Disk : 500 GB.
- Monitor : 15’’ LED
- Input Devices : Keyboard, Mouse
- Ram : 4 GB

SOFTWARE REQUIREMENTS:

- Operating system : Windows 10.
- Coding Language : Java
- Web Framework : Flask

REFERENCE:

J. U. Arshed and M. Ahmed, "RACE: Resource Aware Cost-Efficient Scheduler for Cloud Fog Environment," in IEEE Access, vol. 9, pp. 65688-65701, 2021, doi: 10.1109/ACCESS.2021.3068817.