South Asian Journal of Engineering and Technology Research Article

Open Access Full Text Article 141(2024) 1-3 DOI: 10.26524/sajet.2024.14.1

A Comparative Study on Scheduling and Optimization Algorithm for the Edge Computing

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Article info
Received 12th November 2023
Received in revised form 16 January 2024 Accepted 27 April 2024

Keywords
Fundamental scheduling, energy efficiency, IOT devices

https://sajet.in/index.php/journal/article/view/262

Abstract
As the edge computing is prominent field that emerging in the advancement of IoT devices and cloud computing. Its execution are based on the scheduling process and how their optimized. Thus in this paper discuss about the various current scheduling algorithm and optimization algorithm and pros and cons for applying in the task loading environment.

Introduction

For the better performance of the edge devices output delivery we are using many scheduling algorithms and optimization techniques the basic algorithm and the optimization techniques are differed by means of their performances and necessity in the real time problem. Here we discuss about the various fundamental scheduling algorithm and optimization techniques.

Basics of scheduling process

Scheduling is done on the demand of process has to be executed in the manner where is its response time is less. when the process input is received from the user device its been forwarded to the servers or the end devices which produce the output. Sometimes the input have to be processed in the servers and remote machine where that machine might in execution with other devices also. So the process may get delayed and some time process get denied these issue are to be avoided so, scheduling plays an major role

In this chapter we are going to see about the various scheduling algorithm and there performance in short comparison .so that how their work execution is done.

MOGO Algorithm: whenever an IOT devices are connected to a server and getting output its consumes more energy when the response time is high in case of this issues MOGO algorithm is used which improves the energy efficiency.

Resource Aware scheduling algorithm:

If more number of inputs and more of servers the request should know the resource where to be its executed .so that makes span time will be reduced and execution time will be reduced.

Extended max-min scheduling using petri-net and load balancing

Efficient load balancing techniques which reduce the load balancing issue when the process runs at the peak load and the pertinent used to remove the max-min disclosure. To improvise the cost utilization the improved cost based algorithm for task scheduling algorithm which measure the resource cast and computation performance when the task are large then we are choosing min- min algorithm in similar case when we use smaller task then we propose the max-min.

Comparison on optimization algorithm:

When we are doing survey on optimization algorithms and their efficiency. We found the most of the optimization algorithm are prompted to reduce the response time and most of the algorithm is utilized as a load balancing algorithms.

Considering the ACO [Ant colony optimization algorithm] were very much concern about the response time and act as load balancer in the busy server utilization.

When the same criteria in verified with the genetic algorithm the process of mutation, crossover are all done. This is considered to be a prominent optimization technique.

The better and more efficient algorithm such as GAACO is combination of genetic algorithm and ANT colony optimization algorithm.

Conclusion:

As the survey clearly shows the optimization algorithm and scheduling algorithm that we are considered for our task execution focus on the less time span and equalize the workload balancing. Thus choosing the right algorithm purely based on the type of task that are subjected.

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