EVALUATING JOB PERFORMANCE USING DYNAMIC SCHEDULER

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Abstract:Reducing the communication energy is essential to facilitate the growth of emerging mobile applications. We introduce signal strength into location-based applications to reduce the energy consumption of mobile devices for data reception. First, we model the problem of data fetch scheduling, with the objective of minimizing the energy required to fetch location-based information without impacting the application's semantics adversely. To solve the fundamental problem, we propose a dynamic-programming algorithm and prove its optimality in terms of energy savings. Then, we perform post-optimal analysis to explore the tolerance of the algorithm to signal strength fluctuations. We have also developed a virtual tour system integrated with existing Web applications to validate the practicability of the proposed concept. The results of experiments conducted based on real-world case studies are very encouraging and demonstrate the applicability of the proposed algorithm toward signal strengt fluctuations.

Keywords:MapReduce,JobScheduling,GPS.

I. INTRODUCTION

Tomorrow's cars will comprise many wireless communication systems and mobility aware applications. Music, news, road conditions, weather reports, and other broadcast information are received via digital audio broadcasting (DAB) with 1.5 M-bits/s. For personal communication, a global system for mobile communications (GSM) phone might be available offering voice and data connectivity with 384 k-bits/s. For remote areas satellite communication can be used, while the current position of the car is determined via global positioning system (GPS). Additionally, cars driving in the same area build a local ad-hoc network for fast information exchange in emergency situations or to help each other keeping a safe distance. In case of an accident, not only will the airbag be triggered, but also an emergency call to a service provider informing ambulance and police. Cars with this technology are already available. Future cars will also inform other cars about accidents via the ad hoc network to help them slow down in time, even before a driver can recognize the accident. Buses, trucks, and train are already transmitting maintenance and logistic information to their home base, which helps o improve organization (fleet management), and thus save time and money.

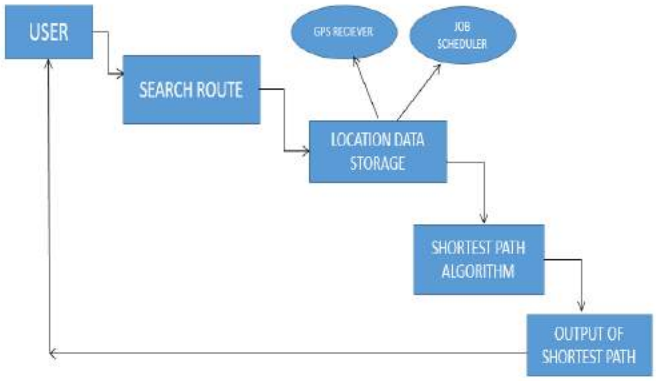
II.EXISTING SYSTEM:

Big data is a term for data sets that are so large or complex that traditional data processing applications are inadequate. Scheduling is the method by which work specified by some means is assigned to resources that complete the work. The work may be virtual computation elements such as threads,processes ,dataflows.Scheduling is fundamental to computation itself.Hadoop is a general-purpose system that enables high-performance processing of data over a set of distributed nodes. Hadoop in scheduling is the efficient tool for running clusters of data . In the MapReduce model computation is expressed as two function; map and reducejobs are executed across multiple machines. The map stage is partitioned into map task and reduce stage is partitioned into reduce task.The map and reduce tasks are executed by map and reduce slots.In the Existing System,the Google location services called the Google Maps is a Web-based service that provides detailed information about geographical regions and sites around the world. In addition to conventional roadmaps, It also offers aerial and satellite views of many places. In some cities,Google Maps offers street views comprising photographs taken from vehicles.Only authorised route informations are given by the system.

III.PROPOSED SYSTEM:

The existing method needs to modify the applications forEffecient performance for travelling at ashort period of time.Cannot maintain goodperformance for large batch jobs.In the proposed system ,certain unauthorized and short route information can be given , making the people reach the destination shortly.In this system, we design and evaluate Dynamic sheduler , a new Hadoop scheduler that exploits capabilities offered by heterogeneous cores for achieving a variety of performance objectives. These heterogeneous cores are used for creating different virtual resource pools, each based on a distinct core type. These virtual pools consist of resources of distinct virtual Hadoop clusters that operate over the same datasets and that can share their resources if needed. Resource pools can be exploited for multiclass job scheduling .Dynamic optimal scheduler can reduce the average completion time of time-sensitive interactive jobs by more than 40%,saves distance and time of travel.At the same time, it increases the performance of google maps can reduce completion time of batch jobs.

IV.SYSTEM ARCHITECTURE



V.MODULE DESCRIPTION:

MODULES:

1. Application security
2. Location feeds
3. Querier
4. Location estimation
5. Energy cost estimation

MODULEDESCRIPTION:

Application security:

Application has the user registration and password verification for the security purpose. User's registered information's are uploaded to the server. Where the user's activities are witnessed and maintained by the server admin

Location feeds:

The location information is uploaded by the server admin and the signal strength in the particular area can be added with the location and each routes also.

Querying user:

The user is the querier who searches for the place as a query from his/her mobile application. The user will get the routes and signal strength in each routes. These routes are generated using the shortest path algorithm.

Location estimation:

Given a trajectory T (P0 →P1), if the location of departure point P0 is known, we can roughly estimate the location of P1 by accumulating the trajectory segments.However, due to the inaccuracy of step size and orientation measurement, errors may be introduced during the estimation of each segment. With the number of segments increase, the errors are accumulated, thus the estimated location will be far away from the actual location. To overcome this drawback, we use the encounter opportunity of nodes to improve the estimation accuracy, which is introduced in the following subsection.

Energy Cost Estimation:

The energy cost (joules per byte) at a checking location is defined as the mobile device's power consumption (watts) divided by the downlink data rate (bytes per second). The downlink data rate has a strong relationship with the signal strength. To plot their relationship, we installed the application program developed by Open Signal Maps on an HTC EVO 3D smartphone to measure the signal strengths and data rates at various locations in Taipei City. We gathered over 3000 pairs of such data within the coverage of 3G/3.5G signals provided by Chunghwa Telecom. Then, we applied the *polynomial regression method* to the gathered data and modeled the relationship with a monotonic function. It is no doubt that the more (and diverse) the data gathered, the more accurate the monotonic function, and the less the effect due to signal fluctuations. Furthermore, we observed that the signal strength at a location is generally stable over time, which also agrees with the phenomenon observed in. Based on our measurement, the signal strength at a checking location is close to the expected signal strength with a standard deviation up to 4 dBm, and the standard deviations are smaller than 2 dBm at most locations. The power consumption depends mainly on the communication chip adopted by the mobile device. Fortunately, the accuracy of the power model will only affect the amount of energy saved if the scheduled objects can be fetched successfully at every checking location; therefore, other device models could also benefit even if their accurate power models have not be acquired. The receive mode of 3G/3.5G has four/five states, and the state transition adheres to the *radio resource control protocol* specified in UMTS/HSPA of the 3GPP standard. In practice, we used the power monitor produced by Monsoon Solutions to measure the power consumption of the HTC EVO 3D smartphone. Fig. 6 shows the power consumption of each state during an ICMP ping. The radio interface is initiated in CELL_IDEL, which consumes almost no power. Then, it transits to CELL_DCH with HS-DSCH, a state supporting high speed data downlink, and consumes 1050 mW when remaining in the state for data reception. Thus, the energy cost at a location can be computed by dividing 1.05 W by the downlink data rate there. After that, the interface starts to release the radio resources, resulting in a state demotion, and lasts in CELL_DCH with power consumption of 590 mW until an inactive timer of 5 s expires.

VI.SYSTEM OUTPUT:

OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

1. Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.

2.Select methods for presenting information.

3.Create document, report, or other formats that contain information produced by the system.

VII.SYSTEM REQUIREMENTS:

HARDWARE REQUIREMENTS:

- System : Pentium i3
- Hard Disk : 500 GB.
- Monitor : 15 VGA Colour.
- Mouse : Logitech.
- Ram : 2GB.

SOFTWARE REQUIREMENTS:

Coding Language: Java1.7

Tool Kit : Hadoop

IDE : Eclipse

VIII.CONCLUSION:

We introduce signal strength into location-based applications to reduce the communication energy of mobile devices. The rationale behind the reduction is that the communication energy is much more when the signal is weak than when it is strong. To prove the concept, we have developed a virtual tour system, where the key technology is to schedule appropriate fetching locations for objects based on signal strength. We propose a dynamic-programming algorithm to derive optimal schedules in terms of energy savings, and perform post-optimal analysis to explore the impact of signal strength fluctuations on the proposed algorithm's optimality and performance. To evaluate the improvement in energy efficiency, we conducted a series of experiments along two routes of diverse characteristics in Taipei City. The results show that an HTC EVO 3D smartphone can achieve energy savings of 46%–70% and 35%–60% for pedestrian users along the two routes, respectively. Moreover, the algorithm can tolerate signal strength fluctuations very well when the objects along a route is sparse. When the impact of signal strength fluctuations is significant, we could slightly underestimate the estimated signal strength (at the cost of the amount of energy saved) to ensure that the scheduled objects can always be fetched successfully.

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