WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Cloud Computing in Automotive Industry.

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ABSTRACT:

IT infrastructure management as well as maintenance activities, but also leads to hugecost savings. Along with many industry sectors, education sector would be largely benefited by adopting cloud services. The motive of this paper is to analyse the approach that has been followed to identify the benefits and limitations of cloud computing. Specific case of a lab setup has been taken to illustrate the financial aspects. A comparative analysis of cloud-based hosting versus conventional (on-premise) application deployment has also been presented. It will likely have a significant impact on the educational environment in the future. Cloud computing is an excellent alternative for educational institutions which are especially under budget shortage in order to operate their information systems effectively without spending any more capital for the computers andnetwork devices.

1. INTRODUCTION

In recent years, as the rapid development of intelligent and connected vehicle (ICV) technology, the demand for automated driving application in logistics, sanitation, port terminals mining, retail, ride sharing , public transportation and other industries has surged and attracted wide attention from both industry and academia. According to the latest Gartner Hype Cycle for Connected and Smart Mobility, most of the technologies related to automate driving and new mobility are in the trough of disillusionment. Cloud computing can be generally defined as computing services delivered to the user over the internet.Cloud computing is defined in which refers to applications and services that run on The five important characteristics of cloud computing are

1. On-demand self-service
2. Resource pooling
3. A broad network access
4. Rapid elasticity
5. Measured service

Information and Communication Technologies (ICT) are powerful enabling tools for educational change and reform introducing new methods of teaching and conducting research as well as provisioning of educational facilities for online learning, teaching and research collaboration. It thus represents a potentially equalizing strategy for developing countries. The present scenario is also under the pressure to fulfil the competing demands such as deploying applications and delivering web-based student services at a rapidly accelerating rate without an increase in the budget for hardware and software. There are various challenges that are faced by the education sector to improve the quality of education. Internet to store,Manage, and action data, rather than a local server or a personal computer.

2.HARDWARE CHALLENGES

Computer systems are no doubt an importantasset for any university, and for a better quality of education, universities must have all the latesthardware resources available in the market. There are various challenges associated with the hardware as listed below. Cost benefit analysis of cloud computing in education.

A. MAINTENANCE AND UPDATINGOF HARDWARE:

Because of the day by day technology changes, one has to keep updating hardware regularly for the smooth running of the system, e.g., Intel Corporation has launched more than 25processors in the market in the past decades. From Pentium III processor to single-core, dual- core, quad-core, and Intel core processor. It is

not possible for any university to have regularup gradation of processors.

B. INSTALLATION OF HARDWARE:

Due to the frequent change of technology, new hardware has to be installed and made compatible with existing hardware and software. To achieve it, a trained personnel having advent knowledge of new technology needs to be hired.

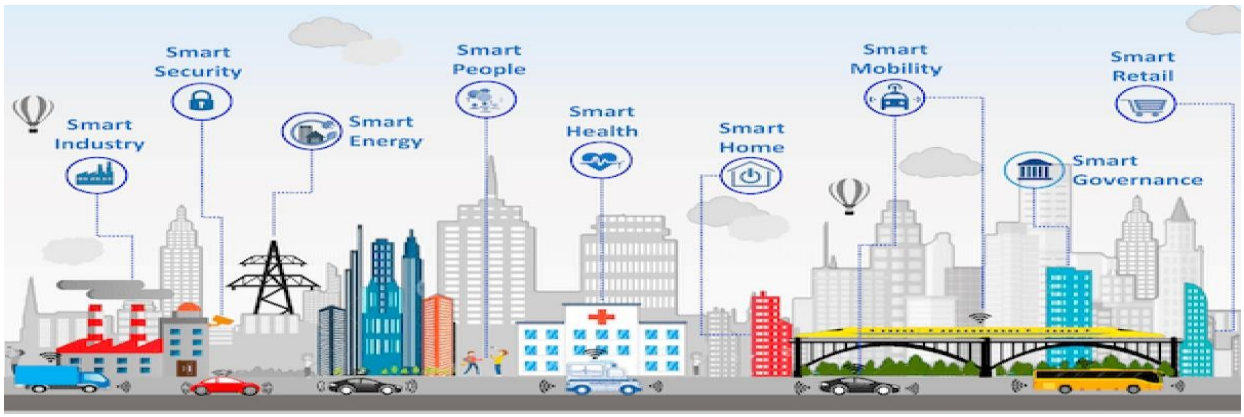
C. DECREASING LIFE SPAN OFHARDWARE:

Computer hardware has a very short lifespan of period i.e. three to four (Yang and Williams, 2008). So expenditure done on computer hardware is depreciated to almost negligible in three to four years (Islington, 2004).

TASK SCHEDULING

***Temporal Task Scheduling For Profit Maximization In Hybrid Clouds*:**

As cloud computing is becoming increasingly popular, consumers' tasks around the world arrive in cloud data centers. A challenging problem is the aperiodicity of arrival tasks and how to dynamically schedule all arrival tasks given the fact that the capacity of a private cloud provider is limited. Although, this will reduce the throughput of a private cloud, and affect revenue loss. Proposed Model The model we will try to offer in this study, should easily meet the needs of the administrative staff should work together with the units and personnel mentioned in the above paragraph in order to optimize all the requirements. loud-based platform planned by (Erickson et a1, 2009) places the application- content rather than applications themselves atthe center providers and available to users whenever they request.



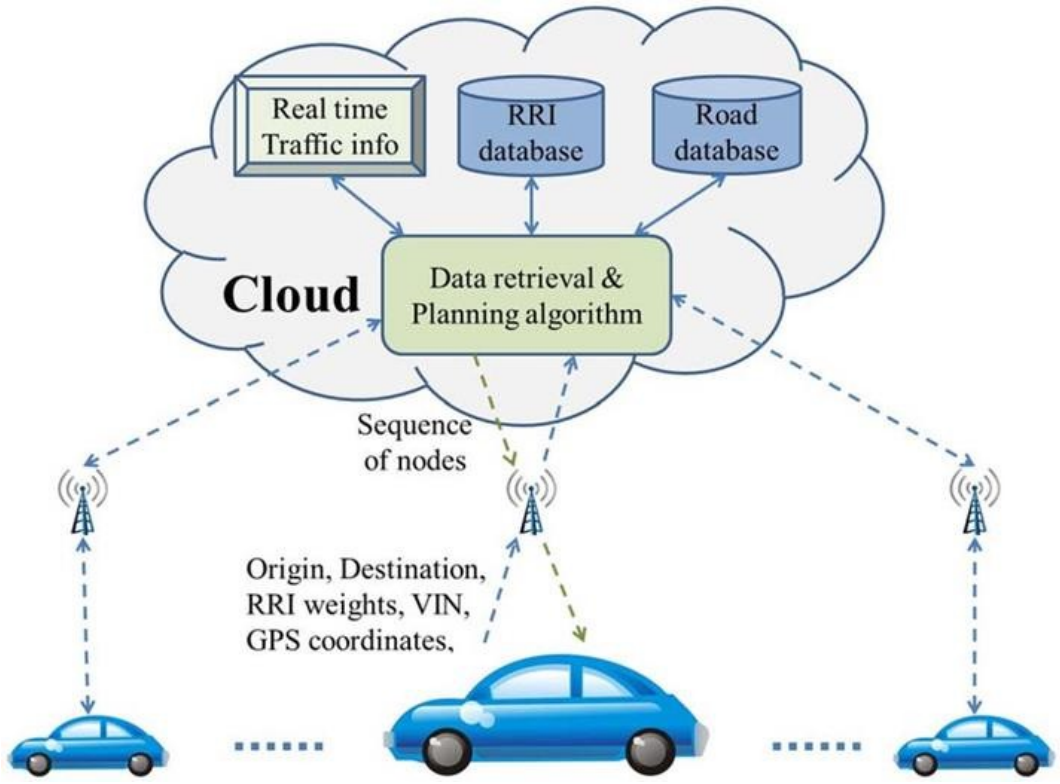


TABLE I COMPARISON TABLE FOR DIFFERENT SCHEDULING TECHNIQUES.NO	**SchedulingTechniques**	**Problem Statement**	**Result**	**Environment**
1	Cloud-basedworkflow Scheduling (CWSA) Algorithm[1]	Resource Management in the context of multi- tenant cloud computing	Minimize the cost of execution of theworkflows	Cloud Environment
2	Cost and energy aware schedulingalgorithm (CEAS)[2]	To execute the deadline-constrained scientific workflows	Minimize the execution cost of workflow	Cloud Environment

TABLE II COMPARISON ON SCHEDULINGALGORITHMS AND PERFORMANCE METRICS Scheduling Techniques	**Performance Metrics**					
Improveresource utilization	**Improves QoS**	**Reduce energy consumption**	**Minimize costof execution**	**Minimize cost**	**Reduce makespan**	
Cloud- based workflow Scheduling (CWSA) Algorithm	-	-	-	✓	-	✓
Cost and energy aware scheduling algorithm (CEAS)	-	-	✓	✓	-	-
Profit maximization algorithm	✓	-	-	-	-	-
Multi- objective optimization algorithm	-	✓	-	-	✓	-
VM ProfitPlanning algorithm	✓	-	✓	-	-	-

OPEN ISSUES AND FUTURE SCOPE

He Demand for Standards: Numerous investigation have featured the issues of the absence of norms ,which is viewed as basic in connection to the Cloud based IoT worldview. In spite of the fact that variously proposed institutionalizations have been advanced by the logical society for the arrangement of IoT and Cloud approaches, clearly models, standard conventions, and APIs are required to take into account interconnection between heterogeneous shrewd things and the age of new administrations, which make up the Cloud-basedIoT worldview.

Energy productivity: Late Cloud-based IoT applications incorporate successive information that is transmitted from IoT items to the Cloud, which rapidly expands the hub vitality. Accordingly, creating effective vitality with regards to information preparing and transmission remains a huge open issue. A few headings have been proposed to conquer this issue, for example, pressure advancements, productive information transmission; Fog Computing: Fog processing is a model which stretches out Cloud figuring administrations to the edge of the system. Like the Cloud, Fog supply conveys application administrations to clients. Haze can basically be viewed as an expansion of Cloud Computing which goes about as a transitionalbetween the edge of the system and the Cloud; Capabilities: As in any arranged condition, security is thought to be one of the principal issues of the Cloud-based IoT worldview. IoT setting, information honesty, secrecy, and genuineness can be ensured by encryption. Notwithstanding, insider assaultscan't be settled and it is likewise difficult to utilize the IoT on gadgets with constrained capacities.

SERVICE MODELS

Software as a Service (SaaS) Cloud application services, or Software as a Service, represent the largest cloud market and are still growingquickly. Most SaaS applications can be run directly from a web browser without any downloads or installations required, although some require plugins.

CONCLUSION:

The users of the education system can get lot of benefits. This results in enhancement of quality education. We have discussed how to adopt cloud computing in education with deployment guidelines. As the cloud computing technologyis growing day by day many new challenges are rising. Task scheduling is one among them. The IoT is turning into an inexorably universal registering administration which requires immense volumes of information stockpiling and handling capacities. The IoT has restricted abilities as far as preparing force and capacity, while there additionally exist considerable issues, for example, security, protection, execution, and dependability; As such, the joining of the Cloud into the IoT is extremely advantageous regarding conquering thesedifficulties

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