**BE Fourth Year Computer Engineering**

**PROJECT SYNOPSIS**

**ON**

**AWS COST REDUCTION SYSTEM**

**Submitted by**

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**Abstract :**

The infrastructure resources of cloud computing can be widely distributed in different phases according to the needs of different users. In the course of a cloud, implementation users have the flexibility to choose the EC2 instance type that provides the appropriate mix of resources for the target application and workload. The charges are applied on the basis of resource utilization, but it is very high as most of them not used in an optimal way.

The main purpose of the system is to create private cloud (test bed) by using (Amazon Account) along with monitoring critical resources like RAM, CPU, memory, bandwidth, partition information, running process information and utilization and swap usages etc. Also, recommend the price reduction strategy.

**Project Objectives:**

1. To monitor and analyze cost pattern on cloud accounts.
2. To analyze usage of the cloud services and give suggestions for future plans according to the user’s usage.
3. To give the suggestions about cost optimization and delivering cost containment.
4. To improve system performance and service quality.

**Related work: (Literature Survey/Existing work about the topic)**

**1. Literature survey:**

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| **Sr. No.** | **Paper Name** | **Publication + Year** | **Author** | **Concept** |
| **1** | Joint Optimization of Computational Cost and  Devices Energy for Task Offloading in  Multi-Tier Edge-Clouds | IEEE- 2019 | Elie El Haber , Tri Minh Nguyen , Chadi Assi. | The authors have made an attempt to propose a low-complexity  algorithm based on the successive convex approximation method  to solve and obtain a high-quality solution and also present an inflation-based algorithm for obtaining a polynomial-time and  efficient solution. |
| **2** | "Cost-Aware Cloud Proﬁling, Prediction, and Provisioning as a Service | ,PUBLISHED BY THE IEEE COMPUTER SOCIET, 2017. | Ryan Chard,Kyle Chard,Rich Wolski,Ravi Madduri,Bryan Ng and Kris Bubendorfer,IanFoster | The paper discussed Scalable Cost-Aware Cloud Infrastructure Management and Provisioning (SCRIMP) a service-based system that enables application developers and users to reliably outsource the task of provisioning cloud infrastructure. It shows that by understanding application requirements, predicting dynamic market conditions, and automatically provisioning infrastructure according to user-deﬁned policies and real-time conditions that our approaches can reduce costs by an order of magnitude when using commercial clouds while also improving execution performance and eﬃciency. |
| **3** | Transferable Knowledge for Low-cost Decision Making in Cloud Environments | 2020 IEEE | Faiza Samreen, Gordon S Blair, Yehia Elkhatib | This paper has introduced and approach and evaluate it through extensive experimentation involving three real world applications over two major public  cloud providers, namely Amazon and Google. Our evaluation shows that our novel two-mode TL scheme increases overall efficiency with a factor of 60% reduction in the time and cost of generating a new prediction model. |
| **4** | Monetary Cost Optimizations for Hosting  Workflow-as-a-Service in IaaS Clouds | 2016 IEEE | Amelie Chi Zhou, Bingsheng He and Cheng Liu | The attempt is done to develop a scheduling system called Dyna to minimize the expected monetary cost given the user-specified probabilistic deadline guarantees. Dyna includes an A⋆-based instance configuration method for performance dynamics, and a hybrid instance configuration refinement for using spot instances. |
| **5** | ENERGY-EFFICIENT AND COST-EFFECTIVE RESOURCE PROVISIONING FRAMEWORK FOR MAP REDUCE WORKLOADS USING DCC ALGORITHM | International Journal of Engineering Science Invention Research & Development; Vol. II Issue IX March 2016 | G.Anuprabavathi1, R.Rajmohan2, J.Nulyn Punitha3, D.Dinagaran4, S.G.Sandhya | The proposed Energy Efficient and Cost effective (EECE) resource management framework aim to minimize the infrastructure cost in the data center and energy conservation for cloud clusters. The system helps to reduce the cost for allocating the resources using the virtual clusters globally. The proposed cluster configuration is based on integer partitioning based approach which selects optimal nodes in a dynamic cloud environment to configure a cluster for running Map Reduce jobs. |

**2. Existing system:**

The current expectation of the cloud market is, customers of AWS will increase by up to 25% depending on how frequently customers start and stop new EC2 instances. But certainly, lots of big companies are investing billions of money in buying cloud infrastructure which is not used in an optimal/effective way. This system is very expensive and they services provided by these systems are less are not very imperative.

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**Guide                         Project Coordinator         Head**

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