Lab Activity 5

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I. How do the results of the study demonstrate the effectiveness of the Deep Reinforcement Learning (DRL) algorithm in improving energy consumption and reducing cloud costs compared to traditional approaches?(paper13)

Ans: The study told that, the new given DRL algorithm signifcantly reduce the energy consumption by up to 34 percent and effectively controls cloud cost in great manner , from the traditional approaches like Round Robin and Maximum Renewable Least things.[1]

II. What are the potential benefits and challenges associated with leveraging performance-equivalent resource configurations for power capping in data center operations?(paper13)

Ans: Benefits can be improved energy efficiency and reduced operating costs. However,the big challenges may be arise like ,in accurately configuring and managing the resources to maintain performance levels while meeting power sortage or loadsheding and other problems.[1]

III. What were the implications of the study?(paper14)

Ans: it highlights factors affecting VM startup times and share insights for optimizing cloud infrastructure use.[2]

IV. What is the main purpose or objective of the study, as outlined by the authors?(paper14)

Ans: The main goal is to analyze and compare VM startup times in AWS and GCP to improve cloud performance and resource management [2]

V. What were the limitations of previous studies and those of this study, according to the authors?(paper15)

Ans: The limitations are given directly to the paper that is, previous studies were primarily related to the lack of focus into impacts of language runtime (time complexity is high , memory problem, cold start times in AWS. This study,has limitations in terms of generalible and the need for validation in real-world scenarios and real life impacts are not sure .[3]

VI. What are some of the key findings or insights presented in the previous papers related to this work?(paper15)

Ans: like cold start challenges, suggesting solutions like middleware and library partitioning . They also observed that languages like Node.js and Python, express.js performed better in reducing cold start times. [3]

VII. Write a summary of the paper in your own words. (paper16)

Ans: summary will be a new tool called cloud property graph that helps understand cloud setups in a easy and better.It help find problem in cloud service by looking at the code and system.It finds problems in cloud services by checking the code and how the system operates,for that the maintainer will find easy to improve security and fix issue and scale without problems .[4]

VIII. What were the implications of the study?(paper16)

Ans:it proposes an enhanced cloud security approach and easy to adress the issues .[4]

IX. Identify potential areas for future research that the authors suggest or hint at in the paper.(paper17)

Ans: the paper is hard to understand for the complex maths and graphs. The paper suggest future research area extending the solution to consider additional optimization metrics,integrating it into decision making frameworks,and testing it in reallife for the exact result because it is a hypothesis yet .[5]

X. Briefly summarize the methodology described in the paper.(paper17)

Ans: The methodology proposing a programming solution and a optimization scheme to solve the problem of data aware placement of multiservice applications in Cloud setting.in the abstract its given that After assessing the performance of both approaches, we reconcile them into a methodology that combines the best of the two worlds by exploiting a declarative preprocessing step to boost the MILP solver while determining optimal solutions.After evaluating both approaches, we devised and prototyped an open-source Prolog tool, EDGEWISE, taking the bestof both methodologies.[5]

XI. Elaborate on any theoretical frameworks or conceptual models that guided the study's design and analysis?(paper18)

Ans: it was guided byframeworks related to time series forecasting using neural network models, specifically LSTM. [6]

XII. How were these models designed and optimized?(paper18)

Ans: The LSTM and Transformer models were first builded to suit time series forecasting tasks. Then, various configure were tested and adjusted to find the optimal settings ensuring they perform well in future data which will make the model more excurate and bias number low.[6]

XIII. How does the study propose to address the limitations of existing commercial systems in integrating blockchain technology with cloud systems?(paper19)

Ans: it proposes an migration cost scheduling approach, includes offline optimal and online dynamic schemes, for doing better add blockchain with cloud systems.[7]

XIV. How does the HPKS scheduling scheme aim to improve the performance of Kubernetes in managing PoS blockchain applications?(paper19)

Ans: HPKS is like organizing tasks in a smart way in Kubernetes. It use fewer workers and helps save money while making everything work better for certain types of computer programs.By using fewer worker nodes, it helps manage the resources needed for blockchain(Pos)[7]

References

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