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Cloud computing and application of software services

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Abstract : *Application software services are the foundation of science Cloud computing, but it always has to do with limited software Licenses and hardware resources. Therefore, software and hardware simultaneous allocation algorithms and strategies. In the field of science cloud computing. In this paper A new architecture for the Science Cloud Computing Campus Suggests that policy-based software and hardware can be supported Management and assignment. Then the model is created Resources, users, jobs, and applications. Besides, the software and the hardware simultaneous allocation algorithm SHA has been proposed. The SHA algorithm was used in NPU campus cloud computing Surroundings. It has various roles and ensures fairness among users. Same role Science Cloud computing is a new pattern of science Calculate. Application software services are the key to science Cloud computing environment. It always refers to something limited Software licenses and hardware resources. Novel in this post proposed campus cloud computing architecture. Based on simultaneous allocation of this architecture, software and hardware. The SHA algorithm is recommended. SHA algorithm was developed used in campus cloud computing environments. Recognize differences in QoS between different users. Ensuring roles and fairness among the same user's role.*

Keywords *- cloud computing, dynamic priority, scheduling algorithm, software service, Wrapping Tools*

I.INTRODUCTION

Cloud computing is the new research and collaboration scientific computational model. Keahey et al. recommendone of them the first cloud infrastructure for digital science, Science cloud. Software a service is at the top cloud computing platform, considered as an alternative Traditional software. With SAAS, the cloud operator provides end users with integrated services including hardware, software and development platform. The resource management is the key of application software service in science cloud computing. The optimization decomposition approach to solve cloud resource allocation for satisfying the cloud user`s needs and the profits of the cloud providers. A new resource management framework presented and it provides efficient green enhancements with scalable cloud computing architecture.

A resource self-organizing model for cloud computing is presented in reference. Abovementioned study is focused on hardware resource management. However, application software licenses are expensive and limited, so it is very important to study how to co-allocation the software and hardware resource. Efforts are being made to remedy the shortcomings of authority and traditional software management mode. Because for example, GenLM is a license management framework allowing independent software vendors to manage their licenses use in a distributed world. Djebbar provides a source enable high data in the cloud.

Although the above techniques were promised, now they are not supported by an application software company. Traditional software user mode is always the main mode. This article focuses on the main application techniques cloud computing science campus software service environment, in this situation, the software license and Hardware is centrally managed. All materials and Software resources are shared based on user roles and priorities. The hardware and software co-allocation algorithm is currently. Evaluation results prove that it can improve use of resources, respect service level based on role agreements, maintaining system load balancers, and more.

II.LITERATURE SURVEY

Wang Xiaoyu, et. al. [1] In cloud computing environments, most Transfer application software and data to the cloud data centres, network service providers, all Application and data management and maintenance Outsourceit to a cloud computing service provider to complete. Provides user convenience with cloud computing functionIt brings a lot of security issues. In this work, first We discussed the architecture of cloud computing

applications. For organizations and virtualization, I studied in the cloud. Computing, large-scale, dynamic and scalable, based Cloud Computing Security Issues, Summary the benefits and measures of safety and environmental protection; I propose a dynamic hash based on this article. Merkle tree-based authentication scheme. with the user Measure by character and control technology Parties, trust in the rights management system from now on. Focus on data encryption technology. Design and demo is a cloud storage security solution. In addition, taking into account the problems that exist in the information Safety standards, we present a combination cloud security standard and scoring system; improve the multi-dimensional cloud protection system and Performance.

Jonathan Hasenburg, et. al. [2] Fog computing is a new computing paradigm that leverages processing and storage capabilities located at the edge. Clouds and maybe in between. However, the runtime infrastructure It may be commonly used or may not exist yet. There are approaches that emulate an infrastructure test bench, but the main focus is usually Emulation of peripherals. Other approaches also mimic but do not take into account the infrastructure of the underlying network or cloud. Supports automated orchestration of experiments. This article proposes to evaluate the fog application on a testbed with an emulated infrastructure built in the cloud. Controlled by a predefined orchestration schedule. Developers have the freedom to design their infrastructure and tune its performance. Characteristics, application component management and experiment configuration. We also present a proof of concept. It can be used to study the impact of infrastructure changes and workload changes.

Ahmed Elmorshidy et.al.[3] Cloud computing is a prime fashion in the beyond decade in which people and companies achieve computing sources over the Internet. This paper critiques current literature approximately cloud computing in addition to empirical research conducted to focus on the advantages related to this notably new technology. The paper further introduces a brand-new version for cloud computing achievement primarily based totally at the well-mounted fashions of Information Systems (IS) Success of DeLone and McLean 2003 and the Technology Acceptance Model of Davis 1989. This new achievement version of cloud computing can manually people and companies on the way to get the fine of cloud computing and understand its advantages.

Yong Shi,et.al.[4],The cloud computing paradigm is compared to existing self-computing solutions through It abstracts computing from infrastructure. the main task All cloud providers have job scheduling, where jobs are Allocating to the computing resources of the cloud system broker. Includes Minmi, MaxMin and Sufferage, but each Depends on the performance trade-offs. Suffrage is provided as follows: Complementary new cloud job scheduling algorithm Performance of the classic Suffrage algorithm. modelling Algorithms using the open-source Clouds package and compared with previous products, you can get performance results. Suffrage - Demonstration of reduced execution time; Increased throughput and improved resource load balancing.

Abhinav Varma, [5] This paper focuses on security issues and challenges. With Cloud Computing, Focusing on Cloud Computing Service types and different types of delivery Their security challenges and threats. The advantage of It's clear that cloud computing has some issues that need to be persisted Prevents companies from adopting it. Problems involving accounts Control, data control, multi-tenancy, data separation, It needed to deal with more issues and created some Suggestions for mitigating and mitigating some of these issues Security management in cloud computing. this Proposals include biometrics with facial recognition Recognition and fingerprint scanning.

Harsh Gupta et. al [6]. In this paper, with a detailed analysis Classification of various security threats in cloud computing Environment with a simple classification method for intrusion detection system. Security attacks launched in a private cloud, Detection and prevention is done through the use of SNORT Port scans and TCP flood attacks are used for ids analysis Purpose. Cloud Computing was also the focus of academia Industry as an affordable and reliable means of achieving this Data transfer speed of the present era. National Institute of Science and Technology (NIST) defined cloud computing as the "cloud." Computing is a model for enabling ubiquitous and convenient on-demand network access to shared pools of configurable data.

Qinglin Qi et. al. [7] It greatly stimulates the development of the intelligent manufacturing industry. More and more in a smart manufacturing environment More devices will be connected to the internet and will be able to access large amounts of data at the same time Product life cycle phase. Cloud-based smart manufacturing paradigm enables new diversity Applications and services that analyse big data and enable large-scale manufacturing Cooperation. However, B. Network is unavailable, bandwidth is congested, Latency and others limit the availability of real-time, high-speed, low-latency

applications. fog Computing and Edge Computing brings cloud computing, storage, and networking capabilities. The edge that corresponds to the above problem. Based on cloud computing, fog computing, this study introduces computing, a hierarchical reference architecture for intelligent manufacturing. The Architecture is applied to digital twins at the manufacturing site and is expected to open up a bright outlook for new things.

Manuel Parra-Royon et. al [8] Cloud computing is rapidly Extensive alternatives to expensive on-premises infrastructure to provide general and especially computer services for data mining services. With that in mind, it's fair Useful for proposing an architecture for deployment A data mining service that enables the underlying service Omitted from the abstracted computing platform Cloud provider, technology, or to support the architecture and focus on services and services Flexible description, configuration, and delivery. therefore Purpose, platform for using data mining Service known as OC2DM: Open Cloud Computing Data Mining has been developed.

Zhiheng Zhong, et. al. [9] This white paper proposes containerized task collocations. (CTCL) Scheduler for efficient task collocation of heterogeneous workloads in the context of cloud-based clusters Management system. By using a commercial algorithm like Kean's ++ to characterize the workload Behavioral identification, CTCL manages to perform accurate tasks Determination of collocation with awareness of interference. the Experiments with Alibaba's workload trace show this. CTCL provides significant improvements in resource utilization Reduced rescheduling rates compared to the original trace and Kubernetes scheduling guidelines. Overall, we the findings can be applied to large-scale cluster management Optimize resource efficiency, cost savings, and QoS safety.

Ahmed Elmorshidy, et. al. [10] It presents a new model for the success of DeLone and McLean's 2003 Information Systems (IS) and the success of cloud computing based on the established model of Davis' 1989 technology acceptance model. This new model of cloud computing success helps individuals and organizations get the most out of cloud computing and realize its benefits.

Oluwasegun Adedugbe, et. al. [11] Semantic technology should make things easier Web content context awareness, allowing machines to do so Understand and process. But this was met There are several challenges, such as B. Different properties of existence Lack of scalability compared to solutions and web scaling. From a holistic perspective on semantic annotation of web content This white paper focuses on the use of cloud computing for this. Theme.

Ankul Sharma, et. al. [12] The main goal of this application is to bridge the gap between end users (people) and authorities to achieve a clean environment. This document describes both the system and hardware requirements for this application. It also describes the features of individual components and the interactions between them.

III.ARCHITECTURE

Application software maintenance systems follow a hierarchical structure.
The hardware resource tier contains all the different hardware resources included in this tier, such as clusters, workstations, and storage systems. The system virtualization layer is responsible for defining application requirements, configuring the production environment, and deploying and running virtual appliances.
The application software service layer provides three functions: software as a web service, information management, and resource allocation optimization.

Application software is a web service that you provide to users, wrapped in a pattern-based fashion for your application. Information management includes dynamic information about hardware resources, software resources, and cloud users. Targets for optimization include improving quality of service, balancing system load, and increasing resource usage. The application layer provides a variety of ways to interact with users, such as graphical interfaces, commands, and APIs. Software tools and development platforms are also available to users at this level.

IV.METHODOLOGY

Software services is mainly combination of software and hardware. Software services has software licences, hardware computing ability. Hardware resource is the resource that mainly provide hardware support for application software service. Software resource is the resource mainly provide software license and application program for software service. Legacy application software and APIs are wrapped in application templates.

Automated service packaging can be divided into 4 steps. 1) Define application templates by collecting descriptive data and information about legacy software systems. 2) Template elements are replaced with values for some parameters including descriptive data, callable interfaces, service endpoints, etc. 3) The service code implemented based on the template is generated and automatically compiled in the compiler unit to generate the .class file of the service endpoint interface and service class. 4) The service implementation class and service deployment descriptor are archived in Aar or war format. Application soft services are scheduled and deployed according to user roles. The higher a user's role, the higher the user's default priority. The higher the latency, the higher the priority. This assigns a quota to each user role. Users cannot use application software services when their quota is reached. Scheduling software services is a multi-entity issue, and entities include meeting SLAs between users and service providers, meeting workload resource requirements, maintaining cloud computing load balancing, and increasing hardware and software resource utilization. This task optimization is NP-hard. It can be solved using a heuristic algorithm. In this paper, we propose the SHA algorithm based on the above information model.

V.FIGURES AND TABLES

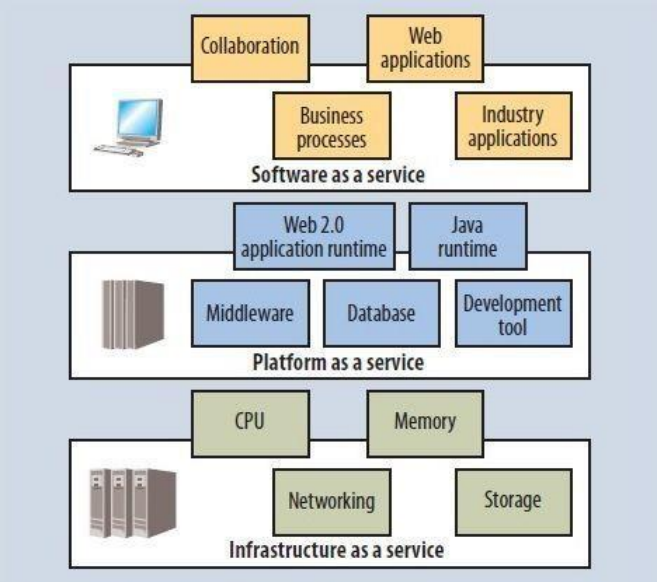

Fig.1 Cloud computing architecture

VI.CONCLUSION

This article proposes a new campus cloud computing architecture. Based on this architecture, a hardware-software co-allocation algorithm for SHA was proposed. SHA was developed by and is used in campus cloud computingenvironments. Scientific cloud computing is a new model of scientific computing. Application software services are at the heart of the scientific cloud computing environment. This is always associated with limited software and hardware resource licenses, this can improve software utilization, understand QoS differences between userswith different roles, and ensure fairness between users with the same roles.

REFERENCES

[1] Wang Xiaoyu, Gao Zhengming "Research and Development of Data Security Multidimensional Protection System in Cloud Computing Environment" International Conference on Advance in Ambient Computing and Intelligence,2020.

[2] Jonathan Hasenburg, Martin Grambow, and David Bermbach "MockFog 2.0: Automated Execution of Fog Application Experiments in the Cloud" IEEE TRANSACTIONS ON CLOUD COMPUTING,2021.

[3] Ahmed Elmorshidy,"Cloud Computing: A New Success Model", 7th International Conference on Future Internet of Things and Cloud Workshops,2019.

[4] Yong Shi, Kun Suo, Jameson Hodge, Divya Pramasani Mohandoss and Steven Kemp" Towards Optimizing Task Scheduling Process in Cloud Environment",IEEE,2021.

[5] Abhinav Varma,"Security threats in cloud computing", International Conference on Computing, Communication & Automation,2015.

[6] Harsh Gupta,"A Semantic Approach to Cloud Security and Compliance",IEEE 8th International Conference on Cloud Computing,2015.

[7] Qinglin Qi,"A Smart Manufacturing Service System Based on Edge Computing, Fog Computing, and Cloud Computing",IEEE Access (Volume: 7), 2019.

[8] Manuel parra-Rayor,"Improving IoT Services Using a Hybrid Fog-Cloud Offloading",IEEE Access (Volume: 9),IEEE Acccess.2019.

[9] Zhiheng Zhong,"Heterogeneous Task Co-location in Containerized Cloud Computing Environments", IEEE 23rd International Symposium on Real-Time Distributed Computing (ISORC),2020.

[10] Ahmed Elmorshidy,"Cloud Computing: A New Success Model",7th International Conference on Future Internet of Things and Cloud Workshops (FiCloudW),2020

[11] Oluwasegun Adedugbe,"A Cloud Computing Capability Model for Large-Scale Semantic Annotation",13th International Conference on Developments in eSystems Engineering (DeSE),2021.

[12] Ankul Sharma,"Mission Swachhta : Mobile application based on Mobile Cloud Computing",10th International Conference on Cloud Computing, Data Science & Engineering (Confluence),2020.