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A SURVEY ON DYNAMIC AND PRIORITY BASED SERVER ALLOCATION IN CLOUD COMPUTING

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Abstract - Cloud Computing is a novel paradigm for the provision of computing infrastructure, which aims to shift the location of the computing infrastructure to the network in order to reduce the costs of management and maintenance of hardware and software resources. Cloud computing has a service-oriented architecture in which services are broadly divided into three categories: Infrastructure-as-a- Service (IaaS), which includes equipment such as hardware, Storage, servers, and networking components are made accessible over the Internet; Platform-as-a-Service (PaaS), which includes hardware and software computing platforms such as virtualized servers, operating systems, and the like; and Software-as-a-Service (SaaS), which includes software applications and other hosted services.

Keywords: Serverallocation,Cloudcomputing,Saas.

INTRODUCTION:

To obtain accurate estimation of the complete probabilitydistribution of the request response time and other important performance indicators. The model allows cloud operators to determine the relationship between the number of servers and input buffer size, on one side, and the performance indicators such as mean number of tasks in the system, blocking probability, and

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probability that a task will obtain immediate service, on the other.

Allocating a multiple resource dynamically using virtualization technology and Green computing based on customer's demand in single cloud Overload Avoidance and Green Computing are the two main focusing points in the existing system. Overload Avoidance: The capacity of the PM(Physical Machines) should be sufficient to satisfy the resources needs of all VMs(Virtual Machines) running on it.The PM is overloaded and can lead to degraded performance of its VMs. Green Computing:The number of PMs used should be minimized as long as they can still satisfy the needs of all VMs. Traditional data mining techniques usually require entire data set to be present.

Random access (or multiple access) to the data, Impractical to store the whole data, Simple calculation per data due to time and space constraints, Consist of 3PM and 5VM in a Single cloud , All VM's are Configured with 12MB of RAM.

a) RELATED WORK:

Server-Storage Virtualization: Integration and Load Balancing In Data Centre

I describe the design of an *agile* data centre with integrated server and storage virtualization technologies. Such data centres form a key building blockfor new cloud computing architectures. I also show how to leverage this integrated agility for non-disruptive load balancing in data centres across multiple resource layers - servers, switches, and storage. We propose a novel load balancing algorithm called Vector Dot for handling the hierarchical and multi-dimensional resource constraints in such systems. The algorithm, inspired by the successful Toyoda method for multi-dimensional knapsacks, is the first of its kind. I evaluate our system on a range of synthetic and real data centre test beds comprising of VMware ESX servers, IBM SAN Volume Controller, Cisco and Brocade switches. Experiment sunder varied conditions demonstrate the end-to-end validity of our system and the

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ability of Vector Dot to efficiently remove overloads on server, switch and storage nodes.

Energy-Aware Server Provisioning In Large Scale Video-On-Demand System

Video-on-demand has a popular internet service in recent years. But energy consumption is becoming a critical issue as these services scale up. In this paper, I propose an energy-aware server provisioning strategy which dynamically turns on/off servers in order to adaptively tailor active servers to dynamic user load. We initiate a stochastic model which characterizes unique properties such as bandwidth and power consumption of video-on-demand systems. Ithen employ a measurement-based adaptive online user load predictor and apply large deviation theory to our model to develop global strategy. Simulation confirms that our strategy can lead a significant amount of energy savings with little or no user experience degradation.

Improving Map Reduce Performance In Heterogeneous Network Environments And Resource Utilization

Map Reduce is a widely-used model for data parallel applications. We found its resource utilization is inefficient when there are not enough tasks to fill all task slots as the resources "reserved" for idle slots are just wasted. We propose resource stealing which enables running tasks to steal the unutilized resources and return them when new tasks are assigned. It exploits the opportunistic use of the otherwise wasted resources to improve overall resource utilization and reduce job execution time. Besides, our practical use of Hadoop shows the current mechanism adopted to trigger speculative execution creates many unnecessary speculative tasks that are killed soon after creation as the original tasks complete earlier. To alleviate the issue, we propose BenefitAware Speculative Execution which predicts the benefit of running new speculative tasks and greatly eliminates unnecessary runs. Finally, Map Reduce is mainly optimized for homogeneous environments and its inefficiency in heterogeneous network environments has been observed in our experiments. We investigate network heterogeneity aware scheduling of both map and reduce tasks.

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Overall, our goal is to enhance Hadoop to cope with significant network heterogeneity and improve resource utilization.

Service Performance and Analysis In Cloud Computing

Cloud computing is a new computing paradigm in which information and computer power can be accessed from a Web browser by customers. Understanding the characteristics of computer service performance has become critical for service applications in cloud computing. For the commercial success of this new computing paradigm, the ability to deliver Quality of Services (QoS) guaranteed a service is crucial. In this paper, we present an approach for studying computer service performance in cloud computing.

A Break inthe Clouds: Towards A Cloud Definition

This paper discusses the concept of Cloud Computing to achieve a complete definition of what a Cloud is, using the main characteristics typically associated with this paradigm in the literature. More than 20 definitions have been studied allowing for the extraction of a consensus definition as well as a minimum definition containing the essential characteristics. This paper pays much attention to the Grid paradigm, as it is often confused with Cloud technologies. We also de- scribe the relationships and distinctions between the Grid and Cloud approaches.

Cloud Computing: A Perspective Study

The Cloud computing emerges as a new computing paradigm which aims to provide reliable, customized and QoS guaranteed dynamic computing environments for end-users. In this paper, we study the Cloud computing paradigm from various aspects, such as definitions, distinct features, and enabling technologies. This paper brings an introduction review on the Cloud computing and provide the state-of-the-art of Cloud computing technologies.

Megastore: Providing Scalable, Highly Available Storage for Interactive Services

Megastore is a storage system developed to meet the requirements of today's interactive online services. Megastore blends the scalability of a NoSQL data store with the convenience of a

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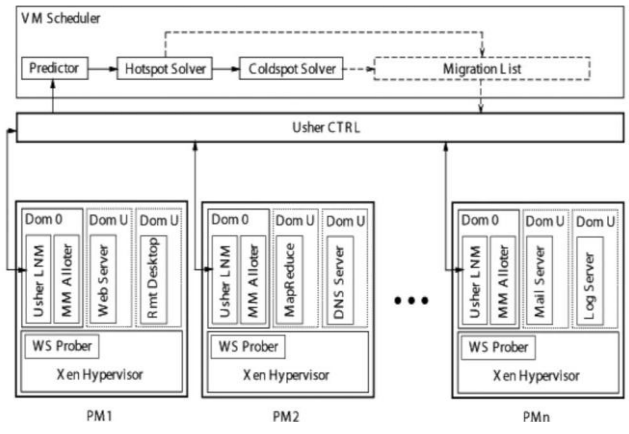
traditional RDBMS in a novel way, and provides both strong consistency guarantees and high availability. We provide fully serializable ACID semantics within ne-grained partitions of data. This partitioning allows us to synchronously replicate each write across a wide area net- work with reasonable latency and support seamless failover between data centres. This paper describes Megastore's semantics and replication algorithm. It also describes our experience supporting a wide range of Google production services built with Megastore.

b) System Model:



Virtual Machine Monitors (VMM) like Xenprovide a mechanism for mapping Virtual Machines(VMs) to a Physical Resources or Physical Machine(PM). Each node runs an Usher Local Node Manager (LNM) on domain 0 which collects the usage statistics of resources for each VM on that Node. The CPU and network usage can be calculated by monitoring the scheduling events in Xen. The Memory Usage within a VM is not visible.

a) DYNAMIC AND PRIORITY BASED SERVER ALLOCATION MODULE

Multi Cloud Configuration

In this module, I assign the individual IP address for each cloud server which is used to client access. Cloud node formation is important factor. It should be depend on user requirement. For multi cloud Environment we are taking Amazon, Azure.

Resource Allocation

Common cloud server, act as Resource Allocator. It will provide dynamic resource allocation within the multi cloud environment. Resources will be allocated based on cluster results which cloud have high performance.

Cloud Execution and Result Details

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After getting job from common cloud server, that particular cloud will perform the task of user then result will be forward to user. User will be get the final result for his request and its processing timings with response cloud name.

Green Computing

Many efforts have been made to curtail energy consumption. Hardware based approaches include novel thermal design for lower cooling power, or adopting power-proportional and low-power hardware. Dynamic Voltage and Frequency Scaling (DVFS) to adjust CPU power according to its load in data centres. Our work belongs to the category of pure-software low-cost Solutions. It requires that the desktop is virtualized with shared storage. Green computing ensures end user satisfaction, regulatory compliance, telecommuting, virtualization of server resources.

b) CONCLUSION:

We have presented the design, implementation, and evaluation of a resource management system for cloud computing services our system multiplexes virtual to physical resources adaptively based on the changing demand. We present a system that uses virtualization technology to allocate data centre resources dynamically based on application demands and support green computing by optimizing the number of servers in use. From the work done, we can conclude that the simulation process can be improved by modifying or adding new strategies for traffic routing, load balancing etc. to make researchers and developers able to do prediction of real implementation of cloud, easily. We develop a set of heuristics that prevent overload in the system effectively while saving energy used. Trace driven simulation and experiment results demonstrate that our algorithm achieves good performance.

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