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Enhancement of Resource power Utilization And Reducing System Down Time During Virtual Machine Migration

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Abstract— — The Cloud Computing is enabling innovative and on demand services by allowing pay per use, location independency and device independency. In process of migration VM moves one physical machine to another. In live migration, the VMs are migrated without stopping their working. In offline migration, process is stopped till the VM can continue on target machine. In this we first present a live migration performance strategy. Live Task of migration and the needed properties of VM for monitoring the resources and optimal the fitness function evaluation. We Will reduce the operation cost, down time and also increases the resource utilization than migrate VM one server to another server base checking of prediction capacity. To solve the problem of the overload of virtual machine, virtual machine migration techniques used which maintain the load balance on the Physical Machine which is undergo unnecessary problems caused during the time of overload and also optimize the resource utilization and total down time

Keywords: ***Recommendation, collaborative filtering,similarity fusion, user rating type***

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I. INTRODUCTION

Cloud computing is a model for enabling ubiquitous, on-demand access to shared pool of configurable computing resources (e.g., computer networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Cloud computing is computing services provided over the internet, whereby shared resources, software and information are provided to computers and other devices on demand. A pool of abstracted, highly scalable, and managed compute infrastructure capable of hosting end customer applications and billed by Consumption[2].

II. RELATED WORKS

Cloud computing is a popular trend in current computing, which people can easy access to computational resources, what's more, its very cheap. There are certain services and models working behind the scene making the cloud computing feasible and accessible to end users. Following are the working models for cloud computing: • Deployment Models • Service Models Deployment models define the type of access to the cloud, i.e., how the cloud is located? Cloud can have any of the four types of access: Public, Private, Hybrid, and Community. A cloud is called a "public cloud" when the services are rendered over a network that is open for public use. Private cloud is cloud infrastructure operated solely for a single organization, whether managed internally or by a third-party, and hosted either internally or externally. Hybrid cloud is a composition of two or more clouds (private, community or public) that remain distinct entities but are bound together, offering the benefits of multiple deployment models. A community cloud in computing is a collaborative effort in which infrastructure is shared between several organizations from a specific community with common concerns (security, compliance, jurisdiction, etc.), whether managed internally or by a third-party and hosted internally or externally. Cloud computing is based on service models. These are categorized into three basic service models which are Software-as-a-Service (SaaS), Platform-as-aService (PaaS), Infrastructure-as–a-Service (IaaS)

Virtualization In Cloud Computing Virtualization is the "creation of a virtual (rather than actual) version of something, such as a server, a desktop, a storage device, an operating system or network resources". In other words, Virtualization is a technique, which allows to share a single physical instance of a resource or an application among multiple customers and organizations. It does by assigning a logical name to a physical storage and providing a pointer to that physical resource when demanded[7]. III. VIRTUAL MACHINE MIGRATION VMs refer to one instance of an operating system along with one or more applications running in an isolated partition within the computer. There

will be multiple VMs running on top of a single physical machine. When one physical host gets overloaded, it may be required to dynamically transfer certain amount of its load to another machine with minimal interruption to the users. This process of moving a VM from one physical host to an other is termed as migration. In the past, to move a VM between two physical hosts, it was necessary to shutdown the VM, allocate the needed resources to the new physical host, move the VM files and start the VM in the new host.VM is a software or operating system, which operate like a separate system. The migration is termed as the process of moving a VM from one physical machine (PM) to another physical machine (PM). When one physical machine gets overloaded, it may be required to transfer the data in one to another machine[1]. The performance of the VM migration is calculated by two metrics • Total migration time: the time from the beginning of pre-migration work to the end of all migration work[1]. • Down time: the time during the VM service is unavailable.[1] Types Of VM Migration 1.Cold Or Non-live Migration In this type of migration, the VMs are migrated when they are not working. 2.Hot Or Live Migration : In this type of migration, the VMs are migrated without stopping their working. Live VM Migration: Live migration migrate running VM from one server to another. It reduce the system downtime compare to cold VM migration. Live migration is an extremely powerful tool for cluster and cloud administrator. An administrator can migrate OS instances with application so that the machine can be freed for maintenance. Similarly, to improve manageability, OS instances may be rearranged across machines to relieve the load on overloaded hosts to perform the live migration of a VM, its runtime state must be transferred from the source to the destination while VM still running. Live migration is a technology used for load balancing and optimization of VM deployment in data Centers. With the help of live migration, VMs can be transferred to another node without shutting down. Live migration is classified into two steps (i) Control is switched to the destination. (ii) Data Transferring (memory/disk) to the destination. Precopy- In this, first Memory is transferred and after this execution is transferred. The pre-copy method is used to transfer the memory to the destination node over a number of iterations. Post-copy- In this, First execution is transferred and after this, memory is transferred. Unlike pre-copy, in post copy the Virtual CPU and devices on the destination node is transfer in the first step and starts the execution in second step. Techniques Of VM Migration 1.Pre copy migration In pre-copy approach pages of memory are iteratively copied from the source machine to the destination host, all without ever stopping the execution of the VM being migrated[1]. Warm-up phase In pre-copy memory migration, the Hypervisor typically copies all the memory pages from source to destination while the VM is still running on the source. Stop-and-copy phase After the warm-up phase, the VM will be stopped on the original host, the remaining dirty pages will be copied to the destination, and the VM will be resumed on the destination host. 2 . Post copy migration In post-copy approach each memory page is transferred only once, which is the main benefit over

In comparator circuits to reduce power consumption the Power gating technique is proposed. In this technique, circuit operates in sleep mode by switching off the current in circuit. Power gating has the benefit that is it measures current (Idd) in the quiescent state. In this paper the different architectures of double tail comparator is presented. The proposed comparator is designed by using power gating technique. Using this technique power and delay is reduced.

III. BACKGROUND OF STUDY

The circuit diagram of the single tail comparator shown in Fig 3. The single tail comparator circuit operation is given below. When CLK=0 the circuit works in reset phase so the Mtail NMOS transistor is in off position and the reset transistors M7 and M8 PMOS transistors are in on position now the output at OUTN and OUTP will be VDD. When CLK= VDD , Mtail NMOS transistor is in ON position and M7 and M8 PMOS transistors are in OFF position now the OUTN and OUTP urrent to keep the differential amplifiers in weak condition so a large current required enabling fast regeneration in the circuit.

IV. METHODOLOGY

This structure has the power consumption 20.49 nW and circuit delay is 38.83 ps. Circuit diagram of the conventional double tail comparator shown in Fig 4. This structure has low static power consumption and operates at lower supply voltages compare to the single tail comparator. The working of this comparator is given below.

When CLK=0 the to discharge with different charging rates. Due to these

V. RESULTS AND DISCUSSIONS

All the circuits are designed by using Cadence Virtuoso tool and simulated in 90 nm CMOS technology with the supply voltage of 0.6V. The output waveform of comparator shown in Fig 8. Power waveform of the single tail comparator is shown in Fig 9.

VI. CONCLUSION

Comparison of three double tail comparator circuits being done. All the circuits simulated by using cadence design tools 90nm

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