II. Virtualization Method

Normally in virtualisation there are three main types of virtualization which are client virtualization, storage virtualization and server virtualization [4].Storage virtualizat ion: Is the process of arranging different physical storage from multiple network storage in to single form. The technology that refers to identify available storage and capacity form different physical device in to a pool of storage device which can be used as a virtual environment [5].Server virtualization: Is the processing of making a physical server in to the virtual server. The server administers uses a software application that divided the server in multiple isolated virtual servers and that also acts as a physical server. Desktop virtualization's the process of isolating a logical operating system in to client that can access it. There are many concepts of desktop virtualization which are dividing into different categories according to user demand [6]. Hosted virtualization: In this scenario, the virtual machine is completely intellection of a real physical machine. All the feature of a real physical machine like memory, operating system and storage are also in hosted virtualization. It can be achieved by the configuration of the real system [7]. Para virtualization: The guest operating system does not run fully on the virtual machine. It does not work fully and it gets help from hypervisor or with the VMM for working. It just improves the functionality of the operating system. Desktop virtualization: Can provide remote access through desktop and the user can access from anywhere. It does not need any compactable system except just internet connection [8]. Memory virtualization: In memory virtualization technique whenever the memory required for the system processing and actual memory is less than the virtualization process is used for memory. Data virtualization: In data virtualization, the collection of data for different location and the user can access them easily. It provides front and an ends application method [9].figure 2 shows different layer and type of virtualization.

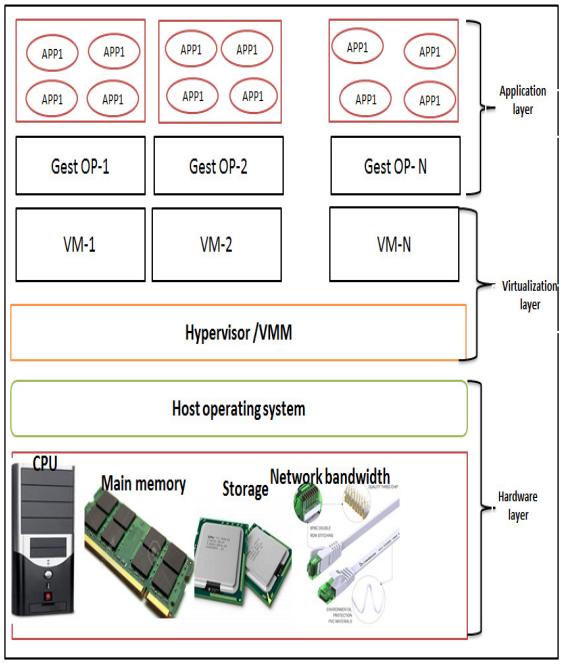

Fig.2 Type of virtualization

III. Virtual Machine

Virtual machine: A single physical resource can appear as multiple resources this process can be achieved with the help of a virtual machine. It contains matched environment for a physical computer system its run an operating system and applications. It can be implemented through with the help of software, framework, and hardware. In some environment different virtual machine are running in the different operating system in one system they are monitored by the hypervisor. Figure 3 shows the staring of the virtual machine [10].

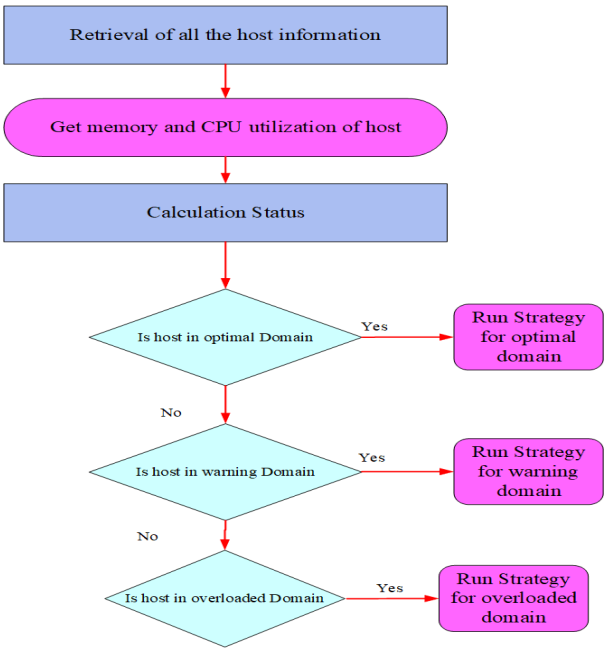

Fig.3: Starting of VM

Virtual machine normally replaces the physical resource with their ability and operating system that make the same environment as hardware. The virtual machine provides a better security model as compared with the normal system. The virtual machine is the processes of software implementations of the physical machine and it has its own operating system. The virtual machine is also known as a guest machine [11]. A hypervisor also called virtual machine monitor (VMM) and it software program that runs on the actual machine and monitors the execution of the gust operating system on the virtual machine. Normally there are two type of hypervisor native and hosted. In native, the virtual machine runs directly on the host machine and share out resources with other. Hosted hypervisor run inside in operating system and support virtual machine individually. Host machine the physical machine in which virtual machine is running is known as the host machine. Guest machine the virtual machine running in the guest machine is known as a guest machine [12].

IV. Virtual Machine Migrations

It is one of the main technology of modern VM with the help of this technology an administration can movie OS from one physical machine to another physical machine without affecting the system. It provides online maintains, load balancing and optimization. It classified in to two types

which are control and data. Control with the help of control switch to the destinations. Data transfer or memory in to destination [13].Live migration model is work in the VMM layer and it consists of two main components which are the live migration model and virtual block device. In live migration, the model is responsible for saving the current state of the virtual machine in to remote storage device. Virtual black it saves the disk state to the remote storage. When cloud computing application request for memory lives virtual machine record the memory page to remote storage. Due to multiple iteration the record memory change in to new record and save in to the remote device. Normally there are two main task of virtual black these are running state backup and second is virtual disk backup[14].Figure 4 shows the virtual machine migrations system load balancing system.

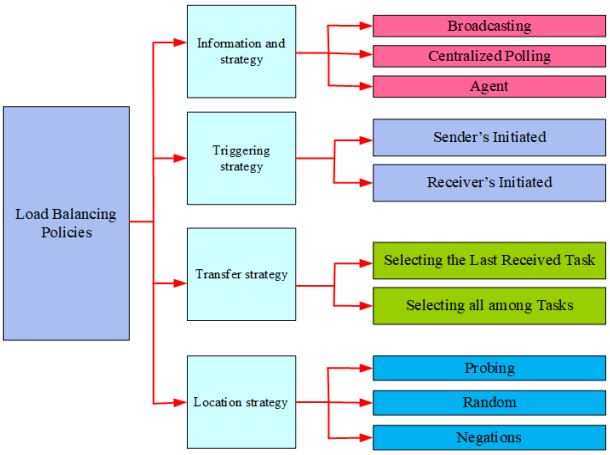

Fig 4: VM migrations for load balancing system

Virtual machine recently revived a good concept as a layer between the physical and logical component and executive computing instruction. With the help of the software virtual machine is possible. Monitoring purpose of virtual machine hypervisor used. Some of the important components about the virtual machine are 1 hypervisor software 2 virtual machine disk image 3 virtual machine configurations which the help of theses component virtual machine executes[15]. The hypervisor read the configure file and make hardware environment, the configure file also point out disk image or make hard disk drive in a virtual machine environment. Hypervisor software is static it needs one time for installations, used for multiple virtual machines. Virtual machine disk image is unique for each virtual machine it few lines. The virtual machine image copy form one physical to the logical environment is a difficult task. Host machine is actually the real machines which have the resources like CPU network connectivity and other resources [16].

V. Simulation Method

For simulations purpose, we used cloudsim 3.3 with the help of cloudsim we built a data centre and datacenter consist of the Broker, Cloudlet, Cloud information services. Figure 5 shows the datacenter structure.

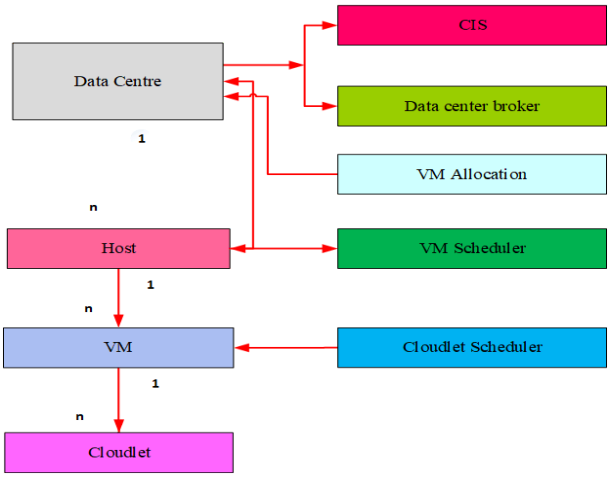

Fig 5: datacenter structure

Cloudlet is a small-scale datacenter or cluster of computers designed to quickly provide cloud computing services to mobile devices, such as smart phones, tablets, and wearable devices, within close geographical proximity. This is intended to eliminate the wide area network (WAN). The broker is class which submits a task to the datacenter. Main roles of datacenter characteristic for host hardware configuration RM PE bandwidth virtuazations make VM and another storage system. Cloud information service which stores host registration VM of the datacenter. After all process, a virtual machine design in each zone .Different zone is build figure 6 shows the different zone.

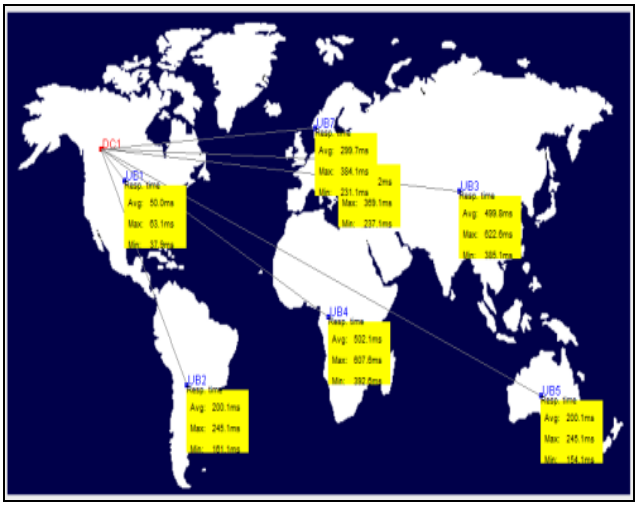

Fig 6: Different zone

After the selection of zone now we start the main configuration. In the main configuration, we take a region, user request, data size, and user. After all the activity we select data center and number of the virtual machine.In the experiment purpose, we make two different senior from one we take 20 VM machine in each data center and second we take 80 VM machine at each data center figure 7,8 show the number of the virtual machine at each data Centre.

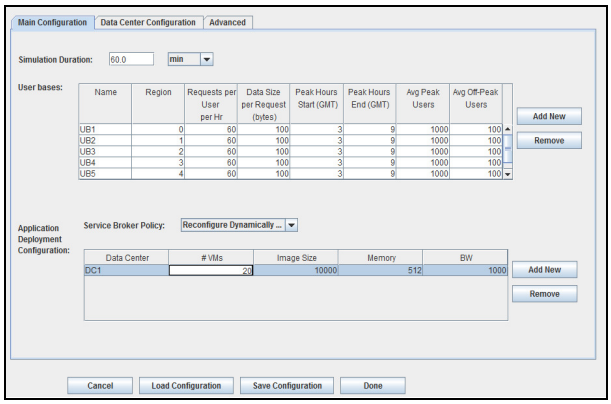

Fig. 7 number of VM

In figure 7 shows the selections of virtual machine at each zone.

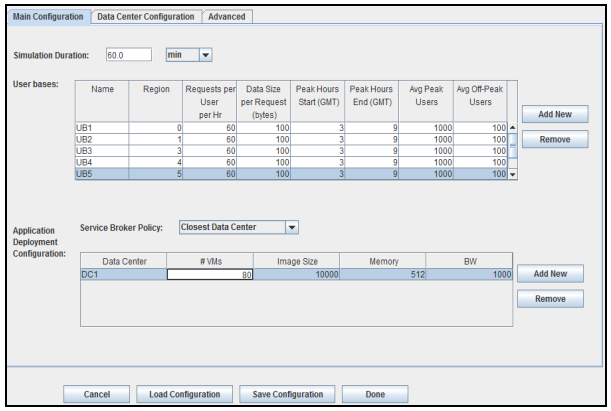

Fig 8: VM selections senior

Figure 8 shows the selection of virtual machine form different zone.

VI. Results And Discussion

After the simulation process, we get the following result. In figure 9 and 10 shows the average time of each data center Mix and Max time of execution of each job for the source to the destination.

Overall Response Time Summary

	Avg (ms)	Min (ms)	Max (ms)
Overall response time:	311.12	37.63	7595.01
Data Center processing time:	2.69	0.02	7270.01

Response Time by Region

Userbase	Avg (ms)	Min (ms)	Max (ms)
UB1	50.87	37.63	61.66
UB2	199.82	154.66	239.58
UB3	299.90	233.09	366.16
UB4	501.84	390.17	602.61
UB5	500.52	375.72	600.67
UB6	311.88	233.29	7595.01

Fig 9: Result of 20 VM

In figure 9 shows the execution time of 20VM in each data Centre along with Mix and Min.According to the result Avg time of overall response time of 80 virtual machine is 311.12 and best case the time will be 7595.01 and worst case is equal to 7270.01.

Overall Response Time Summary

	Avg (ms)	Min (ms)	Max (ms)
Overall response time:	302.29	225.14	7503.02
Data Center processing time:	2.63	0.02	7178.01

Response Time by Region

Userbase	Avg (ms)	Min (ms)	Max (ms)
UB1	300.97	225.14	364.88
UB2	299.49	231.66	362.30
UB3	299.53	233.09	366.16
UB4	301.33	234.17	361.63
UB5	300.69	225.72	364.68
UB6	311.73	233.29	7503.02

Fig 10: Result of 80 VM

Figure 10 shows the executions time of 80 VM in each data Centre along with the mix and min time execution. According to the result Avg time is 302.29, Best time is equal to 225.14 and worst time is equal to 7503.02.

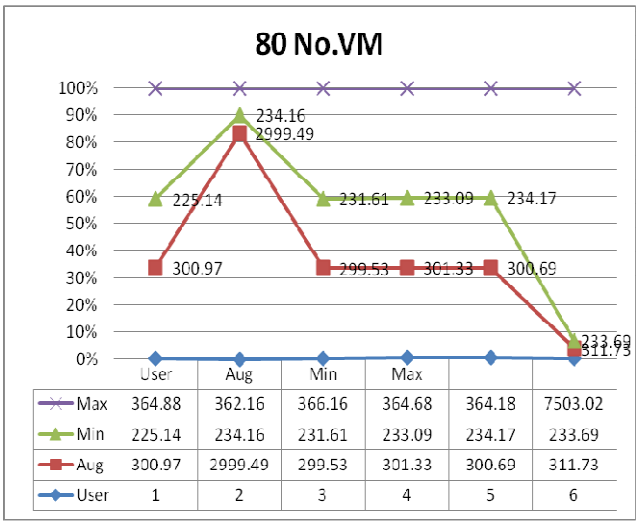

Fig.11: Over all processing

Figure 11 shows the overall processing of data center according to the over all of the data centers a greater number of virtual machine have a good result as compared to a low number of the virtual machine.

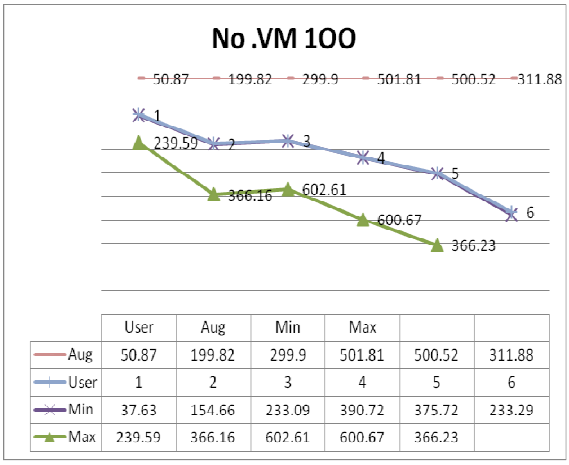

Fig 12: Data processing time

Figure 12 shows the data processing of the data center according to the result if the number of the virtual machines is grater then the data processing time is good as compared to the less number of the virtual machine.

VII. CONCLUSION

In this paper we present the important of virtual machine in different data centre. According to the result the overall processing times of different data centre good when the number of virtual machine are more. It improves the performance of data centre, as well as the user access and control of management system.

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