

Cloud Based Games

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Abstract - We know that now-a-days cloud gaming is having more demand in the market. But the fact is performance of the database is not upto the mark and it comprise low security. The main objective of us is to improve the performance of database and also to provide more security to it. In order to do that we are going to introduce hibernate concept. Generally the each instruction given by the user is considered as a single hit by the database. But by using this hibernate concept a session will be provided to user and all the instructions given in that session is considered as a single hit. By doing this the performance of the database is enhanced, and also we are going to provide more security by creating an object in between user and server.

Keywords – Database Performance, Cloud gaming, Object Creation, Hibernate

Introduction – Gaming is the thing which is loved by many people, now in the present generation gaming technology has been improved very much. One of those gaming technologies which is having more

demand at present is cloud gaming system. The reason for its demand is an user can play any game by this cloud gaming system if he possess good internet connection. The prime benefit of this cloud gaming is there is no need of installing any game in our system, it can be played online if we have data connectivity. So that the memory and the space of system can be saved. That is why many of the gamers are opting for this cloud gaming technology. The main concept of this cloud gaming is user level virtualization technology, which converts the game into frames per second. Frames per second is nothing but the game which is played with the help of hardware is converted into a video. By this, some high end games can be played even in systems which possess low requirements in it.

User level virtualization technology is deployed in cloud based gaming security system which concentrates on scheduling the process. The gaming acknowledgement and cost effective scheduling of games FPS which allots required resources and alleviates the assumption between gaming

There exists several popular cloud gaming and efficient conveniences provided to gamers and the game creators along with the game service providers. The access to these games anywhere anytime is facilitated by the cloud gaming database software. The games can be hired or acquired corresponding to the concern of gamers. It does not need frequent upgrading of hardware or resource to retain the special features such as crossing over client systems during the play and it can visualize the progressing tournaments and share the games between co-players in the middle of the game.

Many facilities over cloud environment will be available for the developers of games by which they can focus on any individual platform which can diminish the expense of shifting and examining. They can ignore the intermediaries and can acquire highest profits by their own. They also can have contact and exposure with more gamers thus have better interaction than any other means. As the game will never be downloaded anywhere for playing there is no possibility of piracy gaming content.

These cloud gaming service providers can acquire novel models of business that can necessitate previously existing cloud services. This can show the efficiency of novel and distant accomplishment of cloud gaming applications that intend the meticulous attributes on various computing and game resources network. To yield excellent gaming knowledge to gamers cloud computing assist in comfortable software for games to be executed on efficient servers in data centers. The benefication of gaming instances and streams to players in the actual lively internet use easily

accessible implementation of software in miscellaneous devices which can collaborate with the lively games.

Related Work - The graphics streaming will be used as an archetype for using commands and data to contribute local clients, this is given by Xiaofei Liao et al. This concept is called as live rendering of cloud games in compressed stream of graphics. It is a paradigm which consumes more bandwidth according to the amount of graphical commands and geometrical calculations of data. The solution for deployment of suitable bandwidth optimization techniques which includes frame compression and cache formation of compresses stream of graphics is the dynamic conception of open source games. This type of live rendering approach can diminish the usage of bandwidth comparing with coarse streaming of graphics. It does not have any noticeable variations in the quality of video which has less reaction towards the delay. Relatively streaming in video approach live rendering of decreased traffic has improvised quality of video with consequential delay enabling the concurrent server.

In live rendering of cloud based games the graphics streaming will deliver the reduced bandwidth problem. This process is also known as compresses graphics streaming which has significant compression methods with inter-frame, intra-frame and caching techniques helps in traffic reduction that manipulates over the essential repetition of geometric models and graphical commands. The accumulated data communication has competent concealing of variations in quality of videos and little delay reacts to the correlated raw streams of graphics.

The delay rate of distortion has optimized cloud game service with hybrid streams with high bandwidth streams, it is derived by Xiaoming et al. The original rate has minimal optimization between streams of video and graphics stream and overall adaptation of bandwidth that responds to delay the attributes. In this concept they propose the exclusion of primary delay in buffering correlates with conventional streaming approach into new instance of games. It minimizes the entire rate of correlated bits with conventional video streaming buffers with data accomplished graphics. The encoded video stream having small encoding of bit rates receives server and client sides enabling the swift start of game data.

The basic cloud playing concept which executes cloud server oriented games and makes multiple player interactions through thin clients is proposed by Yusen Li and et al. They request the dispatching of efficient virtual machine used in cloud gaming software to maintain huge groups in cloud servers to execute cloud server costs. The fundamental cloud games servers allots the approach of game requests that affects the complete service cost of cloud game oriented servers. Neural network related resources minimizes the entire service costs measures first fit and best fit algorithms match the defense games.

Playing high end cloud video games using different gaming devices through broadband networks that installs the software supporting video games is proposed by Zheng Xue et al. This evolves an estimation platform to examine different types of cloud union views such as universal view, local view and user views. This measures the outputs of

present cloud gaming systems about cloud infrastructure patterns of traffic behaviors noticing the quality of video games. The measurement calculation for cloud union is assigned to be active and passive perspectives of players. In active protocol it collects huge amount of multiple gaming sessions analyzing the communications between client and server cloud platforms. Where as in passive measurements the traffic changes between client and remote cloud servers that can analyze and customize the packet analyzer of different fields of cloud union packets.

While inspecting the cloud gaming virtualization and hardware advancement by Ryan Shea shifts public cloud gaming module virtualization with overheads of graphic processing units. The virtualized cloud gaming system with remote server and multiple local clients inherit video encoding of hardware and software requirements. In this they detailed about graphic units that can calculate the usage of energy covering the wide metrics of frame rate that avails energy and memory storage bandwidth sharing multiple resources between local users. The total usage of power will be regulated using wall power with wired digital multi-meter in ac power input line calculates accuracy rating using data logger installation of play station. In this manner virtual CPU scheduling and memory management methods improvise the speed of memory transfer rate.

The improvement of video encoding in cloud gaming rendering data as portrayed by Yao Liu et al the encoded videos streaming in real time devices utilizes cloud gaming and video encoding process. This enhances the recognized quality of videos and diminishes the

computational complexity. It also maximizes priority based rendering of encoding techniques that improvises recognized games quality of videos according to the network bandwidth constraints. All those techniques used for data rendering in different gaming video frames create macro block using dynamic rate distribution method by attribute quantization.

The adaptive algorithm scheduling of GPU cloud gaming resources as virtualization technology rendering complex game scenarios is referred by Chao Zhang et al. Holding runtime scheduling algorithms the API operating system hosts the graphic driver with unaltered guest operating system. Different adaptive scheduling algorithms were featured to satisfy the service oriented usage of graphics processing unit.

Solution for cloud gaming with massive multiplayer online games computing the life like views and actions is provided by seong-ping et al. This needs efficient hardware for playing such high quality games in mobiles or computers through broadband or mobile internet services using smart phones or tablets. It may increase the usage of battery in smart phones the cloud computation provides green solution in which it uses most of the cloud gaming platform thus to provide immense experience to players. In this manner we require more software compatible plug-ins and cost effective service providers for platform independent gaming solutions.

Proposed Work – Many approaches were made to improve the cloud gaming technology in different aspects, all of them used various strategies in order to enhance

this concept of gaming. But when we have a close eye on it we can say that there are still some minor improvements that has to be made in order to make it even more well organized. In our observation we learnt that there is one thing that has to be definitely enhanced, that is database stability. Because in all the previous enhancements done they didn't concentrate on this database stability which improves the performance of database. We know that in this cloud gaming technology many users play games through online in which the data in database will be retrieving many times. Hence the stability will be low, and sometimes it can cause the delay in retrieving of data. So there is a need of enhancement in the stability of database and our approach definitely makes it more stable.

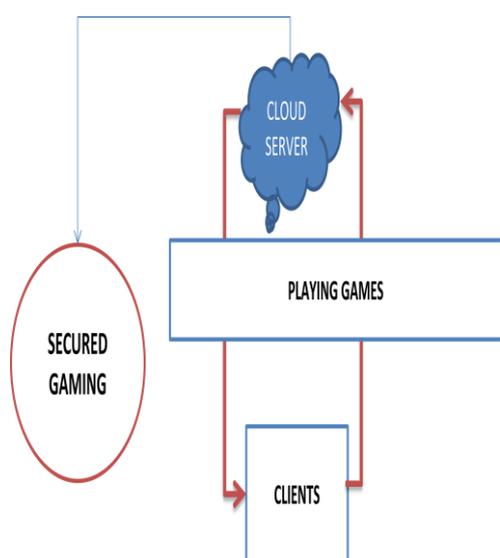
In the existing system G Cloud, a GPU hybrid cluster was proposed, this cluster also works on user level virtualization technology. But the database performance and security in this existing system was not up to the mark. That is the data has been retrieving many number of times from the database by many users who are connected through cloud. This continuous access to the database makes it less stable, and also this direct access to the database can create a chance to attack the database. So in order to enhance the performance of the database and to provide security we are going to introduce hibernate concept.

Hibernate concept is nothing but we are going to create an object in between the database and server which acts as a copy of database. This object is temporarily created so that the user can access the data without entering the

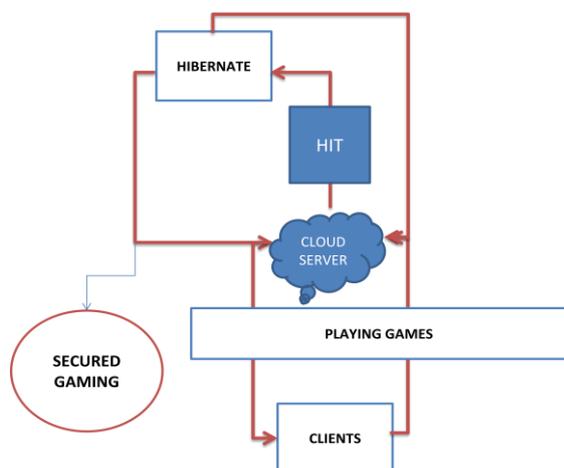
database directly. Generally in database an instruction is considered as a single hit, that is a single instruction is considered as a single hit. For example if we open any file or game in a cloud server each instruction we give in order to access that particular file or game is considered as

Now let us observe the dataflow diagram and graph so that we can get a brief idea about our concept.

LEVEL 0:

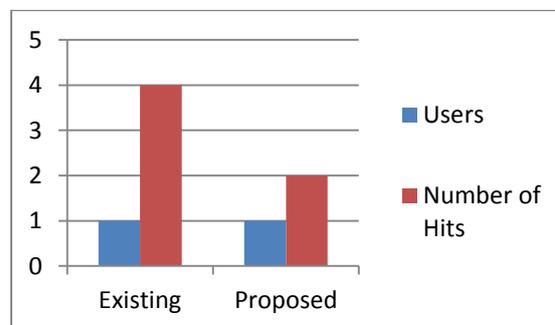


LEVEL 1:



a single hit. This hibernate concept provides a session to the user and considers all the hits in that particular session as a single hit.

The database contains the whole data of a particular cloud gaming server, if many users are accessing that particular database and each of them will be giving a different instruction to the database. By this a lot of pressure will be on the database of that particular server and sometimes it leads to delay in retrieving the data. But by using this hibernate concept all those instructions or hits given by a particular user are decreased to maximum of two hits. Now let us explain this by considering an example, if thousand users give ten instructions per each then totally database is accessed directly for ten thousand times. If we do this same thing by using hibernate concept the database will be directly accessed for maximum of two thousand times. So in this way we can actually reduce the strain on database and make it more stable. Also we are going to provide more security to the database by the creation of object which is just a copy of original database. As the user or attacker cannot access the database directly, it will be more secure.



The above given are the dataflow diagram and graph which explains about

our concept in a brief manner. As shown in it, the clients or users will be playing games through cloud server and the hit or instruction that is given by them will be executed under hibernate concept which again sends back the data to the cloud server. And from there the data will be gained by the user who is accessing that particular cloud server. Here the hit undergoing hibernate concept is nothing but the data will be collected from the object that we created.

Generally the cloud server access the data directly from the database but when it comes to this hibernate concept, a temporary object is created at the back end. This temporary object collects all the information of that particular user and acts as a copy of the database. When the user gives any instruction this object will act as database and provides that information to the user. Once the user login into that particular cloud server the temporary object is created at the back end. And all the instructions given that particular session are taken by that object so that there will be no strain on database. Once the user logout from that particular server the temporary objects sends all that stored data to the database and gets destroyed. When the user login for the next time a new temporary object is created and this same procedure is followed.

There are many kinds of temporary objects that can be created, such as vector, array list etc but here we have created a vector object. This is the concept of hibernate and as we are creating the object in java it will be more secure. As it acts as a copy of the database the hacker cannot attack the database directly, In this manner we are enhancing the database

performance and providing security for cloud based games.

Conclusion – Cloud gaming has been the thing which changed the perception of gaming into a new dimension. As per our survey the cloud gaming system has seen extensive growth in recent years. But it required certain enhancements towards upgraded versions of video gaming online and its security. Finally I would like to conclude by saying that our proposed system will be a step forward into that direction which makes the gaming more efficient and secured.

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