CLOUD GAMING: LEAVERAGING PROCESSING POWER OF HIGH-END PROCESSING MACHINES ON CLOUD AND HIGH-SPEED NETWORK FOR PLAYING GAMES

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Abstract: The cloud was basically designed to provide general-purpose computing using product hardware and its focus was on increasing resource combination as a means to lower cost. The rapid growth of the cloud computing, data collection and information sharing are led to a higher level and are replacing the traditional computation. As modern games normally require tremendous computing and rendering power at the game client, deploying games with such models can transfer the burden of hardware upgrades from players to game operators. One of the most vexing challenges might be latency that influences the quality of gamer's experience. This paper proposes the use of cloud resources such as cloud computing and cloud storage as they provide high scalability as well as dynamic performance features which will enable the client to experience high quality gaming. The use of tcp protocol reduce the latency issues as well as it overcomes the challenges of security and Privacy

*Index Terms - **Cloud Computing, Latency, Data Collection, Scalability.***

I. INTRODUCTION

Last few years' games has become highest grossing product in software industry and is consider as main benefiter. This lead in the manufacturing or creating more games which are better in every aspect than previously released games. There is increase population of players who play games on mobile devices larger in size and graphics rendering audio rendering quality also increased. Due to this running such huge games become problematic using normal pcs and mobile. Realizing the clouds is infinitely processing source therefore it becomes main topics of research in gaming industry. Cloud gaming Presents a new way of delivering computer games to gamer where all the complex computations is done on cloud side not on the user's hardware instead it processes on the cloud. Mobile devices such as tablets and smartphones as well as low-end laptops and desktops have limited resources like limited computation power and are low battery powered. Therefore, running high-end games which has high requirements on these resource-constrained gadgets may lead to lesser performance and high energy consumption. For example, the gaming frame rate may become too low which harm the smooth game play due to insufficient CPU power to execute software video decoders. This results in degraded gaming quality and may drive the gamer away which is not only a significant loss for game developer but also affects the game clients. This paper proposes a system in which the cloud resources are used where the cloud is connected with the clients with tcp protocol. The client can access the game and play the game online without utilizing all its device resources as the resources that are required for playing game is provided by the cloud system. Here the client device only has to perform few tasks and the main complex tasks are done on the cloud. When gamers will play games using this system

II. PROPOSED SYSTEM

In the proposed system it can be seen clearly there are number of verities of client's device like laptop, desktop, mobile, tablet, etc. All these users are connected to the Game runner module which is present in the cloud system the client interacts with the game runner instance to play game. This game runner can play multiple instances of game, these are connected with the client's device with a special protocol named as tcp protocol the main advantage of these protocol is that once the connection is established between the client and game runner the connection will be open till the close request is not send to the game runner.
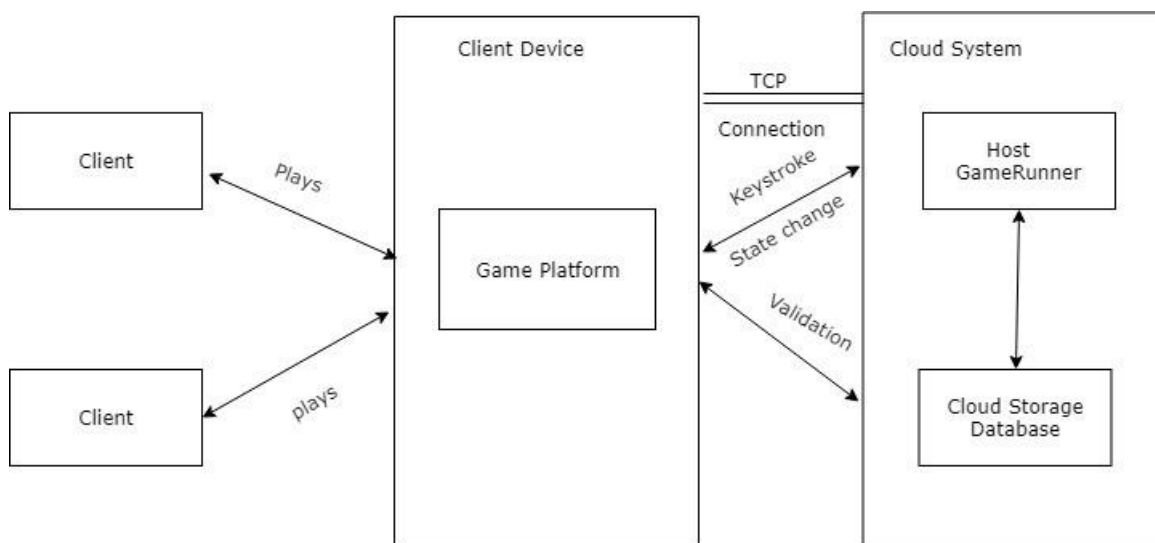
III. SYSTEM ARCHITECTURE

Fig.1: System Architecture

In planned System, as we can see the connection between multiple people components like client's game platform and the cloud system. Normally client interacts with the game platform which is present in client device, where the actual game runs and user plays on it while playing the game platform captures the keystroke of the user and send those keystrokes to the cloud system where the host runner accepts the keystroke and performs the computation on them. These keystrokes are the input provided to the host Game Runner and it produce the state change as the output after performing the computation required on the cloud. This output is send back to the game platform where it performs the relative action according to the state change. This whole communication between client device and the cloud system is done with using web-socket. Tcp connection is provide between each and every client device and cloud so that the multiple users can play. As in this system their is no video or frame transmission between the client and the cloud system they is no requirement for high bandwidth and internet speed so this system will be feasible for more number of people and will help in reducing the latency and overhead issues

IV. ALGORITHM

Algorithm Steps

Step 1: Start

Step 2: Connect to server

Step 3: Establish Tcp connection between the user and cloud system

Step 4: Capture the Keystrokes enter by

users and send them to game host runner

Step 5: After game over show the score

Step 6: if user quits game o closes window close the tcp connection between user

Step 7: Stop

V. RESULT & DISCUSSION

Input:

Here, Whole System taken many more attributes for the input purpose but here author mainly focuses on the Time and performance of system. Based some few attributes we will getting following analytical result for our proposed system.

Parameter	Existing	Proposed
A	10	5
B	10	4
C	7	7
D	8	3
E	10	6

Table 1: Result Table

A = Internet Speed.

B = Latency.

C = Scalable.

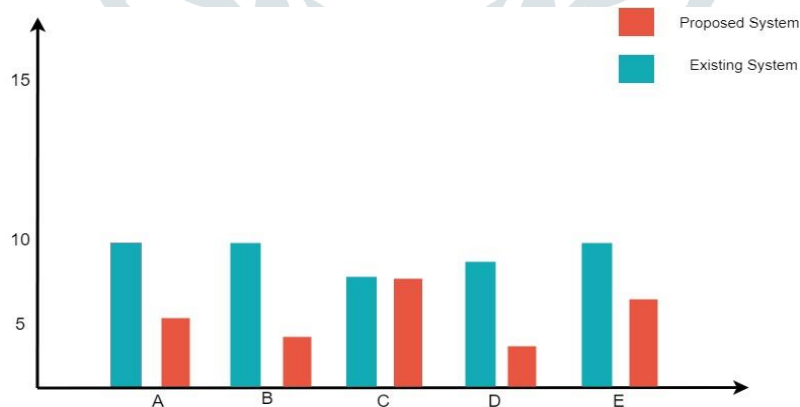D =Bandwidth.

E = Game Quality

Fig.2: Time line chart of Result Analysis

VI. CONCLUSON

This project proposes to satisfy and improve clients gaming experience because the rapid growth in gaming industry unable client keep up with their growing system requirements and the resources required to play the games. Implementing the system can bridge the gap between the recommended system requirements like high processing power and graphic processor on client system by high-end games, hence reducing the overheads and latency issues from player's machine by using the protocol

as tcp protocol and interacting with clients with keystrokes as well as state change. This system not only bridges the gap but also overcomes the challenges such as Security, piracy, packet loss, latency which highly affects user experience.

ACKNOWLEDGMENT

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