

Cloudflare Workers Benefits to Online Gaming

Abstract

The video game industry has cemented itself as an important market for people of all ages. Specifically, players are intrigued with online multiplayer gaming in which people from around the world connect and play games hosted through servers. Issues do arise in the servers when thousands of players connect, problems such as match making time, delay connectivity response (lag), and servers closing can frustrate players. This is where Cloudflare Workers can use its product to improve gameplay for players and save the company from customers that do quit playing those video games due to online errors from servers. Cloudflare Workers can use its platform to improve the interaction and response time between clients and servers that are used to host online multiplayer video games.

Market for Online Multiplayer

An average of 10-15 million people play popular online multiplayer games such as Call of Duty or Fortnite. For the games that are not as popular, the numbers are similar as well. Many video games release sequels every year which attracts new consumers to try the product. With that many players interacting with the game, the servers are always running and many requests from the clients are sent to the servers. Online multiplayer games are evolving to a point where services such as Cloudflare Workers can provide assistance of maintaining and enhance server performance.

Providing Solutions

Cloudflare's Edge network can provide the support for online multiplayer games to handle requests and server usage. Many online players face a problem when the internet connection is slow and the game is responding late to their controls, this is also known in the gaming industry as lag. To boost server performance, Workers can load up information that is not necessarily required by the server to provide. Information such as player name, character outfits, and map layout can all save time by the service provided by Workers rather than have that request access the server, load up the information, and then send the data back to the client. By integrating the Workers solution, companies will now save customers from leaving the game due to the amount of waiting time for the game to load. Edge-side rendering from Cloudflare Edge networks can reduce wait time as well if the client request is located near a Cloudflare server, since the request would not have to travel across the world. Since many requests will occur, instances of these runtimes can be handled through Isolates in the server.

Isolates can be used to detect and patch up servers that have corrupted games. In online gaming, there are times where the host of the server may not have the greatest connection, and thus the server will malfunction and kick the rest of the players out. Cloudflare Workers can provide support by using Isolates to detect which servers are not properly working and render a new host. For games that end because of a bad host, the service worker can quickly locate a

game that has ended and fix the server so that another game that be created for players to join. By improving the server performance, lag, and pre-processing content that the server is not necessarily needed for, gaming companies will be greatly interested in using Cloudflare Workers for a better gaming experience.

Quality of the Product

Before Cloudflare for Gaming can be release for multiple gaming companies to use, tests should be conducted to see if Workers can provide services to the consumer. Cloudflare for Gaming would need tests in which live game servers are running and requests are thrown to the server that the service worker is required to fix. Memory storage is also required to be tested so that the code footprint is < 1MB, Memory usage is < 5 MB, and context switching needs to be high since we can only allow a certain amount of requests to be worked on in the edge network. Memory storage is a big contributing factor because we need to have enough memory so that gaming server can run games, and we can process issues in an efficient manner. Typical lag and multiple requests being sent to the service worker are some of the tests that the Cloudflare gaming service should be able to overcome. We must then measure the amount of time it takes for servers to run and deploy games for players to participate in. There might be a case in which Cloudflare has to work with a gaming company to provide us a game to test our servers upon.

Risk Mitigation

With an innovate idea of enhancing online gaming with Cloudflare Workers, there are some risks and problems that may arise. Security breaches of the servers and user privacy is a concern of many gaming companies. Shared infrastructure like these need proper encryption of user and game information that becomes stored and used on these servers. The integration of using Cloudflare platforms on gaming servers might have some problems as well since Workers is used primarily for apps on servers. Assessing tests for online gaming problems will provide answers to these risks as the product is further developed for the gaming community.

Closing Remark

Cloudflare Gaming can provide an enhanced service to a thriving gaming market. The gaming industry has had issues with gaming services, and this is where Cloudflare can thrive and promote its product for the industry. Implementing this service will require tests and gaming servers to ensure that Cloudflare Workers for Gaming will provide a service that will guarantee a better gaming experience for players.