

Cloudflare Workers for Gaming

Thesis

This report assesses the viability of Cloudflare Workers offering a new service to aid in video game development. The needs of two distinct groups are targeted, developers of AAA titles (a category of high-budget video games) and developers of video game streaming services.

Learning About the Market and its Needs

Research done for this report found that video games are enjoyed primarily on 2 platforms: PC and console. PC/Console games are typically made by large companies that have several developers work on a single title at any given time. Few companies dominate the market and produce multiple AAA titles every year. Given the high price companies charge for these titles, consumers expect flawless gameplay. This means developers often make a “patch” to fix any bugs found in game and push them out on a biweekly to monthly basis. In addition to this, many games are starting to have higher storage requirements, causing a shift to digital storage meaning users have to download the game from an online store.

There is also a new innovation in the market which is video game streaming. Companies perform the heavy graphic computations required to run these games at one of their facilities and stream the result to the user, who offers additional input and causes the whole process to repeat. Google and NVIDIA both currently offer this service, and more companies are expected to enter the market including Microsoft and Sony. The main need of these developers is offering the lowest-latency possible for users. This is because while 200ms of latency while streaming Netflix doesn't matter too much (assuming no interruptions), it is unbearable while playing video games.

What Cloudflare can Offer

Looking at the first segment which is PC/console games, developers are constantly pushing out new games and patches. Cloudflare can improve the speed at which these games are pushed out to the online store, providing a more seamless experience for the end user. Cloudflare can apply similar methodologies to improve the performance of developers initially deploying their game onto the online store.

Moving on to the videogame streaming segment, Cloudflare has the potential to offer developers faster networking speeds/more robust infrastructure so they can offer a better experience to users. An interesting tool companies in this segment are currently leveraging is Machine Learning. Google's service called Stadia is using Machine Learning to predict user input to further reduce the latency for users. Cloudflare can utilize its existing Analytics platform to offer Stadia's competitors the ability to develop their own Machine Learning algorithms for similar purposes.

Methods for Improvement

The primary way improvements to the offering will be made is through implementing feedback from users. In order to do this, a feedback system should be put in place for each group and each

service this product will utilize. This is so improvements can be easily identified/traced to each service and dealt with accordingly.

Another method of improvement can be outsourcing through the Cloudflare community. Developers will post specific issues they are facing on the Cloudflare forum and members can respond with their own unique solutions.

Goals

The primary goal for the AAA developers will be to have a certain percentage of them use our services after one year. This percentage will be defined with more research. A similar goal will be defined for the video game streaming services based on the proportion of the service providers that use our offering. Both of these metrics will be measured on a semi-annual basis and revaluated accordingly.

Another goal is to have a working service to offer the public within one year. Development should begin right away. After six months, partnerships with a few clients in each segment can be procured in order to test the service and work out any kinks found along the way. After an additional six months, the service should be available for purchase by all developers.

Risks of the Project

The first risk of the project is the target audience being too narrow. By primarily targeting large game developers and the few companies that will offer a video game streaming service, the number of clients Cloudflare could serve with this offering is small. To combat this, mobile gaming can also be targeted as a potential segment. Developers use a similar model of pushing their updates (AKA patch) onto app stores for users to then download.

A second risk that rises from this project is the video game streaming service providers not requiring Cloudflare's services. Based off the current competitors in the market, it can be concluded that many of them have the infrastructure to support their own services. In order to mitigate this risk, Cloudflare should form partnerships who are planning to enter the market (for example, Microsoft) in order to remain competitive.