

Product Delivery Summary for Cloudflare Workers for Gaming

Background and Project Thesis – Why Cloudflare, why the gaming industry?

Cloudflare has recently decided to expand its Cloudflare Workers offering to the video games industry. Video gaming is a diverse, multifaceted industry with a few key challenges that Cloudflare is well positioned in the market to solve. Cloudflare had a fascinating insight in the 2018 blog post concerning the Interplanetary File System (IPFS) that relates significantly to changes in the gaming industry. Cloudflare's IPFS allows a distributed network of users to host content on the web, which improves security and performance. It also provides content-driven rather than location-driven navigation. The gaming industry has undergone similar innovations, but in the opposite direction. While premier releases in the '00s decade – such as Halo 2 and Call of Duty: Modern Warfare 2 – were released on peer-to-peer networks, modern major releases such as Destiny 2 and Anthem require massive, dedicated servers often obtained through Amazon Web Services. Therein lies Cloudflare's competitive advantage; the ease of integration between Cloudflare and AWS will allow Cloudflare Workers for Gaming to corner the web performance segment in the gaming industry.

Cloudflare Workers for Gaming will win the market by focusing on the following two issues facing major game developers today:

1. Online games typically “break” at launch for a variety of reasons such as memory leaks, lag spots within the server, or issues connecting with first-party software.
2. Servers can have difficulty communicating with clients or specific ISPs (This was an issue with the 2020 release of Last Oasis).

We believe focusing on AWS connectivity and server maintenance related to game launches will maximize Cloudflare's competitive advantage and prove most useful to customers.

Identifying our Customers

Any mobile or desktop gaming application developer/enterprise should be able to use Cloudflare Workers for Gaming. Given Cloudflare's globally distributed data centers and capabilities, our product should be accessible to major studios who develop and manage globally distributed games.

Project Life Cycle

1. Requirement Collection and Analysis

Collaborating with domain experts is critical here, as is planning for the quality assurance process. By the end of this stage, we should also have a project schedule and budget.

2. Feasibility study

Identifying risks to the project is critical here, particularly legal risks given that we want to deploy this product to an international base. We need to ensure that our technical resources (human capital + technical capital), schedule, and budget are conducive to deploying a finished product.

3. Design

This is the final step before code needs to be written. We need to develop high-level design (HLD) and low-level design (LLD) documents. The former should contain the system architecture, while the latter should contain dependencies, database tables, and inputs/outputs for all modules.

4. Coding

Agile methodology is especially critical here. Tickets should be tracked using software such as Jira. We imagine that two-week sprints will be ideal, but we should keep an open mind.

5. Quality Assurance

The QA/Test Engineering team will communicate with the development team until a final product is bug-free, stable, and fits the project specifications.

6. Deployment

7. Maintenance

Any bugs not discovered in Stage 5 are fixed here. We will also begin planning any upgrades and enhancements in this stage, and then those features begin in Stage 1.

Potential Risks

There are risks unique to the game development world that are not present in Cloudflare Workers' current client base. While the majority of web infrastructure is written in JS or C++, many premier games use proprietary engines that may have compatibility issues with Cloudflare Workers for Gaming. For example, many of Nintendo's products use proprietary engines, as does major 2020 release Persona 5 Royal. Games with proprietary engines constitute a significant – although shrinking – percentage of the gaming market. Furthermore, the gaming industry is evolving rapidly and distributed games may have a smaller market share in the future than they do today. It is imperative to perform the research necessary to determine the strength of Cloudflare's position before entering this market.

Potential Stretch Goals

To deal with the specifics of the gaming industry, it is imperative to make sure Cloudflare Workers for Gaming is compatible with modern gaming engines. Unity is one of the most popular game engines; Unity is coded in both C and C#, the latter of which is not currently supported by Cloudflare Workers to the best of our knowledge. Expanding Cloudflare Workers to be more compatible with modern game engines such as Unity may be necessary to command a large market share. This should be seen as a stretch goal for the product team; Cloudflare should release a functional product capable of implementing JavaScript, C++, and C before moving to C#.