

Cloudflare Workers for Gaming

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The global video game industry is \$90B and growing at 27% per year, making it an attractive market for Cloudflare Workers. This initiative aims to introduce Cloudflare Workers to the game industry by offering solutions to common technical issues that game developers face.

We identify key game developer needs and context. We then propose a plan to validate these hypotheses with additional research, add features to the core Workers product addressing those needs, and review launch timeline and key success metrics.

Overview

Problem

1. Fluctuating and massive numbers of users: many game developers do not have the ability to scale their infrastructure quickly to meet spikes in demand during peak usage, leading to lag in the game and connectivity issues.
2. User authentication hacking and cheating: game developers need to authenticate users and protect against “cheat codes” and “hacks” that compromise the integrity of the game.
3. Unsustainable game development processes: software creation in the game industry is commonly hectic with developers constantly working under “crunch” conditions.

Goals

1. Maintain game responsiveness and scale capacity quickly when popularity and usage of the game increases.
2. Keep the origin secure through blocking malicious bots and adding dynamic user authentication on Cloudflare’s Edge.
3. Allow game developers to focus on actual game development in a timely manner, rather than infrastructure management.

Risks/ Out of Scope

1. Can’t foresee how the product will react with peak number of users once deployed to edge servers.
2. Ease of code deployment may cause developers to erratically change code, leading to inadequate function monitoring and documentation.

Context

Use Cases

1. Game developers want to:
 - a. Protect against security problems.
 - b. Support many users.
 - c. Follow software engineering best practices for game development.

Proposal

1. Validate failures and wants in game development:

- a. Produce case studies on representative customers like Telltale Games, which produced the popular *The Walking Dead* game, but was subsequently slammed for unsustainable development practices, which ultimately led to many game developers quitting their jobs at the company.
 - b. Learn more about the market through large-scale surveys sent out to both indie and industry game developers. These will include pertinent questions like, “How important is a reliable server to you?” and “What is your biggest consideration for purchasing a Cloudflare Workers for Gaming subscription?”
 - c. Create a customer persona: Through case studies and user research, we can create a customer persona with the traits of an “average” video game developer
 - d. Determine addressable market based on this analysis.
2. Build additional features of real-time user tracking metrics that game developers can use for analysis.
 - a. Examples of such metrics would be the number of users on the game at a time and function response time. These metrics help game developers understand when network connectivity issues arise.
 - b. Add an alert system that notifies the game development team when abusive bots or users are trying to break the system so game developers can quickly use Workers to add and deploy custom security.
3. Quality assurance prior to product release
 - a. Release a beta to a limited number of game developers ASAP: run testing on local servers.
 - b. Unit test locally: test functions in a Javascript framework as the product is developed.
 - c. System testing with on-premise servers: stress-test the system to see if it can maintain a stable network with both a large number and a fluctuating number of users.
4. Future work and metrics for success
 - a. Compare post-Workers development lifecycle to pre-Workers development lifecycle. This can be done through surveying game developers who use Cloudflare Workers for Gaming and determining their satisfaction.
 - b. Compute metrics like the number of program crashes and the average function runtime at edge servers, and number of security breaches at origin server. We want these numbers to be lower than they were at the initial state, prior to the game developers using Cloudflare Workers for Gaming.

Tasks and Timeline

1. **April 20:** Spec review.
2. **July 8:** Launch beta on local servers, test with demo gaming software. Sync and understand system pain points.
3. **Aug 10:** Launch to game developers.
4. **Oct 17:** Sync after 1 week. We may have additional tasks then.
5. **Nov 12:** Final sync to review stats and decide if we want to proceed.
6. **Dec 1:** Hard date for project wrap and results.