

The Future of Gaming Infrastructure



EDGE GAP

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Today's gaming infrastructure problem: the lag

Problem: A noticeable **delay** between the action of players and the reaction in the game.

Cause:

Game servers are **centralized** in big data centers, often far away from the players.

Results:

Player frustration

Perception of unfair competition

Loss of revenues



What is a game server?

- Game server is the “referee” for multiplayer video games
- Act as a “man-in-the-middle” for each match
- Dictates what really happen, prevents cheating
- Main source of “lag” as the network traffic always go through it
- Compute-heaving workload
- Network traffic mainly UDP, lots of small packets
- Not comparable to video streaming
- Device agnostic: Mobile, PC, Xbox, Playstation, tablet...



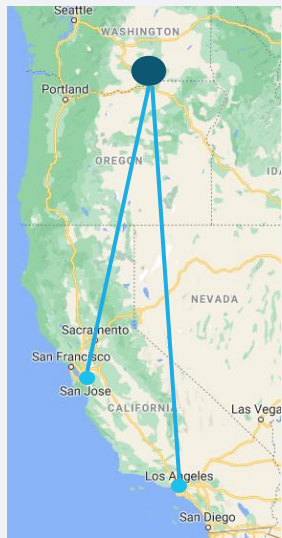
How We Reduce Latency

Edgegap's software will choose **the best location**, on the fly, for your game instance on our **edge network**, per match

Case Study #1: Major 1v1 Game

Before: 74ms

After: 29ms



60% Latency Improvement

- Pathway
- Player Location
- Server Location

Case Study #2: Ubisoft

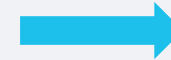
(Ubisoft current infra)



VS



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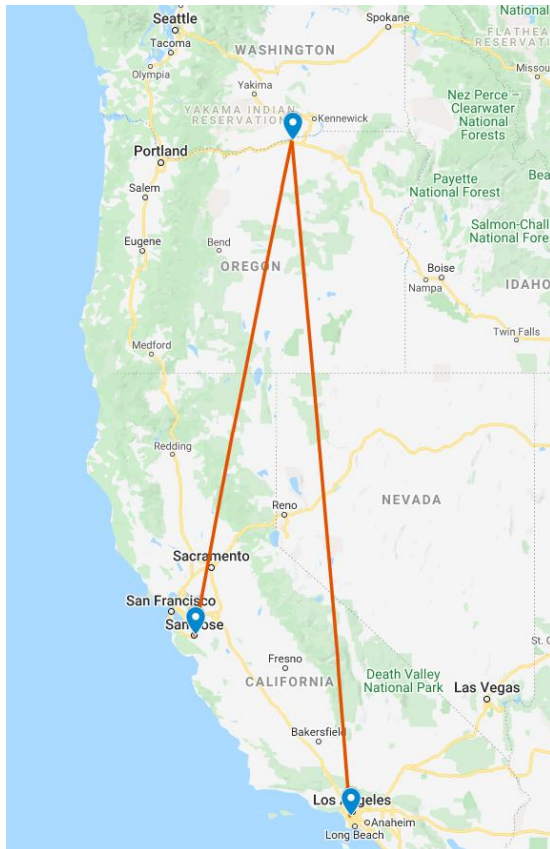


Latency **improved**
95% of the time

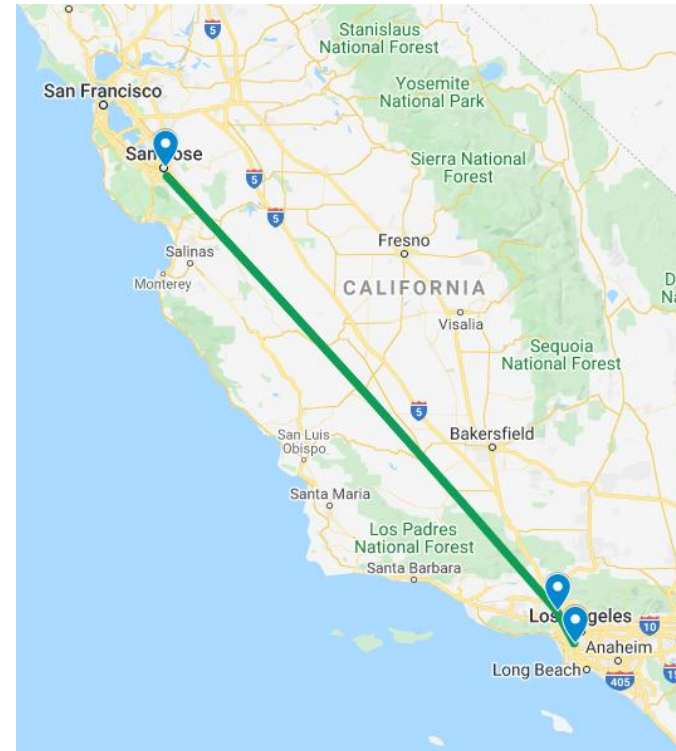
The **average latency**
was **reduced** by **58%**

Visual example

- Before: 74ms



- After: 29ms



Match: 25fee9d3a7c3

What type of game benefits the most?

- Real-time multiplayer online game
- Cooperative or Competitive
- Session-based
- Between 2 and 100 players
- Skill-based competitive aspect
- Esports tournaments



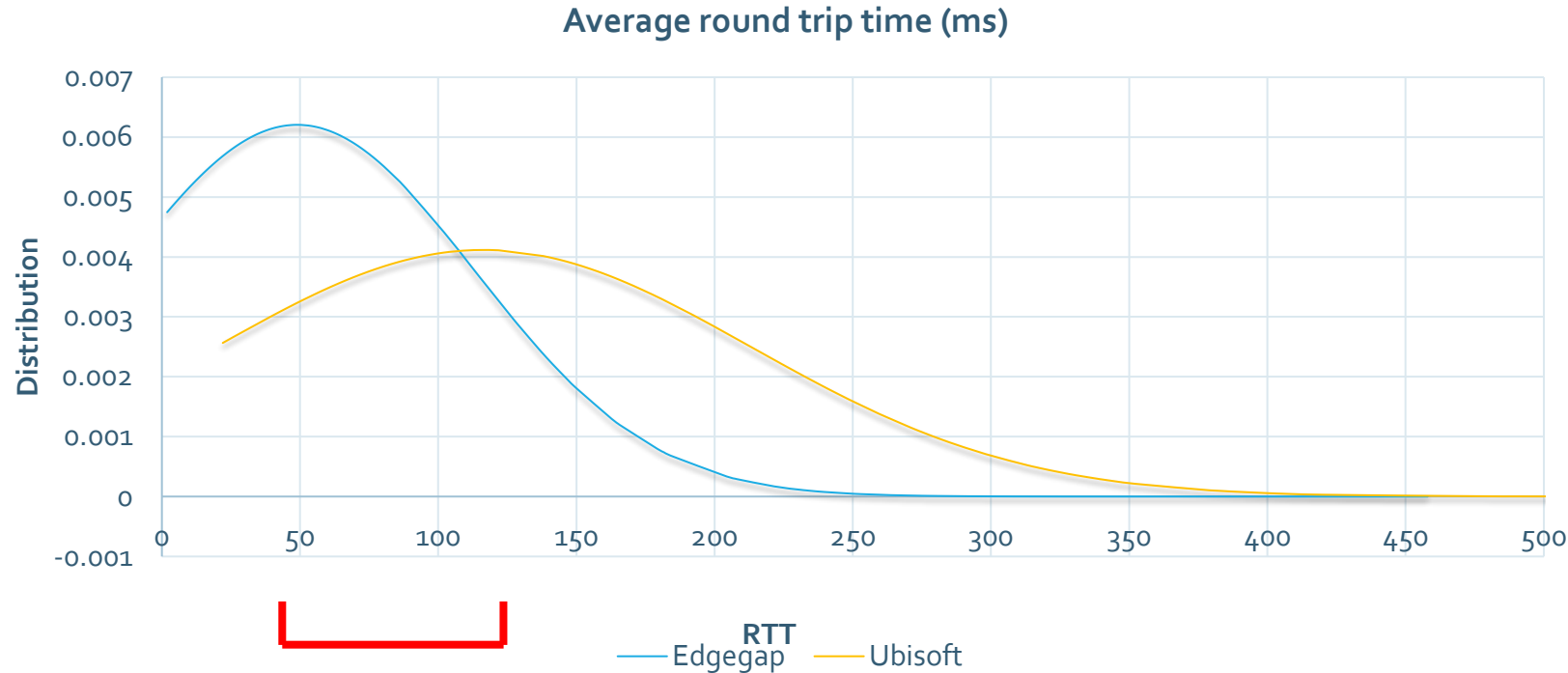
Esports

- Lower latency
- Improved fairness
- Track the network for variations throughout a match
- Control the network: increase or lower latency for specific players



Case Studies

Case study 1: Proof of Concept with Ubisoft



(Ubisoft current infra)



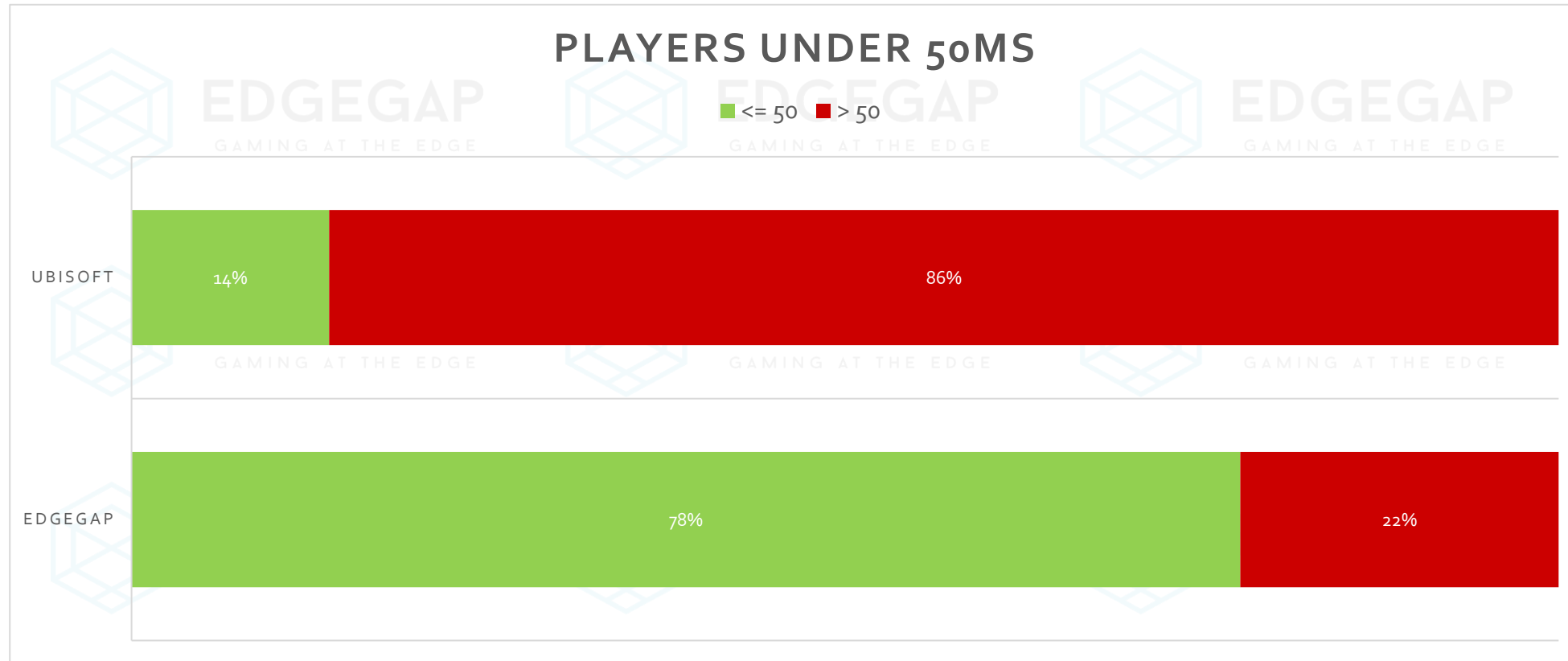
VS



EDGE GAP

- Improved latency **95%** of the time during the PoC
- Average round trip time reduced by **58%**

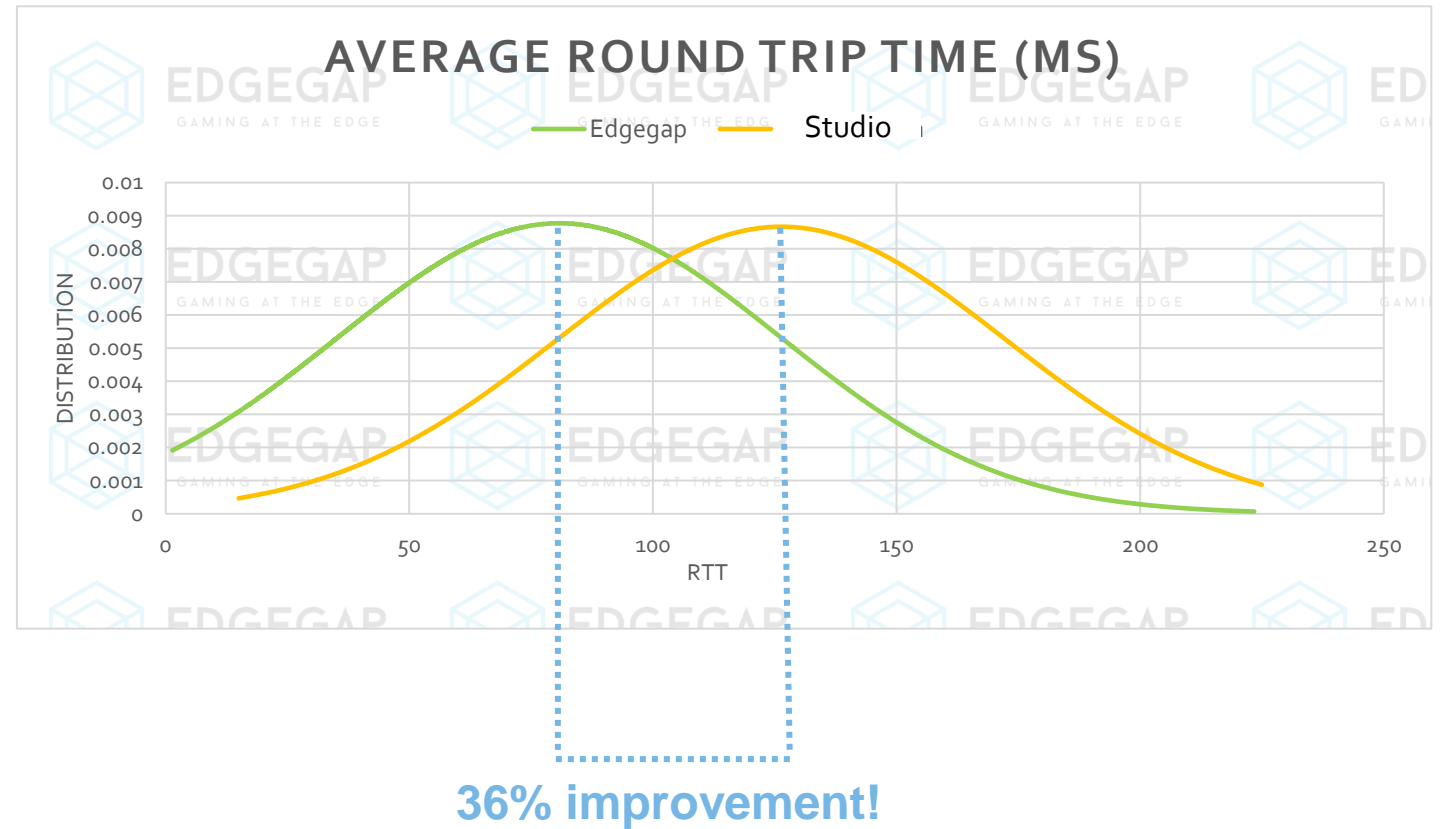
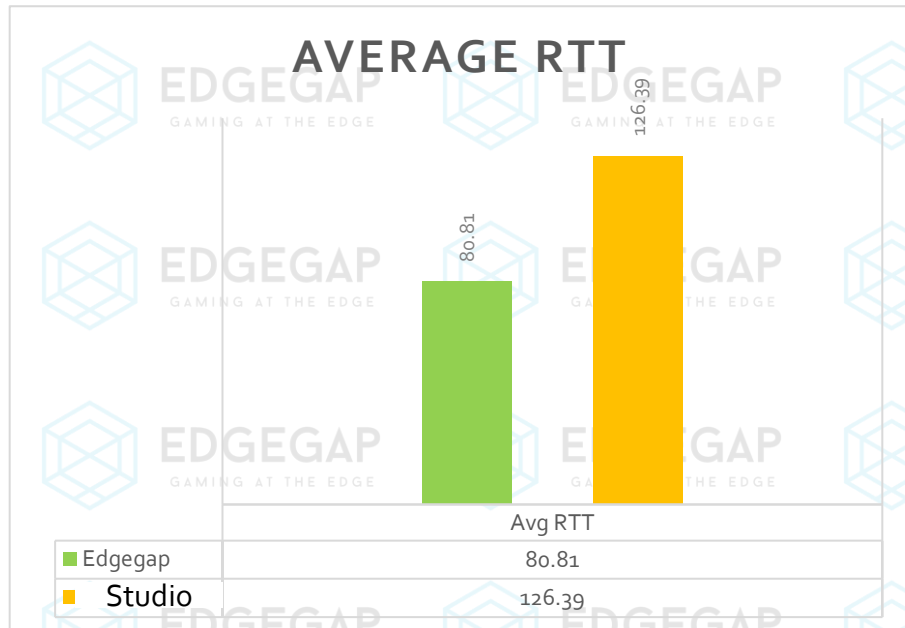
Eliminate the long tail



- **78%** of players below 50ms (vs **14%** without Edgegap)
- **91%** of players below 100ms (vs **67%** without Edgegap)

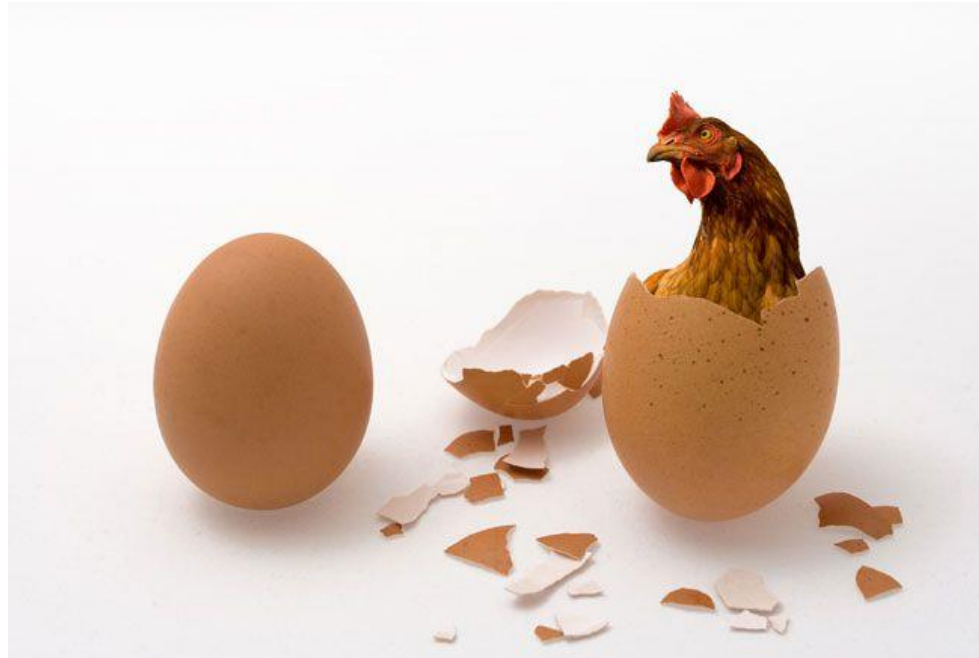
Case study 2: Latency reduction in a 1v1 pvp game scenario

Average Round Trip Time (RTT)
per match reduced by **36%**



What we are typically looking for...

Chicken or the egg



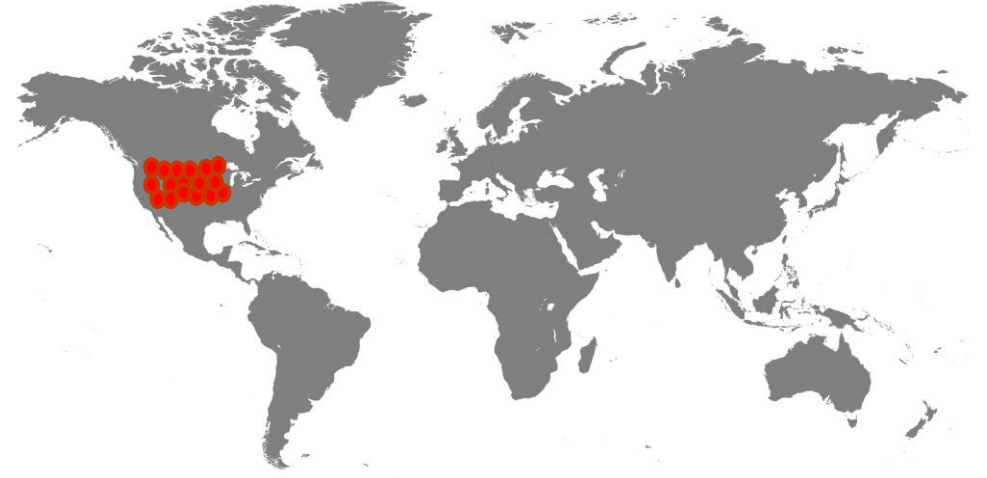
#WeAreHappyWith30msLatency

Middle point between “Cloud” & “Far Edge”

It is easier to start with this...

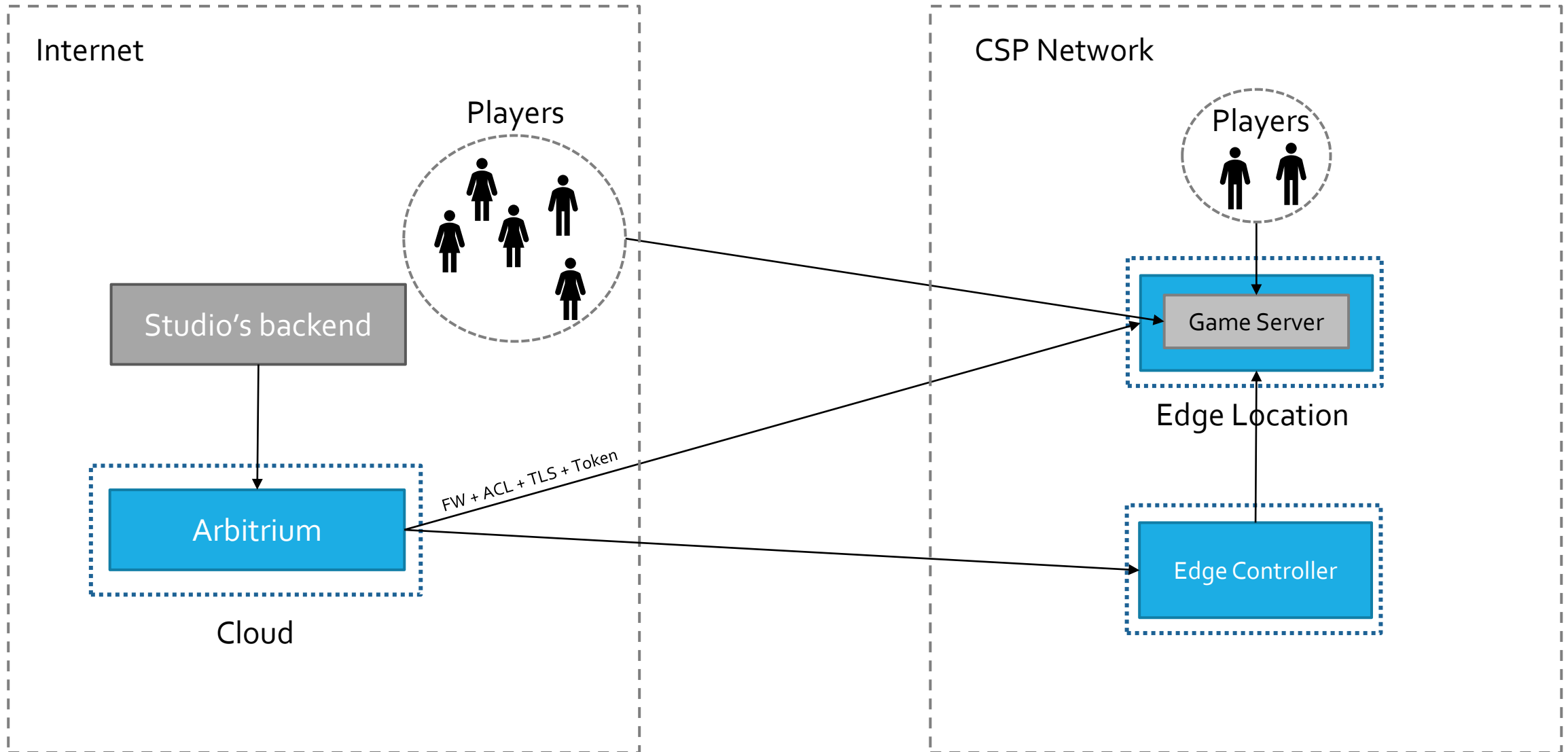


...instead of this



- Different locations than Public cloud
- State/province level enough to make a huge difference vs cloud
- Middle ground to start generate revenue until “far edge”

High level Architecture



Requirements

- IaaS
- Compute power in multiple locations
- Open to the public internet (players can come from anywhere on the internet)
- Manageable through an API (i.e. Openstack)
- GPU not mandatory for some games, but required for others
- Single server per location can be enough if many locations available
- Ideally: minimum of 8 cores per server (x86 based)
- Support baremetal & virtual machines
- No need for network complexity (i.e. load-balancers)
- Minimal storage needed (i.e. 100GB per server)
- Network throughput requirements not as important as latency
- Not limited to Mobile/5G; We need to support xbox/playstation & PC

