

# Background Multiplayer Part

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March 7, 2019

## Background

The video gaming industry has gained a vast interest over the years since it first was introduced with the infamous game Cathode-ray tube amusement device in 1947 running on a cathode ray tube (CRT) screen. This was the start of a revolution with classics like Atari coming and reshaping the idea of games. A lot of things has happened since, we went from single player games to splitscreen where the concept of social playing was first introduced. With the rise of the Internet so came the idea of multiplayer games running across the Internet that can connect people all over the world. The industry has branched out into so many directions (consoles, computers, mobiles) to reach even more people, connecting them becomes the real issue. 2.3 billion people play video games according to Newzoo's annual *Global Games Market Report* in 2018 with an estimate of \$137.9 billion worth of revenue [1]. Online video gaming is the key fact for the rise of video gaming usage and with it comes many problems, low latency, high player capacity, security and other in-game areas such as anti-cheating.

The most important problem of the mentioned is the low latency as games (real time communication RTC games in particular). Games tend to run in a very high past where different actions from the player correlates to direct impact in the game world affecting surrounding environment (other players in the case of online gaming). This is the reason why keeping low latency is the most critical requirement of the network which correlates to a high bandwidth requirement from the players. The network must also ensure that all the players get same updates at approximately the same time thus the updates should be synchronous (one player can not get the information faster then the others since this would give her the higher benefit).

The most common network architecture solution for online games is the Client/Server where a central server

## References

- [1] T. Wijman. Newzoo's 2018 report: Insights into the \$137.9 billion global games market. [Online]. Available: <https://newzoo.com/insights/articles/newzoos-2018-report-insights-into-the-137-9-billion-global-games-market/>