

Abstract

Online gaming is more popular than ever before, with a consistently increasing player population and a trend to build large-scale online games. These large-scale games are growing in number with increasing virtual-world size, simultaneous player count and complexity.

The problem with building large-scale games with increasing virtual world size, number of simultaneous players, and complexity is the cost this requires. It is a financially expensive task to build and support distributed and scalable online games. In addition to this, it requires time and extensive research. Often, this research is completed by companies with no vested interest in sharing or distributing it. This results in a repeated effort to achieve similar goals. This cost can directly restrict the accessibility of development of these large-scale online games and experiences.

The goal of this work is to present and evaluate the design of a model and framework that can be used to create distributed, online games. The framework was implemented through software and used to build an example distributed online game. This approach was evaluated with respect to reusability, accessibility, performance and reliability. The results of this work show that this framework can support 100 concurrent players per partition with 90ms average event request latency and an event loss rate of 1.33