1. Introduction

3D Worlds

OPENSIMULATOR

✔ OpenSimulator is an open-source server platform for hosting virtual worlds. It allows anyone to create their own virtual worlds, hosted on their own machines.

✔ OpenSimulator can be used to simulate virtual environments similar to Second Life, which along with OpenSimulator have been widely used in Education.

✔ As a multi user 3D environment, it facilitates communication between users, allows easily building areas and content, allows using scripts in objects to achieve specific behavior and allows interactions with other users.
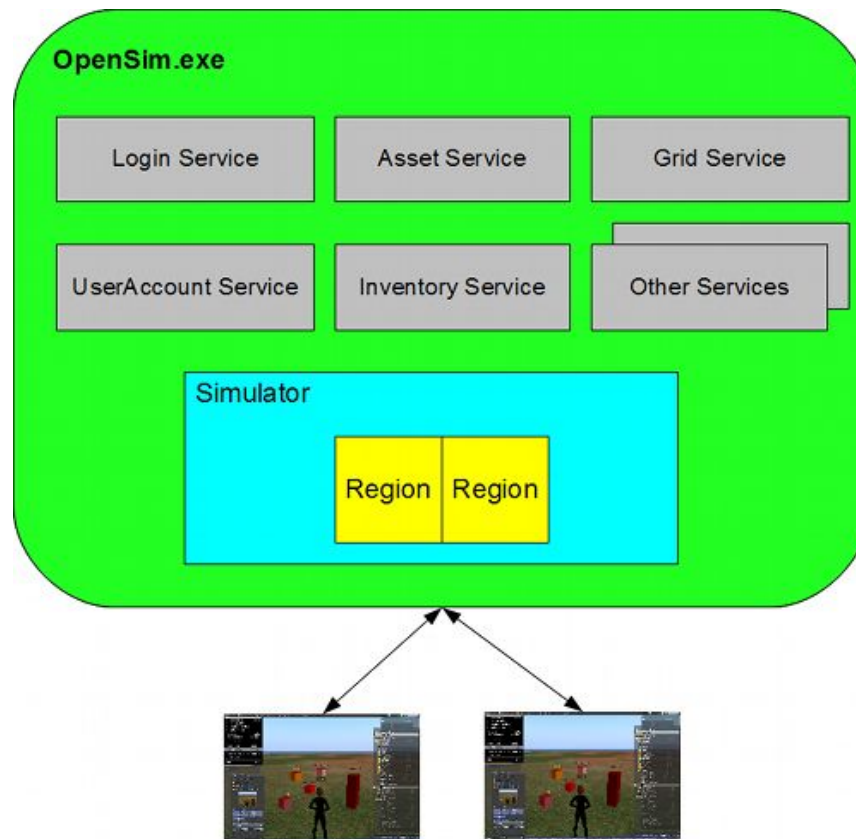
ARCHITECTURE

✔ OpenSimulator is written in C# and is designed to be easily expanded through the use of plugin modules. OpenSimulator uses a Server-Client Architecture where users of the virtual world use viewers (clients) to access the virtual world regions (server).

✔ OpenSimulator can operate in one of two modes: stand alone or grid mode. In stand alone mode, a single process handles the entire simulation. In grid mode, various aspects of the simulation are separated among multiple processes, which can exist on different machines.

ARCHITECTURE

✔ The Image shows OpenSimulator running in standalone mode. Both simulator and services run in the same process (OpenSim.exe).

ARCHITECTURE

✔ The Image shows OpenSimulator running in grid mode. In this case, all the services are being run within a Robust.exe process. Multiple copies of OpenSim.exe (usually running on different machines) all use the same set of common services.
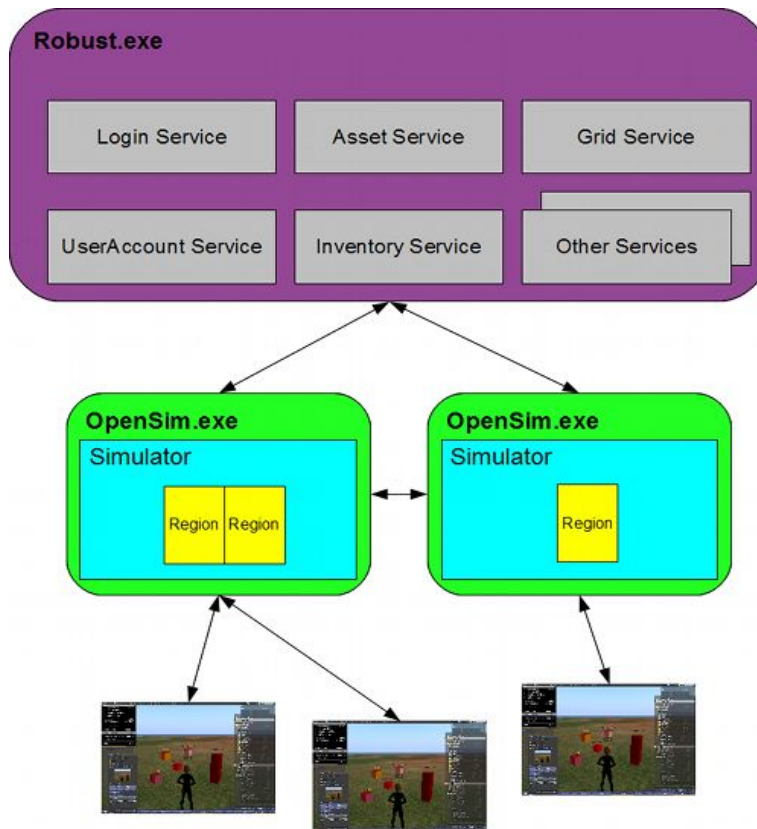
USING HOSTING OPTIONS

✔ Unlike Opensimulator, Secondlife runs on private servers owned by the company LindenLab. In order to own an area there and create content you need to pay some subscription. Secondlife has a big community of users so you may be able to attract others to visit your area.

✔ Alternatively there are companies that run their own versions of Opensimulator on their servers and allow users to create accounts and own some area with varied subscription options (e.g Kitely).

USING HOSTING OPTIONS

✔ **Advantages**: You don't need a server and particular networking / ICT knowledge. You don't spend time to configure the World. You can focus on creating content in your World. You become easily accessible from other users (If you want) and you may have access to a marketplace of available content to buy and use.

✔ **Disadvantages**: You don't have the freedom to configure the World in great detail. You usually have to pay some monthly subscription to keep the area you have created. You rely on remote servers and good internet connection is required.

USING OWN SERVER

✔ Opensimulator on the other hand is an open source version of Secondlife that anyone can download and run on their own computer / server. You are free to configure the platform as you prefer and have as many areas as you like.. You can also connect your local world to grids of other Worlds to become easily accessible from them.

USING OWN SERVER

✔ **Advantages**: You can configure in detail the parameters of the 3D World without restrictions. You can have as many areas as you like for free. You can use it in your local network so Internet Connection would not be required.

✔ **Disadvantages**: You have to invest some time to install, configure and maintain the 3D World and some networking / IT skills are required. Your World will not be as easy to be discovered and visited by other users.