

Case Study: How Robox Runs On Ysemi Test Lab

Challenge

Deploying the game to the cloud requires evaluating the performance of the server and further optimizing and customizing the system platform. The usual forgame system platform adopts the X86 architecture, and the open source anbox needs to be ported to the Android source code, but the anbox solution does not provide the supporting source code.

Anbox puts the android operating system into a container, abstracts hardware access and integrates core system services into a GNU/Linux system. Every android application will be integrated with your operating system like any other native application.

Whether it is CPU affinity, anbox customizability, batching, or system performance analysis, the deployment of cloud gaming platforms is a time-consuming and labor-intensive process.

Solution

Robox is a cloud game solution developed by Huawei based on anbox. ysemi uses Robox to further improve and deploy roblox to actual application scenarios. You can install and run android apps on any pod. Robox joins the IEC Type3 project of the Akraino community, It is about android cloud native applications on Arm servers in edge for Integrated Edge Cloud (IEC) Blueprint Family.

In less than a month, Ysemi Test Lab successfully deployed their game software to the cloud platform using roblox, and completed the evaluation of the performance of multiple instances on the platform.

Using the solution provided by Ysemi computing, Ysemi Test Lab has completed the deployment of more than 100 container instances in a cluster built by K8S on multiple servers, and has the following functions:

- ◆ Connect to the server via vnc and log in to each instance
- ◆ Deploy the game application to the instance platform
- ◆ Cache data to the central node to prevent user data loss
- ◆ Complete the analysis and monitoring of the data of each node through Prometheus

Results

When the game program is deployed to the cloud platform, the frame rate and network delay of the screen can be seen on the game interface. The displayed information during normal operation is 1080p/30fps; when a single node runs more than 20 instances, the interface displayed The frame rate starts to drop, and as the number of node containers increases, the frame rate drops to 20fps and below. The right picture is a screenshot of a single node running more than 20 container instances.



WHAT'S Next For Robox Cloud Gaming Based on ARM Servers

Compared with traditional anbox-based games, the Android system source code used by Robox is also open source, and users can tailor, optimize and deeply customize the running system based on the source code.

The frame rate displayed on the system interface depends on the GPU. In this case, multiple graphics cards need to be installed on the server, and the relevant patches should be merged into the system at the same time. In addition, the parameters in the deployed docker need to be configured accordingly. At the same time, Android and Linux can be updated to the latest versions, so that the hardware and software can be fully coordinated.

With the continuous breakthrough and innovation of GPU virtualization, core technologies such as 3D technology, image rendering and high-definition display will enable cloud games to provide users with a high-quality experience. Using virtualization technology instead of mobile chip board on ARM server will reduce the cost of android platform. ARM server board also let android platform more flexible and more agile.

Ysemi computing will use advanced ARMv9 server chips to replace traditional X86 and arm architecture chips, which can maximize the functions and features of each core and peripherals of CPU server chips. The cost per container is more lower, the power consumption per container is more lower, and each arm server could run more containers.