

Hengtian Provides Test Automation of Smart Home System for a Leading Household Appliance Manufacturer

Overview of the Client

The client is a leading household appliance enterprise in China. The company has a strong market presence and brand, and offers high quality products. The client is the pioneer of Smart Home in the field of household appliance.

Services Provided

As a domestic leader in household appliances, the client is endeavoring to release a Smart Home Manager System. Because the client deals with large volume of household electrical products, it has a greater needed for a highly stable cloud platform with a large loading capability. The client' s Smart Home Manager is an IOT system based on Public Cloud distributed architecture. Due to the complexity of Public Cloud architecture, load testing must be simulated on the cloud, otherwise the produced load will be intercepted by Cloud Security Facilities. Moreover, the Smart Home Manager System connects a variety of household appliances due to the difficulty in determining user habits and in loading characters and historical data, the Hengtian QA team has the following challenges to overcome during testing.

- **Building Testing Environment:** Because the system connects to the company' s platform, all requests and household electrical orders must go through the gateway of this platform. However the high cost of household appliances makes this impossible to deploy through simulation.
- **Public Cloud Testing Environment:** The system is deployed on the Public Cloud with a large scale. It utilizes several cloud services provided by the Public Cloud as well as configuring the Public Cloud' s own monitoring tool. There is no doubt that the Public Cloud provides benefits, but it does have its drawbacks. For

example, the quality of loading balance products provided by the cloud platform cannot be monitored in detail, and the reality of the poor network communication between the testing cluster and the testing environment. Add to that the unmonitored, hidden dangers of the network connection between internal cloud platform servers.

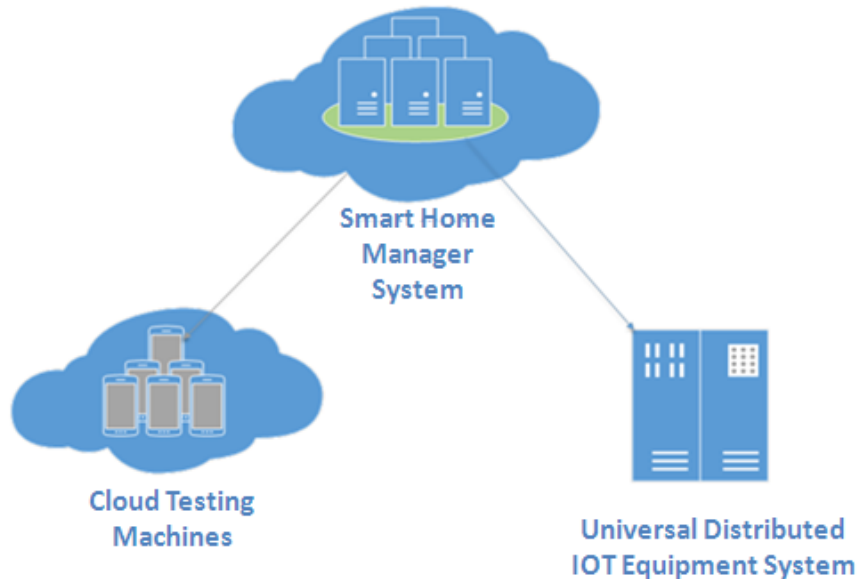


Figure 1: System Logic Architecture

Highlights of the Hengtian Solution

- Utilized an automatic testing tool to simulate requests from the mobile client.
- Based on the testing requirements of the Smart Home System, the Hengtian QA team developed the Universal Distributed IOT Equipment System. The system can provide feedback depend on the order received, and simulate different brands of IOT facilities by order reaction time and returning content, those make the system be universal.

- The Hengtian QA team deployed cloud testing machine on the Public Cloud platform and utilized Distributed Testing Machine to simulate daily use for 100,000 mobile users as well as test regular testing items, such as load, pressure, peak in order to mind system performance, architecture bottlenecks, and system potential performance risk. Adopting automatic monitoring to coordinate artificial monitoring. In addition to using a monitoring tool provided by the Public Cloud, the Hengtian QA team also used more targeted particle-monitoring tools to track performance status and investigate specific performance issues.
- Mined the potential deadlock in the CPU and modified system codes to reduce the potential performance risk of the system.

Voice of the Client

“During this project implementation, the Hengtian team has displayed a high standard of teamwork capability and a very professional technical ability. Both are very impressive.”

—Client Project Manager