RedFish simulation debugging

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摘要 This article describes how to build a Redfish simulation environment in Windows, including the UEFI compilation environment settings, network configuration, import and compilation of RedfishPkg and RedfishClientPkg, and configuration and operation of the Python server. Problems were encountered when configuring the simulation server and network IP, such as the inability to configure specific IP addresses and certificate key requirements. The author provides the completed steps and code res…

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I debugged Redfish on a real machine some time ago. I have always wanted to debug the simulation. I want to see all the process details through debugging. I can also play with it myself when I have time. The RedfishPkg page on github has detailed instructions. If you want to see it, please go to:

edk2-staging/RedfishPkg at edk2-redfish-client · tianocore/edk2-staging · GitHub

This page also explains how to build a simulation environment. I can say that I have completed most of the steps on this basis, but... But I don't know much about network communication . I studied the code and simulator for a long time, but finally gave up temporarily. If you have an idea and can finally debug it, you can comment or send a private message.

Redfish, which replaces IPMI , mainly includes two Pkgs on the BIOS side, RedfishPkg and RedfishClientPkg. Its principle will be discussed in another article. This article mainly explains how to build a simulation environment. The main steps are as follows:

1. Build the UEFI compilation environment under Windows. Many people fail to build it successfully mainly because they did not select the right development package when installing the VS program. There are many references on the Internet.

2. Change BaseTool, mainly add Win32 folder

3. Build a network environment according to UEFI Development Exploration 97 - EDK2 simulator builds a network environment_emulatorpkg ifconfig_luobing4365's blog-CSDN blog article. Note that after EDKII's EmulatorPkg is compiled, ifconfig -l is used in the shell and nothing happens. After adding the SnpNt32Io.dll file, Winpcap must be installed so that the network configuration can be performed after entering the shell. After configuration, it is found that when using WIFI, ping is unsuccessful, but pinging my virtual machine is fine.

4. Import RedfishPkg and RedfishClientPkg. Here I use stable/202011. Finally, import the latest redfish-related code into this version, and compile and debug normally.

5. Configure the simulation server. The server code is in Redfish-Profile-Simulator under the Tools file under RedfishClientPkg. It is best to install the python3.1 version under Windows. Remember to check the option to add it to PATH. After the installation is complete, use CMD and enter python. The version that appears means that the installation is normal. Then pip install all

Werkzeug==0.16
Jinja2==3.0.3
itsdangerous==2.0.1
flask==1.1.1
pyOpenSSL

Then use python redfishProfileSimulator.py -H 127.0.0.1 to run normally, and access http://127.0.0.1:5000/redish/v1 through postman to access normally

6. Start configuring the host IP and server IP. Problems begin to arise here. According to the instructions, the configuration is as follows, but this simulated server cannot be configured with 192.168 at all. If this is configured, the certificate and key must be imported.

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For example, run shell command "RedfishPlatformConfig.efi -s 192.168.10.101 255.255.255.0 192.168.10.123 255.255.255.0", which means
  the source IP address is 192.168.10.101, and the Redfish Server IP address is 192.168.10.123.
```


Except for point 6, other problems have been solved. I put the code in Baidu Netdisk. If you want to debug, you can debug it:

Link: https://pan.baidu.com/s/1oR6OWjzYppi0-LlUUevb4w
Extraction code: 42ip