

LinkedIn: [Kelvin Kimotho](#)

useless 



Medium

General Skills

picoCTF 2023

man

AUTHOR: LOIC SHEMA

Description

There's an interesting script in the user's home directory

The work computer is running SSH. We've been given a script which performs some basic calculations, explore the script and find a flag.

Hostname: saturn.picoctf.net

Port: 64749

Username: picoplayer

Password: password

This challenge launches an instance on demand.

Its current status is:

RUNNING

Instance Time Remaining:

5:39

**Restart
Instance**

Hints 

(None)

Solution

I connected to the server using SSH with the provided hostname, port, username, and password. This allowed me to access the remote machine. Once logged in, I listed the files in the home directory using **ls** command and found a script named "**useless**".

```
picoplayer@challenge: ~  
File Actions Edit View Help  
[kali@kali]~/Desktop  
$ ssh picoplayer@saturn.picoctf.net -p 64749  
picoplayer@saturn.picoctf.net's password:  
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 6.5.0-1023-aws x86_64)  
  
* Documentation: https://help.ubuntu.com  
* Management:   https://landscape.canonical.com  
* Support:      https://ubuntu.com/advantage  
Last login: Thu Feb 27 13:16:36 2025 from 154.159.252.73  
picoplayer@challenge:~$ ls  
useless  
  
picoplayer@challenge:~$ ls -al  
total 20  
drwxr-xr-x 1 picoplayer picoplayer 41 Feb 27 13:17 .  
drwxr-xr-x 1 root      root      24 Aug  4 2023 ..  
-rw----- 1 picoplayer picoplayer 20 Feb 27 13:17 .bash_history  
-rw-r--r-- 1 picoplayer picoplayer 220 Feb 25 2020 .bash_logout  
-rw-r--r-- 1 picoplayer picoplayer 3771 Feb 25 2020 .bashrc  
drwx----- 2 picoplayer picoplayer 34 Feb 27 13:16 .cache  
-rw-r--r-- 1 picoplayer picoplayer 807 Feb 25 2020 .profile  
-rwxr-xr-x 1 root      root      517 Mar 16 2023 useless
```

I attempted to run the script without any arguments, which resulted in the message "Read the code first". This indicated that I needed to provide the correct input format to the script. I opened the script using the `cat` command to read its contents. The script was a Bash script that performed basic mathematical operations based on command-line arguments.

```
picoplayer@challenge:~$ ./useless  
Read the code first  
picoplayer@challenge:~$ cat useless  
#!/bin/bash  
# Basic mathematical operations via command-line arguments  
  
if [ $# != 3 ]  
then  
    echo "Read the code first"  
else  
    if [[ "$1" == "add" ]]  
    then  
        sum=$(( $2 + $3 ))  
        echo "The Sum is: $sum"  
  
    elif [[ "$1" == "sub" ]]  
    then  
        sub=$(( $2 - $3 ))  
        echo "The Subtract is: $sub"  
  
    elif [[ "$1" == "div" ]]  
    then  
        div=$(( $2 / $3 ))  
        echo "The quotient is: $div"  
  
    elif [[ "$1" == "mul" ]]  
    then  
        mul=$(( $2 * $3 ))  
        echo "The product is: $mul"  
  
    else  
        echo "Read the manual"  
    fi  
fi
```

The script required three arguments: an operation (`add`, `sub`, `div`, or `mul`) and two numbers. If the correct number of arguments was not provided, it prompted me to read the code first. I experimented with the script by running it with the multiplication operation and the numbers 6 and 6. The output was "The product is: 36". I also tried running the script with an invalid operation ("test") and received the message "Read the manual", which confirmed that the script was checking for valid operations.

```
picoplayer@challenge:~$ ./useless mul 6 6  
The product is: 36  
picoplayer@challenge:~$ ./useless test 1 2  
Read the manual
```

From the "Read manual message" I went ahead and used the `man` command to access the manual

for the "useless" script. The manual provided a description of the script, its usage, and examples of how to perform calculations. Within the manual, I found the flag: "
picoCTF{us3l3ss_ch4ll3ng3_3xpl0it3d_4151}".

```
picoplayer@challenge:~$ man useless
useless
useless, - This is a simple calculator script

SYNOPSIS
useless, [add sub mul div] number1 number2

DESCRIPTION
Use the useless, macro to make simple calculations like addition, subtraction, multiplication and division.

Examples
./useless add 1 2
This will add 1 and 2 and return 3

./useless mul 2 3
This will return 6 as a product of 2 and 3

./useless div 6 3
This will return 2 as a quotient of 6 and 3

./useless sub 6 5
This will return 1 as a remainder of subtraction of 5 from 6

Authors
This script was designed and developed by Cylab Africa

picoCTF{us3l3ss_ch4ll3ng3_3xpl0it3d_4151}

picoplayer@challenge:~$ Connection to saturn.picoctf.net closed by remote host.
Connection to saturn.picoctf.net closed.

(kali@kali)-[~/Desktop]
$
```

This was the flag I was looking for.