Bandit

Bandit Level 0

ssh -p2220 bandit0@bandit.labs.overthewire.org

password of bandit0 - bandit0

Bandit Level 0 - Level 1

$ ssh -p2220 bandit0@bandit.labs.overthewire.org

bandit0@bandit:~$ cat /home/bandit0/readme

```
bandit0@bandit:~$ cat /home/bandit0/readme
Congratulations on your first steps into the bandit game!!
Please make sure you have read the rules at https://overthewire.org/rules/
If you are following a course, workshop, walkthrough or other educational activity,
please inform the instructor about the rules as well and encourage them to
contribute to the OverTheWire community so we can keep these games free!


The password you are looking for is: ZjLjTmM6FvvyRnrb2rfNWOZOTa6ip5If
```

password of bandit1 - ZjLjTmM6FvvyRnrb2rfNWOZOTa6ip5If

Bandit Level 1 - Level 2

$ ssh -p2220 bandit1@bandit.labs.overthewire.org

bandit1@bandit:~$ cat /home/bandit1/-

```
bandit1@bandit:~$ cat /home/bandit1/-
263JGJPfgU6LtdEvgfWU1XP5yac29mFx
```

bandit1@bandit:~$ cat ./-

```
bandit1@bandit:~$ pwd
/home/bandit1

bandit1@bandit:~$ cat ./-
263JGJPfgU6LtdEvgfWU1XP5yac29mFx
```

password of bandit2 - 263JGJPfgU6LtdEvgfWU1XP5yac29mFx

Bandit Level 2 - Level 3

$ ssh -p2220 bandit2@bandit.labs.overthewire.org

bandit2@bandit:~$ cat "spaces in this filename"

```
bandit2@bandit:~$ pwd
/home/bandit2

bandit2@bandit:~$ cat "spaces in this filename"
MNk8KNH3Usiio41PRUEoDFPqfxLPlSmx
```

password of bandit3 - MNk8KNH3Usiio41PRUEoDFPqfxLPlSmx

Bandit Level 3 - Level 4

$ ssh -p2220 bandit3@bandit.labs.overthewire.org

bandit3@bandit:~$ cat ./inhere/...Hiding-From-You

```
bandit3@bandit:~$ pwd
/home/bandit3

bandit3@bandit:~$ ls -la
total 24
drwxr-xr-x  3 root root 4096 Sep 19  2024 .
drwxr-xr-x 70 root root 4096 Sep 19  2024 ..
-rw-r--r--  1 root root  220 Mar 31  2024 .bash_logout
-rw-r--r--  1 root root 3771 Mar 31  2024 .bashrc
drwxr-xr-x  2 root root 4096 Sep 19  2024 inhere
-rw-r--r--  1 root root  807 Mar 31  2024 .profile

bandit3@bandit:~$ ls -la inhere/
total 12
drwxr-xr-x 2 root    root    4096 Sep 19  2024 .
drwxr-xr-x 3 root    root    4096 Sep 19  2024 ..
-rw-r----- 1 bandit4 bandit3   33 Sep 19  2024 ...Hiding-From-You

bandit3@bandit:~$ cat ./inhere/...Hiding-From-You
2WmrDFRmJIq3IPxneAaMGhap0pFhF3NJ
```

password of bandit4 - 2WmrDFRmJIq3IPxneAaMGhap0pFhF3NJ

Bandit Level 4 - Level 5

$ ssh -p2220 bandit4@bandit.labs.overthewire.org

bandit4@bandit:~$ find ./inhere/ -type f -exec file {} +

```
bandit4@bandit:~$ find ./inhere/ -type f -exec file {} +
./inhere/-file08: data
./inhere/-file02: data
./inhere/-file09: data
./inhere/-file01: data
./inhere/-file00: data
./inhere/-file05: data
./inhere/-file07: ASCII text
./inhere/-file03: data
./inhere/-file06: data
./inhere/-file04: data
```

./inhere/-file07: ASCII text

```
bandit4@bandit:~$ cat ./inhere/-file07
4oQYVPkxZOOEOO5pTW81FB8j8lxXGUQw
```

password of bandit5 - 4oQYVPkxZOOEOO5pTW81FB8j8lxXGUQw

Bandit Level 5 - Level 6

$ ssh -p2220 bandit5@bandit.labs.overthewire.org

bandit5@bandit:~$ find ./ -type f -size 1033c -not -executable

```
bandit5@bandit:~$ find ./ -type f -size 1033c -not -executable
./inhere/maybehere07/.file2

bandit5@bandit:~$ cat ./inhere/maybehere07/.file2
HWasnPhtq9AVKe0dmk45nxy20cvUa6EG
```

```
                                                    bandit5@bandit:~$
```

password of bandit6 - HWasnPhtq9AVKe0dmk45nxy20cvUa6EG

Bandit Level 6 - Level 7

$ ssh -p2220 bandit6@bandit.labs.overthewire.org

bandit6@bandit:~$ find / -type f -size 33c -user bandit7 -group bandit6 2>/dev/null

---

```
bandit6@bandit:~$ find / -type f -size 33c -user bandit7 -group bandit6 2>/dev/null
/var/lib/dpkg/info/bandit7.password

bandit6@bandit:~$ cat /var/lib/dpkg/info/bandit7.password
morbNTDkSW6jIlUc0ymOdMaLnOlFVAaj
```

password of bandit7 - morbNTDkSW6jIlUc0ymOdMaLnOlFVAaj

Bandit Level 7 - Level 8

$ ssh -p2220 bandit7@bandit.labs.overthewire.org

bandit7@bandit:~$ cat data.txt | grep millionth

```
bandit7@bandit:~$ cat data.txt | grep millionth
millionthdfwvzFQi4mU0wfNbFOe9RoWskMLg7eEc
```

password of bandit8 - dfwvzFQi4mU0wfNbFOe9RoWskMLg7eEc

Bandit Level 8 - Level 9

$ ssh -p2220 bandit8@bandit.labs.overthewire.org

bandit8@bandit:~$ cat data.txt | sort | uniq -c

```
bandit8@bandit:~$ cat data.txt | sort | uniq -c
     10 0BKVRLEJQcpNx8wnSPxDLFnFKlQafKK6
     10 0eJPctF8gK96ykGBBaKydhJgxSpTlJtz
     10 0kJ7XHD4gVtNSZIpqyP1V45sfz9OBLFo
     10 0lPOvKhpHZebxji0gdjtGCd5GWiZnNBj
     10 0REUhKk0yMqQOwei6NK9ZqIpE5dVlWWM
     10 1jfUH1m4XCjr7eWAeleGdaNSxFXRtX0l
     10 1VKPEkd0bCtIRwMFVQfY7InulwOFyDsn
     10 2u8fvAzvnaFlvQG3iPt4Wc1TFhPcGxhH
     10 35l6mr3f6TvlJyDwU6aUgJX07cLhr6t9
     10 3FIgajXBiaQAiTMVGo1gxRDSiACNyvvJ
     10 3mNA2le0gfURQKNHVIhGkMNLqLwjyyLN
      1 4CKMh1JI91bUIZZPXDqGanal4xvAg0JM
     10 4P8FsHcdr7d5WKnPtAaXY5SslKICd2gL
     10 5EmwMKZHwF6Lwq5jHUaDlfFJBeHbcX0b
     10 5hYz0028e1Q2TrtPVz5GZbpMzZNjebhh
     10 5I2jWpqjtVp576xXI2TLh1UCyXJtGQ78
     10 6Boy6esAjnIxCYn8uI6KZ7VD7zysDM8i
     10 7cP8ssLElERHXqOJc9T84bxsmJBjNXk2
     10 7qHmEo1FEbzthgyNpKc38YofXjYKZv18
     10 8FCtUQlFXsJnNeyiDY5KfE3vRy6sZFEJ
```

10 8pePxslMzXqA2mi87wFjxd44qDRdrPiW
10 9jfKbKGp40LjMuiiH9cce4bUo9y8nd0j
10 9PqZLdu143n5djN9mL1MCamrmHERuV7k
10 9Tar2wcD3Urge6s2yp18CAE8zX1poUwV
10 A4MixXbxP5t0RE87qkmAdwwPJO3Aw6rO
10 aFStfHbnQdPWqyRHEzhqe91Wch4O8xHJ
10 aMKlTMrptUxxTypCHocCTrqYRkR2gT8h
10 AOz67fZdaabu2QQyatGXK1dXNUIuyuOD
10 BIAd2jxKMFmitEvp0WmsM0oDAwj4WSUa
10 BmwX4bYhJXyImwt4AVHr7wFyLYCn4IIs
10 BooZo7QXA1Tft7d6zbVkgJiGoJzuBTXS
10 ByBO7V0FaYWN1cqIFbNss21xmjf9VNBP
10 CgUjZiluCoMEvzNAge1Nbv3g9tpLQQj2
10 CgvfWFmg5yxx12D2SZvjzaakG0JIyg7B
10 cOk5XehQn4Uoz1z255BqS8y74pthqBeC
10 dPk8jhZUckmUiDsn4fXE28LpV5VTvev7
10 DShzsMw0ejGwWSFIlvAybLwBLKX6qVfF
10 EgKFNgP4k1pMfGdrWRSiDIvSlAC0Tr42
10 EtevhzigGTVT4NbybBWK5DNXnPt2D5AM
10 fmt1Bzwt8Yw0t0cBVine7zuwyS76iJ7N
10 fSbQqHX7C5Er4WmMSlQ9jkl05sXYQgJU
10 ft7OpREehafXGOiX8EtyzEqXU8f3KRug
10 GCaJbpW4K28ukFR84YhZFY6e7MvAOwpX
10 GW8cRcKbnz53MAPYECx99O0T8POlPIFk
10 hevU1VzF39ZyhyYkCBgmVrY6DbiRt2t5
10 HloFLs5IpuFLuVJugBxKEipr5QaObJMk
10 iGmmKP7APsDfPxrZjCL7eDpGEWR3ot3q
10 IkJadTScIdBQY9a4KVjBEHyXKubCxSlx
10 JaFwKSH0hiff1XRuxVYCzjjtibV9P3zF
10 JQx6RCcNbAesB2lehrUl821WnJPI5gHW
10 K8GxBwF1vxLQB5PaqlcCGfRniemRScj4
10 kgf5CWCm26sycUzaAJRP7e6hYKVwu7Y4
10 KhRNo5JlbDhxbBqCGIokXqBm54v7Wunm
10 KqpxKPY3yIDdEVewIwuetpV0WvGIsN5U
10 KZJOZECxhLxDhxDbGzdNy8m0uplzvP11
10 L2iewY0lmIRR6arfrwWA3VhttgbJ0NIn
10 mMD5Z4y1rRh07rmVRw2HfgcMegbKH0c0
10 mUNISmDjtb3h6xAt3wGRVTY9U0r2u9bR
10 noa4sUvodI8D733ugvy2OAlttHdjMPWJ
10 o44oO4jbyPqoQQYX16586yC7Os2uz3ks

```
10 omBfcRI91Zm06GI0RLngq05AMwe8Ndqo
10 PHE4soLmy3nZfNOlX3jB8LYKYZRXuTah
10 pij5cPffIOml4tkDCOwo7M2zyxImYJWm
10 PLsGPuNgYzI8YNu2Y7h4D4vz1nHPSuNl
10 pngaDVKjQWnWHOOUze15L3QpwqKme5M9
10 PRerp5EfTVxJHKuCZDXfAfRyCQSdPjMi
10 prq3SdTnv0vUMlcfcb4yvkl6GAXvtwWE
10 q3dcRUh6vecqwa2ahKdvwWJDon3qA1Xe
10 qEi18Iw0qI0fe3fGMr6tTPpL6SbPMjk3
10 QPVchwY9MCJJ1W6kCWMncGWK2YfcUlFE
10 QQozajTq9wdmrO8AMwcL1i4EG0DA3I3a
10 QWumJVhaTjgcTVU6PILDgf5nPauD4VMm
10 RAM7lFRXtvR3BlgtbRU3dz5UxZYQQ06I
10 RAp5mFyjEBVSRTU203Y4Q1RDSlj7hN1v
10 rENclsy8XIuTnTvJfXagTFpcd78FX8WM
10 rhquEZ5rMuUSRIxtG9DQ6KVOyqPpL0MP
10 RpRE5maDwMQTa8oJt7vVNqff7ElrjLTq
10 s8SnoFuk0jR1CTdQ7pctd67nakJWN2Vc
10 sapgezVFdEYdD3IkqFZGaXcKG4z5P4KR
10 sBDaWzvCbXUiXcP9to4j8o716bXI0inx
10 SCuPKgJN6pAfwgoCy2Ech2U0DTfriL9q
10 Sd14OpeUCugURrfuu47xRwMGB1U6OSzB
10 SeSKZp3f2Lo9JAKP17WmkD2Nnl6I5knE
10 SnF0df244Nioa8VK7fAC8dfc9jQpAx4Y
10 Su9w1lri9UACf53cL1evAMKXVgI0nfqe
10 tgHSfEXcbYCejWXfsWDO4VXXbqtTVcqS
10 tVm8L7CmsGG0cox6GpzlkbQYl0Yavx6i
10 ULGqvJWOAtmPYINByDHwD0r9Mlf5niGK
10 UuNP4xguSOjcTHAzdtHBgm2eNz1Z5133
10 VPlmPWbTDtWppKumxNRUeeXklDk5GpRx
10 w6x5XtaoRWDqMCsYxgZIWuOKVdiGByAu
10 wcX8FCnaWngvBoYa5LrRlDsfRrr3C4kv
10 Wr4hWlUhGCKJpGDCeio8C1pLVt7DZm3X
10 WVQJq1JYFGgtR69JgWxUAKPb0RaKc90J
10 xEkmXBLggW8r1alEgwNX6ZIM6GGCsfmF
10 YbfaJNckJrgh9TvEBScUaEUCRhDJcgIL
10 ylbAYB5vBiEAmViEQOBwITUwjSZkwC7Q
10 ysKmfYcysVfnViisRBcXzgjjXMDgnKKv
10 YZMapJFORxWg84gej4UzQvGYSqBmsPOo
10 Z6SdYkOf5loRVj4uRk6cNiz10RfPnwNy
```

```
     10 zokSjnkcDj1hdGEBE4feukfCtFmv82ZZ
```

bandit8@bandit:~$ cat data.txt | sort | uniq -c | grep -v 10

```
bandit8@bandit:~$ cat data.txt | sort | uniq -c | grep -v 10
      1 4CKMh1JI91bUIZZPXDqGanal4xvAg0JM
```

password of bandit9 - 4CKMh1JI91bUIZZPXDqGanal4xvAg0JM

Bandit Level 9 - Level 10

$ ssh -p2220 bandit9@bandit.labs.overthewire.org

bandit9@bandit:~$ strings data.txt | grep "="

```
bandit9@bandit:~$ strings data.txt | grep "="
}========== the
p\l=
;c<Q=.dEXU!
3JprD========== passwordi
qC(=
~fDV3========== is
7=oc
zP=
~de=
3k=fQ
~o=0
69}=
%"=Y
=tZ~07
D9========== FGUW5ilLVJrxX9kMYMmlN4MgbpfMiqey
N=~[!N
zA=?0j
```

password of bandit10 - FGUW5ilLVJrxX9kMYMmlN4MgbpfMiqey

Bandit Level 10 - Level 11

$ ssh -p2220 bandit10@bandit.labs.overthewire.org

bandit10@bandit:~$ base64 --decode data.txt

```
bandit10@bandit:~$ pwd
/home/bandit10

bandit10@bandit:~$ ls
data.txt

bandit10@bandit:~$ base64 --decode data.txt
The password is dtR173fZKb0RRsDFSGsg2RWnpNVj3qRr
```

password of bandit11 - dtR173fZKb0RRsDFSGsg2RWnpNVj3qRr

Bandit Level 11 - Level 12

$ ssh -p2220 bandit11@bandit.labs.overthewire.org

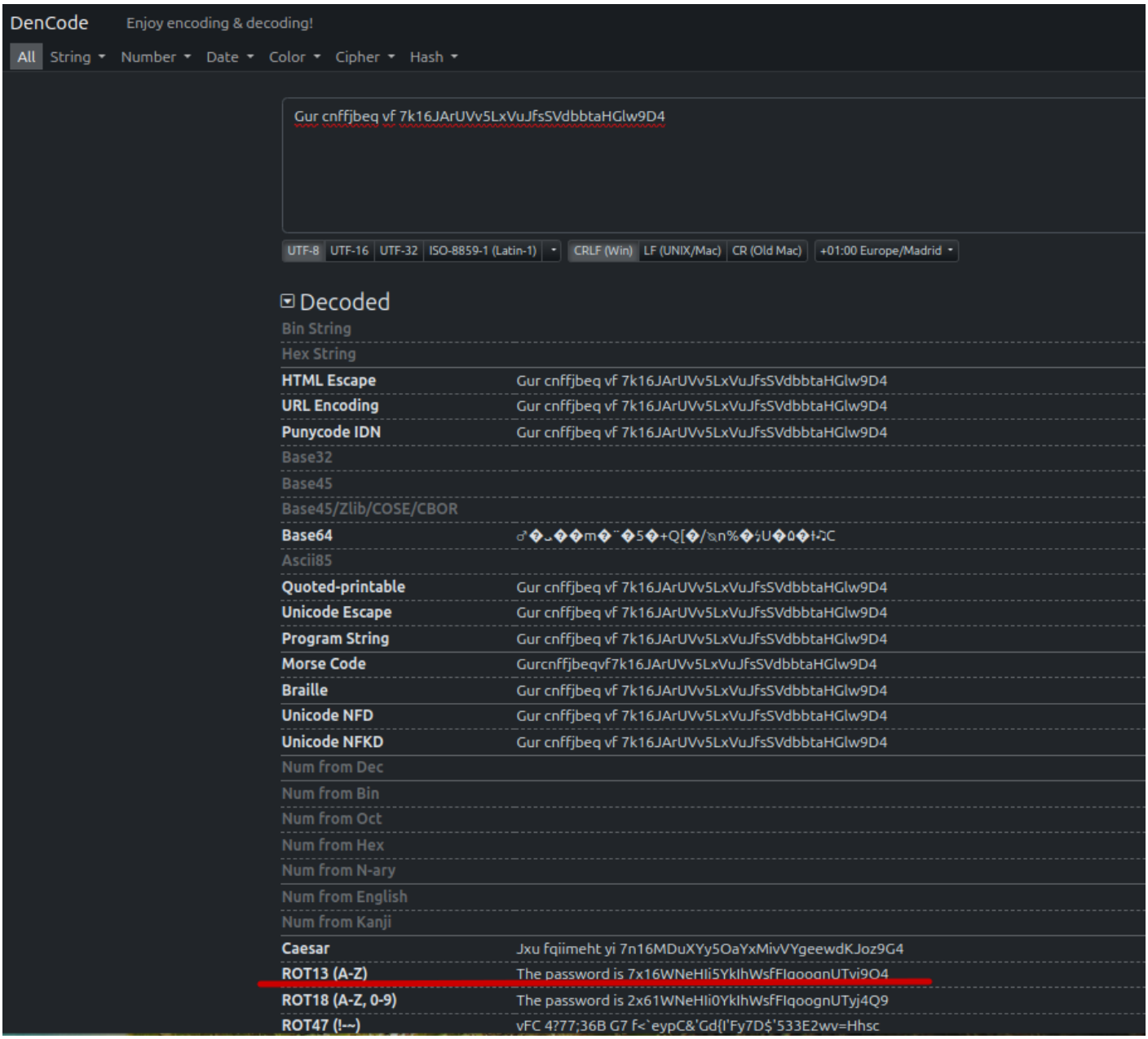
bandit11@bandit:~$ cat data.txt

```
bandit11@bandit:~$ pwd
/home/bandit11

bandit11@bandit:~$ ls -la
total 24
```

```
drwxr-xr-x  2 root     root     4096 Sep 19  2024 .
drwxr-xr-x 70 root     root     4096 Sep 19  2024 ..
-rw-r--r--  1 root     root      220 Mar 31  2024 .bash_logout
-rw-r--r--  1 root     root     3771 Mar 31  2024 .bashrc
-rw-r-----  1 bandit12 bandit11   49 Sep 19  2024 data.txt
-rw-r--r--  1 root     root      807 Mar 31  2024 .profile

bandit11@bandit:~$ cat data.txt
Gur cnffjbeq vf 7k16JArUVv5LxVuJfsSVdbbtaHGlw9D4
```

Rotate 13 - Gur cnffjbeq vf 7k16JArUVv5LxVuJfsSVdbbtaHGlw9D4

Using the decode.com page to rotate.



bandit11@bandit:~$ cat data.txt | tr [a-m][n-z] [n-z][a-m] | tr [A-M][N-Z] [N-Z][A-M]

```
bandit11@bandit:~$ cat data.txt  | tr [a-m][n-z] [n-z][a-m] | tr [A-M][N-Z] [N-Z][A-M]
The password is 7x16WNeHIi5YkIhWsfFIqoognUTyj9Q4
```

password of bandit12 - 7x16WNeHIi5YkIhWsfFIqoognUTyj9Q4

Bandit Level 12 - Level 13

$ ssh -p2220 bandit12@bandit.labs.overthewire.org

A file compressed many times with gzip, bzip2 and tar.

xxd is used to determine what type of file is

```
bandit12@bandit:~$ pwd
/home/bandit12

bandit12@bandit:~$ ls -la
total 24
drwxr-xr-x  2 root     root     4096 Sep 19  2024 .
drwxr-xr-x 70 root     root     4096 Sep 19  2024 ..
-rw-r--r--  1 root     root      220 Mar 31  2024 .bash_logout
-rw-r--r--  1 root     root     3771 Mar 31  2024 .bashrc
-rw-r-----  1 bandit13 bandit12 2583 Sep 19  2024 data.txt
-rw-r--r--  1 root     root      807 Mar 31  2024 .profile

bandit12@bandit:~$ mkdir /tmp/solution_level12

bandit12@bandit:~$ xxd -r data.txt > /tmp/solution_level12/data.txt

bandit12@bandit:~$ cd /tmp/solution_level12

bandit12@bandit:/tmp/solution_level12$ pwd
/tmp/solution_level12

bandit12@bandit:/tmp/solution_level12$ ls
data.txt

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17016
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:19 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:19 ..
-rw-rw-r-- 1 bandit12 bandit12      607 Mar 23 02:19 data.txt

bandit12@bandit:/tmp/solution_level12$ file data.txt
```

```
data.txt: gzip compressed data, was "data2.bin", last modified: Thu Sep 19 07:08:15 2024, max
compression, from Unix, original size modulo 2^32 574

bandit12@bandit:/tmp/solution_level12$ mv data.txt data.gz

bandit12@bandit:/tmp/solution_level12$ gunzip data.gz

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17016
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:20 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:20 ..
-rw-rw-r-- 1 bandit12 bandit12      574 Mar 23 02:19 data

bandit12@bandit:/tmp/solution_level12$ file data
data: bzip2 compressed data, block size = 900k

bandit12@bandit:/tmp/solution_level12$ mv data data.bz2

bandit12@bandit:/tmp/solution_level12$ bunzip2 data.bz2

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17016
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:21 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:21 ..
-rw-rw-r-- 1 bandit12 bandit12      432 Mar 23 02:19 data

bandit12@bandit:/tmp/solution_level12$ file data
data: gzip compressed data, was "data4.bin", last modified: Thu Sep 19 07:08:15 2024, max
compression, from Unix, original size modulo 2^32 20480

bandit12@bandit:/tmp/solution_level12$ mv data data.gz

bandit12@bandit:/tmp/solution_level12$ gunzip data.gz

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17032
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:21 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:21 ..
-rw-rw-r-- 1 bandit12 bandit12    20480 Mar 23 02:19 data
```

```
bandit12@bandit:/tmp/solution_level12$ file data
data: POSIX tar archive (GNU)

bandit12@bandit:/tmp/solution_level12$ mv data data.tar

bandit12@bandit:/tmp/solution_level12$ tar -xf data.tar

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17044
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:22 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:22 ..
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.bin
-rw-rw-r-- 1 bandit12 bandit12    20480 Mar 23 02:19 data.tar

bandit12@bandit:/tmp/solution_level12$ file data5.bin
data5.bin: POSIX tar archive (GNU)

bandit12@bandit:/tmp/solution_level12$ mv data5.bin data5.tar

bandit12@bandit:/tmp/solution_level12$ la -la
total 17044
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:22 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:22 ..
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.tar
-rw-rw-r-- 1 bandit12 bandit12    20480 Mar 23 02:19 data.tar

bandit12@bandit:/tmp/solution_level12$ tar -xf data5.tar

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17048
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:22 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:22 ..
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.tar
-rw-r--r-- 1 bandit12 bandit12      221 Sep 19  2024 data6.bin
-rw-rw-r-- 1 bandit12 bandit12    20480 Mar 23 02:19 data.tar

bandit12@bandit:/tmp/solution_level12$ file data.tar
data.tar: POSIX tar archive (GNU)

bandit12@bandit:/tmp/solution_level12$ tar -xf data.tar
```

```
bandit12@bandit:/tmp/solution_level12$ ls -la
total 17060
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:23 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:23 ..
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.bin
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.tar
-rw-r--r-- 1 bandit12 bandit12      221 Sep 19  2024 data6.bin
-rw-rw-r-- 1 bandit12 bandit12    20480 Mar 23 02:19 data.tar

bandit12@bandit:/tmp/solution_level12$ file data6.bin
data6.bin: bzip2 compressed data, block size = 900k

bandit12@bandit:/tmp/solution_level12$ mv data6.bin data6.bz2

bandit12@bandit:/tmp/solution_level12$ bunzip2 data6.bz2

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17068
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:24 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:24 ..
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.bin
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.tar
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data6
-rw-rw-r-- 1 bandit12 bandit12    20480 Mar 23 02:19 data.tar

bandit12@bandit:/tmp/solution_level12$ file data6
data6: POSIX tar archive (GNU)

bandit12@bandit:/tmp/solution_level12$ mv data6 data6.tar

bandit12@bandit:/tmp/solution_level12$ tar -xf data6.tar

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17072
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:24 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:24 ..
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.bin
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.tar
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data6.tar
```

```
-rw-r--r-- 1 bandit12 bandit12       79 Sep 19  2024 data8.bin
-rw-rw-r-- 1 bandit12 bandit12    20480 Mar 23 02:19 data.tar

bandit12@bandit:/tmp/solution_level12$ file data8.bin
data8.bin: gzip compressed data, was "data9.bin", last modified: Thu Sep 19 07:08:15 2024, max
compression, from Unix, original size modulo 2^32 49

bandit12@bandit:/tmp/solution_level12$ mv data8.bin data8.gz

bandit12@bandit:/tmp/solution_level12$ gunzip data8.gz

bandit12@bandit:/tmp/solution_level12$ ls -la
total 17072
drwxrwxr-x 2 bandit12 bandit12     4096 Mar 23 02:25 .
drwxrwx-wt 1 root     root     17412096 Mar 23 02:25 ..
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.bin
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data5.tar
-rw-r--r-- 1 bandit12 bandit12    10240 Sep 19  2024 data6.tar
-rw-r--r-- 1 bandit12 bandit12       49 Sep 19  2024 data8
-rw-rw-r-- 1 bandit12 bandit12    20480 Mar 23 02:19 data.tar

bandit12@bandit:/tmp/solution_level12$ file data8
data8: ASCII text

bandit12@bandit:/tmp/solution_level12$ cat data8
The password is FO5dwFsc0cbaIiH0h8J2eUks2vdTDwAn
```

> ***password of bandit13 - FO5dwFsc0cbaIiH0h8J2eUks2vdTDwAn***

Bandit Level 13 - Level 14

> **$ ssh -p2220 bandit13@bandit.labs.overthewire.org**

> **bandit13@bandit:~$ cat sshkey.private**

```
bandit13@bandit:~$ cat sshkey.private
-----BEGIN RSA PRIVATE KEY-----
MIIEpAIBAAKCAQEAxkkOE83W2cOT7IWhFc9aPaaQmQDdgzuXCv+ppZHa++buSkN+
gg0tcr7Fw8NLGa5+Uzec2rEg0WmeevB13AIoYp0MZyETq46t+jk9puNwZwIt9XgB
ZufGtZEwWbFWw/vVLNwOXBe4UWStGRWzgPpEeSv5Tb1VjLZIBdGphTIK22Amz6Zb
ThMsiMnyJafEwJ/T8PQO3myS91vUHEuoOMAzoUID4kN0MEZ3+XahyK0HJVq68KsV
ObefXG1vvA3GAJ29kxJaqvRfgYnqZryWN7w3CHjNU4c/2Jkp+n8L0SnxaNA+WYA7
jiPyTF0is8uzMlYQ4l1Lzh/8/MpvhCQF8r22dwIDAQABAoIBAQC6dWBjhyEOzjeA
J3j/RWmap9M5zfJ/wb2bfidNpwbB8rsJ4sZIDZQ7XuIh4LfygoAQSS+bBw3RXvzE
pvJt3SmU8hIDuLsCjL1VnBY5pY7Bju8g8aR/3FyjyNAqx/TLfzlLYfOu7i9Jet67
xAh0tONG/u8FB5I3LAI2Vp6OviwvdWeC4nOxCthldpuPKNLA8rmMMVRTKQ+7T2VS
nXmwYckKUcUgzoVSpiNZaS0zUDypdpy2+tRH3MQa5kqN1YKjvF8RC47woOYCktsD
o3FFpGNFec9Taa3Msy+DfQQhHKZFKIL3bJDONtmrVvtYK40/yeU4aZ/HA2DQzwhe
ol1AfiEhAoGBAOnVjosBkm7sblK+n4IEwPxs8sOmhPnTDUy5WGrpSCrXOmsVIBUf
laL3ZGLx3xCIwtCnEucB9DvN2HZkupc/h6hTKUYLqXuyLD8njTrbRhLgbC9QrKrS
M1F2fSTxVqPtZDlDMwjNR04xHA/fKh8bXXyTMqOHNJTHHNhbh3McdURjAoGBANkU
1hqfnw7+aXncJ9bjysr1ZWbqOE5Nd8AFgfwaKuGTTVX2NsUQnCMWdOp+wFak40JH
PKWkJNdBG+ex0H9JNQsTK3X5PBMAS8AfX0GrKeuwKWA6erytVTqjOfLYcdp5+z9s
8DtVCxDuVsM+i4X8UqIGOlvGbtKEVokHPFXP1q/dAoGAcHg5YX7WEehCgCYTzpO+
xysX8ScM2qS6xuZ3MqUWAxUWkh7NGZvhe0sGy9iOdANzwKw7mUUFViaCMR/t54W1
GC83sOs3D7n5Mj8x3NdO8xFit7dT9a245TvaoYQ7KgmqpSg/ScKCw4c3eiLava+J
3btnJeSIU+8ZXq9XjPRpKwUCgYA7z6LiOQKxNeXH3qHXcnHok855maUj5fJNpPbY
iDkyZ8ySF8GlcFsky8Yw6fWCqfG3zDrohJ5l9JmEsBh7SadkwsZhvecQcS9t4vby
9/8X4jS0P8ibfcKS4nBP+dT81kkkg5Z5MohXBORA7VWx+ACohcDEkprsQ+w32xeD
qT1EvQKBgQDKm8ws2ByvSUVs9GjTilCajFqLJ0eVYzRPaY6f++Gv/UVfAPV4c+S0
kAWpXbv5tbkkzbS0eaLPTKgLzavXtQoTtKwrjpolHKIHUz6Wu+n4abfAIRFubOdN
/+aLoRQ0yBDRbdXMsZN/jvY44eM+xRLdRVyMmdPtP8belRi2E2aEzA==
-----END RSA PRIVATE KEY-----
```

Using the sshkey.private of bandit14 in the console of bandit13 login as bandit14 to the localhost on port 2220.

With the sshkey.private you will connect as bandit14.

bandit14@bandit:~$ cat /etc/bandit_pass/bandit14

```
bandit14@bandit:~$ cat /etc/bandit_pass/bandit14
MU4VWeTyJk8ROof1qqmcBPaLh7lDCPvS
```

> ***password of bandit14 - MU4VWeTyJk8ROof1qqmcBPaLh7lDCPvS***

Bandit Level 14 - Level 15

> **Start the ssh connection as bandit14 after logging in as bandit13 and using the sshkey.private.**

> **bandit13@bandit:~$ ssh -p2220 -i sshkey.private bandit14@localhost**

> ***Note: The key is in bandit13 home directory. Initiate the login process after logging in as bandit13 and use the sshkey.private file.***

```
bandit13@bandit:~$ ssh -p2220 -i sshkey.private bandit14@localhost

The authenticity of host '[localhost]:2220 ([127.0.0.1]:2220)' can't be established.
ED25519 key fingerprint is SHA256:C2ihUBV7ihnV1wUXRb4RrEcLfXC5CXlhmAAM/urerLY.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Could not create directory '/home/bandit13/.ssh' (Permission denied).
Failed to add the host to the list of known hosts (/home/bandit13/.ssh/known_hosts).
                         _                     _ _ _
                        | |__   __ _ _ __   __| (_) |_
                        | '_ \ / _` | '_ \ / _` | | __|
                        | |_) | (_| | | | | (_| | | |_
                        |_.__/ \__,_|_| |_|\__,_|_|\__|


                      This is an OverTheWire game server.
            More information on http://www.overthewire.org/wargames

!!! You are trying to log into this SSH server with a password on port 2220 from localhost.
```

```
!!! Connecting from localhost is blocked to conserve resources.
!!! Please log out and log in again.



      ,----..            ,----,          .---.
     /   /   \         ,/   .`|         /. ./|
    /   .     :      ,`   .'  :     .--'.  ' ;
   .   /   ;.  \   ;    ;     /    /__./ \ : |
  .   ;   /  ` ; .'___,/    ,' .--'.  '   \' .
  ;   |  ; \ ; | |    :     | /___/ \ |    ' '
  |   :  | ; | ' ;    |.';  ; ;   \  \;      :
  .   |  ' ' ' : `----'  |  |  \   ;  `      |
  '   ;  \; /  |     '   :  ;   .   \    .\  ;
   \   \  ',  /      |   |  '    \   \   ' \ |
    ;   :    /       '   :  |     :   '  |--"
     \   \ .'        ;   |.'       \   \ ;
  www. `---` ver     '---' he       '---" ire.org



Welcome to OverTheWire!

If you find any problems, please report them to the #wargames channel on
discord or IRC.

--[ Playing the games ]--

  This machine might hold several wargames.
  If you are playing "somegame", then:

    * USERNAMES are somegame0, somegame1, ...
    * Most LEVELS are stored in /somegame/.
    * PASSWORDS for each level are stored in /etc/somegame_pass/.

  Write-access to homedirectories is disabled. It is advised to create a
  working directory with a hard-to-guess name in /tmp/.  You can use the
  command "mktemp -d" in order to generate a random and hard to guess
  directory in /tmp/.  Read-access to both /tmp/ is disabled and to /proc
  restricted so that users cannot snoop on eachother. Files and directories
  with easily guessable or short names will be periodically deleted! The /tmp
  directory is regularly wiped.
```

```
  Please play nice:

    * don't leave orphan processes running
    * don't leave exploit-files laying around
    * don't annoy other players
    * don't post passwords or spoilers
    * again, DONT POST SPOILERS!
      This includes writeups of your solution on your blog or website!

--[ Tips ]--

  This machine has a 64bit processor and many security-features enabled
  by default, although ASLR has been switched off.  The following
  compiler flags might be interesting:

    -m32                    compile for 32bit
    -fno-stack-protector    disable ProPolice
    -Wl,-z,norelro          disable relro

  In addition, the execstack tool can be used to flag the stack as
  executable on ELF binaries.

  Finally, network-access is limited for most levels by a local
  firewall.

--[ Tools ]--

 For your convenience we have installed a few useful tools which you can find
 in the following locations:

    * gef (https://github.com/hugsy/gef) in /opt/gef/
    * pwndbg (https://github.com/pwndbg/pwndbg) in /opt/pwndbg/
    * gdbinit (https://github.com/gdbinit/Gdbinit) in /opt/gdbinit/
    * pwntools (https://github.com/Gallopsled/pwntools)
    * radare2 (http://www.radare.org/)

--[ More information ]--

  For more information regarding individual wargames, visit
  http://www.overthewire.org/wargames/
```

```
  For support, questions or comments, contact us on discord or IRC.

  Enjoy your stay!

bandit14@bandit:~$
```

bandit14@bandit:~$ telnet localhost 30000

```
bandit14@bandit:~$ telnet localhost 30000
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.


paste the password of bandit14: MU4VWeTyJk8ROof1qqmcBPaLh7lDCPvS


Correct!
8xCjnmgoKbGLhHFAZlGE5Tmu4M2tKJQo

Connection closed by foreign host.
```

```
bandit14@bandit:~$ echo "MU4VWeTyJk8ROof1qqmcBPaLh7lDCPvS" | nc localhost 30000
Correct!
8xCjnmgoKbGLhHFAZlGE5Tmu4M2tKJQo
```

password of bandit15 - 8xCjnmgoKbGLhHFAZlGE5Tmu4M2tKJQo

Bandit Level 15 - Level 16

$ ssh -p2220 bandit15@bandit.labs.overthewire.org

bandit15@bandit:~$ echo "8xCjnmgoKbGLhHFAZlGE5Tmu4M2tKJQo" > /tmp/passbandit15.txt

Create a file with the password of the previous bandit15

bandit15@bandit:~$ openssl s_client localhost:30001 < /tmp/passbandit15.txt

```
bandit15@bandit:~$ openssl s_client localhost:30001 < /tmp/passbandit15.txt
CONNECTED(00000003)
Can't use SSL_get_servername
depth=0 CN = SnakeOil
verify error:num=18:self-signed certificate
verify return:1
depth=0 CN = SnakeOil
verify return:1
---
Certificate chain
 0 s:CN = SnakeOil
   i:CN = SnakeOil
   a:PKEY: rsaEncryption, 4096 (bit); sigalg: RSA-SHA256
   v:NotBefore: Jun 10 03:59:50 2024 GMT; NotAfter: Jun  8 03:59:50 2034 GMT
---
Server certificate
-----BEGIN CERTIFICATE-----
MIIFBzCCAu+gAwIBAgIUBLz7DBxA0IfojaL/WaJzE6Sbz7cwDQYJKoZIhvcNAQEL
BQAwEzERMA8GA1UEAwwIU25ha2VPaWwwHhcNMjQwNjEwMDM1OTUwWhcNMzQwNjA4
MDM1OTUwWjATMREwDwYDVQQDDAhTbmFrZU9pbDCCAiIwDQYJKoZIhvcNAQEBBQAD
ggIPADCCAgoCggIBANI+P5QXm9Bj21FIPsQqbqZRb5XmSZZJYaam7EIJ16Fxedf+
jXAv4d/FVqiEM4BuSNsNMeBMx2Gq0lAfN33h+RMTjRoMb8yBsZsC063MLfXCk4p+
09gtGP7BS6Iy5XdmfY/fPHvA3JDEScdlDDmd6Lsbdwhv93Q8M6POVO9sv4HuS4t/
jEjr+NhE+Bjr/wDbyg7GL71BP1WPZpQnRE4OzoSrt5+bZVLvODWUFwinB0fLaGRk
GmI0r5EUOUd7HpYyoIQbiNlePGfPpHRKnmdXTTEZEoxeWWAaM1VhPGqfrB/Pnca+
vAJX7iBOb3kHinmfVOScsG/YAUR94wSELeY+UlEWJaELVUntrJ5HeRDiTChiVQ++
wnnjNbepaW6shopybUF3XXfhIb4NvwLWpvoKFXVtcVjlOujF0snVvpE+MRT0wacy
tHtjZs7Ao7GYxDz6H8AdBLKJW67uQon37a4MI260ADFMS+2vEAbNSFP+f6ii5mrB
18cY64ZaF6oU8bjGK7BArDx56bRc3WFyuBIGWAFHEuB948BcshXY7baf5jjzPmgz
mq1zdRthQB31MOM2ii6vuTkheAvKfFf+llH4M9SnES4NSF2hj9NnHga9V08wfhYc
x0W6qu+S8HUdVF+V23yTvUNgz4Q+UoGs4sHSDEsIBFqNvInnpUmtNgcR2L5PAgMB
```

```
AAGjUzBRMB0GA1UdDgQWBBTPo8kfze4P9EgxNuyk7+xDGFtAYzAfBgNVHSMEGDAW
gBTPo8kfze4P9EgxNuyk7+xDGFtAYzAPBgNVHRMBAf8EBTADAQH/MA0GCSqGSIb3
DQEBCwUAA4ICAQAKHomtmcGqyiLnhziLe97Mq2+Sul5QgYVwfx/KYOXxv2T8ZmcR
Ae9XFhZT4jsAOUDK1OXx9aZgDGJHJLNEVTe9zWv1ONFfNxEBxQgP7hhmDBWdtj6d
taqEW/Jp06X+08BtnYK9NZsvDg2YRcvOHConeMjwvEL7tQK0m+GVyQfLYg6jnrhx
egH+abucTKxabFcWSE+Vk0uJYMqcbXvB4WNKz9vj4V5Hn7/DN4xIjFko+nREw6Oa
/AUFjNnO/FPjap+d68H1LdzMH3PSs+yjGid+6Zx9FCnt9qZydW13Miqg3nDnODXw
+Z682mQFjVlGPCA5ZOQbyMKY4tNazG2n8qy2famQT3+jF8Lb6a4NGbnpeWnLMkIu
jWLWIkA9MlbdNXuajiPNVyYIK9gdoBzbfaKwoOfSsLxEqlf8rio1GGcEV5Hlz5S2
txwI0xdW9MWeGWoiLbZSbRJH4TIBFFtoBG0LoEJi0C+UPwS8CDngJB4TyrZqEld3
rH87W+Et1t/Nepoc/Eoaux9PFp5VPXP+qwQGmhir/hv7OsgBhrkYuhkjxZ8+1uk7
tUWC/XM0mpLoxsq6vVl3AJaJe1ivdA9xLytsuG4iv02Juc593HXYR8yOpow0Eq2T
U5EyeuFg5RXYwAPi7ykw1PW7zAPL4MlonEVz+QXOSx6eyhimp1VZC11SCg==
-----END CERTIFICATE-----
subject=CN = SnakeOil
issuer=CN = SnakeOil
---
No client certificate CA names sent
Peer signing digest: SHA256
Peer signature type: RSA-PSS
Server Temp Key: X25519, 253 bits
---
SSL handshake has read 2103 bytes and written 373 bytes
Verification error: self-signed certificate
---
New, TLSv1.3, Cipher is TLS_AES_256_GCM_SHA384
Server public key is 4096 bit
Secure Renegotiation IS NOT supported
Compression: NONE
Expansion: NONE
No ALPN negotiated
Early data was not sent
Verify return code: 18 (self-signed certificate)
---
---
Post-Handshake New Session Ticket arrived:
SSL-Session:
    Protocol  : TLSv1.3
    Cipher    : TLS_AES_256_GCM_SHA384
    Session-ID: DB913DD20979C7012B7A33EA837FE4FB8F10C05674E68702ACF9A134FF9EA6D3
```

```
    Session-ID-ctx:
    Resumption PSK:
BBA80756820903613A85A773E680AE36B41A24E410CFAAA344B9FCA9D39613EEA8FDBE607244D65690E64305B88E0D
E2
    PSK identity: None
    PSK identity hint: None
    SRP username: None
    TLS session ticket lifetime hint: 300 (seconds)
    TLS session ticket:
    0000 - fa 93 ce 9e 9b db 91 e2-99 9f a3 a9 56 2b ad e3   ............V+..
    0010 - be b0 b2 5a 13 ca 38 7f-10 b4 a9 ef 88 83 bb 67   ...Z..8........g
    0020 - 95 08 6d 7c cd b2 55 95-c6 41 e2 f6 a1 f0 a3 04   ..m|..U..A......
    0030 - d4 b2 94 df c1 06 24 0d-c9 43 cd 6e 7b 76 2b bb   ......$..C.n{v+.
    0040 - fa 10 65 12 2d bb 92 59-d7 6a 73 92 49 39 88 fb   ..e.-..Y.js.I9..
    0050 - 75 82 dc 90 88 49 b2 9f-02 ec 19 02 71 1e b9 ff   u....I......q...
    0060 - 29 fd 51 2d 49 08 86 be-89 bd 1d 5f fb 65 ef 1f   ).Q-I......_.e..
    0070 - 73 cc ba ff cc c3 b8 46-6d a1 fa c8 8e 27 3a 0c   s......Fm....':.
    0080 - 01 c5 1e a3 92 80 88 81-60 da 48 07 fb 0e a7 e3   ........`.H.....
    0090 - fe 2c ca e7 1a 78 94 84-08 87 00 5f d9 7e ec 14   .,...x....._.~..
    00a0 - a9 5f 5b 9b c7 d5 24 46-1c 5d 8c 03 93 96 5c dd   ._[...$F.]....\.
    00b0 - 5e 0d 72 46 bb 48 20 47-3f 61 73 ed b6 5b d9 48   ^.rF.H G?as..[.H
    00c0 - 1d 3b 15 cf 2e 25 2b e3-a1 89 2e 73 bb 70 f1 17   .;...%+....s.p..
    00d0 - 73 28 b4 3f 54 87 0b 8f-9f 0d a7 ec 0a 48 ab f0   s(.?T........H..

    Start Time: 1742699697
    Timeout   : 7200 (sec)
    Verify return code: 18 (self-signed certificate)
    Extended master secret: no
    Max Early Data: 0
---
read R BLOCK
---
Post-Handshake New Session Ticket arrived:
SSL-Session:
    Protocol  : TLSv1.3
    Cipher    : TLS_AES_256_GCM_SHA384
    Session-ID: 7BCBCF8F2A8625312E3AF88E52595E265E7C2432FABD252B093AE473DB8F0257
    Session-ID-ctx:
    Resumption PSK:
428EB612107234BBD53BEB46F0557883227782CD76C75A648364CA54BC7D02A9748DE77D86C945AF7462E4AD12BB84
```

```
85
    PSK identity: None
    PSK identity hint: None
    SRP username: None
    TLS session ticket lifetime hint: 300 (seconds)
    TLS session ticket:
    0000 - fa 93 ce 9e 9b db 91 e2-99 9f a3 a9 56 2b ad e3   ............V+..
    0010 - 08 9e 2f d5 52 d2 e2 12-d6 41 f0 34 ed a3 5e 61   ../.R....A.4..^a
    0020 - 62 fd 39 f1 4a 59 ae 50-d6 c3 34 b4 e2 74 85 f1   b.9.JY.P..4..t..
    0030 - f2 1b 62 91 42 74 7c 61-39 99 46 9b 89 50 ef a9   ..b.Bt|a9.F..P..
    0040 - 64 a9 b3 2c 70 c0 ae 0a-34 a6 e2 e7 7b e6 a8 0b   d..,p...4...{...
    0050 - d8 06 2a 05 29 df 1c ec-7a e5 ba 75 02 5f 75 c4   ..*.)...z..u._u.
    0060 - 7a 0c 41 ae 5f 1f 0d 5c-7d 11 29 84 9e 34 64 80   z.A._..\}.)..4d.
    0070 - cc e1 fc 84 67 41 e4 25-01 89 c7 b4 79 5f 93 c2   ....gA.%....y_..
    0080 - 88 9e 8e 16 00 e3 cb 17-ae 43 ae b7 51 50 2b f5   .........C..QP+.
    0090 - 76 32 41 30 6a 9b bf 02-e5 d8 c0 32 47 73 c4 fb   v2A0j......2Gs..
    00a0 - 44 2d b0 49 db b3 52 ed-e7 ff 95 08 15 22 ce ee   D-.I..R......"..
    00b0 - da ad ff 58 5d 6f 6a b8-fb af b6 19 e5 e2 96 2f   ...X]oj......../
    00c0 - 9d 6f 78 2e fa c1 65 8c-c3 c7 3b 94 4a 77 c9 5d   .ox...e...;.Jw.]
    00d0 - 5c a1 9d a5 33 76 b5 20-69 da a4 bf c6 1a 12 64   \...3v. i......d

    Start Time: 1742699697
    Timeout   : 7200 (sec)
    Verify return code: 18 (self-signed certificate)
    Extended master secret: no
    Max Early Data: 0
---
read R BLOCK
Correct!
kSkvUpMQ7lBYyCM4GBPvCvT1BfWRy0Dx

closed
```

> ***password of bandit16 - kSkvUpMQ7lBYyCM4GBPvCvT1BfWRy0Dx***

Bandit Level 16 - Level 17

$ ssh -p2220 bandit16@bandit.labs.overthewire.org

bandit16@bandit:~$ nmap -Pn -p31000-32000 -sV localhost

Search for the ports that are in service from port 31000 to 32000 in the localhost.

```
bandit16@bandit:~$ nmap -Pn -p31000-32000 -sV localhost
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-03-23 03:29 UTC
Nmap scan report for localhost (127.0.0.1)
Host is up (0.00022s latency).
Not shown: 996 closed tcp ports (conn-refused)
PORT      STATE SERVICE     VERSION
31046/tcp open  echo
31518/tcp open  ssl/echo
31691/tcp open  echo
31790/tcp open  ssl/unknown
31960/tcp open  echo
1 service unrecognized despite returning data. If you know the service/version, please submit
the following fingerprint at https://nmap.org/cgi-bin/submit.cgi?new-service :
SF-Port31790-TCP:V=7.94SVN%T=SSL%I=7%D=3/23%Time=67DF804A%P=x86_64-pc-linu
SF:x-gnu%r(GenericLines,32,"Wrong!\x20Please\x20enter\x20the\x20correct\x2
SF:0current\x20password\.\n")%r(GetRequest,32,"Wrong!\x20Please\x20enter\x
SF:20the\x20correct\x20current\x20password\.\n")%r(HTTPOptions,32,"Wrong!\
SF:x20Please\x20enter\x20the\x20correct\x20current\x20password\.\n")%r(RTS
SF:PRequest,32,"Wrong!\x20Please\x20enter\x20the\x20correct\x20current\x20
SF:password\.\n")%r(Help,32,"Wrong!\x20Please\x20enter\x20the\x20correct\x
SF:20current\x20password\.\n")%r(FourOhFourRequest,32,"Wrong!\x20Please\x2
SF:0enter\x20the\x20correct\x20current\x20password\.\n")%r(LPDString,32,"W
SF:rong!\x20Please\x20enter\x20the\x20correct\x20current\x20password\.\n")
SF:%r(SIPOptions,32,"Wrong!\x20Please\x20enter\x20the\x20correct\x20curren
SF:t\x20password\.\n");

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 169.13 seconds
```

SF-Port31790-TCP:V=7.94SVN%T=SSL%I=7%D=3/23%Time=67DF804A%P=x86_64-pc-linu

In the line above is shows that the port 31790 needs a password. Using the password kSkvUpMQ7lBYyCM4GBPvCvT1BfWRy0Dx

echo "kSkvUpMQ7lBYyCM4GBPvCvT1BfWRy0Dx" | openssl s_client -connect localhost:31790 -ign_eof

```
bandit16@bandit:~$ echo "kSkvUpMQ7lBYyCM4GBPvCvT1BfWRy0Dx" | openssl s_client -connect
localhost:31790 -ign_eof
CONNECTED(00000003)
Can't use SSL_get_servername
depth=0 CN = SnakeOil
verify error:num=18:self-signed certificate
verify return:1
depth=0 CN = SnakeOil
verify return:1
---
Certificate chain
 0 s:CN = SnakeOil
   i:CN = SnakeOil
   a:PKEY: rsaEncryption, 4096 (bit); sigalg: RSA-SHA256
   v:NotBefore: Jun 10 03:59:50 2024 GMT; NotAfter: Jun  8 03:59:50 2034 GMT
---
Server certificate
-----BEGIN CERTIFICATE-----
MIIFBzCCAu+gAwIBAgIUBLz7DBxA0IfojaL/WaJzE6Sbz7cwDQYJKoZIhvcNAQEL
BQAwEzERMA8GA1UEAwwIU25ha2VPaWwwHhcNMjQwNjEwMDM1OTUwWhcNMzQwNjA4
MDM1OTUwWjATMREwDwYDVQQDDAhTbmFrZU9pbDCCAiIwDQYJKoZIhvcNAQEBBQAD
ggIPADCCAgoCggIBANI+P5QXm9Bj21FIPsQqbqZRb5XmSZZJYaam7EIJ16Fxedf+
jXAv4d/FVqiEM4BuSNsNMeBMx2Gq0lAfN33h+RMTjRoMb8yBsZsC063MLfXCk4p+
09gtGP7BS6Iy5XdmfY/fPHvA3JDEScdlDDmd6Lsbdwhv93Q8M6POVO9sv4HuS4t/
jEjr+NhE+Bjr/wDbyg7GL71BP1WPZpQnRE4OzoSrt5+bZVLvODWUFwinB0fLaGRk
GmI0r5EUOUd7HpYyoIQbiNlePGfPpHRKnmdXTTEZEoxeWWAaM1VhPGqfrB/Pnca+
vAJX7iBOb3kHinmfVOScsG/YAUR94wSELeY+UlEWJaELVUntrJ5HeRDiTChiVQ++
wnnjNbepaW6shopybUF3XXfhIb4NvwLWpvoKFXVtcVjlOujF0snVvpE+MRT0wacy
tHtjZs7Ao7GYxDz6H8AdBLKJW67uQon37a4MI260ADFMS+2vEAbNSFP+f6ii5mrB
18cY64ZaF6oU8bjGK7BArDx56bRc3WFyuBIGWAFHEuB948BcshXY7baf5jjzPmgz
mq1zdRthQB31MOM2ii6vuTkheAvKfFf+llH4M9SnES4NSF2hj9NnHga9V08wfhYc
x0W6qu+S8HUdVF+V23yTvUNgz4Q+UoGs4sHSDEsIBFqNvInnpUmtNgcR2L5PAgMB
AAGjUzBRMB0GA1UdDgQWBBTPo8kfze4P9EgxNuyk7+xDGFtAYzAfBgNVHSMEGDAW
```

```
gBTPo8kfze4P9EgxNuyk7+xDGFtAYzAPBgNVHRMBAf8EBTADAQH/MA0GCSqGSIb3
DQEBCwUAA4ICAQAKHomtmcGqyiLnhziLe97Mq2+Sul5QgYVwfx/KYOXxv2T8ZmcR
Ae9XFhZT4jsAOUDK1OXx9aZgDGJHJLNEVTe9zWv1ONFfNxEBxQgP7hhmDBWdtj6d
taqEW/Jp06X+08BtnYK9NZsvDg2YRcvOHConeMjwvEL7tQK0m+GVyQfLYg6jnrhx
egH+abucTKxabFcWSE+Vk0uJYMqcbXvB4WNKz9vj4V5Hn7/DN4xIjFko+nREw6Oa
/AUFjNnO/FPjap+d68H1LdzMH3PSs+yjGid+6Zx9FCnt9qZydW13Miqg3nDnODXw
+Z682mQFjVlGPCA5ZOQbyMKY4tNazG2n8qy2famQT3+jF8Lb6a4NGbnpeWnLMkIu
jWLWIkA9MlbdNXuajiPNVyYIK9gdoBzbfaKwoOfSsLxEqlf8rio1GGcEV5Hlz5S2
txwI0xdW9MWeGWoiLbZSbRJH4TIBFFtoBG0LoEJi0C+UPwS8CDngJB4TyrZqEld3
rH87W+Et1t/Nepoc/Eoaux9PFp5VPXP+qwQGmhir/hv7OsgBhrkYuhkjxZ8+1uk7
tUWC/XM0mpLoxsq6vVl3AJaJe1ivdA9xLytsuG4iv02Juc593HXYR8yOpow0Eq2T
U5EyeuFg5RXYwAPi7ykw1PW7zAPL4MlonEVz+QXOSx6eyhimp1VZC11SCg==
-----END CERTIFICATE-----
subject=CN = SnakeOil
issuer=CN = SnakeOil
---
No client certificate CA names sent
Peer signing digest: SHA256
Peer signature type: RSA-PSS
Server Temp Key: X25519, 253 bits
---
SSL handshake has read 2103 bytes and written 373 bytes
Verification error: self-signed certificate
---
New, TLSv1.3, Cipher is TLS_AES_256_GCM_SHA384
Server public key is 4096 bit
Secure Renegotiation IS NOT supported
Compression: NONE
Expansion: NONE
No ALPN negotiated
Early data was not sent
Verify return code: 18 (self-signed certificate)
---
---
Post-Handshake New Session Ticket arrived:
SSL-Session:
    Protocol  : TLSv1.3
    Cipher    : TLS_AES_256_GCM_SHA384
    Session-ID: B5604EB1371F87BC2243B2DFF084A9FDBA1FC9B7E429F83FC2A338B93FE7DF05
    Session-ID-ctx:
```

```
    Resumption PSK:
074C0C4998116196DA2755F6F98D26BC93C2ABAD63B9A9B79C66EF991D9C6F3997B695382FA0C5751E626619E80C4E
8C
    PSK identity: None
    PSK identity hint: None
    SRP username: None
    TLS session ticket lifetime hint: 300 (seconds)
    TLS session ticket:
    0000 - 65 4f 28 b4 a4 21 c3 43-f9 75 e1 e7 ba c3 6c 78   eO(..!.C.u....lx
    0010 - 7e d4 e7 e8 d5 98 2c be-53 fc 79 d6 e4 72 55 c8   ~.....,.S.y..rU.
    0020 - 08 9a 4c 3c 51 5d 38 9f-e6 1b 1f fe a2 26 6f ec   ..L<Q]8......&o.
    0030 - fd ae ff 67 3d 35 f2 83-81 b7 aa 1a db 0e c2 8c   ...g=5..........
    0040 - 58 a6 cf 66 ae cf 9e 96-d6 62 ce 00 f1 f3 16 c2   X..f.....b......
    0050 - 73 49 ba 91 b6 e3 49 92-c7 fc 56 14 da c6 27 1f   sI....I...V...'.
    0060 - 7c 23 a2 35 3d 9d f5 55-d8 0c 85 a8 d6 70 13 f5   |#.5=..U.....p..
    0070 - e1 8a 1c 2a a0 6e 9c 6d-05 3a 1e 9f b6 80 a5 df   ...*.n.m.:......
    0080 - 12 74 f3 b0 36 30 ba 7e-f8 40 14 06 0a 52 2b a1   .t..60.~.@...R+.
    0090 - 78 49 14 65 fd 5b 9b 3e-60 a0 1d 10 2d 1c 07 d0   xI.e.[.>`...-...
    00a0 - e0 14 f8 c1 db 81 4a bc-49 2d 35 22 c7 24 78 6d   ......J.I-5".$xm
    00b0 - 9b f0 67 c7 25 39 a9 36-60 8c a2 c2 bd d9 86 0a   ..g.%9.6`.......
    00c0 - a5 5b 98 01 0c aa 09 d6-9b 54 8c 7a e4 90 89 af   .[.......T.z....
    00d0 - c1 9c 45 11 e6 79 99 49-44 18 d0 b3 e2 f2 e2 f1   ..E..y.ID.......

    Start Time: 1742701153
    Timeout   : 7200 (sec)
    Verify return code: 18 (self-signed certificate)
    Extended master secret: no
    Max Early Data: 0
---
read R BLOCK
---
Post-Handshake New Session Ticket arrived:
SSL-Session:
    Protocol  : TLSv1.3
    Cipher    : TLS_AES_256_GCM_SHA384
    Session-ID: F38B4EF522C6B53FCFB4035714DCD8F86442DC9E18C45BAAA255F3B422FB98CA
    Session-ID-ctx:
    Resumption PSK:
7A6764601D7C6FBC47B013CA24345D437F49368C4799BF1FC1B70373DB901BFA8D95DE5C830F5A6112CC7C10580EC8
5F
```

```
    PSK identity: None
    PSK identity hint: None
    SRP username: None
    TLS session ticket lifetime hint: 300 (seconds)
    TLS session ticket:
    0000 - 65 4f 28 b4 a4 21 c3 43-f9 75 e1 e7 ba c3 6c 78   eO(..!.C.u....lx
    0010 - bb 92 4b 34 02 18 fe 7d-17 17 c7 e2 4a e5 88 67   ..K4...}....J..g
    0020 - c9 9e ae d0 51 5a 91 00-ca 97 b1 a6 4f 2a 9b 32   ....QZ......O*.2
    0030 - 49 3a e3 7e 2d 81 20 71-0d 3f b3 cf 31 cf bd f1   I:.~-. q.?..1...
    0040 - e0 44 2a a4 0b f4 ae 0f-63 1f d0 e9 2d 7a f8 52   .D*.....c...-z.R
    0050 - c1 bf 0a fe 62 39 22 61-63 6a 49 52 1d 1e 1b e7   ....b9"acjIR....
    0060 - 1c e2 07 71 7d 43 3d f7-4a 50 85 25 ae 1b 8b ba   ...q}C=.JP.%....
    0070 - f7 a3 64 82 19 19 c7 5b-10 b7 ff b1 d5 fe 48 66   ..d....[......Hf
    0080 - 56 36 44 ad 45 ca 5b db-d2 59 eb a0 c5 21 96 2b   V6D.E.[..Y...!.+
    0090 - 75 8d 40 04 b0 c7 c7 02-aa aa 31 f5 2c 06 e2 7b   u.@.......1.,..{
    00a0 - e5 5e e8 24 b7 15 08 82-9d 18 ce ec 81 5b ab 1c   .^.$.........[..
    00b0 - 8f 30 d7 3b e8 2e ec f2-53 49 7a fa 18 20 7c a9   .0.;....SIz.. |.
    00c0 - 48 08 6a 27 83 d4 dd 86-01 ac 3f 66 c6 4b 01 22   H.j'......?f.K."
    00d0 - 8b a2 c5 58 3d f4 81 63-ad 78 62 ac c2 f7 05 8b   ...X=..c.xb.....

    Start Time: 1742701153
    Timeout   : 7200 (sec)
    Verify return code: 18 (self-signed certificate)
    Extended master secret: no
    Max Early Data: 0
---
read R BLOCK
Correct!
-----BEGIN RSA PRIVATE KEY-----
MIIEogIBAAKCAQEAvmOkuifmMg6HL2YPIOjon6iWfbp7c3jx34YkYWqUH57SUdyJ
imZzeyGC0gtZPGujUSxiJSWI/oTqexh+cAMTSMlOJf7+BrJObArnxd9Y7YT2bRPQ
Ja6Lzb558YW3FZl87ORiO+rW4LCDCNd2lUvLE/GL2GWyuKN0K5iCd5TbtJzEkQTu
DSt2mcNn4rhAL+JFr56o4T6z8WWAW18BR6yGrMq7Q/kALHYW3OekePQAzL0VUYbW
JGTi65CxbCnzc/w4+mqQyvmzpWtMAzJTzAzQxNbkR2MBGySxDLrjg0LWN6sK7wNX
x0YVztz/zbIkPjfkU1jHS+9EbVNj+D1XFOJuaQIDAQABAoIBABagpxpM1aoLWfvD
KHcj10nqcoBc4oE11aFYQwik7xfW+24pRNuDE6SFthOar69jp5RlLwD1NhPx3iBl
J9nOM8OJ0VToum43UOS8YxF8WwhXriYGnc1sskbwpXOUDc9uX4+UESzH22P29ovd
d8WErY0gPxun8pbJLmxkAtWNhpMvfe0050vk9TL5wqbu9AlbssgTcCXkMQnPw9nC
YNN6DDP2lbcBrvgT9YCNL6C+ZKufD52yOQ9qOkwFTEQpjtF4uNtJom+asvlpmS8A
vLY9r60wYSvmZhNqBUrj7lyCtXMIu1kkd4w7F77k+DjHoAXyxcUp1DGL51sOmama
```

```
+TOWWgECgYEA8JtPxP0GRJ+IQkX262jM3dEIkza8ky5moIwUqYdsx0NxHgRRhORT
8c8hAuRBb2G82so8vUHk/fur85OEfc9TncnCY2crpoqsghifKLxrLgtT+qDpfZnx
SatLdt8GfQ85yA7hnWWJ2MxF3NaeSDm75Lsm+tBbAiyc9P2jGRNtMSkCgYEAypHd
HCctNi/FwjulhttFx/rHYKhLidZDFYeiE/v45bN4yFm8x7R/b0iE7KaszX+Exdvt
SghaTdcG0Knyw1bpJVyusavPzpaJMjdJ6tcFhVAbAjm7enCIvGCSx+X3l5SiWg0A
R57hJglezIiVjv3aGwHwvlZvtszK6zV6oXFAu0ECgYAbjo46T4hyP5tJi93V5HDi
Ttiek7xRVxUl+iU7rWkGAXFpMLFteQEsRr7PJ/lemmEY5eTDAFMLy9FL2m9oQWCg
R8VdwSk8r9FGLS+9aKcV5PI/WEKlwgXinB3OhYimtiG2Cg5JCqIZFHxD6MjEGOiu
L8ktHMPvodBwNsSBULpG0QKBgBAplTfC1HOnWiMGOU3KPwYWt0O6CdTkmJOmL8Ni
blh9elyZ9FsGxsgtRBXRsqXuz7wtsQAgLHxbdLq/ZJQ7YfzOKU4ZxEnabvXnvWkU
YOdjHdSOoKvDQNWu6ucyLRAWFuISeXw9a/9p7ftpxm0TSgyvmfLF2MIAEwyzRqaM
77pBAoGAMmjmIJdjp+Ez8duyn3ieo36yrttF5NSsJLAbxFpdlc1gvtGCWW+9Cq0b
dxviW8+TFVEBl1O4f7HVm6EpTscdDxU+bCXWkfjuRb7Dy9GOtt9JPsX8MBTakzh3
vBgsyi/sN3RqRBcGU40fOoZyfAMT8s1m/uYv52O6IgeuZ/ujbjY=
-----END RSA PRIVATE KEY-----

closed
```

The end of the result is the PRIVATE KEY of the access to the next level.

Save the following text in a file called key.private

```
-----BEGIN RSA PRIVATE KEY-----
MIIEogIBAAKCAQEAvmOkuifmMg6HL2YPIOjon6iWfbp7c3jx34YkYWqUH57SUdyJ
imZzeyGC0gtZPGujUSxiJSWI/oTqexh+cAMTSMlOJf7+BrJObArnxd9Y7YT2bRPQ
Ja6Lzb558YW3FZl87ORiO+rW4LCDCNd2lUvLE/GL2GWyuKN0K5iCd5TbtJzEkQTu
DSt2mcNn4rhAL+JFr56o4T6z8WWAW18BR6yGrMq7Q/kALHYW3OekePQAzL0VUYbW
JGTi65CxbCnzc/w4+mqQyvmzpWtMAzJTzAzQxNbkR2MBGySxDLrjg0LWN6sK7wNX
x0YVztz/zbIkPjfkU1jHS+9EbVNj+D1XFOJuaQIDAQABAoIBABagpxpM1aoLWfvD
KHcj10nqcoBc4oE11aFYQwik7xfW+24pRNuDE6SFthOar69jp5RlLwD1NhPx3iBl
J9nOM8OJ0VToum43UOS8YxF8WwhXriYGnc1sskbwpXOUDc9uX4+UESzH22P29ovd
d8WErY0gPxun8pbJLmxkAtWNhpMvfe0050vk9TL5wqbu9AlbssgTcCXkMQnPw9nC
YNN6DDP2lbcBrvgT9YCNL6C+ZKufD52yOQ9qOkwFTEQpjtF4uNtJom+asvlpmS8A
vLY9r60wYSvmZhNqBUrj7lyCtXMIu1kkd4w7F77k+DjHoAXyxcUp1DGL51sOmama
+TOWWgECgYEA8JtPxP0GRJ+IQkX262jM3dEIkza8ky5moIwUqYdsx0NxHgRRhORT
8c8hAuRBb2G82so8vUHk/fur85OEfc9TncnCY2crpoqsghifKLxrLgtT+qDpfZnx
SatLdt8GfQ85yA7hnWWJ2MxF3NaeSDm75Lsm+tBbAiyc9P2jGRNtMSkCgYEAypHd
HCctNi/FwjulhttFx/rHYKhLidZDFYeiE/v45bN4yFm8x7R/b0iE7KaszX+Exdvt
```

```
SghaTdcG0Knyw1bpJVyusavPzpaJMjdJ6tcFhVAbAjm7enCIvGCSx+X3l5SiWg0A
R57hJglezIiVjv3aGwHwvlZvtszK6zV6oXFAu0ECgYAbjo46T4hyP5tJi93V5HDi
Ttiek7xRVxUl+iU7rWkGAXFpMLFteQEsRr7PJ/lemmEY5eTDAFMLy9FL2m9oQWCg
R8VdwSk8r9FGLS+9aKcV5PI/WEKlwgXinB3OhYimtiG2Cg5JCqIZFHxD6MjEGOiu
L8ktHMPvodBwNsSBULpG0QKBgBAplTfC1HOnWiMGOU3KPwYWt0O6CdTkmJOmL8Ni
blh9elyZ9FsGxsgtRBXRsqXuz7wtsQAgLHxbdLq/ZJQ7YfzOKU4ZxEnabvXnvWkU
YOdjHdSOoKvDQNWu6ucyLRAWFuISeXw9a/9p7ftpxm0TSgyvmfLF2MIAEwyzRqaM
77pBAoGAMmjmIJdjp+Ez8duyn3ieo36yrttF5NSsJLAbxFpdlc1gvtGCWW+9Cq0b
dxviW8+TFVEBl1O4f7HVm6EpTscdDxU+bCXWkfjuRb7Dy9GOtt9JPsX8MBTakzh3
vBgsyi/sN3RqRBcGU40fOoZyfAMT8s1m/uYv52O6IgeuZ/ujbjY=
-----END RSA PRIVATE KEY-----
```

Connect to the next level using the private key.

$ ssh -p2220 -i key.private bandit17@bandit.labs.overthewire.org

Bandit Level 17 - Level 18

$ ssh -p2220 -i key.private bandit17@bandit.labs.overthewire.org

```
$ ssh -p2220 -i key.private bandit17@bandit.labs.overthewire.org
                         _                     _ _ _
                        | |__   __ _ _ __   __| (_) |_
                        | '_ \ / _` | '_ \ / _` | | __|
                        | |_) | (_| | | | | (_| | | |_
                        |_.__/ \__,_|_| |_|\__,_|_|\__|


                      This is an OverTheWire game server.
            More information on http://www.overthewire.org/wargames

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@         WARNING: UNPROTECTED PRIVATE KEY FILE!          @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Permissions 0664 for 'key.private' are too open.
It is required that your private key files are NOT accessible by others.
```

```
This private key will be ignored.
Load key "key.private": bad permissions
bandit17@bandit.labs.overthewire.org's password:
```

> ***If the above appeared change the permission of the key.private file to 600***

> ***$ chmod 600 key.private and try to connect again using the key.private.***

> **$ ssh -p2220 -i key.private bandit17@bandit.labs.overthewire.or**

```
bandit17@bandit:~$ diff passwords.old passwords.new
42c42
< ktfgBvpMzWKR5ENj26IbLGSblgUG9CzB
---
> x2gLTTjFwMOhQ8oWNbMN362QKxfRqGlO
```

> ***Line 5 is the new password.***

> ***password of bandit18 - x2gLTTjFwMOhQ8oWNbMN362QKxfRqGlO***

Bandit Level 18 - Level 19

> **$ ssh -p2220 bandit18@bandit.labs.overthewire.org**

> ***When connecting to the server using ssh and it is validated but is logs out.***

```
$ ssh -p2220 bandit18@bandit.labs.overthewire.org
                         _                     _ _ _
                        | |__   __ _ _ __   __| (_) |_
                        | '_ \ / _` | '_ \ / _` | | __|
                        | |_) | (_| | | | | (_| | | |_
                        |_.__/ \__,_|_| |_|\__,_|_|\__|
```

```
                    This is an OverTheWire game server.
            More information on http://www.overthewire.org/wargames

bandit18@bandit.labs.overthewire.org's password:

      ,----..            ,----,          .---.
     /   /   \         ,/   .`|         /. ./|
    /   .     :      ,`   .'  :     .--'.  ' ;
   .   /   ;.  \   ;    ;     /    /__./ \ : |
  .   ;   /  ` ; .'___,/    ,' .--'.  '   \' .
  ;   |  ; \ ; | |    :     | /___/ \ |    ' '
  |   :  | ; | ' ;    |.';  ; ;   \  \;      :
  .   |  ' ' ' : `----'  |  |  \   ;  `      |
  '   ;  \; /  |     '   :  ;   .   \    .\  ;
   \   \  ',  /      |   |  '    \   \   ' \ |
    ;   :    /       '   :  |     :   '  |--"
     \   \ .'        ;   |.'       \   \ ;
  www. `---` ver     '---' he       '---" ire.org


Welcome to OverTheWire!

If you find any problems, please report them to the #wargames channel on
discord or IRC.

--[ Playing the games ]--

  This machine might hold several wargames.
  If you are playing "somegame", then:

    * USERNAMES are somegame0, somegame1, ...
    * Most LEVELS are stored in /somegame/.
    * PASSWORDS for each level are stored in /etc/somegame_pass/.

  Write-access to homedirectories is disabled. It is advised to create a
  working directory with a hard-to-guess name in /tmp/.  You can use the
  command "mktemp -d" in order to generate a random and hard to guess
  directory in /tmp/.  Read-access to both /tmp/ is disabled and to /proc
```

```
  restricted so that users cannot snoop on eachother. Files and directories
  with easily guessable or short names will be periodically deleted! The /tmp
  directory is regularly wiped.
  Please play nice:

    * don't leave orphan processes running
    * don't leave exploit-files laying around
    * don't annoy other players
    * don't post passwords or spoilers
    * again, DONT POST SPOILERS!
      This includes writeups of your solution on your blog or website!

--[ Tips ]--

  This machine has a 64bit processor and many security-features enabled
  by default, although ASLR has been switched off.  The following
  compiler flags might be interesting:

    -m32                    compile for 32bit
    -fno-stack-protector    disable ProPolice
    -Wl,-z,norelro          disable relro

  In addition, the execstack tool can be used to flag the stack as
  executable on ELF binaries.

  Finally, network-access is limited for most levels by a local
  firewall.

--[ Tools ]--

 For your convenience we have installed a few useful tools which you can find
 in the following locations:

    * gef (https://github.com/hugsy/gef) in /opt/gef/
    * pwndbg (https://github.com/pwndbg/pwndbg) in /opt/pwndbg/
    * gdbinit (https://github.com/gdbinit/Gdbinit) in /opt/gdbinit/
    * pwntools (https://github.com/Gallopsled/pwntools)
    * radare2 (http://www.radare.org/)

--[ More information ]--
```

```
  For more information regarding individual wargames, visit
  http://www.overthewire.org/wargames/

  For support, questions or comments, contact us on discord or IRC.

  Enjoy your stay!

Byebye !
Connection to bandit.labs.overthewire.org closed.
```

> ***In the above connection it connected but it logs out after logging in due to a line in .bashrc. To get the file readme execute the command using the ssh.***

```
$ ssh -p2220 bandit18@bandit.labs.overthewire.org "cat readme"
                         _                     _ _ _
                        | |__   __ _ _ __   __| (_) |_
                        | '_ \ / _` | '_ \ / _` | | __|
                        | |_) | (_| | | | | (_| | | |_
                        |_.__/ \__,_|_| |_|\__,_|_|\__|


                      This is an OverTheWire game server.
            More information on http://www.overthewire.org/wargames

bandit18@bandit.labs.overthewire.org's password:
cGWpMaKXVwDUNgPAVJbWYuGHVn9zl3j8
```

> ***password of bandit19 - cGWpMaKXVwDUNgPAVJbWYuGHVn9zl3j8***

Bandit Level 19 - Level 20

> **$ ssh -p2220 bandit19@bandit.labs.overthewire.org**

```
bandit19@bandit:~$ pwd
/home/bandit19
bandit19@bandit:~$ ls -la
total 36
drwxr-xr-x  2 root     root      4096 Sep 19  2024 .
drwxr-xr-x 70 root     root      4096 Sep 19  2024 ..
-rwsr-x---  1 bandit20 bandit19 14880 Sep 19  2024 bandit20-do
-rw-r--r--  1 root     root       220 Mar 31  2024 .bash_logout
-rw-r--r--  1 root     root      3771 Mar 31  2024 .bashrc
-rw-r--r--  1 root     root       807 Mar 31  2024 .profile
```

bandit19@bandit:~$ ./bandit20-do

```
bandit19@bandit:~$ ./bandit20-do
Run a command as another user.
  Example: ./bandit20-do id
```

bandit19@bandit:~$ ./bandit20-do cat /etc/bandit_pass/bandit20

```
bandit19@bandit:~$ ./bandit20-do cat /etc/bandit_pass/bandit20
0qXahG8ZjOVMN9Ghs7iOWsCfZyXOUbYO
```

password of bandit20 - 0qXahG8ZjOVMN9Ghs7iOWsCfZyXOUbYO

Bandit Level 20 - Level 21

$ ssh -p2220 bandit20@bandit.labs.overthewire.org

Note: it makes a connection to localhost on the port you specify as a commandline argument

```
bandit20@bandit:~$ pwd
/home/bandit20
bandit20@bandit:~$ ls -la
```

```
total 36
drwxr-xr-x  2 root     root      4096 Sep 19  2024 .
drwxr-xr-x 70 root     root      4096 Sep 19  2024 ..
-rw-r--r--  1 root     root       220 Mar 31  2024 .bash_logout
-rw-r--r--  1 root     root      3771 Mar 31  2024 .bashrc
-rw-r--r--  1 root     root       807 Mar 31  2024 .profile
-rwsr-x---  1 bandit21 bandit20 15604 Sep 19  2024 suconnect
```

A command suconnect will be used in this exercise. Before running the command, open another ssh connection to the bandit server with the same user bandit20.

In console 1, run the following command and do not close or break it because the password will be sent to the console 1.

bandit20@bandit:~$ nc -vv -lv -p 12345

```
bandit20@bandit:~$ nc -vv -lv -p 12345
Listening on 0.0.0.0 12345
```

In console 2, run the following command

bandit20@bandit:~$ ./suconnect 12345

```
bandit20@bandit:~$ ./suconnect 12345

Read: 0qXahG8ZjOVMN9Ghs7iOWsCfZyXOUbYO

Password matches, sending next password
```

After running the suconnect in console 2, you should see in console 1 the following.

```
bandit20@bandit:~$ nc -vv -lv -p 12345

Listening on 0.0.0.0 12345
```

```
Connection received on localhost 36210

0qXahG8ZjOVMN9Ghs7iOWsCfZyXOUbYO

EeoULMCra2q0dSkYj561DX7s1CpBuOBt
```

password of bandit21 - EeoULMCra2q0dSkYj561DX7s1CpBuOBt

Bandit Level 21 - Level 22

$ ssh -p2220 bandit21@bandit.labs.overthewire.org

Search for the cron job for bandit22 in the /etc/cron.d

bandit21@bandit:~$ cat /etc/cron.d/cronjob_bandit22

```
bandit21@bandit:~$ cat /etc/cron.d
cron.d/     cron.daily/

bandit21@bandit:~$ cat /etc/cron.d/
cronjob_bandit22  cronjob_bandit24  otw-tmp-dir       sysstat
cronjob_bandit23  e2scrub_all       .placeholder

bandit21@bandit:~$ cat /etc/cron.d/cronjob_bandit22
@reboot bandit22 /usr/bin/cronjob_bandit22.sh &> /dev/null
* * * * * bandit22 /usr/bin/cronjob_bandit22.sh &> /dev/null

bandit21@bandit:~$ ls -l /usr/bin/cronjob_bandit22.sh
-rwxr-x--- 1 bandit22 bandit21 130 Sep 19  2024 /usr/bin/cronjob_bandit22.sh
```

The cron job for bandit22 is cronjob_bandit22 and the file can be executed by the group bandit21.

Get the content of the script in the cron job.

bandit21@bandit:~$ cat /usr/bin/cronjob_bandit22.sh

```
bandit21@bandit:~$ cat /usr/bin/cronjob_bandit22.sh

#!/bin/bash
chmod 644 /tmp/t7O6lds9S0RqQh9aMcz6ShpAoZKF7fgv
cat /etc/bandit_pass/bandit22 > /tmp/t7O6lds9S0RqQh9aMcz6ShpAoZKF7fgv
```

The file /etc/bandit_pass/bandit22 cannot be read by bandit21 but the file created in the /tmp/t7O6lds9S0RqQh9aMcz6ShpAoZKF7fgv is the same content which is the password of bandit22.

bandit21@bandit:~$ cat /tmp/t7O6lds9S0RqQh9aMcz6ShpAoZKF7fgv

```
bandit21@bandit:~$ cat /tmp/t7O6lds9S0RqQh9aMcz6ShpAoZKF7fgv
tRae0UfB9v0UzbCdn9cY0gQnds9GF58Q
```

password of bandit22 - tRae0UfB9v0UzbCdn9cY0gQnds9GF58Q

Bandit Level 22 - Level 23

$ ssh -p2220 bandit22@bandit.labs.overthewire.org

Get the cronjob from /etc/cron.d for bandit23

bandit22@bandit: $ cat /etc/cron.d/cronjob_bandit23

```
bandit22@bandit:~$ pwd
/home/bandit22

bandit22@bandit:~$ cd /etc/cron.d

bandit22@bandit:/etc/cron.d$ ls -la
total 44
drwxr-xr-x   2 root root  4096 Sep 19  2024 .
drwxr-xr-x 121 root root 12288 Sep 20  2024 ..
-rw-r--r--   1 root root   120 Sep 19  2024 cronjob_bandit22
-rw-r--r--   1 root root   122 Sep 19  2024 cronjob_bandit23
-rw-r--r--   1 root root   120 Sep 19  2024 cronjob_bandit24
-rw-r--r--   1 root root   201 Apr  8  2024 e2scrub_all
-rwx------   1 root root    52 Sep 19  2024 otw-tmp-dir
-rw-r--r--   1 root root   102 Mar 31  2024 .placeholder
-rw-r--r--   1 root root   396 Jan  9  2024 sysstat

bandit22@bandit:/etc/cron.d$ ls -l /etc/cron.d/cronjob_bandit23
-rw-r--r-- 1 root root 122 Sep 19  2024 /etc/cron.d/cronjob_bandit23

bandit22@bandit:/etc/cron.d$ cat /etc/cron.d/cronjob_bandit23
@reboot bandit23 /usr/bin/cronjob_bandit23.sh  &> /dev/null
* * * * * bandit23 /usr/bin/cronjob_bandit23.sh  &> /dev/null

bandit22@bandit:/etc/cron.d$ cat /usr/bin/cronjob_bandit23.sh

#!/bin/bash

myname=$(whoami)
mytarget=$(echo I am user $myname | md5sum | cut -d ' ' -f 1)

echo "Copying passwordfile /etc/bandit_pass/$myname to /tmp/$mytarget"

cat /etc/bandit_pass/$myname > /tmp/$mytarget
```

The script that is being executed inside the cron job is /usr/bin/cronjob_bandit23.sh.

bandit22@bandit:/etc/cron.d$ cat /usr/bin/cronjob_bandit23.sh

```
bandit22@bandit:/etc/cron.d$ cat /usr/bin/cronjob_bandit23.sh
#!/bin/bash

myname=$(whoami)
mytarget=$(echo I am user $myname | md5sum | cut -d ' ' -f 1)

echo "Copying passwordfile /etc/bandit_pass/$myname to /tmp/$mytarget"

cat /etc/bandit_pass/$myname > /tmp/$mytarget
```

Since the script is run in a cronjob, this means it is executed and have the following information:

myname=·(whoami) which is myname=bandit23

mytarget=$(echo I am user $myname | md5sum | cut -d ' ' -f 1) will be the following command

mytarget=$(echo I am user bandit23 | md5sum | cut -d ' ' -f 1)

```
bandit22@bandit:/etc/cron.d$ mytarget=$(echo I am user bandit23 | md5sum | cut -d ' ' -f 1)
bandit22@bandit:/etc/cron.d$ echo $mytarget
8ca319486bfbbc3663ea0fbe81326349
```

The file therefor is /tmp/$mytarget which is /tmp/8ca319486bfbbc3663ea0fbe81326349

bandit22@bandit:/etc/cron.d$ cat /tmp/8ca319486bfbbc3663ea0fbe81326349

```
bandit22@bandit:/etc/cron.d$ mytarget=$(echo I am user bandit23 | md5sum | cut -d ' ' -f 1)

bandit22@bandit:/etc/cron.d$ echo $mytarget
8ca319486bfbbc3663ea0fbe81326349
```

```
bandit22@bandit:/etc/cron.d$ cat /tmp/8ca319486bfbbc3663ea0fbe81326349
0Zf11ioIjMVN551jX3CmStKLYqjk54Ga
```

password of bandit23 - 0Zf11ioIjMVN551jX3CmStKLYqjk54Ga

Bandit Level 23 - Level 24

$ ssh -p2220 bandit23@bandit.labs.overthewire.org

Search for the cronjob for bandit24 and the script.

```
bandit23@bandit:~$ pwd
/home/bandit23

bandit23@bandit:~$ cd /etc/cron.d

bandit23@bandit:/etc/cron.d$ ls -la
total 44
drwxr-xr-x   2 root root  4096 Sep 19  2024 .
drwxr-xr-x 121 root root 12288 Sep 20  2024 ..
-rw-r--r--   1 root root   120 Sep 19  2024 cronjob_bandit22
-rw-r--r--   1 root root   122 Sep 19  2024 cronjob_bandit23
-rw-r--r--   1 root root   120 Sep 19  2024 cronjob_bandit24
-rw-r--r--   1 root root   201 Apr  8  2024 e2scrub_all
-rwx------   1 root root    52 Sep 19  2024 otw-tmp-dir
-rw-r--r--   1 root root   102 Mar 31  2024 .placeholder
-rw-r--r--   1 root root   396 Jan  9  2024 sysstat

bandit23@bandit:/etc/cron.d$ cat cronjob_bandit24

@reboot bandit24 /usr/bin/cronjob_bandit24.sh &> /dev/null
* * * * * bandit24 /usr/bin/cronjob_bandit24.sh &> /dev/null

bandit23@bandit:/etc/cron.d$ cat /usr/bin/cronjob_bandit24.sh
#!/bin/bash
```

```
myname=$(whoami)

cd /var/spool/$myname/foo
echo "Executing and deleting all scripts in /var/spool/$myname/foo:"
for i in * .*;
do
    if [ "$i" != "." -a "$i" != ".." ];
    then
        echo "Handling $i"
        owner="$(stat --format "%U" ./$i)"
        if [ "${owner}" = "bandit23" ]; then
            timeout -s 9 60 ./$i
        fi
        rm -f ./$i
    fi
done
```

Analyzing the script /usr/bin/cronjob_bandit24.sh, it is executing all scripts in the directory /var/spool/$myname/foo.

We know that $myname is myname=$(whoami) which should be the user bandit24.

So we have to prepare a script to be run by bandit24 and place it in the directory /var/spool/bandit24/foo/.

Create a script in /tmp

bandit23@bandit:/home/bandit24$ nano /tmp/scriptbandit24.sh

Put the following inside the file /tmp/scriptbandit.sh

```
#!/bin/bash

cat /etc/bandit_pass/bandit24 > /tmp/password_bandit24
```

Then make the file executable.

bandit23@bandit:/home/bandit24$ chmod a+x /tmp/scriptbandit24.sh

Then copy the script created from /tmp/scriptbandit24.sh to the folder /var/spool/bandit24/foo/.

bandit23@bandit:/home/bandit24$ cp /tmp/scriptbandit24.sh /var/spool/bandit24/foo/

After copying, wait until a file is created in the /tmp directory which is the /tmp/password_bandit24

bandit23@bandit:/home/bandit24$ cat /tmp/password_bandit24

```
bandit23@bandit:/home/bandit24$ cat /tmp/password_bandit24
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8
```

password of bandit24 - gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8

Bandit Level 24 - Level 25

First create a file with the 10,000 combiation of the 4-DIGIT pincode.

In the KALI LINUX let us use the software crunch to create the file.

kali@kali:/$ crunch 4 4 1234567890 -o pincodes

Upload the file pincodes to the bandit server using the following commands.

scp -P2220 pincodes bandit24@bandit.labs.overthewire.org:/tmp

```
$ scp -P2220 pincodes bandit24@bandit.labs.overthewire.org:/tmp

                         _                     _ _ _
                        | |__   __ _ _ __   __| (_) |_
                        | '_ \ / _` | '_ \ / _` | | __|
                        | |_) | (_| | | | | (_| | | |_
                        |_.__/ \__,_|_| |_|\__,_|_|\__|



                      This is an OverTheWire game server.
            More information on http://www.overthewire.org/wargames

bandit24@bandit.labs.overthewire.org's password:
pincodes
100%   49KB 314.3KB/s   00:00
```

Now, login to the bandit and go to the /tmp directory

$ ssh -p2220 bandit24@bandit.labs.overthewire.org

bandit24@bandit:~$ cd /tmp/

In the instructions: A daemon is listening on port 30002 and will give you the password for bandit25 if given the password for bandit24 and a secret numeric 4-digit pincode. There is no way to retrieve the pincode except by going through all of the 10000 combinations, called brute-forcing.

A new file should be created with a "PASSWORD PIN", the password gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 and then the pincode

bandit24@bandit:/tmp$ echo "" passpin; while read ln; do echo "gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 $ln" >> passpin; done < pincodes

A new file is created, passpin which is the combination of the password and the 4-digit code. Check if the file is ok.

bandit24@bandit:/tmp$ cat passpin

```
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0080
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0091
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0092
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0093
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0094
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0095
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0096
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0097
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0098
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0099
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0090
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0001
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0002
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0003
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0004
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0005
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0006
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0007
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0008
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0009
gb8KRRCsshuZXI0tUuR6ypOFjiZbf3G8 0000
```

There should be 10,000 lines.

Now the file should be feed to port 30002 to the localhost.

bandit24@bandit:/tmp$ nc localhost 30002 < passpin

```
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
```

```
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Wrong! Please enter the correct current password and pincode. Try again.
Correct!
The password of user bandit25 is iCi86ttT4KSNe1armKiwbQNmB3YJP3q4
```

password of bandit25 - iCi86ttT4KSNe1armKiwbQNmB3YJP3q4

Bandit Level 25 - Level 26

$ ssh -p2220 bandit25@bandit.labs.overthewire.org

bandit25@bandit:~$ ls -ltr

In the home directory of bandit25 there is a bandit26.sshkey file which is the key for bandit26. Using this key to connect to the bandit.

```
bandit25@bandit:~$ ls
bandit26.sshkey

bandit25@bandit:~$ pwd
```

```
/home/bandit25

bandit25@bandit:~$ ls -l
total 4
-r-------- 1 bandit25 bandit25 1679 Sep 19  2024 bandit26.sshkey

bandit25@bandit:~$ cat bandit26.sshkey
-----BEGIN RSA PRIVATE KEY-----
MIIEpQIBAAKCAQEApis2AuoooEqeYWamtwX2k5z9uU1Afl2F8VyXQqbv/LTrIwdW
pTfaeRHXzr0Y0a5Oe3GB/+W2+PReif+bPZlzTY1XFwpk+DiHk1kmL0moEW8HJuT9
/5XbnpjSzn0eEAfFax2OcopjrzVqdBJQerkj0puv3UXY07AskgkyD5XepwGAlJOG
xZsMq1oZqQ0W29aBtfykuGie2bxroRjuAPrYM4o3MMmtlNE5fC4G9Ihq0eq73MDi
1ze6d2jIGce873qxn308BA2qhRPJNEbnPev5gI+5tU+UxebW8KLbk0EhoXB953Ix
3lgOIrT9Y6skRjsMSFmC6WN/O7ovu8QzGqxdywIDAQABAoIBAAaXoETtVT9GtpHW
qLaKHgYtLEO1tOFOhInWyolyZgL4inuRRva3CIvVEWK6TcnDyIlNL4MfcerehwGi
il4fQFvLR7E6UFcopvhJiSJHIcvPQ9FfNFR3dYcNOQ/IFvE73bEqMwSISPwiel6w
e1DjF3C7jHaS1s9PJfWFN982aublL/yLbJP+ou3ifdljS7QzjWZA8NRiMwmBGPIh
Yq8weR3jIVQl3ndEYxO7Cr/wXXebZwlP6CPZb67rBy0jg+366mxQbDZIwZYEaUME
zY5izFclr/kKj4s7NTRkC76Yx+rTNP5+BX+JT+rgz5aoQq8ghMw43NYwxjXym/MX
c8X8g0ECgYEA1crBUAR1gSkM+5mGjjoFLJKrFP+IhUHFh25qGI4Dcxxh1f3M53le
wF1rkp5SJnHRFm9IW3gM1JoF0PQxI5aXHRGHphwPeKnsQ/xQBRWCeYpqTme9amJV
tD3aDHkpIhYxkNxqol5gDCAt6tdFSxqPaNfdfsfaAOXiKGrQESUjIBcCgYEAxvmI
2ROJsBXaiM4Iyg9hUpjZIn8TW2UlH76pojFG6/KBd1NcnW3fu0ZUU790wAu7QbbU
i7pieeqCqSYcZsmkhnOvbdx54A6NNCR2btc+si6pDOe1jdsGdXISDRHFb9QxjZCj
6xzWMNvb5n1yUb9w9nfN1PZzATfUsOV+Fy8CbG0CgYEAifkTLwfhqZyLk2huTSWm
pzB0ltWfDpj22MNqVzR3h3d+sHLeJVjPzIe9396rF8KGdNsWsGlWpnJMZKDjgZsz
JQBmMc6UMYRARVP1dIKANN4eY0FSHfEebHcqXLho0mXOUTXe37DWfZza5V9Oify3
JquBd8uUptW1Ue41H4t/ErsCgYEArc5FYtF1QXIlfcDz3oUGz16itUZpgzlb71nd
1cbTm8EupCwWR5I1j+IEQU+JTUQyI1nwWcnKwZI+5kBbKNJUu/mLsRyY/UXYxEZh
ibrNklm94373kV1US/0DlZUDcQba7jz9Yp/C3dT/RlwoIw5mP3UxQCizFspNKOSe
euPeaxUCgYEAntklXwBbokgdDup/u/3ms5Lb/bm22zDOCg2HrlWQCqKEkWkAO6R5
/Wwyqhp/wTl8VXjxWo+W+DmewGdPHGQQ5fFdqgpuQpGUq24YZS8m66v5ANBwd76t
IZdtF5HXs2S5CADTwniUS5mX1HO9l5gUkk+h0cH5JnPtsMCnAUM+BRY=
-----END RSA PRIVATE KEY-----
```

> ***As user bandit25 gather information of the server and the login.***

```
bandit25@bandit:~$ dpkg --list | grep openssh
ii  openssh-client                 1:9.6p1-3ubuntu13.5                     amd64
```

```
secure shell (SSH) client, for secure access to remote machines
ii  openssh-server                  1:9.6p1-3ubuntu13.5                    amd64
secure shell (SSH) server, for secure access from remote machines
ii  openssh-sftp-server             1:9.6p1-3ubuntu13.5                    amd64
secure shell (SSH) sftp server module, for SFTP access from remote machines
```

The shell of the user bandit26 which makes it non-interactive.

bandit25@bandit:~$ cat /etc/passwd | grep bandit26

```
bandit25@bandit:~$ cat /etc/passwd | grep bandit26
bandit26:x:11026:11026:bandit level 26:/home/bandit26:/usr/bin/showtext
```

The shell login is /usr/bin/showtext, and getting this file is a custom script which execute an "exit 0".

bandit25@bandit:~$ cat /usr/bin/showtext

```
bandit25@bandit:~$ cat /usr/bin/showtext
#!/bin/sh

export TERM=linux

exec more ~/text.txt
exit 0
```

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