Overwire Linux games

Level 0

```
ADMIN@DESKTOP-NIPDOO4 ~
$ ssh bandit0@bandit.labs.overthewire.org -p 2220
The authenticity of host '[bandit.labs.overthewire.org]:2220 ([176.9.9.172]:2220)' can't be established.
Warning: Permanently added '[bandit.labs.overthewire.org]:2220,[176.9.9.172]:222
0' (ECDSA) to the list of known hosts.
This is a OverTheWire game server. More information on http://www.overthewire.or0' (ECDSA) to the list of known hosts.
g/wargames

bandit0@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux

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

Welcome to OverTheWire!

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irc.overthewire.org.

--[ 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/.
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  For your convenience we have installed a few usefull tools which you can find
 in the following locations:

    * gef (https://github.com/hugsy/gef) in /usr/local/gef/
    * pwndbg (https://github.com/pwndbg/pwndbg) in /usr/local/pwndbg/
    * peda (https://github.com/longld/peda.git) in /usr/local/peda/
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```

```
--[ More information ]--

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

  For support, questions or comments, contact us through IRC on
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  Enjoy your stay!
```

Level 1

```
ADMIN@DESKTOP-NIPDOO4 ~
$ ssh bandit1@bandit.labs.overthewire.org -p 2220
This is a OverTheWire game server. More information on http://www.overthewire.org/wargames

bandit1@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux
```

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

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  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/ and /proc/ is disabled
  so that users can not snoop on eachother. Files and directories with
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  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.

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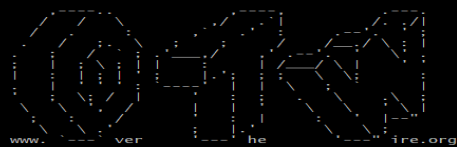 http://www.overthewire.org/wargames/

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```

```
bandit1@bandit:~$ ls
-
bandit1@bandit:~$ cat ./"-"
CV1DtqXwVFXTvM2F0k09SHz0YwRINYA9
bandit1@bandit:~$
```

Level 2

ADMIN@DESKTOP-NIPDOO4 ~
$ ssh bandit2@bandit.labs.overthewire.org -p 2220
This is a OverTheWire game server. More information on http://www.overthewire.org/wargames

bandit2@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux

```
       /    ,------.    /    ,------.         /  ,----.
      /    /        \  /    /        \       /  /    /`|
     /    /    ,--.  \/    /    ,--.  \     /  /    / /
    /    /    /   |   \   /    /   |   \   /  /    `-'
   /    /    `---'    \ /    /    `---'    \/  /
  www. `----'  ver    `----'  he     `----'   ire.org
```

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```
bandit2@bandit:~$ ls
spaces in this filename
bandit2@bandit:~$ cat "spaces in this filename"
UmHadQclWmgdLOKQ3YNgjWxGoRMb5luK
bandit2@bandit:~$
```

Level 3

ADMIN@DESKTOP-NIPD004 ~
$ ssh bandit3@bandit.labs.overthewire.org -p 2220
This is a OverTheWire game server. More information on http://www.overthewire.org/wargames

bandit3@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux

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  Enjoy your stay!

bandit3@bandit:~$ ls
inhere
bandit3@bandit:~$ cd inhere
bandit3@bandit:~/inhere$ ls
bandit3@bandit:~/inhere$ ls -a
. .. .hidden
bandit3@bandit:~/inhere$ cat .hidden
pIwrPrtPN36QITSp3EQaw936yaFoFgAB
bandit3@bandit:~/inhere$ |

Level 4

Level 5

```
bandit5@bandit:~$ cd inhere
bandit5@bandit:~/inhere$ ls
maybehere00  maybehere02  maybehere04  maybehere06  maybehere08  maybehere10  maybehere12  maybehere14  maybehere16  maybehere18
maybehere01  maybehere03  maybehere05  maybehere07  maybehere09  maybehere11  maybehere13  maybehere15  maybehere17  maybehere19
bandit5@bandit:~/inhere$ find -type f -size 1033c
./maybehere07/.file2
bandit5@bandit:~/inhere$ cat ./maybehere07/.file2
DXjZPULLxYr17uwoI01bNLQbtFemEgo7
```

Level 6


```
ADMIN@DESKTOP-NIPDOO4 ~
$ ssh bandit6@bandit.labs.overthewire.org -p 2220
This is a OverTheWire game server. More information on http://www.overthewire.org/wargames

bandit6@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux

               .----.       .----.     .----.
             ./      \    ./   /  |   /    / /
            /  /\     \   / /   / |  /  __/ /  |
           /  /. \   .  / /    / | / / __/ / . |
          .  /.  .   . /  __  / _|/ /    /    .|
          |  |. .  |  |/ __    |/   /   /  .   |
          |  |  |  |  |       .     /   /  .   |
          .  \   /  / .____.   .   \   .  /----"
           \  .  . ./      .    \   \  \
            .  .  . /      . |    \   . .  |--"
             .  . . /      . |     .   . .|
              \  . ./      .  .      \ . .|
         www.  "---" ver   "---" he   "---" ire.org


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  If you are playing "somegame", then:

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```

```
bandit6@bandit:~$ find / -user bandit7 -group bandit6 -size 33c
find: '/root': Permission denied
find: '/home/bandit28-git': Permission denied
find: '/home/bandit30-git': Permission denied
find: '/home/bandit5/inhere': Permission denied
find: '/home/bandit27-git': Permission denied
find: '/home/bandit29-git': Permission denied
find: '/home/bandit31-git': Permission denied
find: '/lost+found': Permission denied
find: '/etc/ssl/private': Permission denied
find: '/etc/polkit-1/localauthority': Permission denied
find: '/etc/lvm/archive': Permission denied
find: '/etc/lvm/backup': Permission denied
find: '/sys/fs/pstore': Permission denied
find: '/proc/tty/driver': Permission denied
find: '/proc/9828/task/9828/fd/6': No such file or directory
find: '/proc/9828/task/9828/fdinfo/6': No such file or directory
find: '/proc/9828/fd/5': No such file or directory
find: '/proc/9828/fdinfo/5': No such file or directory
find: '/cgroup2/csessions': Permission denied
find: '/boot/lost+found': Permission denied
find: '/tmp': Permission denied
find: '/run/lvm': Permission denied
find: '/run/screen/S-bandit1': Permission denied
find: '/run/screen/S-bandit10': Permission denied
find: '/run/screen/S-bandit29': Permission denied
find: '/run/screen/S-bandit25': Permission denied
find: '/run/screen/S-bandit30': Permission denied
find: '/run/screen/S-bandit9': Permission denied
find: '/run/screen/S-bandit28': Permission denied
find: '/run/screen/S-bandit18': Permission denied
find: '/run/screen/S-bandit20': Permission denied
find: '/run/screen/S-bandit12': Permission denied
find: '/run/screen/S-bandit5': Permission denied
find: '/run/screen/S-bandit7': Permission denied
find: '/run/screen/S-bandit16': Permission denied
find: '/run/screen/S-bandit26': Permission denied
find: '/run/screen/S-bandit8': Permission denied
find: '/run/screen/S-bandit15': Permission denied
find: '/run/screen/S-bandit4': Permission denied
find: '/run/screen/S-bandit3': Permission denied
find: '/run/screen/S-bandit19': Permission denied
find: '/run/screen/S-bandit31': Permission denied
```

```
find: '/run/screen/S-bandit17': Permission denied
find: '/run/screen/S-bandit2': Permission denied
find: '/run/screen/S-bandit22': Permission denied
find: '/run/screen/S-bandit21': Permission denied
find: '/run/screen/S-bandit14': Permission denied
find: '/run/screen/S-bandit13': Permission denied
find: '/run/screen/S-bandit24': Permission denied
find: '/run/screen/S-bandit23': Permission denied
find: '/run/shm': Permission denied
find: '/run/lock/lvm': Permission denied
find: '/var/spool/bandit24': Permission denied
find: '/var/spool/cron/crontabs': Permission denied
find: '/var/spool/rsyslog': Permission denied
find: '/var/tmp': Permission denied
find: '/var/lib/apt/lists/partial': Permission denied
find: '/var/lib/polkit-1': Permission denied
/var/lib/dpkg/info/bandit7.password
find: '/var/log': Permission denied
find: '/var/cache/apt/archives/partial': Permission denied
find: '/var/cache/ldconfig': Permission denied
```

```
bandit6@bandit:~$ cat /var/lib/dpkg/info/bandit7.password
HKBPTKQnIay4Fw76bEy8PVxKEDQRKTzs
bandit6@bandit:~$
```

Level 7


```
bandit7@bandit:~$ ls
data.txt
bandit7@bandit:~$ cat data.txt|grep millionth
millionth        cvX2JJa4CFALtqS87jk27qwqGhBM9plV
bandit7@bandit:~$ |
```

Level 8


```
bandit8@bandit:~$ ls
data.txt
bandit8@bandit:~$ cat data.txt |sort | uniq -u
UsvVyFSfZZWbi6wgC7dAFyFuR6jQQUhR
bandit8@bandit:~$ |
```

Level 9


```
ADMIN@DESKTOP-NIPDOO4 ~
$ ssh bandit9@bandit.labs.overthewire.org -p 2220
This is a OverTheWire game server. More information on http://www.overthewire.org/wargames

bandit9@bandit.labs.overthewire.org's password:
Permission denied, please try again.
bandit9@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux
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```



```
bandit9@bandit:~$ ls
data.txt
bandit9@bandit:~$ strings data.txt | grep '='
========== the*2i"4
=:G e
========== password
<I=zsGi
Z)========== is
A=|t&E
Zdb=
c^ LAh=3G
*SF=s
&========== truKLdjsbJ5g7yyJ2X2ROo3a5HQJFuLk
S=A.H&^
bandit9@bandit:~$
```

Level 10

```
ADMIN@DESKTOP-NIPDOO4 ~
$ ssh bandit10@bandit.labs.overthewire.org -p 2220
This is a OverTheWire game server. More information on http://www.overthewire.org/wargam

bandit10@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux


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


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```
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by default, although ASLR has been switched off.  The following
compiler flags might be interesting:

  -m32                      compile for 32bit
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In addition, the execstack tool can be used to flag the stack as
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--[ More information ]--

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For support, questions or comments, contact us through IRC on
irc.overthewire.org #wargames.

Enjoy your stay!
```

```
bandit10@bandit:~$ ls
data.txt
bandit10@bandit:~$ cat data.txt
VGhlIHBhc3N3b3JkIGlzIElGdWt3S0dzRlc4TU9xM0lSRnFyeEUxaHhUTkViVVBSCg==
bandit10@bandit:~$ cat data.txt | base64 -d
The password is IFukwKGsFW8MOq3IRFqrxE1hxTNEbUPR
bandit10@bandit:~$ |
```

Level 11


```
bandit11@bandit:~$ cat data.txt
Gur cnffjbeq vf 5Gr8L4qetPEsPk8htqjhRK8XSP6x2RHh
bandit11@bandit:~$ cat data.txt | tr a-zA-Z n-za-mN-ZA-M
The password is 5Te8Y4drgCRfCx8ugdwuEX8KFC6k2EUu
bandit11@bandit:~$ |
```

Level 12

```
bandit12@bandit:~$ ls
data.txt
bandit12@bandit:~$ cat data.txt
00000000: 1f8b 0808 0650 b45e 0203 6461 7461 322e  .....P.^..data2.
00000010: 6269 6e00 013d 02c2 fd42 5a68 3931 4159  bin..=...BZh91AY
00000020: 2653 598e 4f1c c800 001e 7fff fbf9 7fda  &SY.O...........
00000030: 9e7f 4f76 9fcf fe7d 3fff f67d abde 5e9f  ..Ov...}?..}..^.
00000040: f3fe 9fbf f6f1 feee bfdf a3ff b001 3b1b  ..............;.
00000050: 5481 a1a0 1ea0 1a34 d0d0 001a 68d3 4683  T......4....h.F.
00000060: 4680 0680 0034 1918 4c4d 190c 4000 0001  F....4..LM..@...
00000070: a000 c87a 81a3 464d a8d3 43c5 1068 0346  ...z..FM..C..h.F
00000080: 8343 40d0 3400 0340 66a6 8068 0cd4 f500  .C@.4..@f..h....
00000090: 69ea 6800 0f50 68f2 4d00 680d 06ca 0190  i.h..Ph.M.h.....
000000a0: 0000 69a1 a1a0 1ea0 194d 340d 1ea1 b280  ..i......M4.....
000000b0: f500 3406 2340 034d 3400 0000 3403 d400  ..4.#@.M4...4...
000000c0: 1a07 a832 3400 f51a 0003 43d4 0068 0d34  ...24.....C..h.4
000000d0: 6868 f51a 3d43 2580 3e58 061a 2c89 6bf3  hh..=C%.>X..,.k.
000000e0: 0163 08ab dc31 91cd 1747 599b e401 0b06  .c...1...GY.....
000000f0: a8b1 7255 a3b2 9cf9 75cc f106 941b 347a  ..rU....u.....4z
00000100: d616 55cc 2ef2 9d46 e7d1 3050 b5fb 76eb  ..U....F..0P..v.
00000110: 01f8 60c1 2201 33f0 0de0 4aa6 ec8c 914f  ..`.".3..J....O
00000120: cf8a aed5 7b52 4270 8d51 6978 c159 8b5a  ....{RBp.Qix.Y.Z
00000130: 2164 fb1f c26a 8d28 b414 e690 bfdd b3e1  !d...j.(........
00000140: f414 2f9e d041 c523 b641 ac08 0c0b 06f5  ../..A.#.A......
00000150: dd64 b862 1158 3f9e 897a 8cae 32b0 1fb7  .d.b.X?..z..2...
00000160: 3c82 af41 20fd 6e7d 0a35 2833 41bd de0c  <..A .n}.5(3A...
00000170: 774f ae52 a1ac 0fb2 8c36 ef58 537b f30a  wO.R.....6.XS{..
00000180: 1510 cab5 cb51 4231 95a4 d045 b95c ea09  .....QB1...E.\..
00000190: 9fa0 4d33 ba43 22c9 b5be d0ea eeb7 ec85  ..M3.C".........
000001a0: 59fc 8bf1 97a0 87a5 0df0 7acd d555 fc11  Y.........z..U..
000001b0: 223f fdc6 2be3 e809 c974 271a 920e acbc  "?..+....t'.....
000001c0: 0de1 f1a6 393f 4cf5 50eb 7942 86c3 3d7a  ....9?L.P.yB..=z
000001d0: fe6d 173f a84c bb4e 742a fc37 7b71 508a  .m.?.L.Nt*.7{qP.
000001e0: a2cc 9cf1 2522 8a77 39f2 716d 34f9 8620  ....%".w9.qm4..
000001f0: 4e33 ca36 eec0 cd4b b3e8 48e4 8b91 5bea  N3.6...K..H...[.
00000200: 01bf 7d21 0b64 82c0 3341 3424 e98b 4d7e  ..}!.d..3A4$..M~
00000210: c95c 1b1f cac9 a04a 1988 43b2 6b55 c6a6  .\.....J..C.kU..
00000220: 075c 1eb4 8ecf 5cdf 4653 064e 84da 263d  .\....\.FS.N..&=
00000230: b15b bcea 7109 5c29 c524 3afc d715 4894  .[..q.\).$:...H.
00000240: 7426 072f fc28 ab05 9603 b3fc 5dc9 14e1  t&./.(......]...
00000250: 4242 393c 7320 7320 98f7 681d 3d02 0000  BB9<s ..h.=...
```

```
00000250: 4242 393c 7320 7320 981d 3d02 0000  BB9<s ..h.=...
bandit12@bandit:~$ mkdir /tmp/crack
bandit12@bandit:~$ cp data.txt /tmp/crack
bandit12@bandit:~$ cd /tmp/crack
bandit12@bandit:/tmp/crack$ ls
data.txt
bandit12@bandit:/tmp/crack$ xxd -r data.txt > data
bandit12@bandit:/tmp/crack$ ls
data  data.txt
bandit12@bandit:/tmp/crack$ file data
data: gzip compressed data, was "data2.bin", last modified: Thu May  7 18:14:30
2020, max compression, from Unix
bandit12@bandit:/tmp/crack$ mv data file.gz
bandit12@bandit:/tmp/crack$ gzip -d file.gz
bandit12@bandit:/tmp/crack$ ls
data.txt  file
bandit12@bandit:/tmp/crack$ file file
file: bzip2 compressed data, block size = 900k
bandit12@bandit:/tmp/crack$ mv file file.bz2
bandit12@bandit:/tmp/crack$ man bzip2
bandit12@bandit:/tmp/crack$ bandit12@bandit:/tmp/crack$ bzip2 -d file.bz2
bandit12@bandit:/tmp/crack$ ls
data.txt  file
bandit12@bandit:/tmp/crack$ file file
file: bzip2 compressed data, block size = 900k
bandit12@bandit:/tmp/crack$ bzip2 -d data.bz2
bandit12@bandit:/tmp/crack$ ls
data  data.tar
bandit12@bandit:/tmp/crack$ file data
data: POSIX tar archive (GNU)
bandit12@bandit:/tmp/crack$ mv data data.tar
bandit12@bandit:/tmp/crack$ ls
data.tar
bandit12@bandit:/tmp/crack$ tar xf data.tar
bandit12@bandit:/tmp/crack$ ls
data8.bin  data.tar
bandit12@bandit:/tmp/crack$ file data8.bin
data8.bin: gzip compressed data, was "data9.bin", last modified: Thu May  7 18:14:30 2020, max compression, from Unix
bandit12@bandit:/tmp/crack$ mv data8.bin data.gz
bandit12@bandit:/tmp/crack$ gzip -d data.gz
bandit12@bandit:/tmp/crack$ ls
data  data.tar
bandit12@bandit:/tmp/crack$ file data
data: ASCII text
bandit12@bandit:/tmp/crack$ cat data
The password is 8ZjyCRiBWFYkneahHwxCv3wb2a1ORpYL
bandit12@bandit:/tmp/crack$ 
```

Level 13


```
ADMIN@DESKTOP-NIPDOO4 ~
$ ssh bandit13@bandit.labs.overthewire.org -p 2220
This is a OverTheWire game server. More information on http://www.overthewire.org/wargames

bandit13@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux
```



```
Welcome to OverTheWire!

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  working directory with a hard-to-guess name in /tmp/.  You can use the
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```
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  Enjoy your stay!
```

```
bandit13@bandit:~$ ls
sshkey.private
bandit13@bandit:~$ ssh -i sshkey.private bandit14@localhost
Could not create directory '/home/bandit13/.ssh'.
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ECDSA key fingerprint is SHA256:98ULOZWr85496EtCRkklo20X30PnyPSB5tB5RPbhczc.
Are you sure you want to continue connecting (yes/no)? yes
Failed to add the host to the list of known hosts (/home/bandit13/.ssh/known_hos
ts).
This is a OverTheWire game server. More information on http://www.overthewire.or
g/wargames

Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux
```



```
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```

```
bandit14@bandit:~$ cat /etc/bandit_pass/bandit14
4wcYUJFw0k0XLShlDzztnTBHiqxU3b3e
bandit14@bandit:~$
```

Level 14

```
bandit14@bandit:~$ telnet localhost 30000
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
4wcYUJFwOkOXLShlDzztnTBHiqxU3b3e
Correct!
BfMYroe26WYalil77FoDi9qh59eK5xNr

Connection closed by foreign host.
bandit14@bandit:~$ |
```

Level 15

```
ADMIN@DESKTOP-NIPDOO4 ~
$ ssh bandit15@bandit.labs.overthewire.org -p 2220
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bandit15@bandit.labs.overthewire.org's password:
Linux bandit.otw.local 5.4.8 x86_64 GNU/Linux


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


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```

```
bandit15@bandit:~$ openssl s_client -connect 127.0.0.1:30001
CONNECTED(00000003)
depth=0 CN = localhost
verify error:num=18:self signed certificate
verify return:1
depth=0 CN = localhost
verify return:1
---
Certificate chain
 0 s:/CN=localhost
   i:/CN=localhost
---
Server certificate
-----BEGIN CERTIFICATE-----
MIICBjCCAW+gAwIBAgIEZOzuVDANBgkqhkiG9w0BAQUFADAUMRIwEAYDVQQDDAls
b2NhbGhvc3QwHhcNMjEwOTMwMDQ0NTU0WhcNMjIwOTMwMDQ0NTU0WjAUMRIwEAYD
VQQDDAlsb2NhbGhvc3QwgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAM9En7CC
uPr6cVPATLAVhWMU1hggfIJEp5sZN9RPUbK0zKBv8O2yD54ObHYmIge6lqqkgXOz
2AuI4UfCG4iMb0UYUCA/wISwNqUQrjcja0OnqzCTRscXzzoIsHbC8lGFzMDRz3Jw
8nBD6/2jvFt1rnBtZ4ghibNn5rFHRi5EC+K/AgMBAAGjTBjMBQGA1UdEQQNMAuC
CWxvY2FsaG9zdDBLBglghkgBhvhCAQ0EPhY8QXV0b21hdGljYWxseSBnZW5lcmFO
ZWQgYnkgTmNhdC4gU2VlIGh0dHBzOi8vbm1hcC5vcmcvbmNhdC8uMA0GCSqGSIb3
DQEBBQUAA4GBAD7/moj14DUI6/D6imJ8pQlAy/8lZlsrbyRnqpzjWaATShDYr7k3
umdRg+36MciNFAglE7nGYZroTSDCm650D81+797owSXLPAdp1Q6JfQH5LOni2kbw
UHcO9hwQ+rJzEgIlfGOic7dC5lj8DBU5tugY87RZGKiZ2GG77WXas9Iz
-----END CERTIFICATE-----
subject=/CN=localhost
issuer=/CN=localhost
---
No client certificate CA names sent
Peer signing digest: SHA512
Server Temp Key: X25519, 253 bits
---
SSL handshake has read 1019 bytes and written 269 bytes
Verification error: self signed certificate
---
New, TLSv1.2, Cipher is ECDHE-RSA-AES256-GCM-SHA384
Server public key is 1024 bit
Secure Renegotiation IS supported
Compression: NONE
Expansion: NONE
No ALPN negotiated
```

```
No ALPN negotiated
SSL-Session:
    Protocol  : TLSv1.2
    Cipher    : ECDHE-RSA-AES256-GCM-SHA384
    Session-ID: DA7AAFB9F101A080A99024D2C7A876DE316F2140B59C667703A3CCC3CEFABD33
    Session-ID-ctx:
    Master-Key: 10724B371D372161873EB5E5D44DE694E2E86E61492333E3CC0527790BE474EBE9024542496697E6AC2B1A66EF4E8090
    PSK identity: None
    PSK identity hint: None
    SRP username: None
    TLS session ticket lifetime hint: 7200 (seconds)
    TLS session ticket:
    0000 - 8a ae eb e8 f5 31 15 46 ad-b2 a8 10 c1 51 b9 66 14   ....1.F.....Q.f.
    0010 - b7 29 f4 60 32 ae 57 fa-76 d7 0a e4 27 42 d4 b5   .).`2.W.v...'B..
    0020 - 8e a7 10 7d e9 f5 83 9c-3d f7 5f 0c 84 fa 67 51   ...}....=._...gQ
    0030 - 37 92 72 66 93 4a 01 c7-ab 6b 2c 24 51 cd 79 9f   7.rf.J...k,$Q.y.
    0040 - 43 26 3b 13 a6 4d 13 05-d7 01 08 2b 14 7b 95 db   C&;..M.....+.{..
    0050 - 33 3a 8e 8f ec 75 78 a6-63 b6 22 44 71 ca a1 8a   3:...ux.c."Dq...
    0060 - 8f 75 29 d0 b7 a6 7a 27-6b 59 a4 44 1e 38 3b b7   .u)...z'kY.D.8;.
    0070 - 91 02 34 37 0d fb d3 f3-f4 ac 07 76 18 e5 f8 af   ..47.......v....
    0080 - ae 48 e7 d8 7b 5f 8f 62-8e 8d 33 bf 11 fe 74 ed   .H..{._.b..3...t.
    0090 - 29 24 5f 44 4b 04 36 fe-fe 92 59 fd 0c 11 c8 b3   )$_DK.6...Y.....

    Start Time: 1646503275
    Timeout   : 7200 (sec)
    Verify return code: 18 (self signed certificate)
    Extended master secret: yes
---
BfMYroe26WYalil77FoDi9qh59eK5xNr
Correct!
cluFn7wTiGryunymYOu4RcffSxQluehd

closed
bandit15@bandit:~$ |
```