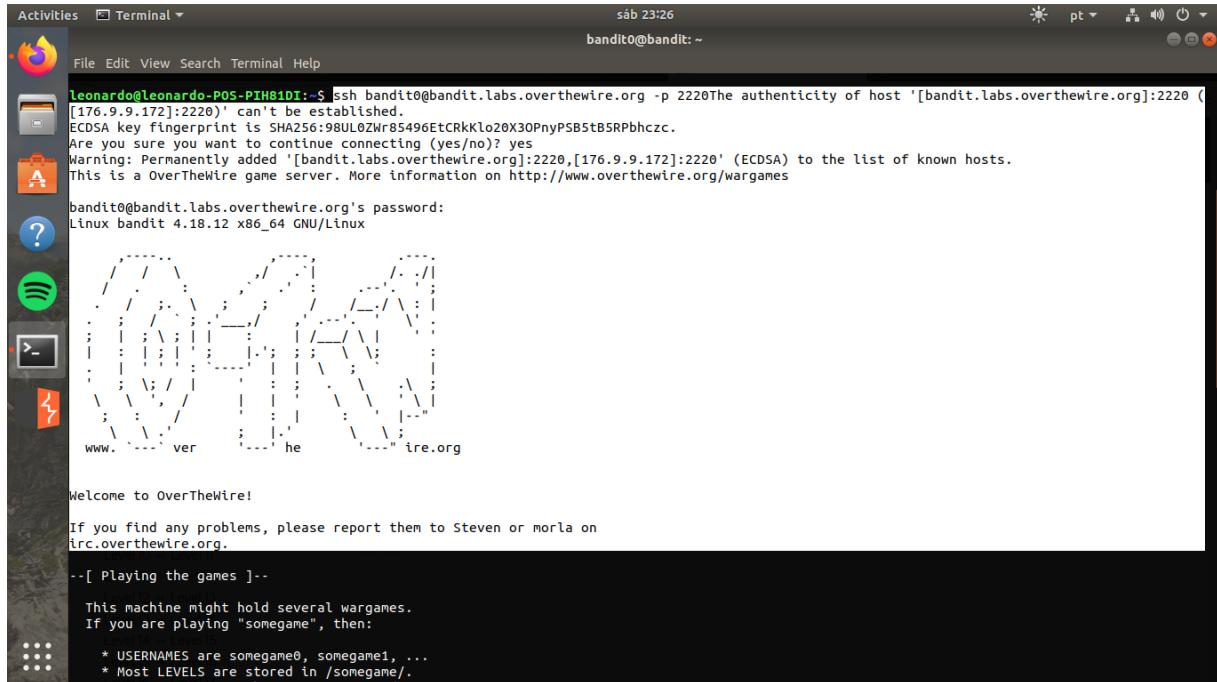


PROCESSO SELETIVO: GRIS – 2020

NOME: Leonardo Andrade

TAG OTW – BANDIT

Level 0: Logar usando SSH



A screenshot of a Linux desktop environment (Ubuntu) showing a terminal window. The terminal title is "Activities Terminal". The command entered is "ssh bandit0@bandit.labs.overthewire.org -p 2220". The response shows the host key fingerprint and asks if the user wants to continue connecting (yes/no). The user responds "yes". The password prompt "bandit0@bandit.labs.overthewire.org's password:" is shown, followed by "Linux bandit 4.18.12 x86_64 GNU/Linux". Below the terminal window, there is a decorative ASCII art of a tree with the URL "www.OverTheWire.org" at its base.

```
leonardo@leonardo-POS-PIH81DI:~$ 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.
ECDSA key fingerprint is SHA256:98UL02Wr85496EtCRkKlo20X30PnyPSB5tB5Rpbhczc.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '[bandit.labs.overthewire.org]:2220,[176.9.9.172]:2220' (ECDSA) to the list of known hosts.
This is a OverTheWire game server. More information on http://www.overthewire.org/wargames

bandit0@bandit.labs.overthewire.org's password:
Linux bandit 4.18.12 x86_64 GNU/Linux

Welcome to OverTheWire!
If you find any problems, please report them to Steven or morla on
irc.overthewire.org.

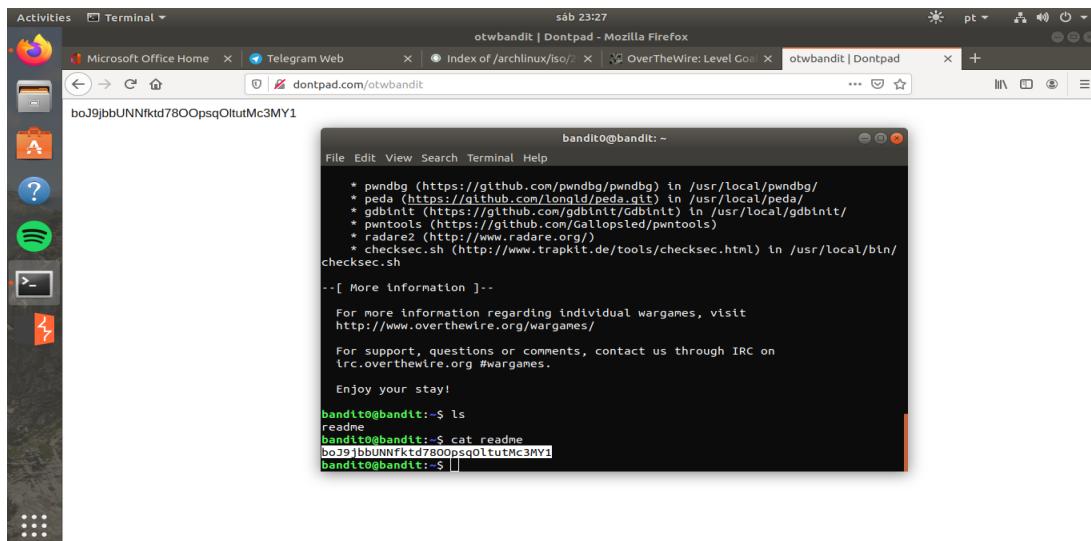
--[ Playing the games ]--

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

* USERNAMEs are somegame0, somegame1, ...
* Most LEVELs are stored in /somegame/
... 
```

Nesse desafio bastava logar e digitar a senha SSH

Level 0 – Level 1



A screenshot of a Linux desktop environment (Arch Linux) showing a terminal window. The terminal title is "Activities Terminal". The command entered is "cat readme". The output shows the contents of the "readme" file, which contains links to various tools and a message encouraging users to visit the OverTheWire website for more information.

```
bandit0@bandit:~$ cat readme
* pwndbg (https://github.com/pwndbg/pwndbg) in /usr/local/pwndbg/
* peda (https://github.com/lonn1/peda.git) in /usr/local/peda/
* gdbinit (https://github.com/gdbinit/GdbInit) in /usr/local/gdbinit/
* pwntools (https://github.com/gallopsled/pwntools)
* radare2 (https://www.radare.org/)
* checksec.sh (http://www.trapkit.de/tools/checksec.html) in /usr/local/bin/
checksec.sh

--[ More information ]--

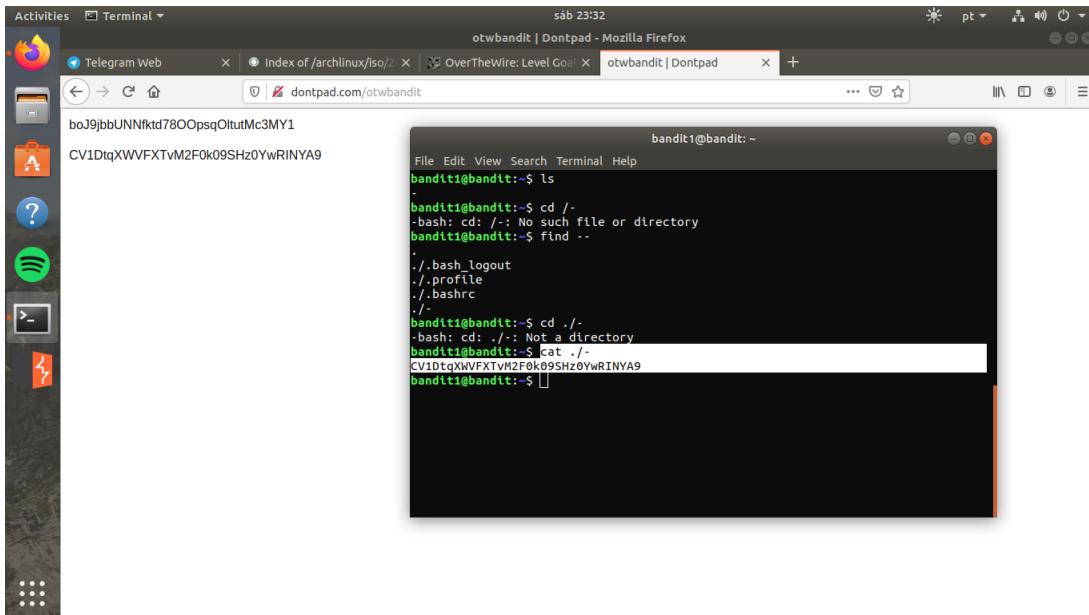
For more information regarding individual wargames, visit
http://www.overthewire.org/wargames/

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

Enjoy your stay!
bandit0@bandit:~$ ls
readme
bandit0@bandit:~$ cat readme
boJ9jbUNNfkt78OOpsqOlutMc3MY1
bandit0@bandit:~$ 
```

Apenas usar um cat para ler o arquivo. Abri um dontpad para ir guardando as senhas de cada desafio concluído.

Level 1 – Level 2



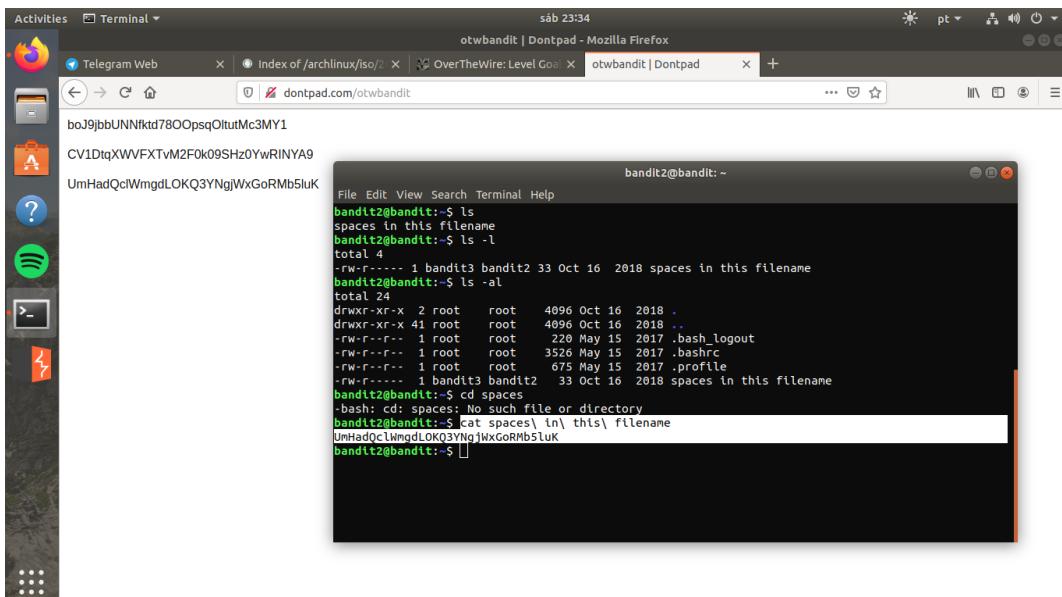
A screenshot of a Linux desktop environment. On the left is a vertical dock with icons for Telegram Web, a file manager, a terminal, a question mark, Spotify, and a terminal. In the center, there's a terminal window titled "bandit1@bandit: ~" running on Arch Linux. The terminal shows the following session:

```
sáb 23:32
bandit1@bandit:~$ ls
bandit1@bandit:~$ cd /-
-bash: cd: /: No such file or directory
bandit1@bandit:~$ find ..
.
./.bash_logout
./.profile
./.bashrc
./-
bandit1@bandit:~$ cd ./
-bash: cd: ./: Not a directory
bandit1@bandit:~$ cat ./
CV1DtqXWVFXTvM2F0k09SHz0YwRINYA9
bandit1@bandit:~$
```

The terminal window has a white background with black text. The output of the "cat ./" command is highlighted in white.

Nesse aqui tinha uma malandragem, tentei usar o cat de primeira mas não consegui. Precisava usar o “./” antes para que fosse reconhecível para o comando.

Level 2 - Level 3



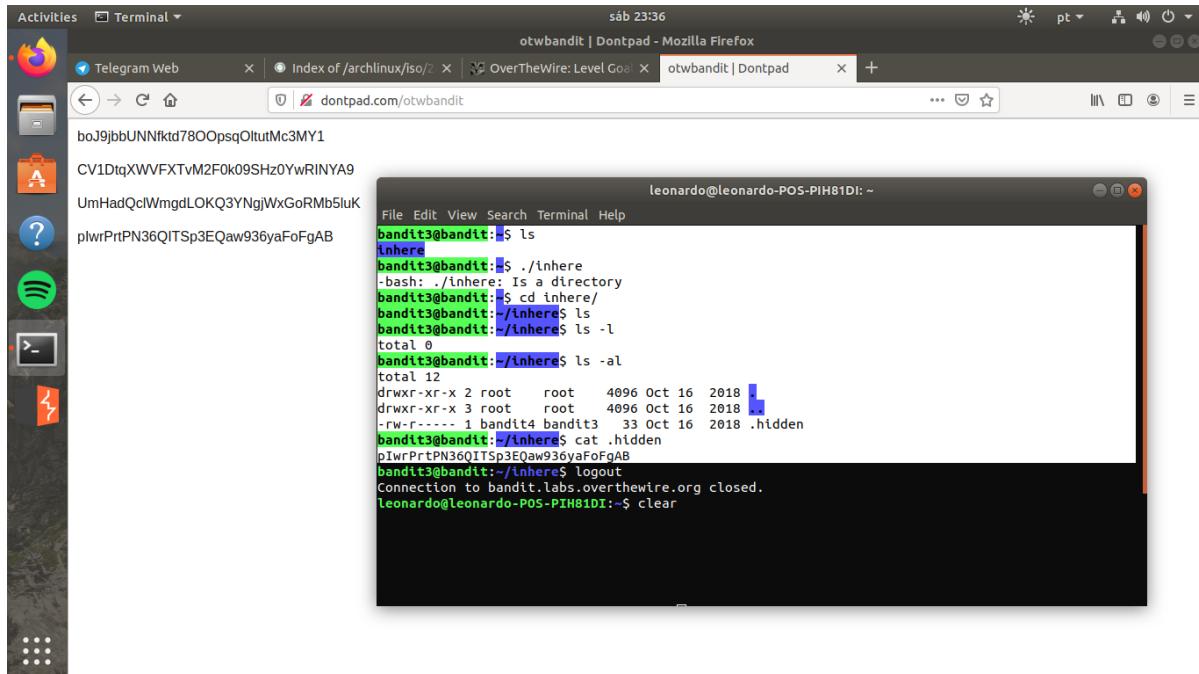
A screenshot of a Linux desktop environment, similar to the previous one. It shows a terminal window titled "bandit2@bandit: ~" running on Arch Linux. The terminal shows the following session:

```
sáb 23:34
bandit2@bandit:~$ ls
spaces in this filename
bandit2@bandit:~$ ls -l
total 4
-rw-r----- 1 bandit3 bandit2 33 Oct 16 2018 spaces in this filename
bandit2@bandit:~$ ls -al
total 24
drwxr-xr-x  2 root      root     4096 Oct 16 2018 .
drwxr-xr-x  41 root      root     4096 Oct 16 2018 ..
-rw-r--r--  1 root      root     220 May 15 2017 .bash_logout
-rw-r--r--  1 root      root    3526 May 15 2017 .bashrc
-rw-r--r--  1 root      root     675 May 15 2017 .profile
-rw-r-----  1 bandit3 bandit2  33 Oct 16 2018 spaces in this filename
bandit2@bandit:~$ cd spaces
-bash: cd: spaces: No such file or directory
bandit2@bandit:~$ cat spaces_in_this_filename
UmHadQclWmgdLOKQ3YNgJWxGoRMb5luK
bandit2@bandit:~$
```

The terminal window has a white background with black text. The output of the "cat spaces_in_this_filename" command is highlighted in white.

Usar “cat” novamente. Os espaços entre as palavras podem complicar um pouco, mas bastava escrever “spaces” e dar um “tab”.

Level 3 - Level 4

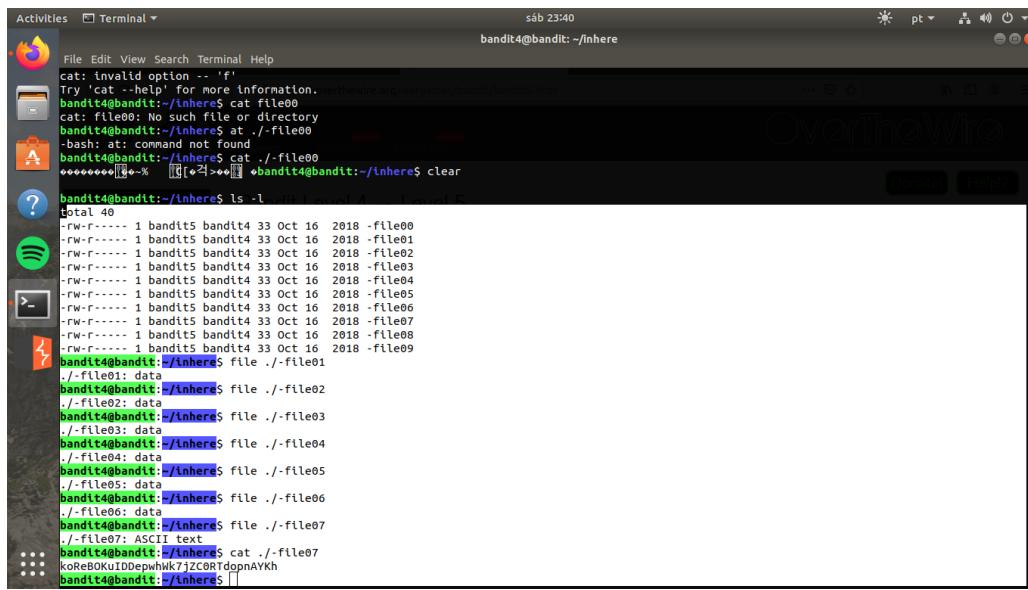


A screenshot of a Linux desktop environment. On the left is a dock with icons for Telegram Web, a file manager, a terminal, a question mark, Spotify, and a terminal. In the center, there's a terminal window titled "leonardo@leonardo-POS-PIH81DI: ~" and a browser window titled "otwbandit | Dontpad - Mozilla Firefox". The terminal window shows the following session:

```
sáb 23:36
otwbandit | Dontpad - Mozilla Firefox
Activities Terminal ▾
Telegram Web Index of /archlinux/iso/2 OverTheWire: Level Goal dontpad.com/otwbandit
boJ9jbUNNfktd78OOpsoOlutMc3MY1
CV1DtqXWVFXTvM2F0k09SHz0YwRINYA9
UmHadQclWmgdLOKQ3YNgjWxGoRMb5luK
plwrPrtpN36QITSp3EQaw936yaFoFgAB
bandit3@bandit:~$ ls
bandit3@bandit:~$ ./inhere
bandit3@bandit:~$ ls
bandit3@bandit:~$ cd inhere/
bandit3@bandit:~/inhere$ ls
bandit3@bandit:~/inhere$ ls -l
total 0
bandit3@bandit:~/inhere$ ls -al
total 12
drwxr-xr-x 2 root root 4096 Oct 16 2018 .
drwxr-xr-x 3 root root 4096 Oct 16 2018 ..
-rw-r----- 1 bandit4 bandit3 33 Oct 16 2018 .hidden
bandit3@bandit:~/inhere$ cat .hidden
plwrPrtpN36QITSp3EQaw936yaFoFgAB
bandit3@bandit:~/inhere$ logout
Connection to bandit.labs.overthewire.org closed.
leonardo@leonardo-POS-PIH81DI:~$ clear
```

Usei cat de novo, porém para encontrar o nome do arquivo usei o comando ls seguido de um –al que lista todos os arquivos e diretórios.

Level 4 – Level 5



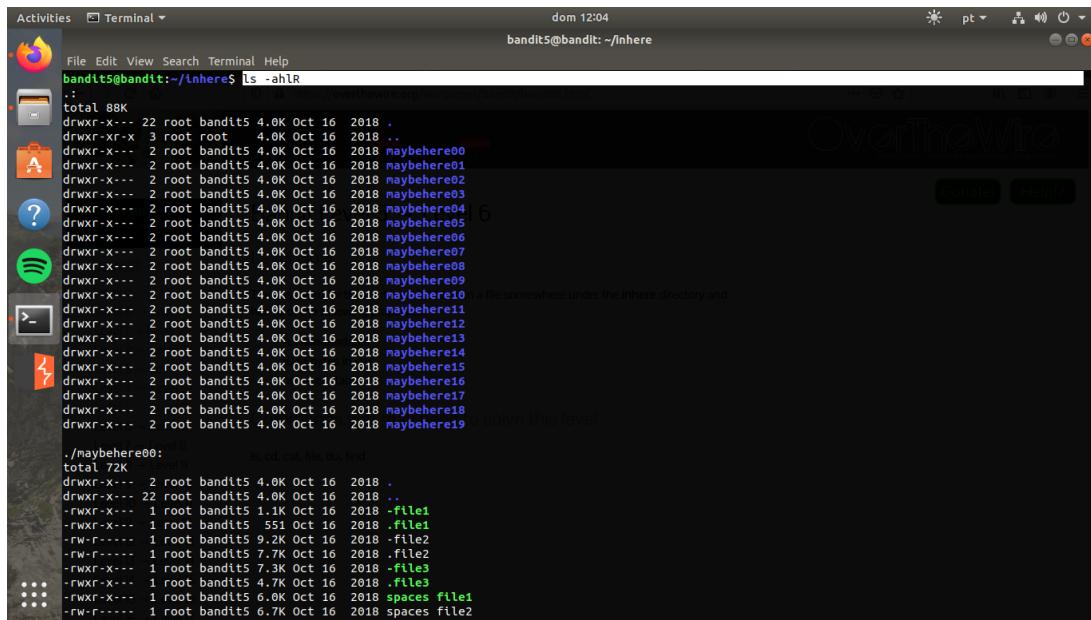
A screenshot of a Linux desktop environment. On the left is a dock with icons for Telegram Web, a file manager, a terminal, a question mark, Spotify, and a terminal. The terminal window shows the following session:

```
sáb 23:40
bandit4@bandit:~/inhere
Activities Terminal ▾
OverTheWire
File Edit View Search Terminal Help
cat: Invalid option -- 'f'
Try 'cat --help' for more information. overthewire.org/wargames/bandit/bandit4.html
bandit4@bandit:~/inhere$ cat file00
cat: file00: No such file or directory
bandit4@bandit:~/inhere$ at ./file00
-bash: at: command not found
bandit4@bandit:~/inhere$ cat ./file00
*****@*-% bandit4@bandit:~/inhere$ clear
bandit4@bandit:~/inhere$ ls -l
total 40
-rw-r----- 1 bandit5 bandit4 33 Oct 16 2018 -file00
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file01
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file02
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file03
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file04
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file05
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file06
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file07
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file08
-rw-r----- 1 bandits bandit4 33 Oct 16 2018 -file09
bandit4@bandit:~/inhere$ file ./file01
./file01: data
bandit4@bandit:~/inhere$ file ./file02
./file02: data
bandit4@bandit:~/inhere$ file ./file03
./file03: data
bandit4@bandit:~/inhere$ file ./file04
./file04: data
bandit4@bandit:~/inhere$ file ./file05
./file05: data
bandit4@bandit:~/inhere$ file ./file06
./file06: data
bandit4@bandit:~/inhere$ file ./file07
./file07: ASCII text
bandit4@bandit:~/inhere$ cat ./file07
koreBOKuIDDepwhk7jZCOrTdpnAYKh
bandit4@bandit:~/inhere$
```

Nesse aqui eu precisei entrar no diretório e verificar quem era legível ou não, usando o o “file” para isso. Quem era “data” não era legível, mas temos um que é “ASCII text”, dando um cat vemos que é a nossa senha.

Level 5 – Level 6

Nesse nível é necessário um pouco mais de cautela e busca. Inicialmente vamos usar o comando “ls -ahlR”, o ls para listar os arquivos e diretórios de “inhere”, o “a” para que não ignore nenhum arquivo, o “h” para que liste os arquivos legíveis para humanos, ou seja, dados estão de fora, “l” para exibir organizadamente em lista e o “R” para listar também os subdiretórios recursivamente.

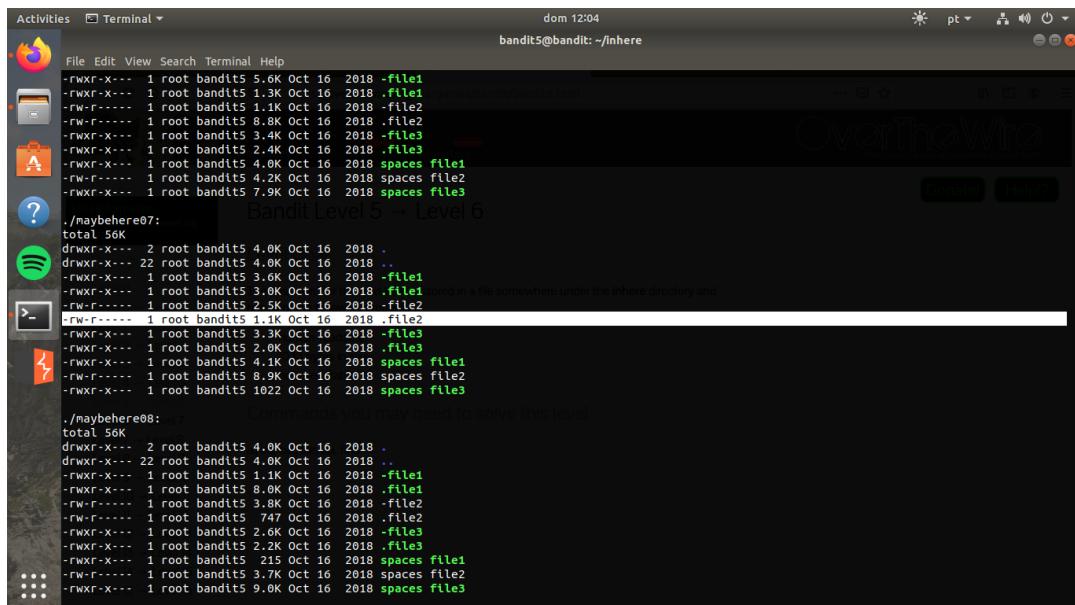


```
bandit5@bandit:~/inhere$ ls -ahlR
.
total 88K
drwxr-x--- 22 root bandit5 4.0K Oct 16 2018 .
drwxr-x-x 3 root root 4.0K Oct 16 2018 ..
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere00
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere01
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere02
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere03
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere04
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere05
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere06
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere07
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere08
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere09
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere10
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere11
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere12
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere13
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere14
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere15
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere16
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere17
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere18
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 maybehere19

./maybehere00:
total 72K
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 .
drwxr-x--- 22 root bandit5 4.0K Oct 16 2018 ..
-rwxr-x--- 1 root bandit5 1.1K Oct 16 2018 -file1
-rwxr-x--- 1 root bandit5 551 Oct 16 2018 -file1
-rw-r----- 1 root bandit5 9.2K Oct 16 2018 -file2
-rw-r----- 1 root bandit5 7.7K Oct 16 2018 -file2
-rwxr-x--- 1 root bandit5 7.3K Oct 16 2018 -file3
-rwxr-x--- 1 root bandit5 4.7K Oct 16 2018 -file3
-rwxr-x--- 1 root bandit5 6.0K Oct 16 2018 spaces file1
-rw-r----- 1 root bandit5 6.7K Oct 16 2018 spaces file2

Commands you may need to solve this level
```

Perceba que temos informações como tamanho em bytes dos arquivos e se ele é ou não um executável. Estamos procurando um não-executável de 1033 bytes, provável que seu tamanho esteja arredondado para “1.1K”, vamos procurar...



```
bandit5@bandit:~/inhere$ ls -ahlR
.
total 56K
-rwxr-x--- 1 root bandit5 5.6K Oct 16 2018 -file1
-rwxr-x--- 1 root bandit5 1.3K Oct 16 2018 .file1
-rw-r----- 1 root bandit5 1.1K Oct 16 2018 -file1
-rw-r----- 1 root bandit5 8.8K Oct 16 2018 .file2
-rwxr-x--- 1 root bandit5 3.4K Oct 16 2018 -file3
-rwxr-x--- 1 root bandit5 2.4K Oct 16 2018 .file3
-rwxr-x--- 1 root bandit5 4.0K Oct 16 2018 spaces file1
-rw-r----- 1 root bandit5 4.2K Oct 16 2018 spaces file2
-rwxr-x--- 1 root bandit5 7.9K Oct 16 2018 spaces file3

./maybehere07:
total 56K
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 .
drwxr-x--- 22 root bandit5 4.0K Oct 16 2018 ..
-rwxr-x--- 1 root bandit5 3.6K Oct 16 2018 -file1
-rwxr-x--- 1 root bandit5 3.0K Oct 16 2018 .file1 found in a file somewhere under the inhere directory and
-rw-r----- 1 root bandit5 2.5K Oct 16 2018 -file2
-rw-r----- 1 root bandit5 1.1K Oct 16 2018 -file2
-rwxr-x--- 1 root bandit5 3.3K Oct 16 2018 -file3
-rwxr-x--- 1 root bandit5 2.0K Oct 16 2018 .file3
-rwxr-x--- 1 root bandit5 4.1K Oct 16 2018 spaces file1
-rw-r----- 1 root bandit5 8.9K Oct 16 2018 spaces file2
-rwxr-x--- 1 root bandit5 1022 Oct 16 2018 spaces file3

./maybehere08:
total 56K
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 .
drwxr-x--- 22 root bandit5 4.0K Oct 16 2018 ..
-rwxr-x--- 1 root bandit5 1.1K Oct 16 2018 -file1
-rwxr-x--- 1 root bandit5 8.0K Oct 16 2018 .file1
-rw-r----- 1 root bandit5 3.8K Oct 16 2018 -file2
-rw-r----- 1 root bandit5 747 Oct 16 2018 .file2
-rwxr-x--- 1 root bandit5 2.6K Oct 16 2018 -file3
-rwxr-x--- 1 root bandit5 2.2K Oct 16 2018 .file3
-rwxr-x--- 1 root bandit5 215 Oct 16 2018 spaces file1
-rw-r----- 1 root bandit5 3.7K Oct 16 2018 spaces file2
-rwxr-x--- 1 root bandit5 9.0K Oct 16 2018 spaces file3

Commands you may need to solve this level
```

Encontramos o arquivo “.file2” em “maybehere07” que aparentemente atende aos requisitos. Observe que acima, no “maybehere06” temos algo semelhante com o “-file2”, porém eu fiz a verificação dele e ele não o arquivo “especial”, digamos assim, então vamos poupar nosso tempo e espaço.

```
Activities Terminal dom 12:05
bandit5@bandit:~/Inhere/maybehere07$ ls -ahlR
.:
total 56K
drwxr-x--- 2 root bandit5 4.0K Oct 16 2018 .
drwxr-x--- 22 root bandit5 4.0K Oct 16 2018 ..
-rw-r--r-- 1 root bandit5 3.6K Oct 16 2018 .file1
-rw-r--r-- 1 root bandit5 3.0K Oct 16 2018 .file1
-rw-r----- 1 root bandit5 2.5K Oct 16 2018 .file2
-rw-r----- 1 root bandit5 1.1K Oct 16 2018 .file2
-rw-r----- 1 root bandit5 3.3K Oct 16 2018 .file3
-rw-r----- 1 root bandit5 2.0K Oct 16 2018 .file3
4 .. .file2
bandit5@bandit:~/Inhere/maybehere07$ du -b .file2
1033 .file2
bandit5@bandit:~/Inhere/maybehere07$ file .file2
.file2: ASCII text, with very long lines
bandit5@bandit:~/Inhere/maybehere07$ cat .file2
DXjZPULLxYr1uwoI01BNLQbtFemEgo7

Level 6 → Level 7 Commands you may need to solve this level
Level 7 → Level 8 ls, cd, cat, file, du, find
Level 8 → Level 9
Level 9 → Level 10
Level 10 → Level 11
bandit5@bandit:~/Inhere/maybehere07$ 

Level 11 → Level 12
Level 12 → Level 13
Level 13 → Level 14
Level 14 → Level 15
Level 15 → Level 16
Level 16 → Level 17
```

Entrando no diretório “maybehere07”, daremos um “ls -ahlR” apenas para verificação, logo em seguida damos o comando “du -b .file2”, isso nos retornará o tamanho em bytes do arquivo. Note que ele possui 1033 bytes, assim como estamos procurando. Usando um comando “file”, vemos que é um texto em ASCII com muitas linhas, talvez não seja a nossa senha por ser um arquivo muito grande, mas não vamos desistir ainda, daremos um “cat” para visualizar o conteúdo dele. E como pode ver, ali está a nossa senha! O restante do espaço foi ocupado por “espaços” para mascarar o arquivo, mas aquela ali é de fato o que procuramos, vamos anotar no donpad e partir para o próximo desafio.

Level 6 – Level 7

Neste nível precisamos encontrar um arquivo de 33 bytes que pertence ao usuário bandit7 e no grupo bandit6. Se executarmos o “groups” no diretório atual, perceberemos que já estamos no grupo bandit6. Vamos usar o comando “find” de uma forma um pouco mais detalhada, passando informações de usuário, grupo e tamanho conforme o necessário.

```
bandit6@bandit:~$ clear
bandit6@bandit:~$ find / -user bandit7 -group bandit6 -size 33c
find: '/run/lock': Permission denied
find: '/run/screen/S-bandit17': Permission denied
find: '/run/screen/S-bandit0': Permission denied
find: '/run/screen/S-bandit3': Permission denied
find: '/run/screen/S-bandit13': Permission denied
find: '/run/screen/S-bandit11': Permission denied
find: '/run/screen/S-bandit9': Permission denied
find: '/run/screen/S-bandit27': Permission denied
find: '/run/screen/S-bandit25': Permission denied
find: '/run/screen/S-bandit2': Permission denied
find: '/run/screen/S-bandit16': Permission denied
find: '/run/screen/S-bandit20': Permission denied
find: '/run/screen/S-bandit30': Permission denied
find: '/run/screen/S-bandit14': Permission denied
find: '/run/screen/S-bandit31': Permission denied
find: '/run/screen/S-bandit8': Permission denied
find: '/run/screen/S-bandit4': Permission denied
find: '/run/screen/S-bandit29': Permission denied
find: '/run/screen/S-bandit28': Permission denied
find: '/run/screen/S-bandit21': Permission denied
find: '/run/screen/S-bandit26': Permission denied
find: '/run/screen/S-bandit24': Permission denied
find: '/run/screen/S-bandit22': Permission denied
find: '/run/screen/S-bandit1': Permission denied
find: '/run/screen/S-bandit19': Permission denied
find: '/run/screen/S-bandit23': Permission denied
find: '/run/shm': Permission denied
```

Usando o comando “`find / -user bandit7 -group bandit6 -size 33c`” podemos passar todos os parâmetros que estamos buscando. Para entender melhor os argumentos, basta ler o “`man find`”. Obtivemos diversos arquivos, porém apenas um temos autorização de visualizar:

```
bandit6@bandit:~$ find / -user bandit7 -group bandit6 -size 33c
find: '/var/lib/apt/lists/partial': Permission denied
find: '/var/lib/polkit-1': Permission denied
find: '/cgroup2sessions': Permission denied
find: '/home/bandit28-git': Permission denied
find: '/home/bandit30-git': Permission denied
find: '/home/bandit31-git': Permission denied
find: '/home/bandits/inhere': Permission denied
find: '/home/bandit27-git': Permission denied
find: '/home/bandit29-git': Permission denied
find: '/tmp': Permission denied
find: '/lost+found': Permission denied
find: '/root': Permission denied
find: '/etc/ssl/private': Permission denied
find: '/etc/lvm/backup': Permission denied
find: '/etc/lvm/archive': Permission denied
find: '/etc/polkit-1/localauthority': Permission denied
find: '/sys/fs/pstore': Permission denied
find: '/proc/city/driver': Permission denied
find: '/proc/16134/task/16134/fd/6': No such file or directory
find: '/proc/16134/task/16134/fdInfo/6': No such file or directory
find: '/proc/16134/fd/5': No such file or directory
find: '/proc/16134/fdInfo/5': No such file or directory
find: '/boot/lost+found': Permission denied
bandit6@bandit:~$
```

Achamos o nosso arquivo, agora é só dar um “`cat`”, guardar a senha no dontpad e passar para o próximo nível.

```
File Edit View Search Terminal Help
find: '/run/shm': Permission denied
find: '/run/lock/lvm': Permission denied
find: '/var/spool/bandit24': Permission denied
find: '/var/spool/syslog': Permission denied
find: '/var/spool/cron/crontabs': Permission denied
find: '/var/log': Permission denied
find: '/var/tmp': Permission denied
find: '/var/cache/ldconfig': Permission denied
find: '/var/cache/apt/archives/partial': Permission denied
find: '/var/lib/dpkg/info/bandit7.password': Permission denied somewhere on the
[...]
find: '/var/lib/apt/lists/partial': Permission denied
find: '/var/lib/polkit-1': Permission denied
find: '/cgroup/group/cessessions': Permission denied
find: '/home/bandit28-gt': Permission denied
find: '/home/bandit30-gt': Permission denied
find: '/home/bandit31-gt': Permission denied
find: '/home/bandit5/inhere': Permission denied
find: '/home/bandit27-gt': Permission denied
find: '/home/bandit29-gt': Permission denied
find: '/tmp': Permission denied
find: '/lost+found': Permission denied and. However in this level, we need to include more
find: '/root': Permission denied
find: '/etc/ssl/private': Permission denied what we want to search for, as the scope of
find: '/etc/lvm/backup': Permission denied or just 80 files in a folder.
find: '/etc/lvm/archive': Permission denied
find: '/etc/polkit-1/localauthority': Permission denied
find: '/sys/fs/pstore': Permission denied / -User bandit7 -group bandit6
find: '/proc/tty/driver': Permission denied
find: '/proc/16134/task/16134/fd/6': No such file or directory
find: '/proc/16134/task/16134/fdinfo/6': No such file or directory
find: '/proc/16134/fd/5': No such file or directory
find: '/proc/16134/fdinfo/5': No such file or directory
find: '/boot/lost+found': Permission denied
bandit6@bandit:~$ cd /var/lib/dpkg/info/bandit7.password
-bash: cd: /var/lib/dpkg/info/bandit7.password: Not a directory
bandit6@bandit:~$ cat /var/lib/dpkg/info/bandit7.password
HKBP7KOnIay4Fw76bEv8PVxKEDQRKTzs
bandit6@bandit:~$
```

Level 7 – Level 8

Agora, temos um arquivo `data.txt`, se usarmos um “`cat`” direto, veremos que o arquivo é gigante e possui diversas possíveis senhas do lado de palavras aleatórias. Porém a dica dada pelo exercício é que a senha correta está do lado da palavra “millionth”. Com um simples comando “`cat data.txt | grep millionth`” podemos encontrar o que estamos buscando.

bandit7@bandit:~\$ file data.txt
data.txt: UTF-8 Unicode text
bandit7@bandit:~\$ du -b data.txt
4184396 data.txt
bandit7@bandit:~\$ cat data.txt | grep millionth
millionth cvx2JJa4CFALtqS87jk27qwqGhBM9plV

Bandit Level 7 → Level 8

Level Goal

The password for the next level is stored in the file `data.txt` next to the word `millionth`

Commands you may need to solve this level

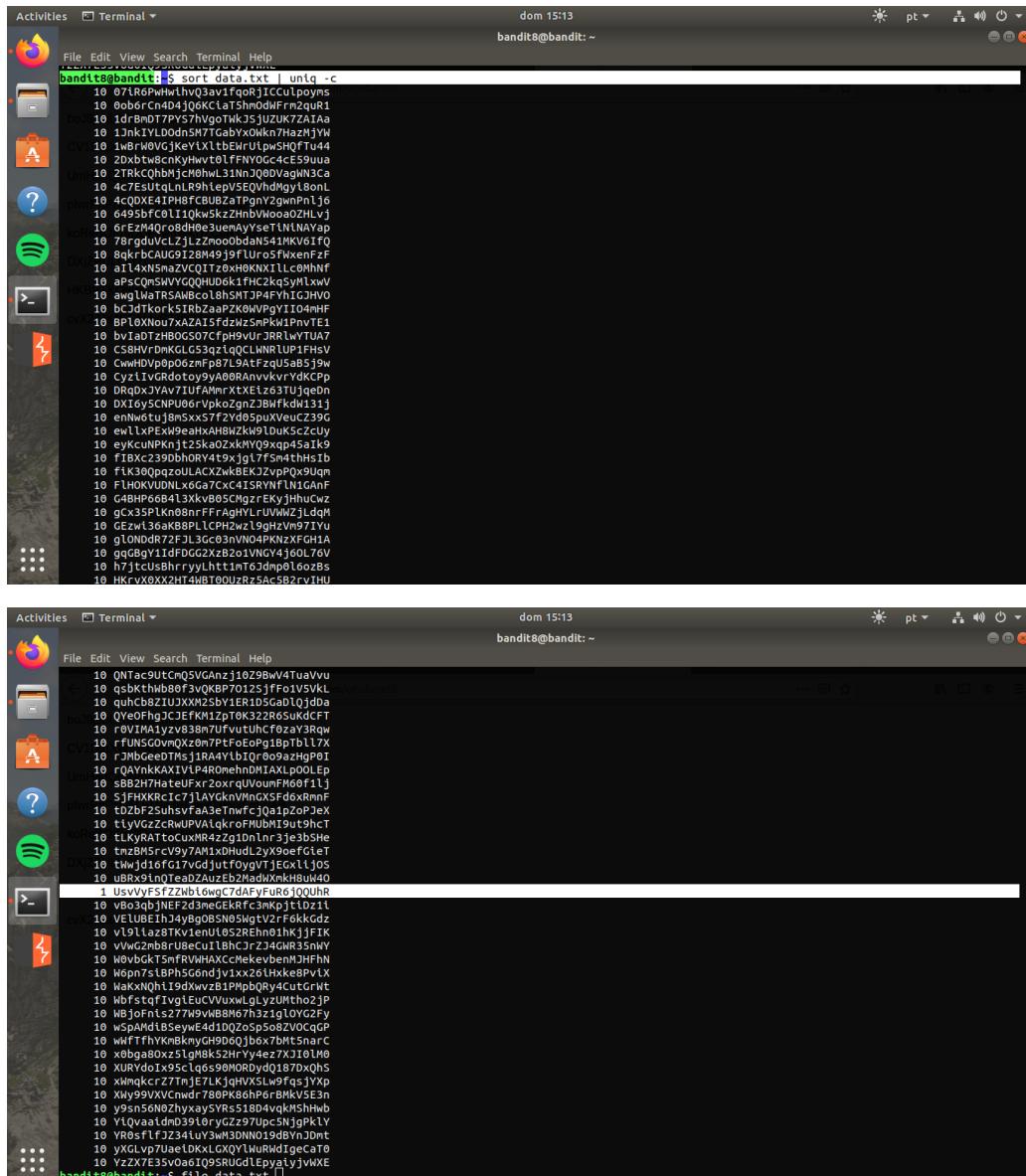
grep, sort, uniq, strings, base64, tr, tar, gzip, bz2, xz

Level 0 → Level 1
Level 1 → Level 2
Level 2 → Level 3
Level 3 → Level 4
Level 4 → Level 5
Level 5 → Level 6
Level 6 → Level 7
Level 7 → Level 8
Level 8 → Level 9
Level 9 → Level 10
Level 10 → Level 11
Level 11 → Level 12
Level 12 → Level 13
Level 13 → Level 14
Level 14 → Level 15
Level 15 → Level 16

Ali está nossa senha correta.

Level 8 – Level 9

Neste nível temos um arquivo com diversas senhas. O exercício nos diz que a senha correta aparece apenas 1 vez. Se utilizarmos o comando “sort” veremos que grande parte das senhas se repetem, a olho nu não é possível encontrar o que queremos. Meu pensamento inicial foi de usar o “uniq”, porém ele não retorna a linha que aparece apenas uma vez, e sim todas as linhas, mesmo as repetidas, só que apenas uma vez. Usando o “man uniq” notei que há uma extensão “-c” que conta o número de vezes que uma linha aparece. Usando o comando “sort data.txt | uniq -c” eu ordenei a lista e passei mais um comando para o retorno, o que exibe apenas uma vez as linhas e conta quantas vezes elas aparecem no original. Como pode ver, o padrão é 10 vezes.



```
Activities Terminal dom 15:13
bandit8@bandit: ~
File Edit View Search Terminal Help
bandit8@bandit: $ sort data.txt | uniq -c
 10 07fR6PwHwlhvQ3aV1fqQRjCkLpoym
 10 0ob6rCn4D4jQ6KCLaTShn0dFrzqur1
 10 1drB#T7PYS7hYgoTkJSjUZUK7zA1Aa
 10 1Jnk1YLDDdn5N7TGabY0kkn7HaMjYW
CV11 1vBrw8VjKeyLxLtbErUs.pwSHQfTu44
 10 2Dxbtw8cnkyHwto1FFNYOGc4CE59uua
 10 2TRkCqbhjcm0hwl31nJ09dVagin3Nca
 10 4c7EsUtqlnR9hlepjSEFQvhMgy18onL
 10 4CQDXE4IPh8FCB8uZaTfgnYZgwnPnJ6
 10 6495bfcf110kw5kzZhbW0o02hLvj
 10 6rEZM4qro8dHe3uemuAySeetLNAYap
 10 78rgduVCLzLzzmoodbaN51MKV61f0
 10 8qkrbcAuG9128m49j9fLuor5fwXenZf
 10 a1l4xNsma2VQQTzrpxrX1X1c0mHNf
 10 aefCQmsWVtVQ0000000000000000000000
 10 agharARSAMhZ16hGNTJPA45VH16hAV0
 10 bCDtkKrkSrbZanPZK0WnP0YI04HF
 10 bPLOwvJyfZAl5fdsp1spnR4hPrvTE1
 10 bv1AdTzHB0G507C1ph9Vu3DR1lwTUa7
 10 CSbHVxDmKGL53q31q0CLuNBLlUP1FHsV
 10 CwwHDVpp0G6zmp871.9AtFzqUsabSj9w
 10 Cyz1iVgRdtocy9vA00RAvnuvkrYdKCPp
 10 DRqDxJ4VzT1UfAmrxtxE1z637Ujqeo0n
 10 DX16y5NPu06rVpkzoqZBwfkfdw113j
 10 enNw6tuJB8J0xx57F2d05puXeuCZ39G
 10 ew1lxPExd9eAhA8uZkW10ukSc2cijy
 10 eyKcUnPKnjt25ka0ZxkHIV09xqp45a1k9
 10 f1Bxc239dbhDRY419xj1q7f5m4thHs1b
 10 flk300p0qz0uLACXZwBKEKJ2vpQx9uqm
 10 FLHOKVUDNLxGg7CxC41SRNF1N1gAnF
 10 G4BHP668413xxkB095CMgzFEkyJHuwcz
 10 gCx35PlKn08mFFFAGhYLUVwWz1LdqM
 10 GEzw136ak88PL1CPHzw19ghzv9771Yu
 10 gLONDdr72F1L3Gc03nVn04PKNzXFH1A
 10 ggBqgY11dFDGG2xZBz0iVNGY4j60L76V
 10 h7jtcUsBhrryy.htm1mT63dploeo8s
 10 HKrvx0X2HT4WBTO0UzRz5Ac5B2rvIJu

Activities Terminal dom 15:13
bandit8@bandit: ~
File Edit View Search Terminal Help
 1 UsvvYFSFzZh1b6wC7dAfVFUR6j0QUjhR
 1 vB03qbjNEF2d3meGEKrfC3mkp1t1Dz11
 1 vE1UBE1h14ybgOBsN05gV2r6kckdz
 1 v19l1laaz8Tkv1enUl0s2Rhn01hK1jfIK
 1 vVwG2nb8rU8e1ulBhC1rJz4GMr35mW
 1 Wvb6gkT5nFRVmHAXCcMekevbenMhfhN
 1 W6pn7stBPH5G0ndjv1xx26tHkxe8PvLX
 1 WaXn0h1l0dKwvzb1PMBpbRy4CutGrWt
 1 WbfstqfIvgEuCVuxwlgyzUth02jP
 1 WBjofnlsz77w9vB88M67z3zg1LOY2Gfy
 1 wSpAd1B8seyE4d1DQz0Sp5o8zV0CgGP
 1 wifTfHykm8kMyGHD6QjbxoxbfttsnarC
 1 x0bga80xz51gM8k52Hrlyyez7xJ10lM0
 1 XURydo1x95clqgs90M0R0yjd1870xQhs
 1 ximqkcrZ7TmJE7LkjgHxXSLw97qsjXp
 1 Xiy99VXnwdr780PK8ehP6rBhKvSE3n
 1 y9s5N0N02hyxaySVRs518D4vqkMShiwb
 1 YlQvaadn03910ryGz297UpcSNjgPkLY
 1 YR0sfLfJ234lu3wM3DN0N19dbYnJ0mt
 1 yGLvpUae1DKLxGQY1wRwd1geCat0
 1 YzzX7E35v0aG109sRUg1lEpvyjvKXE
```

Facilmente podemos encontrar a senha que aparece apenas uma vez na lista, agora é só guardar para o próximo nível.

Level 9 – Level 10

Neste nível o exercício nos informa que a nossa senha é uma das poucas strings legíveis a humanos e está seguida de alguns “=”. Podemos pedir todas as strings do arquivo através do comando “strings”, porém para filtrarmos melhor daremos um pipe e um “grep” para obtermos apenas os conteúdos seguidos de “=”.

The screenshot shows a terminal window titled "Terminal" with the command "bandit9@bandit: ~". The terminal displays the following session:

```
*t1z
{d2-
q7 u@
J@sc
J19j
+TuBy
^ek$K
KBP77f+
"1oq
Nd^*<
((97
47<}
&-zd
Sh+b
8a:E
+vex1]
Y(zs
C1/(
{4x
bandit9@bandit:~$ strings data.txt | grep = may need to solve this level
2===== the
===== password
>t= yP
rV=dHm=
===== isa
=FQ?PVU
= F[
pb=x
J;n=
=)S=
===== truKLdjsbJ5g7yyJ2X2R0o3a5HQJFuLk
tv8!=
bandit9@bandit:~$ strings data.txt | grep =====
2===== the
===== password
===== isa
===== truKLdjsbJ5g7yyJ2X2R0o3a5HQJFuLk
bandit9@bandit:~$
```

O nosso retorno é bem sugestivo, a senha correta é a última string, basta guardar e seguir para o próximo desafio.

Level 10 – Level 11

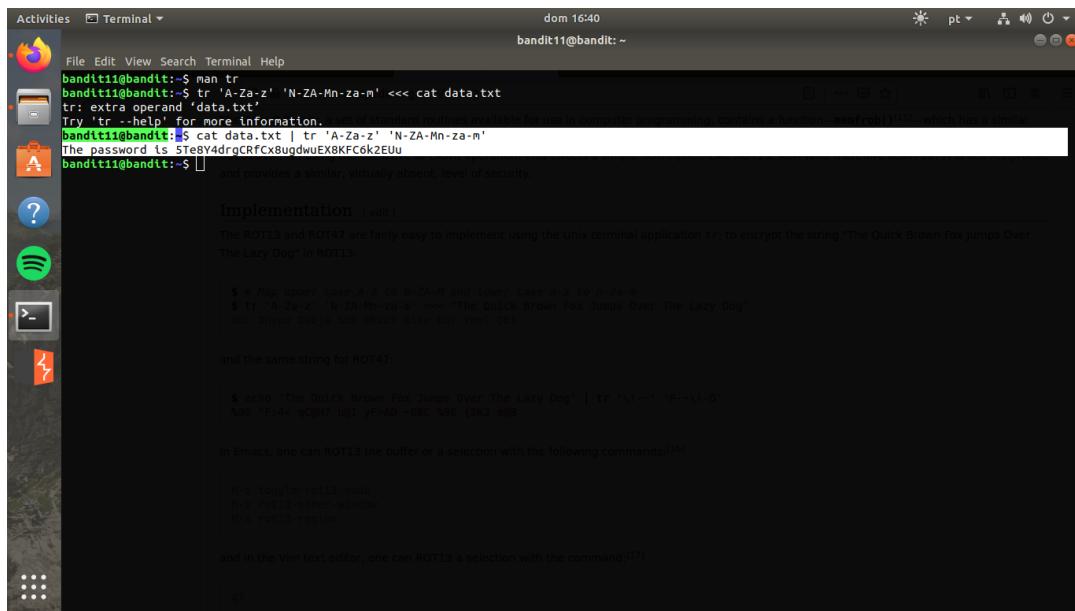
Neste nível temos um código em base64 e devemos decodificar para encontrarmos a nossa senha. O Linux possui o comando “base64” que codifica e decodifica textos em base64, para decodificar basta passarmos “base64 -d”. Passaremos o seguinte comando: “cat data.txt | base64 -d”, que irá exibir o conteúdo do arquivo e decodificar o retorno.

The screenshot shows a terminal window titled "Terminal" with the command "bandit10@bandit: ~". The terminal displays the following session:

```
File Edit View Search Terminal Help
bandit10@bandit:~$ cat data.txt
VGhlIHBhc3N3b3JkCl1zIiElGdwts50d2Rlc4TU9XM0lSRnFyeEUxaHhUTkVlVVBSG==
bandit10@bandit:~$ cat data.txt | base64 -d
The password is IFukwKGsFW8M0q3IRFqrxE1hxTNEbUPR
bandit10@bandit:~$
```

Level 11 –Level 12

Neste nível o conteúdo do arquivo está criptografado utilizando a ROT-13, um tipo de criptografia semelhante ao código César, mas caso da ROT-13 cada caractere é substituído por outro que esteja a uma distância de 13 letras no alfabeto. Por exemplo, “A” se torna “N” (A-B-C-D-E-F-G-H-I-J-K-L-M-N), “E” se torna “R” (E-F-G-H-I-J-K-L-M-N-O-P-Q- R), e assim por diante. Vamos usar o comando “tr” (abreviação para *translate*) dessa seguinte forma **tr 'A-Za-z' 'N-ZA-Mn-za-m'**, isso significa que queremos mapear as letras maiúsculas A-Z para N-ZA-M e minúsculas a-z para n-za-m.



The screenshot shows a terminal window titled "Terminal" with the command "bandit11@bandit: ~". The terminal output is as follows:

```
dom 16:40
bandit11@bandit:~$ man tr
bandit11@bandit:~$ tr 'A-Za-z' 'N-ZA-Mn-za-m' <<< cat data.txt
tr: extra operand 'data.txt'
Try 'tr --help' for more information.
cat: standard input: file too large, 1024 bytes available for use in computer programming, contains a function... `memchr(1024)... which has a similar
bandit11@bandit:~$ cat data.txt | tr 'A-Za-z' 'N-ZA-Mn-za-m'
The password is 5t8y4drqCRFcX8ugdwuEX8KFC6k2EUu
bandit11@bandit:~$
```

The terminal also displays a portion of a help page for the "tr" command, which includes notes about file size limits and function pointers.

Ali está a nossa senha.