

Step 1:

```
Oct 5 17:54
john@john-VirtualBox: ~
john@john-VirtualBox:~$ sudo useradd -m -s /bin/bash user1
[sudo] password for john:
john@john-VirtualBox:~$ sudo useradd -m -s /bin/bash user2
john@john-VirtualBox:~$ sudo useradd -m -s /bin/bash user3
john@john-VirtualBox:~$ sudo useradd -m -s /bin/bash user4
john@john-VirtualBox:~$ sudo useradd -m -s /bin/bash user5
john@john-VirtualBox:~$ sudo useradd -m -s /bin/bash user6

john@john-VirtualBox:~$ sudo pam-auth-update
john@john-VirtualBox:~$ sudo pam-auth-update
john@john-VirtualBox:~$ sudo pam-auth-update
john@john-VirtualBox:~$ echo 'user1:impossible' | sudo chpasswd
john@john-VirtualBox:~$ echo 'user2:6489' | sudo chpasswd
john@john-VirtualBox:~$ echo 'user3:banana123' | sudo chpasswd
john@john-VirtualBox:~$ echo 'user4:orange2021!' | sudo chpasswd
john@john-VirtualBox:~$ echo 'user5:grape77' | sudo chpasswd
john@john-VirtualBox:~$ echo 'user6:BlueBerry99$' | sudo chpasswd
john@john-VirtualBox:~$
```

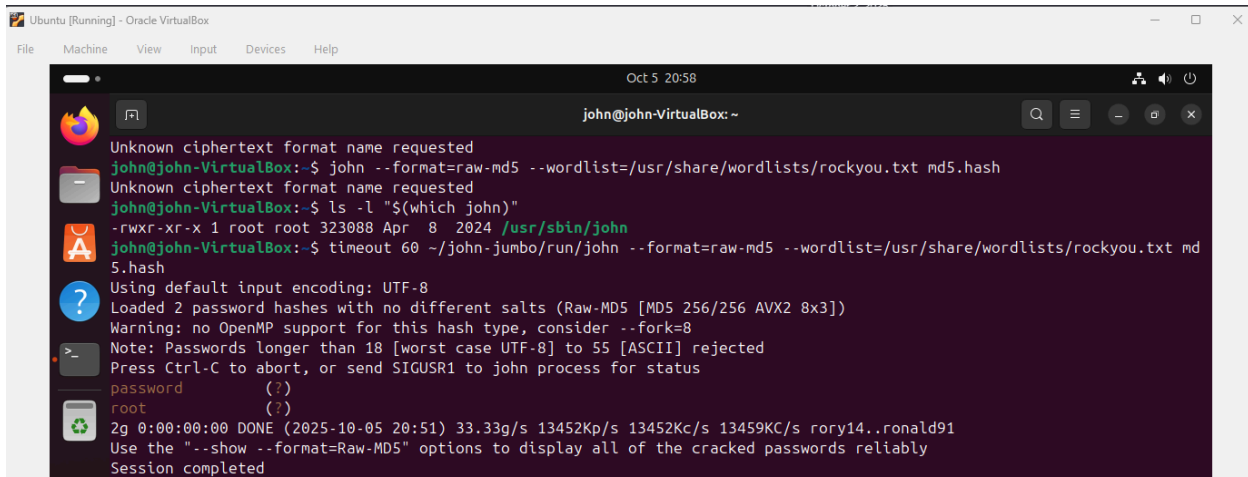
Step 2 and 3:

```
john@john-VirtualBox:~$ MIDASNAME="jmonr015"
john@john-VirtualBox:~$ sudo grep -E '^(user[1-6]):' /etc/shadow > ${MIDASNAME}.hash
john@john-VirtualBox:~$ ls -l
total 56
-rw-r--r-- 1 john john 5501 Sep 14 20:04 copyright_cyse270
drwxrwxr-x 2 john john 4096 Sep  2 19:01 data
drwxr-xr-x 2 john john 4096 Aug 31 17:51 Desktop
drwxr-xr-x 2 john john 4096 Aug 31 17:51 Documents
drwxr-xr-x 2 john john 4096 Aug 31 17:51 Downloads
-rw-rw-r-- 1 john john 141 Sep  2 18:57 error_file
-rw-rw-r-- 1 john john 594 Oct  5 17:57 jmonr015.hash
drwxr-xr-x 2 john john 4096 Aug 31 17:51 Music
drwxr-xr-x 2 john john 4096 Aug 31 17:51 Pictures
drwxr-xr-x 2 john john 4096 Aug 31 17:51 Public
drwx----- 5 john john 4096 Aug 31 18:00 snap
drwxr-xr-x 2 john john 4096 Aug 31 17:51 Templates
-rw-rw-r-- 1 john john  0 Sep  2 19:00 test
drwxr-xr-x 2 john john 4096 Aug 31 17:51 Videos
```

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Ubuntu [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Oct 5 20:33
john@john-VirtualBox: ~
copyright_cyse270 Desktop Downloads jmonr015.hash Music Public snap test
data Documents error_file john-jumbo Pictures rockyou.txt.tar.gz Templates Videos
john@john-VirtualBox:~$ sed -n '1,6p' "jmonr015.hash"
user1:$y$j9T$3tITyfmG12Kz/7I914nBZ1$0ZOATIC0FgBKHL7TillQaHyN0n8LQtxWcBDTbPbeEJ.:20366:0:99999:7:::
user2:$y$j9T$HcVdjd12d90TdY38AXW6I.$PU.q4To9iv3PRT5gXe7yshj6E4DEzjaAI/Ws6E8l.r2:20366:0:99999:7:::
user3:$y$j9T$TKUz0MLWl0.TJcg1mwmkB.$Gx4M1RNYjLDzNP75bXhCS.EQBA.gd7y.PrBd3dm.FL4:20366:0:99999:7:::
user4:$y$j9T$uu97e0L8j8gJ0MHSzcXLE.$RiMcjSjIA1g4LbP00LJ1nydfnLQkPGuKt5DBg03G/30:20366:0:99999:7:::
user5:$y$j9T$ex97ruuX7peY.RqwjShnq1$T0KoQ/xLzLI0NElkbFhmAhsqosi9c1tb0aFLPj3wG9:20366:0:99999:7:::
user6:$y$j9T$ne10IVjUi8l2p/rUj12Zb1$0azysvqnPz30ggE.xrcEqINZkwV844QKb8igAxpLQ6:20366:0:99999:7:::
john@john-VirtualBox:~$ timeout 600 "$JRUN" --session=labrun --wordlist="$WORDLIST" --rules=none "$HASHFILE"
timeout: failed to run command ': No such file or directory
john@john-VirtualBox:~$ timeout 600 "$JRUN" --session=labrun --wordlist="$WORDLIST" --rules=none "$HASHFILE"
timeout: failed to run command ': No such file or directory
john@john-VirtualBox:~$ timeout 600 "$JRUN" --session=labrun --wordlist="$WORDLIST" --rules=none "$HASHFILE"
timeout: failed to run command ': No such file or directory
john@john-VirtualBox:~$ timeout 600 "$JRUN" --session=labrun --format=sha512crypt --wordlist="$WORDLIST" --rules=none "$HASHFILE"
timeout: failed to run command ': No such file or directory
john@john-VirtualBox:~$ printf 'JRUN="%s"\n' "${JRUN-}"
JRUN=""
john@john-VirtualBox:~$ export JRUN="$HOME/john-jumbo/run/john"
john@john-VirtualBox:~$ printf 'JRUN="%s"\n' "${JRUN-}"
JRUN="/home/john/john-jumbo/run/john"
john@john-VirtualBox:~$ timeout 600 "$JRUN" --session=labrun --wordlist="$WORDLIST" --rules=none "$HASHFILE"
Using default input encoding: UTF-8
Loaded 6 password hashes with 6 different salts (crypt, generic crypt(3) [?/64])
Cost 1 (algorithm [0:unknown 1:descrypt 2:md5crypt 3:sunmd5 4:bcrypt 5:sha256crypt 6:sha512crypt 7:scrypt 10:yescrypt 11:gost-yescrypt]) is 10 for all loaded hashes
Cost 2 (algorithm specific iterations) is 1 for all loaded hashes
Will run 8 OpenMP threads
Note: Passwords longer than 24 [worst case UTF-8] to 72 [ASCII] rejected
Press Ctrl-C to abort, or send SIGUSR1 to john process for status
Enabling duplicate candidate password suppressor using 256 MiB

john@john-VirtualBox:~$ timeout 600 "$JRUN" --session=labrun --wordlist="$WORDLIST" --rules=none "$HASHFILE"
Using default input encoding: UTF-8
Loaded 6 password hashes with 6 different salts (crypt, generic crypt(3) [?/64])
Cost 1 (algorithm [0:unknown 1:descrypt 2:md5crypt 3:sunmd5 4:bcrypt 5:sha256crypt 6:sha512crypt 7:scrypt 10:yescrypt 11:gost-yescrypt]) is 10 for all loaded hashes
Cost 2 (algorithm specific iterations) is 1 for all loaded hashes
Will run 8 OpenMP threads
Note: Passwords longer than 24 [worst case UTF-8] to 72 [ASCII] rejected
Press Ctrl-C to abort, or send SIGUSR1 to john process for status
Enabling duplicate candidate password suppressor using 256 MiB
Failed to use huge pages (not pre-allocated via sysctl? that's fine)
impossible (user1)
banana123 (user3)
Session 'labrun' aborted
john@john-VirtualBox:~$
```

Extra credit:



```
Ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Oct 5 20:58
john@john-VirtualBox: ~
Unknown ciphertext format name requested
john@john-VirtualBox:~$ john --format=raw-md5 --wordlist=/usr/share/wordlists/rockyou.txt md5.hash
Unknown ciphertext format name requested
john@john-VirtualBox:~$ ls -l "$(which john)"
-rwxr-xr-x 1 root root 323088 Apr  8 2024 /usr/sbin/john
john@john-VirtualBox:~$ timeout 60 ~/john-jumbo/run/john --format=raw-md5 --wordlist=/usr/share/wordlists/rockyou.txt md5.hash
Using default input encoding: UTF-8
Loaded 2 password hashes with no different salts (Raw-MD5 [MD5 256/256 AVX2 8x3])
Warning: no OpenMP support for this hash type, consider --fork=8
Note: Passwords longer than 18 [worst case UTF-8] to 55 [ASCII] rejected
Press Ctrl-C to abort, or send SIGUSR1 to john process for status
password      (?)
root          (?)
2g 0:00:00:00 DONE (2025-10-05 20:51) 33.33g/s 13452Kp/s 13452Kc/s 13459Kc/s rory14..ronald91
Use the "--show --format=Raw-MD5" options to display all of the cracked passwords reliably
Session completed
```