



CYB613: Operating Systems Theory and Administration Lab3

Objective

To learn about managing user accounts in Linux OS.

Lab 7.1

Chapter 7. Managing User Accounts

These labs should be performed on the Ubuntu operating system that you installed in [Chapter 1, "Distributions and Key Components."](#) Before you begin this lab, log in to the student account that you created during the installation process.

Lab 7.1 Managing User Accounts

STEP 1. Open a terminal window.

STEP 2. Execute the correct command to display user account information (including the login shell and home directory) for the bin account.

STEP 3. Execute the correct command to display user password information (including the encrypted password and password aging) for the bin account.

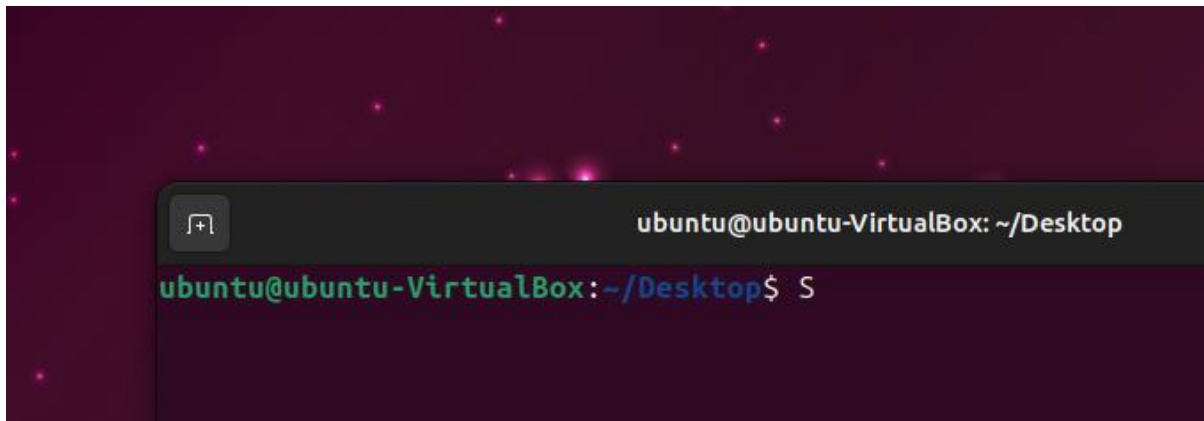
STEP 4. The command in step 3 should have failed. Execute the correct su command to change your account so the command from step 3 will be successful when executed.

STEP 5. Create a new user named jake and explicitly use options to create the home directory /home/jake for this user.

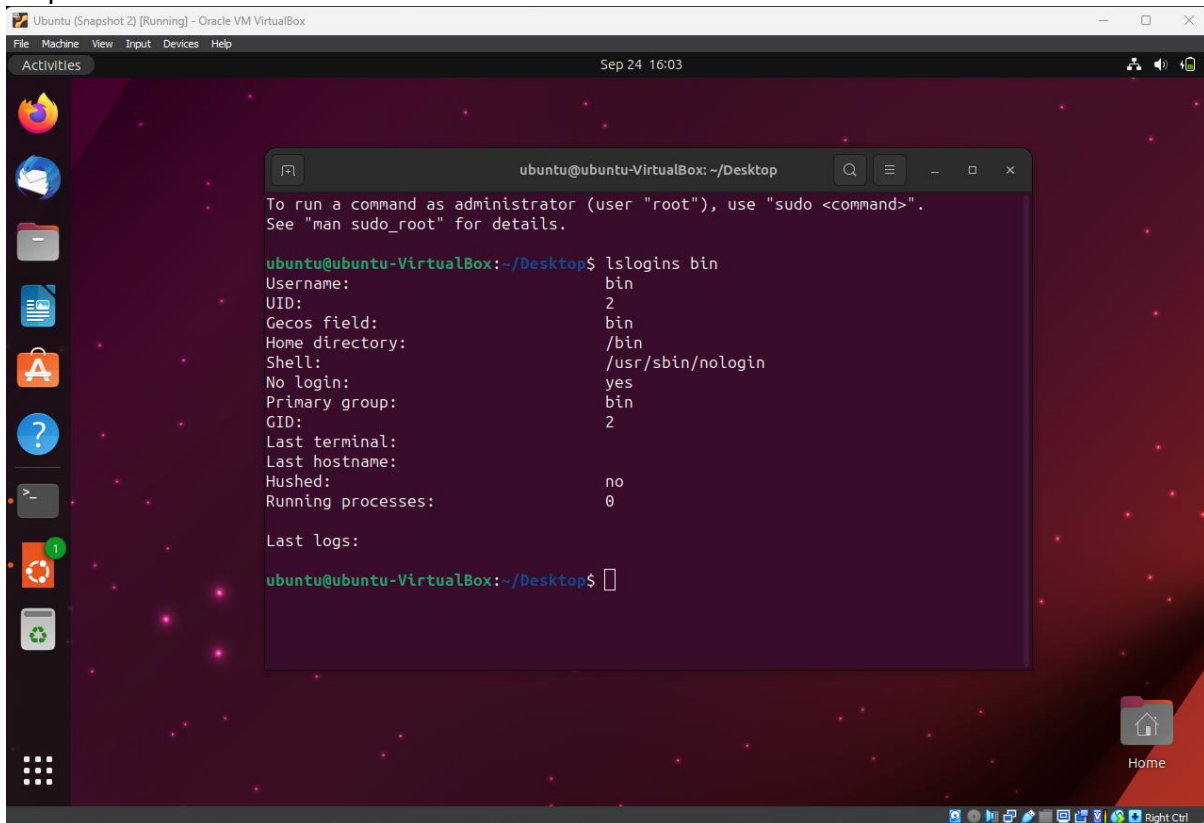
STEP 6. Set a password for the jake user to a password of your choosing.

STEP 7. Run the correct command to display the default values used when a new account is created.

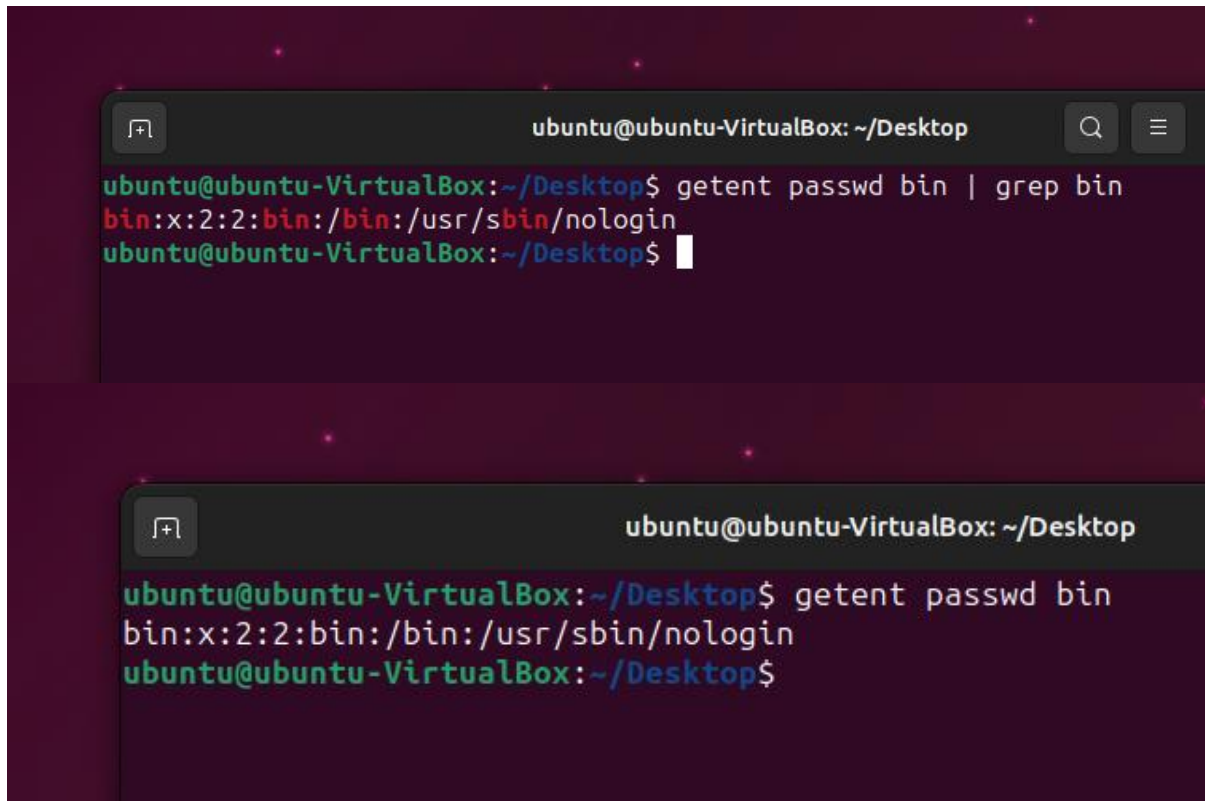
Step 1



Step 2



Step 3

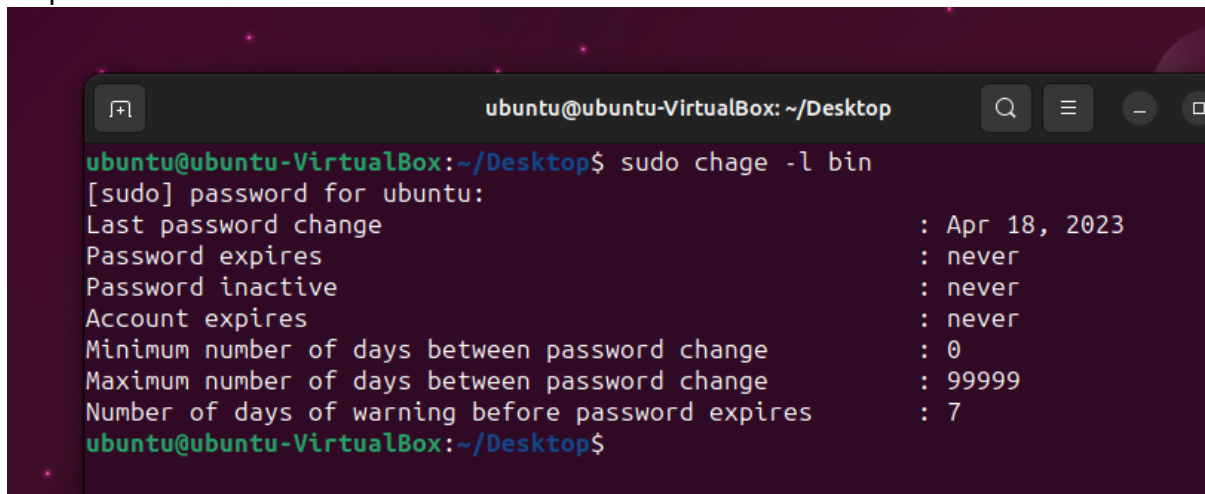


The image shows two screenshots of a terminal window. The terminal title is 'ubuntu@ubuntu-VirtualBox: ~/Desktop'. The first screenshot shows the command 'getent passwd bin | grep bin' being executed, resulting in the output 'bin:x:2:2:bin:/bin:/usr/sbin/nologin'. The second screenshot shows the same command being executed again, with the same output.

```
ubuntu@ubuntu-VirtualBox: ~/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ getent passwd bin | grep bin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
ubuntu@ubuntu-VirtualBox:~/Desktop$

ubuntu@ubuntu-VirtualBox: ~/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ getent passwd bin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

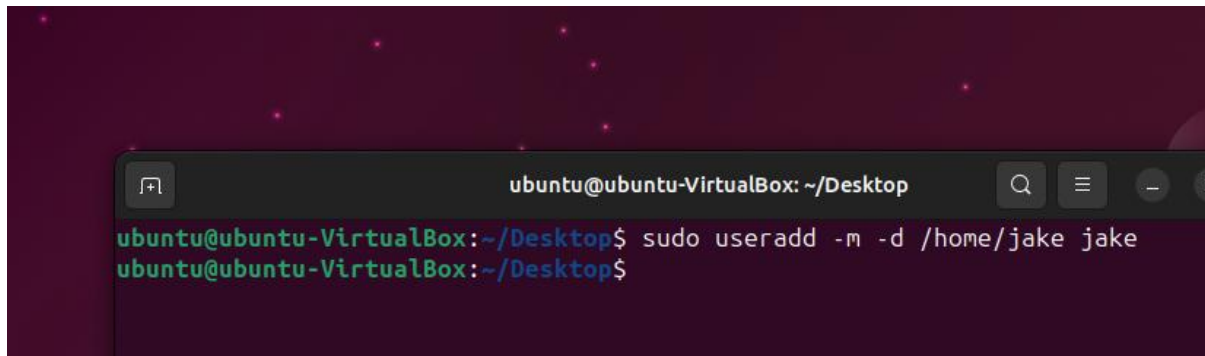
Step 4



The image shows a screenshot of a terminal window. The terminal title is 'ubuntu@ubuntu-VirtualBox: ~/Desktop'. The command 'sudo chage -l bin' is executed, and the output shows the current password policy for the 'bin' user. The output includes fields for last password change, password expiration, password inactivity, account expiration, and minimum/maximum number of days between password changes, along with the number of days of warning before password expiration.

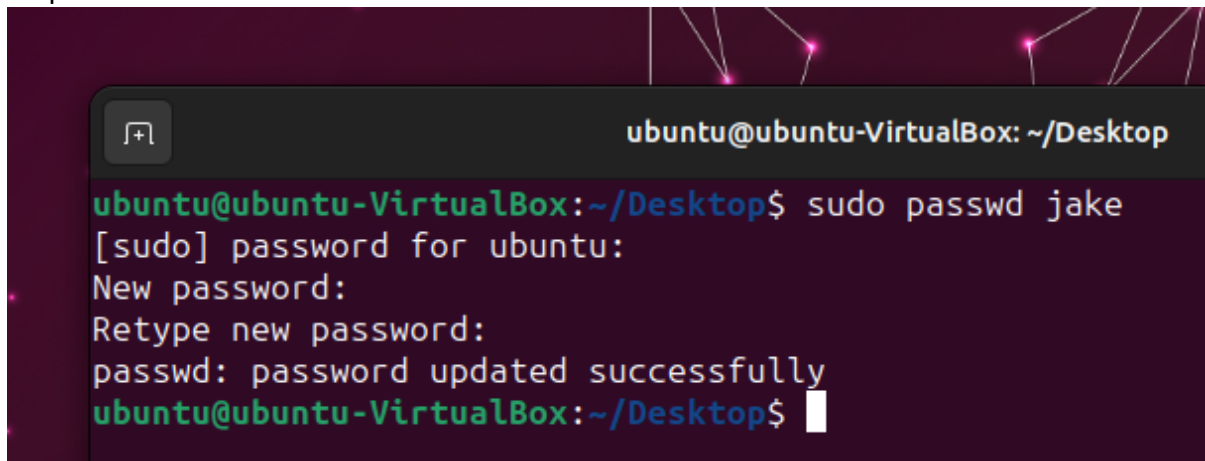
```
ubuntu@ubuntu-VirtualBox: ~/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo chage -l bin
[sudo] password for ubuntu:
Last password change                : Apr 18, 2023
Password expires                    : never
Password inactive                   : never
Account expires                     : never
Minimum number of days between password change : 0
Maximum number of days between password change : 99999
Number of days of warning before password expires : 7
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

Step 5



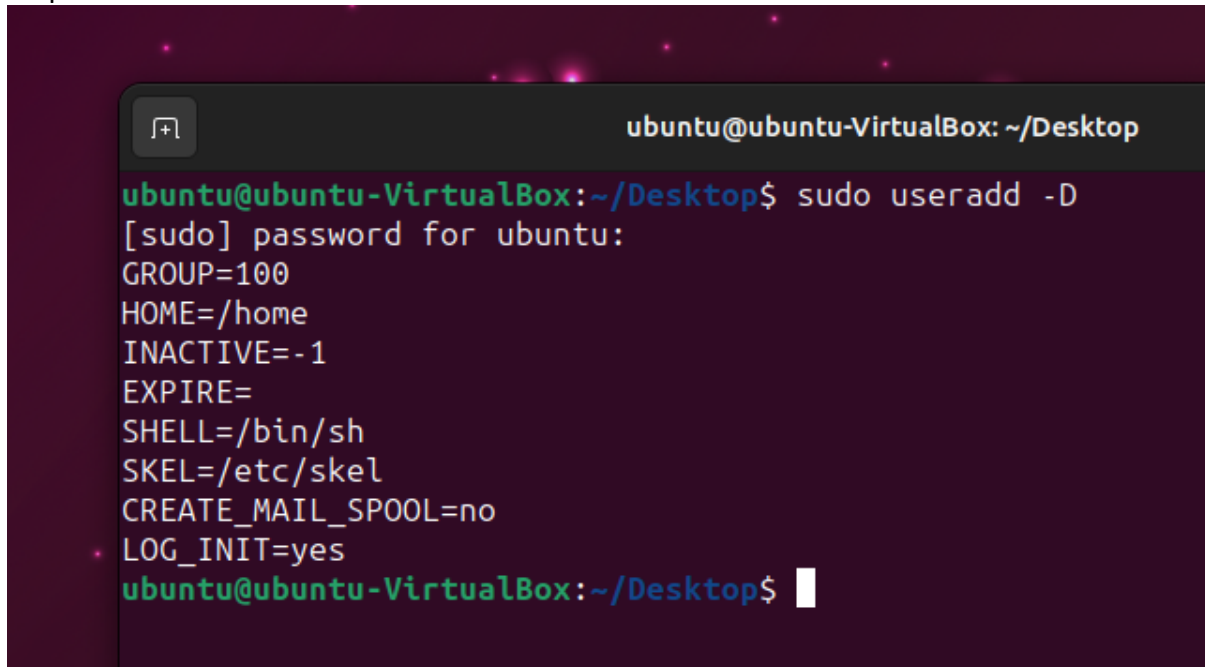
```
ubuntu@ubuntu-VirtualBox: ~/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo useradd -m -d /home/jake jake
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

Step 6



```
ubuntu@ubuntu-VirtualBox: ~/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo passwd jake
[sudo] password for ubuntu:
New password:
Retype new password:
passwd: password updated successfully
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

Step 7



```
ubuntu@ubuntu-VirtualBox: ~/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo useradd -D
[sudo] password for ubuntu:
GROUP=100
HOME=/home
INACTIVE=-1
EXPIRE=
SHELL=/bin/sh
SKEL=/etc/skel
CREATE_MAIL_SPOOL=no
LOG_INIT=yes
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

Step 8

```
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo less /etc/login.defs
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

Activities Terminal Sep 24 16:12 ubuntu@ubuntu-VirtualBox: ~/Desktop

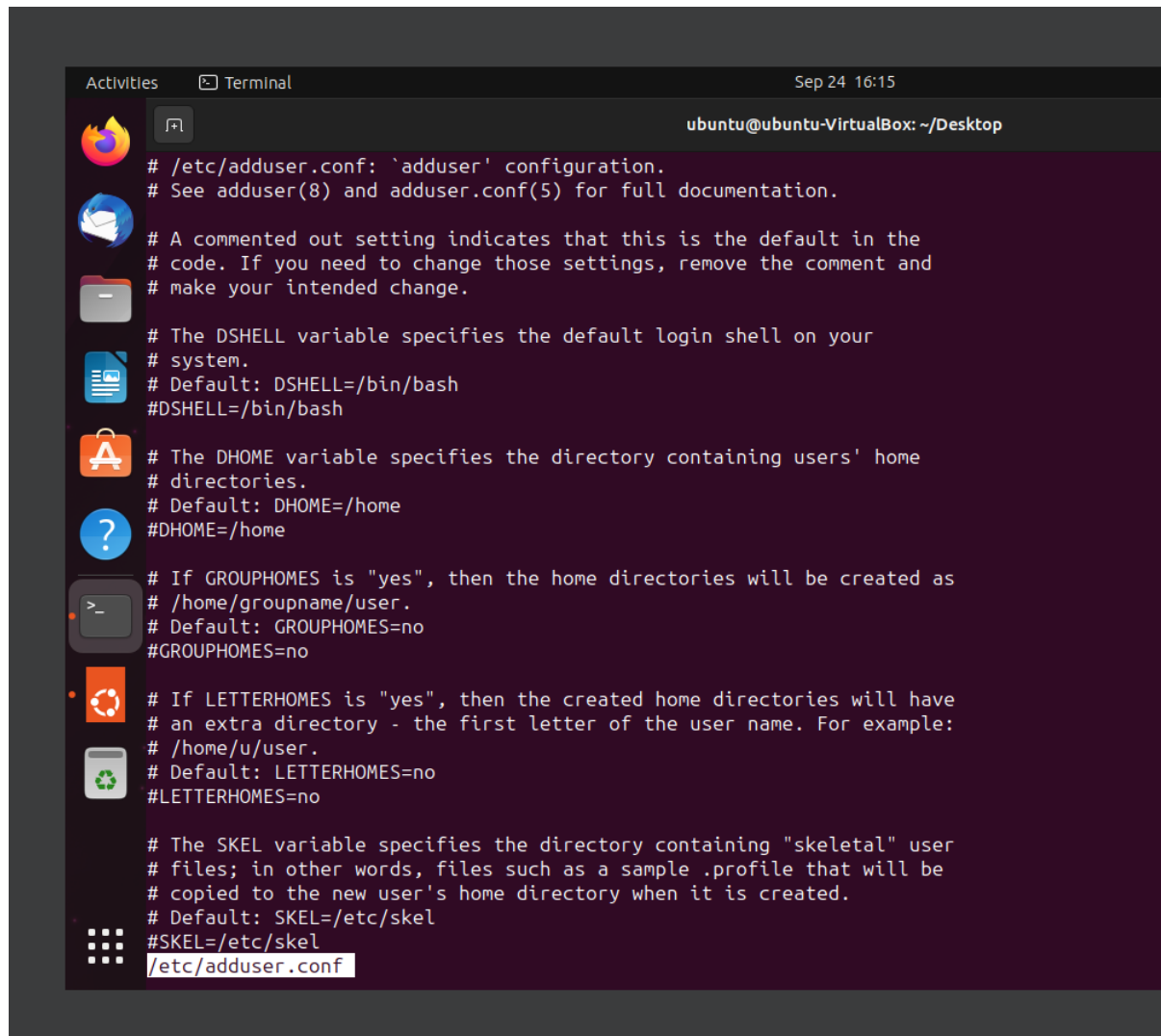
```
#
# /etc/login.defs - Configuration control definitions for the login package.
#
# Three items must be defined: MAIL_DIR, ENV_SUPATH, and ENV_PATH.
# If unspecified, some arbitrary (and possibly incorrect) value will
# be assumed. All other items are optional - if not specified then
# the described action or option will be inhibited.
#
# Comment lines (lines beginning with "#") and blank lines are ignored.
#
# Modified for Linux. --marekm

# REQUIRED for useradd/userdel/usermod
# Directory where mailboxes reside, _or_ name of file, relative to the
# home directory. If you _do_ define MAIL_DIR and MAIL_FILE,
# MAIL_DIR takes precedence.
#
# Essentially:
#   - MAIL_DIR defines the location of users mail spool files
#     (for mbox use) by appending the username to MAIL_DIR as defined
#     below.
#   - MAIL_FILE defines the location of the users mail spool files as the
#     fully-qualified filename obtained by prepending the user home
#     directory before $MAIL_FILE
#
# NOTE: This is no more used for setting up users MAIL environment variable
# which is, starting from shadow 4.0.12-1 in Debian, entirely the
# job of the pam_mail PAM modules
# See default PAM configuration files provided for
# login, su, etc.
#
# This is a temporary situation: setting these variables will soon
# move to /etc/default/useradd and the variables will then be
# :
```

Step 9

```
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo less /etc/default/useradd
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

```
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo less /etc/adduser.conf
ubuntu@ubuntu-VirtualBox:~/Desktop$
```



The screenshot shows a terminal window titled 'Terminal' with the date and time 'Sep 24 16:15'. The prompt is 'ubuntu@ubuntu-VirtualBox: ~/Desktop'. The terminal displays the contents of the file `/etc/adduser.conf`, which is a configuration file for the `adduser` command. The file contains several commented-out lines explaining various configuration options. The terminal output is as follows:

```
# /etc/adduser.conf: `adduser' configuration.
# See adduser(8) and adduser.conf(5) for full documentation.

# A commented out setting indicates that this is the default in the
# code. If you need to change those settings, remove the comment and
# make your intended change.

# The DSHELL variable specifies the default login shell on your
# system.
# Default: DSHELL=/bin/bash
#DSHELL=/bin/bash

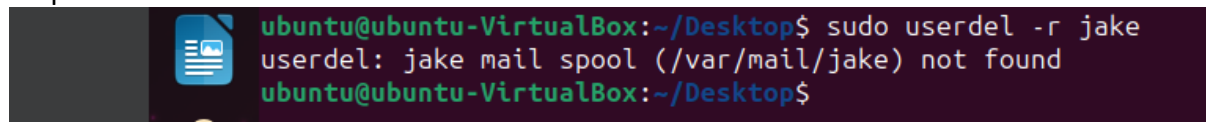
# The DHOME variable specifies the directory containing users' home
# directories.
# Default: DHOME=/home
#DHOME=/home

# If GROUPHOMES is "yes", then the home directories will be created as
# /home/groupname/user.
# Default: GROUPHOMES=no
#GROUPHOMES=no

# If LETTERHOMES is "yes", then the created home directories will have
# an extra directory - the first letter of the user name. For example:
# /home/u/user.
# Default: LETTERHOMES=no
#LETTERHOMES=no

# The SKEL variable specifies the directory containing "skeletal" user
# files; in other words, files such as a sample .profile that will be
# copied to the new user's home directory when it is created.
# Default: SKEL=/etc/skel
#SKEL=/etc/skel
/etc/adduser.conf
```

Step 10

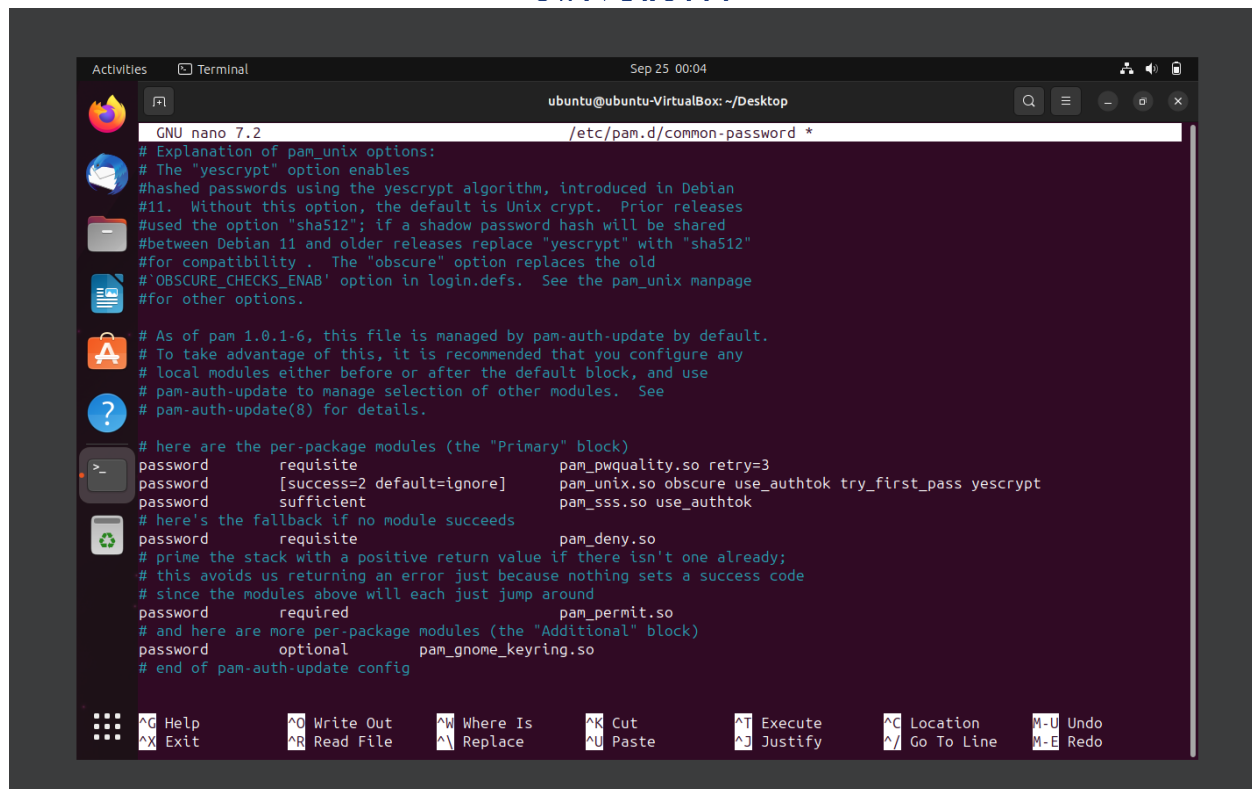


The screenshot shows a terminal window with the prompt 'ubuntu@ubuntu-VirtualBox: ~/Desktop\$'. The user has entered the command `sudo userdel -r jake`. The output of the command is `userdel: jake mail spool (/var/mail/jake) not found`. The prompt then changes to `ubuntu@ubuntu-VirtualBox: ~/Desktop$`.

Lab 7.2

List the commands you used also you will need to edit file

`/etc/pam.d/common-password` and change the `minlen=` value on the `pam_cracklib.so` line to 12



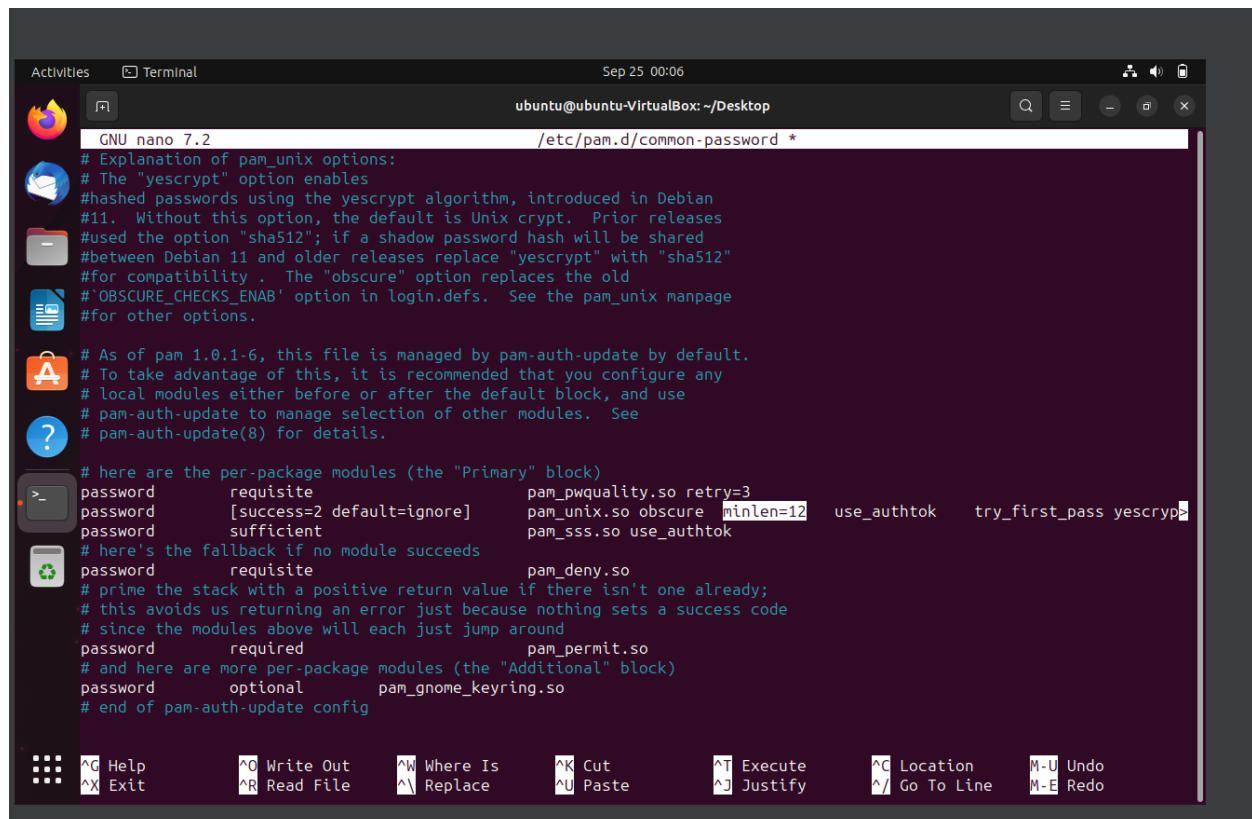
```

GNU nano 7.2 /etc/pam.d/common-password *
# Explanation of pam_unix options:
# The "yescrypt" option enables
#hashed passwords using the yescrypt algorithm, introduced in Debian
#11. Without this option, the default is Unix crypt. Prior releases
#used the option "sha512"; if a shadow password hash will be shared
#between Debian 11 and older releases replace "yescrypt" with "sha512"
#for compatibility . The "obscure" option replaces the old
# 'OBSCURE_CHECKS_ENAB' option in login.defs. See the pam_unix manpage
#for other options.

# As of pam 1.0.1-6, this file is managed by pam-auth-update by default.
# To take advantage of this, it is recommended that you configure any
# local modules either before or after the default block, and use
# pam-auth-update to manage selection of other modules. See
# pam-auth-update(8) for details.

# here are the per-package modules (the "Primary" block)
password    requisite          pam_pwquality.so retry=3
password    [success=2 default=ignore] pam_unix.so obscure use_authtok try_first_pass yescrypt
password    sufficient         pam_sss.so use_authtok

# here's the fallback if no module succeeds
password    requisite          pam_deny.so
# prime the stack with a positive return value if there isn't one already;
# this avoids us returning an error just because nothing sets a success code
# since the modules above will each just jump around
password    required           pam_permit.so
# and here are more per-package modules (the "Additional" block)
password    optional           pam_gnome_keyring.so
# end of pam-auth-update config
  
```



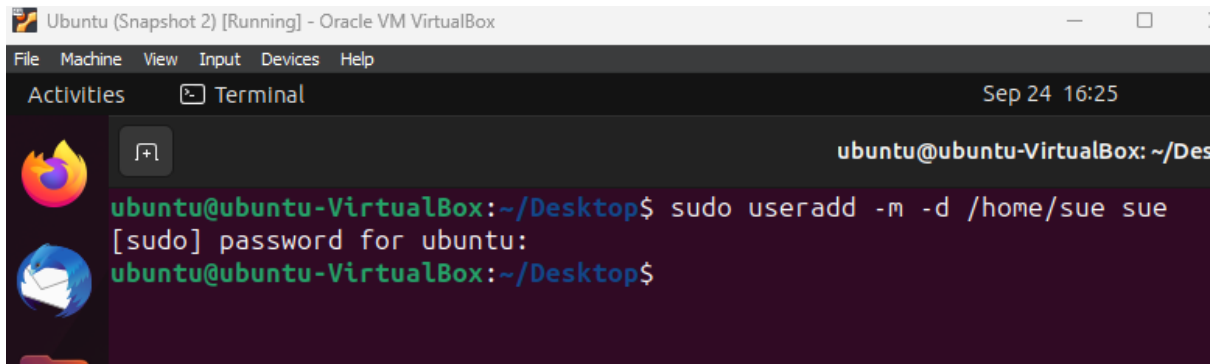
```

GNU nano 7.2 /etc/pam.d/common-password *
# Explanation of pam_unix options:
# The "yescrypt" option enables
#hashed passwords using the yescrypt algorithm, introduced in Debian
#11. Without this option, the default is Unix crypt. Prior releases
#used the option "sha512"; if a shadow password hash will be shared
#between Debian 11 and older releases replace "yescrypt" with "sha512"
#for compatibility . The "obscure" option replaces the old
# 'OBSCURE_CHECKS_ENAB' option in login.defs. See the pam_unix manpage
#for other options.

# As of pam 1.0.1-6, this file is managed by pam-auth-update by default.
# To take advantage of this, it is recommended that you configure any
# local modules either before or after the default block, and use
# pam-auth-update to manage selection of other modules. See
# pam-auth-update(8) for details.

# here are the per-package modules (the "Primary" block)
password    requisite          pam_pwquality.so retry=3
password    [success=2 default=ignore] pam_unix.so obscure minlen=12 use_authtok try_first_pass yescrypt
password    sufficient         pam_sss.so use_authtok

# here's the fallback if no module succeeds
password    requisite          pam_deny.so
# prime the stack with a positive return value if there isn't one already;
# this avoids us returning an error just because nothing sets a success code
# since the modules above will each just jump around
password    required           pam_permit.so
# and here are more per-package modules (the "Additional" block)
password    optional           pam_gnome_keyring.so
# end of pam-auth-update config
  
```

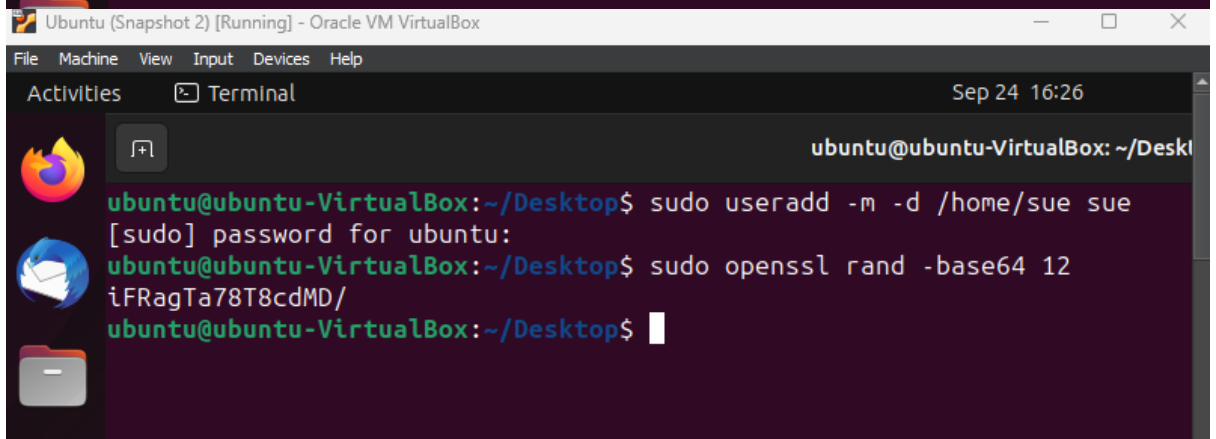
Ubuntu (Snapshot 2) [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Activities Terminal Sep 24 16:25

ubuntu@ubuntu-VirtualBox: ~/Desktop

```
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo useradd -m -d /home/sue sue
[sudo] password for ubuntu:
ubuntu@ubuntu-VirtualBox:~/Desktop$
```



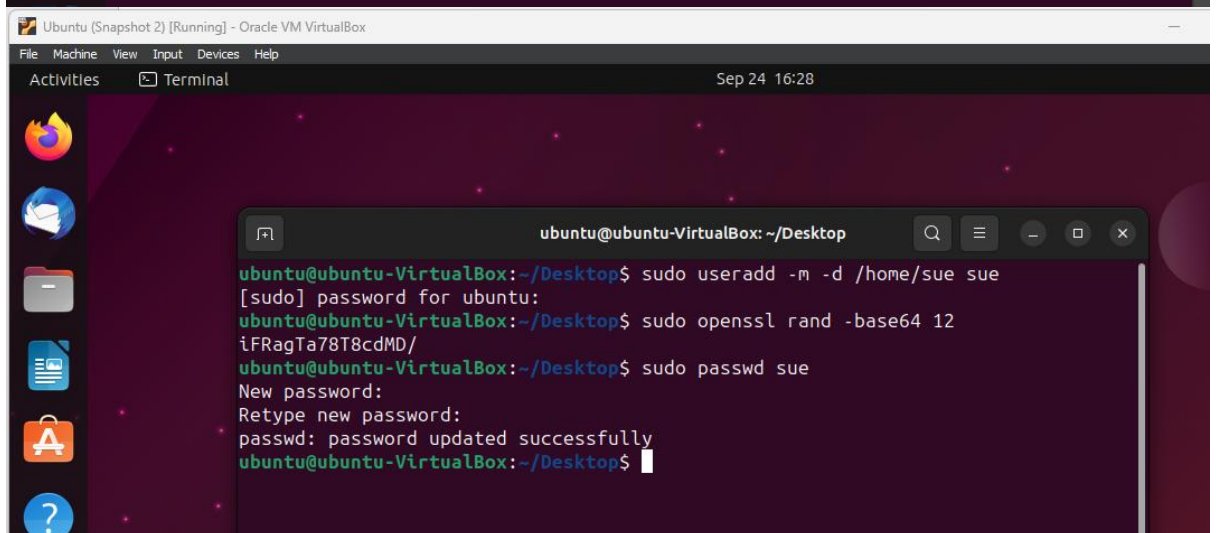
Ubuntu (Snapshot 2) [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Activities Terminal Sep 24 16:26

ubuntu@ubuntu-VirtualBox: ~/Desktop

```
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo useradd -m -d /home/sue sue
[sudo] password for ubuntu:
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo openssl rand -base64 12
iFRagTa78T8cdMD/
ubuntu@ubuntu-VirtualBox:~/Desktop$
```



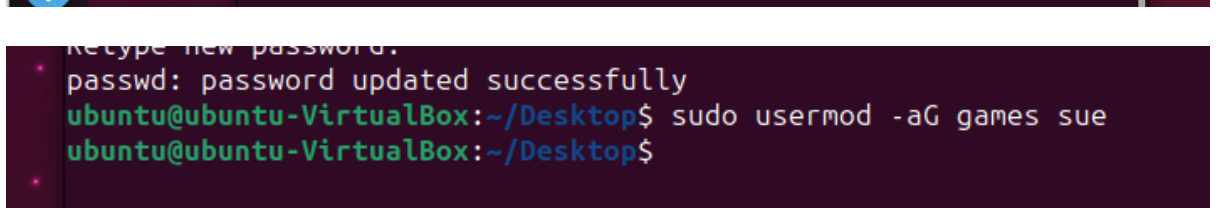
Ubuntu (Snapshot 2) [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Activities Terminal Sep 24 16:28

ubuntu@ubuntu-VirtualBox: ~/Desktop

```
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo useradd -m -d /home/sue sue
[sudo] password for ubuntu:
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo openssl rand -base64 12
iFRagTa78T8cdMD/
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo passwd sue
New password:
Retype new password:
passwd: password updated successfully
ubuntu@ubuntu-VirtualBox:~/Desktop$
```



```
Retype new password:
passwd: password updated successfully
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo usermod -aG games sue
ubuntu@ubuntu-VirtualBox:~/Desktop$
```



```
Retype new password:
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo chage -M 60 -m 2 -W 10 -I 60 -E 2025-01-01 sue
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

```
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo passwd -x 12 sue
passwd: password changed.
ubuntu@ubuntu-VirtualBox:~/Desktop$
```

Lab 7.3

List the steps you did and the commands you executed.

Then paste a single screenshot showing a successful execution of command the `apt-get install joe` executed

The screenshot shows a terminal window titled "Ubuntu (Snapshot 2) [Running] - Oracle VM VirtualBox". The terminal output is as follows:

```
root@ubuntu-VirtualBox: /home/ubuntu/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo su
root@ubuntu-VirtualBox:/home/ubuntu/Desktop# apt-get install joe
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
joe is already the newest version (4.6-1build2).
0 upgraded, 0 newly installed, 0 to remove and 262 not upgraded.
root@ubuntu-VirtualBox:/home/ubuntu/Desktop#
```

The terminal window also shows the "Activities" menu and the "Terminal" icon in the dock.

The image shows a Ubuntu VirtualBox desktop environment. The background is a dark purple desktop with a starry pattern. On the left is a vertical dock with icons for Firefox, a mail client, a file manager, a document viewer, the Ubuntu Software Center, a help icon, a terminal, and a trash can. Two terminal windows are open.

The top terminal window is titled 'ubuntu@ubuntu-VirtualBox: ~/Desktop'. It shows the contents of the file `/etc/sudoers.tmp` being edited. The text in the terminal is as follows:

```
IW /etc/sudoers.tmp Row 60 Col 1
#Defaults:%sudo env_keep += "GPG_AGENT_INFO"

# Host alias specification

# User alias specification

# Cmnd alias specification

# User privilege specification
root    ALL=(ALL:ALL) ALL

# Members of the admin group may gain root privileges
%admin   ALL=(ALL) ALL

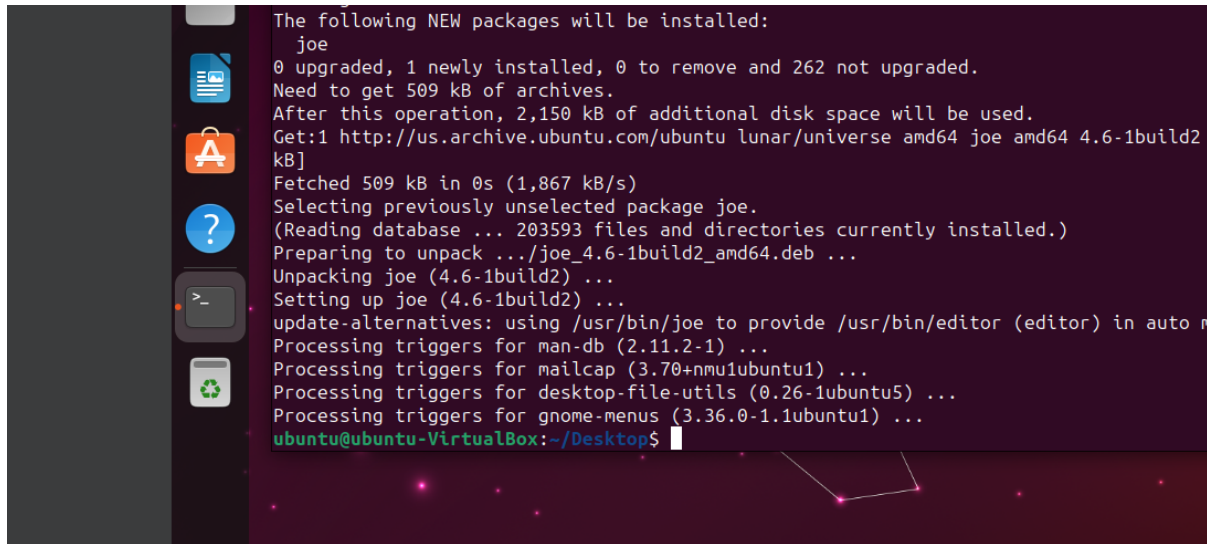
# Allow members of group sudo to execute any command
%sudo   ALL=(ALL:ALL) ALL

# See sudoers(5) for more information on "@include" directives:

@include /etc/sudoers.d
sue     ALL=(ALL) NOPASSWD: /usr/bin/apt-get
```

The bottom terminal window is also titled 'ubuntu@ubuntu-VirtualBox: ~/Desktop'. It shows the output of the command `visudo: /etc/sudoers.tmp unchanged` followed by `sudo apt-get install joe`. The output of the command is:

```
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo apt-get install joe
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  joe
0 upgraded, 1 newly installed, 0 to remove and 262 not upgraded.
Need to get 509 kB of archives.
After this operation, 2,150 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu lunar/universe amd64 joe amd64
kB]
Fetched 509 kB in 0s (1,867 kB/s)
Selecting previously unselected package joe.
(Reading database ... 203593 files and directories currently installed.)
Preparing to unpack .../joe_4.6-1build2_amd64.deb ...
Unpacking joe (4.6-1build2) ...
Setting up joe (4.6-1build2) ...
update-alternatives: using /usr/bin/joe to provide /usr/bin/editor (edito
Processing triggers for man-db (2.11.2-1) ...
Processing triggers for mailcap (3.70+nmu1ubuntu1) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu5) ...
Processing triggers for gnome-menus (3.36.0-1.1ubuntu1) ...
```



```
The following NEW packages will be installed:
joe
0 upgraded, 1 newly installed, 0 to remove and 262 not upgraded.
Need to get 509 kB of archives.
After this operation, 2,150 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu lunar/universe amd64 joe amd64 4.6-1build2
kB]
Fetched 509 kB in 0s (1,867 kB/s)
Selecting previously unselected package joe.
(Reading database ... 203593 files and directories currently installed.)
Preparing to unpack .../joe_4.6-1build2_amd64.deb ...
Unpacking joe (4.6-1build2) ...
Setting up joe (4.6-1build2) ...
update-alternatives: using /usr/bin/joe to provide /usr/bin/editor (editor) in auto m
Processing triggers for man-db (2.11.2-1) ...
Processing triggers for mailcap (3.70+nmu1ubuntu1) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu5) ...
Processing triggers for gnome-menus (3.36.0-1.1ubuntu1) ...
ubuntu@ubuntu-VirtualBox:~/Desktop$
```