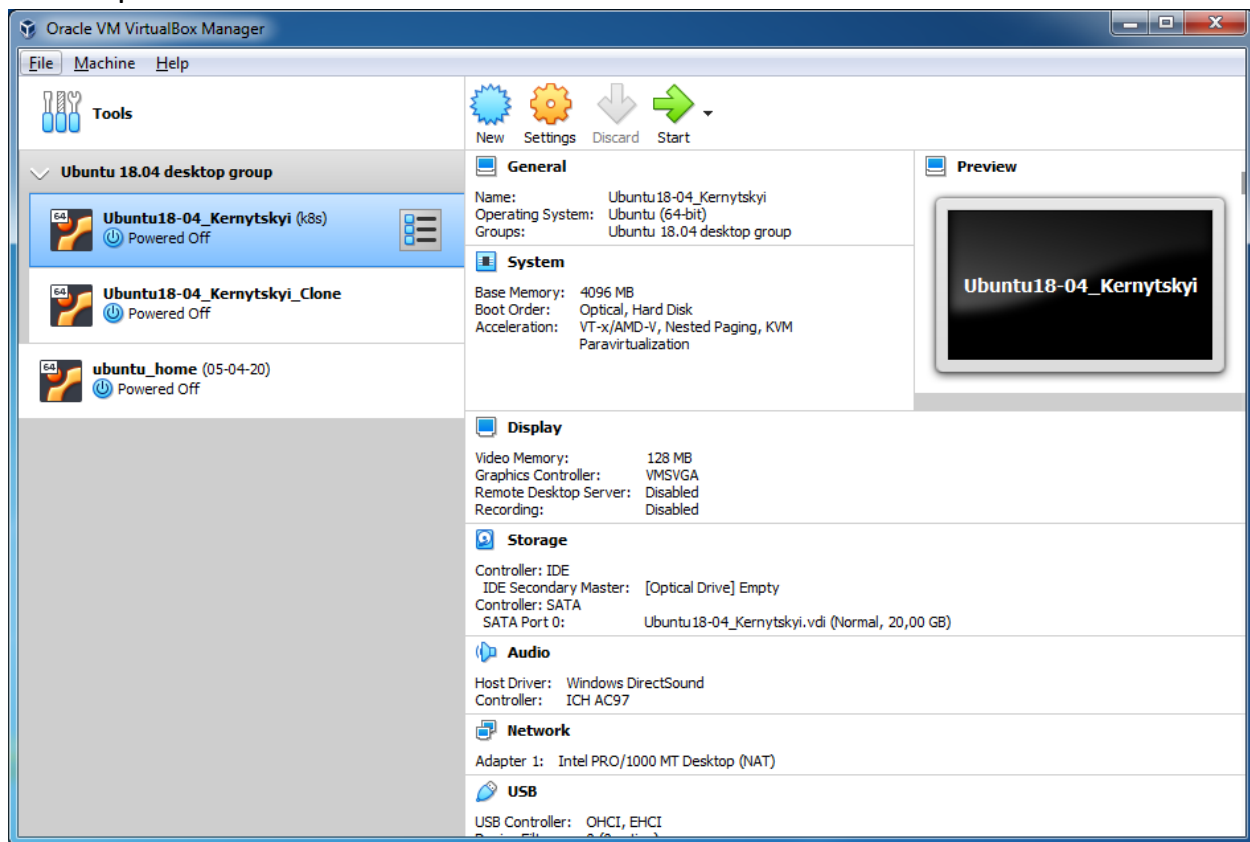
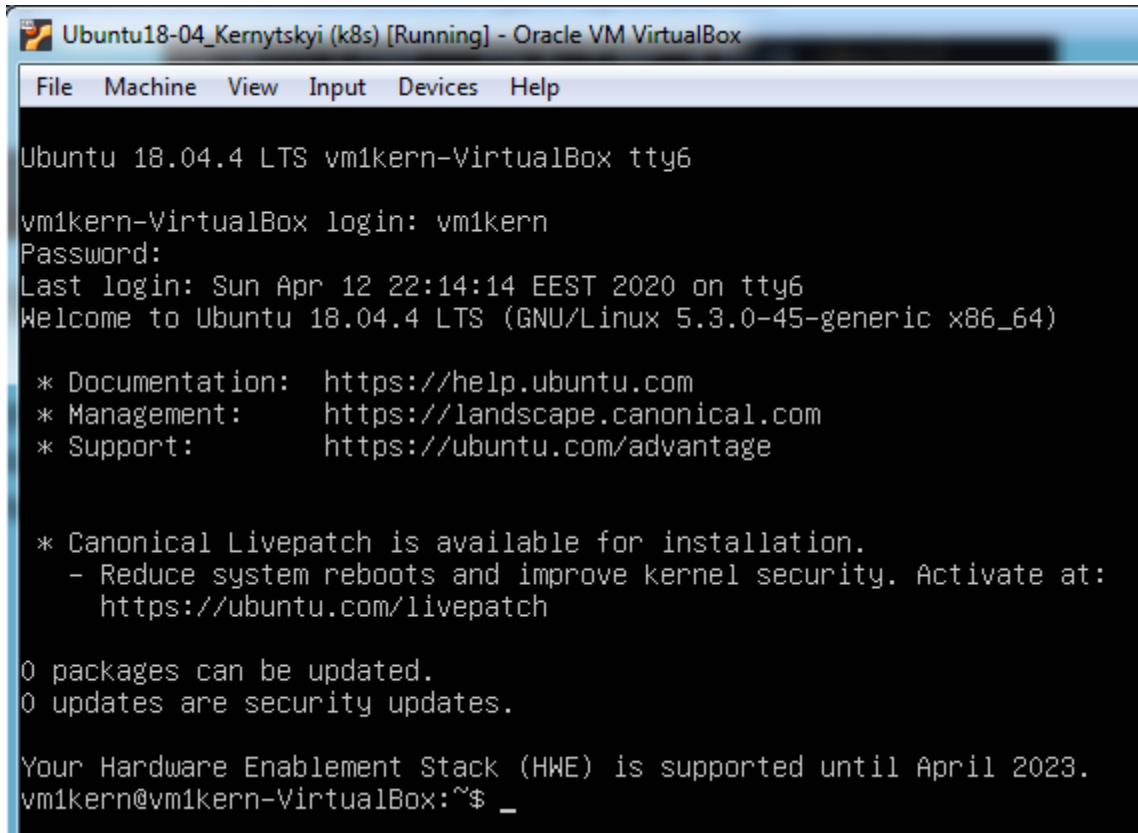


EPAM University Programs
DevOps external course
Module 4 DevOps Introduction
TASK 4.2

1. Set up Linux Virtual Machine in VirtualBox.



2. Familiarize yourself with the commands and utilities listed in the presentation (switching between **virtual terminals** (consoles); **printenv**; content of **/etc/profile** and **~/.bash_profile**, **\$echo \$HISTFILE \$HISTSIZE \$HISTFILESIZE**, **who**, **w**, **whoami**, **id**). Make 5 screenshots.



```
Ubuntu18-04_Kernytskyi (k8s) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Ubuntu 18.04.4 LTS vm1kern-VirtualBox tty6

vm1kern-VirtualBox login: vm1kern
Password:
Last login: Sun Apr 12 22:14:14 EEST 2020 on tty6
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.3.0-45-generic x86_64)

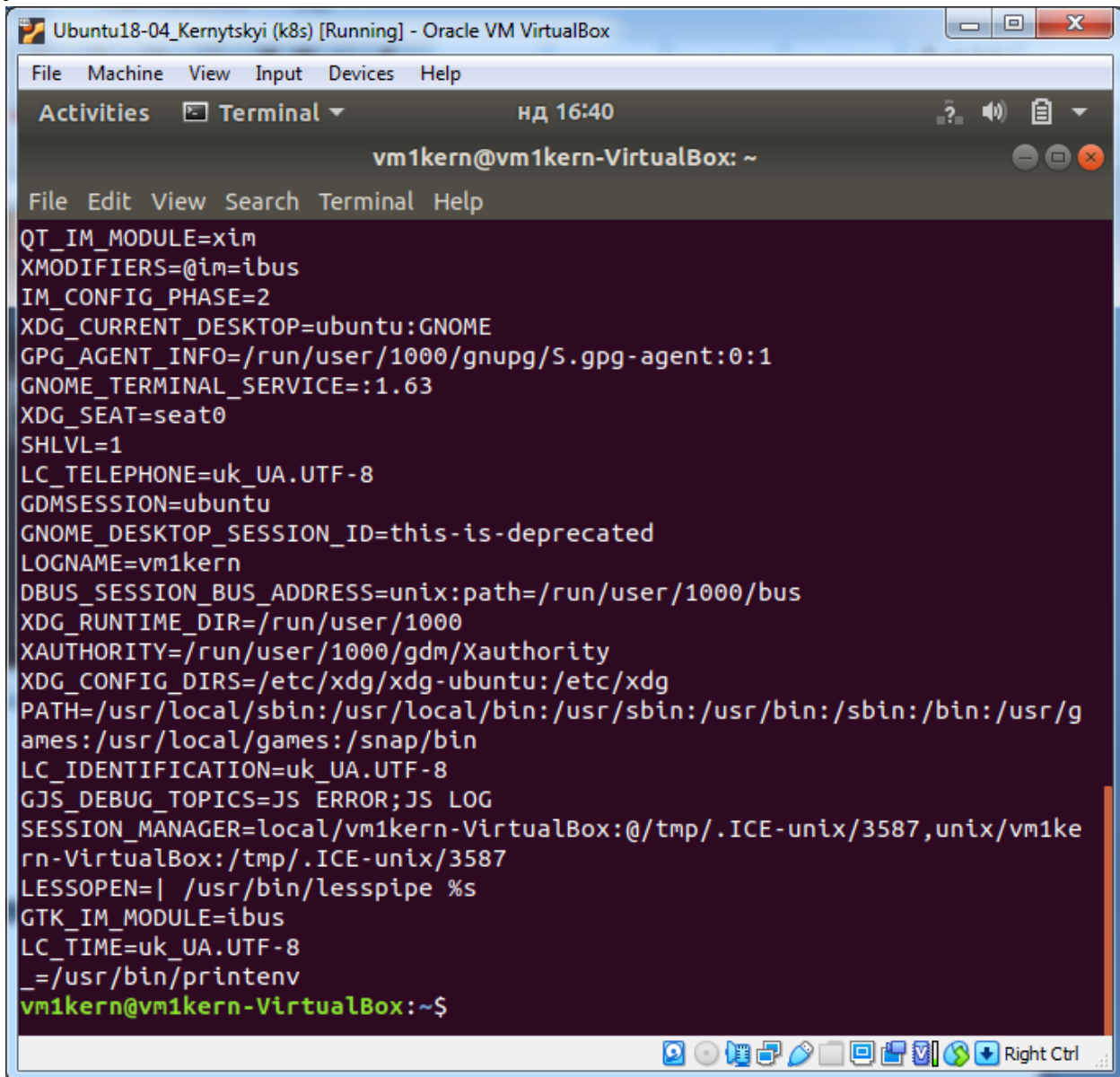
 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

 * Canonical Livepatch is available for installation.
   - Reduce system reboots and improve kernel security. Activate at:
     https://ubuntu.com/livepatch

0 packages can be updated.
0 updates are security updates.

Your Hardware Enablement Stack (HWE) is supported until April 2023.
vm1kern@vm1kern-VirtualBox:~$ _
```

printenv - show a list of environment's variables that are set.

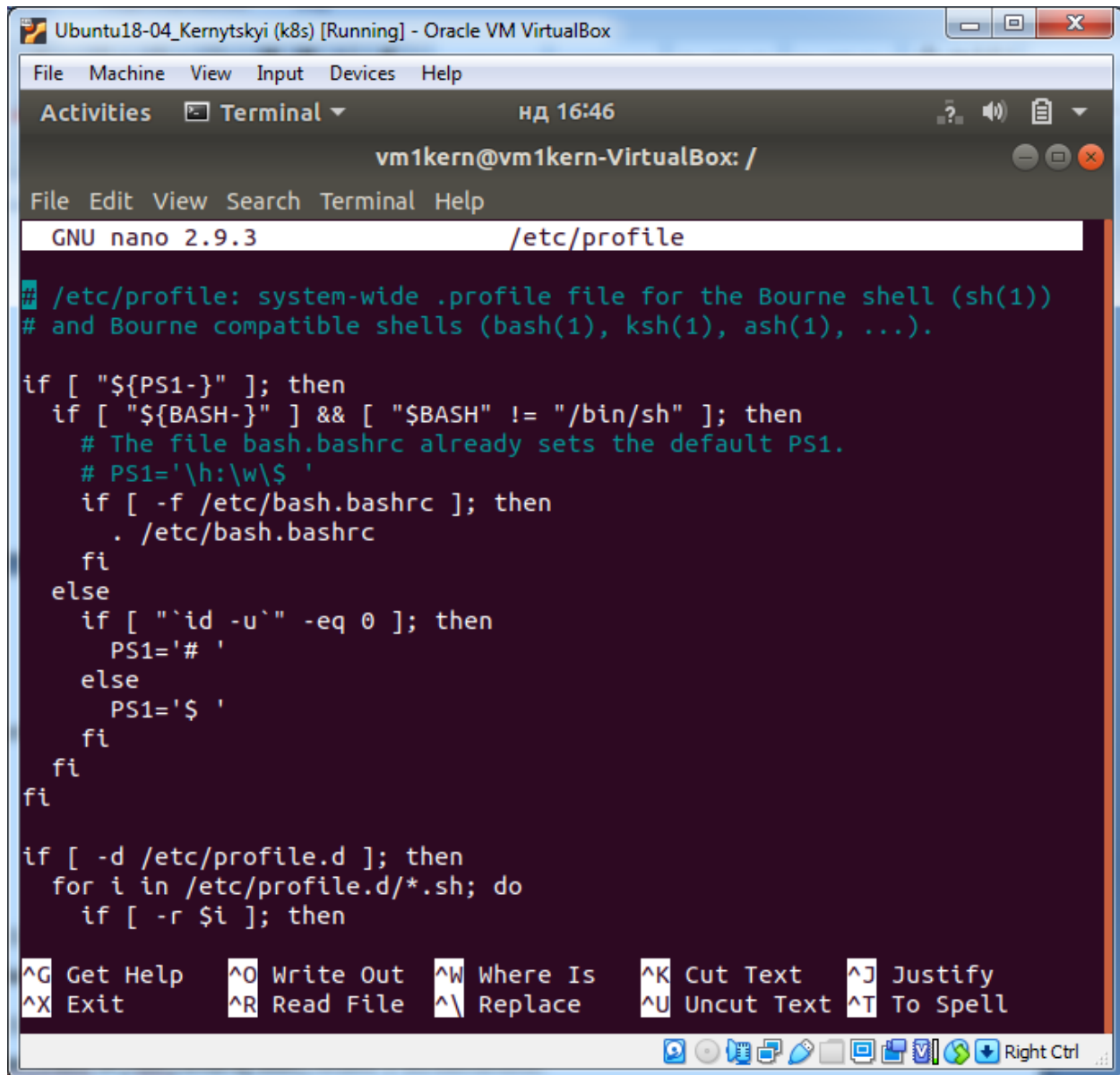


The screenshot shows a terminal window titled "Ubuntu18-04_Kernyskyi (k8s) [Running] - Oracle VM VirtualBox". The window has a menu bar with "File", "Machine", "View", "Input", "Devices", and "Help". Below the menu bar is a toolbar with icons for "Activities", "Terminal", and a clock showing "нд 16:40". The terminal prompt is "vm1kern@vm1kern-VirtualBox: ~". The terminal output shows the following environment variables:

```
QT_IM_MODULE=xim
XMODIFIERS=@im=ibus
IM_CONFIG_PHASE=2
XDG_CURRENT_DESKTOP=ubuntu:GNOME
GPG_AGENT_INFO=/run/user/1000/gnupg/S.gpg-agent:0:1
GNOME_TERMINAL_SERVICE=:1.63
XDG_SEAT=seat0
SHLV=1
LC_TELEPHONE=uk_UA.UTF-8
GDMSESSION=ubuntu
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
LOGNAME=vm1kern
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
XDG_RUNTIME_DIR=/run/user/1000
XAUTHORITY=/run/user/1000/gdm/Xauthority
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin
LC_IDENTIFICATION=uk_UA.UTF-8
GJS_DEBUG_TOPICS=JS ERROR;JS LOG
SESSION_MANAGER=local/vm1kern-VirtualBox:@/tmp/.ICE-unix/3587,unix/vm1kern-VirtualBox:/tmp/.ICE-unix/3587
LESSOPEN=| /usr/bin/lesspipe %s
GTK_IM_MODULE=ibus
LC_TIME=uk_UA.UTF-8
_=/usr/bin/printenv
vm1kern@vm1kern-VirtualBox:~$
```

The terminal window also has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The bottom of the window shows a taskbar with various icons and a "Right Ctrl" button.

content of `/etc/profile`



The screenshot shows a terminal window titled "Ubuntu18-04_Kernyskyi (k8s) [Running] - Oracle VM VirtualBox". The window has a menu bar with "File", "Machine", "View", "Input", "Devices", and "Help". Below the menu bar is a toolbar with icons for "Activities", "Terminal", and a clock showing "нд 16:46". The terminal prompt is "vm1kern@vm1kern-VirtualBox: /". The terminal is running the GNU nano 2.9.3 editor, editing the file `/etc/profile`. The content of the file is as follows:

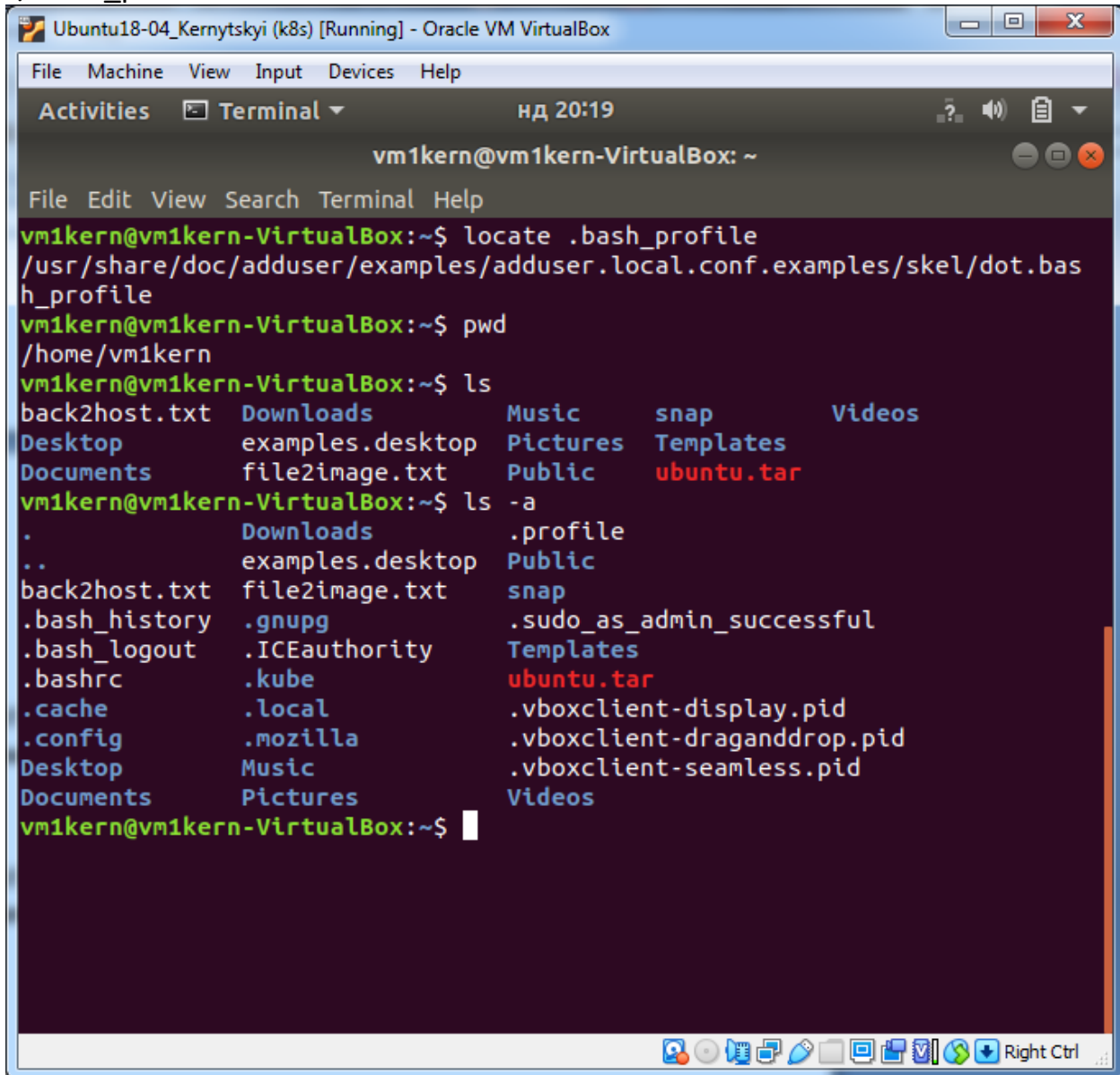
```
# /etc/profile: system-wide .profile file for the Bourne shell (sh(1))
# and Bourne compatible shells (bash(1), ksh(1), ash(1), ...).

if [ "${PS1-}" ]; then
  if [ "${BASH-}" ] && [ "$BASH" != "/bin/sh" ]; then
    # The file bash.bashrc already sets the default PS1.
    # PS1='\h:\w\$ '
    if [ -f /etc/bash.bashrc ]; then
      . /etc/bash.bashrc
    fi
  else
    if [ "`id -u`" -eq 0 ]; then
      PS1='# '
    else
      PS1='$ '
    fi
  fi
fi

if [ -d /etc/profile.d ]; then
  for i in /etc/profile.d/*.sh; do
    if [ -r $i ]; then
      . $i
    fi
  done
fi
```

At the bottom of the terminal window, there is a status bar with various keyboard shortcuts: `^G` Get Help, `^O` Write Out, `^W` Where Is, `^K` Cut Text, `^J` Justify, `^X` Exit, `^R` Read File, `^_\` Replace, `^U` Uncut Text, `^T` To Spell. The bottom of the window shows a taskbar with various application icons and a "Right Ctrl" button.

~/bash_profile

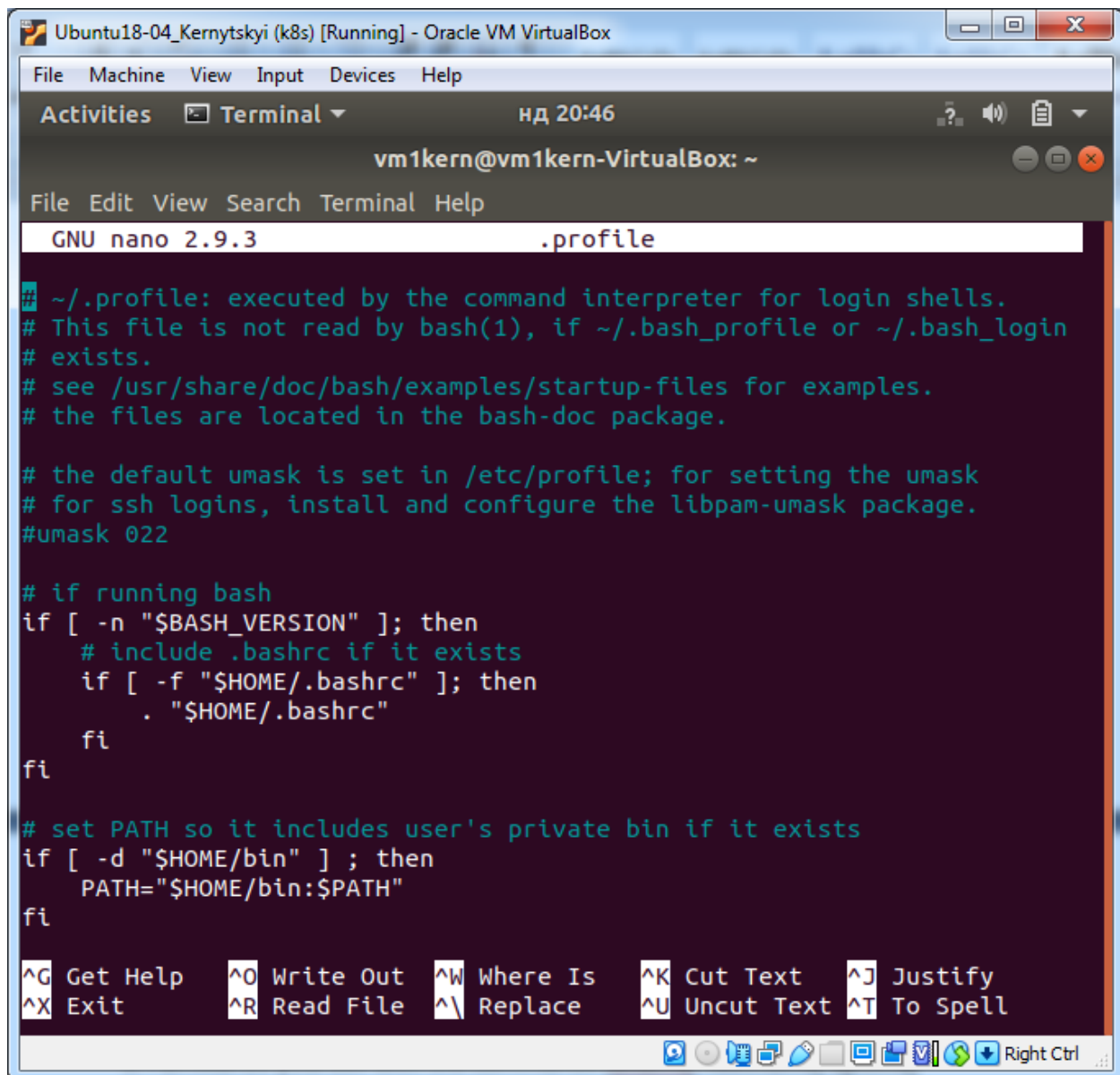
A screenshot of a terminal window titled "Ubuntu18-04_Kernyskyi (k8s) [Running] - Oracle VM VirtualBox". The terminal shows the following commands and output:

```
vm1kern@vm1kern-VirtualBox: ~  
File Edit View Search Terminal Help  
vm1kern@vm1kern-VirtualBox:~$ locate .bash_profile  
/usr/share/doc/adduser/examples/adduser.local.conf.examples/skel/dot.bas  
h_profile  
vm1kern@vm1kern-VirtualBox:~$ pwd  
/home/vm1kern  
vm1kern@vm1kern-VirtualBox:~$ ls  
back2host.txt  Downloads          Music             snap             Videos  
Desktop        examples.desktop  Pictures          Templates  
Documents      file2image.txt    Public            ubuntu.tar  
vm1kern@vm1kern-VirtualBox:~$ ls -a  
.               Downloads          .profile  
..              examples.desktop  Public  
back2host.txt   file2image.txt    snap  
.bash_history   .gnupg            .sudo_as_admin_successful  
.bash_logout    .ICEauthority     Templates  
.bashrc         .kube             ubuntu.tar  
.cache          .local            .vboxclient-display.pid  
.config         .mozilla          .vboxclient-draganddrop.pid  
Desktop        Music             .vboxclient-seamless.pid  
Documents      Pictures          Videos  
vm1kern@vm1kern-VirtualBox:~$
```

According to [the source](#)

3.1.2.3. ~/.profile

In the absence of ~/.bash_profile and ~/.bash_login, ~/.profile is read. It can hold the same configurations, which are then also accessible by other shells. Mind that other shells might not understand the Bash syntax.



The screenshot shows a terminal window titled "Ubuntu18-04_Kernyskiy (k8s) [Running] - Oracle VM VirtualBox". The terminal is running the GNU nano 2.9.3 text editor, editing the file `~/.profile`. The content of the file is as follows:

```
~/.profile: executed by the command interpreter for login shells.
# This file is not read by bash(1), if ~/.bash_profile or ~/.bash_login
# exists.
# see /usr/share/doc/bash/examples/startup-files for examples.
# the files are located in the bash-doc package.

# the default umask is set in /etc/profile; for setting the umask
# for ssh logins, install and configure the libpam-umask package.
#umask 022

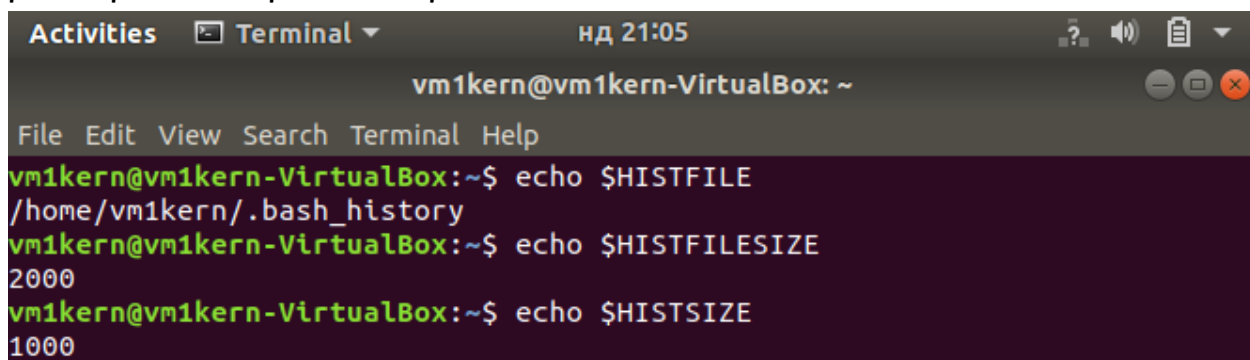
# if running bash
if [ -n "$BASH_VERSION" ]; then
    # include .bashrc if it exists
    if [ -f "$HOME/.bashrc" ]; then
        . "$HOME/.bashrc"
    fi
fi

# set PATH so it includes user's private bin if it exists
if [ -d "$HOME/bin" ] ; then
    PATH="$HOME/bin:$PATH"
fi
```

At the bottom of the terminal window, there is a table of keyboard shortcuts:

^G Get Help	^O Write Out	^W Where Is	^K Cut Text	^J Justify
^X Exit	^R Read File	^_ Replace	^U Uncut Text	^T To Spell

\$echo \$HISTFILE \$HISTSIZE \$HISTFILESIZE



The screenshot shows a terminal window titled "vm1kern@vm1kern-VirtualBox: ~". The terminal is running the command `echo $HISTFILE $HISTSIZE $HISTFILESIZE`, and the output is as follows:

```
vm1kern@vm1kern-VirtualBox:~$ echo $HISTFILE
/home/vm1kern/.bash_history
vm1kern@vm1kern-VirtualBox:~$ echo $HISTFILESIZE
2000
vm1kern@vm1kern-VirtualBox:~$ echo $HISTSIZE
1000
```

who, w, whoami, id

```
vmikern@vmikern-VirtualBox:~$ w
 21:25:54 up   5:04,  1 user,  load average: 0,54, 0,57, 0,49
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU WHAT
vmikern   :0        :0            16:22    ?xdm?  42:12   0.01s /usr/li
vmikern@vmikern-VirtualBox:~$ who
vmikern   :0                2020-04-12 16:22 (:0)
vmikern@vmikern-VirtualBox:~$ whoami
vmikern
vmikern@vmikern-VirtualBox:~$ id
uid=1000(vmikern) gid=1000(vmikern) groups=1000(vmikern),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),116(lpadmin),126(sambashare),127(lxd),997(microk8s)
```

3. Familiarize yourself with the commands (*uname, hostname, uptime, shutdown, halt, reboot, init...*). Make 5 screenshots.

```
vmikern@vmikern-VirtualBox:~$ uname
Linux
vmikern@vmikern-VirtualBox:~$ hostname
vmikern-VirtualBox
vmikern@vmikern-VirtualBox:~$ uptime
 22:16:49 up   5:55,  2 users,  load average: 0,78, 0,72, 0,57
vmikern@vmikern-VirtualBox:~$
```

halt, **poweroff**, and **reboot** are commands you can run as [root](#) to stop the system hardware.

- **halt** instructs the hardware to stop all CPU functions.
- **poweroff** sends an [ACPI](#) signal which instructs the system to power down.
- **reboot** instructs the system to [reboot](#).

These commands require superuser [privileges](#). If you are not logged in as root, you will need to prefix the command with [sudo](#) or the signal will not be sent.

4. Familiarize yourself with the help commands (*man*, *info*, *find*, *locate*, *whereis*, *less*/*zless* in */usr/share/doc*). Make 5 screenshots.

man

```
vmikern@vmikern-VirtualBox:~$ man --help
Usage: man [OPTION...] [SECTION] PAGE...
```

man - am interface to the on-line reference manuals

info

```
vmikern@vmikern-VirtualBox:~$ info --help
Usage: info [OPTION]... [MENU-ITEM...]

Read documentation in Info format.
```

find

```
vmikern@vmikern-VirtualBox:~$ find --help
Usage: find [-H] [-L] [-P] [-Olevel] [-D debugopts] [path...] [expression]
```

find - search for files in a directory hierarchy

locate

```
vmikern@vmikern-VirtualBox:~$ locate --help
Usage: locate [OPTION]... [PATTERN]...
Search for entries in a mlocate database.
```

whereis

```
vmikern@vmikern-VirtualBox:~$ whereis --help

Usage:
  whereis [options] [-BMS <dir>... -f] <name>

Locate the binary, source, and manual-page files for a command.
```