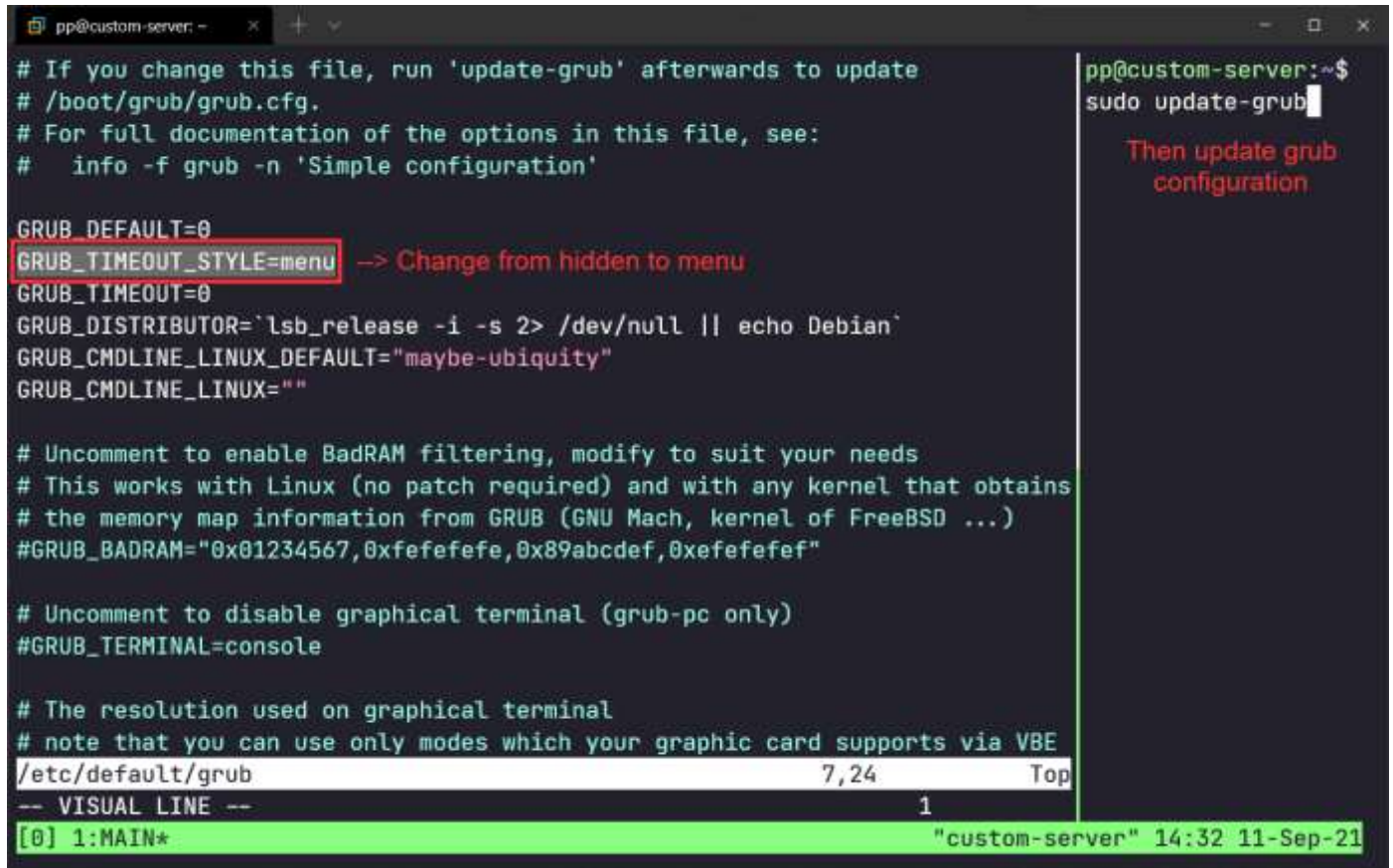


Pytania wstępne – UbuntuServer

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1. Uaktywnić menu GRUB.



```
# If you change this file, run 'update-grub' afterwards to update
# /boot/grub/grub.cfg.
# For full documentation of the options in this file, see:
#   info -f grub -n 'Simple configuration'

GRUB_DEFAULT=0
GRUB_TIMEOUT_STYLE=menu --> Change from hidden to menu
GRUB_TIMEOUT=0
GRUB_DISTRIBUTOR=`lsb_release -i -s 2> /dev/null || echo Debian`
GRUB_CMDLINE_LINUX_DEFAULT="maybe-ubiquity"
GRUB_CMDLINE_LINUX=""

# Uncomment to enable BadRAM filtering, modify to suit your needs
# This works with Linux (no patch required) and with any kernel that obtains
# the memory map information from GRUB (GNU Mach, kernel of FreeBSD ...)
#GRUB_BADRAM="0x01234567,0xfefefefe,0x89abcdef,0xefefefef"

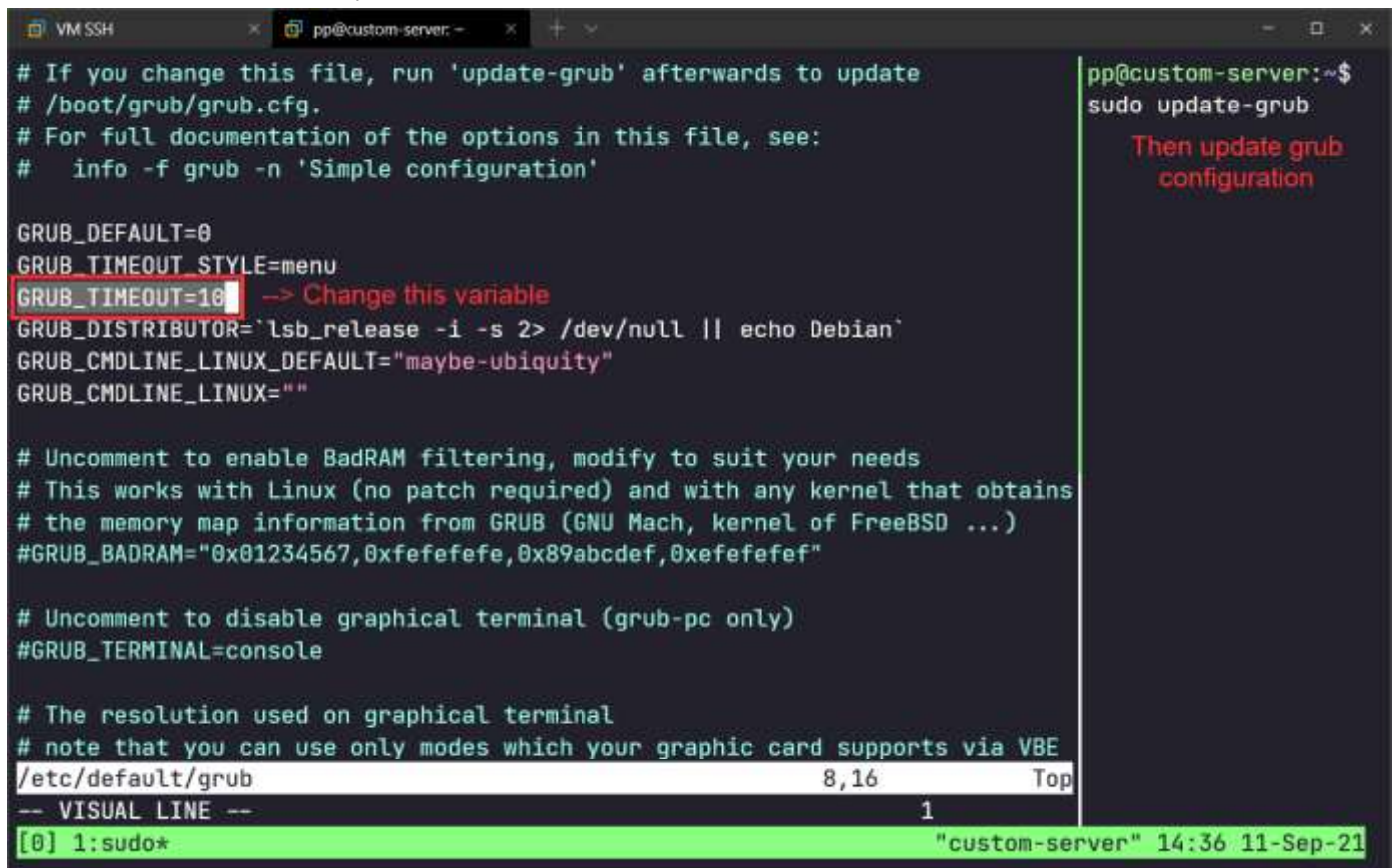
# Uncomment to disable graphical terminal (grub-pc only)
#GRUB_TERMINAL=console

# The resolution used on graphical terminal
# note that you can use only modes which your graphic card supports via VBE
/etcd/default/grub 7,24 Top
-- VISUAL LINE -- 1
[0] 1:MAIN* "custom-server" 14:32 11-Sep-21
```

pp@custom-server:~\$
sudo update-grub

Then update grub configuration

2. Zmienić czas wyświetlania menu GRUB.



```
# If you change this file, run 'update-grub' afterwards to update
# /boot/grub/grub.cfg.
# For full documentation of the options in this file, see:
#   info -f grub -n 'Simple configuration'

GRUB_DEFAULT=0
GRUB_TIMEOUT_STYLE=menu
GRUB_TIMEOUT=10 --> Change this variable
GRUB_DISTRIBUTOR=`lsb_release -i -s 2> /dev/null || echo Debian`
GRUB_CMDLINE_LINUX_DEFAULT="maybe-ubiquity"
GRUB_CMDLINE_LINUX=""

# Uncomment to enable BadRAM filtering, modify to suit your needs
# This works with Linux (no patch required) and with any kernel that obtains
# the memory map information from GRUB (GNU Mach, kernel of FreeBSD ...)
#GRUB_BADRAM="0x01234567,0xfefefefe,0x89abcdef,0xefefefef"

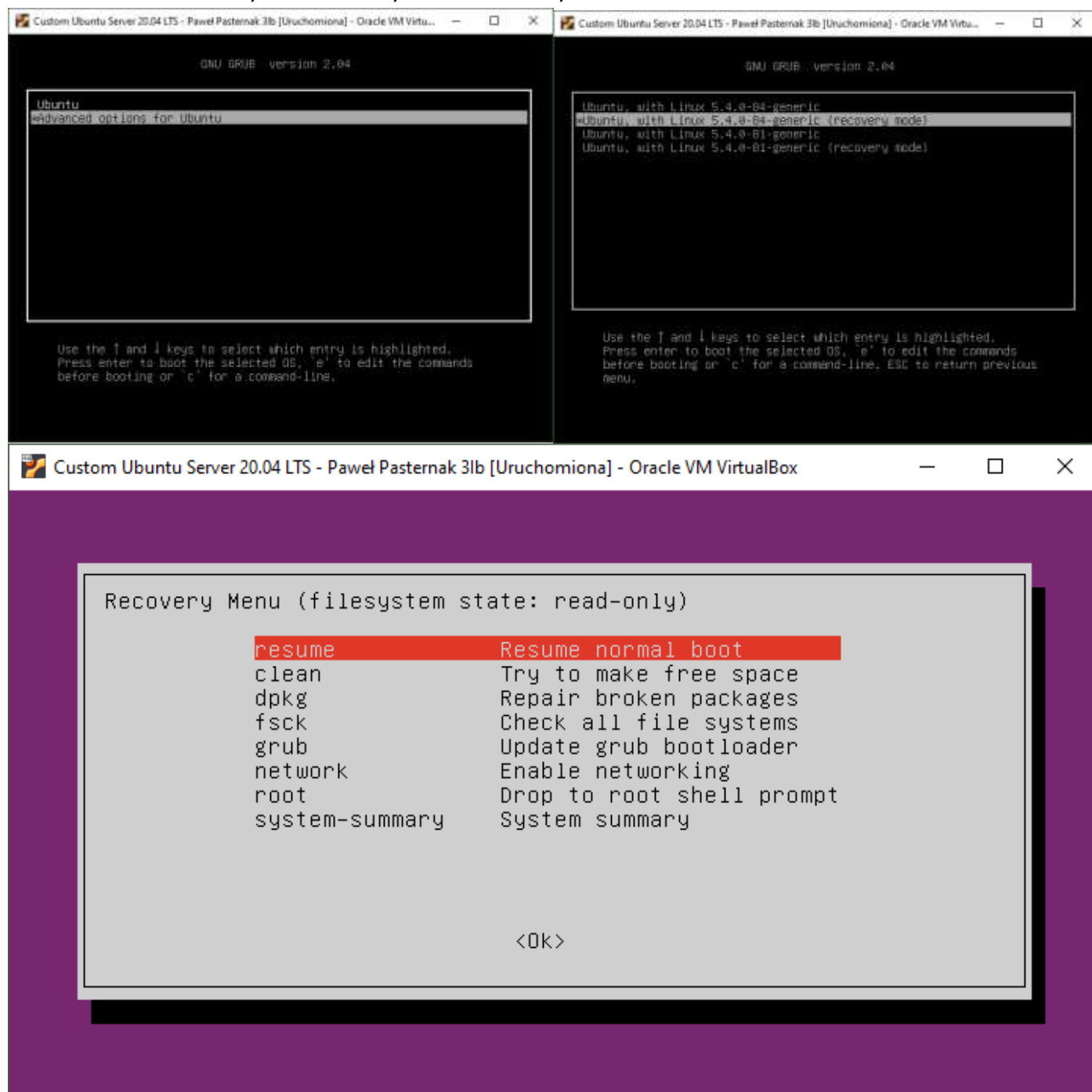
# Uncomment to disable graphical terminal (grub-pc only)
#GRUB_TERMINAL=console

# The resolution used on graphical terminal
# note that you can use only modes which your graphic card supports via VBE
/etcd/default/grub 8,16 Top
-- VISUAL LINE -- 1
[0] 1:sudo* "custom-server" 14:36 11-Sep-21
```

pp@custom-server:~\$
sudo update-grub

Then update grub configuration

3. Uruchomić system w trybie recovery.



4. Uaktywnić konto użytkownika root.

```
root@custom-server: /hoi x + v
pp@custom-server:~$ sudo passwd -u root → Unlock Root account
[sudo] password for pp:
passwd: password expiry information changed.
pp@custom-server:~$ sudo su → Login as Root
root@custom-server:/home/pp# id
uid=0(root) gid=0(root) groups=0(root)
root@custom-server:/home/pp#
```

5. Dodać użytkownika student do grupy administratorów oraz zezwolić na wykonywanie poleceń przypisanych do root'a

```
pp@custom-server: ~ x + v
pp@custom-server:~$ sudo useradd -m student → Create user "student" with home directory
pp@custom-server:~$

pp@custom-server:~$ sudo usermod -aG root student → Add student to root group
[sudo] password for pp:
pp@custom-server:~$

pp@custom-server:~$ sudo su student → Login as student
$ id
uid=1001(student) gid=1001(student) groups=1001(student),0(root)
$

[0] 1: bash* "custom-server" 14:59 11-Sep-21
```


6. Naprawić bootloader na dysku zawierającym partycję linuxową

```

Custom Ubuntu Server 20.04 LTS - Paweł Pasternak 3lb [Uruchomiona] - Oracle VM VirtualBox
clean          Try to make free space
dpkg           Repair broken packages
fsck           Check all file systems
grub           Update grub bootloader
network        Enable networking
root           Drop to root shell prompt
system-summary System summary

<Ok>

Enter root shell

Press Enter for maintenance
(or press Control-D to continue):
root@custom-server:~# id
uid=0(root) gid=0(root) groups=0(root)
root@custom-server:~# grub-install /dev/sda
Installing for i386-pc platform.
Installation finished. No error reported.
root@custom-server:~# reboot

Reinstall grub on /dev/sda
Reboot

```

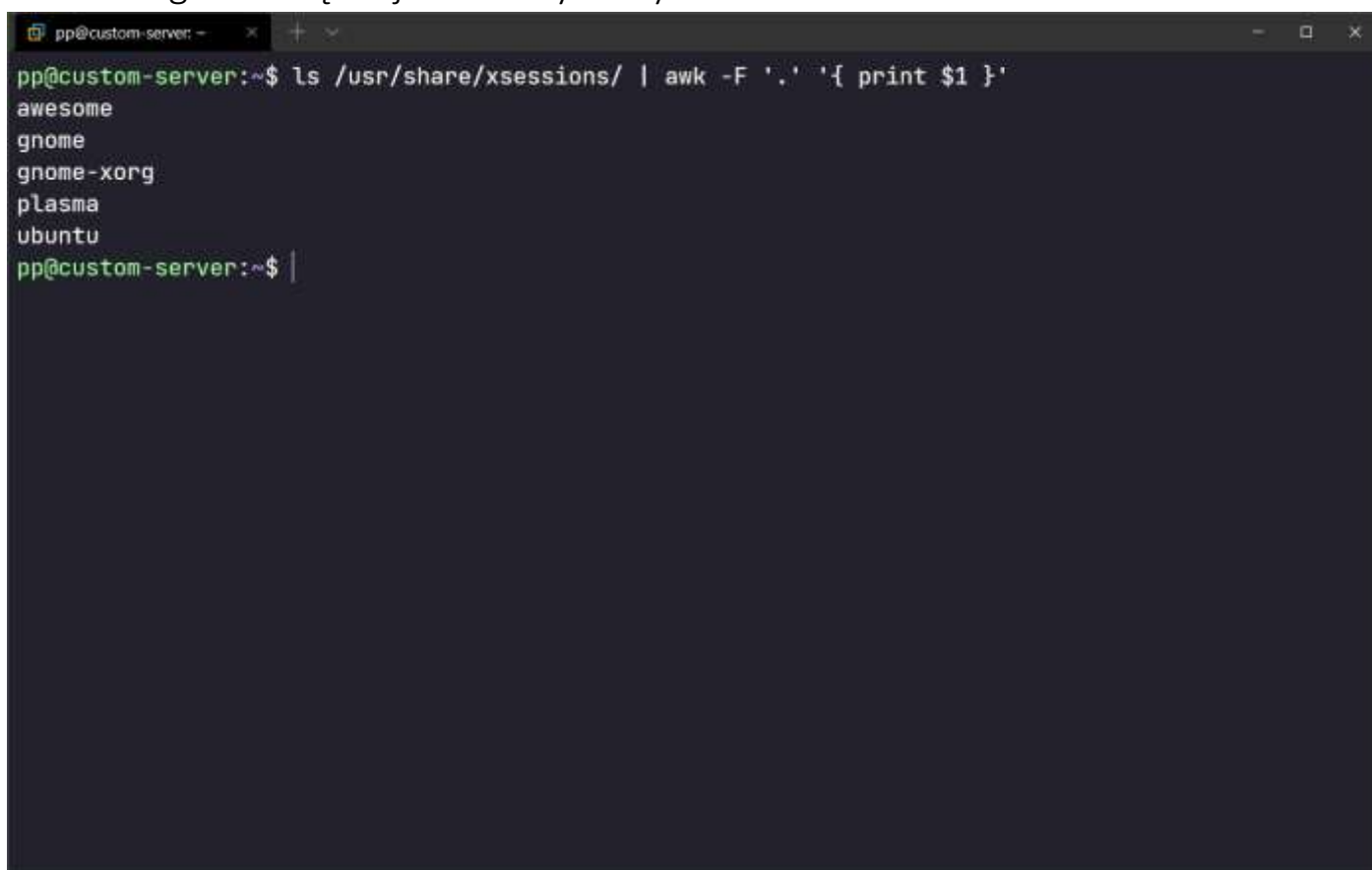
7. Dodać dowolne środowisko graficzne np. LXDE, Xfce, KDE Standard

```

pp@custom-server: ~$ sudo apt install kde-plasma-desktop -y
[sudo] password for pp:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  appmenu-gtk-module-common appmenu-gtk3-module appstream apt-config-icons
  apt-config-icons-hidpi apt-config-icons-large apt-config-icons-large-hidpi baloo-kf5
  bluedevil bluez-obexd breeze breeze-cursor-theme breeze-gtk-theme breeze-icon-theme catdoc
  debconf-kde-data debconf-kde-helper desktop-base docbook-xsl dolphin drkonqi ffmpegthumbs
  fonts-hack fonts-noto-cjk fonts-noto-core fonts-noto-hinted fonts-noto-mono
  fonts-noto-ui-core fonts-noto-unhinted fonts-quicksand fonts-ubuntu frameworkintegration gdb
  gdbserver gtk2-engines-pixbuf haveged i965-va-driver ieee-data intel-media-va-driver
  javascript-common kaccounts-providers kactivities-bin kactivitymanagerd kde-baseapps
  kde-cli-tools kde-cli-tools-data kde-config-gtk-style kde-config-screenlocker kde-config-sddm
  kde-style-breeze kde-style-oxygen-qt5 kdeconnect kded5 kdegraphics-thumbnailers kdialog
  kdoctools5 keditbookmarks kfind kgamma5 khelpcenter khotkeys khotkeys-data
  kimageformat-plugins kinfocenter kinit kio kio-extras kio-extras-data kmenuedit konqueror
  konsole konsole-kpart kpackagelauncherqml kpackageqt5 kpeople-vcards kscreen ksshaskpass
  ksysguard ksysguard-data ksysguardd ktexteditor-data ktexteditor-katepart kwalletmanager
  kwayland-data kwayland-integration kwin-common kwin-data kwin-style-breeze kwin-x11 kwrite
  kwrited liba52-0.7.4 libaacs0 libaccounts-glib0 libaccounts-qt5-1 libaom0
  libappmenu-gtk3-parser0 libappstreamqt2 libaribb24-0 libass9 libauthen-sasl-perl libavcodec58
  libavfilter7 libavformat58 libavutil56 libbabeltrace1 libbasicusageenvironment1 libbdplus0
  libbluray2 libbs2b0 libc6-dbg libcc1-0 libcdcb2 libchromaprint1 libcodec2-0.9

```

8. Sprawdzić jakie środowiska graficzne są dostępne w systemie oraz zalogować się na jedno z wybranych środowisk

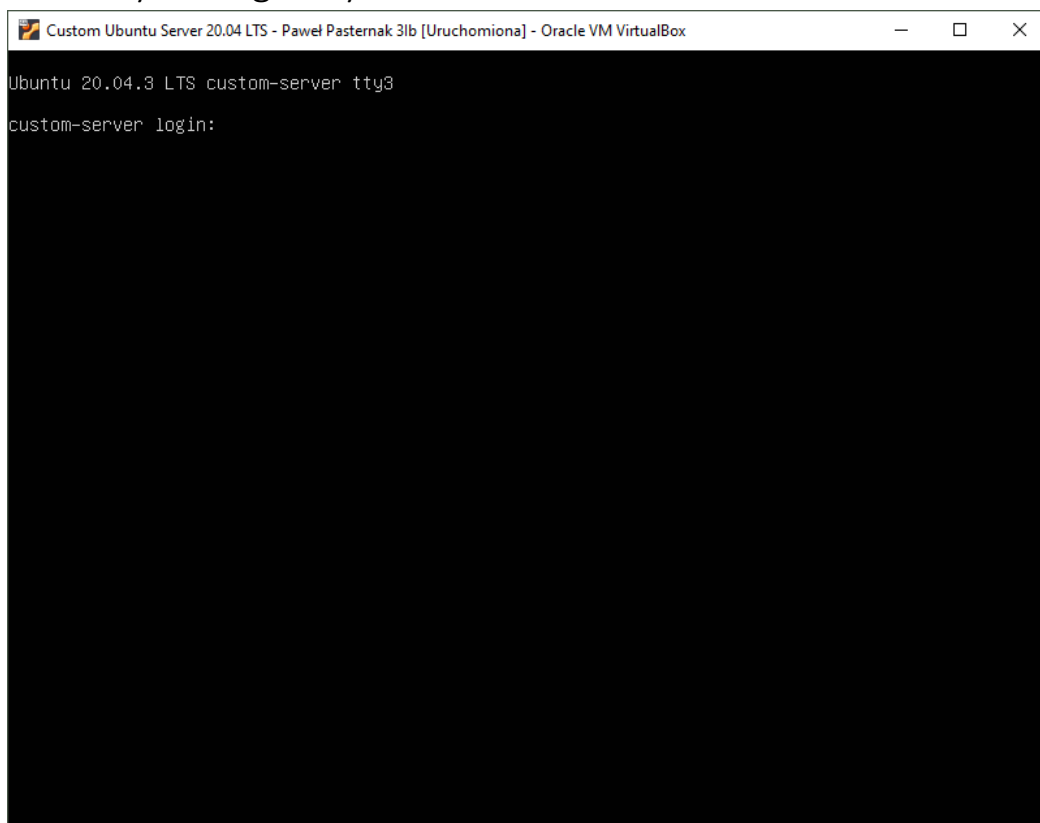


```
pp@custom-server: ~$ ls /usr/share/xsessions/ | awk -F '.' '{ print $1 }'
```

awesome
gnome
gnome-xorg
plasma
ubuntu

```
pp@custom-server: ~$
```

9. Przełączyć się z trybu graficznego na tryb tekstowy i zalogować się na konto wybranego użytkownika.

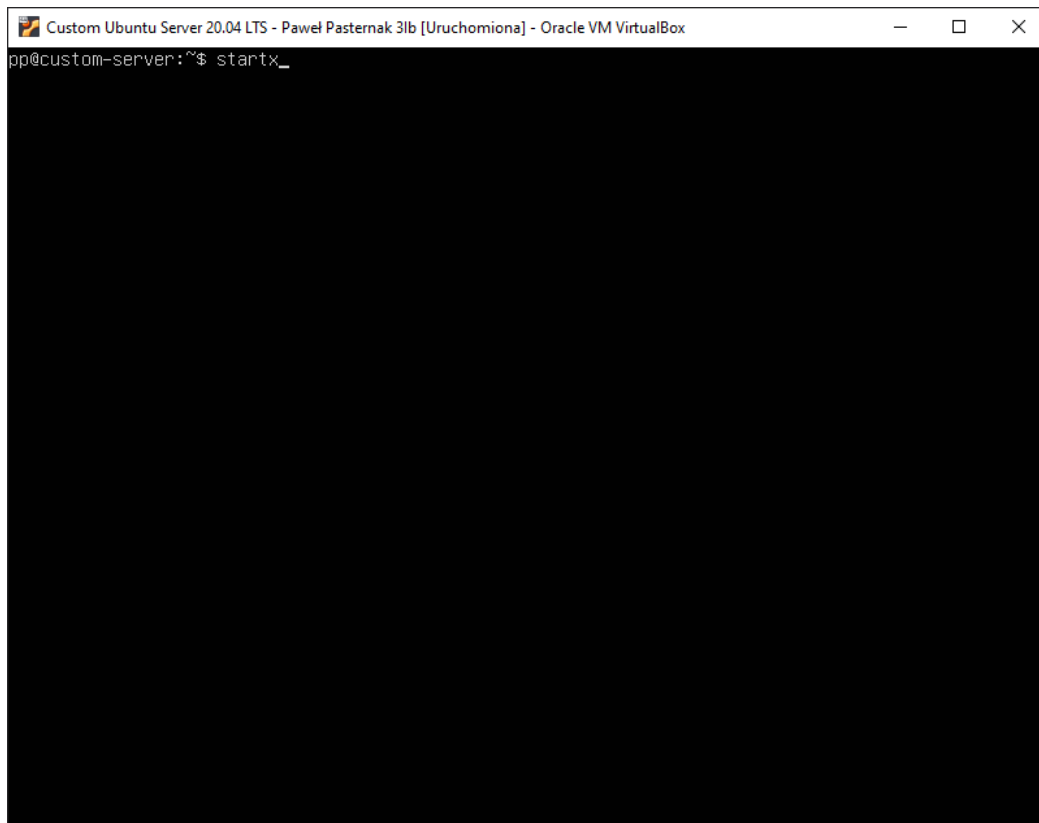


```
Custom Ubuntu Server 20.04 LTS - Paweł Pasternak 3Ib [Uruchomiona] - Oracle VM VirtualBox
```

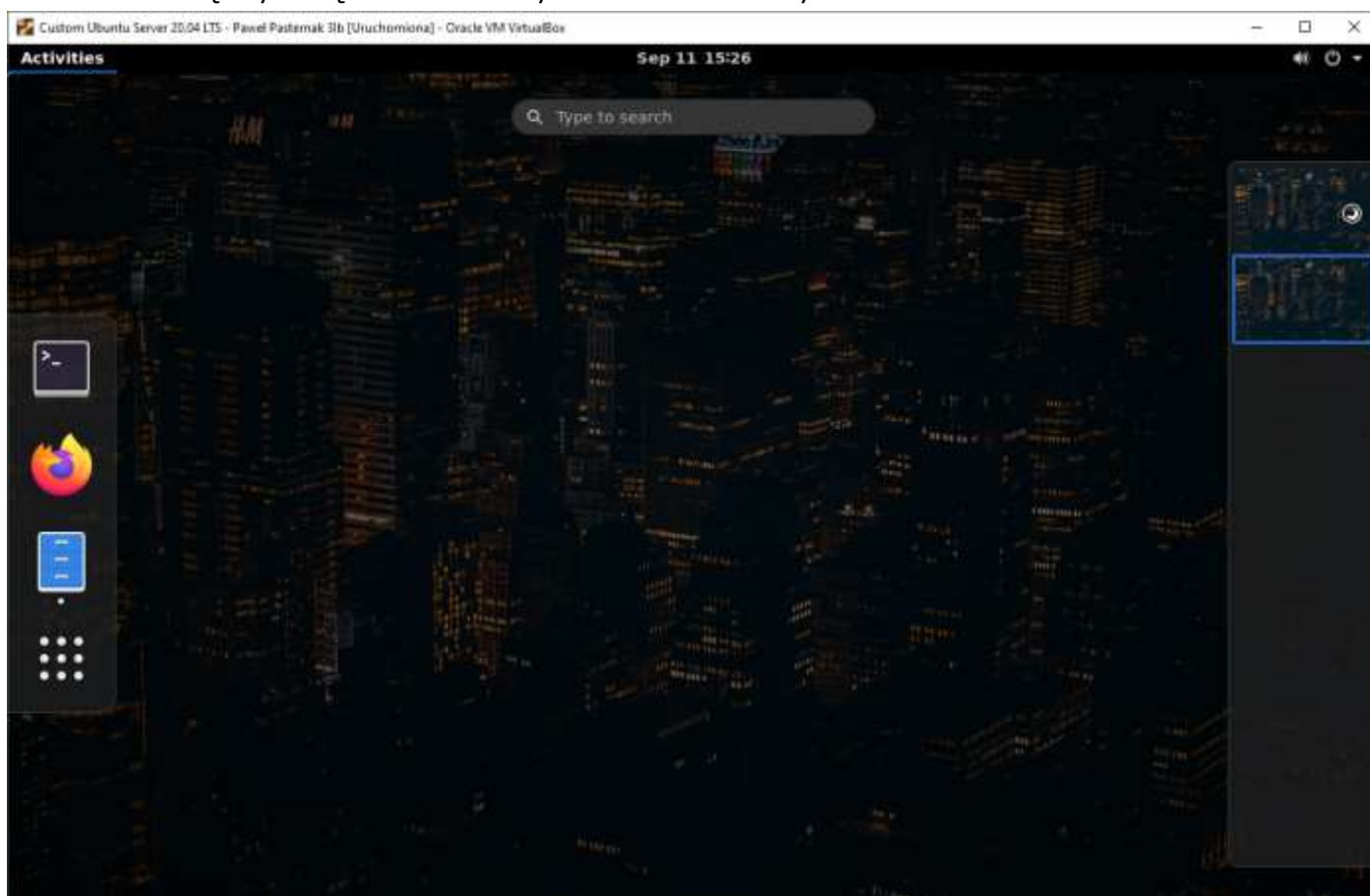
```
Ubuntu 20.04.3 LTS custom-server tty3
```

```
custom-server login:
```

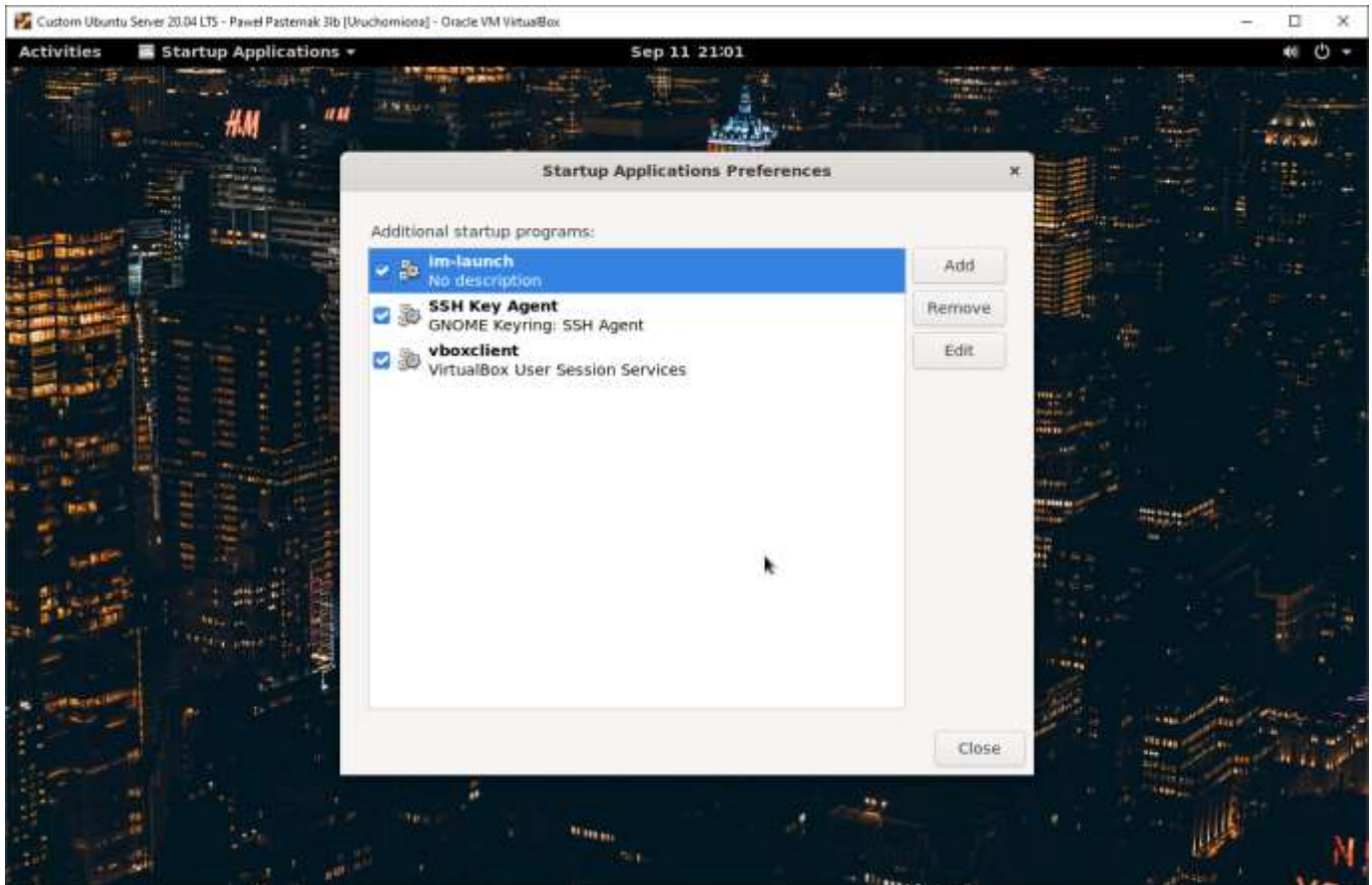
10. W trybie tekstowym załączyć środowisko graficzne



11. Przełączyć się na dowolny obszar roboczy



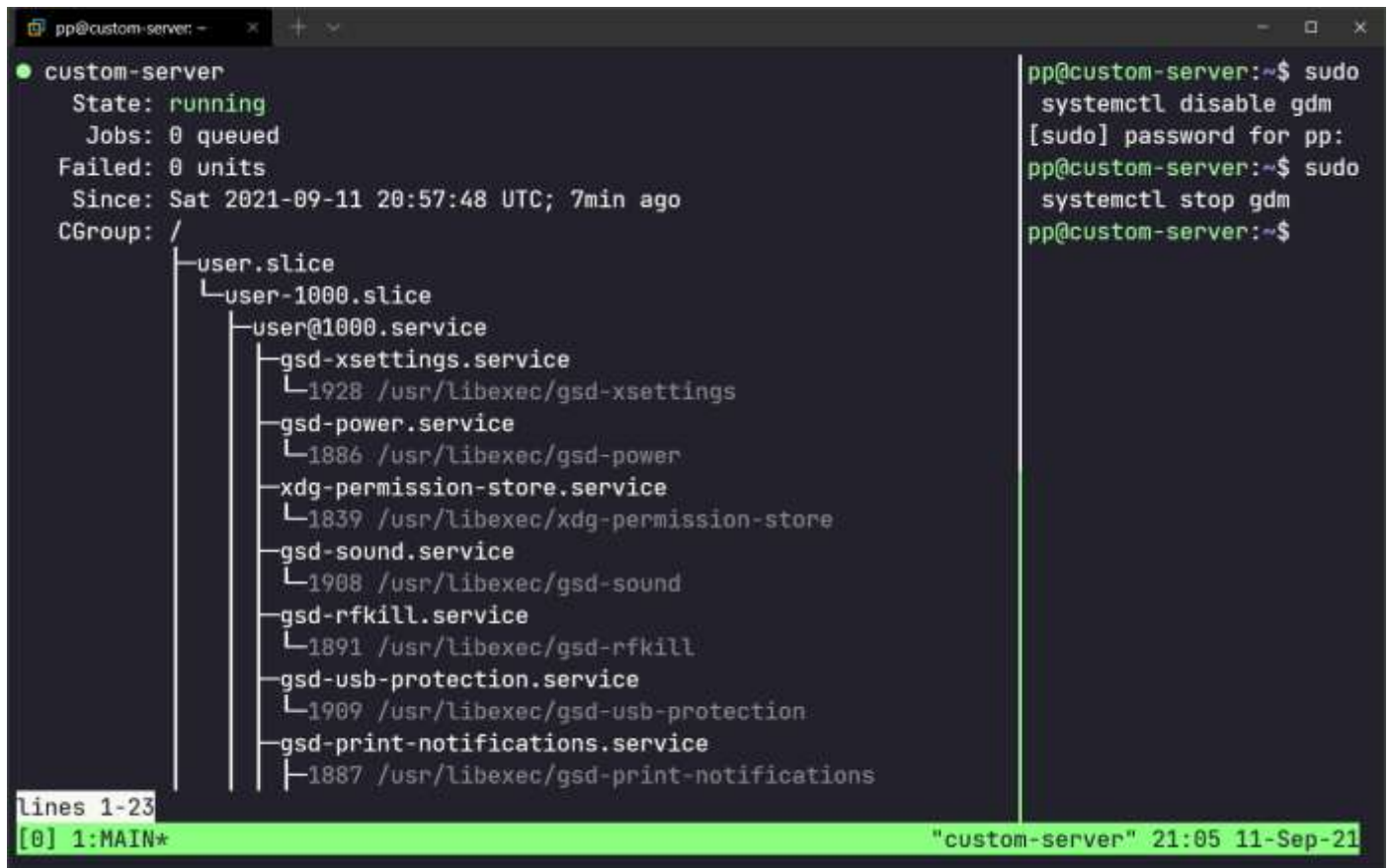
12. W jaki sposób możemy dodawać lub usuwać programy do autostartu



13. W jaki sposób możemy uruchomić, przeładować, zatrzymać, podać status wybranej usługi

```
pp@custom-server: ~$ systemctl status custom-server
● custom-server
   State: running
     Jobs: 0 queued
  Failed: 0 units
   Since: Sat 2021-09-11 20:57:48 UTC; 4min 9s ago
    CGroup: /
            └─user.slice
                  └─user-1000.slice
                        └─user@1000.service
                              ├─gsd-xsettings.service
                              │   └─1928 /usr/libexec/gsd-xsettings
                              ├─gsd-power.service
                              │   └─1886 /usr/libexec/gsd-power
                              ├─xdg-permission-store.service
                              │   └─1839 /usr/libexec/xdg-permission-store
                              ├─gsd-sound.service
                              │   └─1908 /usr/libexec/gsd-sound
                              ├─gsd-rfkill.service
                              │   └─1891 /usr/libexec/gsd-rfkill
                              ├─gsd-usb-protection.service
                              │   └─1909 /usr/libexec/gsd-usb-protection
                              ├─gsd-print-notifications.service
                              │   └─1887 /usr/libexec/gsd-print-notifications
                              └─1933 /usr/libexec/gsd-printer
```


14. Pokazać uruchomione przez wybranego użytkownika procesy. Wyłączyć dany proces



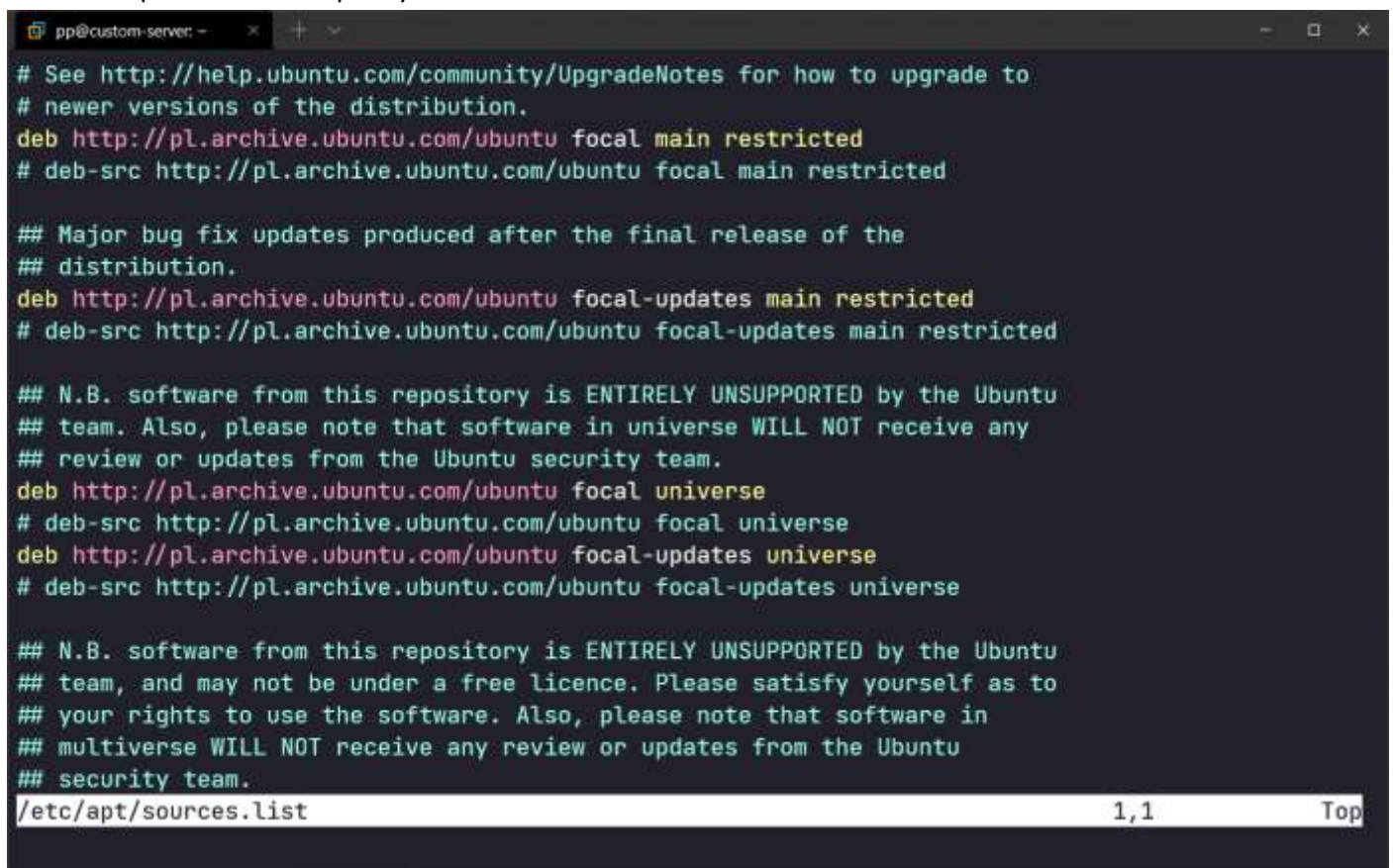
The screenshot shows a terminal window with two panes. The left pane displays the status of the 'custom-server' service, which is running. It lists various user services and their corresponding processes, including gsd-xsettings, gsd-power, xdg-permission-store, gsd-sound, gsd-rfkill, gsd-usb-protection, and gsd-print-notifications. The right pane shows the execution of 'sudo systemctl disable gdm' and 'sudo systemctl stop gdm' commands. The terminal prompt is 'pp@custom-server:~\$'.

```
pp@custom-server:~$ sudo systemctl disable gdm
[sudo] password for pp:
pp@custom-server:~$ sudo systemctl stop gdm
pp@custom-server:~$
```

```
● custom-server
  State: running
    Jobs: 0 queued
  Failed: 0 units
  Since: Sat 2021-09-11 20:57:48 UTC; 7min ago
  CGroup: /
          └─user.slice
              └─user-1000.slice
                  └─user@1000.service
                      ├─gsd-xsettings.service
                      │   └─1928 /usr/libexec/gsd-xsettings
                      ├─gsd-power.service
                      │   └─1886 /usr/libexec/gsd-power
                      ├─xdg-permission-store.service
                      │   └─1839 /usr/libexec/xdg-permission-store
                      ├─gsd-sound.service
                      │   └─1908 /usr/libexec/gsd-sound
                      ├─gsd-rfkill.service
                      │   └─1891 /usr/libexec/gsd-rfkill
                      ├─gsd-usb-protection.service
                      │   └─1909 /usr/libexec/gsd-usb-protection
                      └─gsd-print-notifications.service
                          └─1887 /usr/libexec/gsd-print-notifications
```

Lines 1-23
[0] 1:MAIN* "custom-server" 21:05 11-Sep-21

15. Sprawdzić repozytoria sieciowe



The screenshot shows a terminal window displaying the contents of the /etc/apt/sources.list file. The file contains several lines of text, including instructions on how to upgrade to newer versions of the distribution, and lists of repositories for focal, focal-updates, and focal-universe. The terminal prompt is 'pp@custom-server:~\$'.

```
# See http://help.ubuntu.com/community/UpgradeNotes for how to upgrade to
# newer versions of the distribution.
deb http://pl.archive.ubuntu.com/ubuntu focal main restricted
# deb-src http://pl.archive.ubuntu.com/ubuntu focal main restricted

## Major bug fix updates produced after the final release of the
## distribution.
deb http://pl.archive.ubuntu.com/ubuntu focal-updates main restricted
# deb-src http://pl.archive.ubuntu.com/ubuntu focal-updates main restricted

## N.B. software from this repository is ENTIRELY UNSUPPORTED by the Ubuntu
## team. Also, please note that software in universe WILL NOT receive any
## review or updates from the Ubuntu security team.
deb http://pl.archive.ubuntu.com/ubuntu focal universe
# deb-src http://pl.archive.ubuntu.com/ubuntu focal universe
deb http://pl.archive.ubuntu.com/ubuntu focal-updates universe
# deb-src http://pl.archive.ubuntu.com/ubuntu focal-updates universe

## N.B. software from this repository is ENTIRELY UNSUPPORTED by the Ubuntu
## team, and may not be under a free licence. Please satisfy yourself as to
## your rights to use the software. Also, please note that software in
## multiverse WILL NOT receive any review or updates from the Ubuntu
## security team.
/etc/apt/sources.list
```

1,1 Top

16. Zmienić menedżer logowania (gdm3, lightdm)

```
pp@custom-server: ~$ sudo dpkg-reconfigure lightdm
```

Run this command to change login manager

[0] 1:MAIN* "custom-server" 21:10 11-Sep-21

17. Zmienić ustawienia karty sieciowej, podać jej oznaczenie

```
network:
  ethernets:
    enp0s8:
      dhcp4: true
  version: 2
```

Edit files located in /etc/netplan

```
pp@custom-server: ~$ sudo netplan apply
[sudo] password for pp:
pp@custom-server: ~$
```

Apply netplan

/etc/netplan/00-installer-config.yaml 5,1 All

[1] 1:MAIN* "custom-server" 21:21 11-Sep-21

18. Przepuścić przez zaporę sieciową wybraną usługę sieciową.

```
pp@custom-server:~$ sudo iptables -A INPUT -i enp0s8 -p tcp --dport 22 -j ACCEPT
pp@custom-server:~$ Add firewall rule for accepting incoming traffic on port 22 with tcp, at enp0s8 interface
pp@custom-server:~$ sudo iptables -L Print firewall rules
Chain INPUT (policy ACCEPT)
target     prot opt source                destination            tcp dpt:ssh
ACCEPT     tcp  --  anywhere               anywhere               tcp dpt:ssh

Chain FORWARD (policy ACCEPT)
target     prot opt source                destination

Chain OUTPUT (policy ACCEPT)
target     prot opt source                destination
pp@custom-server:~$
```

19. Skorzystać z manuala systemowego, wyszukać dane słowo kluczowe

```
SSH(1) BSD General Commands Manual SSH(1)

NAME
  ssh - OpenSSH remote login client

SYNOPSIS
  ssh [-46AaCfGgKkMnQsTtVvXxYy] [-B bind_interface] [-b bind_address] [-c cipher_spec]
    [-D [bind_address:]port] [-E log_file] [-e escape_char] [-F configfile] [-I pkcs11]
    [-i identity_file] [-J destination] [-L address] [-l login_name] [-m mac_spec]
    [-O ctl_cmd] [-o option] [-p port] [-Q query_option] [-R address] [-S ctl_path]
    [-W host:port] [-w local_tun[:remote_tun]] destination [command]

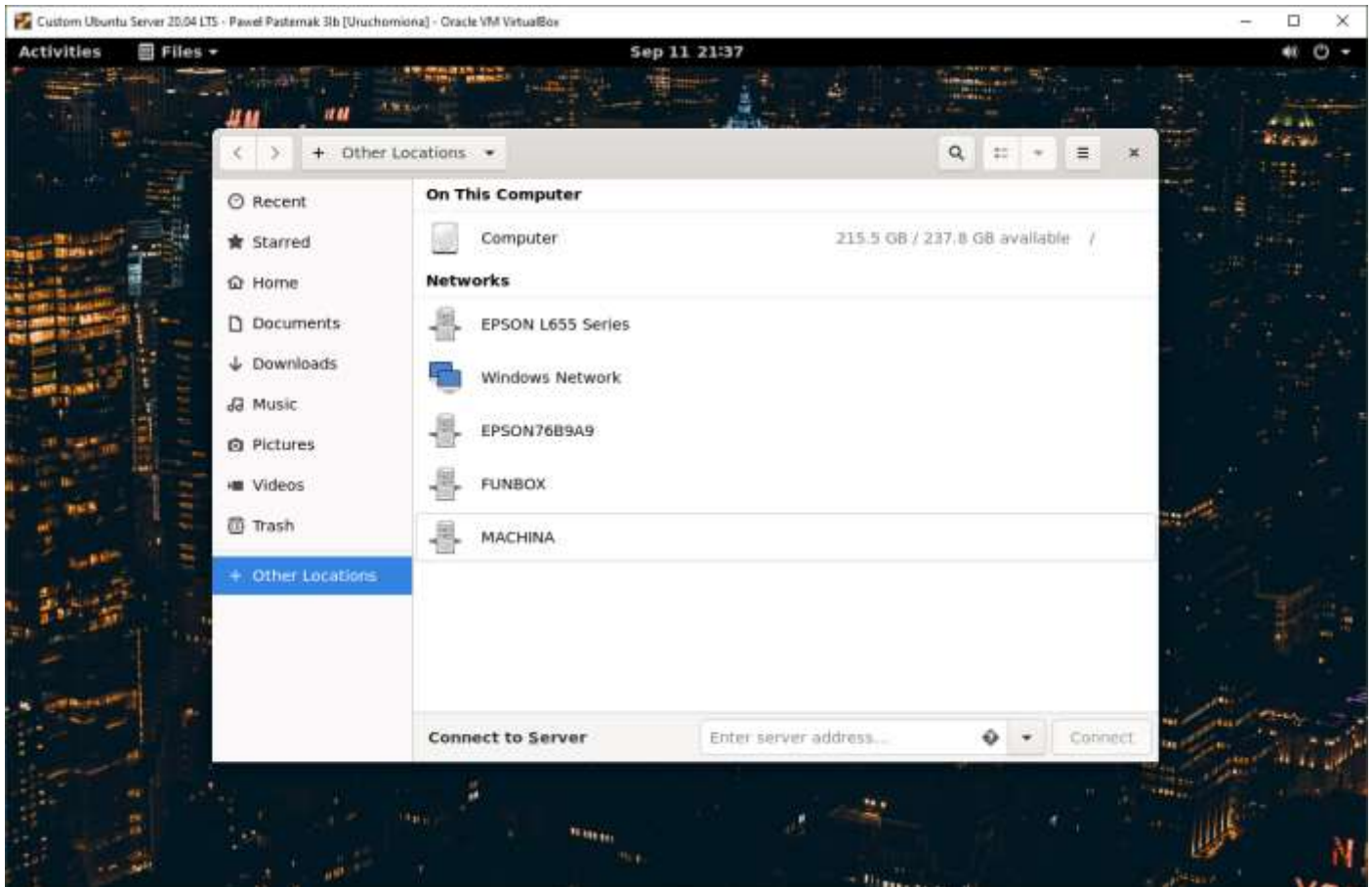
DESCRIPTION
  ssh (SSH client) is a program for logging into a remote machine and for executing com-
  mands on a remote machine. It is intended to provide secure encrypted communications be-
  tween two untrusted hosts over an insecure network. X11 connections, arbitrary TCP ports
  and UNIX-domain sockets can also be forwarded over the secure channel.

  ssh connects and logs into the specified destination, which may be specified as either
  [user@]hostname or a URI of the form ssh://[user@]hostname[:port]. The user must prove
  his/her identity to the remote machine using one of several methods (see below).

  If a command is specified, it is executed on the remote host instead of a login shell.

Manual page ssh(1) line 1 (press h for help or q to quit)
```

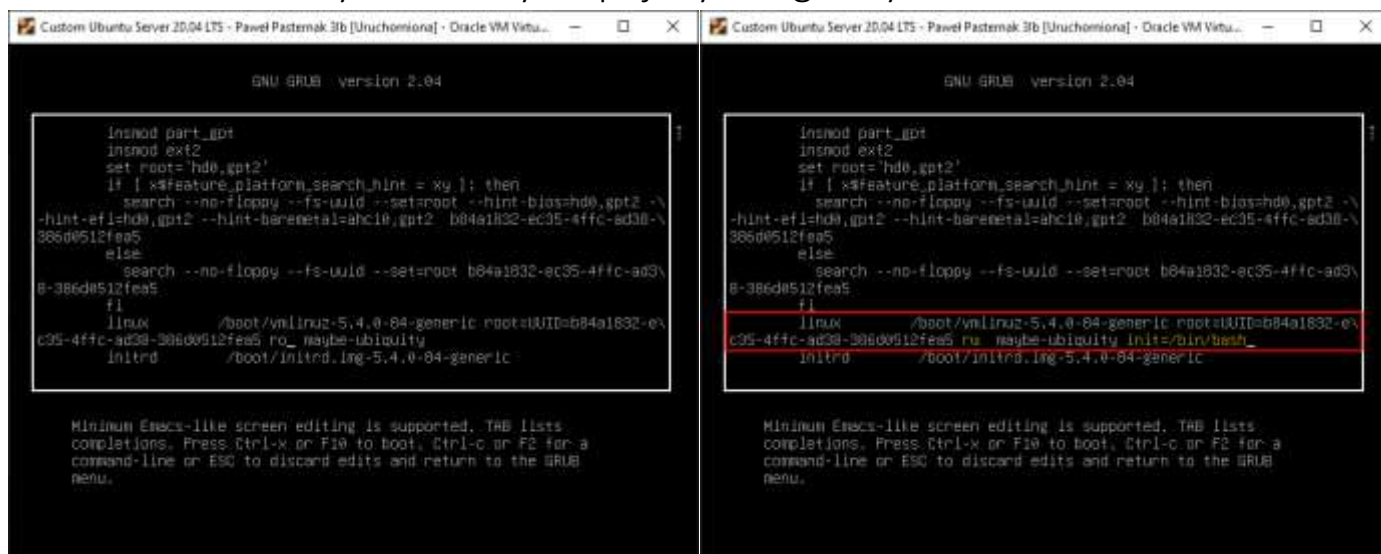

20. Połączyć się z udostępnionym udziałem Windows



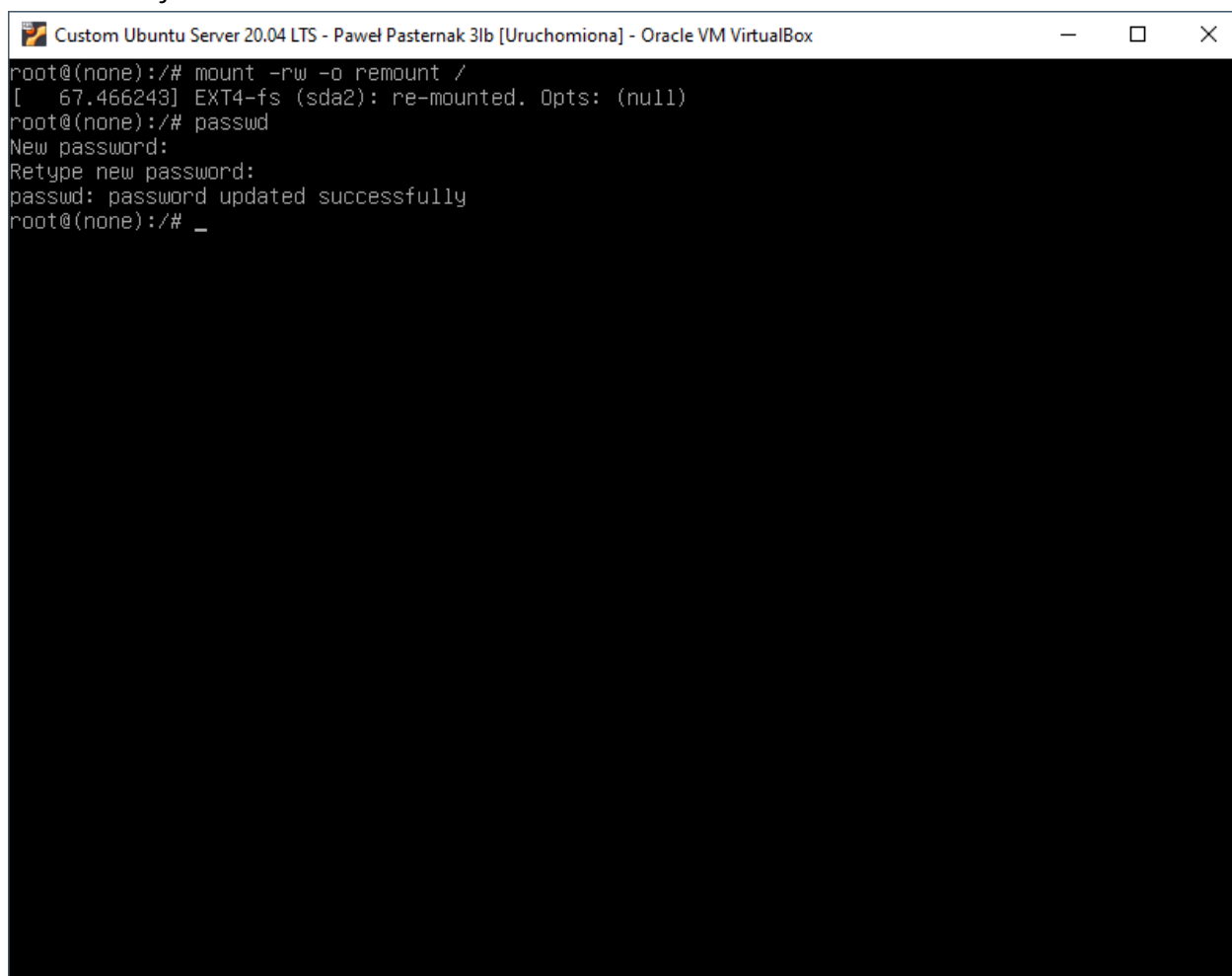
21. W jaki sposób możemy zaktualizować system do nowszej wersji.

```
pp@custom-server: ~$ sudo apt-get update && sudo apt-get upgrade
Hit:1 http://pl.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://pl.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://ppa.launchpad.net/aslatter/ppa/ubuntu focal InRelease
Hit:4 http://pl.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:5 http://pl.archive.ubuntu.com/ubuntu focal-security InRelease
Reading package lists... Done
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
pp@custom-server: ~$
```


22. Uruchomić system w trybie pojedynczego użytkownika



23. W trybie linux single zmienić hasło użytkownika administrator bez jego znajomości



24. Wyłączyć środowisko graficzne przy starcie systemu

```
pp@custom-server: ~$ sudo systemctl set-default multi-user
[sudo] password for pp:
Created symlink /etc/systemd/system/default.target → /lib/systemd/system/multi-user.target.
pp@custom-server: ~$
```


25. Zmień nazwę komputera

```
pp@custom-server: ~$ sudo hostname custom-server
[sudo] password for pp:
pp@custom-server: ~$
```

26. Przywrócić ustawienia domyślne środowiska Gnome

```
pp@custom-server: ~$ dconf reset -f /org/gnome/
pp@custom-server: ~$
```

27. Zmienić domyślne środowisko graficzne uruchamiane z trybu tekstowego



The screenshot shows a terminal window with a dark background. At the top, the window title is "pp@custom-server: ~". Below the title bar, the text "1 awesome" is displayed, indicating a file named "awesome" with 1 line. A vertical red bar is visible on the right side of the terminal. The bottom of the terminal shows a status bar with the text ".xinitrc" and "1,7" on the left, and "All" on the right. Below the status bar, the text ".xinitrc" [New] 1L, 8C written is displayed.

28. Zmień/sprawdź adres serwera DNS

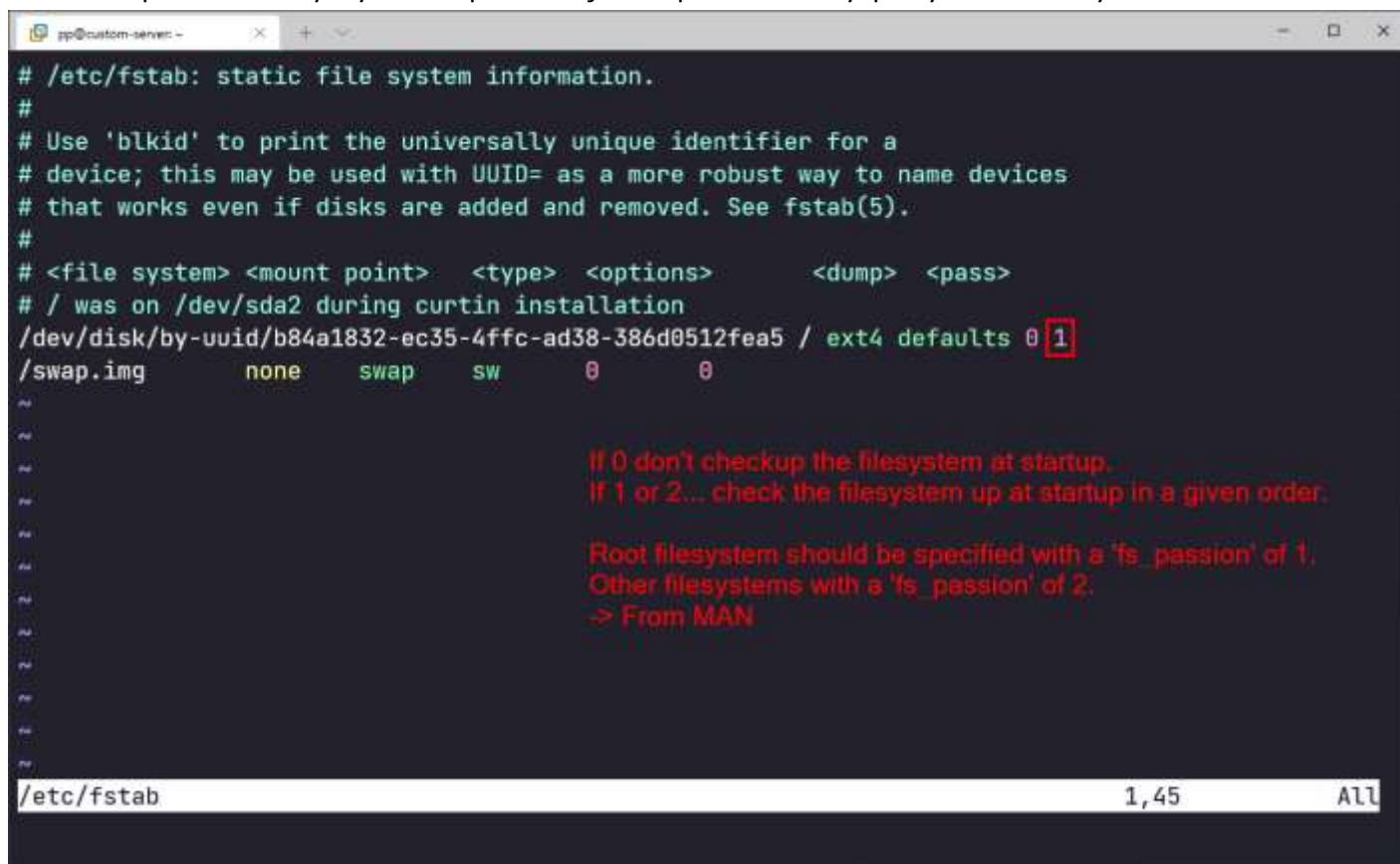
```
pp@custom-server: ~$ cat /etc/resolv.conf
# This file is managed by man:systemd-resolved(8). Do not edit.
#
# This is a dynamic resolv.conf file for connecting local clients to the
# internal DNS stub resolver of systemd-resolved. This file lists all
# configured search domains.
#
# Run "resolvectl status" to see details about the uplink DNS servers
# currently in use.
#
# Third party programs must not access this file directly, but only through the
# symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a different way,
# replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported modes of
# operation for /etc/resolv.conf.

nameserver 127.0.0.53
options edns0 trust-ad
search home
pp@custom-server:~$ grep "nameserver" /etc/resolv.conf
nameserver 127.0.0.53
pp@custom-server:~$
```

29. Sprawdź ilość wolnego miejsca w głównym systemie plików

```
pp@custom-server: ~$ df -h /
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda2       222G  9.6G  201G   5% /
pp@custom-server:~$
```


30. Sprawdź czy system plików jest sprawdzany przy starcie systemu



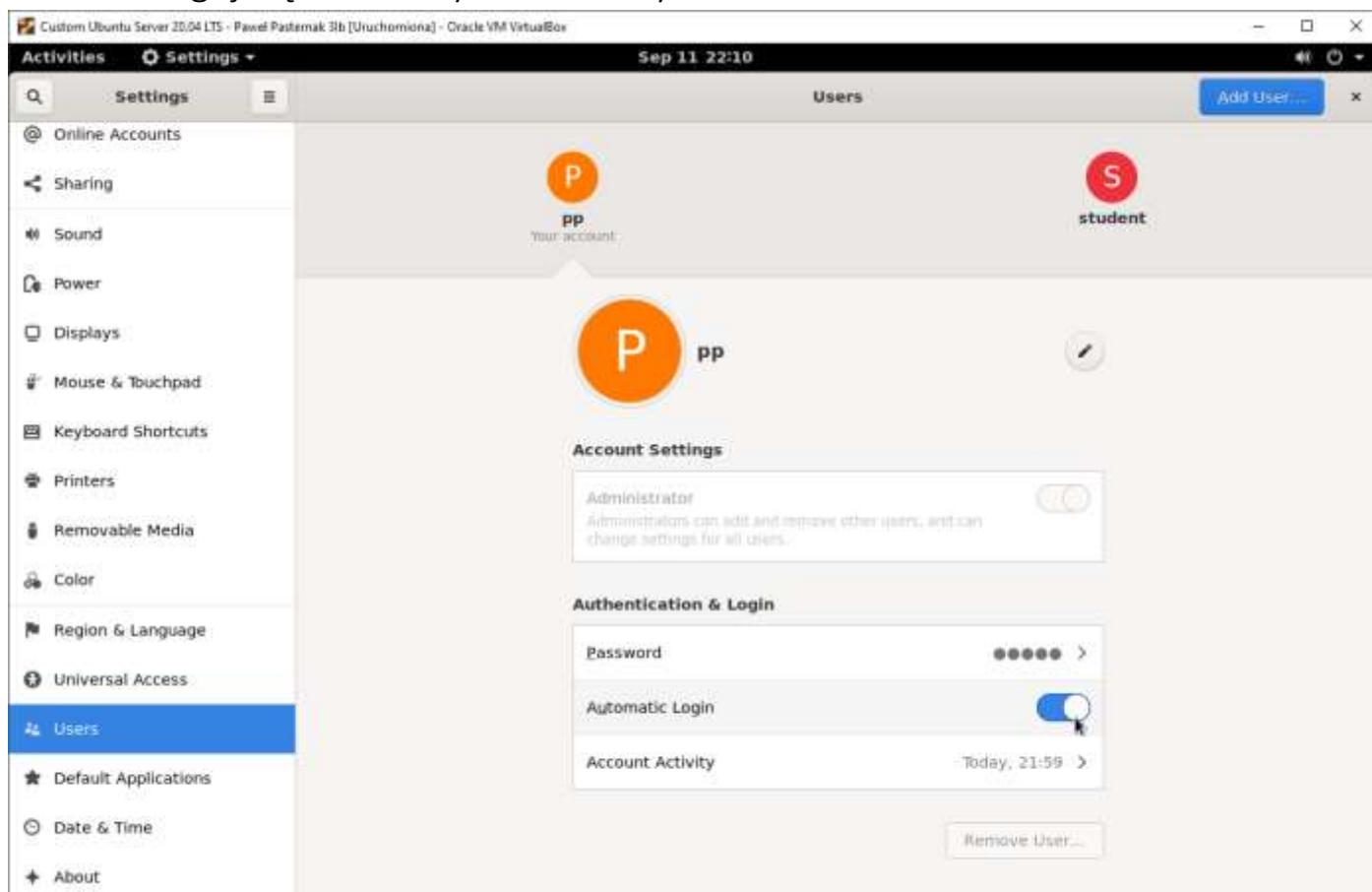
```
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point> <type> <options>        <dump> <pass>
# / was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/b84a1832-ec35-4ffc-ad38-386d0512fea5 / ext4 defaults 0 1
/swap.img      none      swap      sw         0         0
```

If 0 don't checkup the filesystem at startup.
If 1 or 2... check the filesystem up at startup in a given order.

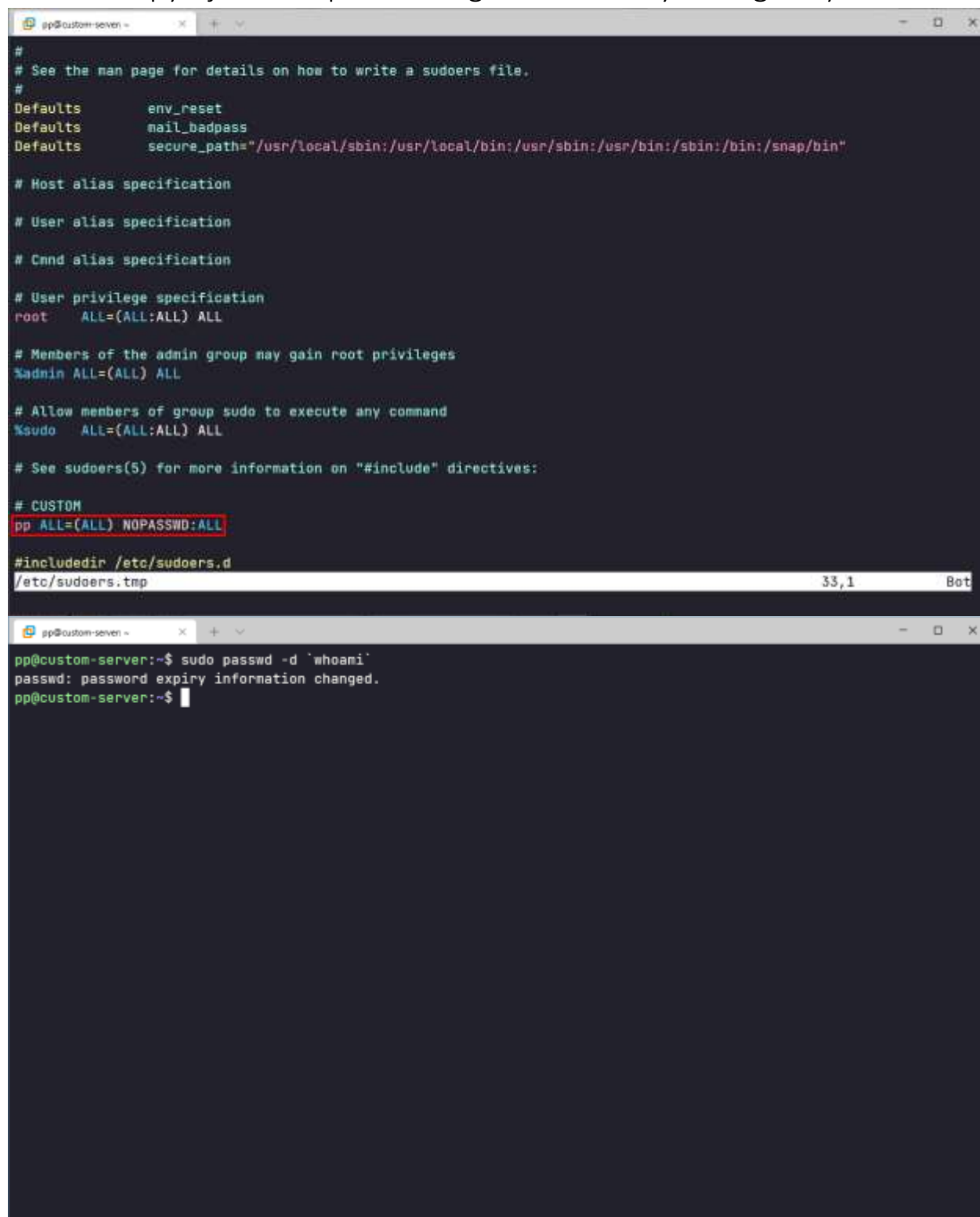
Root filesystem should be specified with a 'fs_passion' of 1.
Other filesystems with a 'fs_passion' of 2.
-> From MAN

/etc/fstab 1,45 All

31. Zaloguj się automatycznie na użytkownika administrator



32. Nie pytaj o hasło podczas logowania dla wybranego użytkownika

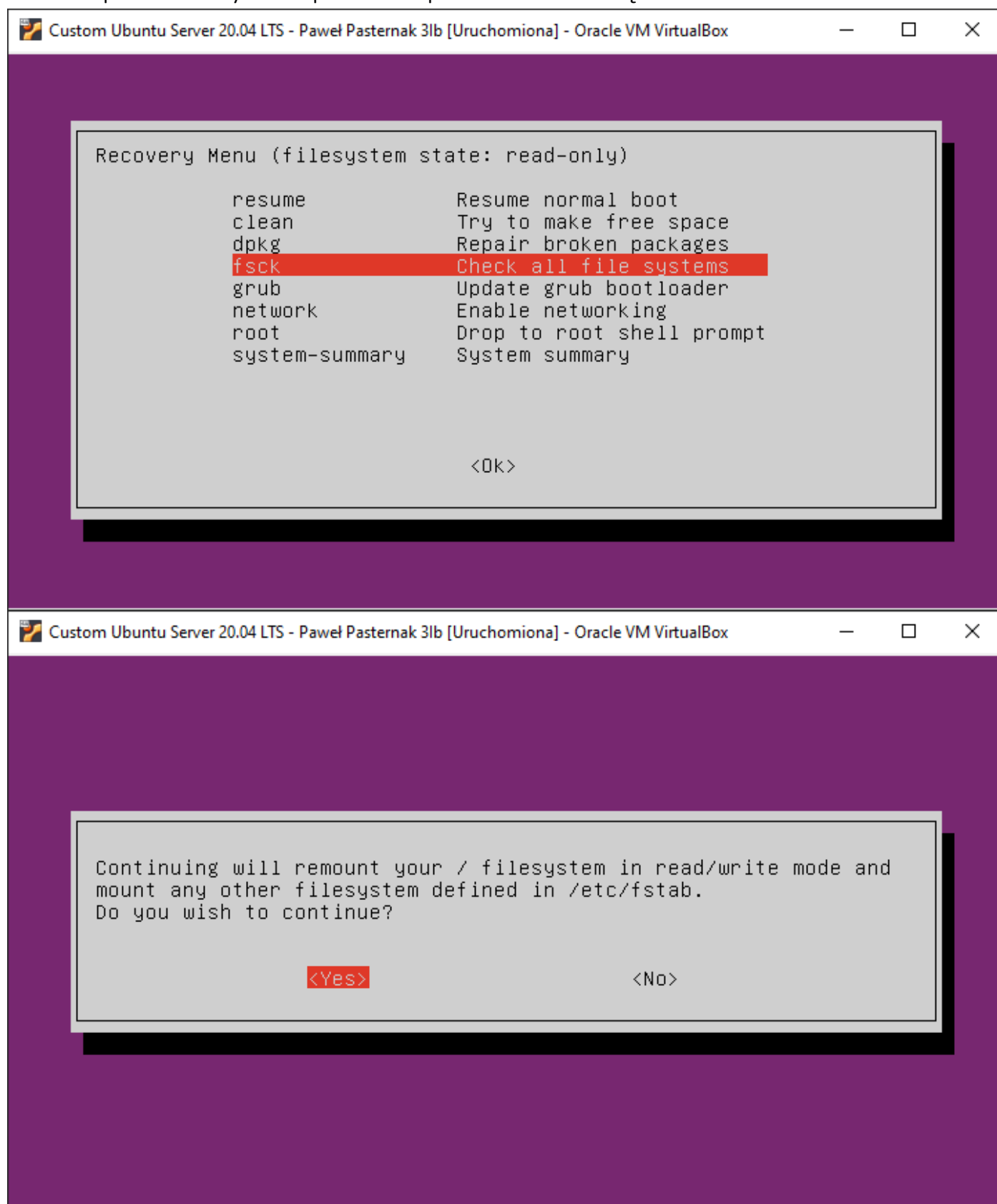


The image shows a terminal window with a dark background. The top part displays the contents of the `/etc/sudoers` file. The file includes standard configuration lines for defaults, host, user, and Cmnd aliases, as well as privilege specifications for `root`, `%admin`, and `%sudo`. A custom line is highlighted with a red box: `pp ALL=(ALL) NOPASSWD:ALL`. Below this, the `#includedir /etc/sudoers.d` section is shown, with `/etc/sudoers.tmp` listed. The bottom part of the terminal shows a command prompt where the user `pp` runs `sudo passwd -d 'whoami'`. The output indicates that the password expiry information was successfully changed.

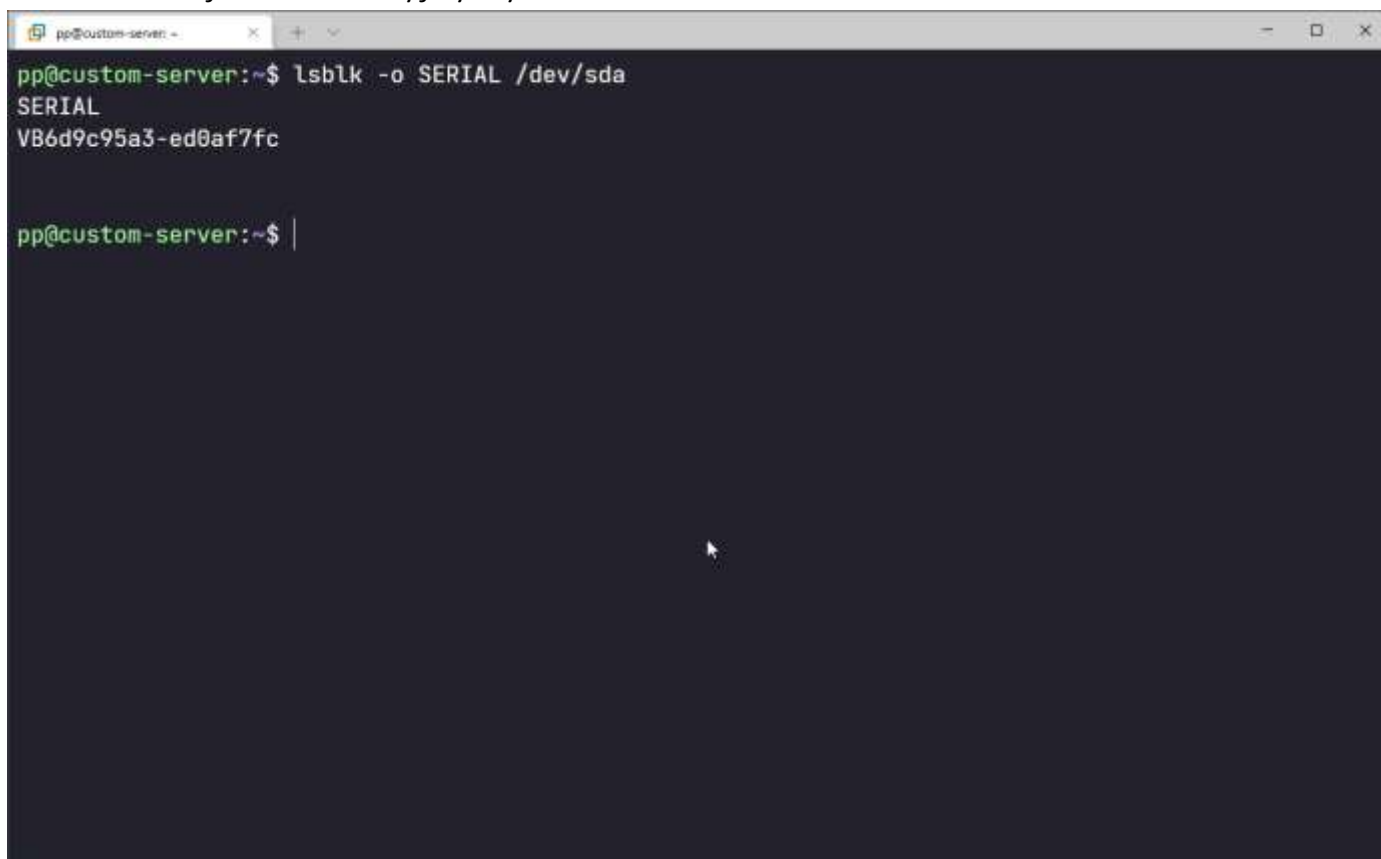
```
#  
# See the man page for details on how to write a sudoers file.  
#  
Defaults            env_reset  
Defaults            mail_badpass  
Defaults            secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/snap/bin"  
  
# Host alias specification  
  
# User alias specification  
  
# 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:  
  
# CUSTOM  
pp ALL=(ALL) NOPASSWD:ALL  
  
#includedir /etc/sudoers.d  
/etc/sudoers.tmp 33,1 Bot
```

```
pp@custom-server:~$ sudo passwd -d 'whoami'  
passwd: password expiry information changed.  
pp@custom-server:~$
```

33. Sprawdzić system plików w poszukiwaniu błędów



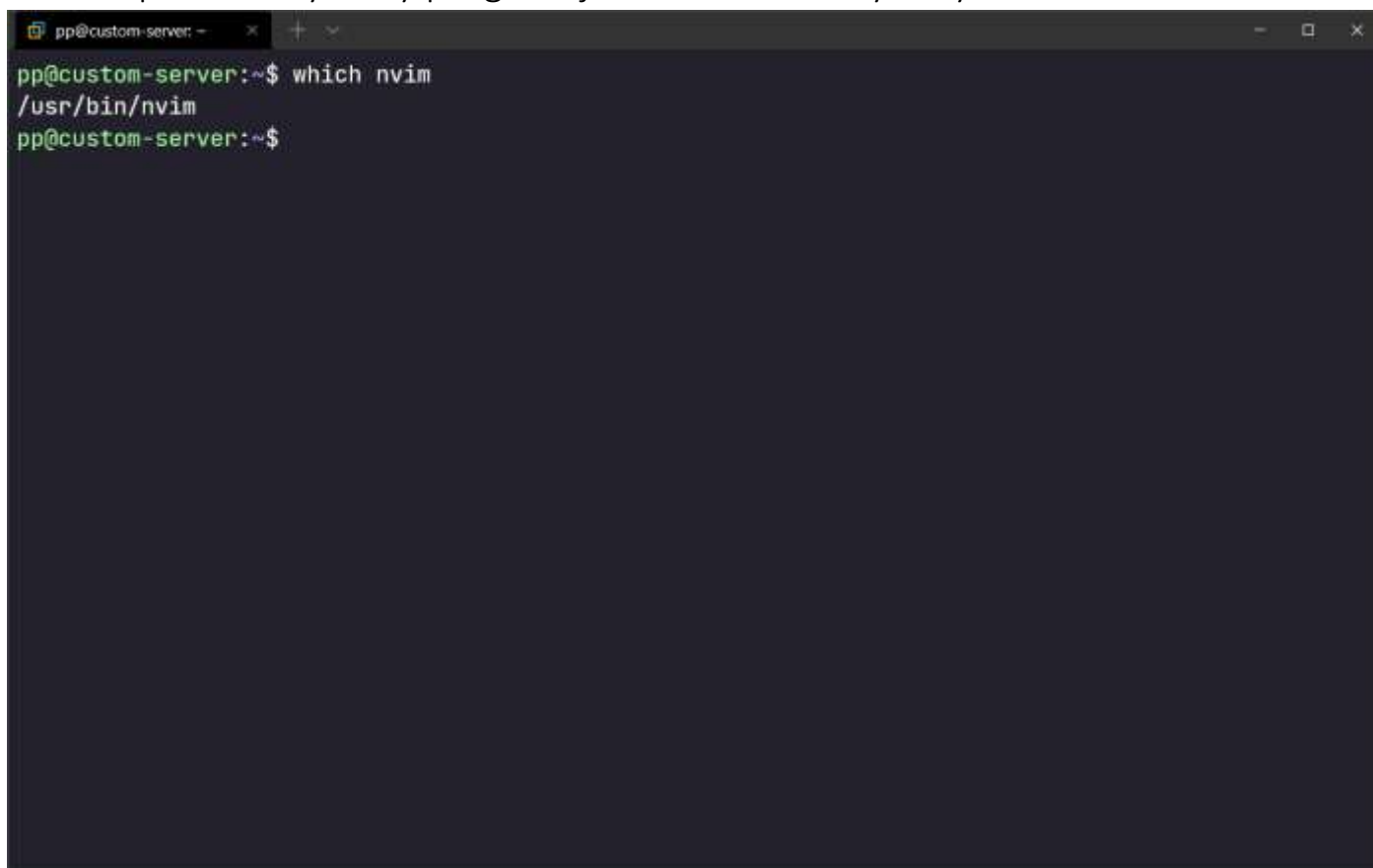
34. Podaj numer seryjny dysku



```
pp@custom-server:~$ lsblk -o SERIAL /dev/sda
SERIAL
VB6d9c95a3-ed0af7fc

pp@custom-server:~$ |
```

35. Sprawdź czy dany program jest zainstalowany w systemie



```
pp@custom-server:~$ which nvim
/usr/bin/nvim
pp@custom-server:~$
```


36. Odśwież parametry interfejsu sieciowego. Aktywuj, deaktywuj połączenie sieciowe.

```
pp@custom-server:~$ sudo ip link set enp0s8 down
[sudo] password for pp:
pp@custom-server:~$ ip link show enp0s8
2: enp0s8: <BROADCAST,MULTICAST> mtu 1500 qdisc fq_codel state DOWN mode
DEFAULT group default qlen 1000
    link/ether 08:00:27:47:7c:80 brd ff:ff:ff:ff:ff:ff
pp@custom-server:~$

pp@custom-server:~$ sudo ip link set enp0s8 up
[sudo] password for pp:
pp@custom-server:~$ ip link show enp0s8
2: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode
DEFAULT group default qlen 1000
    link/ether 08:00:27:47:7c:80 brd ff:ff:ff:ff:ff:ff
pp@custom-server:~$
```

[0] 1: bash* "custom-server" 22:25 11-Sep-21

37. Podać specyfikację karty graficznej

```
pp@custom-server:~$ lshw -C video
WARNING: you should run this program as super-user.
*-display
  description: VGA compatible controller
  product: SVGA II Adapter
  vendor: VMware
  physical id: 2
  bus info: pci@0000:00:02.0
  version: 00
  width: 32 bits
  clock: 33MHz
  capabilities: vga_controller bus_master rom
  configuration: driver=vmwgfx latency=64
  resources: irq:18 ioport:d010(size=16) memory:e0000000-e7ffffff memory:f0000000-f01fffff m
emory:c0000-dffff
WARNING: output may be incomplete or inaccurate, you should run this program as super-user.
pp@custom-server:~$ lspci | grep VGA
00:02.0 VGA compatible controller: VMware SVGA II Adapter
pp@custom-server:~$
```