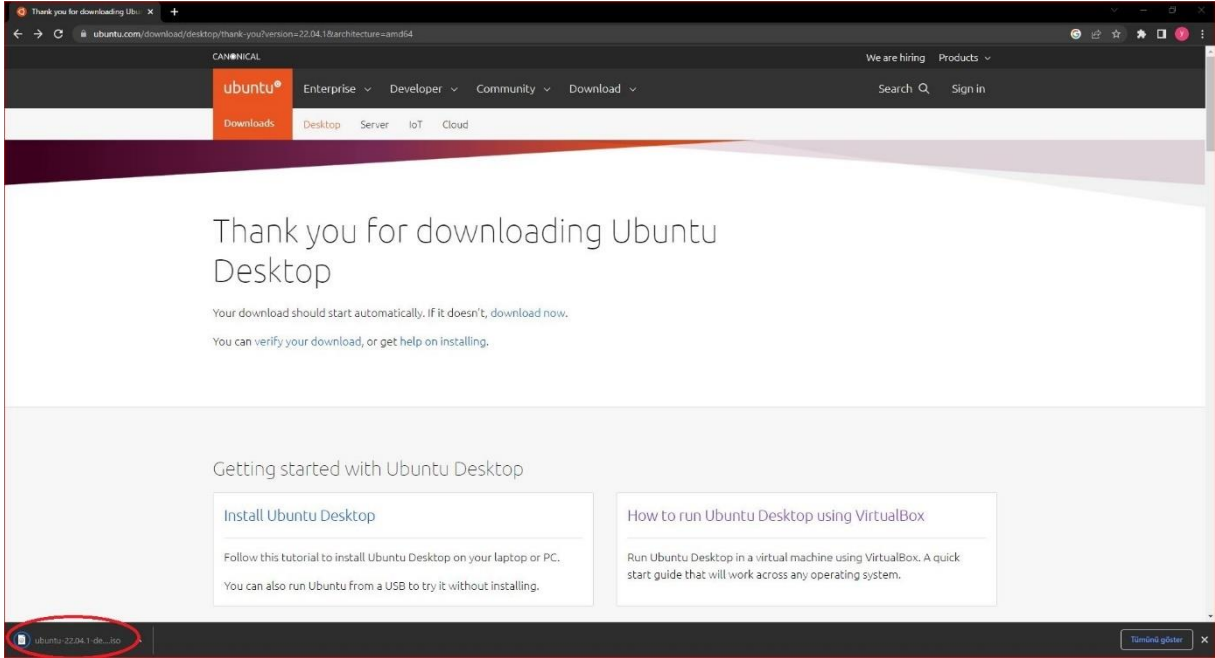
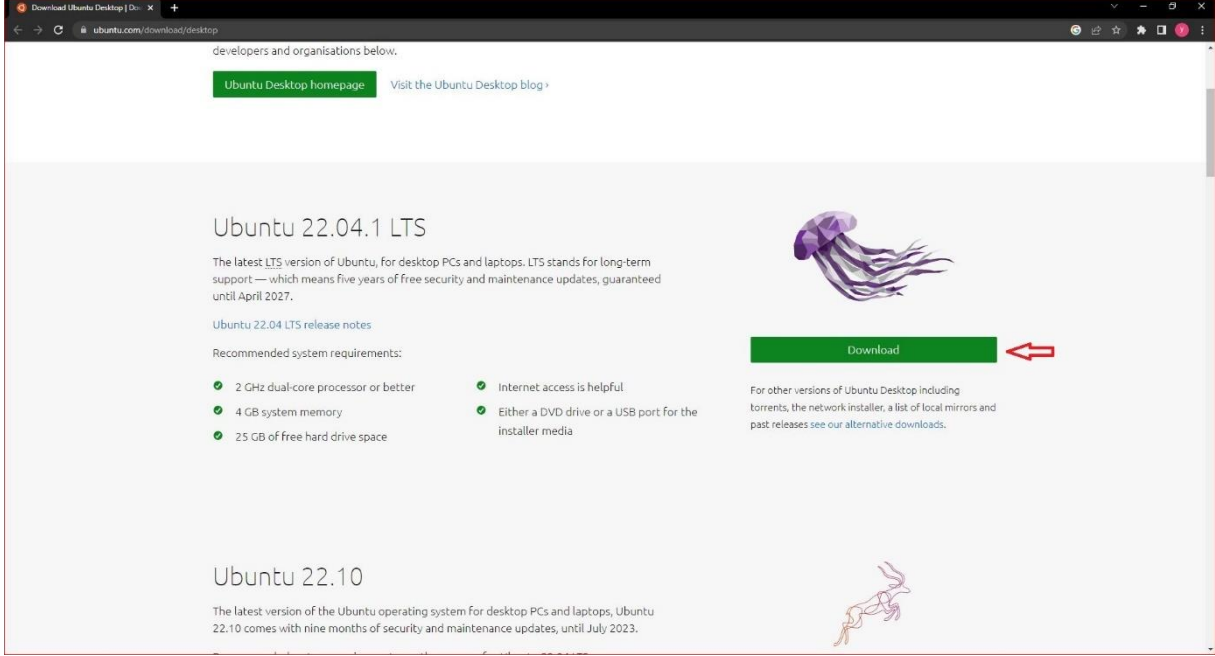
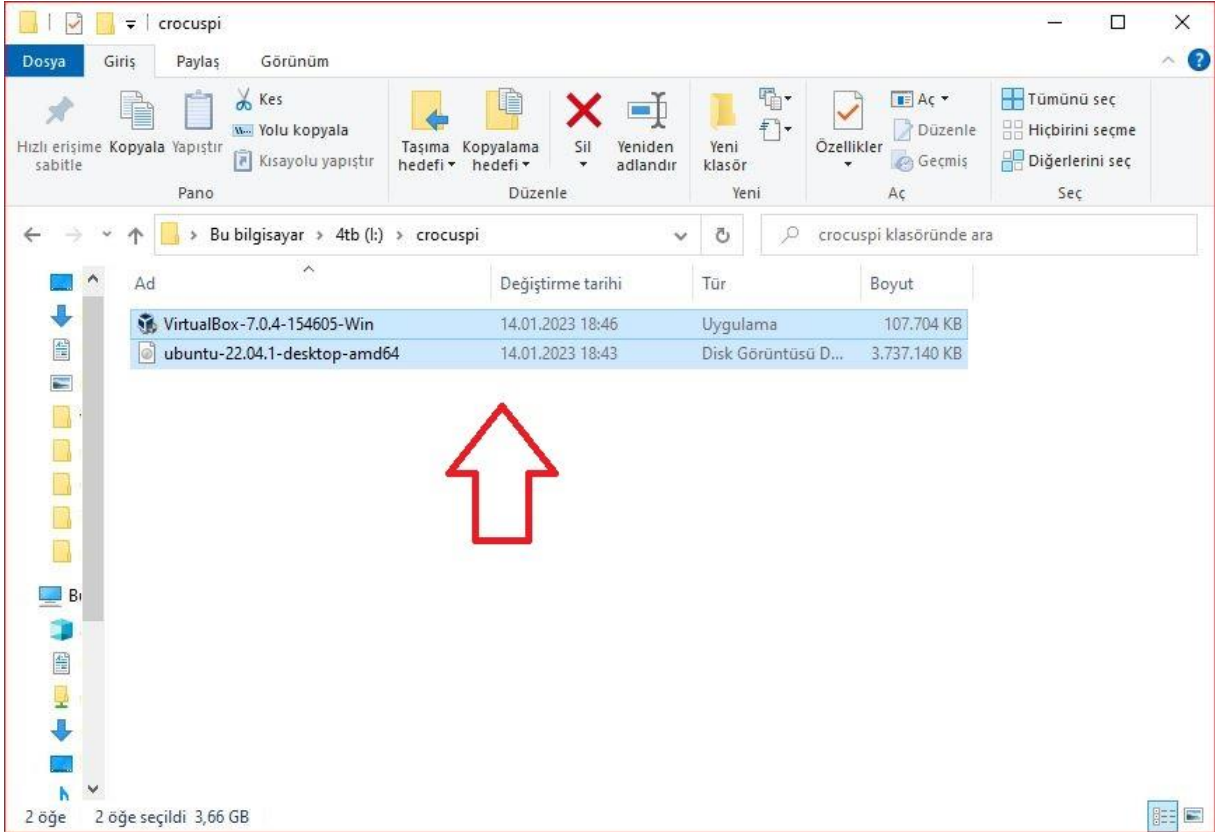
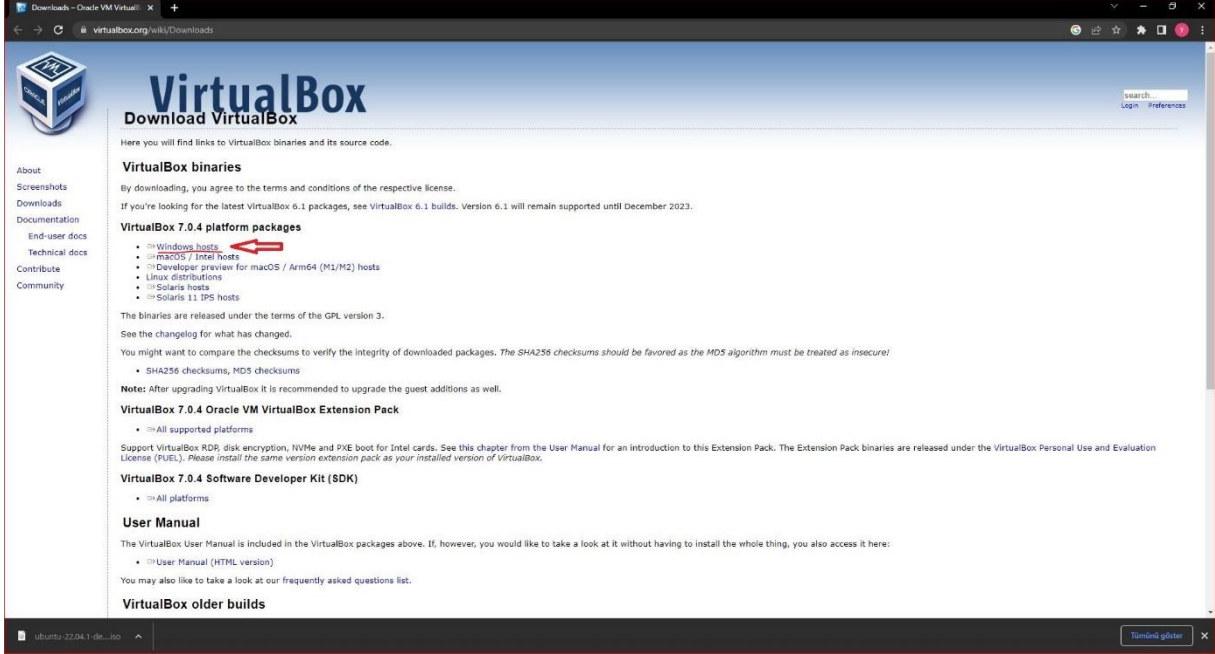


Virtual Box ve Ubuntu 22.04 Kurulumu

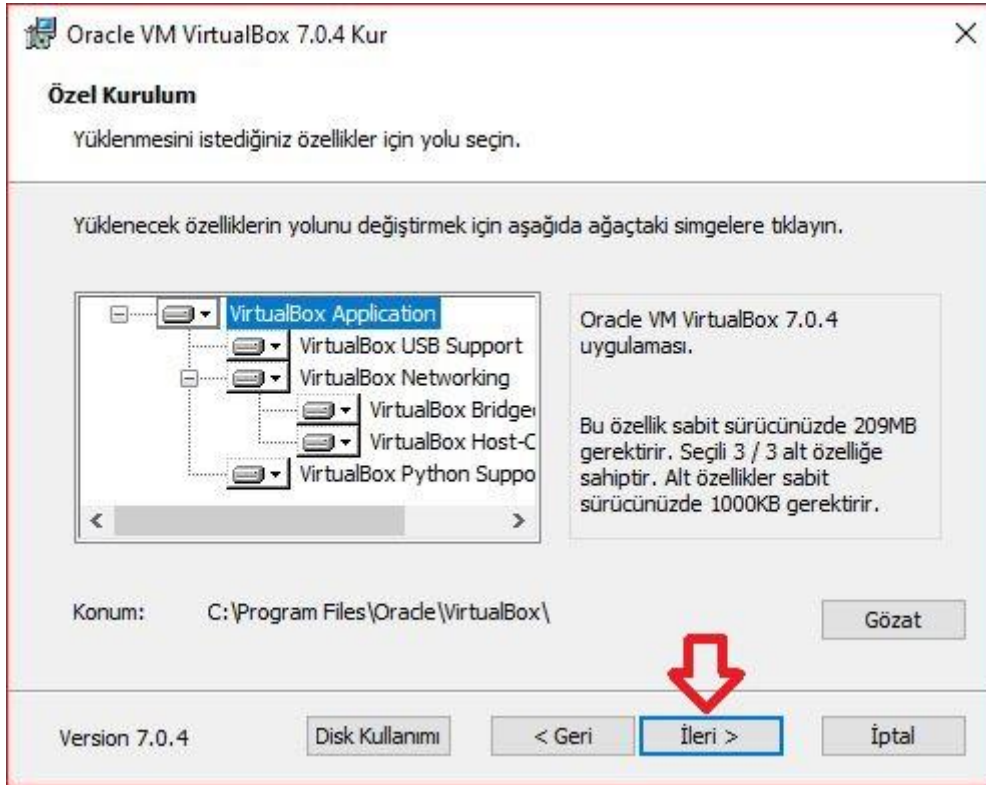
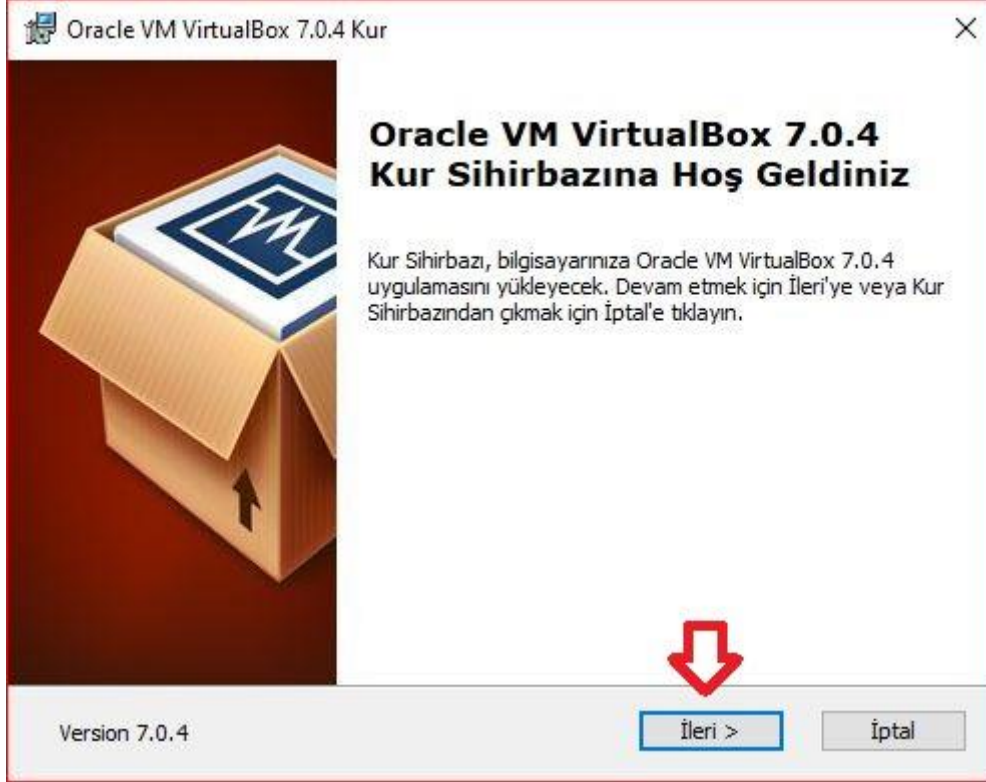
- 1- Ubuntu 22.04 imajını <https://ubuntu.com/download/desktop> adresinden veya CrocusPI uygulamalar [klasöründen](#) indirin.

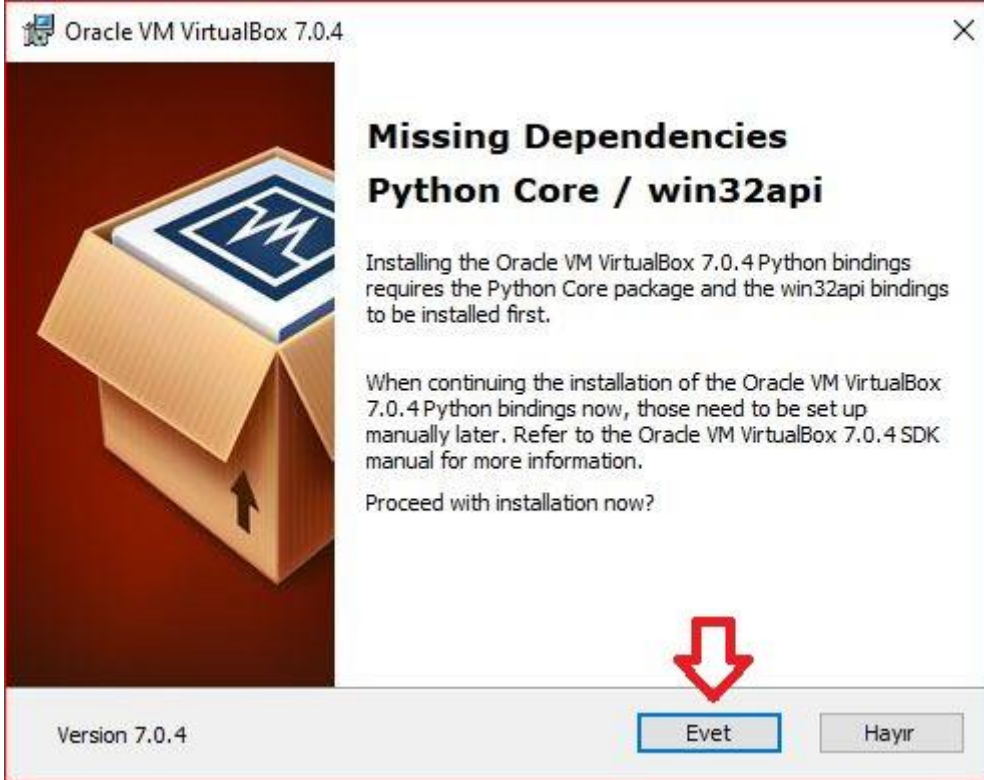
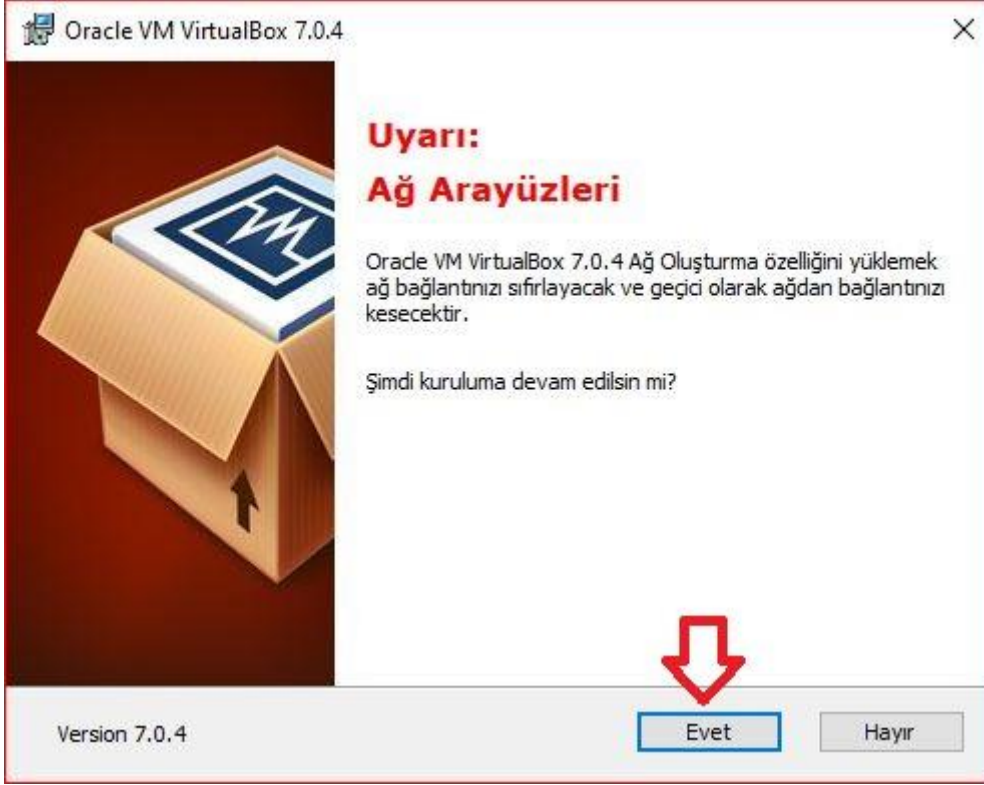


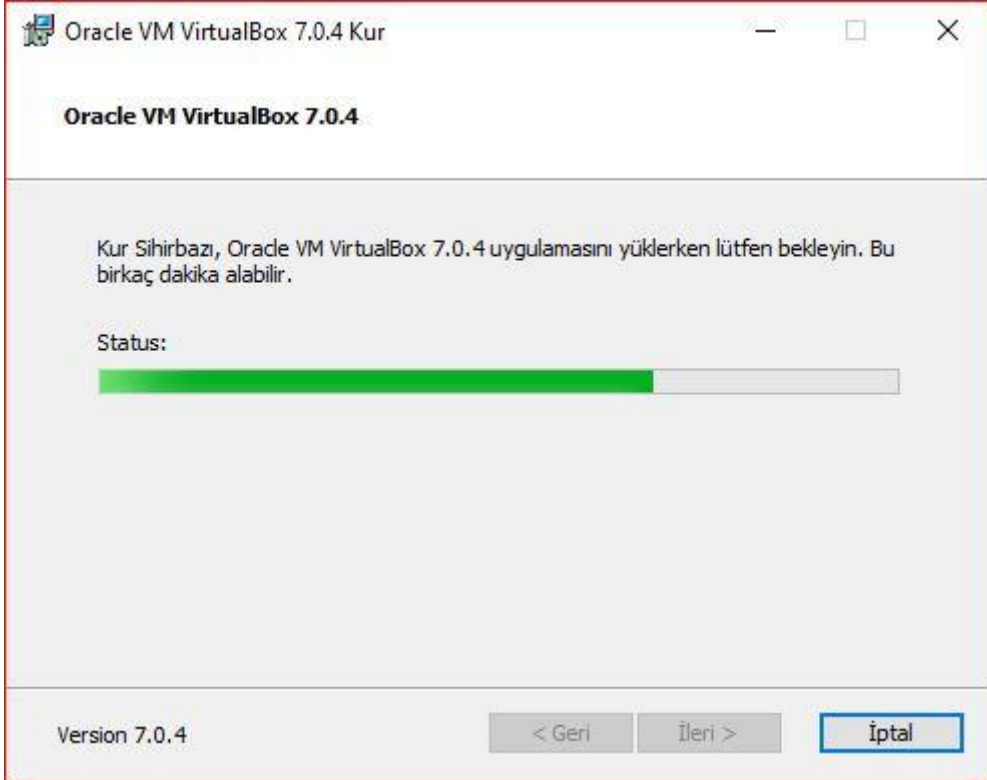
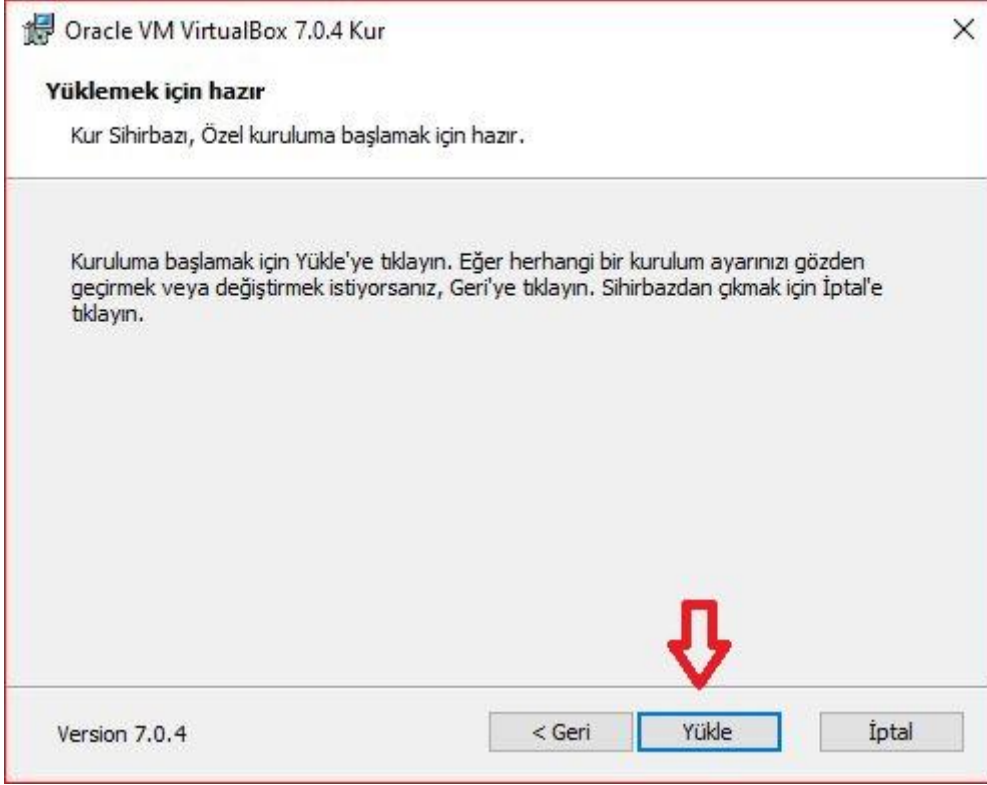
- 2- Oracle Virtual Box 7.0 yazılımını <https://www.virtualbox.org/wiki/Downloads> adresinden veya CrocusPI uygulamalar [klasöründen](#) indirin.



3- Virtual Box 'ı kurun.

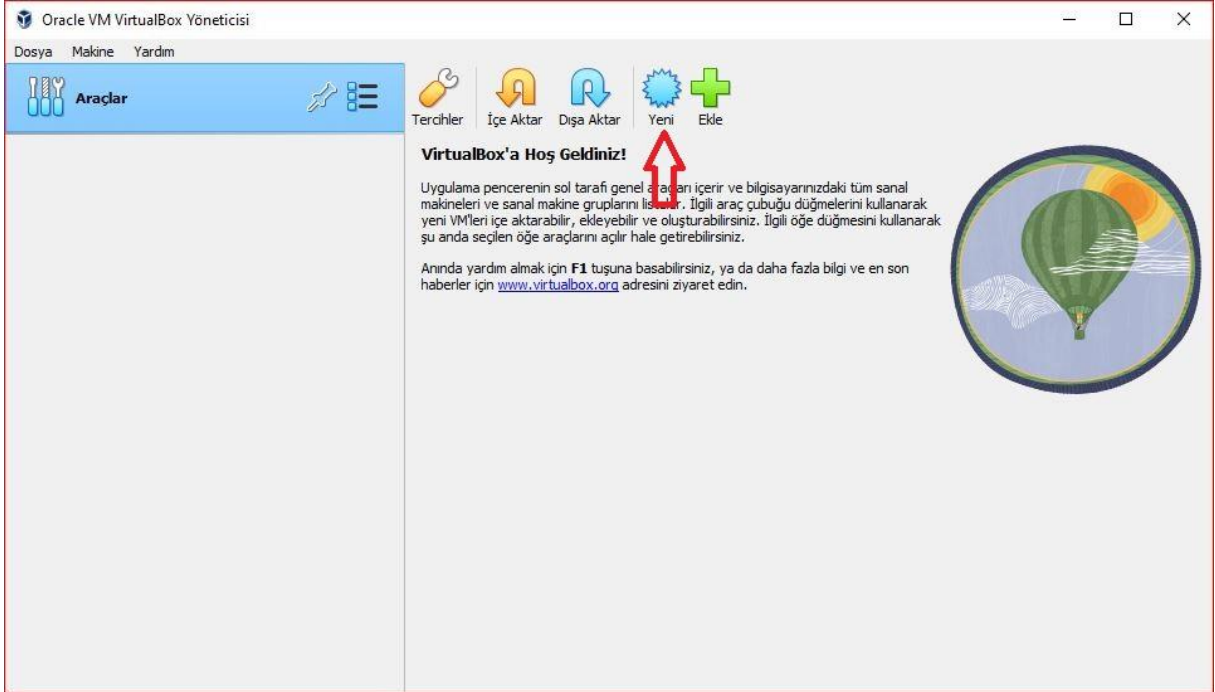




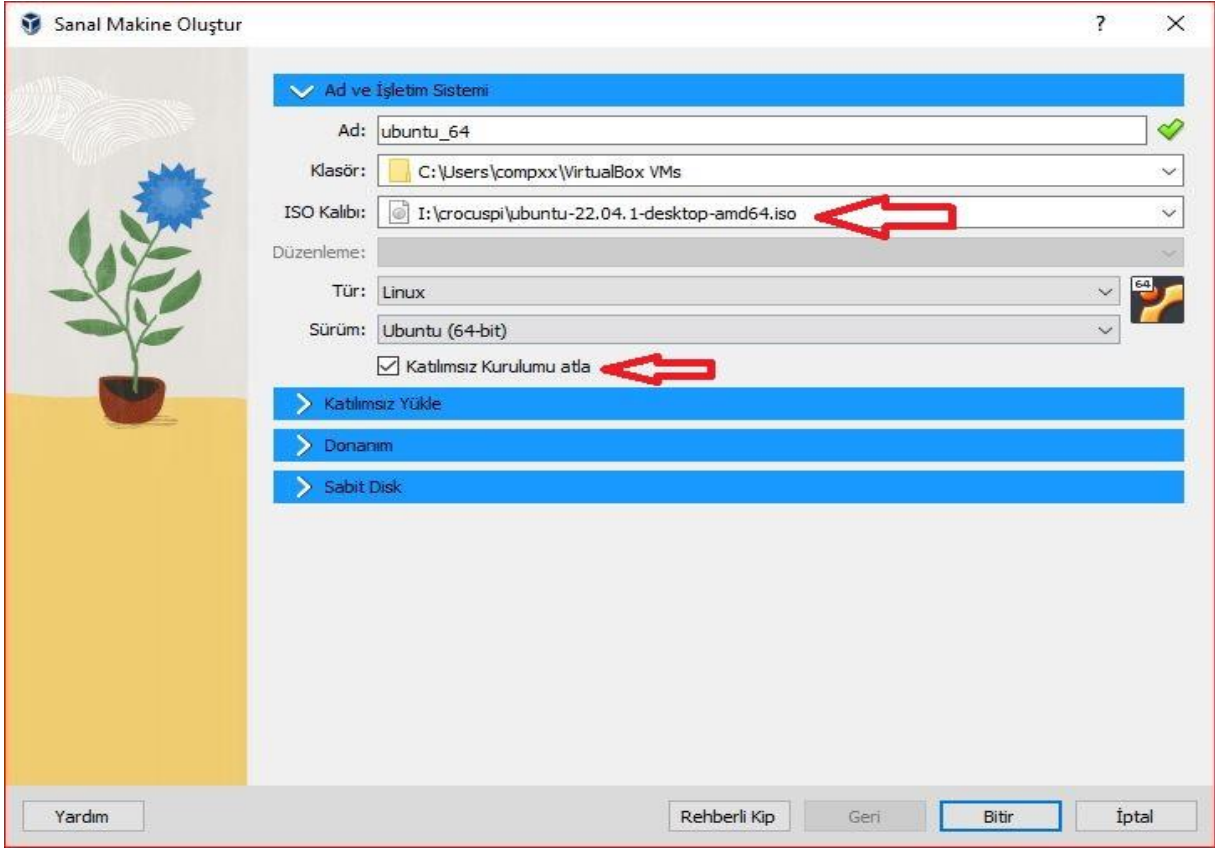




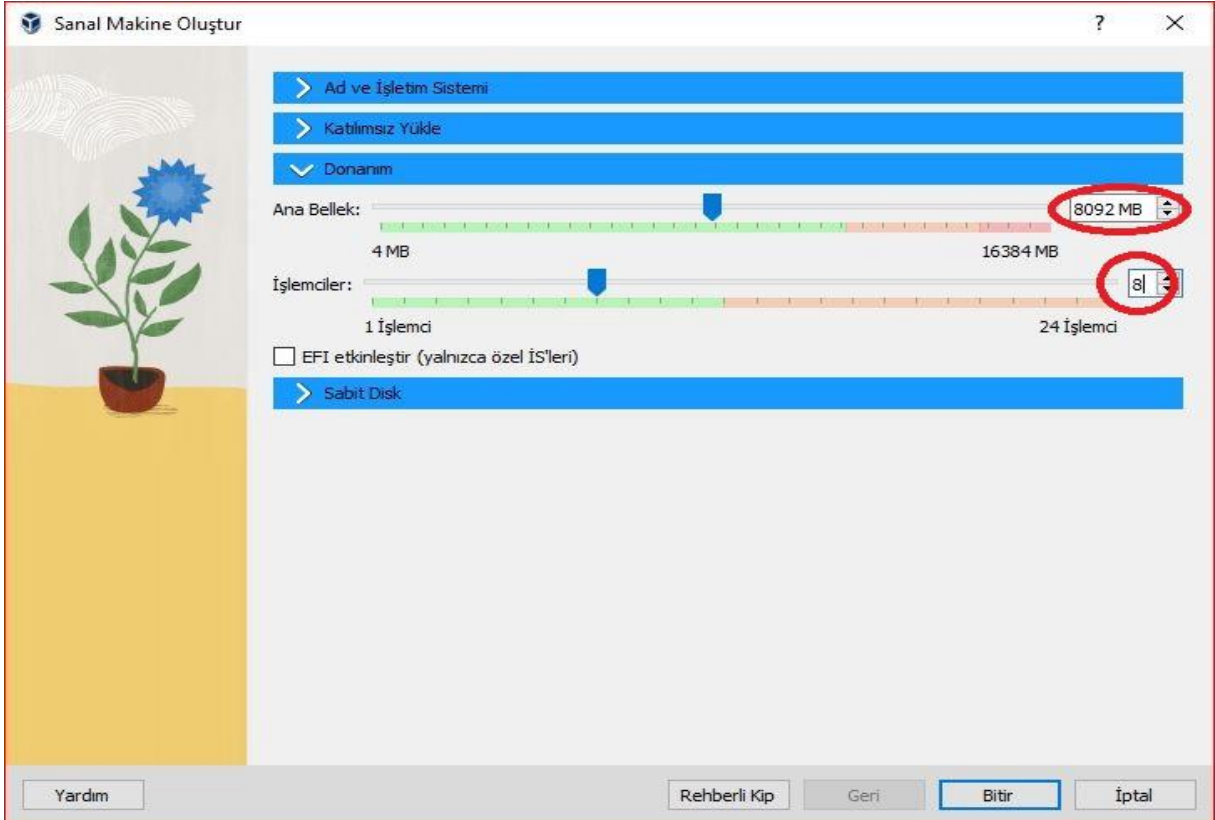
4- Yeni bir sanal makine kurmak için “Yeni” seçeneğine tıklayın.



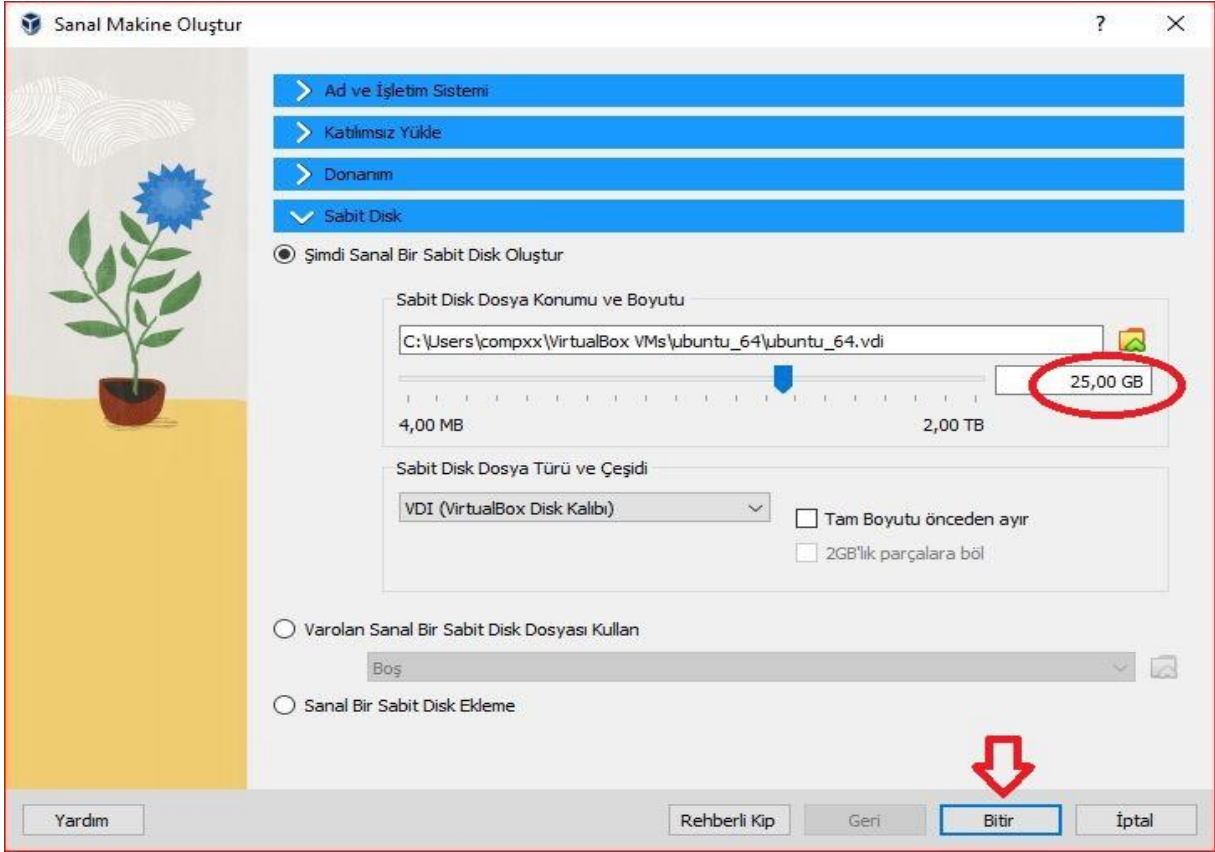
- 5- ISO kalıbı olarak indirilen Ubuntu imajını ekleyin. “Katılımsız kurulumu atla” seçeneğini işaretleyin.



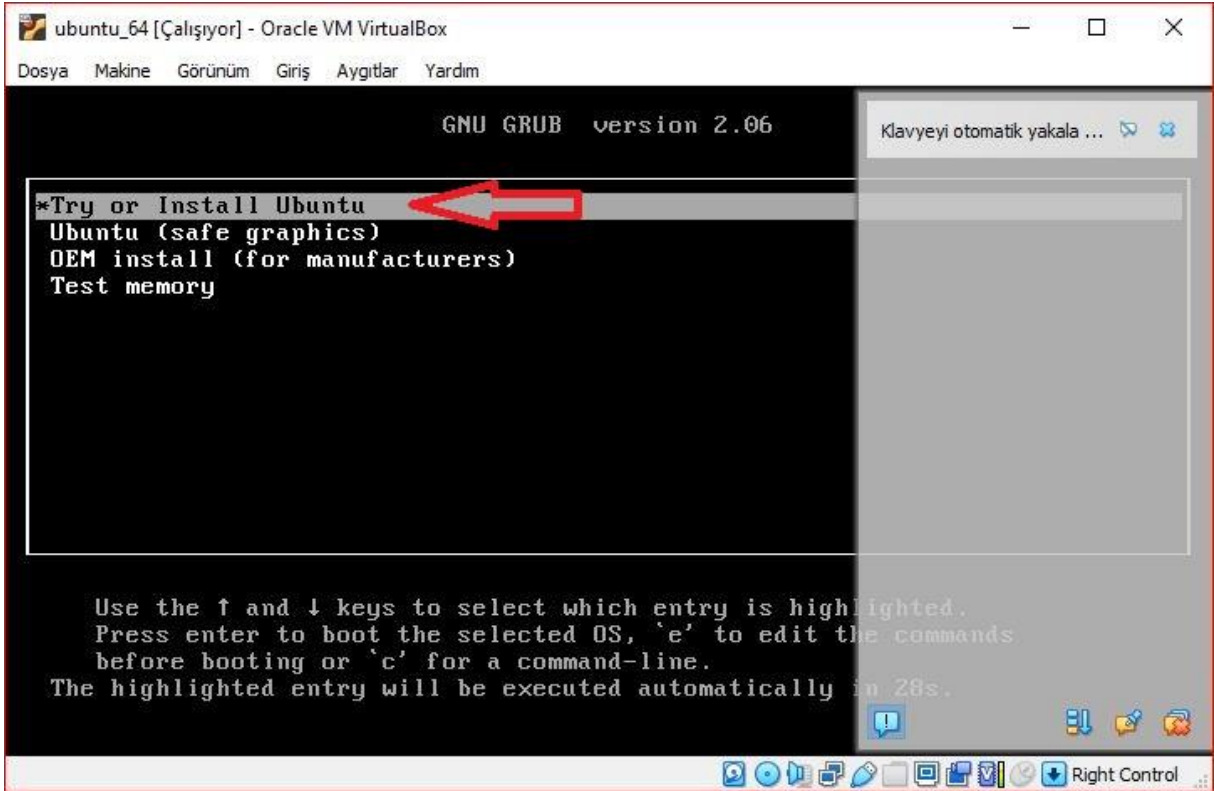
- 6- Donanım başlığında bilgisayar donanımınıza göre bellek ve işlemci ayarlarını yapın.

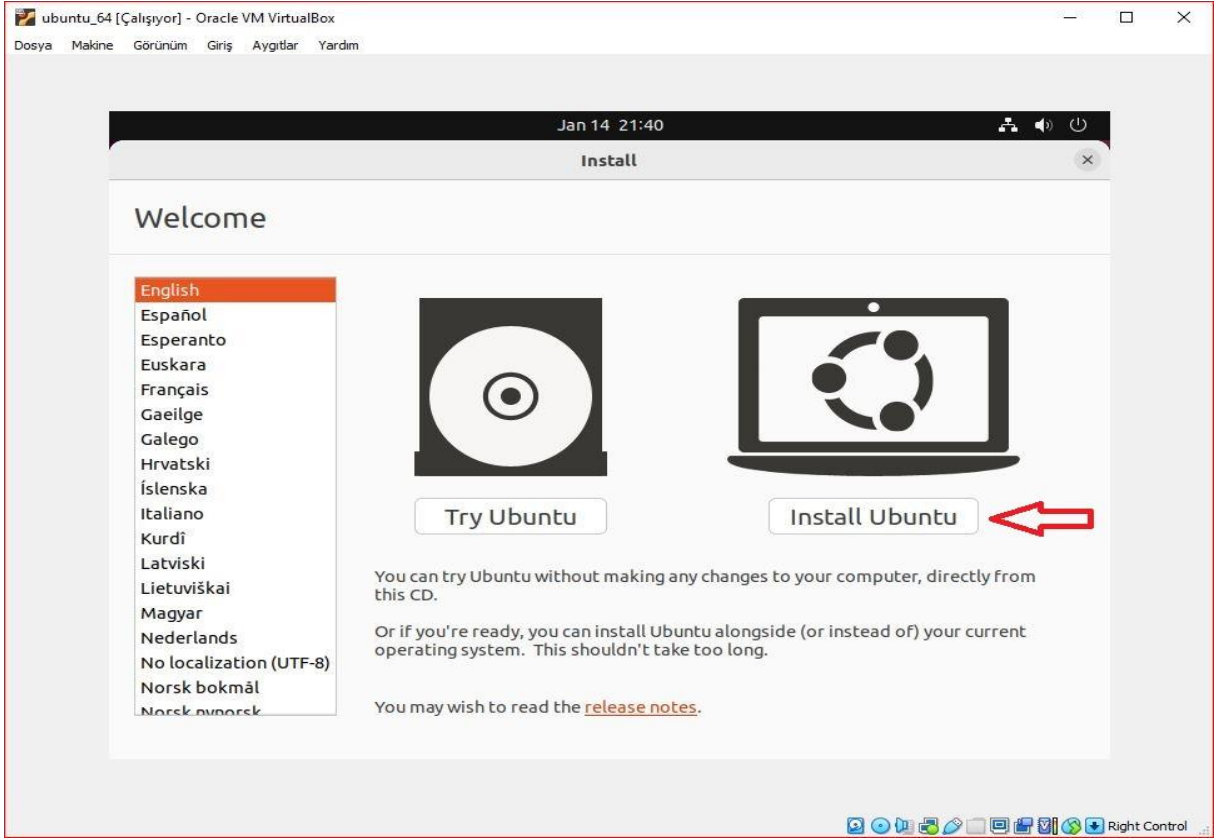


7- Sabit Disk boyutunu ayarlayın ve “Bitir” ile sistemi başlatın.

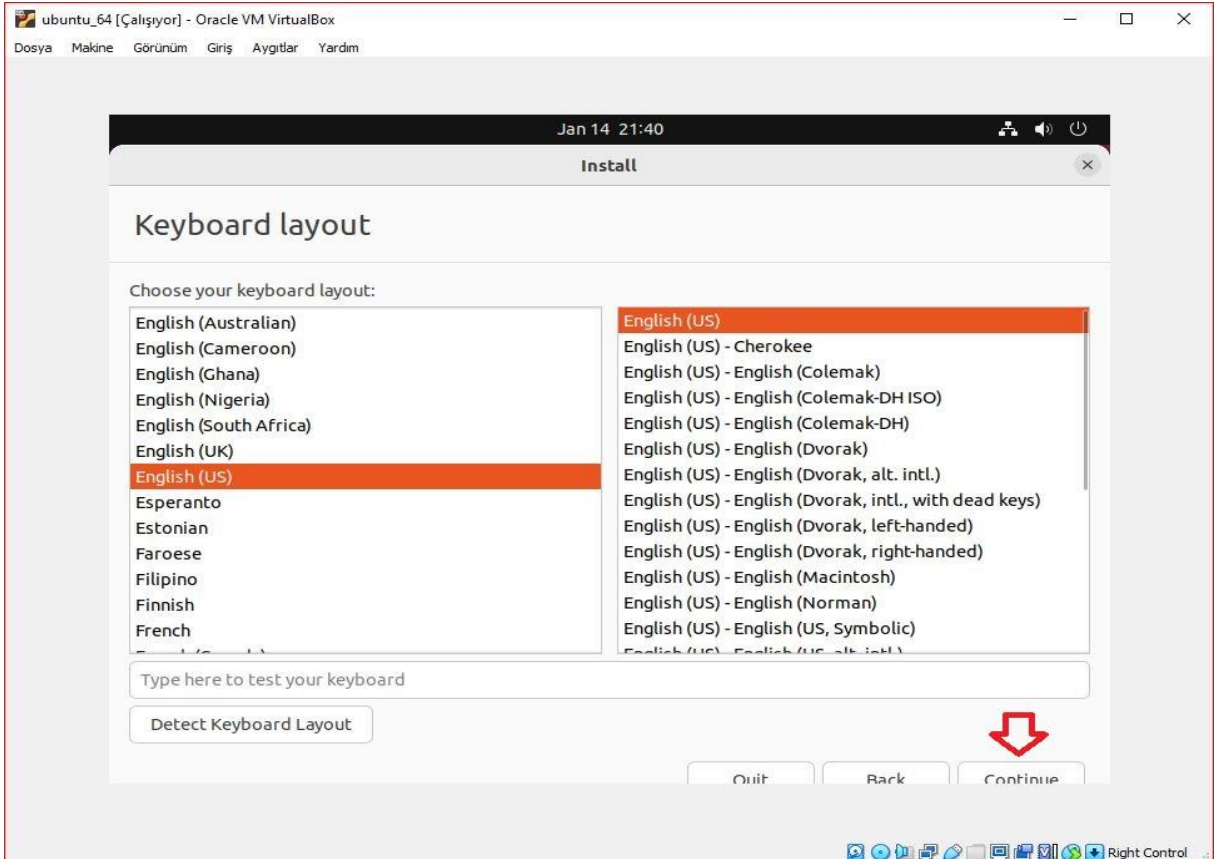


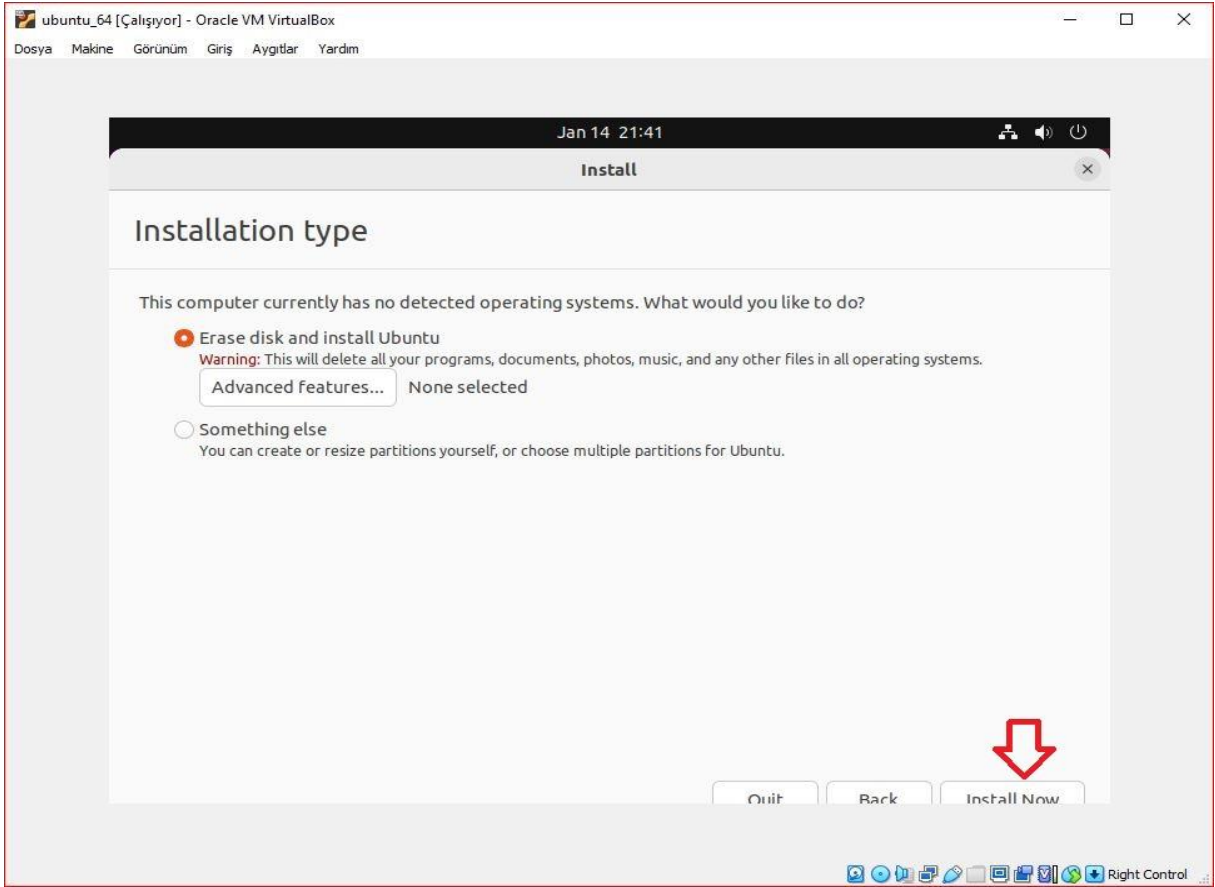
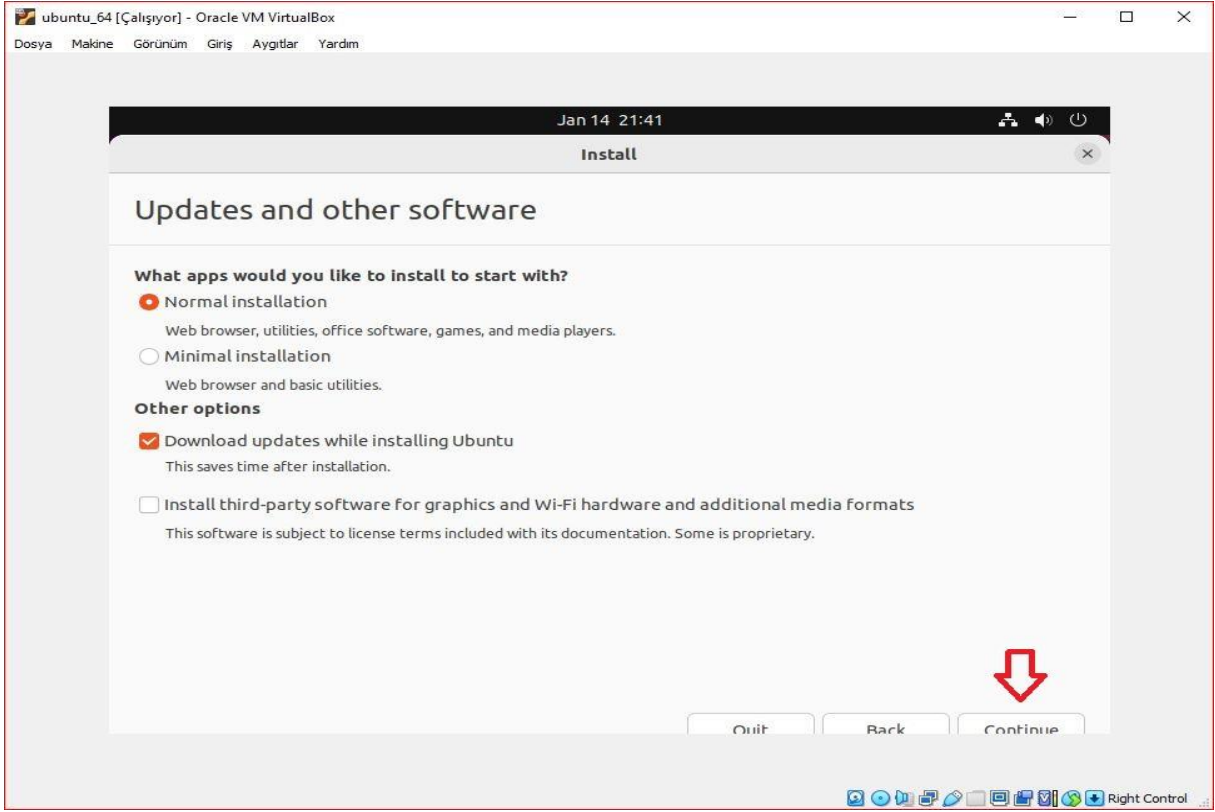
8- Ubuntu başlangıç seçeneklerinde Kurulumu seçin.

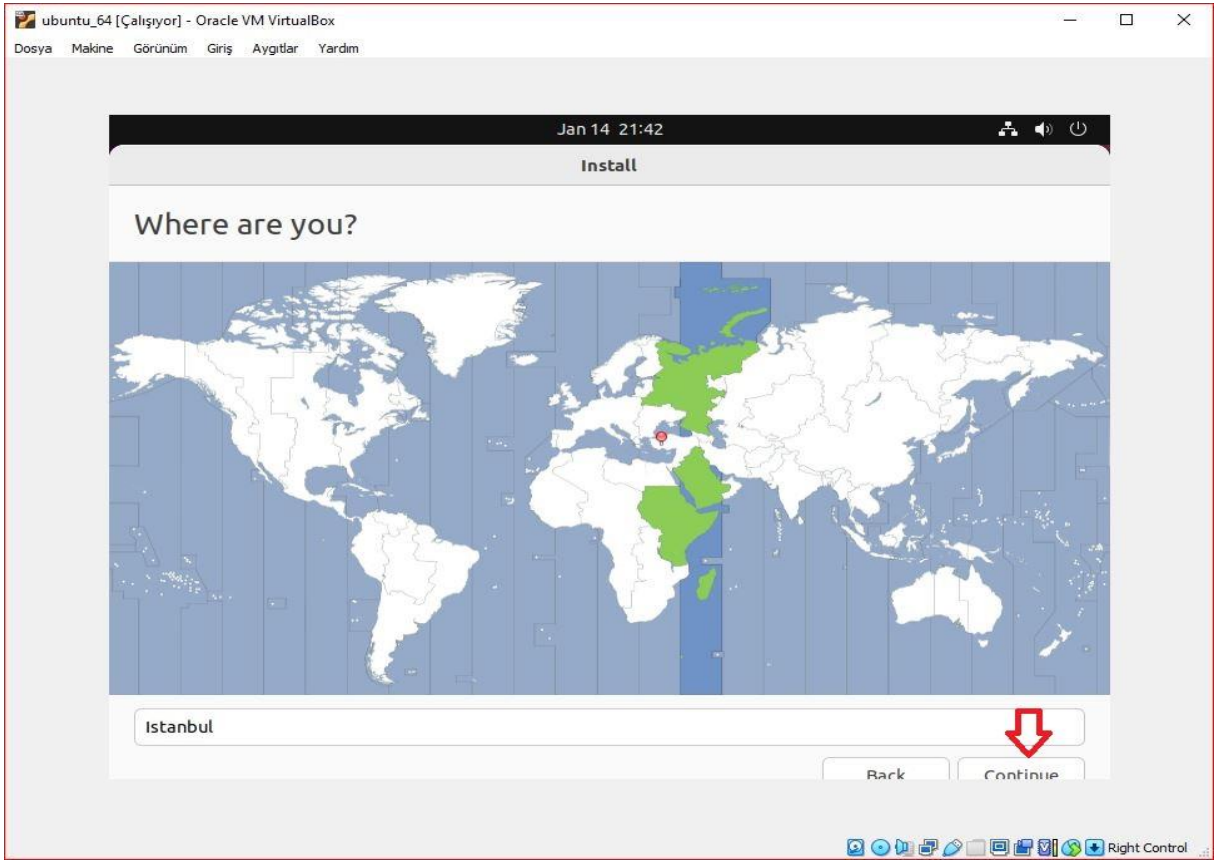
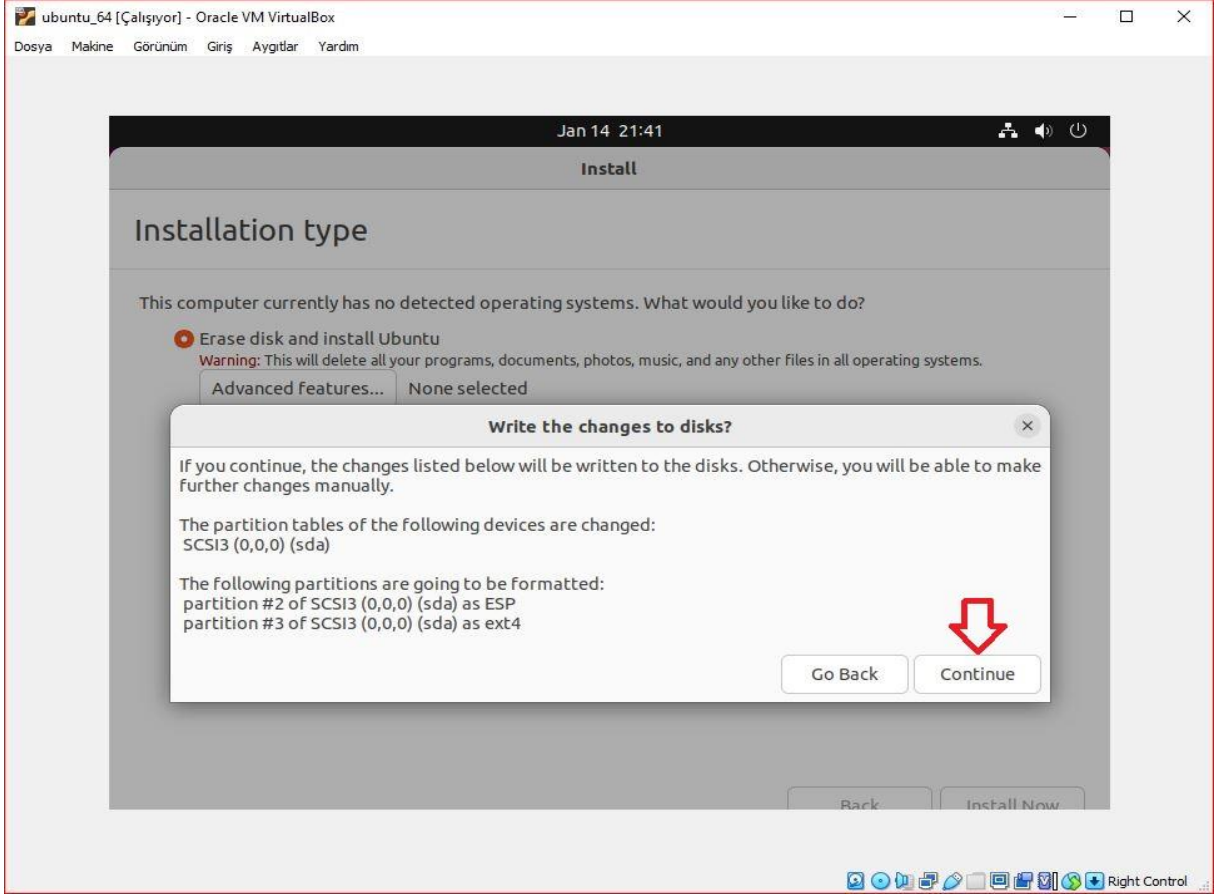




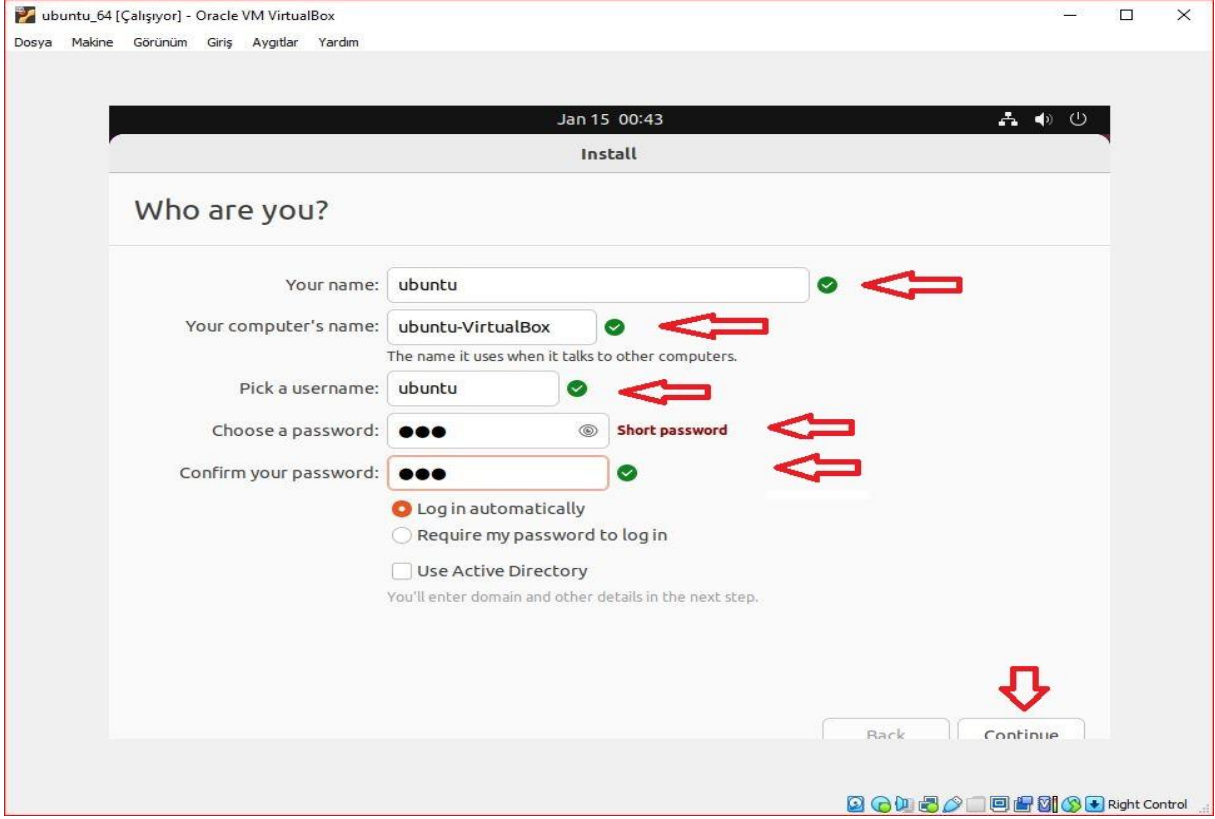
9- Klavye ayarınızı seçin.



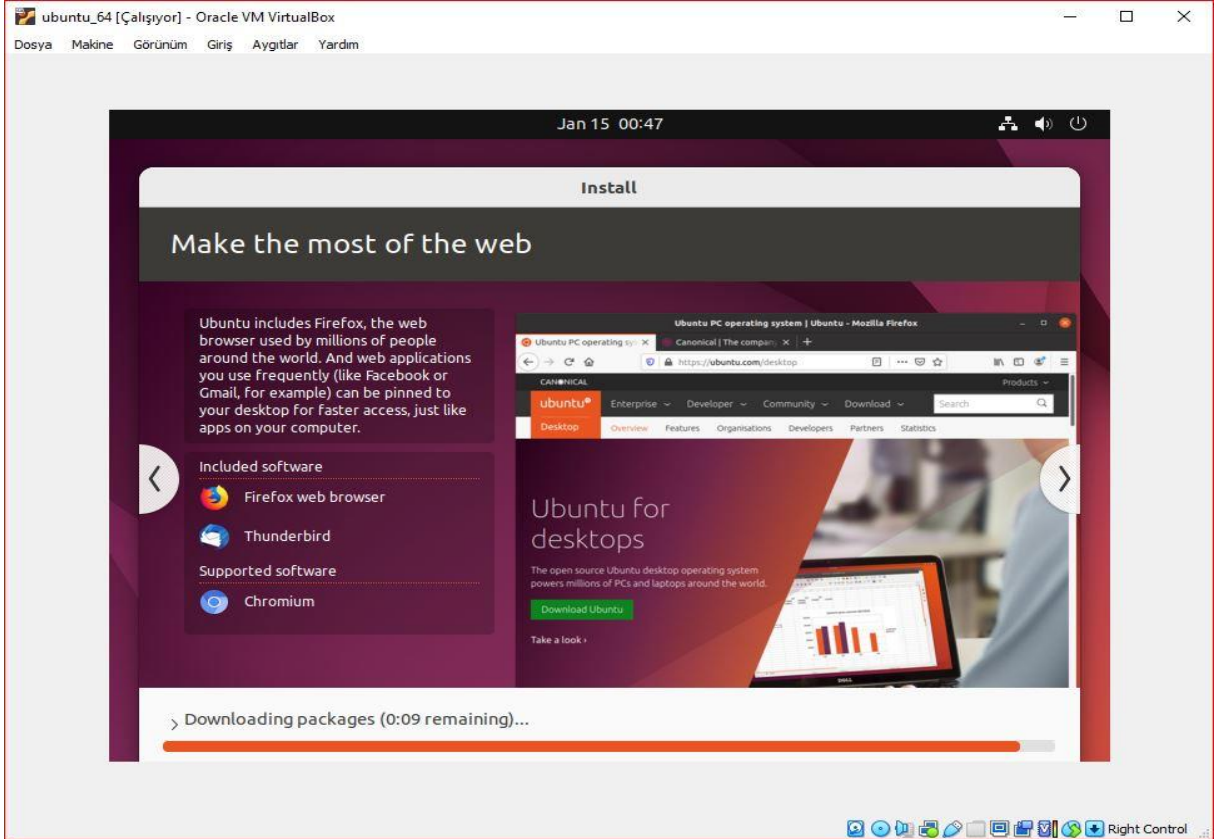




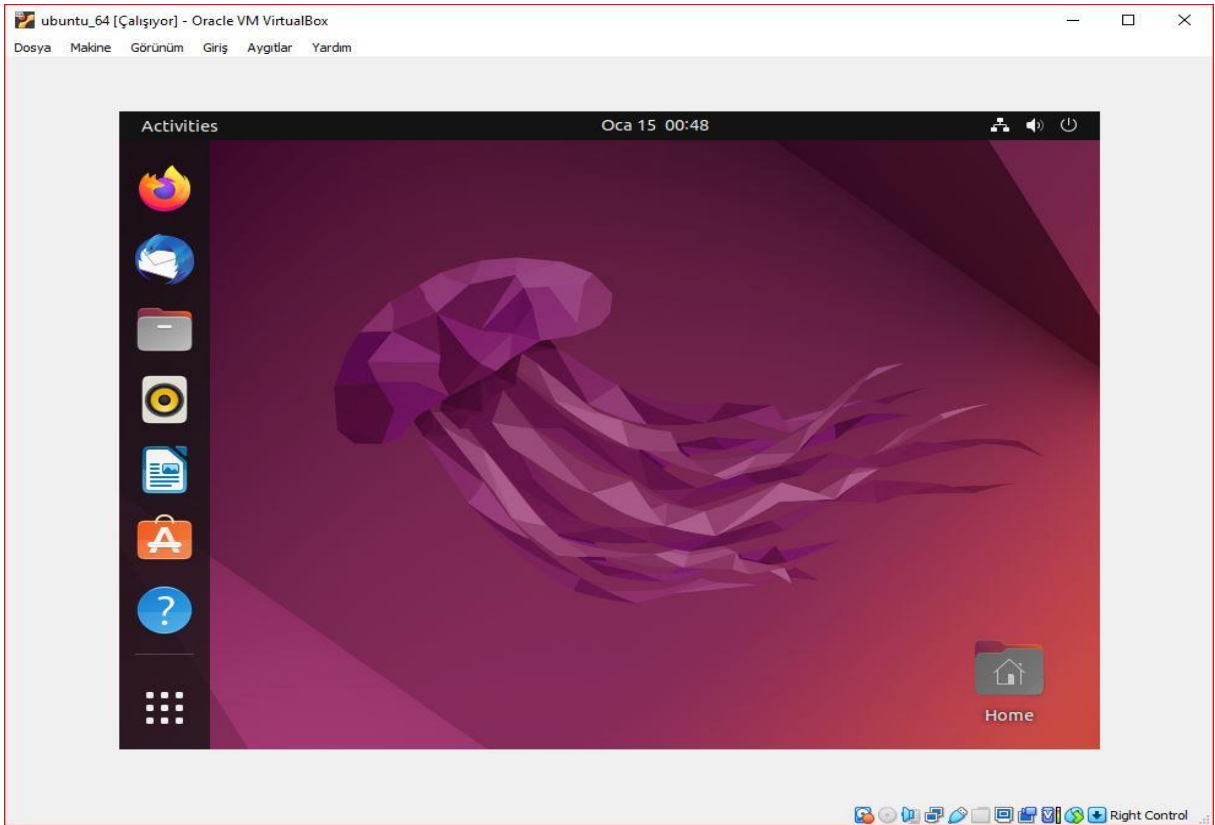
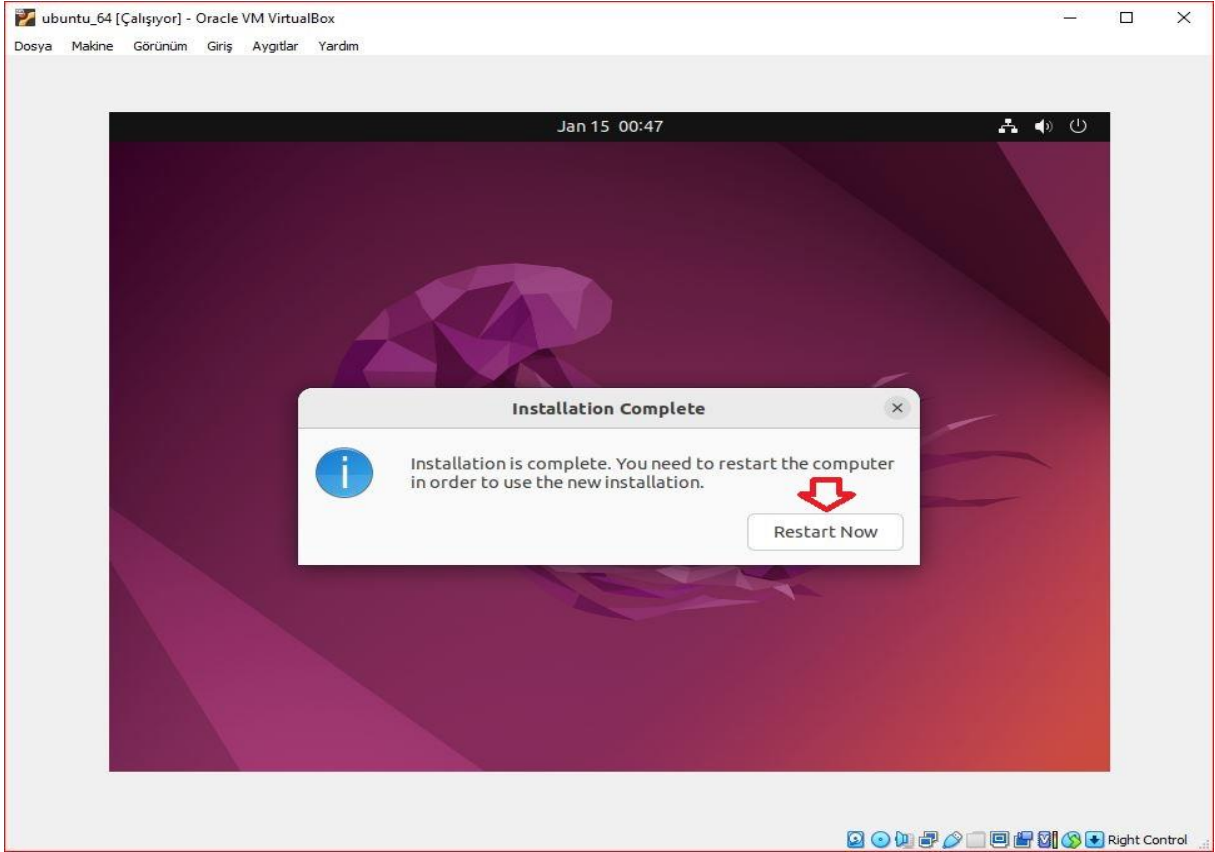
10- Ubuntu bilgisayar adı ve kullanıcı adı şifrenizi belirleyin.



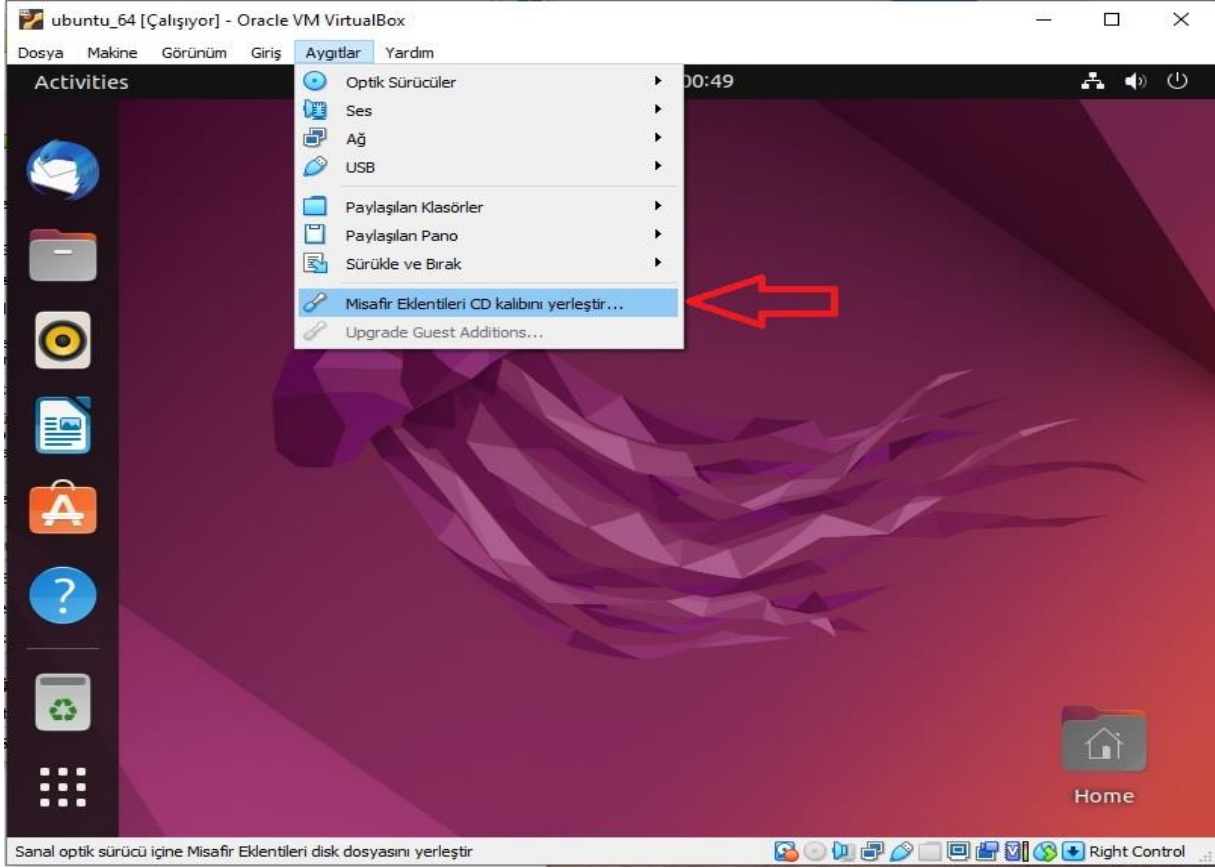
11- Kurulumun tamamlanmasını bekleyin.



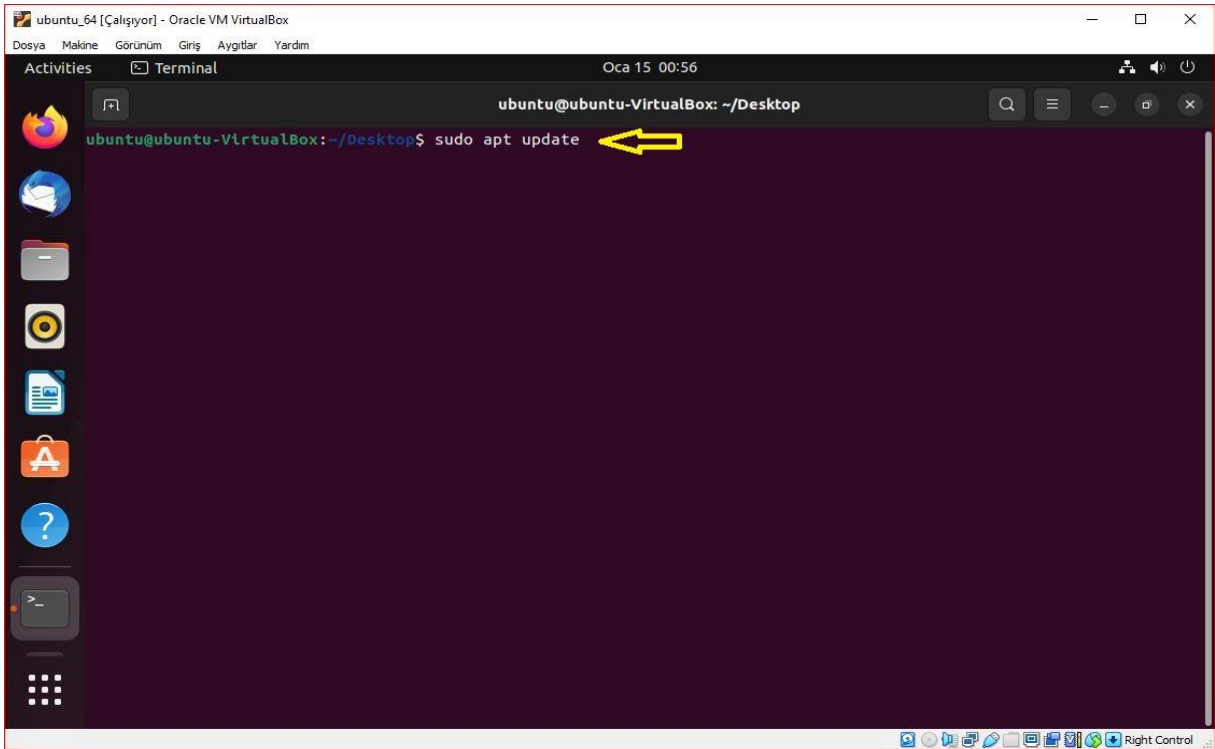
12- Kurulum tamamlandıktan sonra makineyi restart edin.



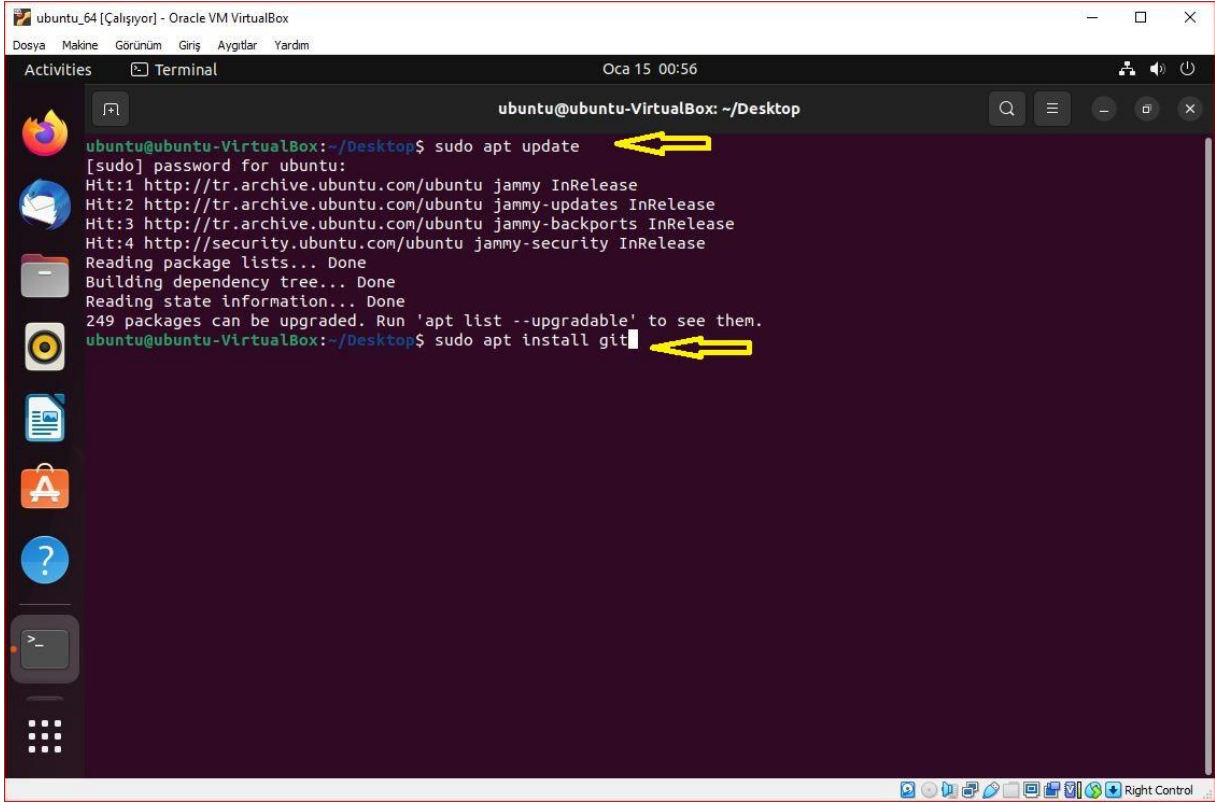
13- Misafir eklentileri kurulumunu gerçekleştirin. Kurulum bu işlem ile tamamlanmış olacak.



14- “**sudo apt update**” komutu ile paket yükleyicisini güncelleştirin.

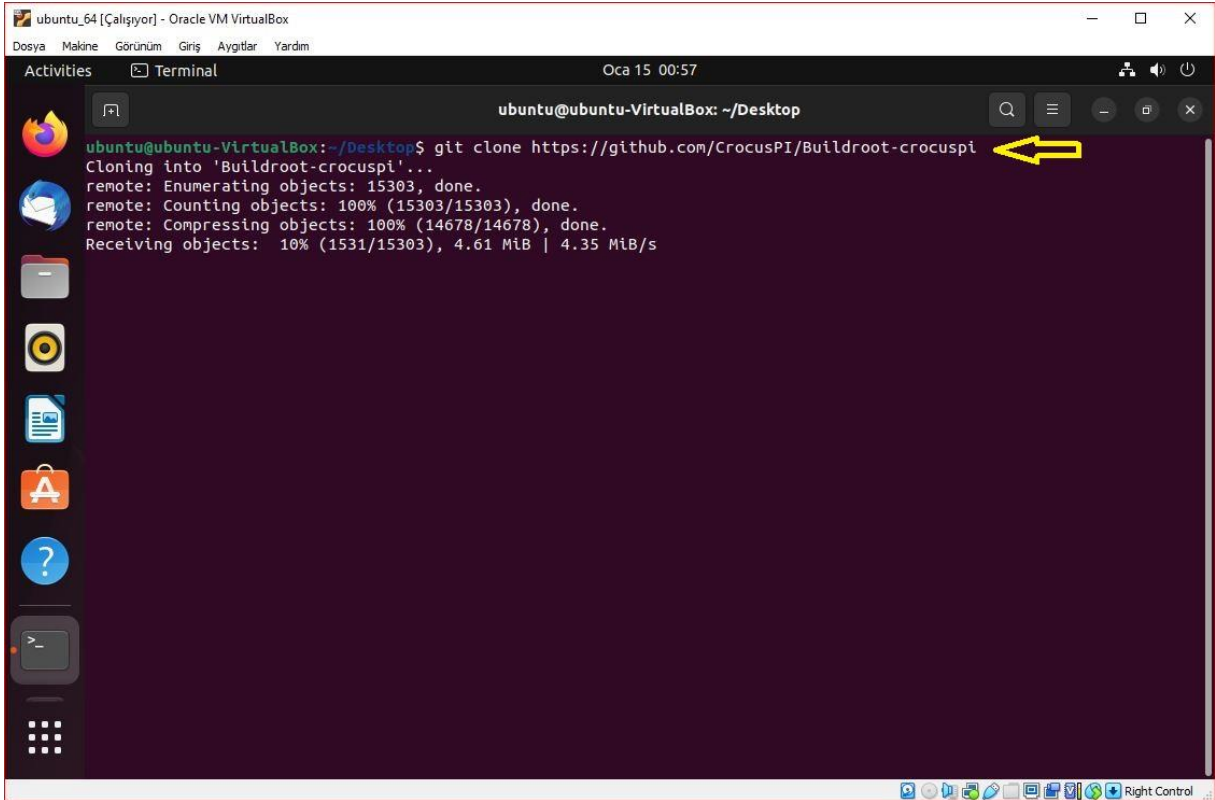


15- “**sudo apt install git**” komutu ile git uygulamasını kurun.



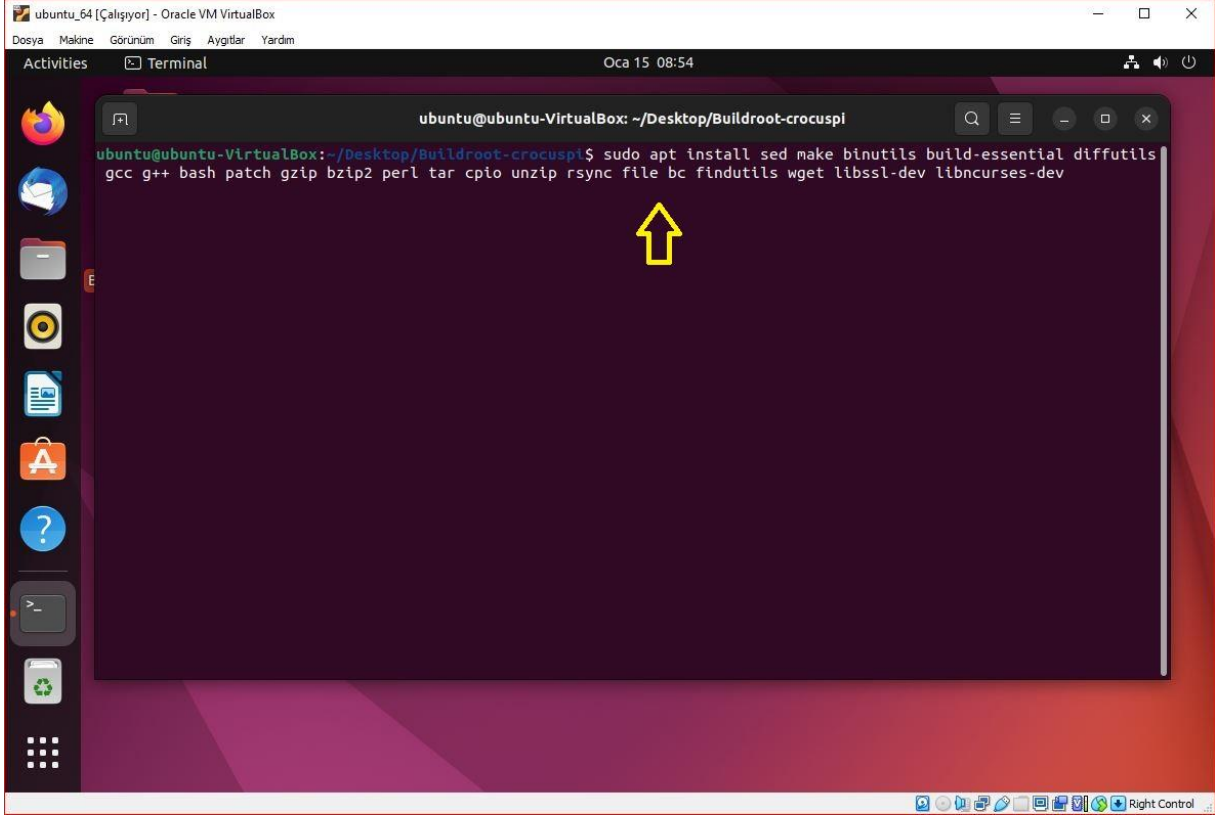
```
ubuntu_64 [Çalışıyor] - Oracle VM VirtualBox
Dosya Makine Görünüm Giriş Aygıtlar Yardım
Activities Terminal Oca 15 00:56
ubuntu@ubuntu-VirtualBox: ~/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo apt update
[sudo] password for ubuntu:
Hit:1 http://tr.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://tr.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://tr.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
249 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ubuntu-VirtualBox:~/Desktop$ sudo apt install git
```

16- “**git clone <https://github.com/CrocusPI/Buildroot-crocuspi>**” komutu ile github deposunu bilgisayarınıza klonlayın.



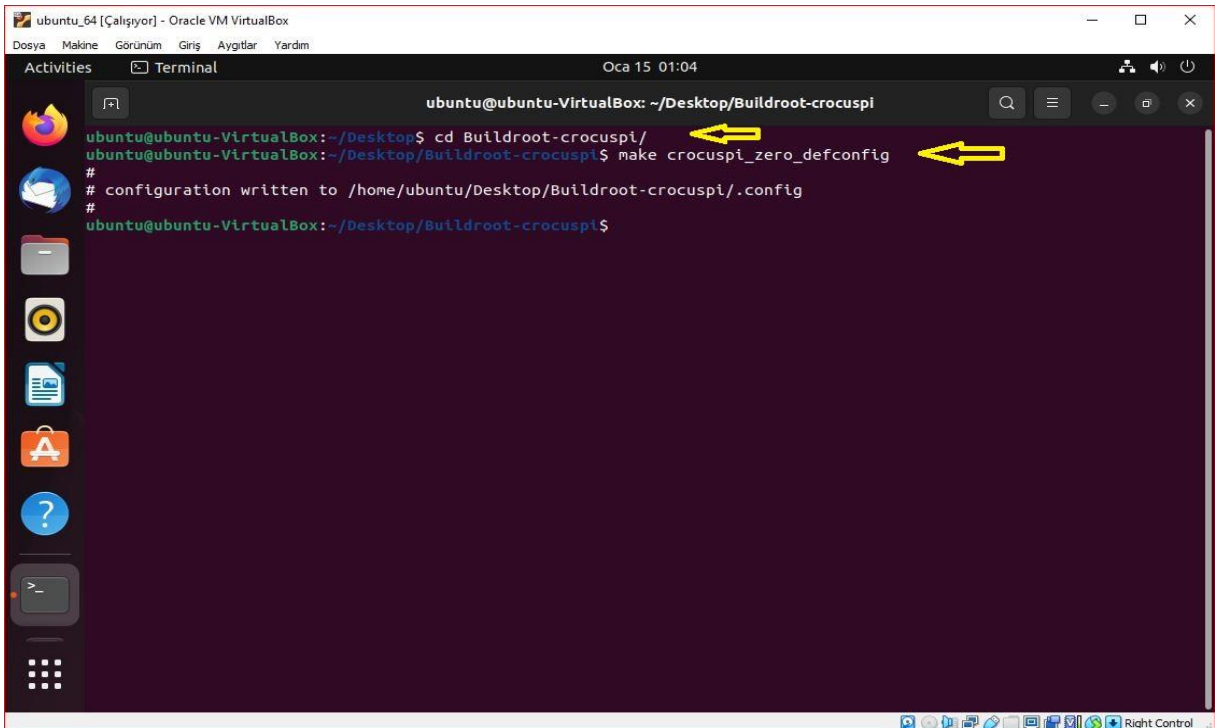
```
ubuntu_64 [Çalışıyor] - Oracle VM VirtualBox
Dosya Makine Görünüm Giriş Aygıtlar Yardım
Activities Terminal Oca 15 00:57
ubuntu@ubuntu-VirtualBox: ~/Desktop
ubuntu@ubuntu-VirtualBox:~/Desktop$ git clone https://github.com/CrocusPI/Buildroot-crocuspi
Cloning into 'Buildroot-crocuspi'...
remote: Enumerating objects: 15303, done.
remote: Counting objects: 100% (15303/15303), done.
remote: Compressing objects: 100% (14678/14678), done.
Receiving objects: 10% (1531/15303), 4.61 MiB | 4.35 MiB/s
```

- 17- “**sudo apt install sed make binutils build-essential diffutils gcc g++ bash patch gzip bzip2 perl tar cpio unzip rsync file bc findutils wget libssl-dev libncurses-dev**” komutu ile derleme işlemleri için gerekli uygulamaları kurun.



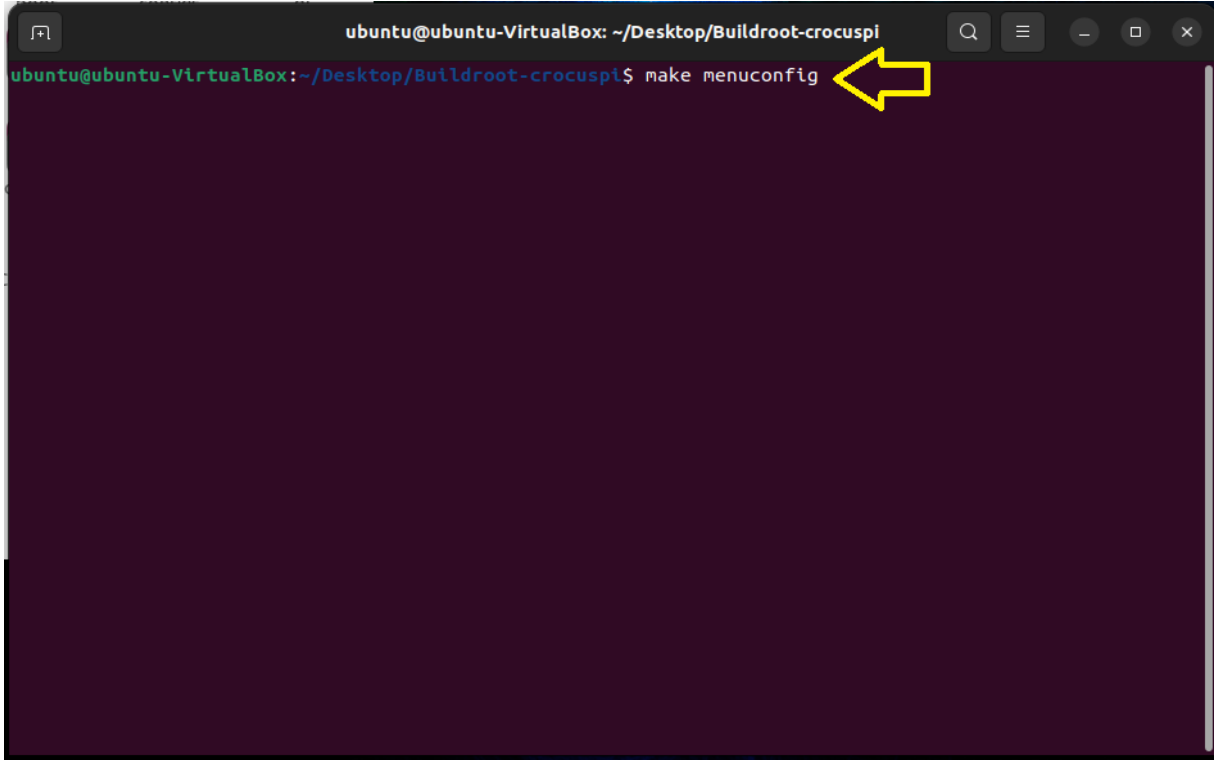
```
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-crocuspi
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-crocuspi$ sudo apt install sed make binutils build-essential diffutils gcc g++ bash patch gzip bzip2 perl tar cpio unzip rsync file bc findutils wget libssl-dev libncurses-dev
```

- 18- Buildroot klasöründe iken “**make crocuspi_zero_defconfig**” komutu ile CrocusPI ayarlarını yükleyin.

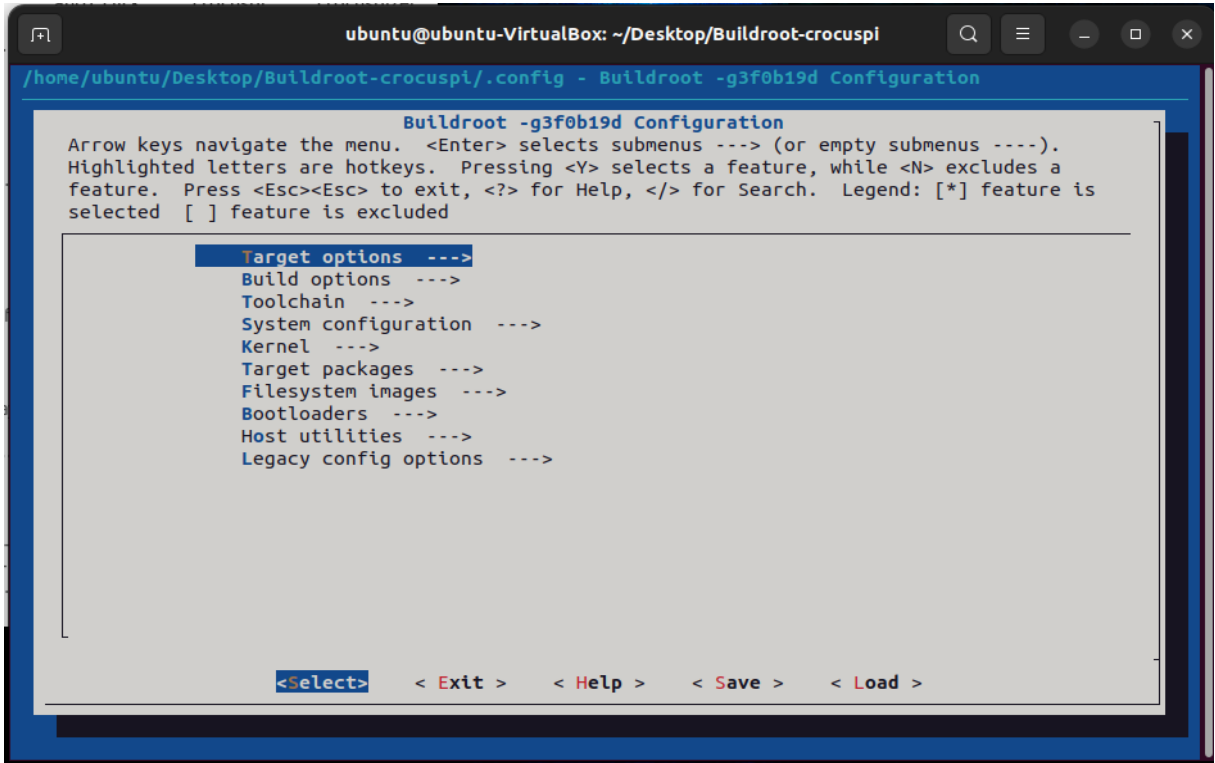


```
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-crocuspi
ubuntu@ubuntu-VirtualBox:~/Desktop$ cd Buildroot-crocuspi/
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-crocuspi$ make crocuspi_zero_defconfig
# configuration written to /home/ubuntu/Desktop/Buildroot-crocuspi/.config
#
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-crocuspi$
```


19- “make menuconfig” komutu ile **Buildroot paketlerini özelleştirebilirsiniz**. İstedığınız uygulamaları ekleyip çıkarabilirsiniz.



```
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-crocuspi
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-crocuspi$ make menuconfig
```



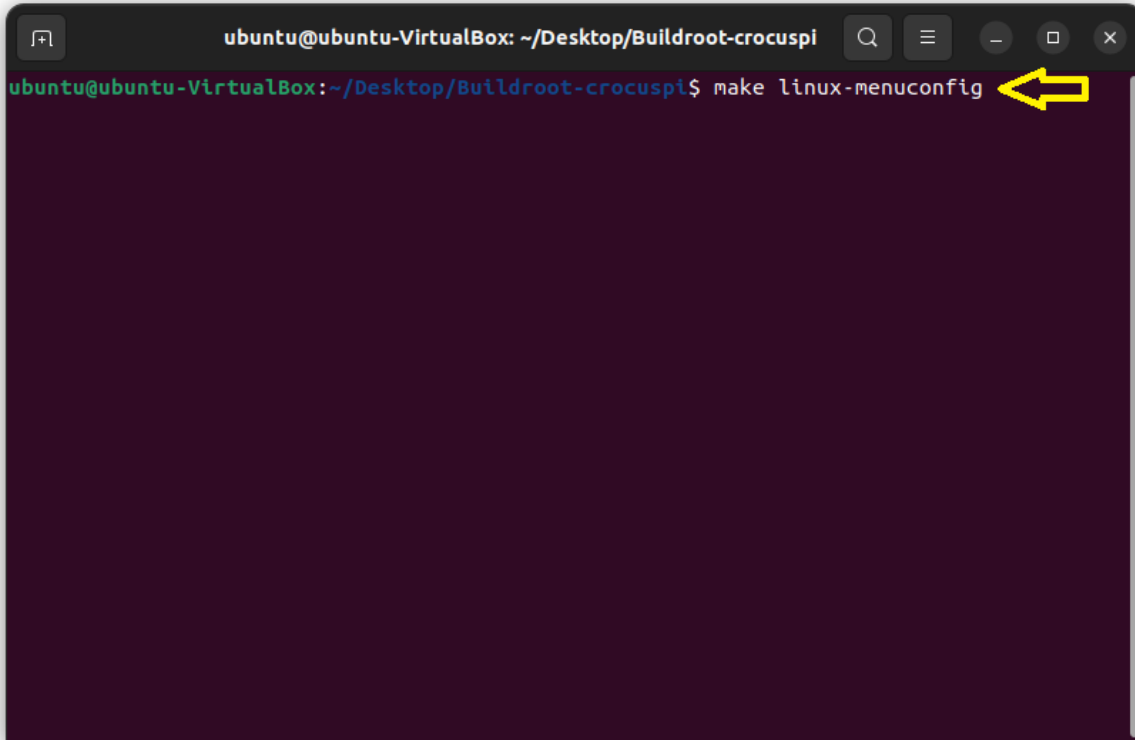
```
/home/ubuntu/Desktop/Buildroot-crocuspi/.config - Buildroot -g3f0b19d Configuration

Buildroot -g3f0b19d Configuration
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----).
Highlighted letters are hotkeys. Pressing <Y> selects a feature, while <N> excludes a
feature. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] feature is
selected [ ] feature is excluded

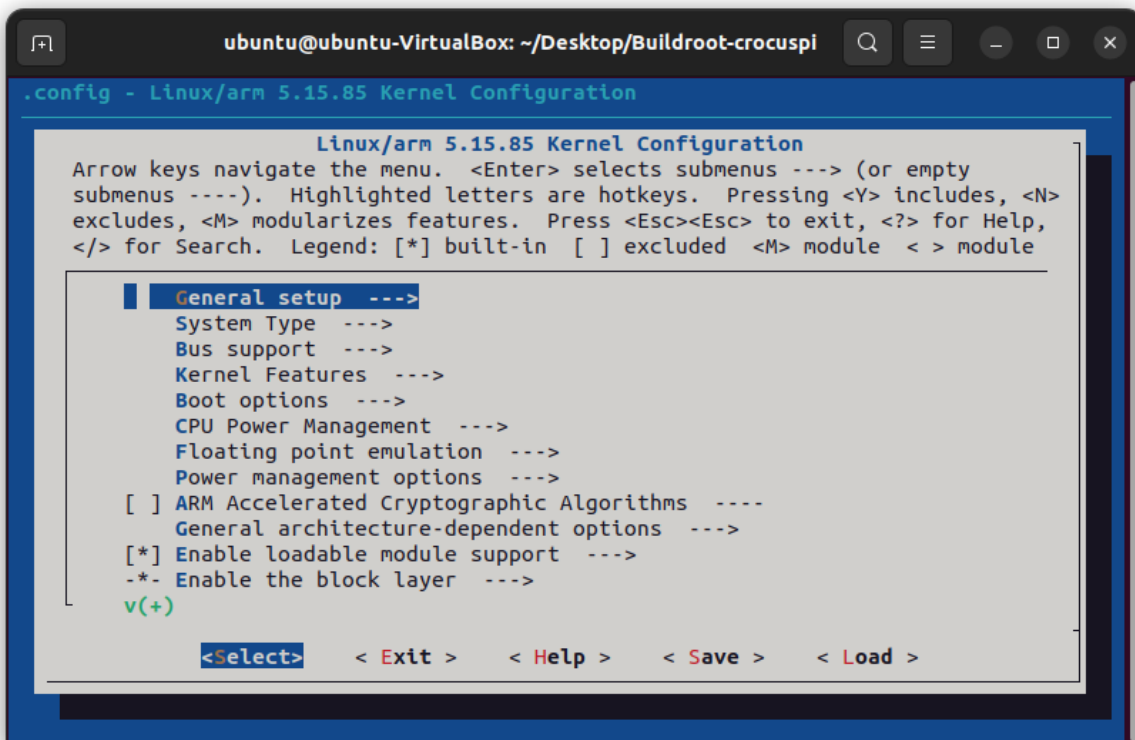
Target options --->
Build options --->
Toolchain ---->
System configuration ---->
Kernel --->
Target packages --->
Filesystem images --->
Bootloaders --->
Host utilities --->
Legacy config options ---->

<select> < Exit > < Help > < Save > < Load >
```

20- “make linux-menuconfig” komutu ile Linux Kernel i özelleştirebilirsiniz.



```
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-crocuspi
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-crocuspi$ make linux-menuconfig
```

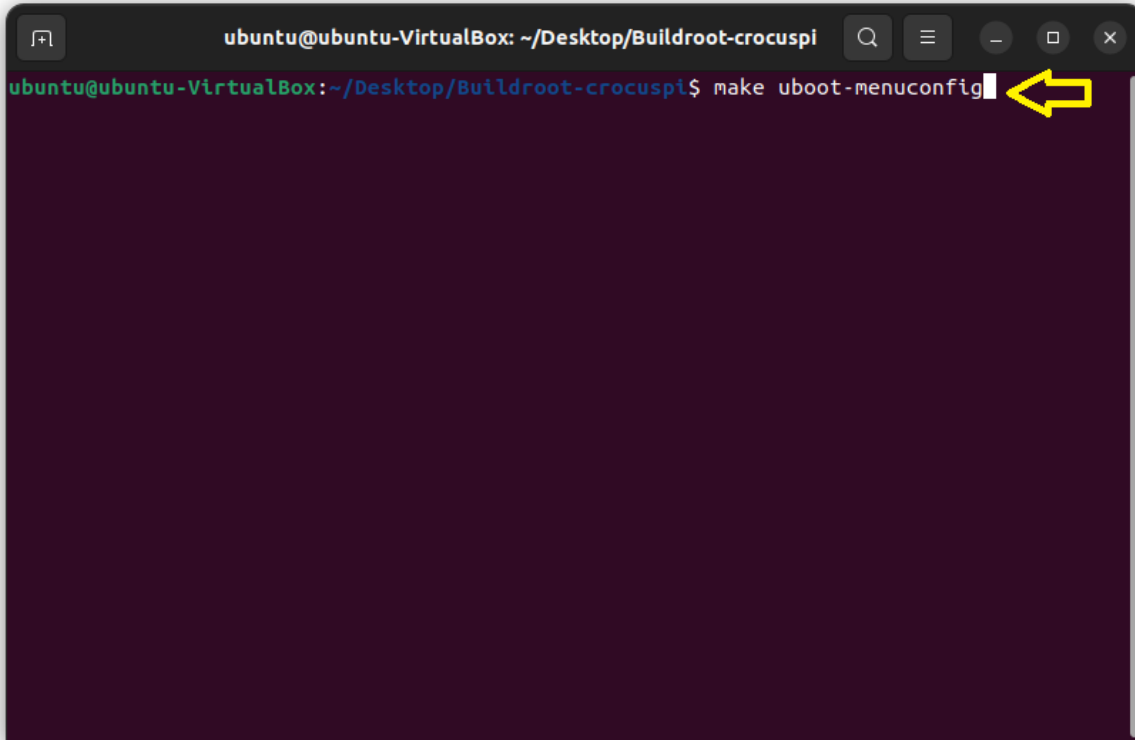


```
.config - Linux/arm 5.15.85 Kernel Configuration

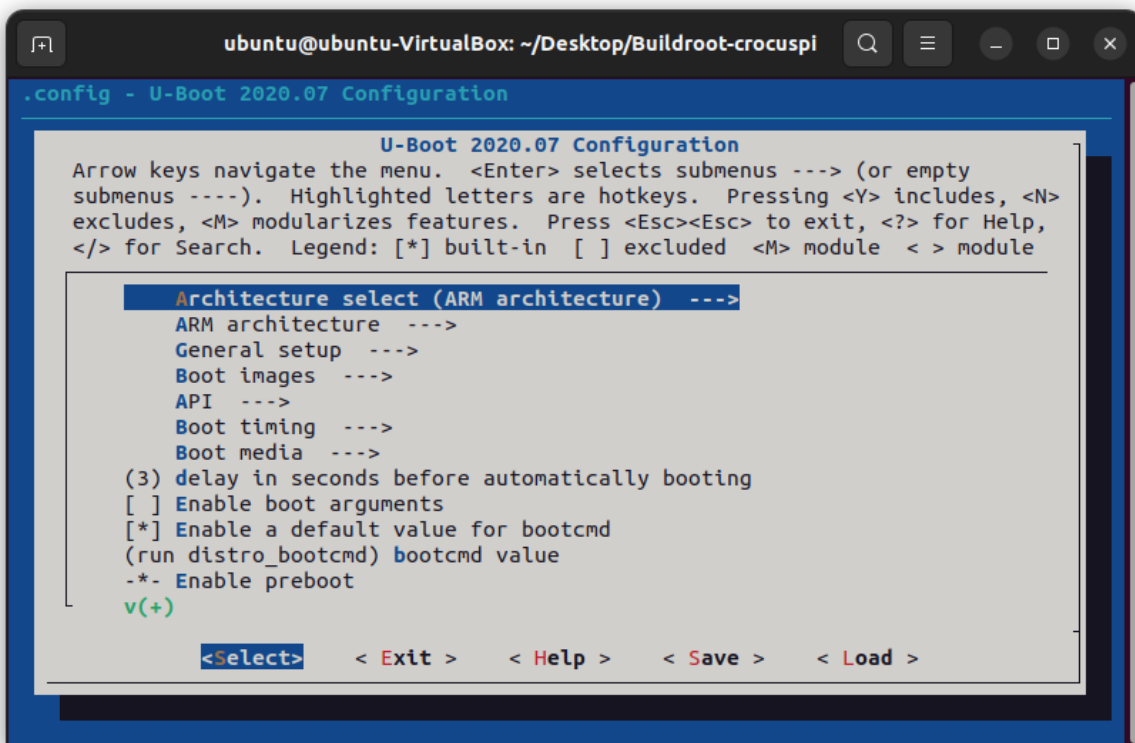
Linux/arm 5.15.85 Kernel Configuration
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty
submenus ----). Highlighted letters are hotkeys. Pressing <Y> includes, <N>
excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help,
</> for Search. Legend: [*] built-in [ ] excluded <M> module < > module

| General setup --->
| System Type --->
| Bus support --->
| Kernel Features --->
| Boot options --->
| CPU Power Management --->
| Floating point emulation --->
| Power management options --->
| [ ] ARM Accelerated Cryptographic Algorithms ----
| General architecture-dependent options --->
| [*] Enable loadable module support --->
| -* Enable the block layer --->
v(+)
```

21- “make uboot-menuconfig” komutu ile Uboot ‘u özelleştirebilirsiniz.



```
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-crocuspi
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-crocuspi$ make uboot-menuconfig
```

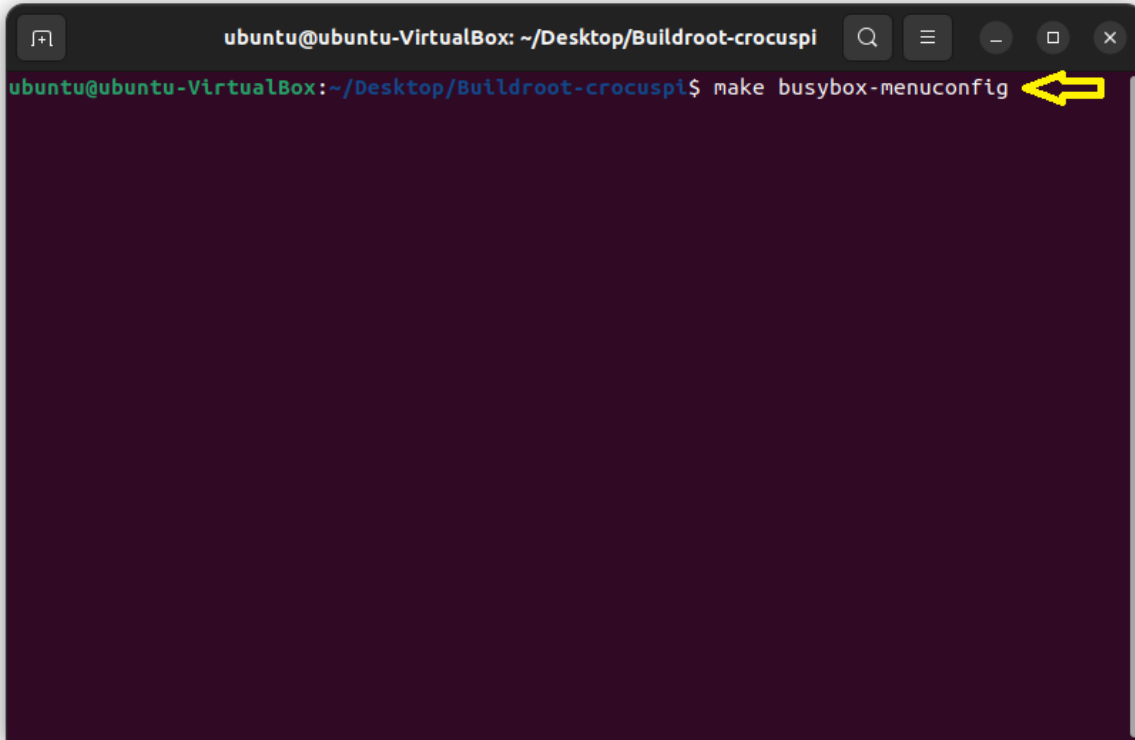


```
.config - U-Boot 2020.07 Configuration

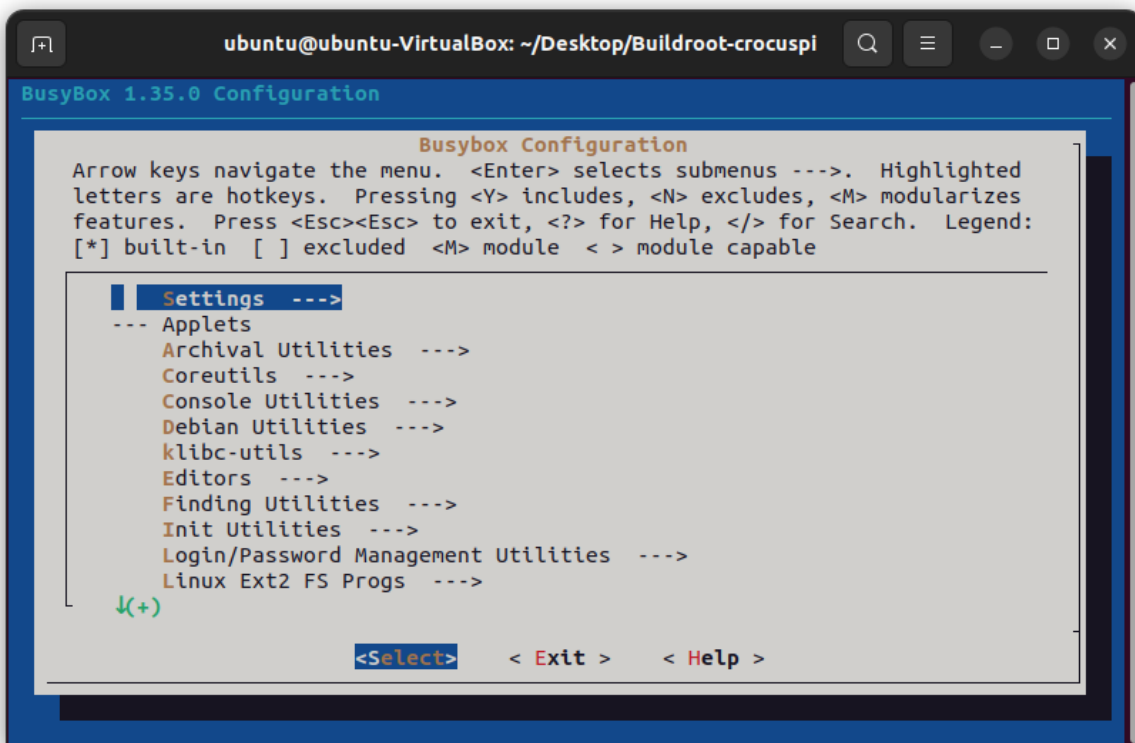
U-Boot 2020.07 Configuration
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty
submenus ----). Highlighted letters are hotkeys. Pressing <Y> includes, <N>
excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help,
</> for Search. Legend: [*] built-in [ ] excluded <M> module < > module

Architecture select (ARM architecture) --->
ARM architecture --->
General setup --->
Boot images --->
API --->
Boot timing --->
Boot media --->
(3) delay in seconds before automatically booting
[ ] Enable boot arguments
[*] Enable a default value for bootcmd
(run distro_bootcmd) bootcmd value
-*- Enable preboot
v(+)
```

22- “make busybox-menuconfig” komutu ile Busybox ‘i özelleştirebilirsiniz.



```
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-crocuspi
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-crocuspi$ make busybox-menuconfig
```

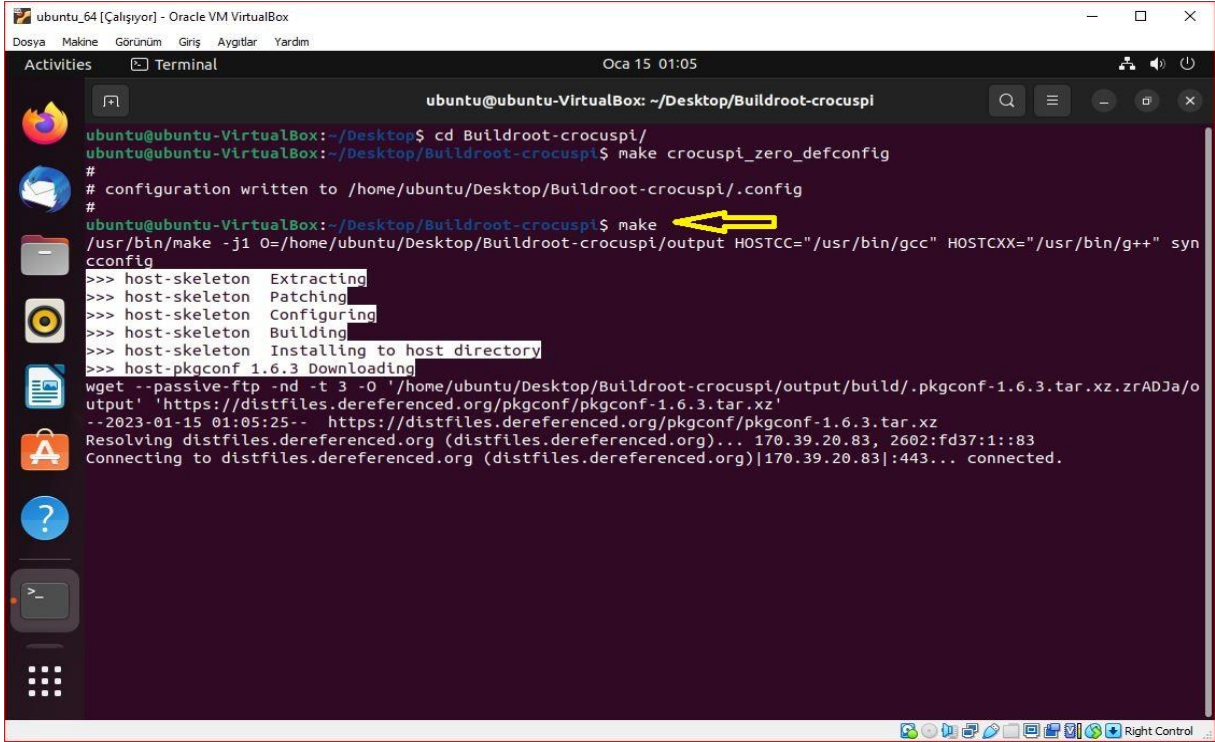


```
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-crocuspi
BusyBox 1.35.0 Configuration

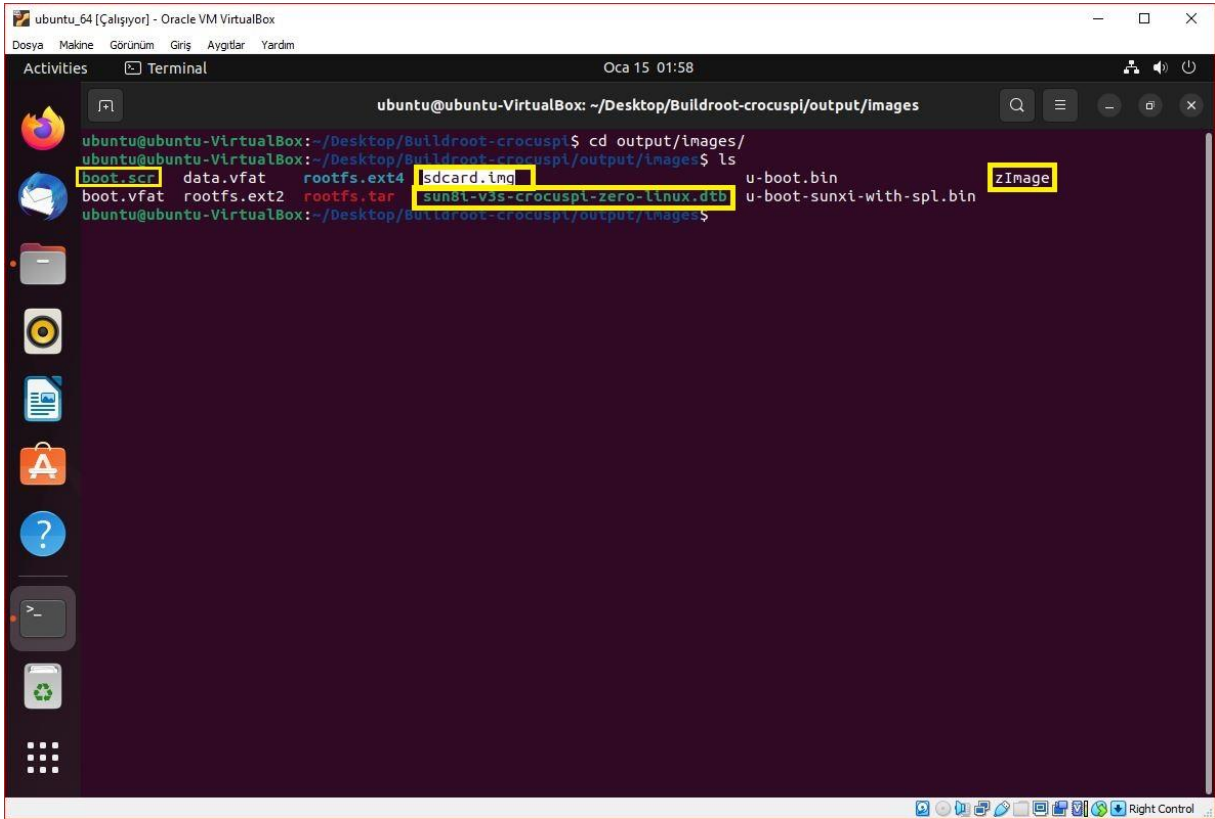
          Busybox Configuration
Arrow keys navigate the menu. <Enter> selects submenus --->. Highlighted
letters are hotkeys. Pressing <Y> includes, <N> excludes, <M> modularizes
features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend:
[*] built-in [ ] excluded <M> module < > module capable

  Settings --->
--- Applets
  Archival Utilities --->
  Coreutils --->
  Console Utilities --->
  Debian Utilities --->
  klibc-utils --->
  Editors --->
  Finding Utilities --->
  Init Utilities --->
  Login/Password Management Utilities --->
  Linux Ext2 FS Progs --->
↓(+)
```

23- “make” veya “make -j\$(nproc)” komutu ile derleme işlemini başlatabilirsiniz.



```
ubuntu_64 [Çalışıyor] - Oracle VM VirtualBox
Dosya Makine Görünüm Giriş Aygıtlar Yardım
Activities Terminal Oca 15 01:05
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-croscuspi
ubuntu@ubuntu-VirtualBox:~/Desktop$ cd Buildroot-croscuspi/
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-croscuspi$ make croscuspi_zero_defconfig
# configuration written to /home/ubuntu/Desktop/Buildroot-croscuspi/.config
#
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-croscuspi$ make
/usr/bin/make -j1 O=/home/ubuntu/Desktop/Buildroot-croscuspi/output HOSTCC="/usr/bin/gcc" HOSTCXX="/usr/bin/g++" syn
cconfig
>>> host-skeleton Extracting
>>> host-skeleton Patching
>>> host-skeleton Configuring
>>> host-skeleton Building
>>> host-skeleton Installing to host directory
>>> host-pkgconf 1.6.3 Downloading
wget --passive-ftp -nd -t 3 -O '/home/ubuntu/Desktop/Buildroot-croscuspi/output/build/.pkgconf-1.6.3.tar.xz.zrADJa/o
utput' 'https://distfiles.dereferenced.org/pkgconf/pkgconf-1.6.3.tar.xz'
--2023-01-15 01:05:25-- https://distfiles.dereferenced.org/pkgconf/pkgconf-1.6.3.tar.xz
Resolving distfiles.dereferenced.org (distfiles.dereferenced.org)... 170.39.20.83, 2602:fd37:1::83
Connecting to distfiles.dereferenced.org (distfiles.dereferenced.org)|170.39.20.83|:443... connected.
```



```
ubuntu_64 [Çalışıyor] - Oracle VM VirtualBox
Dosya Makine Görünüm Giriş Aygıtlar Yardım
Activities Terminal Oca 15 01:58
ubuntu@ubuntu-VirtualBox: ~/Desktop/Buildroot-croscuspi/output/images
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-croscuspi$ cd output/images/
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-croscuspi/output/images$ ls
boot.scf data.vfat rootfs.ext4 sdc card.img u-boot.bin zImage
boot.vfat rootfs.ext2 rootfs.tar sunxi-v3s-croscuspi-zero-linux.dtb u-boot-sunxi-with-spl.bin
ubuntu@ubuntu-VirtualBox:~/Desktop/Buildroot-croscuspi/output/images$
```

24- Derleme işlemi tamamlandıktan sonra “output/images” klasörünün içinde gerekli dosyalar oluşacaktır. İmaj dosyasını microSD kartınıza yükleyip, CrocusPI Zero’yu çalıştırabilirsiniz.

