

Memasang Ubuntu Arm (32bit) pada Qemu Versi Terbaru

Note : Versi terbaru saat dokumen ini dibuat adalah Qemu 5.1.0

1. Buat direktori baru untuk pemasangan Ubuntu Arm pada Qemu:

```
$ mkdir ubuntu_arm
$ cd ubuntu_arm
```

2. Unduh semua file yang diperlukan:

```
$ wget -r -nH -nd -np -R "index.html*" --quiet
http://ports.ubuntu.com/ubuntu-ports/dists/xenial/main/installer-
armhf/current/images/generic-lpae/netboot/
```

Atau:

```
$ wget http://ports.ubuntu.com/ubuntu-ports/dists/xenial/main/installer-
armhf/current/images/generic-lpae/netboot/vmlinuz
$ wget http://ports.ubuntu.com/ubuntu-ports/dists/xenial/main/installer-
armhf/current/images/generic-lpae/netboot/initrd.gz
```

Setelah proses pengunduhan selesai, pastikan pada direktori `ubuntu_arm` terdapat file bernama `vmlinuz` dan `initrd.gz`.

```
isro@isro-vmware:~/ubuntu_arm$ ls
initrd.gz vmlinuz
```

3. Buat hard disk virtual untuk pemasangan Ubuntu Arm:

```
$ qemu-img create -f qcow2 xenial.qcow2 16G
```

Perhatikan bahwa nama hard disk virtual adalah `xenial.qcow2` dan ukurannya 16GB. Sesuaikan dengan kebutuhan dan pastikan bahwa file tersebut berhasil dibuat dan terdapat pada folder `ubuntu_arm`.

```
isro@isro-vmware:~/ubuntu_arm$ ls
initrd.gz vmlinuz xenial.qcow2
```

4. Pasang Ubuntu Arm sebagaimana memasang Ubuntu Headless / Server (Contoh Terlampir) dengan menjalankan perintah berikut:

```
$ qemu-system-arm -M virt -m 4096 \
-kernel vmlinuz \
-initrd initrd.gz \
-drive if=none,file=xenial.qcow2,format=qcow2,id=hd \
-device virtio-blk-device,drive=hd \
-netdev user,id=mynet \
-device virtio-net-device,netdev=mynet \
-nographic -no-reboot
```

Perhatikan bahwa parameter `file=xenial.qcow2` harus sesuai dengan nama hard disk virtual yang telah dibuat dan parameter `-m 4096` tidak melebihi ukuran memori sistem utama (dalam MB). Setelah terpasang, Ubuntu Arm masih belum memiliki bootloader sehingga perlu menyalin file bootloader dari hard disk virtual.

Muat hard disk virtual pada direktori sementara untuk dapat menyalin file bootloader. Gunakan user root untuk menjalankan perintah berikut:

```
$ sudo su
$ modprobe nbd max_part=8
$ qemu-nbd --connect=/dev/nbd0 xenial.qcow2
$ mount /dev/nbd0p1 /home/user/qemu_mnt
$ cp /home/user/qemu_mnt/vmlinuz-*-generic-lpae .
$ chmod 644 vmlinuz-*-generic-lpae
$ cp /home/user/qemu_mnt/initrd.img-*-generic-lpae .
$ chmod 644 initrd.img-*-generic-lpae
$ umount /home/user/qemu_mnt/
$ qemu-nbd --disconnect /dev/nbd0
$ rmmmod nbd
$ exit
```

Perhatikan bahwa parameter `/home/user/qemu_mnt` adalah direktori sementara untuk memuat hard disk virtual. Sesuaikan dengan direktori pada sistem.

```
root@isro-vmware:/home/isro/ubuntu_arm# ls /home/isro/qemu_mnt/
config-4.4.0-197-generic-lpae      System.map-4.4.0-197-generic-lpae
initrd.img                        vmlinuz
initrd.img-4.4.0-197-generic-lpae vmlinuz-4.4.0-197-generic-lpae
initrd.img.old                    vmlinuz.old
lost+found
```

```
isro@isro-vmware:~/ubuntu_arm$ ls
initrd.gz          vmlinuz          xenial.qcow2
initrd.img-4.4.0-197-generic-lpae vmlinuz-4.4.0-197-generic-lpae
```

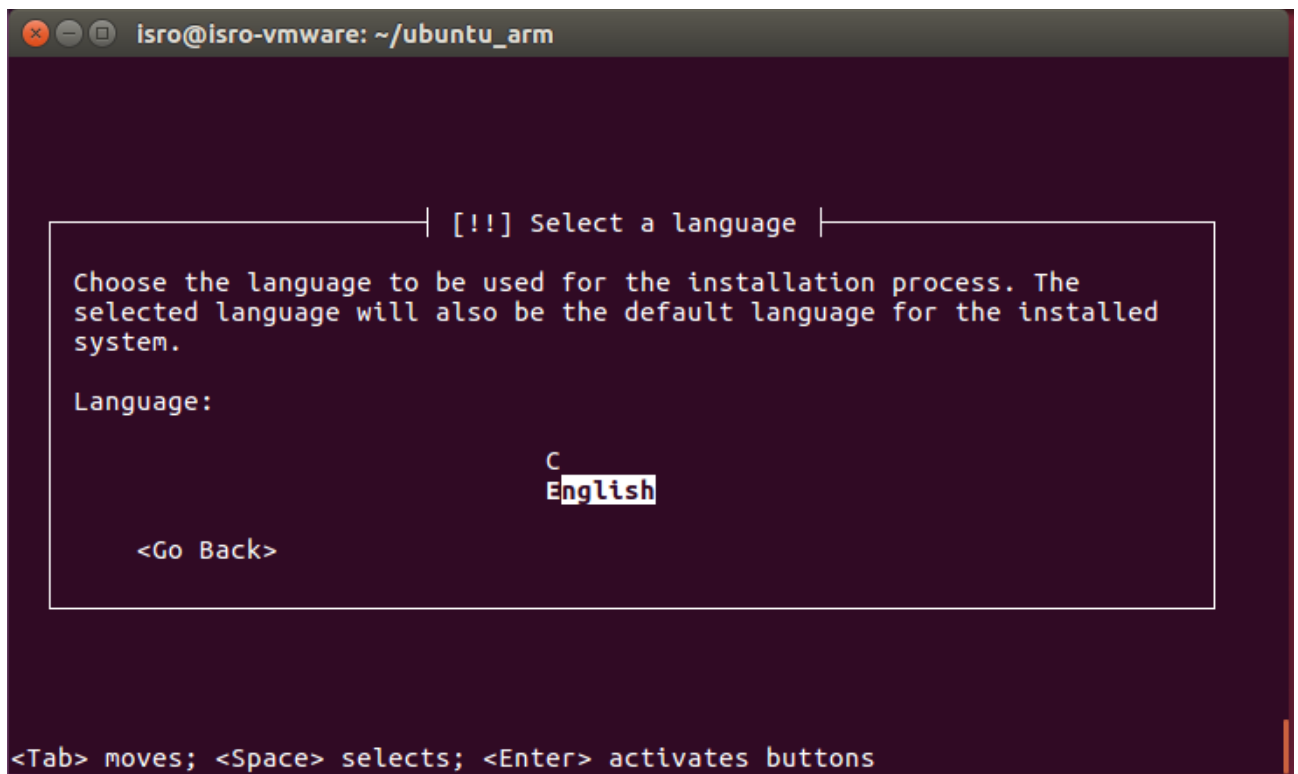
Apabila bootloader sudah disalin, Ubuntu Arm dapat dijalankan dengan perintah berikut:

```
$ qemu-system-arm -M virt -m 4096 \
-kernel vmlinuz-*-generic-lpae \
-initrd initrd.img-*-generic-lpae \
-append 'root=/dev/vda2' \
-drive if=none,file=xenial.qcow2,format=qcow2,id=hd \
-device virtio-blk-device,drive=hd \
-netdev user,id=mynet \
-device virtio-net-device,netdev=mynet \
-nographic
```

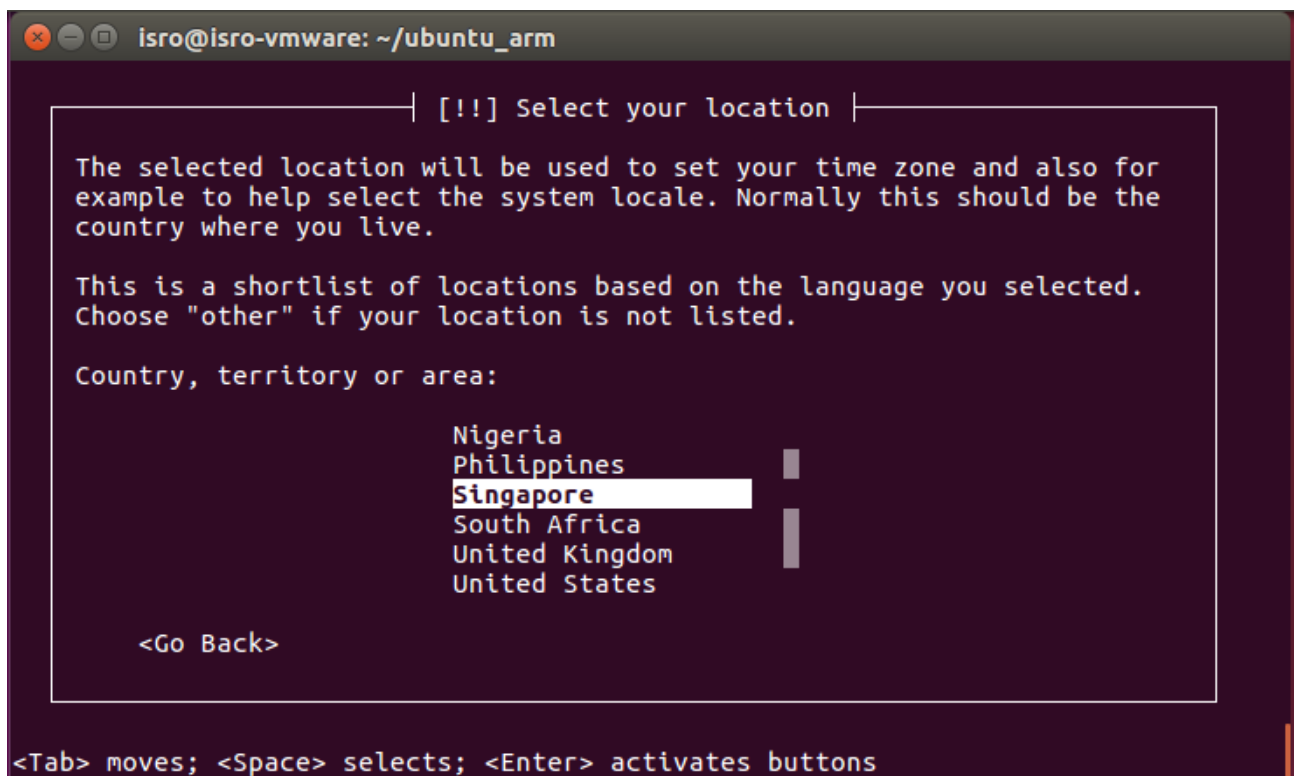
Pengguna dapat menambahkan parameter lain saat menjalankan Qemu apabila dirasa perlu.

Contoh Pemasangan Ubuntu Arm (32bit) pada Qemu Versi Terbaru

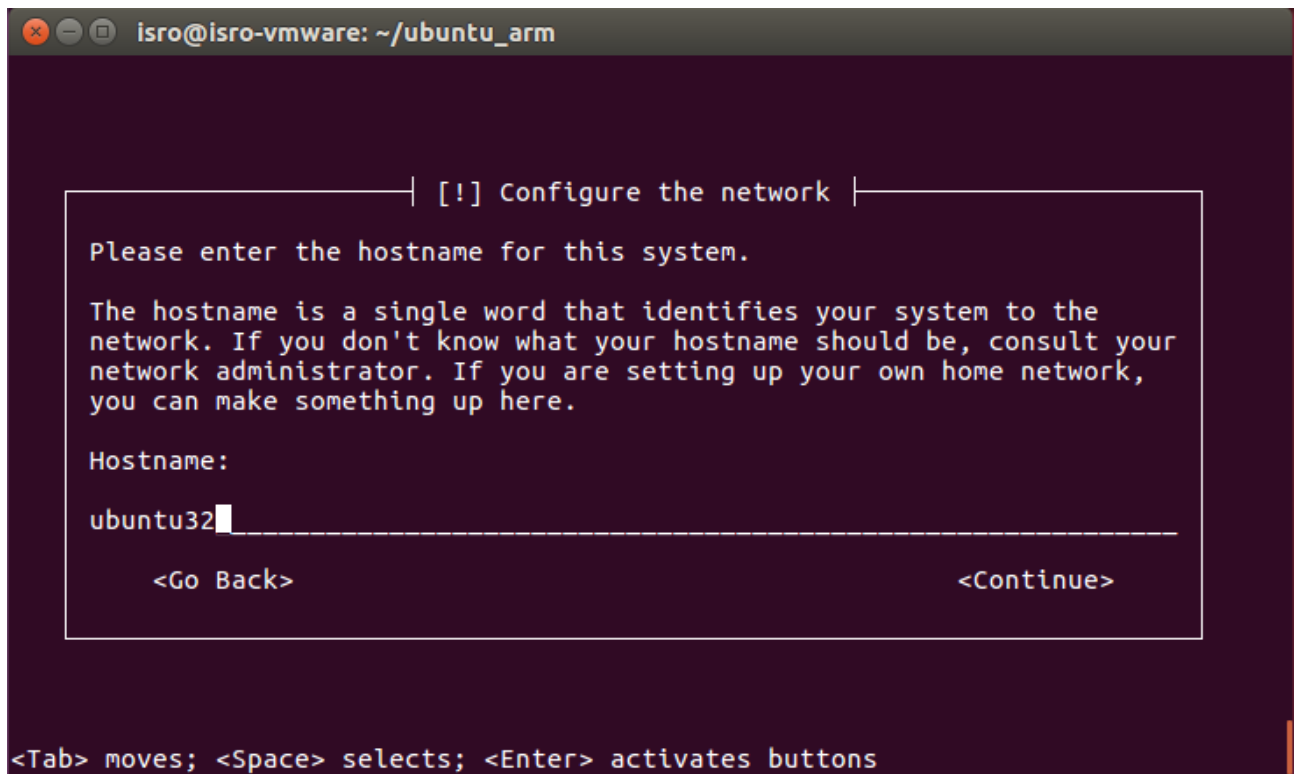
1. Pilih bahasa



2. Pilih lokasi (bebas, nantinya sistem akan mendeteksi lokasi)



3. Masukkan nama host untuk identifikasi sistem di jaringan



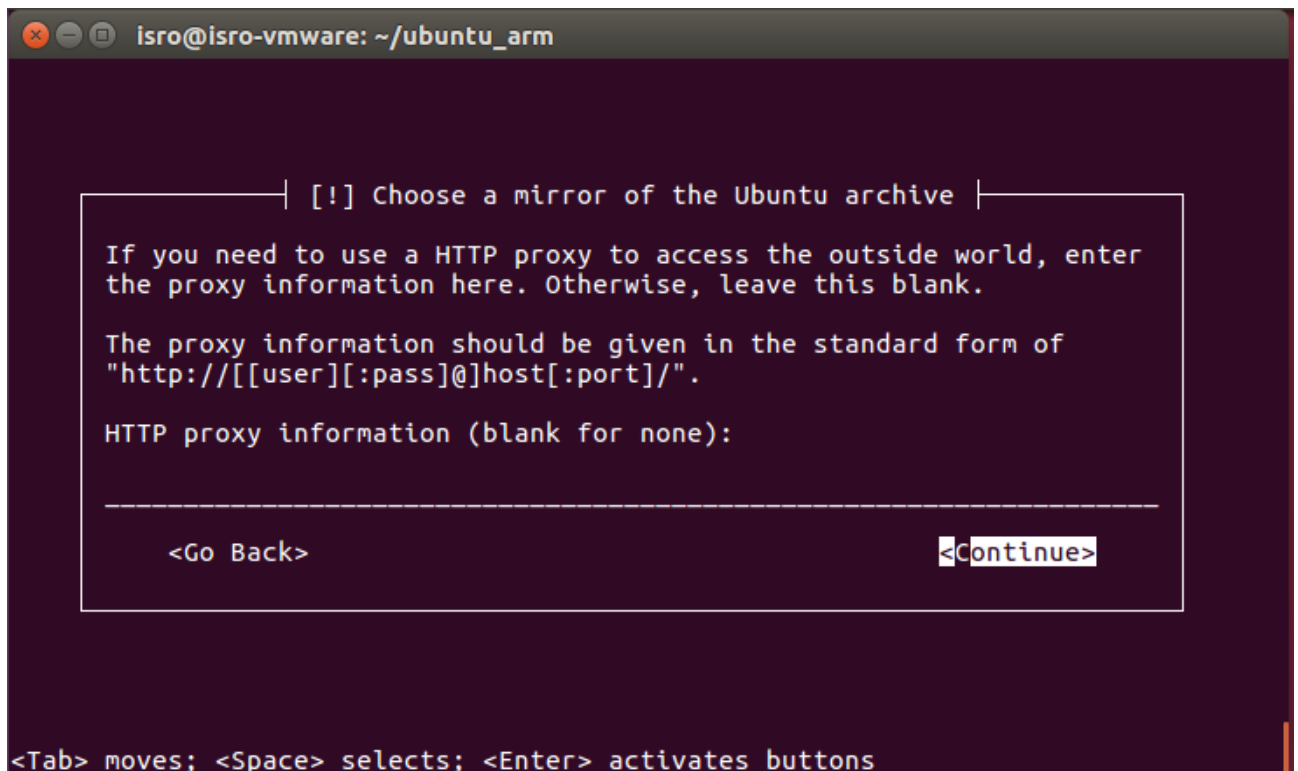
4. Pilih lokasi server mirror untuk mengunduh update dan package (Indonesia)



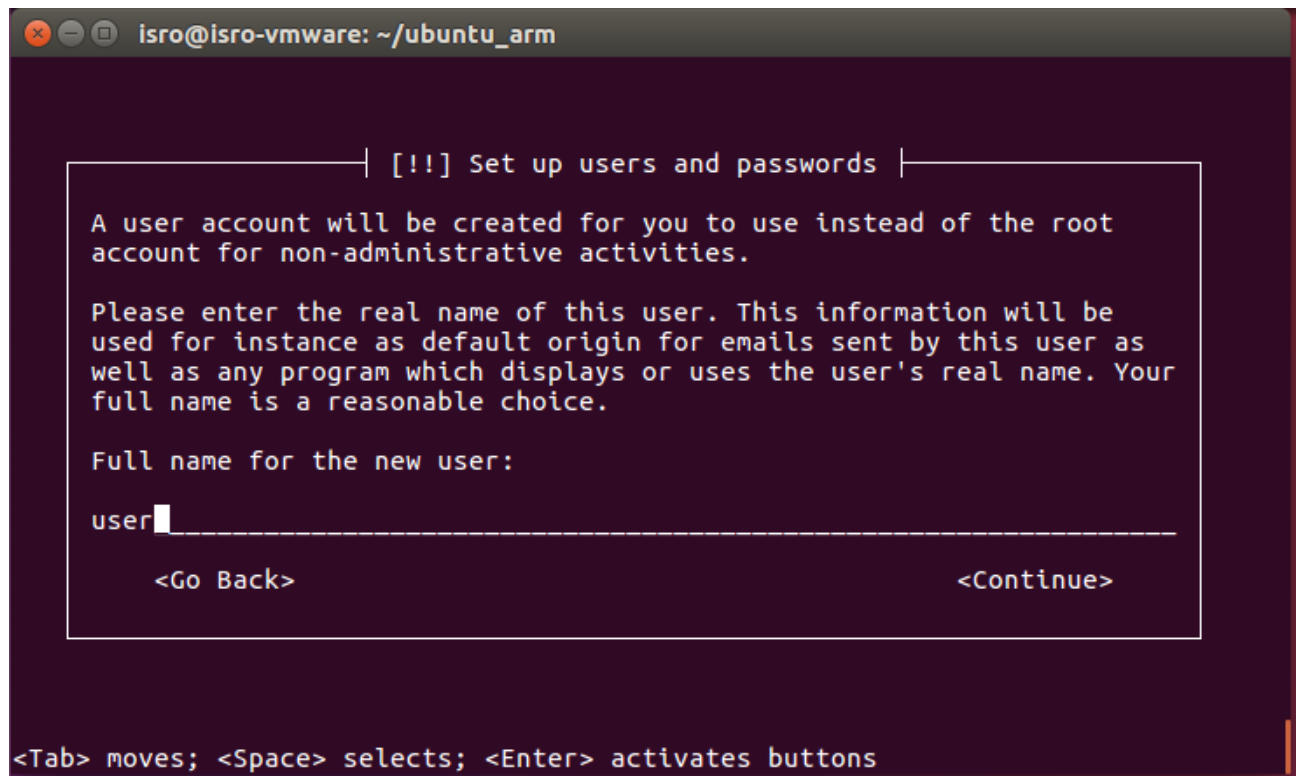
5. Pilih alamat server mirror untuk mengunduh update dan package



6. Masukkan informasi proxy dari jaringan (jika ada)



7. Masukkan nama pengguna (bukan nama akun tapi boleh sama)



isro@isro-vmware: ~/ubuntu_arm

[!!] Set up users and passwords

A user account will be created for you to use instead of the root account for non-administrative activities.

Please enter the real name of this user. This information will be used for instance as default origin for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice.

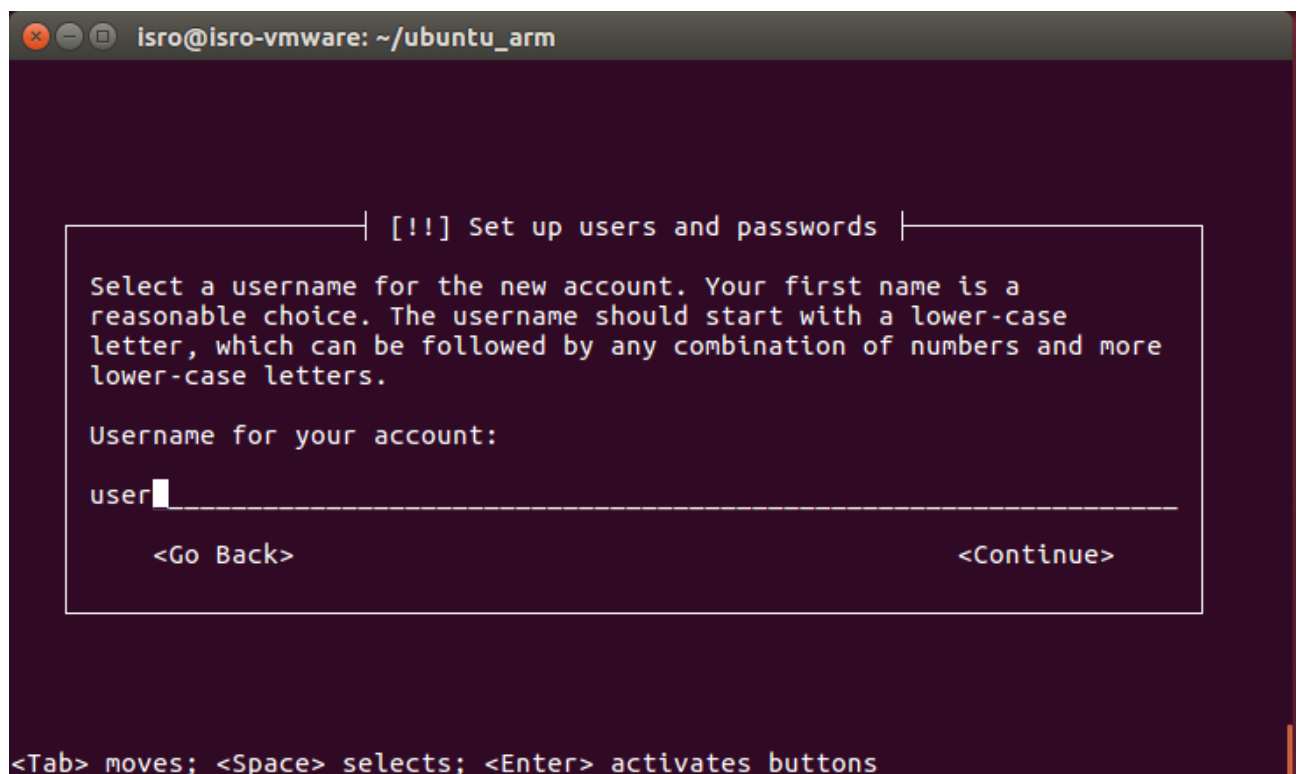
Full name for the new user:

user

<Go Back> <Continue>

<Tab> moves; <Space> selects; <Enter> activates buttons

8. Masukkan nama akun



isro@isro-vmware: ~/ubuntu_arm

[!!] Set up users and passwords

Select a username for the new account. Your first name is a reasonable choice. The username should start with a lower-case letter, which can be followed by any combination of numbers and more lower-case letters.

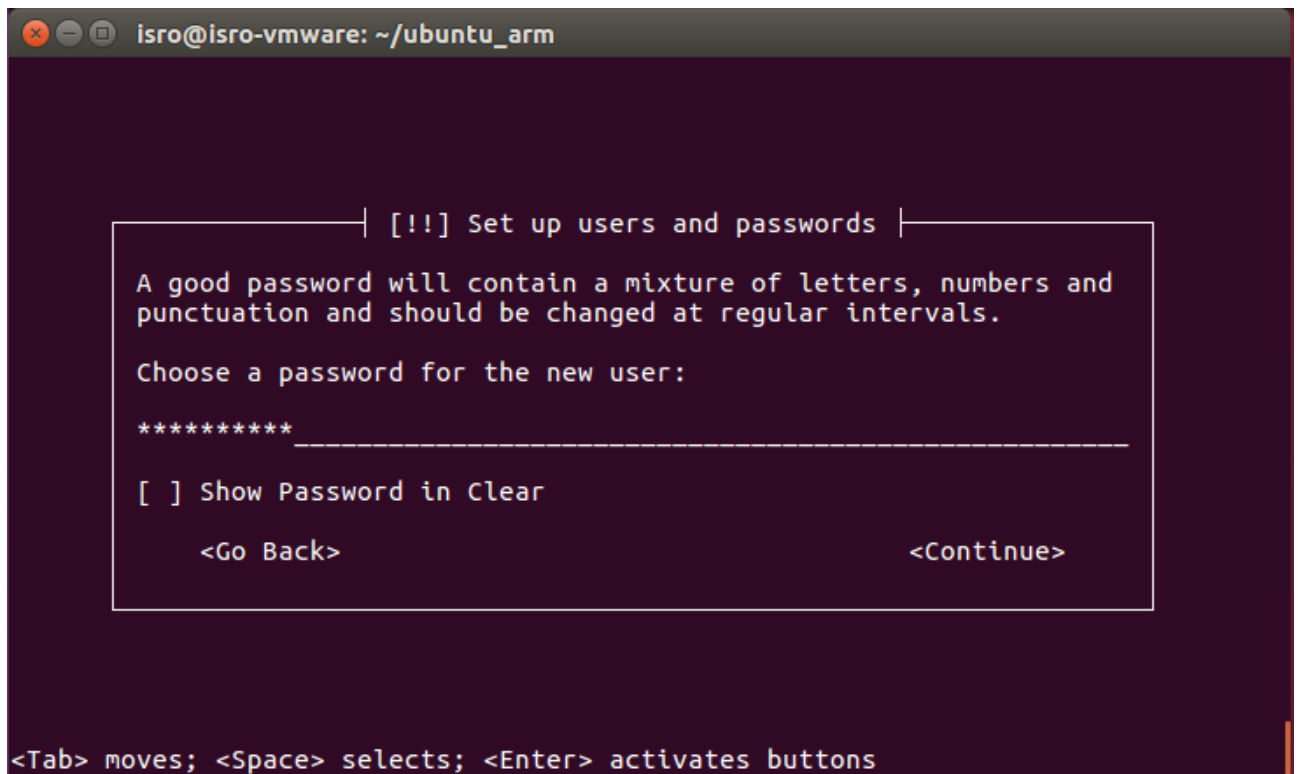
Username for your account:

user

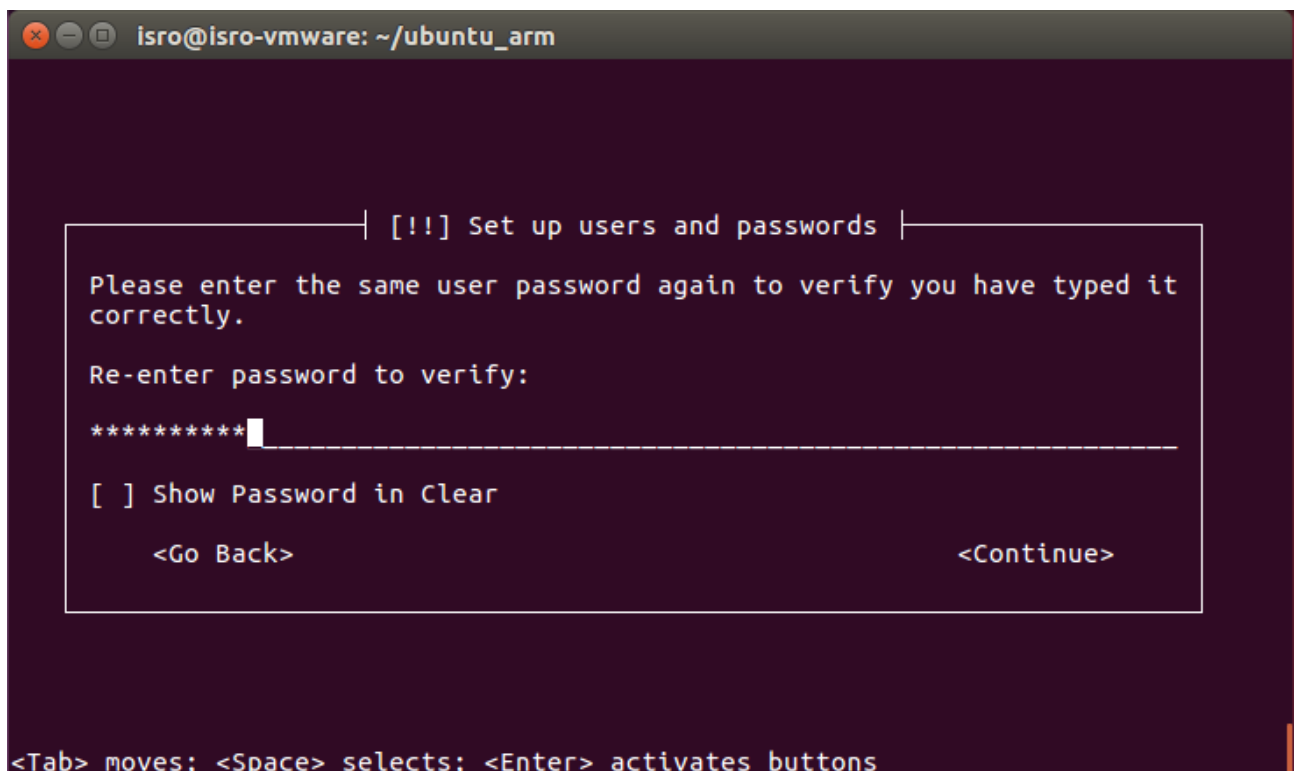
<Go Back> <Continue>

<Tab> moves; <Space> selects; <Enter> activates buttons

9. Masukkan kata sandi akun



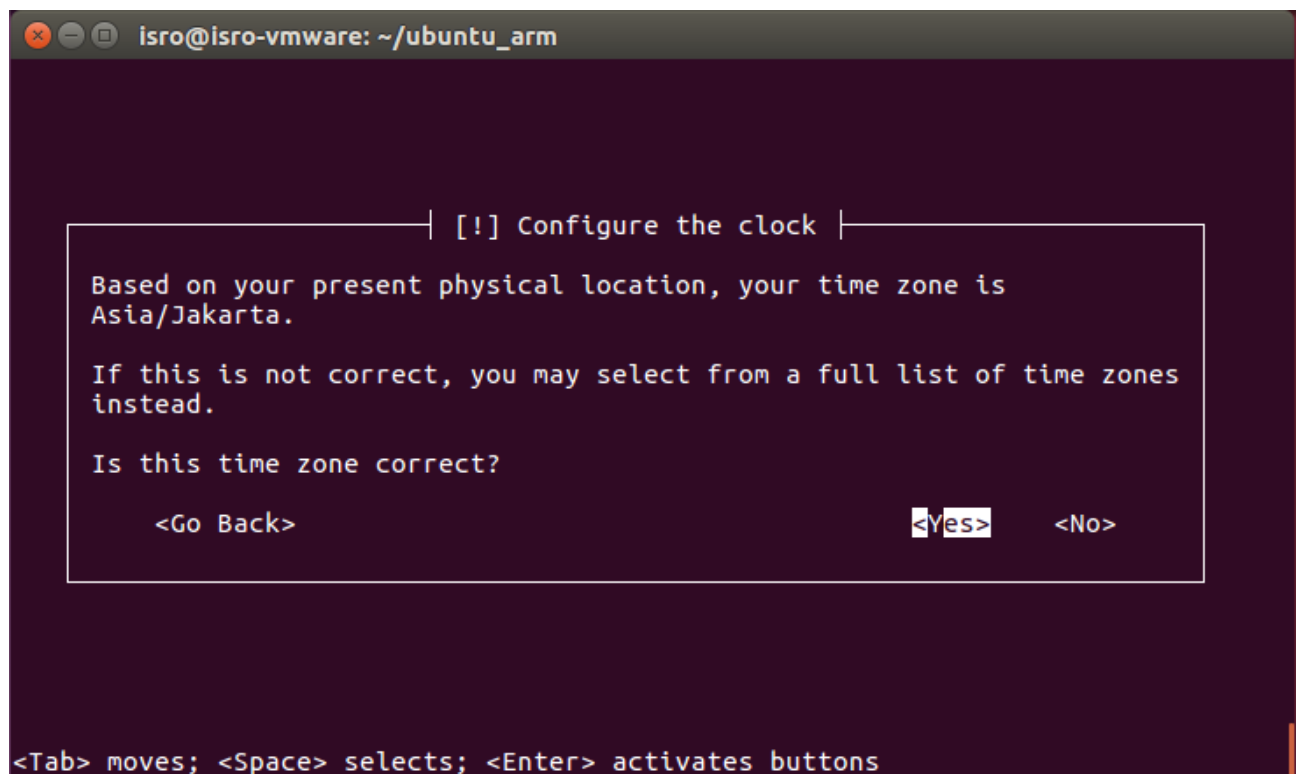
10. Masukkan kembali kata sandi akun



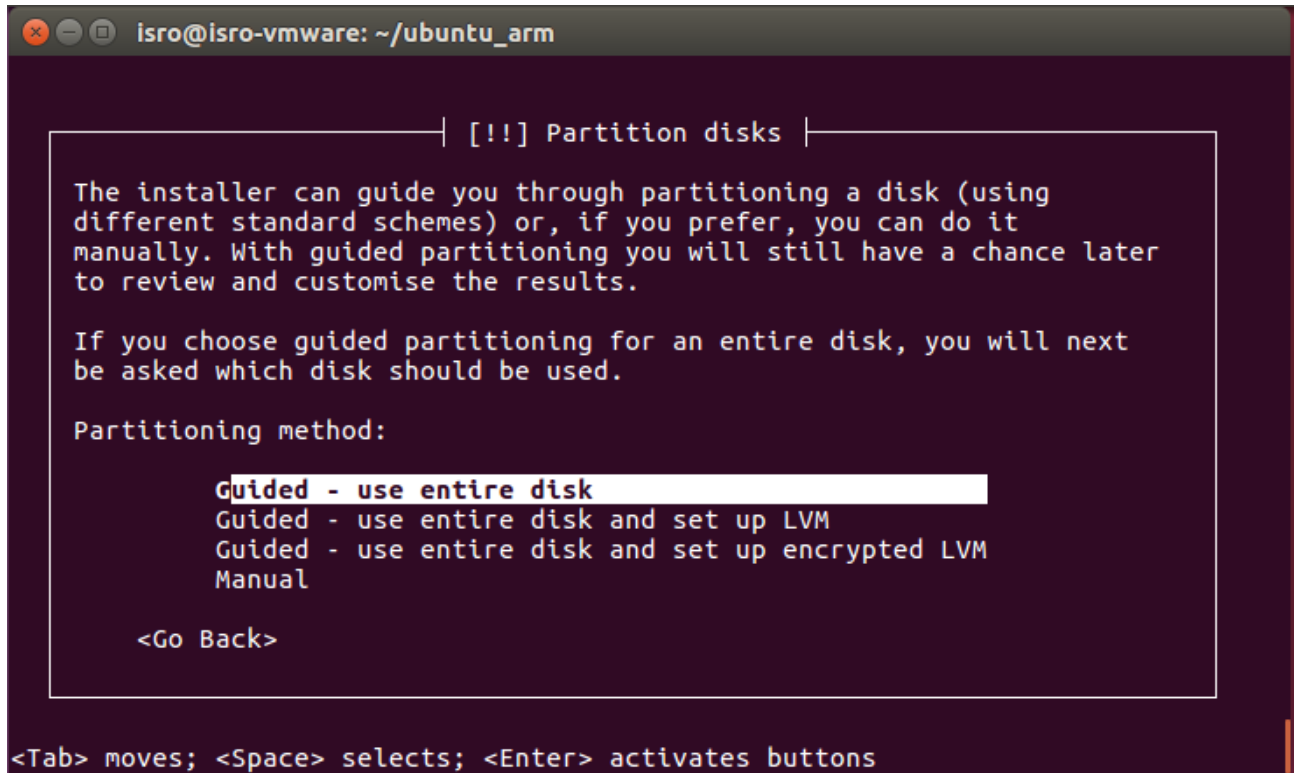
11. Pilih enkripsi direktori home (tidak)



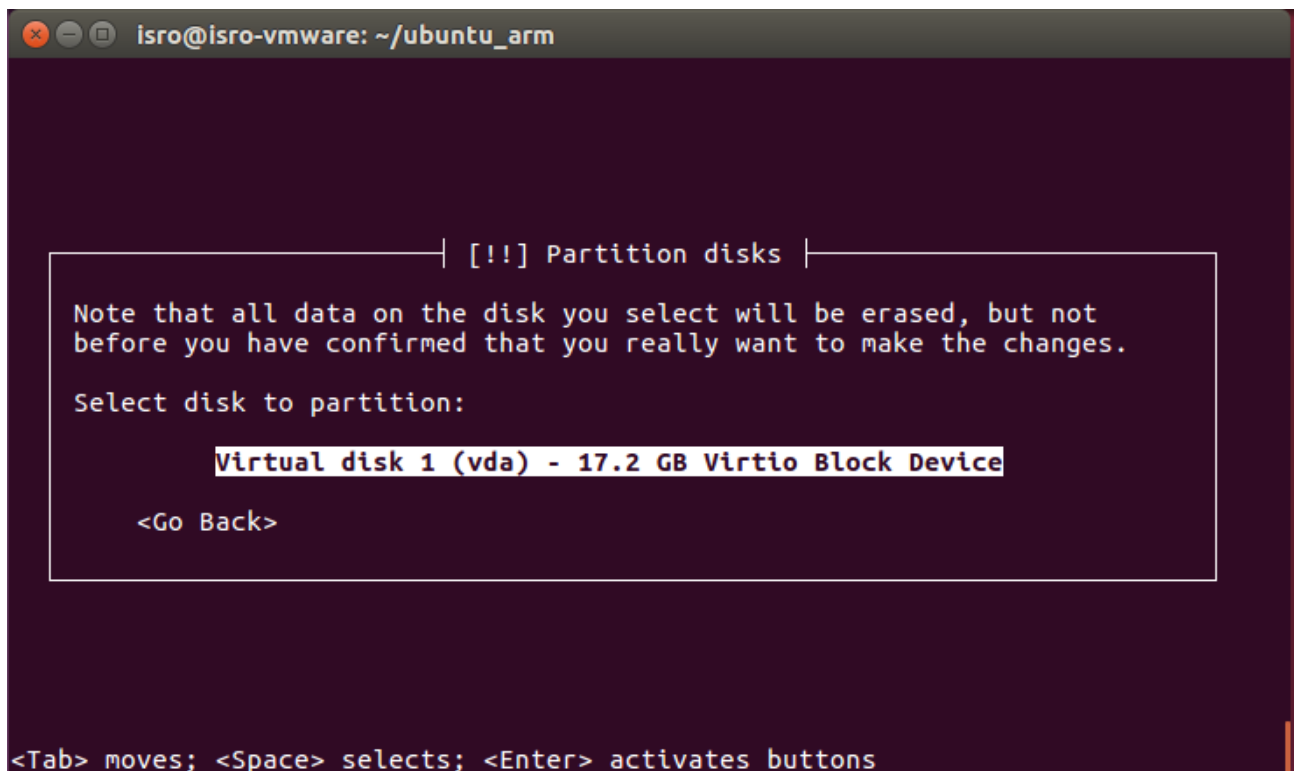
12. Pastikan hasil deteksi lokasi untuk menentukan zona waktu



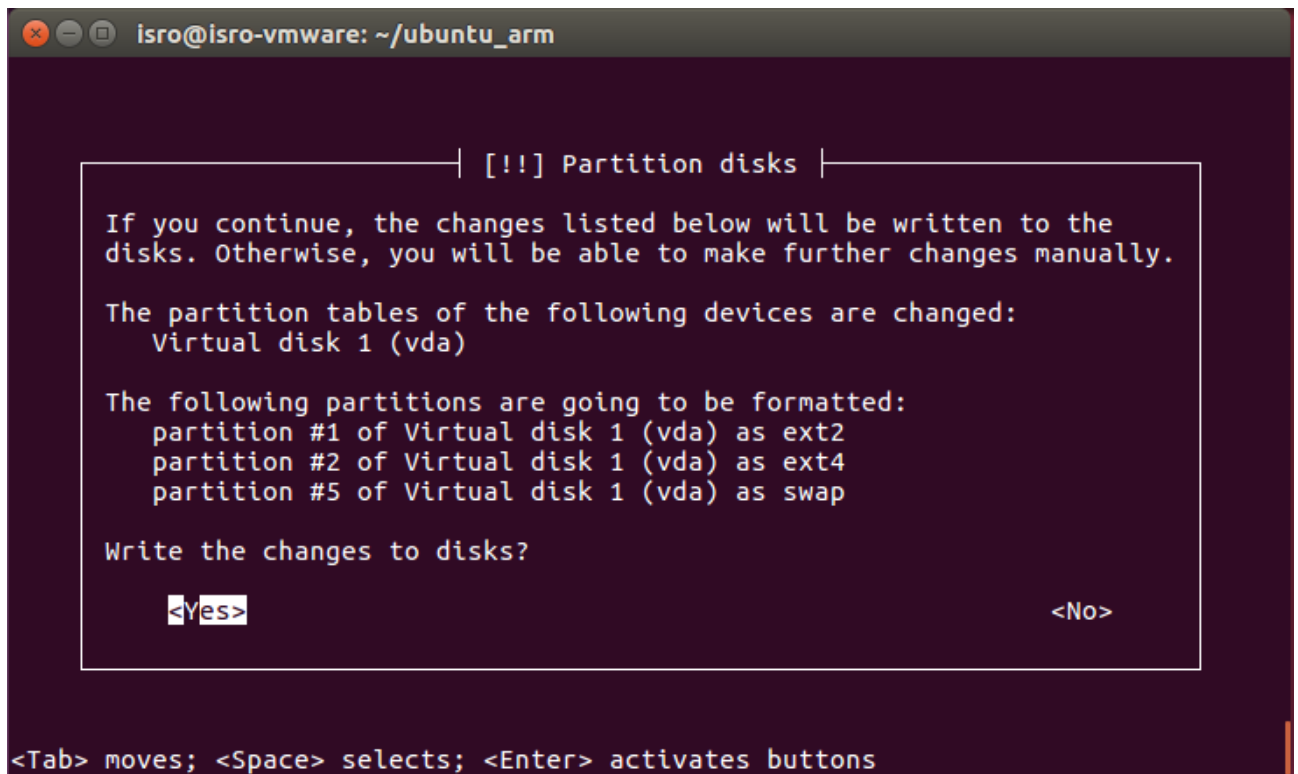
13. Pilih metode partisi hard disk virtual



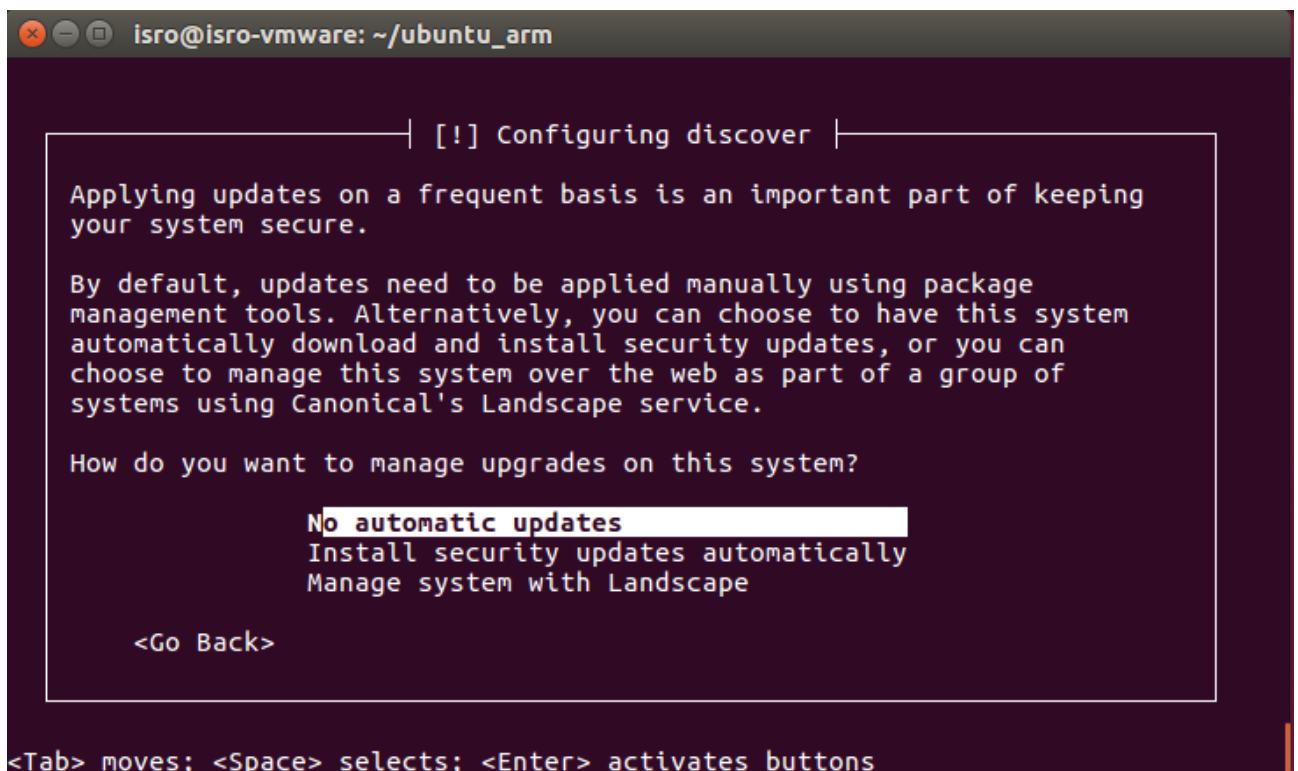
14. Pilih hard disk virtual untuk partisi



15. Pastikan partisi hard disk virtual



16. Pilih metode update sistem



17. Pilih software untuk dipasang

```
isro@isro-vmware: ~/ubuntu_arm

[!] Software selection

At the moment, only the core of the system is installed. To tune the
system to your needs, you can choose to install one or more of the
following predefined collections of software.

Choose software to install:

[ ] Mythbuntu slave backend
[ ] Mythbuntu frontend
[ ] PostgreSQL database
[ ] Samba file server
[*] standard system utilities
[ ] Tomcat Java server
[ ] Ubuntu desktop
[ ] Ubuntu GNOME desktop
[ ] Ubuntu MATE cloudtop

<Continue>

<Tab> moves; <Space> selects; <Enter> activates buttons
```

18. Pemasangan tidak menyertakan bootloader

```
isro@isro-vmware: ~/ubuntu_arm

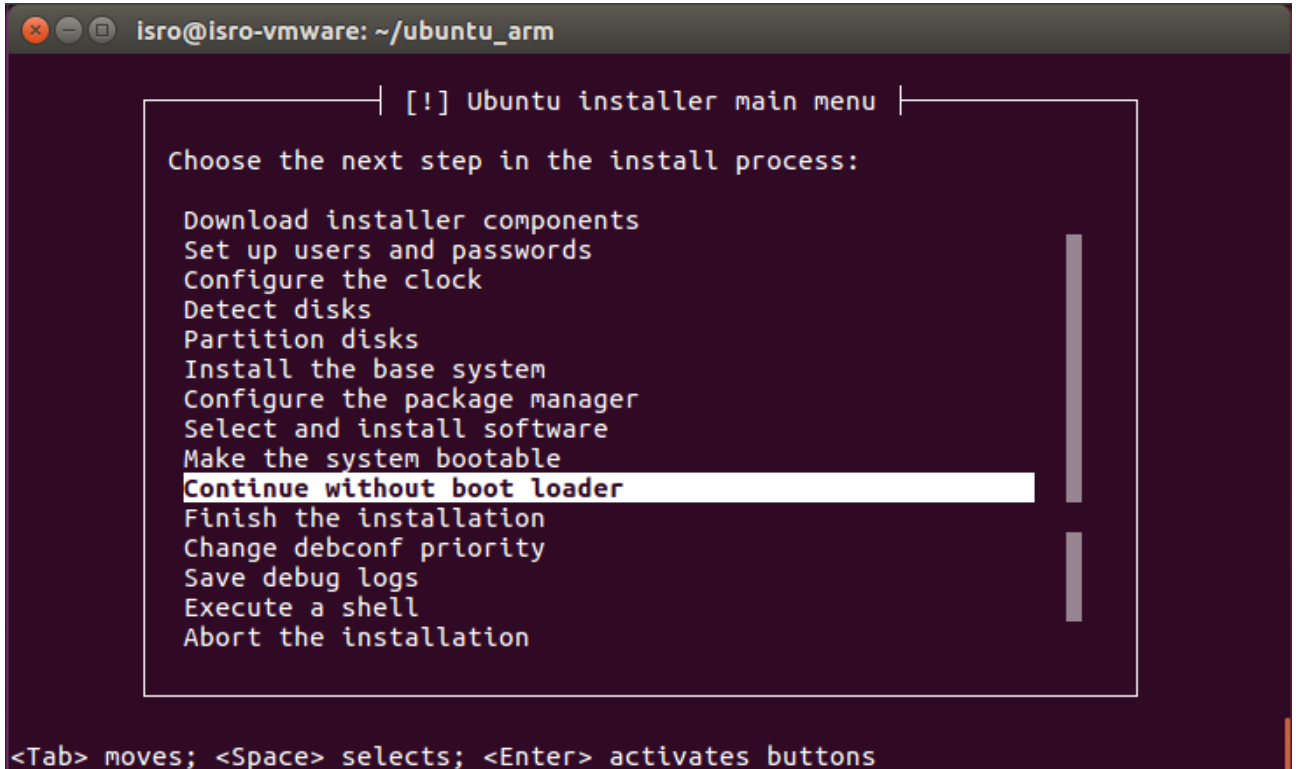
[!!] Make the system bootable

Installation step failed
An installation step failed. You can try to run the failing item
again from the menu, or skip it and choose something else. The
failing step is: Make the system bootable

<Continue>

<Tab> moves; <Space> selects; <Enter> activates buttons
```

19. Pilih untuk melanjutkan pemasangan tanpa bootloader



The screenshot shows a terminal window titled "isro@isro-vmware: ~/ubuntu_arm". Inside the terminal, a box titled "[!] Ubuntu installer main menu" contains the text "Choose the next step in the install process:". Below this, a list of installation steps is displayed. The step "Continue without boot loader" is highlighted with a white background. At the bottom of the terminal, a hint reads "<Tab> moves; <Space> selects; <Enter> activates buttons".

```
isro@isro-vmware: ~/ubuntu_arm

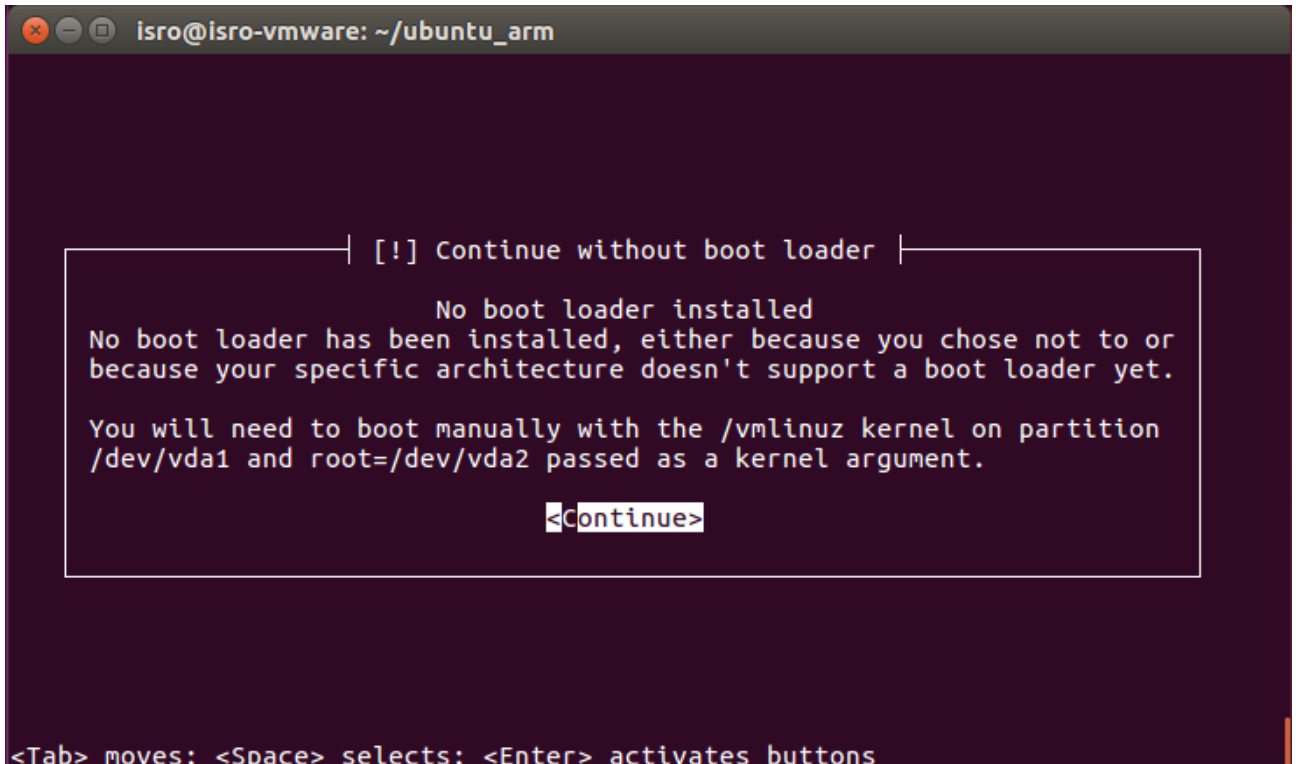
[!] Ubuntu installer main menu

Choose the next step in the install process:

Download installer components
Set up users and passwords
Configure the clock
Detect disks
Partition disks
Install the base system
Configure the package manager
Select and install software
Make the system bootable
Continue without boot loader
Finish the installation
Change debconf priority
Save debug logs
Execute a shell
Abort the installation

<Tab> moves; <Space> selects; <Enter> activates buttons
```

20. Pastikan untuk menyalin file bootloader dari hard disk virtual



The screenshot shows a terminal window titled "isro@isro-vmware: ~/ubuntu_arm". Inside the terminal, a box titled "[!] Continue without boot loader" contains the text "No boot loader installed". It explains that no boot loader has been installed and provides instructions to boot manually with the /vmlinuz kernel on partition /dev/vda1 and root=/dev/vda2 passed as a kernel argument. At the bottom of the box, the text "<Continue>" is displayed. Below the box, a hint reads "<Tab> moves; <Space> selects; <Enter> activates buttons".

```
isro@isro-vmware: ~/ubuntu_arm

[!] Continue without boot loader

No boot loader installed

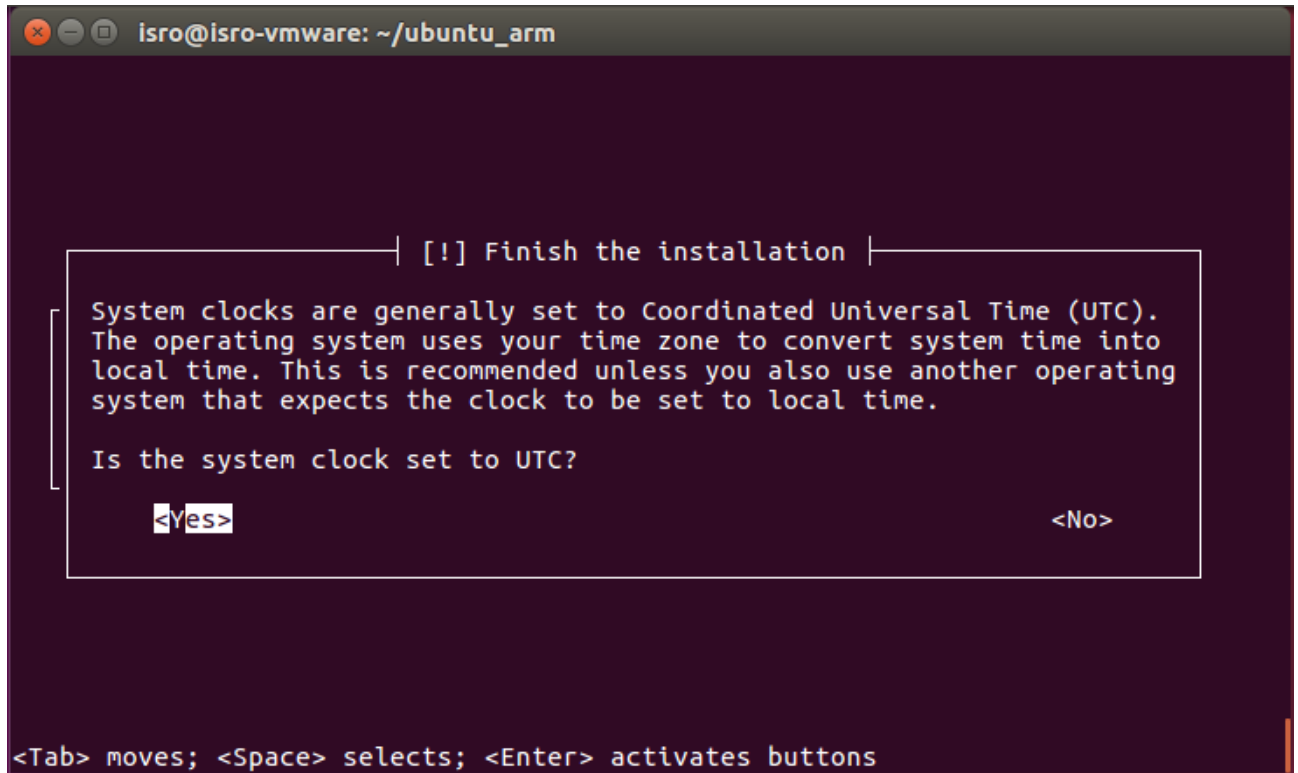
No boot loader has been installed, either because you chose not to or
because your specific architecture doesn't support a boot loader yet.

You will need to boot manually with the /vmlinuz kernel on partition
/dev/vda1 and root=/dev/vda2 passed as a kernel argument.

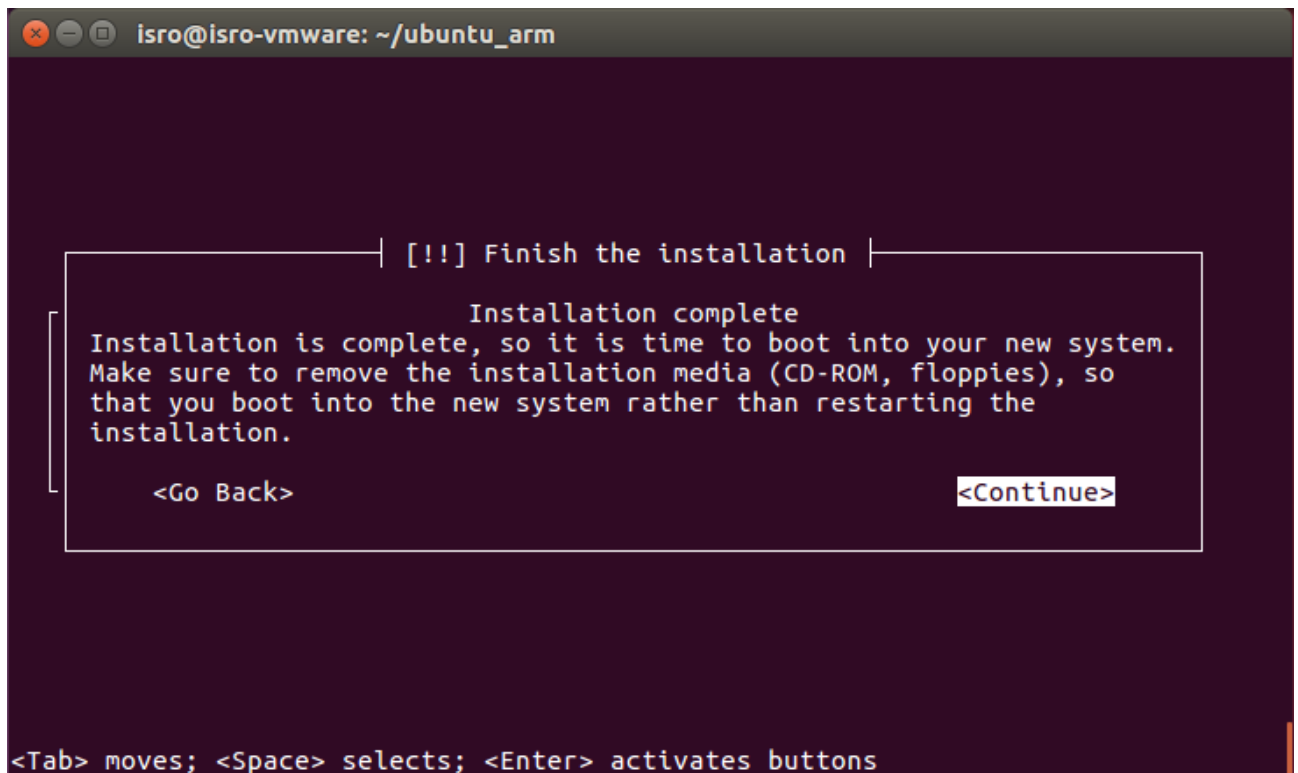
<Continue>

<Tab> moves; <Space> selects; <Enter> activates buttons
```

21. Pastikan standar waktu untuk sistem



22. Pemasangan selesai



Menjalankan Ubuntu Arm (32bit) pada Qemu Versi Terbaru

1. Tampilan login Ubuntu Arm

```
isro@isro-vmware: ~/ubuntu_arm
[ OK ] Started Accounts Service.
[ OK ] Started LSB: Set the CPU Frequency Scaling governor to "ondemand".
[ OK ] Started LSB: daemon to balance interrupts for SMP systems.
[ OK ] Started Raise network interfaces.
[ OK ] Reached target Network.
       Starting /etc/rc.local Compatibility...
[ OK ] Started /etc/rc.local Compatibility.
       Starting Terminate Plymouth Boot Screen...
       Starting Hold until boot process finishes up...
[ OK ] Started Terminate Plymouth Boot Screen.
[ OK ] Started Hold until boot process finishes up.
[ OK ] Started Getty on tty1.
[ OK ] Started Serial Getty on ttyAMA0.
[ OK ] Reached target Login Prompts.
[ OK ] Reached target Multi-User System.
[ OK ] Reached target Graphical Interface.
       Starting Update UTMP about System Runlevel Changes...
       Starting Set console scheme...
[ OK ] Started Set console scheme.
[ OK ] Started Update UTMP about System Runlevel Changes.

Ubuntu 16.04.7 LTS ubuntu32 ttyAMA0

ubuntu32 login: █
```

2. Tampilan terminal (shell) Ubuntu Arm

```
isro@isro-vmware: ~/ubuntu_arm
[ OK ] Started Set console scheme.
[ OK ] Started Update UTMP about System Runlevel Changes.

Ubuntu 16.04.7 LTS ubuntu32 ttyAMA0

ubuntu32 login: user
Password:
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-197-generic-lpae armv7l)

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

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

user@ubuntu32:~$ █
```