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Network Startup Resource Center

PacNOG 6: Nadi, Fiji

**Installing Ubuntu Server 9.04**

# Default Installation

If you do a default install of “Jaunty Jackalope” (Ubuntu 9.04) you will end up with the following:

- Dynamic network address via DHCP
- A file system of the form:
  - / (root) → All of disk minus 3xRAM
  - <swap> → 3xRAM
- Minimum software installation

# Our Installation

- **Manual network setup**
  - Fixed IP address
  - Correct host name
  - Domain
  - Add username *inst* with password given in class
- **After the initial install**
  - You will add the Ubuntu Desktop meta-package (GNOME 2.x and X.Org)
  - Configure (if necessary) graphics hardware
- **Disk configuration**
  - Default partition scheme, but we will demo a more complex partitioning scheme

# Information You Will Need

**You can write these down below:**

IP Address:

---

Netmask:

---

Gateway:

---

DNS Server:

---

Hostname:

---

Keyboard Layout:

---

If you have questions during installation ask  
your instructor or an assistant for help!

# Step-by-step install of Ubuntu 9.04

- 1.) Insert Ubuntu installation CD-ROM
- 2.) Boot your machine from CD-ROM
- 3.) Choose your installation language:



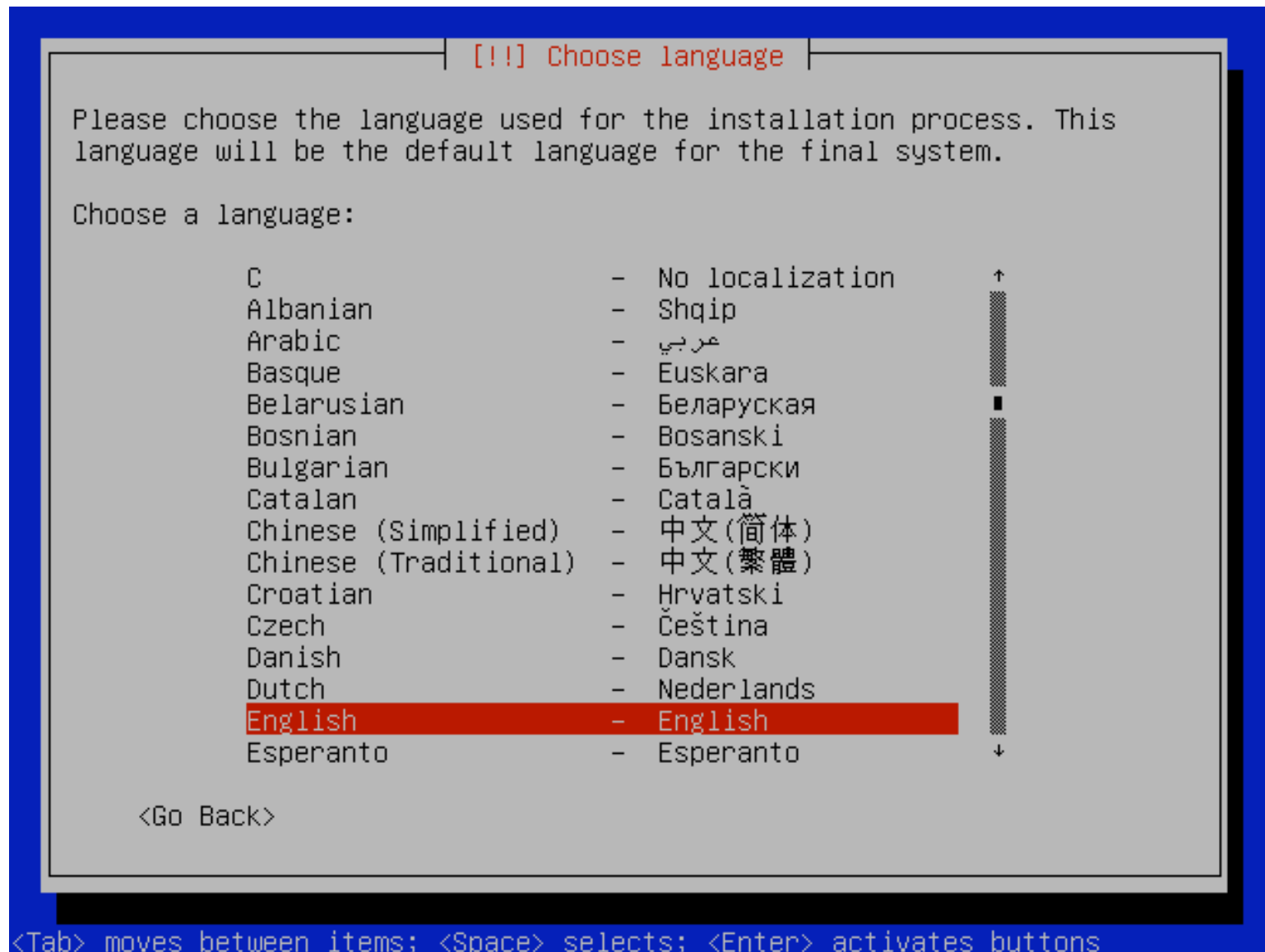
# Press <ENTER>



Install Ubuntu Server  
Check disc for defects  
Test memory  
Boot from first hard disk  
Rescue a broken system

F1 Help F2 Language F3 Keymap F4 Modes F5 Accessibility F6 Other Options

# Choose installation language (again)



# Choose your region or country

!!! Choose language

Based on your language, you are probably located in one of these countries or regions.

Choose a country, territory or area:


- Antigua and Barbuda
- Australia
- Botswana
- Canada
- Hong Kong
- India
- Ireland
- New Zealand
- Nigeria
- Philippines
- Singapore
- South Africa
- United Kingdom
- United States
- Zimbabwe
- other

<Go Back>

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



# Choose continent or region (example only!)



[[!]] Choose language

The continent or region in which the desired country is located.

Choose a continent or region:

- Africa
- Antarctica
- Asia
- Atlantic Ocean
- Caribbean
- Central America
- Europe
- Indian Ocean
- North America
- Oceania**
- South America

<Go Back>

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

**PLEASE READ!!!** This is an example only! Please choose your correct region, continent and country. It is important that you do this for the country where this workshop is taking place!

# Choose your country (example!)

[!!] Choose language

Choose a country, territory or area:

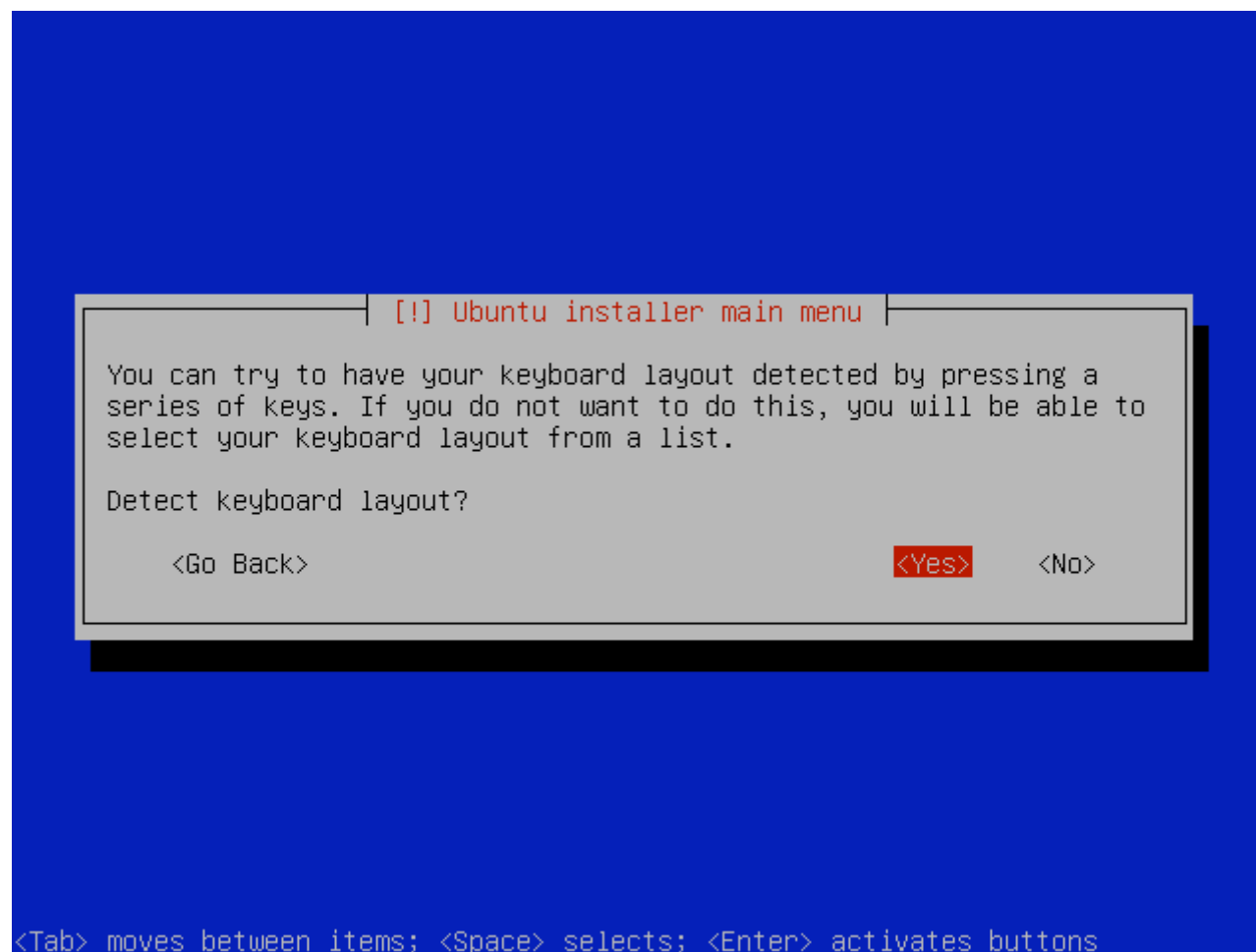
- American Samoa
- Australia
- Cook Islands
- Fiji
- French Polynesia**
- Guam
- Kiribati
- Marshall Islands
- Micronesia, Federated States of
- Nauru
- New Caledonia
- New Zealand
- Niue
- Norfolk Island
- Northern Mariana Islands
- Palau
- Papua New Guinea
- Pitcairn
- Samoa

<Go Back>

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

**PLEASE READ!!!** This is an example only! Please choose the country where this workshop is taking place!

# Auto-detection of Keyboard



**PLEASE READ!!!** If you wish to use a different keyboard than is detected we can change this after installation.

# Auto-detection of keyboard cont.

Ubuntu installer main menu

Please press one of these keys: + y u r n γ u π v y ν

Keycode 56 was not expected -- ignored.  
No need to press Shift or other modifier keys.  
Waiting 20 seconds ...

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

# Keyboard choice (example only!)

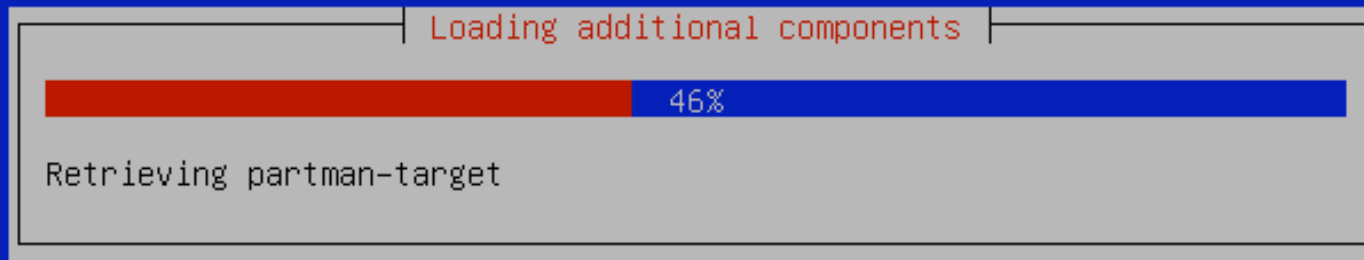
```
[!] Ubuntu installer main menu
Keyboard layout detection complete
Based on the keys you pressed, your keyboard layout appears to be
"us:intl". If this is not correct, you can go back and select your
layout from the full list instead.

<Go Back>                                <Continue>
```

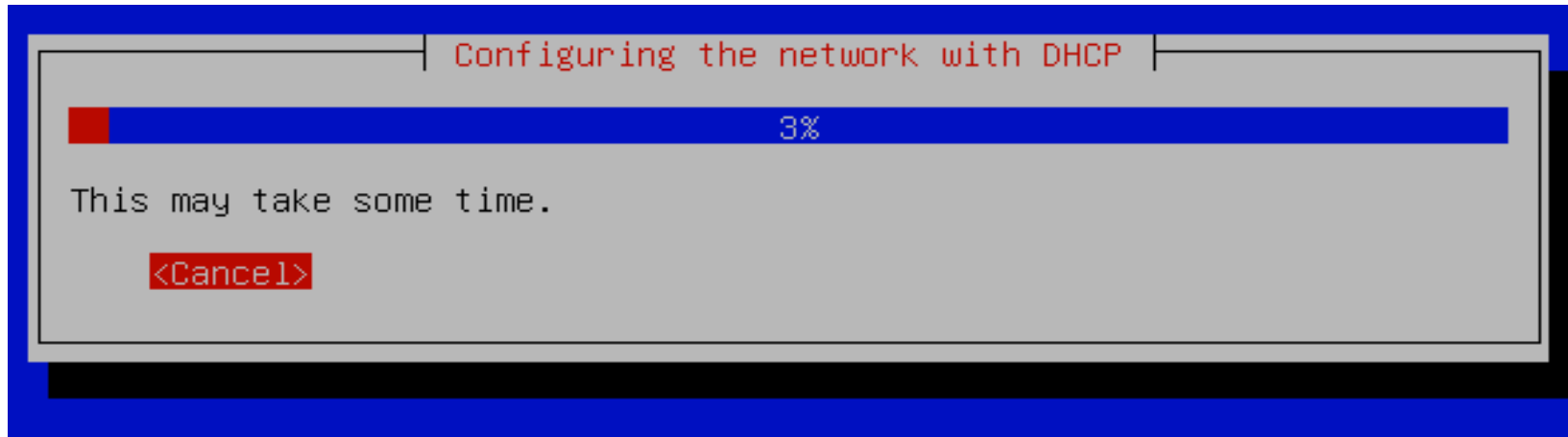
<Tab> moves between items; <Space> selects; <Enter> activates buttons

**If you wish to use a different keyboard than is detected we can change this after installation. Press “Continue”.**

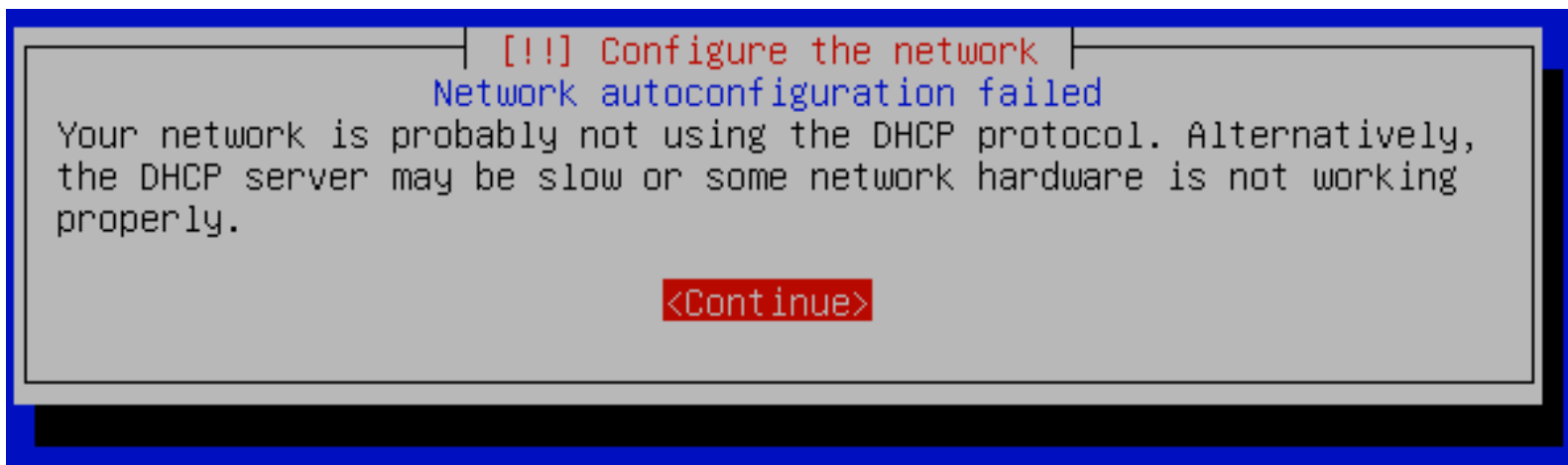
# After keyboard selection...



# Detecting Network...



Press **"Cancel"** to configure your network manually.



Press **"Continue"** to continue.

# Configuring Network

[!!] Configure the network

From here you can choose to retry DHCP network autoconfiguration (which may succeed if your DHCP server takes a long time to respond) or to configure the network manually. Some DHCP servers require a DHCP hostname to be sent by the client, so you can also choose to retry DHCP network autoconfiguration with a hostname that you provide.

Network configuration method:

Retry network autoconfiguration

Retry network autoconfiguration with a DHCP hostname

Configure network manually

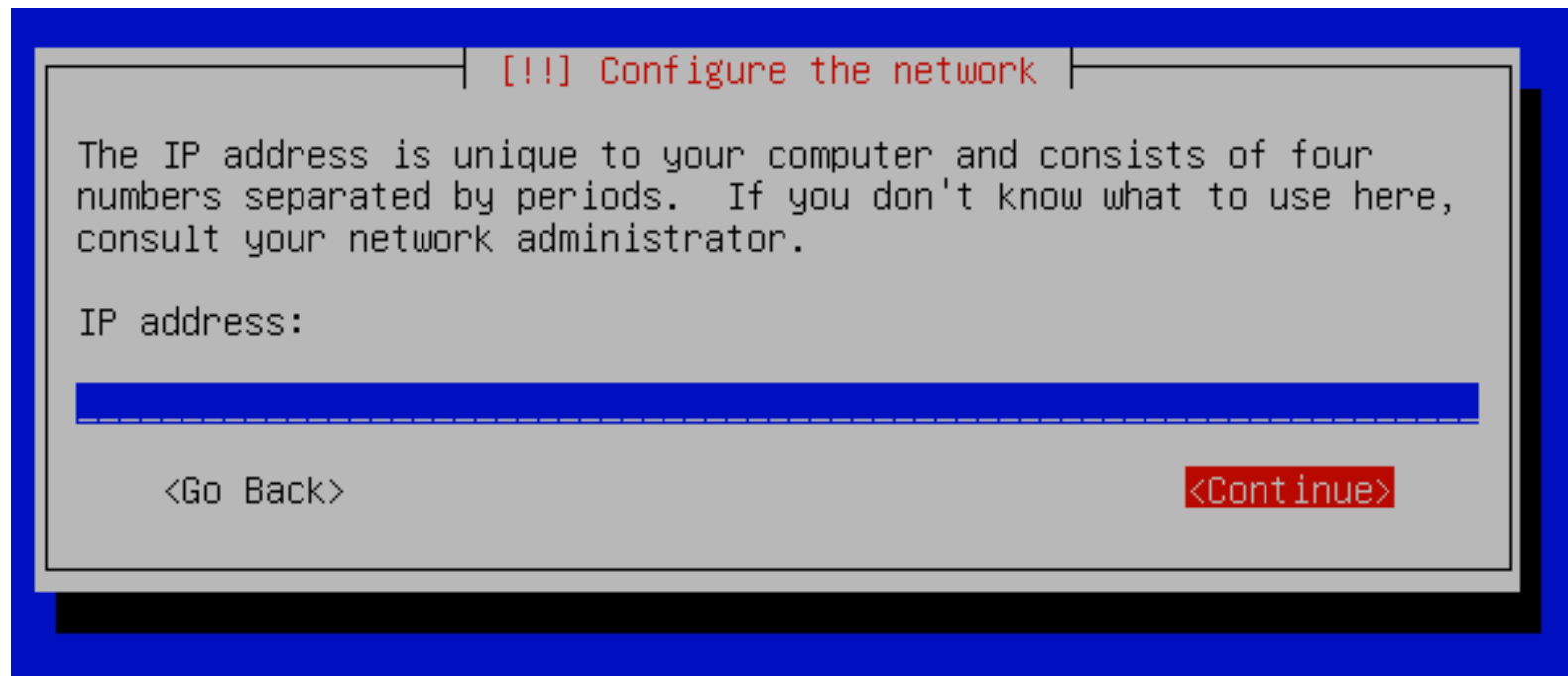
Do not configure the network at this time

<Go Back>

**Be sure to select manual configuration**



# Static IP Address



[[!]] Configure the network

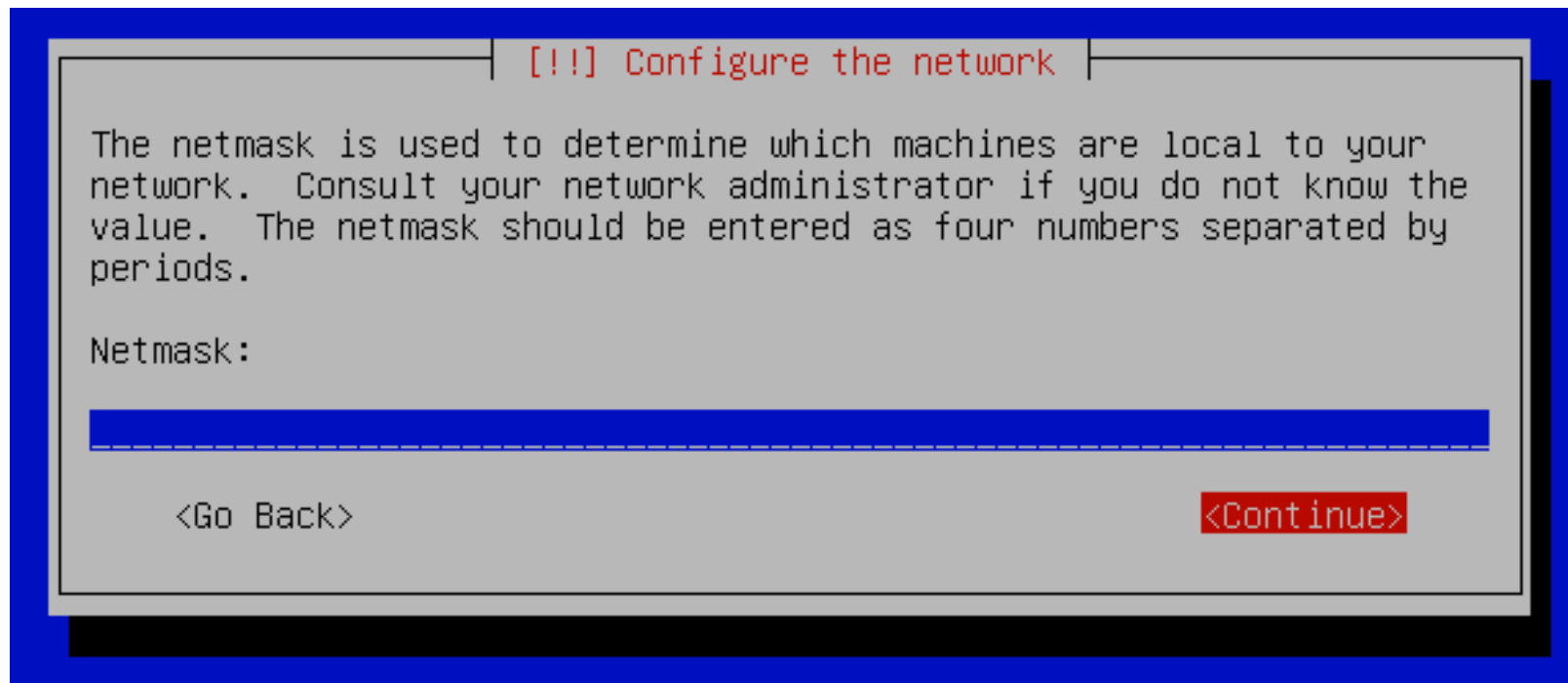
The IP address is unique to your computer and consists of four numbers separated by periods. If you don't know what to use here, consult your network administrator.

IP address:

<Go Back> <Continue>

**Refer to your network information you gathered at the start of this exercise. If you are not sure of any information ask your instructor or an assistant for help.**

# Network Mask (netmask)



The screenshot shows a window titled "Configure the network" with a red title bar. Inside, there is a text box containing the following text: "The netmask is used to determine which machines are local to your network. Consult your network administrator if you do not know the value. The netmask should be entered as four numbers separated by periods." Below this text is a label "Netmask:" followed by a blue input field. At the bottom of the window, there are two buttons: "<Go Back>" on the left and "<Continue>" on the right, the latter of which is highlighted in red.

Configure the network

The netmask is used to determine which machines are local to your network. Consult your network administrator if you do not know the value. The netmask should be entered as four numbers separated by periods.

Netmask:

<Go Back> <Continue>

**The installer wants netmasks in the form: nnn.nnn.nnn.nnn**  
**For instance, a '/24' is represented as 255.255.255.0**

# Network Gateway

!!! Configure the network

The gateway is an IP address (four numbers separated by periods) that indicates the gateway router, also known as the default router. All traffic that goes outside your LAN (for instance, to the Internet) is sent through this router. In rare circumstances, you may have no router; in that case, you can leave this blank. If you don't know the proper answer to this question, consult your network administrator.

Gateway:

<Go Back>

<Continue>

**Refer to your network information you gathered at the start of this exercise. If you are not sure of any information ask your instructor or an assistant for help.**

# Name Server or DNS

!!! Configure the network

The name servers are used to look up host names on the network. Please enter the IP addresses (not host names) of up to 3 name servers, separated by spaces. Do not use commas. The first name server in the list will be the first to be queried. If you don't want to use any name server, just leave this field blank.

Name server addresses:

<Go Back> <Continue>

**Refer to your network information you gathered at the start of this exercise. If you are not sure of any information ask your instructor or an assistant for help.**

# Hostname

[[! Configure the network

Please enter the hostname for this system.

The hostname is a single word that identifies your system to the network. If you don't know what your hostname should be, consult your network administrator. If you are setting up your own home network, you can make something up here.

Hostname:

<Go Back>

<Continue>

**Only enter the hostname. You will enter the domain name in the next step.**

# Domain Name

!! Configure the network

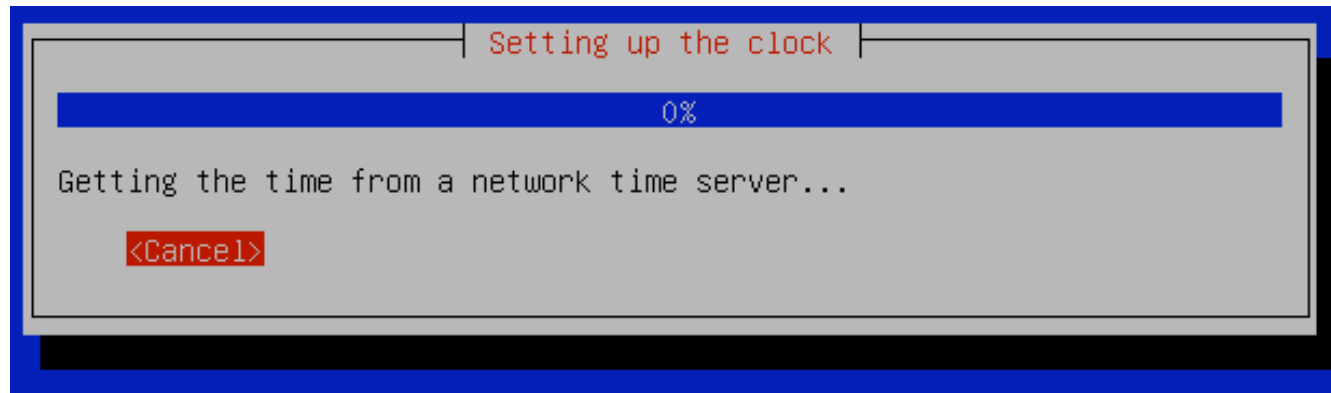
The domain name is the part of your Internet address to the right of your host name. It is often something that ends in .com, .net, .edu, or .org. If you are setting up a home network, you can make something up, but make sure you use the same domain name on all your computers.

Domain name:

<Go Back> <Continue>

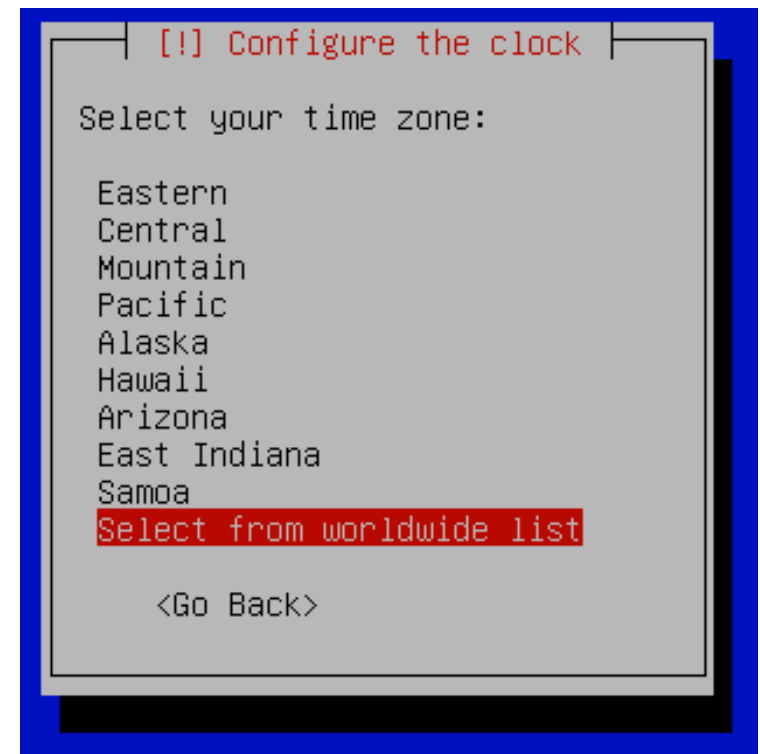
**Refer to your network information you gathered at the start of this exercise. If you are not sure of any information ask your instructor or an assistant for help.**

# Configuring Your Clock



**It's important that you configure your clock for the time zone where this course is taking place.**

**If you choose another time zone some of your server settings will not be optimal – including the locations where you obtain additional software for your installation.**



# Select Your Time Zone

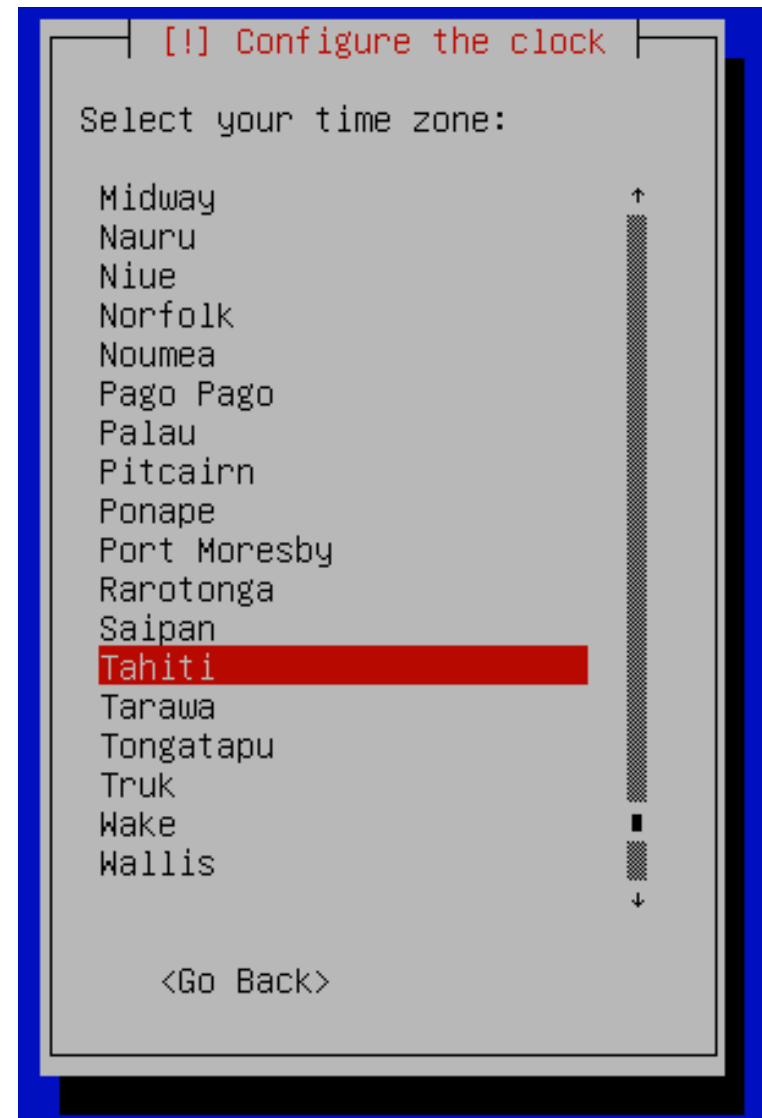
If you chose “Select from worldwide list” in the previous step, then scroll down the screen until you find your region and country. Highlight your choice and press <ENTER> to continue.





# Configuring Your Clock cont.

The diagram on the right is an example only. Please choose the country where this workshop is taking place and press <ENTER> to continue.



# Partitioning Your Disk

## [[!]] Partition disks

The installer can guide you through partitioning a disk (using different standard schemes) or, if you prefer, you can do it manually. With guided partitioning you will still have a chance later to review and customise the results.

If you choose guided partitioning for an entire disk, you will next be asked which disk should be used.

Partitioning method:

Guided - use entire disk

**Guided - use entire disk and set up LVM**

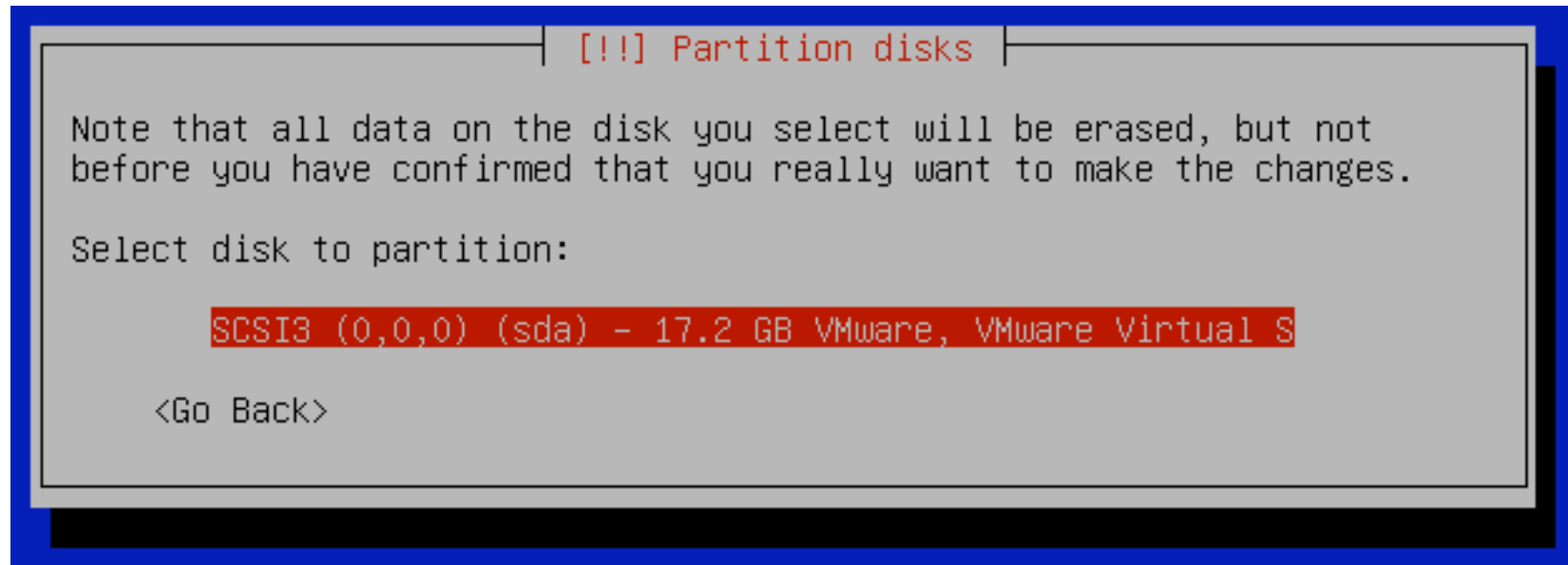
Guided - use entire disk and set up encrypted LVM

Manual

<Go Back>

In class your instructor may demonstrate doing a manual partition of your drive. Please select either “Guided – use entire disk” or “**Guided – use entire disk and set up LVM**” and press <ENTER> to continue.

# Partitioning Your Disk cont.



**Assuming you have a single disk and we plan on using the entire disk, then your screen should look something like this. The sizes will be different. This is an example only.**

# Partitioning Your Disk cont.

## [!!] Partition disks

Before the Logical Volume Manager can be configured, the current partitioning scheme has to be written to disk. These changes cannot be undone.

After the Logical Volume Manager is configured, no additional changes to the partitioning scheme of disks containing physical volumes are allowed during the installation. Please decide if you are satisfied with the current partitioning scheme before continuing.

The partition tables of the following devices are changed:  
SCSI3 (0,0,0) (sda)

Write the changes to disks and configure LVM?

**<Yes>**

<No>

Select “**<Yes>**” and press <ENTER> to continue.

# Partitioning Your Disk cont.

[!] Partition disks

You may use the whole volume group for guided partitioning, or part of it. If you use only part of it, or if you add more disks later, then you will be able to grow logical volumes later using the LVM tools, so using a smaller part of the volume group at installation time may offer more flexibility.

The minimum size of the selected partitioning recipe is 596.0 MB (or 3%); please note that the packages you choose to install may require more space than this. The maximum available size is 16.9 GB.

Hint: "max" can be used as a shortcut to specify the maximum size, or enter a percentage (e.g. "20%") to use that percentage of the maximum size.

Amount of volume group to use for guided partitioning:

max

<Go Back>

<Continue>

The full size of the disk or “max” should be entered here. Select “<Continue>” and press <ENTER> to continue.

# Partitioning Your Disk cont.

## [[!]] Partition disks

If you continue, the changes listed below will be written to the disks. Otherwise, you will be able to make further changes manually.

WARNING: This will destroy all data on any partitions you have removed as well as on the partitions that are going to be formatted.

The partition tables of the following devices are changed:

- LVM VG pcN, LV root
- LVM VG pcN, LV swap\_1
- SCSI3 (0,0,0) (sda)

The following partitions are going to be formatted:

- LVM VG pcN, LV root as ext3
- LVM VG pcN, LV swap\_1 as swap
- partition #5 of SCSI3 (0,0,0) (sda) as ext2

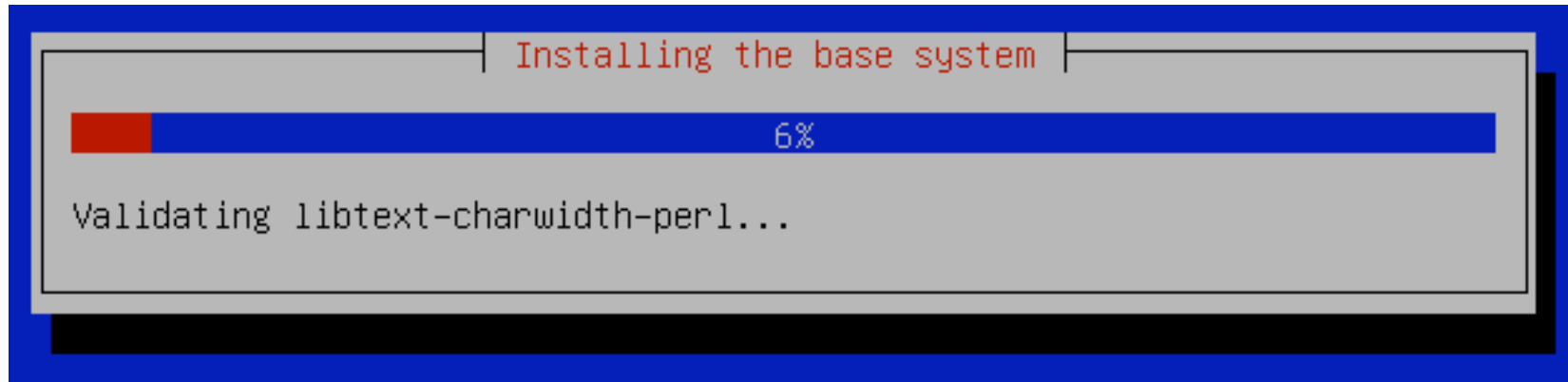
Write the changes to disks?

<Yes>

<No>

Select “<Yes>” and press <ENTER> to continue.

# Installing the Base System



**You will see your disk being partitioned as well as a number of packages being installed. This may take a few moments.**

# Create a User

[[!]] 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:

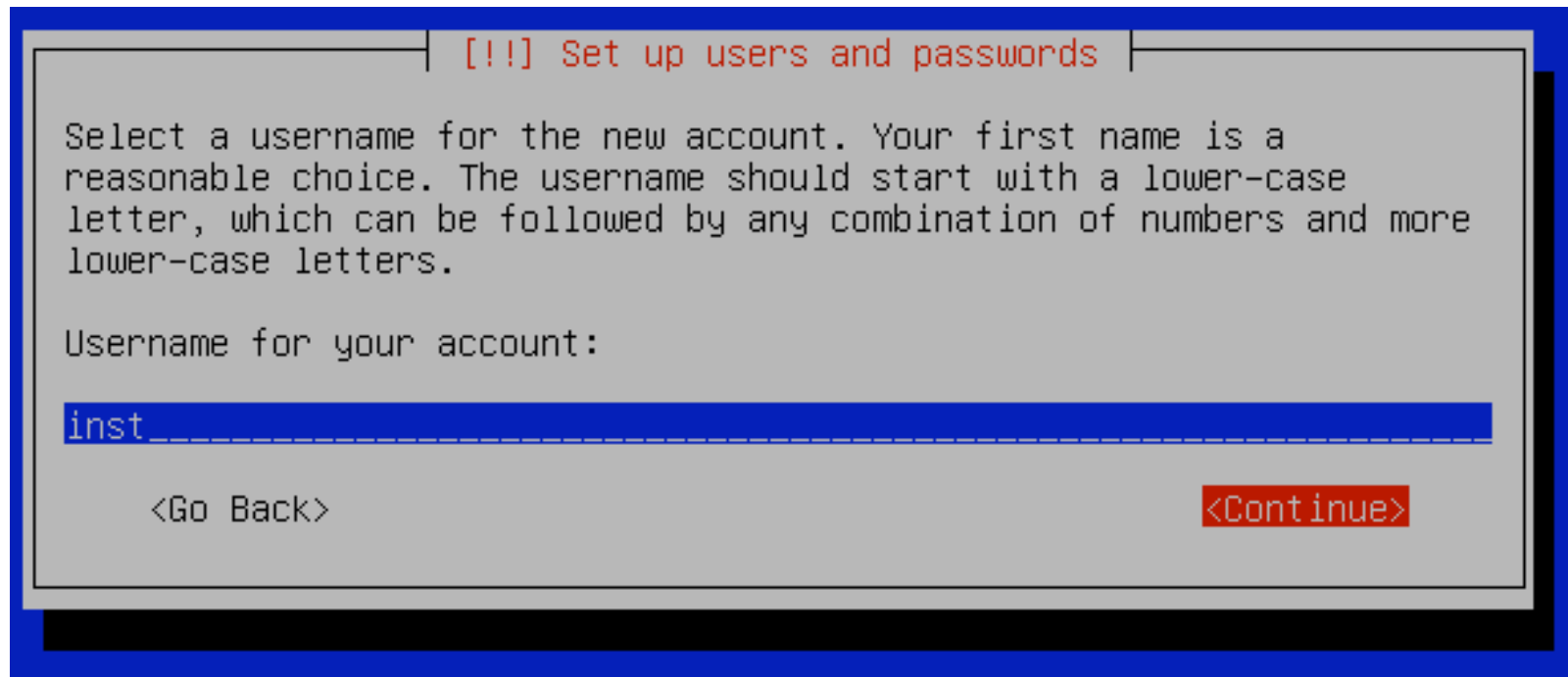
inst\_\_\_\_\_

<Go Back> <Continue>

You can actually use any descriptive name you wish here, but be sure in the next step to name the user “*inst*”.



# Select Username *inst*



[[!]] 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:

inst\_\_\_\_\_

<Go Back> <Continue>

**Please be sure to use “*inst*” as the username. We will be using this user during the week.**

# Set Password for User *inst*

!!! Set up users and passwords

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

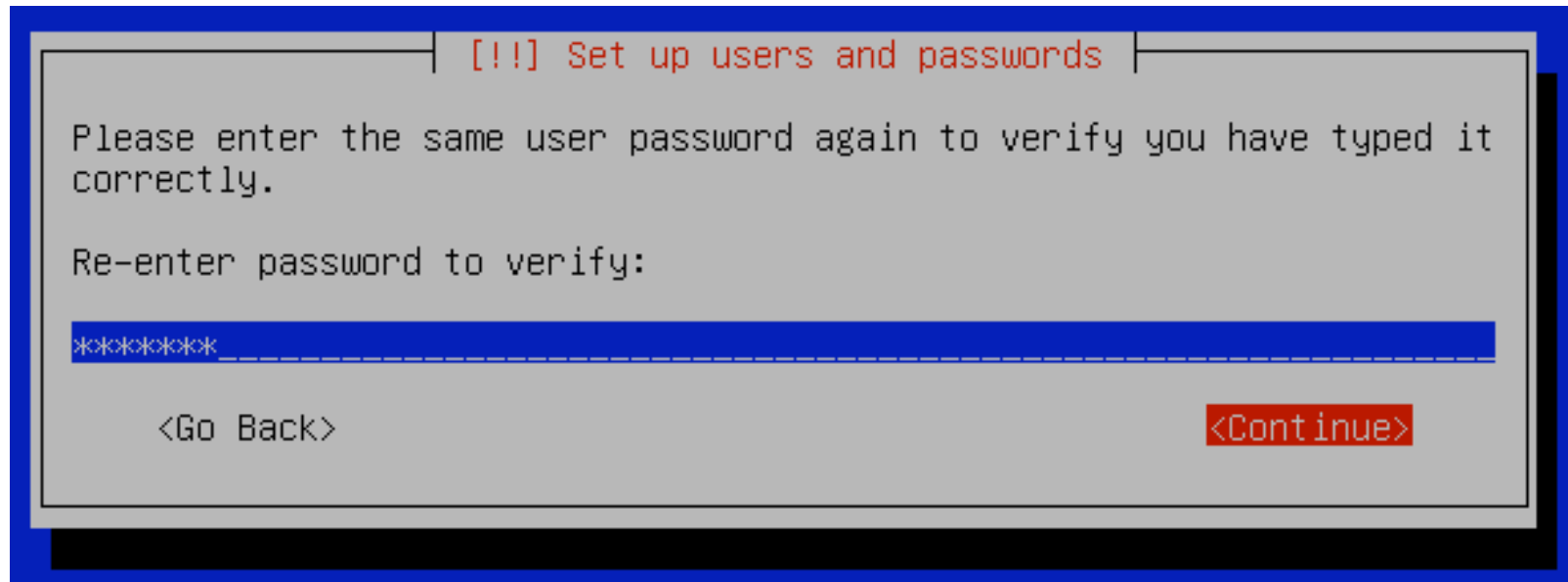
Choose a password for the new user:

\*\*\*\*\*

<Go Back> <Continue>

**Please use the password given in class. If you use a different password we may not be able to assist with possible problems during the workshop.**

# Set Password for User *inst* cont.



[[!]] Set up users and passwords

Please enter the same user password again to verify you have typed it correctly.

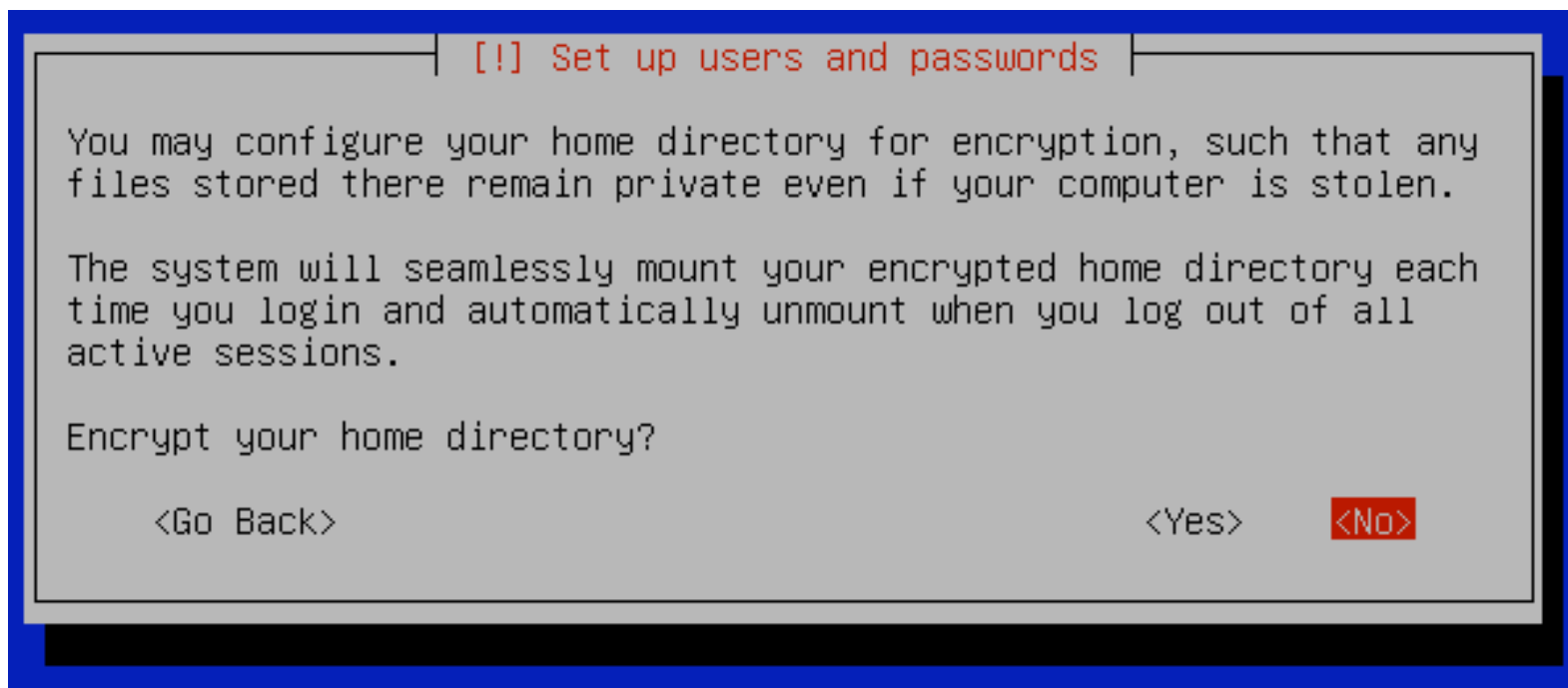
Re-enter password to verify:

\*\*\*\*\*

<Go Back> **<Continue>**

Enter the password given in class, select “**<Continue>**” and press **<ENTER>**.

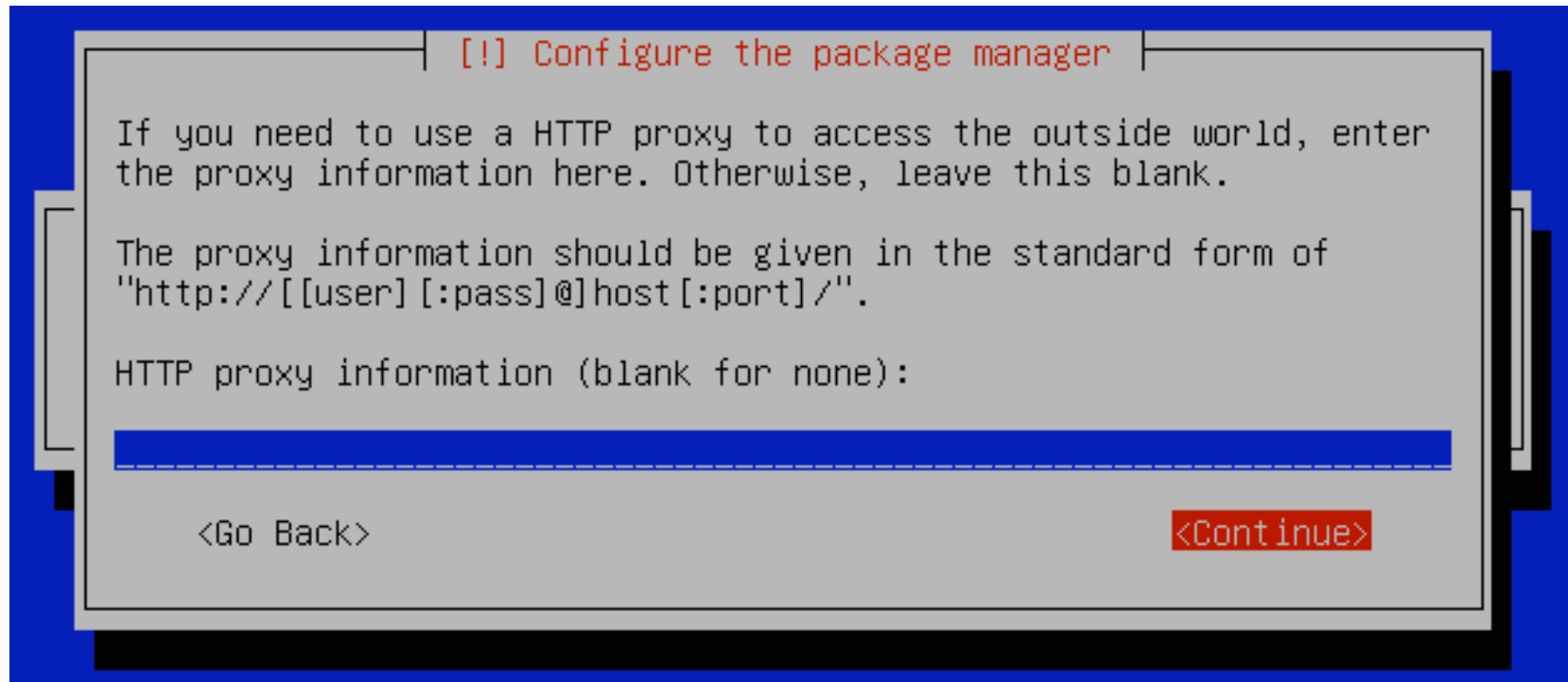
# Encrypt Home Directory - No



**Select “<No>” and press <ENTER> to continue.**

This is a nice feature, particularly on portable devices that can be easily stolen or lost, to protect personal data.

# Enter in HTTP Proxy Information



[!] Configure the package manager

If you need to use a HTTP proxy to access the outside world, enter the proxy information here. Otherwise, leave this blank.

The proxy information should be given in the standard form of "http://[[user] [:pass]@]host[:port]/".

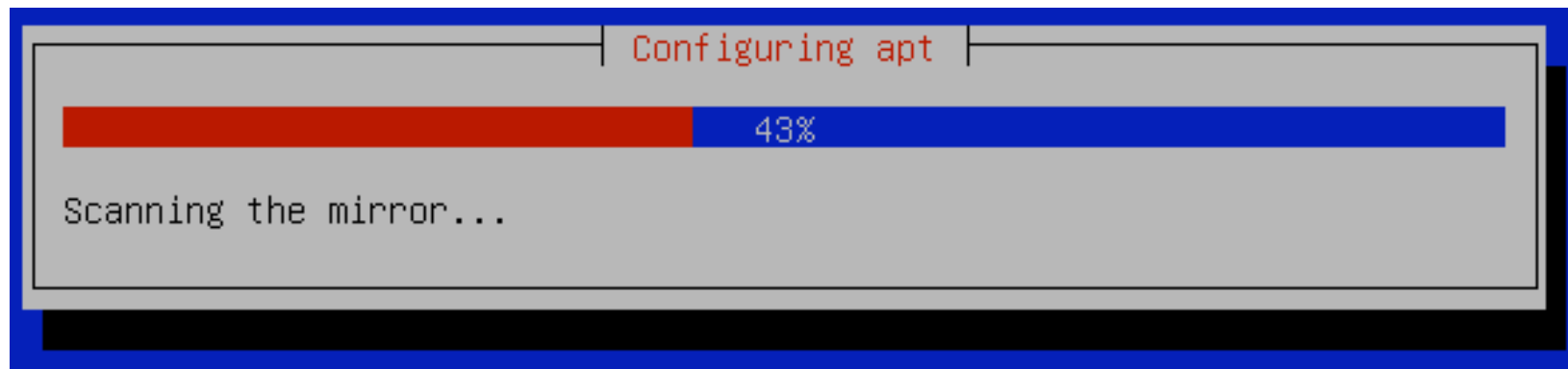
HTTP proxy information (blank for none):

\_\_\_\_\_

<Go Back> **<Continue>**

For most workshops no HTTP proxy is used. If one is in use we will tell you before installation. In most cases, enter nothing, select “**<Continue>**” and press <ENTER>.

# Scanning Mirrors Dialogue



**This screen may pause for a while as your installation attempts to find the nearest Ubuntu software repository.**

If you entered in the wrong time zone when setting your clock this dialogue may take considerably longer to finish. This can be resolved later.

# Automatic Updates

[!] Select and install software

Applying updates on a frequent basis is an important part of keeping your system secure.

By default, updates need to be applied manually using package management tools. Alternatively, you can choose to have this system automatically download and install security updates, or you can choose to manage this system over the web as part of a group of systems using Canonical's Landscape service.

How do you want to manage upgrades on this system?

**No automatic updates**

Install security updates automatically

Manage system with Landscape

Please choose **“No automatic updates”** for now to avoid issues with bandwidth and version problems with installed software. We can discuss this more during the workshop.

# Software Installation

```
[!] 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:

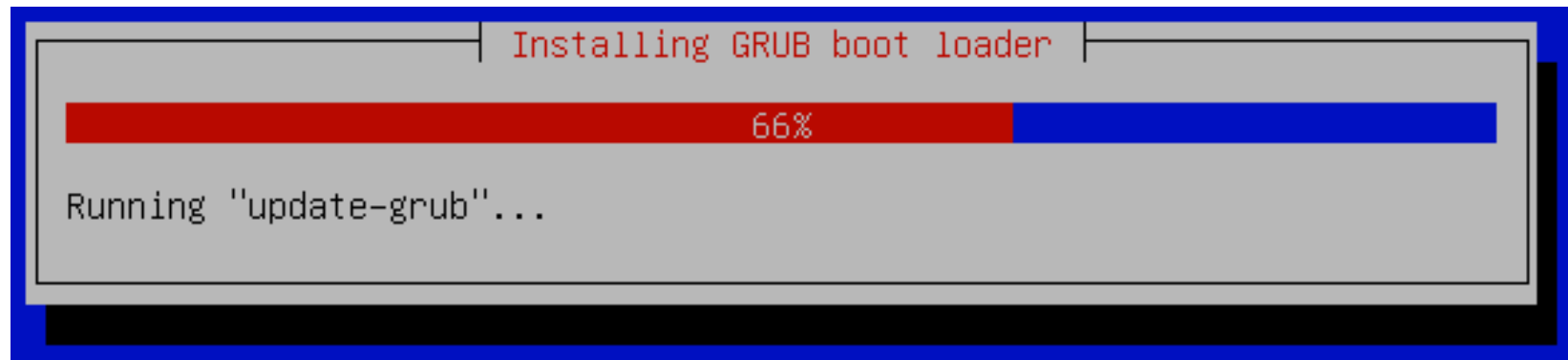
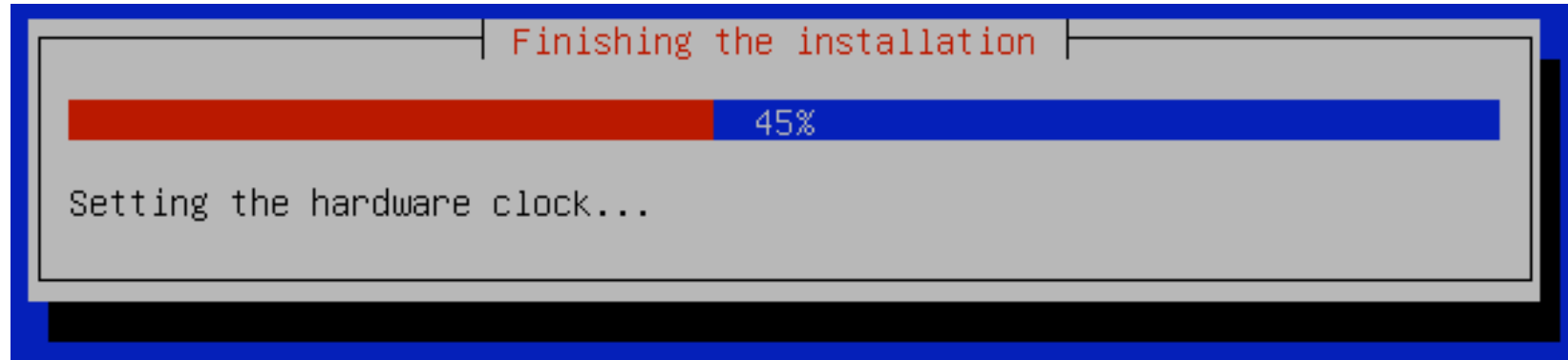
[ ] DNS server
[ ] LAMP server
[ ] Mail server
[*] OpenSSH server
[ ] PostgreSQL database
[ ] Print server
[ ] Samba file server
[ ] Tomcat Java server
[ ] Virtual Machine host
[ ] Manual package selection

<Continue>
```

Other items we will install during the workshop. Please be sure to select “OpenSSH server”, then select “<Continue>” and press <ENTER>.

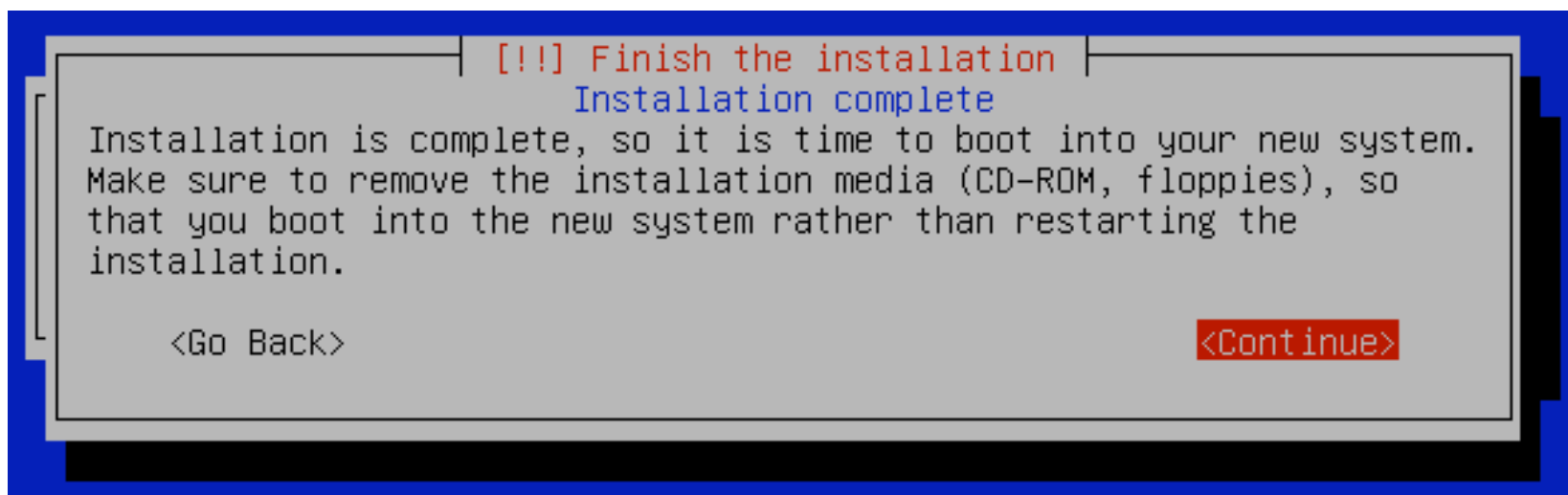


# Final Install Steps



**These should appear on your screen as Ubuntu finishes its installation process.**

# Installation Completed



If you are installing from a CD-ROM be sure to remove it as the machine is rebooting. Select “<Continue>” and press <ENTER> to reboot your machine.

**Congratulations. Ubuntu 9.04 is now installed**

# What Was Installed

1. A simple disk partition scheme:



2. Statically configured Network with:

- IP address
- Netmask
- Network Gateway
- Hostname
- Domain Name
- Name server

3. Initial user name, *inst* with password given in class.

4. OpenSSH Server and basic software.

# Initial Ubuntu Boot

```
fsck 1.41.4 (27-Jan-2009)
/dev/sda5: clean, 31/120480 files, 28744/240943 blocks

* Mounting local filesystems... [ OK ]
* Activating swapfile swap... [ OK ]
* Starting AppArmor
* Mounting securityfs on /sys/kernel/security... [ OK ]
* Loading AppArmor profiles ... [ OK ]
* Skip starting firewall: ufw (not enabled)... [ OK ]
* Configuring network interfaces... [ OK ]
* Setting up console font and keymap... [ OK ]
* Loading ACPI modules... [ OK ]
* Starting ACPI services... [ OK ]
* Starting system log daemon... [ OK ]
* Starting kernel log daemon... [ OK ]
* Starting system message bus dbus [ OK ]
* Starting OpenBSD Secure Shell server sshd [ OK ]
* Starting deferred execution scheduler atd [ OK ]
* Starting periodic command scheduler crond [ OK ]
* Restarting OpenBSD Secure Shell server sshd

Ubuntu 9.04 ubuntu tty1

ubuntu login: _
```

If you re-boot in to Ubuntu you should see something like this. If the prompt sticks at “**Restarting OpenBSD Secure Shell server sshd**” press <ENTER> to view the log in prompt.