Installing Ubuntu Linux
Gutsy Gibbon - Server Version 7.10

The Installer

If you do a default installation you will end up with a server that uses DHCP to obtain it's network address, a file system of the form:

/ (root) [All of disk minus 3xRAM]
<swap> 3xRAM

and a minimal installation of software.

Our Goal

We want you to install Ubuntu and set up the network manually entering in your fixed IP address, your correct host name and domain.

After the Initial Install

We will install the Ubuntu Desktop meta-package (Gnome 2.x and Xorg) as well as properly configure this to work with your particular hardware.

Information you Need

IP Address: ______________________________
Netmask: ______________________________
Gateway: ______________________________
DNS Server: _____________________________
Hostname: ______________________________
Keyboard Layout: _______________________

You will specify a user name and password of your choosing. One of the post-install exercises will include creating a user named admin and a password that we will specify in class.

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

Installing Ubuntu

Step 1

Please choose the language used for the installation process. This language will be the default language for the final system.

This list is restricted to languages that can currently be displayed.

Choose a language:

- Bulgarian
- Catalan
- Chinese (Simplified)
- Chinese (Traditional)
- Croatian
- Czech
- Danish
- Dutch
- English

<Go Back>
Step 2

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

Choose a country, territory or area:

- Australia
- Botswana
- Canada
- Hong Kong
- India
- Ireland
- New Zealand
- Philippines
- Singapore
- South Africa
- United Kingdom
- United States
- Zimbabwe
- Other

<Go Back>

Step 3

Choose a country, territory or area:

- Myanmar
- Nepal
- Oman
- Pakistan
- Palestinian Territory, Occupied
- Philippines
- Qatar
- Saudi Arabia
- Singapore
- Sri Lanka
- Syrian Arab Republic
- Taiwan
- Tajikistan
- United Arab Emirates
- United Kingdom
- Turkey
- Turkmenistan
- United Arab Emirates
- Uzbekistan
- Viet Nam

<Go Back>

Step 4

You can try to have your keyboard layout detected by pressing a series of keys. If you do not want to do this, you will be able to select your keyboard layout from a list.

Detect keyboard layout?

<Go Back>    <Yes>    <No>

Step 5

This may be different depending on location.
**Step 6**  
Again, this may be different depending on location.

**Step 7**  
You will see several screens appear as the installer loads various modules and detects hardware. Eventually you will see the screen below. If you can press **Cancel** in time please do so, otherwise see the screen in **Step 8** and choose to **Go Back** to manually configure your network.

**Step 8**  
Only if you did not press **Cancel** in step 7.

**Step 9**  
Note  
On the next page for steps 10-14 you should use the values you filled in
for your network information at the start of this exercise.

**Step 10**

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>

**Step 11**

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>

**Step 12**

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>

**Step 13**

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>

**Step 14**

Remember to use lowercase characters in your 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>

**Partitioning**

On the next page you will do a Guided partition of your drive.
Step 15

| 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>

Step 16

The drive and size will be different for your machine.

Step 17

Be sure you choose Yes below.

| 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:

- SCSI (0,0,0) (sda)

The following partitions are going to be formatted:

- partition #1 of SCSI (0,0,0) (sda) as ext3
- partition #5 of SCSI (0,0,0) (sda) as swap

Write the changes to disks?

<Yes> <No>

<Go Back>

Step 18

In reality you would probably want your server’s clock to be set to Universal Time (UTC), but for purposes of our lab it is simplest if we choose No at this point.

<Go Back>

<Yes> <No>
Step 19
(Enter in a user name you wish to use in place of Jane User)

Step 20
(If you wish a different username you can specify this here.)

Step 21
A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

Step 22
Please enter the same user password again to verify you have typed it correctly.

Step 23
Now you should see this on your screen for a fairly long time...
Step 24

And then this...

![Configuring apt]

40%

Scanning the mirror...

Step 24a

You should not see this screen.

If you see this, then your network settings are likely broken. At this point installation will take a very long time. Let your instructor or assistant know that you are seeing this screen as restarting the installation is probably faster than waiting for completion.

Step 25

For now please don't choose to install any packages.

![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

(Continue)

Step 26

You should see this. At 85% things will take a bit to finish..

![Select and install software]

65%

Installed update-manager-core

Step 27

![Installing GRUB boot loader]

50%

Running "grub-install (hd0)"...
**Step 28**  
Congratulations! You have installed Ubuntu.

**The Final Step**

Your machine reboots and starts Ubuntu server. You will be presented with an initial log in prompt. If your screen stops at Running local boot scripts (/etc/rc.local) just press ENTER to get the initial log in prompt.

**Manual Partitioning of Drives**

During this installation we did a Guided Partition of your entire drive. Manually partitioning your drive using the Ubuntu installer involves numerous steps. You may wish to do this if you install Ubuntu back at your own location this workshop includes an appendix to this installation guide that gives you step-by-step instructions for doing a sample manual partition of a drive during installation of Ubuntu.

The appendix on the following pages has step-by-step instructions for doing this.

If you are looking at a printout without an appendix, the appendix is available in the on-line version of this document on your workshop's web site. The document is linked in the Detailed Agenda for this workshop.

Next we'll be doing some exercises to practice some concepts in Ubuntu as well as setting up your Ubuntu environment to run with a graphical user interface (GUI) using the Xorg XWindow system with the Gnome desktop.
Appendix

Manual Partitioning of Drives

In Step 15 of the installation we chose Guided use entire disk. If you wish to manually partition a drive for installation of Ubuntu you should follow these steps instead.

Step 1

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
- Manual

Step 2

Your machine may already have partitions on it. If this is the case you need to delete each individual partition first, then you can create partitions. Here is a sample of deleting one partition. Repeat this until all partitions are deleted:

Step 3

You are editing partition #2 of SCSI (0,0,0) (sda). This partition is formatted with the swap area. All data in it WILL BE DESTROYED!

Partition settings:

- Use as: swap area
- Bootable flag: off
- Resize the partition (currently 880.1 MB)

Done setting up the partition
Copy data from another partition
Delete the partition

<Go Back>
Step 4
Now repeat 1 through 3 until you have no partitions left. Then go on to step 5.

Step 5
These screens show a sample drive. Your drive will be different.

Step 6

Step 7
You have selected an entire device to partition. If you proceed with creating a new partition table on the device, then all current partitions will be removed.

Note that you will be able to undo this operation later if you wish.

Create new empty partition table on this device?
<Go Back>  Yes  No

Step 8
Your partition size will be different.
**Step 9**

How to use this free space:
- Create a new partition
- Automatically partition the free space
- Show Cylinder/Head/Sector Information

<Go Back>

**Step 10**

Again, your disk size is different than what's in the dialog on this screen. If, for example, you had 1GB of RAM you might want 1 or 2GB for swap. If you are using 40GB of disk space, then to have 1GB of swap space you would do the following:

<Go Back>

**Step 11**

You are editing partition #1 of SCSI1 (0,0) (sda). No existing file system was detected in this partition.

Partition settings:
- Use as: Ext3 journaling file system
- Mount point: /
- Mount options: defaults
- Label: none
- Reserved blocks: 5%
- Typical usage: standard
- Bootable flag: off

<Go Back>

**Step 12**

Please choose whether you want the new partition to be created at the beginning or at the end of the available space.

Location for the new partition:
- Beginning
- End

<Go Back>
Step 13

[Partition disks]

You are editing partition #1 of SCSI1 (0,0) (sda). No existing file system was detected in this partition.

Partition settings:
- Use as: Ext3 journaling file system
- Mount point: /
- Mount options: defaults
- Label: none
- Reserved blocks: 5%
- Typical usage: standard
- Bootable flag: off

Steps:
- Done setting up the partition
- Copy data from another partition
- Delete the partition

<Go Back>

Step 14

[Partition disks]

This is an overview of your currently configured partitions and mount points. Select a partition to modify its settings (file system, mount point, etc.), a free space to create partitions, or a device to initialise its partition table.

Guided partitioning
Help on partitioning

SCSI1 (0,0) (sda) - 12.9 GB VMware, VMware Virtual 5
#1 primary 12.0 GB + ext3
#1 partition 680.1 MB FREE SPACE

Steps:
- Undo changes to partitions
- Finish partitioning and write changes to disk

<Go Back>

Step 15

[Partition disks]

How to use this free space:
- Create a new partition
- Automatically partition the free space
- Show Cylinder/Head/Sector information

<Go Back>

Step 16

If this dialog is incorrect simply enter in the maximum size listed at the top of the dialog for your machine. This will be the SWAP space (virtual memory) in use on your machine.

Step 17

[Partition disks]

Type for the new partition:
- Primary
- Logical

<Go Back>
**Step 18**

You are editing partition #2 of SCSI1 (0,0,0) (sda). No existing file system was detected in this partition.

Partition settings:

- **Use as:** Ext4 journaling file system
- **Mount point:** /home
- **Mount options:** defaults
- **Label:** none
- **Reserved blocks:** 5%
- **Typical usage:** standard
- **Bootable flag:** off

Done setting up the partition

Copy data from another partition

Delete the partition

*Go Back*

**Step 19**

Note the difference. You chose **Use as:** in step 18. This gives you the dialog below. This is how you set this partition to be swap.

**Step 20**

You are editing partition #2 of SCSI1 (0,0,0) (sda). No existing file system was detected in this partition.

Partition settings:

- **Use as:** swap area
- **Bootable flag:** off

Done setting up the partition

Copy data from another partition

Delete the partition

*Go Back*

**Step 21**

This is an overview of your currently configured partitions and mount points. Select a partition to modify its settings (file system, mount point, etc.), a free space to create partitions, or a device to initialise its partition table.

- **Guided partitioning**
- **Help on partitioning**

- **SCSI1 (0,0,0) (sda) - 12.9 GB VMware, VMware Virtual S**
  - #1 primary 12.0 GB + ext3
  - #2 primary 680.1 MB + swap swap

- **Undo changes to partitions**

  **Finish partitioning and write changes to disk**

  *Go Back*
Step 22

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:

SCSI1 (0,0,0) (sda)

The following partitions are going to be formatted:

partition #1 of SCSI1 (0,0,0) (sde) as ext3
partition #2 of SCSI1 (0,0,0) (sde) as swap

Write the changes to disks?

<Go Back>  <Yes>  <No>

Step 23

You'll see this on the screen...

Creating ext3 file system for / in partition #1 of SCSI1 (0,0,0) (sda)...

Once this dialog finishes you are done partitioning your drive. Note that the partition we created was the same as you get if you choose Guided us entire disk in Step 1. Naturally you could choose to partition your drive any way you wish.