

Installing Ubuntu Linux

“Feisty Fawn” - Server Version 7.04

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. In addition we will manually partition your file system. We will still create the same file system as you would get with an automated install, but in the real world you may need to understand how to create your own file system layout.

After the Initial Install

We will install the Ubuntu Desktop meta-package (Gnome 2.18 and Xorg) as well as properly configure this to work with your particular hardware by installing the xserver-xorg-video-intel package. Before we do this we'll do a number of other exercises as well.

Information you Need

The first PC in the classroom has the IP address 169.223.5.10 and the name pc1.nm.conference.sanog.org. The last PC has the IP address 169.223.5.23 and the name pc14.nm.conference.sannog.org. Please note that the name is lowercase and that no leading zero (0) is used in the name.

Your PC's Information

IP Address:	169.223.5.____	
Netmask:	255.255.255.0	[or a “/24”]
Gateway:	169.223.5.1	
DNS Server:	169.223.5.254	[or classroom “noc”]
Hostname:	pcN.nm.conference.sanog.org	

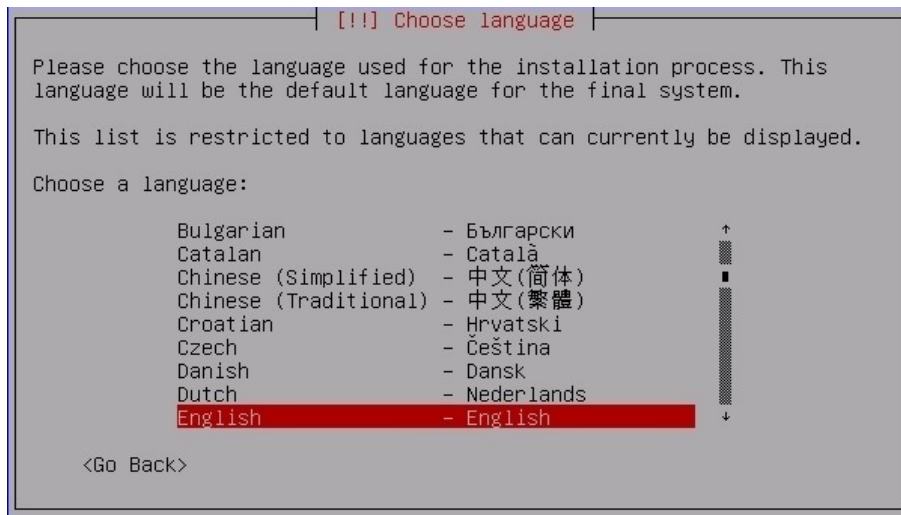
You will specify a user name and password of your choosing. One of the exercises will include creating a user named “*admin*” and a password we'll specify in class.

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

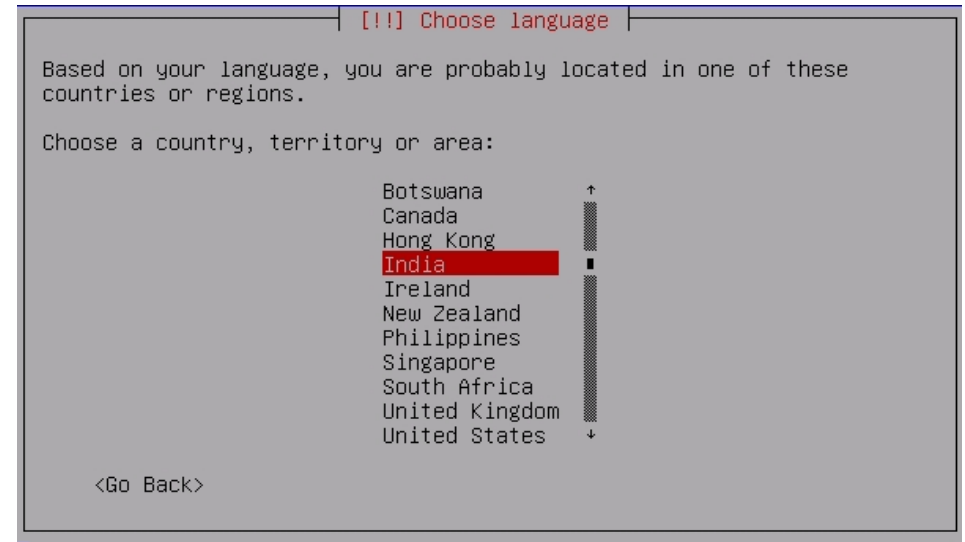
Installing Ubuntu



Step 1



Step 2



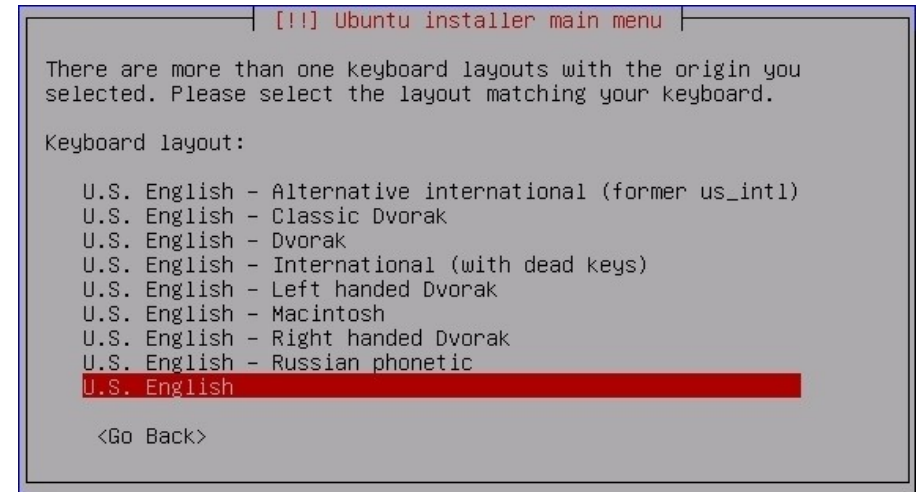
Step 3

BLANK FOR THIS WORKSHOP

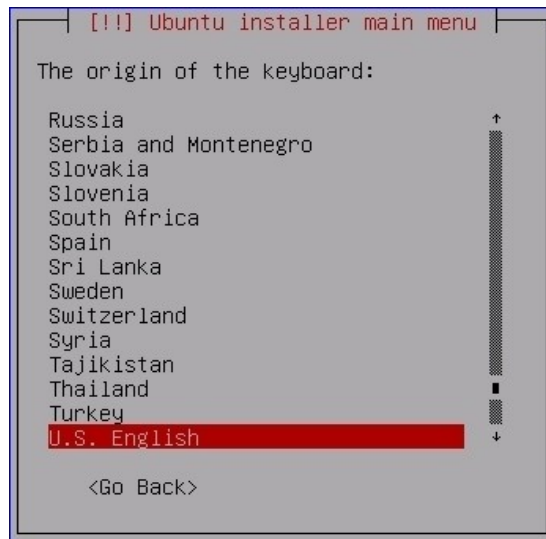
Step 4



Step 6

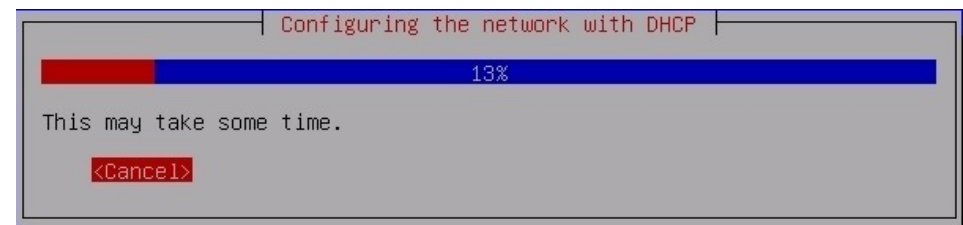


Step 5



Step 7

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

[[!]] 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:

ubuntu

<Go Back> <Continue>

Step 9

[[!]] 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>

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:

255.255.255.0

<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:

202.65.42.254

<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:

202.65.42.252

<Go Back> <Continue>

Step 14

The hostname is what you should have on your first page of this installation guide. And, remember to use lowercase characters.

[[!]] 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:

pcnn.conference.pacnog.org

<Go Back> <Continue>

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
Manual

<Go Back>

Step 16

Your machines likely already have partitions on them. 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:

[[!]] 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 (0,0,0) (sda) - 12.9 GB VMware, VMware Virtual S

#1	primary	12.0 GB	K ext3	/media/sda1
#2	primary	880.1 MB	F swap	swap

Undo changes to partitions
Finish partitioning and write changes to disk

<Go Back>

Step 17

[[!]] Partition disks

You are editing partition #2 of SCSI1 (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 19

[[!]] 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 (0,0,0) (sda) - 12.9 GB VMware, VMware Virtual S

Undo changes to partitions
Finish partitioning and write changes to disk

<Go Back>

Step 18

Now repeat 16 through 18 until you have no partitions left. Then go on to step 19.

[[!]] 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 (0,0,0) (sda) - 12.9 GB VMware, VMware Virtual S

#1 primary	12.0 GB	K ext3	/media/sda1
pri/log	880.1 MB	FREE SPACE	

Undo changes to partitions
Finish partitioning and write changes to disk

<Go Back>

Step 20

[[!]] Partition disks

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 21

Your partition size is likely to be different. Probably 40 GB.

```

[!!!] 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 (0,0,0) (sda) - 12.9 GB VMware, VMware Virtual S
pri/log 12.9 GB FREE SPACE

Undo changes to partitions
Finish partitioning and write changes to disk

<Go Back>
```

Step 22

```

[!!!] 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 23

Again, your disk size is different than what's in the dialogue on this screen. Choose a size that leaves 1.0 GB of space for SWAP. If you have a 40.0 GB drive, then enter "39.0 GB", as shown below, is what you want to do.

```

[!!!] Partition disks

The maximum size you can use is 12.9 GB.

Hint: Use "20%" (or "30%", etc.) for 20% (resp. 30%, etc.) of the
available free space for this partition. Use "max" as a shortcut for
the maximum allowed size.

New partition size:
39.0 GB

<Go Back> <Continue>
```

Step 24

```

[!!!] Partition disks

You are editing partition #1 of SCSI1 (0,0,0) (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

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

<Go Back>
```

Step 25

[[!]] Partition disks

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 26

[[!]] Partition disks

You are editing partition #1 of SCSI1 (0,0,0) (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

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

<Go Back>

Step 27

[[!]] 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 (0,0,0) (sda) - 12.9 GB VMware, VMware Virtual S

#1 primary	12.0 GB	f ext3	/
pri/log	880.1 MB	FREE SPACE	

Undo changes to partitions
Finish partitioning and write changes to disk

<Go Back>

Step 28

[[!]] 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 29

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

The screenshot shows a dialog box titled 'Partition disks'. It contains the following text: 'The maximum size you can use is 880.1 MB.' followed by a hint: 'Hint: Use "20%" (or "30%", etc.) for 20% (resp. 30%, etc.) of the available free space for this partition. Use "max" as a shortcut for the maximum allowed size.' Below this, it says 'New partition size:' followed by a blue bar containing the text '1.5 GB'. At the bottom, there are two buttons: '<Go Back>' and '<Continue>'.

Step 30

The screenshot shows a dialog box titled 'Partition disks'. It contains the text 'Type for the new partition:' followed by two options: 'Primary' and 'Logical'. The 'Primary' option is highlighted with a red background. At the bottom, there is a button labeled '<Go Back>'.

Step 31

The screenshot shows a dialog box titled 'Partition disks'. It contains the text: 'You are editing partition #2 of SCSI1 (0,0,0) (sda). No existing file system was detected in this partition.' Below this, it says 'Partition settings:' followed by a list of settings: 'Use as: Ext3 journaling file system', 'Mount point: /home', 'Mount options: defaults', 'Label: none', 'Reserved blocks: 5%', 'Typical usage: standard', and 'Bootable flag: off'. Below the settings, it says 'Done setting up the partition', 'Copy data from another partition', and 'Delete the partition'. At the bottom, there is a button labeled '<Go Back>'.

Step 32

Note the difference. You chose "Use as:" in step 31. This gives you the dialogue below. This is how you set this partition to be swap.

The screenshot shows a dialog box titled 'Partition disks'. It contains the text 'How to use this partition:' followed by a list of options: 'Ext3 journaling file system', 'Ext2 file system', 'ReiserFS journaling file system', 'JFS journaling file system', 'XFS journaling file system', 'FAT16 file system', 'FAT32 file system', 'swap area', 'EFI boot partition', 'physical volume for LVM', 'physical volume for RAID', and 'do not use the partition'. The 'swap area' option is highlighted with a red background. At the bottom, there is a button labeled '<Go Back>'.

Step 33

[[!]] Partition disks

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 34

[[!]] 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 (0,0,0) (sda) - 12.9 GB VMware, VMware Virtual S				
#1 primary	12.0 GB	f ext3	/	
#2 primary	880.1 MB	f swap	swap	

Undo changes to partitions
Finish partitioning and write changes to disk

<Go Back>

Step 35

[[!]] 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:
SCSI1 (0,0,0) (sda)

The following partitions are going to be formatted:
partition #1 of SCSI1 (0,0,0) (sda) as ext3
partition #2 of SCSI1 (0,0,0) (sda) as swap

Write the changes to disks?

<Go Back> **<Yes>** <No>

Step 36

You'll see this on the screen...

Partitions formatting

33%

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

Step 37

[!] Configure the clock

System clocks are generally set to Coordinated Universal Time (UTC). The operating system uses your time zone to convert system time into local time. This is recommended unless you also use another operating system that expects the clock to be set to local time.

Is the system clock set to UTC?

<Go Back> <Yes> **<No>**

Step 38

You can enter in your real name here in place of “Jane 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:

Jane User

<Go Back> <Continue>

Step 39

If you wish a different username you can specify this here.

[[!]] 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:

jane

<Go Back> <Continue>

Step 40

[[!]] 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>

Step 41

[[!]] 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>

Step 42

Now you should see this on your screen...

Installing the base system

48%

Unpacking the base system...

Step 43

And this...

Configuring apt

40%

Scanning the mirror...

Step 44

For now please don't choose either of these...

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

<Continue>

Step 47

Congratulations! You have installed Ubuntu.

Finish the installation

Installation complete

Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media (CD-ROM, floppies), so that you boot into the new system rather than restarting the installation.

<Go Back>

<Continue>

The Final Step

Your machine reboots and starts Ubuntu server. You will be presented with an initial log in prompt.

Step 45

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

Select and install software

85%

Installed update-manager-core

Step 46

Installing GRUB boot loader

50%

Running "grub-install (hd0)"...

```
* Activating swap... [ OK ]
* Checking root file system...
fsck 1.40-WIP (14-Nov-2006)
/dev/sda1: clean, 21916/1465920 files, 167248/2929846 blocks
[ OK ]
* Checking file systems...
fsck 1.40-WIP (14-Nov-2006)
[ OK ]
* Mounting local filesystems... [ OK ]
* Activating swapfile swap... [ OK ]
* Configuring network interfaces... [ OK ]
* Setting up console font and keymap... [ OK ]
* Starting system log daemon... [ OK ]
* Starting kernel log... [ OK ]
* Starting deferred execution scheduler atd [ OK ]
* Starting periodic command scheduler crond [ OK ]
* Running local boot scripts (/etc/rc.local) [ OK ]
Ubuntu 7.04 pc37.conference.pacnog.org tty1
pc37.conference.pacnog.org login: _
```

Next we'll be doing some exercises to practice some concepts in Ubuntu.