Chapter 2 Installing Red Hat

Concepts:

- Hardware issues, Disks, Partitioning, Mount Points, GRUB/LILO.
- Greater detail will be given in later sections.

Installation Prerequisites:

- What you need to know about your system before you install Red Hat Linux.
- Networking issues.

The Installation Interface:

- Virtual consoles.

An installation walk

through. Your

installation.

Slide 7:
Agenda

Intr
o This section outlines certain concepts that you will be required to understand to install Red Hat Linux. The concepts covered are not explained in great detail. The aim is to give you enough information to get you through the installation. Most of the topics discussed are explained in far more depth in the following sections. Red Hat Linux provides many ways to perform the installation such as booting from CD-ROM, booting from local disk, FTP, HTTP and NFS. During this course we are going to use the NFS method to install the operating system. By the end of this section you will have Red Hat Linux installed on your system.

You will also be familiar
with:

Hardware Issues

Partitions and mount points

Packages

GRUB/LILO

Virtual

consoles

Different installation classes

The installation program's user interface

Supported Architectures

Device drivers

– latest and greatest may not be supported.

– developers do not have a fixed relationship with the

hardware vendors. CPUs

– The installation program automatically probes for the number of CPUs.

– Two kernels installed:

– `grub.conf` entries are `Red Hat Linux (kernel version)` and `Red Hat Linux (kernel version-smp)`

– `lilo.conf` entries are `linux` and `linux-up`

Memory

– Red Hat 9 on 32-bit x86 can autodetect up to a gigabyte of memory.

– kernel hacks are needed to detect more.

Slide 8: Hardware
issues

1.1   Concepts

General Issues

There are a number of hardware issues, which need to be addressed before you can install Red Hat.

Architectures: Linux can run on a variety of hardware platforms for example x86, Itanium and Compaq Alpha. This course will concentrate on the x86 platform. However a similar process can be used to install Linux on other architectures.

Device drivers: Unfortunately the latest and greatest hardware is sometimes not supported by Linux.

This is due to the software development community not having a fixed relationship with the hardware vendors. The Red Hat hardware compatibility list can be found at http://hardware.redhat.com/hcl and is worth checking if you wish to buy a new machine to run Red Hat on. A list of supported graphics cards for Linux can be found at: http://www.xfree86.org.

CPUs: A maximum of sixteen CPUs are supported by the kernel.

Memory: The 2.4 kernel which is supplied with Red Hat Linux 9 can autodetect up to 1 gigabyte of memory on a 32-bit processor machine. If you want more memory to be recognised then you will need to perform some non-trivial kernel modifications.

Basic Disk Structure:

- Master Boot Record (MBR).
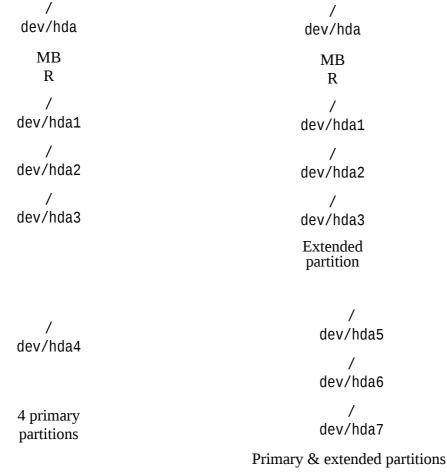
- A number of parititions.

Master Boot Record:

- Partition table stores info on how the partitons are laid out.

- Boot loader stores info on where to boot from.

Partitions:

- Up to 4 primary partitions.

- Can convert a primary partition into an extended partition.

- Extended partitions are containers for logical partitions.

- Up to 12 logical partitions can exist within an extended partition.

Slide 9: Disk Structure and Partitioning

```
        /                                    /
     dev/hda                              dev/hda

       MB                                   MB
        R                                    R
        /                                    /
     dev/hda1                             dev/hda1
        /                                    /
     dev/hda2                             dev/hda2
        /                                    /
     dev/hda3                             dev/hda3

                                         Extended
                                         partition


        /                                    /
     dev/hda4                             dev/hda5
                                             /
                                          dev/hda6
    4 primary                                /
    partitions                           dev/hda7
```

Primary & extended partitions

Slide 10: Disk partitioning examples

A brief description about disk structure Partitioning provides a mechanism that allows discs to be spilt into slices. These

smaller slices are easier to manage and also provide a certain amount of flexibility.

Each hard drive can be split up into a maximum of four primary partitions. If additional partitions are required then one of the four primary partitions can be divided further by making an extended partition. An extended partition is simply a container which holds logical partitions (see slide 10).

Partitioning
Tool:

    - Disk Druid (only available from within the installation program).

Disk
Druid:

    - Easy to use for standard partitioning schemes.

    - Makes intelligent assumptions about the use of extended and logical partitions.

    - You can assign mount points to partitions.

    - *BUT:*

    - it does impose restrictions.

    - you can't edit the existing partition set up.

    - it decides where partitions go on the disk and what device names are allocated.

Slide 11: Disk Partitioning
utilities

Disk partitioning utilities The partitioning tool used by the installation program is called Disk Druid and it is only available from within the Red Hat installation program.

It offers a graphical representation of your hard drive(s) and allows you to partition your hard drive(s) by using the mouse. It also allows you to assign mount points.

Disk Druid uses the following rules when assigning partitions to device names:

The 4 primary partitions are assigned unique device names of `/dev/hda1`, `/dev/hda2`, `/dev/hda3` and
`/dev/hda4`
respectively.

If one of the primary partitions is used for an extended partition then the logical partitions within this ex- tended partition are assigned device names sequentially upwards from `/dev/hda5`. For example the first logical partition will always be assigned `/dev/hda5`, the second `/dev/hda6` and so on.

Device names are allocated to each

partition. Primary partition are assigned

`/dev/`*xxy*`[1-4]`.

Logical partitions are assigned sequentially upwards from `/dev/`*xxy*`5`.

`/dev/`*xxyN*

    xx: Indicates what type of device, `hd` (IDE), `sd` (SCSI)

    y: Indicates which disk, `a` (the first disk), `b` (the second disk)

N : The actual partition number.

```
/dev/hda5
```

  - the 1st logical partition on the 1st IDE drive.

```
/dev/sdb7
```

  - the 3rd logical partition on the 2nd SCSI drive.

Slide 12: Understanding Device Names

The device names allocated to the individual partitions are deciphered as follows:

/dev/xxyN

`dev` This directory contains all the device files. All possible devices reside under `/dev/`.

xx These two characters indicate what type of device the partition is on. For example `hd` indicates

an IDE disk, `sd` would indicate a SCSI device.

y This indicates which device the partition is on. For example `hda` would be the first IDE disk.

N This denotes the partition. For example `/dev/sdb7` would be the third logical partition on the

second SCSI drive.

A quick Unix filesystem review:

     - built up in an inverted tree structure.

     - the top of the tree is called

root or `/`. Mounting:

     - is a mechanism of attaching an extra branch to the tree structure.

     - it maps partitions onto reference points in the filesystems.

     - e.g. `mount /dev/hda8 /usr/local`

     - the filesystem on `/dev/hda8` can now be accessed through the

`/usr/local` mount point. Mount points are assigned to partitions during the

installation.

     - this tells the installation where to put things!

Slide 13: The Unix Filesystem and Mount points

The Unix filesystem and Mount points The Unix file system is built up in an inverted tree structure. At the top of the structure is a directory called root (`/`). Directories in general are just files that contain subdirectories and other files. The root directory contains several subdirectories which have names such as `/etc`, `/sbin`, `/lib`, `/proc` and so on. Each of these subdirectories contain files that are grouped together under a particular subdirectory because they provide a similar function. For example the `/dev` directory is reserved for file system entries that represent devices that are attached to the system. The `/lib` directory should contain only those libraries that are needed to execute the binaries in `/bin` and `/sbin`.

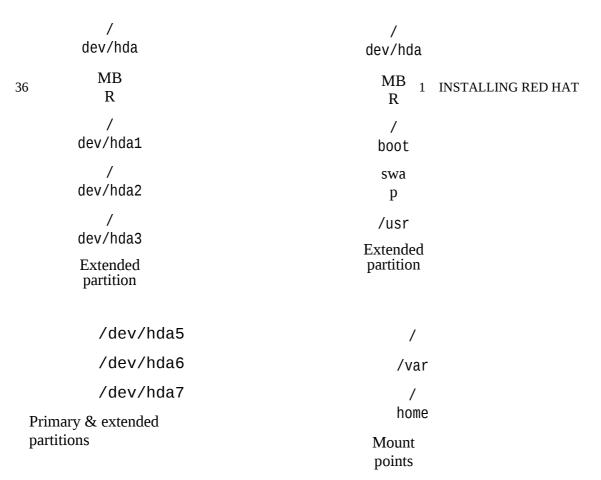Here is a brief description of the subdirectories that can be found directly under the root directory:

`bin` Essential command binaries. `boot` Static files of the boot loader. `dev` Device files.

`etc` Host-specific system configuration.

`home` User home directories.

`lib` Essential shared libraries and kernel modules.

`mnt` Mount point of temporary partitions.

`opt`   Add-on application software
packages.
`root`   Home directory for the
root user.

`sbin` Essential   system
binaries.
`tmp`   Temporary
files.
`usr`   Secondary
hierarchy.
`var`   Variable
data.

The   complete   standard   can   be   found   at
http://www.pathname.com/fhs/

```
            /                              /
       dev/hda                        dev/hda

         MB                            MB
         R                             R

            /                              /
       dev/hda1                         boot

            /                            swa
       dev/hda2                          p

            /                            /usr
       dev/hda3
       Extended                       Extended
       partition                      partition


       /dev/hda5                          /

       /dev/hda6                         /var

       /dev/hda7                          /
                                        home
    Primary & extended
    partitions                        Mount
                                      points
```

Slide 14: Mount Points and Disk Partitions

Partitions and Mount points Subdirectories under the root filesystem do not have to live on the same physical disk partition. For example the root directory (/) could reside on `/dev/hda6` while `/home` could reside on `/dev/hda7`.

To attach `/home` to the main (/) filesystem we use a mechanism called "mounting". Mounting simply attaches an extra subdirectory to the existing file system under a special point in the filesystem called a mount point. These mount points are transparent and just look and act like any other subdirectories.

Mount points can be assigned to partitions during the installation by using Disk Druid or after the installation by adding entries to the `/etc/fstab` file. The `/etc/fstab` file is a lookup table that is read during the system start up. It simply maps mount points to device names.

Slide 14 shows the relationship between mount points and physical partitions.

Partitioning is a very contentious issue amongst

seasoned installers. You need at least 2 *partitions* for

the installation:

   - A root partition or (/).

   - Swap (There is a maximum of 8 swap partitions).

Red Hat also recommends a `/boot`.

   - it contains the kernel and a small number of files used during the bootstrapping
   process.

BUT: It is best to spilt certain mount points onto separate partitions.

> - this provides some extra flexibility and resilience.
>
> - Could split `/usr`, `/home`, `/data`, `/var`.
>
> - Don't separate `/etc`, `/lib`, `/sbin`, `/dev`.

Slide 15: A simple partitioning
scheme

**Partitioning
issues** Partitioning is a very contentious issue among seasoned Linux installers. The
partitioning scheme that you use depends mainly on what the machine is going to be used for.
For example if you have a large web server that generates a copious amount of log files then
perhaps it would be a good idea to have a separate, larger than normal,
`/`
`var.`

The `/boot` partition contains all the files which are needed to bootstrap the system. The idea
is to keep this partition located near the front of the disk therefore overcoming the 1024
cylinder limit imposed by some older makes of BIOS.

> GRUB (GRand Unified Boootloader) or LILO (The Linux Loader) – used to
>
> boot the system. The default is GRUB.
>
> By default it get installed in the MBR.
>
> You can change where GRUB is installed during the installation?
>
> > - in the Master Boot Record (can boot both Linux and Win 95/98/2K/XP).
> >
> > - or in the first sector of your root partition (this doesn't overwrite the current system
> > loader).

Slide 16: Installing
GRUB/LILO

**Installing
GRUB/LILO** To allow the system to be booted without a floppy you are going to need a boot
loader. The installation program provides you with two boot loaders for you to choose from.

GRUB is the GRand Unified Boootloader and is installed by default. LILO is
the Linux Loader.

During the installation you can also choose where you wish to install GRUB. You can either
install it in the MBR or you can install it on the first sector of your root partition. Installing
GRUB on the first sector of the root partition is the recommended place if you wish to keep
the system loader that is already installed in the MBR.

If you currently have Windows 98, Windows 95 or Windows 2000 installed on your system
you can still install
GRUB into the MBR. GRUB is quite friendly and will allow you to boot either
operating system.

By default GRUB in installed in the MBR. If you are not sure whether or not installing
GRUB will destroy your current set up then it is suggested that you take a copy of the MBR
before the installation.

1.2 Before you install

Gathering Information Installing Red Hat Linux is a relatively straightforward process. However in order for the installation to go as smoothly as possible there are a number of prerequisite tasks that you should perform.

The things you should know about:

– Hard Drive(s): How many, size, IDE or SCSI ?

– Network card: Make and model number?

– Memory: How much?

– Mouse: Type, number of buttons, protocol?

– Monitor: Make, model and manufacturer?

– Graphics card: Make, model and VRAM?

So, how do you find out?

- look at the vendor supplied documentation, use Windows or
open the box.

These days the autoprobe facility does a good job at detecting hardware.

Slide 17: So, what do you need to
know?

Hardware In order to install Red Hat you will need to know certain information about the machine on which you are planning to put the operating system. On most newer systems the installation is able to probe your system to identify what hardware is installed.

Once you have found out what hardware configuration your machine has, write it down! This will save you time on the next occasion you update or reinstall your system.

Once you have collected the information concerning your system it is worth checking with the Red Hat compati- bility list to see if your hardware will work with the operating system.

Your network details can be obtained from your CO or   ip-

register@ucs.cam.ac.uk   . Networking:

Machine Name: the name you wish to call your machine.

IP number: a unique number used to identify your

machine. Netmask: a number that defines the scope

of your local network. Default gateway: the gateway

out of your subnet.

Nameserver: the system that resolves machine names to IP address.

Slide 18:
Networking

Networking

 As part of networking your system you are going to need an IP address. This is usually assigned by
address or your computer officer.

IP
Address

This is a series of four numbers between `0` and `254` separated by dots. It will be
something like
`131.111.8.2`. This is the number that is unique to your computer and corresponds to
your machine's name.

Netmas
k

This is like an IP address but very likely the numbers will all be 0 or 255. It will usually have
the value
`255.255.255.0`   though   some   (typically   large)   departments   have   the   value
`255.255.0.0`. The netmask is used to determine whether or not an outgoing packet is
destined for a machine on the local subnet or not. If the packet in question is local then
the packet is sent directly to the machine, otherwise the packet will be sent to the router.

Default
router

This is also called the gateway. Common (but not universal) practice within the
University is for the default router address to be the same as the machine's IP address
except for the last of the four numbers being replaced by `62`. So in the example above
the default router might be `131.111.8.62`.

Nameserv
er

IP register will also give you the IP addresses of your nearest the nameserver. Some
departments have their own nameserver, in which case you will be told about it.
Otherwise you will have been given the IP addresses of the two central nameservers that

we run: `131.111.8.42` and `131.111.12.20`.

---

bootdisk.img - primary boot image for all install

methods. A secondary driver disk will be needed.

The following driver disks are available: `drvnet.img` -

Supplemental Network Drivers. `pcmciadd.img` -

PCMCIA Driver Diskette. `drvblock.img` -

Supplemental Block Device Drivers.

So which one do you use?

---

depends on your machine's configuration.

and where the copy of the installation media resides.

Slide 19: Installation images

Where do you get the boot disk from?

- located in the `images` directory.

You need:

- a blank, formatted, high-density (1.44 MB), 3.5-inch disk.

- a machine capable of writing to 3.5-inch disks.

– For example to make a boot disk under a Linux-like OS from our NFS server:

```
# mount nfs-uxsup.csx.cam.ac.uk:/linux/redhat/9/en/os/i386/
/mnt
# cd /mnt/images
# dd if=bootdisk.img of=/dev/fd0
```

Slide 20: Making Boot Disks

First stage installer: The boot diskette A boot diskette will be needed if you cannot boot from the CD-ROM or if you wish to install from a network, block, or PCMCIA device.

A If you choose to create a boot diskette then you must also create the appropriate driver diskette for your booting scenario. See slide 19 for details.

The diskette images can be found in the images directory on your Red Hat Linux CD-ROM.

Once found and loaded, the second stage installer contains the majority of the installation.

It is a graphical user interface (GUI).
- you point and click to navigate screens or enter text fields.
- you can also use the [Tab] and [Return] keys.

Virtual Consoles:

Console 1, [Ctrl]-[Alt]-[F1], the installation

dialogue. Console 2, [Ctrl]-[Alt]-[F2], the

shell prompt.

Console 3, [Ctrl]-[Alt]-[F3], the installation log.

Console 4, [Ctrl]-[Alt]-[F4], the system log, messages from

the kernel etc. Console 5, [Ctrl]-[Alt]-[F5], other messages.

Console 7, [Ctrl]-[Alt]-[F7], the X graphical display.

Can be very helpful if you encounter a problem during the installation!

Slide 21: The Installation Program User Interface

Virtual Consoles The Red Hat installation procedure provides a number of virtual consoles that can be used during the installation. These can be extremely helpful if you encounter problems while installing. Not only do they provide a number of diagnostic messages but also provide you with a mechanism, a shell, where you can enter commands.

There are six virtual consoles available and you can switch between them using a

single keystroke. Generally there is no need to switch between different consoles

during the installation.

1.3   An installation walk through

Booting the Installation Program This part of the course is designed to give you a step by step account of a typical dialogue that occurs when installing Red Hat Linux over the network from Unix Support's NFS server.

Since we are performing a network installation we are going to need two floppy disks.

The first will contain the initial installation program (`bootdisk.img`) and the second will store a copy of the network drivers (`drvnet.img`).

To make the boot floppies under Linux:

```
# mount nfs-uxsup.csx.cam.ac.uk:/linux/redhat/9/en/os/386/ /mnt
# cd /mnt/images/
# dd if=bootdisk.img of=/dev/fd0
(Insert a different floppy disk)
# dd if=drvnet.img of=/dev/fd0
```

To start the installation procedure off, insert the boot floppy (bootdisk.img) into your computer's first floppy disk drive and reboot. Your BIOS settings may need to be changed to allow you to boot from the disk. After a short delay a screen containing the boot prompt should appear. This screen contains a variety of boot options.

Further information on the different boot options available can be obtained by pressing the [F2] function key.

For this course: Simply press the [Return] key.

Choosing a language
The next screen is a simple question asking you which language you wish to use during the installation.

For this course: Select *English*.

Selecting the keyboard

Next, the installation asks you what keyboard type you are using.

For this course: Select *uk*.

Selecting an installation method
Next, you will be asked which type of installation method you are planning to use.

For this course: We are installing Red Hat from an NFS server so select *NFS image*.

No driver found

Next, you will be asked if you would like to manually select your driver or to use a driver disk.

For this course: Select *Use a driver disk*.

Next, you will be asked which device contains the driver disk.

Driver Disk
For this course: Insert the network driver disk and select *fd0*.

Configuring Network

You will now be asked to enter the machine's network configuration. Most of this information can be found from your local C.O. or on the letter sent to you from the IP-register group.

For this course: Do not select the dynamic IP configuration option.

IP address:
`128.232.253.`*`xx`*
Netmask
`255.255.255.192`
Default gateway
`128.232.253.62`

Primary nameserver   `131.111.8.42`

NFS Setup

The next screen asks you for information regarding your NFS server. You must enter the
fully qualified domain name or the IP address of your NFS server. You must also enter the
name of the exported directory that contains the Red Hat Linux CD.

For this course: NFS server name: `nfs-uxsup.csx.cam.ac.uk`
                Red Hat directory: `/linux/redhat/9/en/os/i386`

There will now be a short wait while the installation program is downloaded from the server.

Welcome to Red Hat

This is the GUI to the installation program. Throughout the installation you can use the
mouse to select options and navigate between the screens. You can also select installation
options by using the [Tab] and [Return] keys.

Cancelling the installation can occur any time before the *"About to install"* screen. There is
no turning back after this screen because the installer will start writing packages to your local
disk.

For this course: Simply press [Return] to continue with the
installation.

Hint: Be very careful to only use a single mouse click to select the *Next* button on the GUI.
Double clicking the mouse button will result in the installation program skipping a screen.
Sorry to sound pedantic but this is a very common mistake.

The graphical interface

Once the second stage of the installation program has been downloaded from the NFS server
and the GUI started, you will be ask to configure your mouse.

If you don't know what mouse you have, choose one that is compatible with yours. Otherwise
choose the *Generic* option. If you have a serial mouse you will need to choose the correct

port and device that your serial mouse is connected to. The *Emulate 3 Buttons* option allows a 2 button mouse to emulate a 3 button mouse by clicking both mouse buttons at the same time to act as a middle button.

You can change the mouse configuration after the installation by using the `redhat-config-mouse` command in a shell prompt.

For this course: Accept the mouse that has been highlighted.

Installation type On this screen you must decide what type of installation you require. Note that in figure 11 the "Custom" button is selected and all the others are unselected.

For this course: Choose the *Custom* installation option.

For this course: Select the *Manually Partition with Disk Druid* option.

Main Disk Druid Window – Partitioning

Next, you must tell the installation program where to install the Red Hat software. This is achieved by defining mount points for one or more disk partitions into which the operating system is installed.

Controlling Disk Druid
You can control Disk Druid by clicking on the appropriate buttons with the mouse or by using

keyboard short cuts. Here is a description of each button:

New: Used to add a new partition.
Edit: Used to edit mount points and partition sizes.
Delete: Used to delete the partition which is highlighted within the partition section table. *Reset:*   This will reset the partition table to its original state. All changes will be lost. *RAID:*   Used to provide redundancy to any or all disk partitions.
LVM: Allows you to create an LVM logical volume.

Adding a Partition
First click on the *New* button in the main Disk Druid window. Then enter the appropriate details into the window that pops up. For this example enter `/boot` in the *Mount Point* field and 100 into the *Size (Megs)* field, then you simply need to click on the *Ok* button. See figure 14 for an illustration of this example.
You can choose whether to keep a partition a fixed size or to allow it to "grow" (fill up the rest of the disk) or to allow the partition to grow to a certain point.

If you select the *Fill to maximum allowable size* button on more than one partition then any additional free space will be shared out between the partitions.

The partition layout for this course
  For this course: First delete all of the

partitions shown. Next, create the following

partition layout:

```
100 MB     /boot
512 MB     swap
1000 MB    /
4000 MB    /usr
1000 MB    /var
2000 MB    /home
```

Make sure that none of the partitions has the *Fill to maximum allowable size* button selected.
This deliberately leaves some space spare for us to play with during this course.

  Hint: If you make a complete hash of the partitioning simply hit the *Reset* button. This
restores the partition table to its original state.

Installing GRUB/LILO

  **For this
  course:**   Do not change the default boot
                       label. Do not use a boot loader
                       passwd.
                       Do not select the *Configure advanced boot loader options* button.

Network Configuration

  For this course:
  Do not select the *automatically via
  DHCP* button. Add a secondary DNS
  server: `131.111.12.20`
  Check the network configuration and click on the *Next* button.

Firewall Configuration

On this screen of the installation process we have the option of setting up a firewall to stop
selected network services from being accessed.

  For this course: Select the *No firewall* option.

Language support selection
  This is where we decide on the default language that is used once the installation has finished.

  For this course: Accept the default language *English (USA)*

Time zone configuration

You can set your time zone by either selecting your computer's physical location or by an offset from the Universal Co-ordinated Time.

There are a number of ways you can select the timezone. You can either use the interactive map and click on the yellow dot which corresponds to your city or you can scroll through the list and choose your desired timezone.

For this course: Set the Timezone to
Europe/London.

Warning: If you are setting up a dual boot Windows/Linux system then it is probably best to set the system clock to use local time and not UTC. On the whole is it not a very good idea to have two different operating systems fighting over which one controls the system clock.

On this screen you simply have to supply the password for the root account.

Setting Root Password

The root password you choose must be at least six characters long and is case sensitive. Make sure you choose a password which is easily remembered and has a good mix of numerals, alphanumeric characters, upper and lower case letters, and is not a dictionary word.

For this course: Set the root password to be the one shown on the overhead projector.

Authentication

MD5 is simply a different encryption algorithm from the old-style one and allows up to 256 characters instead of the normal eight letters or fewer. Shadow passwords are a mechanism which allows the encrypted passwords to be readable only by `root`.

 For this course: Make sure that MD5 and shadow passwords are enabled and all the other
methods are disabled.

Package group selection

This is the part of the installation where you get to choose which package groups of the Red Hat distribution you wish to install. Each package group is a bundle of packages. For example the kernel development package group contains various packages to install, compile and build new kernels. Once a package group has been selected it is then possible to select or deselect individual packages from that group by clicking on the *Select individual packages* button and advancing to the next screen.

 For this course:
 Select the following package groups: X Window System

                                                       GNOME Desktop Enivronment
                                                       Editor
                                                          s
                                                       Graphical
                                                       Internet Text-
                                                       based Internet
                                                       Office/Productivi
                                                       ty Sound and
                                                       Video Graphics
                                                       Development
                                                       Tools Kernel
                                                       Development
                                                       Administration
                                                       Tools

   Remove the following packages groups: Printing Support

   Make sure that the *Select individual packages* button is selected.

Selecting individual packages

On this screen you can add or delete individual packages from the package groups that you
selected on the previous screen.

You can choose to view the individual packages in *Tree View*

or *Flat View*. The *Tree View* displays the packages grouped

by application type.

The *Flat View* display the packages in an alphabetical listing on the
right of the screen.

Using *Tree View*, you see a listing of package groups. When you expand this list (by double-
clicking on the folder arrow beside a package group name) and pick one group, the list of
packages in that group appears in the panel on the right. *Flat View* allows you to see all of the
packages in an alphabetical listing on the right of the screen.

To select an individual package, click the checkbox beside the package name. A check mark
in the box means that a package has been selected.

For this course:

   Add the `anaconda` package:
        Hint - take a look in the *Applications* menu then in the *System* folder.

   Remove the `tcl` package:

Hint - look in the *Development* menu then in the *Languages* folder.

Unresolved Dependencies

Some packages depend on other packages being installed, so to make sure that the system has all the packages it needs, it performs a dependency check every time you install or remove an individual package.

If there are any unresolved dependencies then the installer will list them and give you an opportunity to install the packages needed.

For this course:

Check that *Install packages to satify dependencies*

is selected. Click on the *Next* button to satisify the

dependencies.

About to Install You should now see a screen preparing you for the installation of Red Hat Linux. If you would rather not continue with the installation process, this is your last opportunity to safely cancel the process and reboot your machine. To cancel this installation process, press your computer's Reset button or use the [Control]-[Alt]-[Delete] key combination to reboot your machine.

For this course: Press the *Next* button.

Creating a boot disk It is highly recommended that you create a boot diskette. If for some reason your system were not able to boot properly using GRUB, LILO, a boot diskette would enable you to properly boot your system.

For this course: Insert a blank floppy and click on the *Next* button.

Installing X At this point the installation program will probe your system in an attempt to determine which video card you have. If this probing fails then you would be presented with a list of video cards and monitors for you to select from.

For this course: Click on the *Skip X configuration* button because we are going to install X in the next section of the course.

Congratulations you have now installed Red Hat. Simply remove your floppy and reboot your system!

For this course: Press the *Exit* button.

Assignments
1 Mark Questions
1) Give the resource to know the compatibility list with RedHat Linux?

2) What MBR stands for?

3) What is a boot loader?

4) GRUB stands for ---

5) LILO stands for ------

6) ____is device name given for the 1 st logical partition

7)What is mounting a file system?

8) What is a Firewall?

9) Which is a default Boot Loader comes in Linux?

10) Which are the minimum partition required to install a Linux?

5 Mark Questions
1) What are the different alternate for installing RedHat Linux on your local system?

2) What are the hardware issues of RedHat Linux?

3) Write a note on disk structure and partitioning

4) What is MBR?What are the content of a MBR?

5) What is Disk Druid? What is a different options with DD?

6) What is a general approach of assigning Device Name for different partition? Explain

7) Explain the File System Mounting in Linux with an example.

8) What are the different installation mode provided in RedHat Linux? Explain