



Installation Guidelines





What will be covered?

- Installation considerations
- Sources & Hardware
- Start an install
- Mice
- Installation type
- Disk partitioning
- Bootloader configuration
- Firstboot





Installation considerations

- To dual-boot or not to?
- Getting to know the bootloader – GRUB
- Partitioning
 - /boot – Boot partition (small, 100MB)
 - /home – Home partition (variable size)
 - / - Where things get stored (greater than 3GB)
 - /scratch – What's this for? ;)



- Dual-booting means sharing the same hard disk with an operating system like Microsoft Windows and Linux – this means that there will be co-existence of the two operating systems.
- GRUB is the bootloader of choice – it is the first software program that the computer runs, and once it loads it transfers control to the kernel (like Linux, Windows and so on). Even if you don't want a dual-boot system, you still require a bootloader to load Linux.
- Installation generally happens via a CD-ROM – Disc 1 is a bootable CD-ROM, so configuring BIOS to boot from the CD is ideal. If however this isn't possible, Smart Boot Manager (<http://btmgr.sourceforge.net/>) fits on a floppy and gets the job done fairly easily.
- Thoughts on partitioning are important, especially if you have a dual-boot machine - /boot contains all the boot information, a kernel and the GRUB configuration, so its generally a good idea to keep it as the first partition, or within the first 8.4GB of the disk (on older BIOS'es).
- / is where everything is kept – we go into file system hierarchy a little later in the course; keeping /home on a separate partition is just good practice so that if you hose your / partition or upgrade, your information still stays intact.



Sources & Hardware

- CDROM
- NFS
- FTP
- Kickstart
- (floppy) – done away with in *modern* distributions
- Working CDROM drive
- RAM = 128MB (or greater)
- Video card – X supported
- Keyboard/mouse



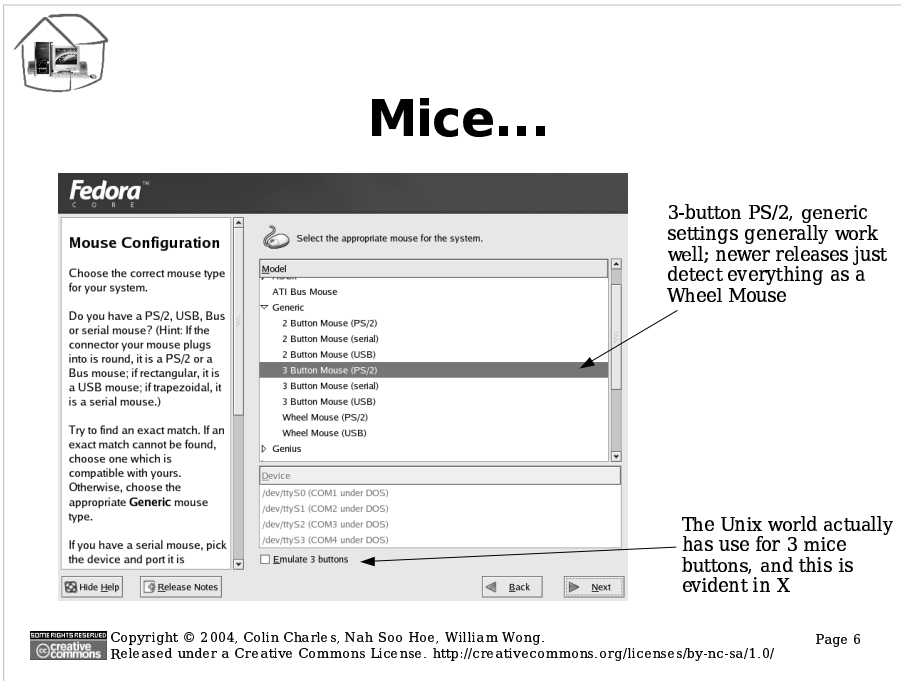
- Installation doesn't only need to happen via the CDROM (a standard installation method) – it can be done via NFS (Network File System), FTP (File Transfer Protocol), and even via having the ISO images on the same hard disk. using the correct method based on installation requirements are important.
- Kickstart is a system which Red Hat developed to get installations in large environments done simply – more details are at the HOWTO at: <http://www.tldp.org/HOWTO/KickStart-HOWTO.html>
- Floppy installs are generally done away with since modern kernels don't fit on a floppy disk – you can boot from the floppy disk if the BIOS doesn't support CDROM booting, but installations generally don't happen that way any longer.



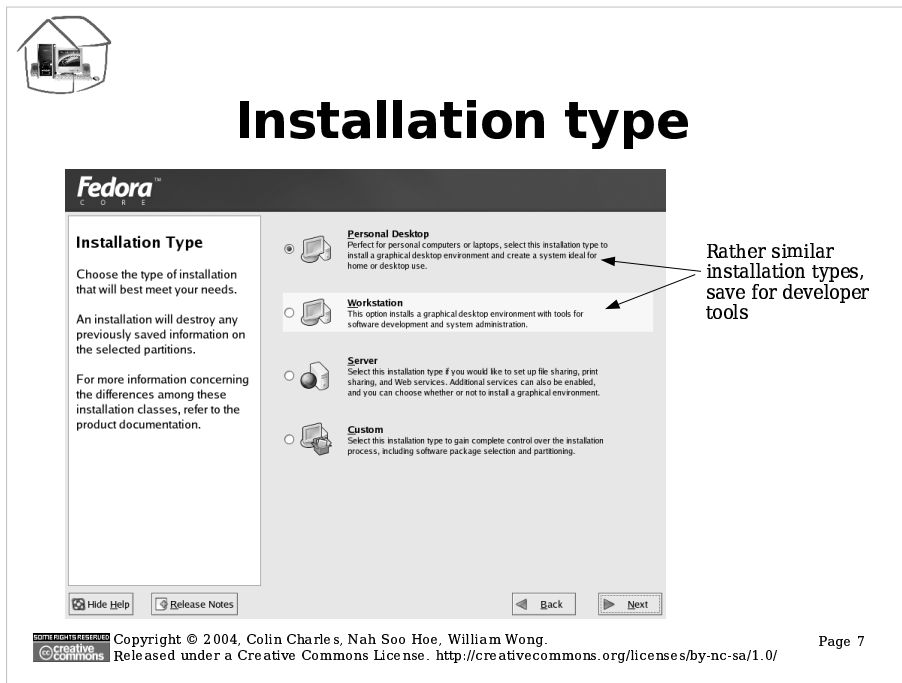
- The install can be performed via a keyboard or a mouse.
- The above install screen is if you install Fedora using the default graphical installation.
- On machines that have 64MB of RAM, only the text-based installer will work, fired up by running 'linux text'.
- Following the instructions on the screen make it very, very easy for just about anyone to perform an installation.

The next screens

- Next, you will be configuring the language to be used throughout the installation. English is the default choice, but the installation can be performed in Malay, for example as well as many other languages.
- Configuring the keyboard is next – we all generally use QWERTY U.S. English styled keyboards – the default is generally correct.



- Next comes choosing a display – picking this correctly will mean you get the maximum resolution possible. Choosing from the Generic LCD/CRT displays will be sufficient enough, unless your monitor is within the hardware database.



- A Personal Desktop installation is great if you're new to the wonderful world of Linux, and is great for home use. It is a fully graphical environment, so users never really need to see the CLI. Choosing this installation, you only require the first 2 CDs of Fedora Core 1.
- A Workstation installation is exactly like the Personal Desktop installation, except it comes with the software development tools. This is a recommended installation as sometimes, when you get sources/tarballs to install, you will need some of the development libraries like gcc, automake, and so on.
- A Server installation generally doesn't give you the X Window system, and is mainly for users wanting to use their Linux box to run services.
- A Custom install allows you full control, is great for advanced users, and an installation of under 510MB is possible.
- Upgrade is another option available if you have existing Linux installations (of the same distribution, just a previous version, for example).



Disk partitioning

The screenshot shows the 'Disk Setup' window in Fedora Core. On the left, there are instructions for choosing where to install Fedora Core and options for automatic or manual partitioning. On the right, a graphical view shows a disk 'hda' (11510 MB) with a partition 'hda1' (10970 MB). Below this is a table of partitioning details:

Device	Mount Point/ RAID/Volume	Type	Format	Size (MB)	Start	End	
Hard Drives							
▼ /dev/hda							
/dev/hda1		ext3		10971	1	1486	
/dev/hda2		swap	✓	539	1487	1559	

Annotations: 'Graphical view of the disk being partitioned' points to the disk diagram, and 'Partitioning details are here' points to the table.

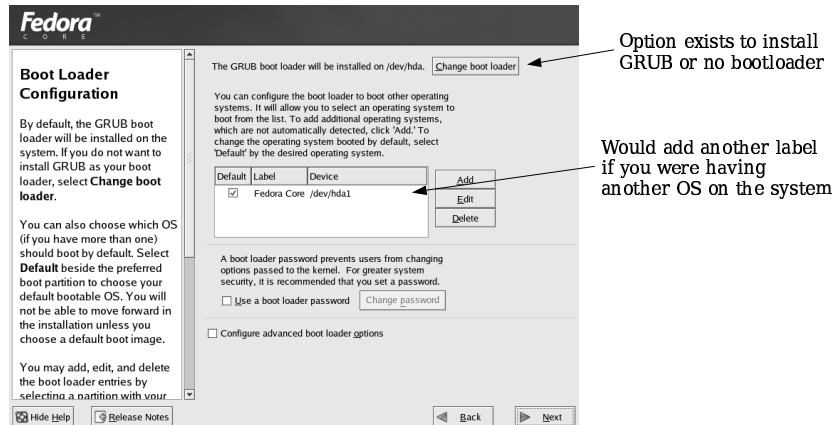
- You are asked if you'd like to automatically partition the disk, or use Red Hat's Disk Druid, a GUI-based configuration tool (look, no more fdisk like look-alikes!).
- If the Automatic partitioning (or Disk Druid) detects existing Linux partitions, it poses you with three options: remove all Linux partitions on the system (good if you're changing distributions, except maybe /home!), remove all partitions on this system (this removes Windows too, use with extreme caution), keep all partitions and use existing free space (this is good if you have a well planned system).
- The option to review (and modify if needed) should be used if you're going to go the removing partitions method, especially if you have data on the disks.
- At the Disk Setup (screenshot above), you can create New partitions, delete partitions, edit them, and give them properties.

The 'Edit Partition: /dev/hda1' dialog box shows the following fields and options:

- Mount Point: /
- Original File System Type: ext3
- Size (MB): 10970
- How would you like to prepare the file system on this partition?
 - Leave unchanged (preserve data)
 - Format partition as: ext3
- Buttons: Cancel, OK



Bootloader configuration



Option exists to install GRUB or no bootloader

Would add another label if you were having another OS on the system

- Changing the bootloader made sense when Red Hat Linux also shipped LILO, but since this doesn't exist anymore, it only makes way if you want to use 3rd party bootloaders (like one's from Partition Magic, for instance).
- Labels are important, and they point to different bootable partitions on your hard disk; this means many distributions of Linux can sit on one hard disk, or more commonly, Linux and Microsoft Windows can live alongside each other.

The next screens

- Configuring the network if a NIC is installed – DHCP-based is what most require.
- Let the firewall be enabled, and don't allow connections through it.
- Additional Language support – significant, so that you can add Malay, Tamil, Mandarin, and so on.
- Timezone select (Malaysia/Kuala Lumpur)
- Root passwords are important – remember this well. This is the account of the administrator, for all administrative tasks.
- Default software packages are sufficient, but adding KDE is useful.



Firstboot

- Means installation was successful!
- Set Date & Time
- Add a user
- Work the sound
- Use the desktop!



- Agreeing to the license agreement is mandatory – its the GPL for Fedora Core.
- The current date & time should be picked out from the BIOS if it was set correctly there, so changing this might not actually be necessary. NTP is supported, and requires an Internet connection.
- Adding a user is important – this means you don't do everything as root!
- Testing the detected soundcard (thank kudzu), will play a stereo tune through your speakers.
- After this, you'll be sent to the GDM login screen.



Thank You!

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