

**Fedora Core 8 Installation and Tool Guide for Linux Newbies v1.0**  
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**Part 1: Installing the Fedora Core 8 OS**

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**about this guide**

this guide is for those who haven't used Linux before. it's aimed primarily at users who haven't been introduced to any advanced concepts before, that is, non-programmer Windows users wanting to migrate to Fedora Core 8. if you're an advanced user or already use Linux, there's no way you'll need this guide, and you should find the advanced, official FC8 install guide at <http://docs.fedoraproject.org>.

this guide was written by Lepht Anonym as a contribution to LearnSecurityOnline.com (<http://www.learnsecurityonline.com>). anyone can use, distribute or host it, and it isn't worth plagiarising; people will only submit corrections to you, don't bother. any corrections you do have, send them to me at [lepht@trioptimum.com](mailto:lepht@trioptimum.com), and if you want a version with capitals, send me five euros and i'll get right on it.

**< 01. getting and verifying installation media >**

setting up Linux isn't as different from installing a commercial OS as you might have thought. like most operating systems, Linux is installed from a disk - Core 8 can be installed from a live CD or DVD, or from a regular DVD. a 'live' disk can be booted from without writing anything to your hard drive, so you can test out a smaller version of Fedora without making any commitments or even touching your hard drive, and they have an install program so you can install when you're ready. live

media are also portable, so you can carry one with you and use Linux on any disk-bootable computer you come across (most are, though you might not have permission to do this at your workplace or university; like it sounds, this is because live media make a hacktool par excellence). their major disadvantage is that you can't save your settings or changes: everything reverts to default each time you shut down the system.

the install DVD isn't live, meaning you can only boot from it if you definitely want to install, but it has a much greater selection of free open-source software to choose from; when you install Fedora permanently on your HDD, i recommend you get the DVD so you can have the best pick of programs and the least work installing extras after you finish.

you can get disks a few different ways. the best way is to download the disk images over the BitTorrent peer-to-peer networks; this makes the downloads faster for everyone else, and it's also the fastest way for you to get them. to do this, go to the Fedora download page at <http://fedoraproject.org/en/get-fedora>. next to the type of disk you want - the install DVD is "Install Media", the live CD/DVD is "Fedora Desktop Live Media" - choose the link under "BitTorrent" that matches your processor architecture. for most people this will be i386. if you already run a 64-bit operating system like Windows Vista 64-bit, choose x86\_64, and if you have a Mac, choose ppc. you will get a torrent file which you can open with your usual BitTorrent client. if you don't already have one, the most reliable one is µTorrent (mu-torrent), from <http://www.utorrent.com>.

you can also pick the HTTP download links to download over the net. this isn't a recommended option, because the images are huge; it will take most people a few hours to complete, and in the meantime, the download will be slower the more people try to download any one file.

once you have your image, you need to burn it to disk. Windows users can do this as part of the operating system - right click the .iso image file and choose "Burn to disk", or you can use the free Nero suite from <http://www.nero.com> instead (it's more reliable). Linux users have a choice of burning programs; if you've never burnt disks under Linux before, pick one from the YoLinux list at <http://www.yolinux.com/TUTORIALS/LinuxTutorialCDBurn.html> and follow the burning tutorial there, or use the inbuilt burner that's part of the Nautilus file manager. label your disk with a sharpie once you've burnt it, or you'll mess your head up trying to remember which disk is which...

if you don't have a connection you can hog whilst the downloads complete, or it's too slow to get large files (the images are impossible to get over a dialup-speed link), or you don't have a DVD burner, you can order the disks ready-burnt via post. if you don't have any money, scroll down to the bottom of the Fedora downloads page, choose the "Fedora Free Media Program" and have the disks you want sent to you completely free. if you've money to spare, support Linux by buying disks from a vendor - the Fedora Project keeps a list of them, so choose "online vendors" and find the best price for the type of disk you want; in the UK, the average Fedora install DVD price is about £2.50 (6 Euros, or 5 USD). there's also a list of local vendors, so you might be able to get disks from a shop or reseller in your city if you don't want to wait for the snailmail.

once you have your install disk, you're ready to hit the books. yeah, i said 'books'.

< 02. required reading >

before we start, there's some required reading... first of all, look through the Fedora Core 8 release notes at <http://docs.fedoraproject.org/release-notes/> - choose your language under Fedora Core 8 Latest Content (top row, first column of the table) and read it to get any last-minute changes or recent bugs the developers need to warn you about. also bookmark the Fedora Project's documentation section, <http://docs.fedoraproject.org/> - there's no need to read any of it yet, but this is where you find the user manuals, software installer (yum) guide, common bug lists and FAQs for Core 8, as well as a better install guide if this one is confusing you. it will be your first port of call after the man pages if anything strange happens with your new Fedora system, or if you just need some help. the Linux Questions forums at <http://www.linuxquestions.org> are excellent for this too; i'm user lephth, and i'll be there to try my hand at answering your questions, along with hundreds of helpful Linux users with more experience who can solve almost any problem you have. lastly, also bookmark the Red Hat Bugzilla project, <https://bugzilla.redhat.com/>, which is where you can submit any bugs you find and have the developers get to work on them, and <http://www.learnsecurityonline.com>, the people whose idea this guide was and your forum resource for securing your system in Part 2.

when you've read the release notes and taken a look at everything, you can start preparing your existing systems for the install.

### < 03. **partitioning and preparing** >

if you want to dualboot Core 8 and another OS, install the other OS first. this is to avoid the Fedora bootloader, which will be either GRUB or LILO (more on these later on), getting overwritten with the one from the other OS - Windows and Apple loaders aren't tolerant of Linux and generally won't let you boot into it. often during install, these OS will also crap all over anything that's already on the drive, usually refusing to do anything except reformat the entire disk. there's a tutorial for dual-booting Fedora and Windows Vista from APC magazine at [http://apcmag.com/how\\_to\\_dualboot\\_vista\\_with\\_linux\\_vista\\_installed\\_first.htm](http://apcmag.com/how_to_dualboot_vista_with_linux_vista_installed_first.htm).

if you already have an OS set up on the machine, first of all, make a system backup. Windows OS have utilities to do this for you, usually called Backup or Backup and Recovery; they can be found in the Control Panel or on the Vista interactive Start Menu. Linux users have a huge choice of utilities; pick one from the full list at <http://www.linux.org/apps/all/Administration/Backup.html>. Fedora isn't likely to flatten your original partitions, but bad things happen sometimes, especially with older MacOS and Windows versions which aren't aware of any other partitions on the hard drive, so make sure at least your important files are backed up to a DVD or external hard drive.

if you already have Windows Vista running, and you want to make sure it's preserved, you need to make space on your hard drive for Fedora as a separate partition. this is easy to do: type "Computer Management" into the search box in the start menu (or you can right click the My Computer icon and choose Manage), pick the Disk Management sidebar item and right-click the Vista partition. choose "Shrink" and shrink it by as much as you can; you can get it down by a lot more if you defragment first and clear the page file, but you'll want to shrink by a minimum of 5GB and an ideal of about 6-7GB. this is because Fedora averages at 5GB, which is bigger than most Microsoft or Apple operating systems but normal for a Linux one; this is because it comes with all the software most people need, and a lot of extras, already installed. you'll put a lot of extra software on it, especially if you follow Part 2 of this guide and load your new Fedora system up to the hilt with hacktools, so it's good to have at least 2GB as room for games, programming tools, extra drivers and personal files.

make sure any backups you made are clean and can be recovered from, label them up and put them somewhere safe; now, put the Fedora CD or DVD in the drive, connect any network cables you need, and turn the machine off. it's time to install Fedora!

#### < 04. booting from media >

right at the start when the machine boots up, you should see an option in your BIOS to boot from CD or DVD (it's usually "Boot from optical media" or "Boot menu"; you can then select where you want to boot from.) choose this; you almost always need to hit an F key to activate it. if you don't see an option like this, press the key that lets you see "setup" or a similar choice to take you to your BIOS menu, which will be an oldschool blue ASCII-graphics menu where you should be able to set the BIOS to boot from optical media. your machine's original manual or vendor site will have instructions on how to work with the BIOS if you can't figure it out.

once you've booted from disk, hit enter to start the Fedora boot sequence. you'll see another oldschool ASCII program, the Fedora text-based installer.

#### < 05. testing media in the drive >

the first thing the text installer will do is ask you whether you want to verify the install media. hit Y to test your disk for bad data - they're usually fine, but if the installer finds any errors, you need to either download and burn new media, or if you bought yours from a vendor, contact them for a new disk. it will eject the disk when it's done, so put it back in and reboot the machine, doing as you did before until you get the question again. this time, hit N and continue.

#### < 06. following anaconda, the fc graphical installer >

##### < 06.01. keyboard layout >

once your media is verified, the text installer will proceed for a while until you see a more impressive graphical interface. this is Anaconda, the Fedora graphical install wizard. first of all, it will ask you to choose a keyboard layout; pick the one that corresponds to the country your keyboard was made in, and test it by typing in the test textbox. if you get gibberish, you've got the wrong layout.

##### < 06.02. partitioning >

next, Anaconda will help you repartition the hard drive. there are four options: first, you can install Fedora on the free space only, leaving everything else intact. this is ideal if there are other OS on the disk that you want to preserve, but bear in mind that the free space needs to be at least 5GB or Fedora won't fit.

second, you can format the entire HDD. this is good if the disk is empty, or if you don't want or need to keep its contents - nothing can be recovered after you format. also bear in mind you now won't be able

to read this disk from a Windows box, which can't recognise the Linux ext3 format you'll be using.

third, you can choose to overwrite Linux partitions only, if there are any on the disk. this is useful as a painless way to switch from another distribution to Fedora, and won't touch any non-Linux ones, so you can upgrade a dual-boot install this way.

last, you can manually choose what to do with the partitions. it's not advisable to hack around with this if you've never done it before, as you can make your disk unbootable; if you don't mind that, you need to create a 5-7GB partition for Core 8, and a swap partition as large as you can spare. this will be used instead of a page file in Windows (OSX and others use swap).

### < 06.03 bootloaders >

next, you'll need to pick a bootloader. Fedora offers you a choice of two, GRUB - the Grand Unified BootLoader - or LILO, the older Linux Loader. for newbies, it's better to pick GRUB, both because GRUB is newer and also because it can be configured later on without you having to mess around with your machine's Master Boot Record, something which if messed up renders the machine permanently unusable; LILO requires this to be written to each time you change its configuration or update, so only pick it if you've used it before. you should also set a bootloader password here; it needs to be a secure one, because it protects the kernel parameters and other advanced interactive boot options from general use. these can be used to manipulate your system, so make sure you've memorised the password and continue.

### < 06.04 network and location options >

if you don't have any network cables connected, skip the next dialogue. otherwise, fill in everything you know about the network the Fedora system is connected to; it doesn't matter if you don't know anything or you need to get more information later, as you can set up connections at any time. on the next screen, pick your correct timezone, daylight savings options and geographical location - if the machine is a laptop, just pick the location it will connect from most often.

### < 06.05 the root password >

this is the most important facet of the security of your machine. the root password is the superuser's account password, root being the only user who has total administrative control over the system. you're not going to be working as root, but you'll need this password to do anything that requires administrator access. it needs to be a long, random password; use an online password generator like the high-security one at <https://www.grc.com/passwords.htm>, and don't write it down or make it the same one as the bootloader password. when you've memorised it, test yourself to make sure; if you lose the root password, you'll have to reinstall.

### < 06.06 selecting packages >

packages are the programs and suites of programs Fedora can install straight from its installation DVD, that come with the OS. this dialogue lets you select exactly which ones you do and don't want; they're separated into categories that you can expand and collapse to see a map of the software available, and each category can be "blanket" selected or unselected, so that every choice in them is taken or left respectively. the best approach is usually to just blanket-select only the categories you want, e.g. taking all the defaults and adding the Programming category, then removing the games. if you want to get

more in-depth, you can go through each category separately choosing exactly which programs you want. this is good if you need a cut-down system or you know that you never use particular programs - if you only use Vim for text editing, you could go to the text editors and remove gEdit and emacs to save space.

if you're going to be following part 2 of this guide, install the Programming and General categories. you'll need these for compiling and scripting, not to mention eventually developing exploits.

once you're done, Anaconda will check the dependencies of your packages, i.e. the required files. if it finds that you need packages you haven't selected, it will ask you to decide what you want to do - select the dependencies, or unselect the dependent programs. it's better to go with the former: make your choice and hit continue.

### < 06.07 the point of no return >

this is where you go and get a coffee as Anaconda performs everything you just told it to do; up until now, you've just been marking out tasks that need to be done. now, two meters will show you how far Anaconda has progressed - first, one will show it formatting the disk in the way you asked, then afterwards, it will display another as it installs all the packages you marked for installation in section 06.06. once it's completely done, reboot the machine (sometimes it will reboot itself) and choose the highest "fc8" version number at the bootloader prompt.

## < 07. rebooting the machine and setting the first boot options >

### < 07.01. licence >

this will be the first time you boot your new machine, so before you start using it, Fedora needs a little more information from you. first of all, you need to read through the Core 8 licence, a version of the GNU GPL. if you've never seen the GPL before, you should read the whole thing; the gist of it is that you can modify whatever part of Fedora you want, but if you redistribute, it must also be under the GPL, and you agree not to plagiarise or Tivoise the software (that is, run the software on hardware that will only work with your official version, as the second-generation Tivo box does to its Linux OS.) like all EULAs, you can't continue unless you agree, so legally bind your soul to Richard Stallman and hit continue.

### < 07.02. security options >

next, you'll need to set some firewall options. since you're probably going to be running Snort, a much better form of defence, anyway, it's best to just leave this at the default. some versions of Fedora will also give you a bug here where the program lokkit won't let you set any options anyway; if you get this, ignore it; the updater will deliver a fix as soon as you connect to the Net. you'll also be asked to set the security level for SELinux, the stack protection extension used by Fedora; if you're new, leave this at the medium level, and if you're new and paranoid, crank it up. do not turn SELinux off - this leaves you exposed to your own exploits (or other people's).

### < 07.03. time/date and hardware profile >

here you set the system date and time. just pick and continue. next, if you're connected, you can send an anonymised report of your hardware configuration to the Fedora Project analysts; do this if you can. it

makes the Project's job a lot easier when it comes to figuring out what new drivers should be included, what needs more support, etc. and the more people that do it, the better and more accurate the statistics are for you.

#### < 07.04. creating user accounts >

now you get to create a user account for yourself. fill in your data and pick a picture; just make sure the password isn't the same or even remotely similar to the root password. it should be long and unique; i recommend again using a password generator like the one in section 06.05. every user should get her own account; nobody who isn't you should have the root password, and you should never, ever log in as root. in addition to it being a colossal security risk, you can write off your system this way, as anyone who's administrated a Windows XP machine can tell you.

this is the last thing you need to do. reboot and login as yourself. congratulations on installing Core 8, and welcome to life in the global community of Linux users!

#### < 08. after install >

once you've installed and are running as yourself, there are a few things newbies might like to do. first of all, you have a slightly unfamiliar interface to learn; find your way around the intuitive GUI, learn to use multiple desktops, and read a beginner's tutorial on the invaluable Linux terminal (commandline) like the one at [http://www.hypexr.org/bash\\_tutorial.php](http://www.hypexr.org/bash_tutorial.php). you can also mess with the cosmetic aspects of the GUI by going to the System menu and looking through the options under Preferences -> Look and Feel.

once you can use the terminal, play around with the programs, and see what's been installed. use the yum installer to remove or add programs - the Fedora Project has a guide to using yum at <http://docs.fedoraproject.org/yum/>. if you're going on to Part 2, you'll be using yum a lot, so get familiar with it - read its manual and info pages, play with it.

you'll also want to check that all your hardware is working. if you find anything that isn't, you get the challenge of fixing it; your first pitstops should be the maker's website to check for Linux drivers, then the Fedora Forums at <http://www.fedora-forums.com/> and Linux Questions (<http://www.linuxquestions.org>) to see whether other people have had the same problem. if not, ask away. you'll improve your knowledge of Linux vastly.

have fun with the world's best operating system, and have fun helping other people. good luck!

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