

## **Linux Lessons: Introducing Fedora** **“From Red Hat to the Fedora Project”**

*by Pete Choppin*

In our last series of Linux Lessons we introduced one of the more popular distributions—Ubuntu. We are now going to take a look at another very well known distribution—Fedora.

Fedora has been around now for more than six years and is currently on release 12. The goal and intent of the [Fedora Project](#) is to make available a free distribution that is on the cutting edge of open-source software.

### **History**

Prior to the creation of the Fedora Project, [Red Hat](#) had developed its version of free, open-source Linux. This progressed to the ninth release of that product. At that point, the Red Hat company was in the process of developing an enterprise version of its distribution. This would include a full-support contract offering, which would then be available for purchase.

To keep the Red Hat Linux open-source community viable, and frankly, to keep from losing the loyalty and support of a rich community that had been with Red Hat Linux since release 1, the Fedora Project was created and offered the free version of Red Hat Linux called Fedora Core. The name *Fedora Core* remained as such from release 1 through 6, at which point the project dropped the Core part of the name, leaving it simply *Fedora*.

We will be installing the latest release—Fedora 12. Incidentally, the Fedora Project typically releases a new version of Fedora about every six months. For information on the next release, check the [Fedora Release Schedule](#)

### **Bleeding Edge**

I would like to point out that, although Fedora has gone through multiple releases and each release follows standard testing phases, including alpha and beta releases prior to their final release, this distribution can potentially introduce problems on your system. This is because Fedora is intended to be used in a testing environment where new and innovative packages (applications) are introduced. Fedora should not be used in production environments where systems rely on high percentages of uptime and where system failures cannot be tolerated.

That having been said, I have found very few issues with Fedora and I have been using it since its inception.

### **Downloading Fedora**

Fedora can be downloaded from the Fedora Project [download site](#).

You will notice that the Fedora Live CD is the first thing you are offered on the download site. You are certainly welcome to try Fedora this way, but we will be installing the full version instead of the Live CD. Scroll down the page to see the Mirrors under Other Download Options.

Click on the "See all mirrors" link. This will take you to the Active Mirrors page, which lists more than 100 mirror sites to choose from. They are listed alphabetically by country, so the idea is to select a mirror that is geographically close to you. The list also shows the bandwidth of each mirror. You will want to select the highest bandwidth in order to get the fastest download.

## Installation Prep

As with the Ubuntu installation, you will need to take the .iso image that you will download and burn this to DVD before you can begin the installation. You will also need to either have a computer available on which to install Fedora, or you can install it to a virtual machine.

Once this is ready you may begin the install. Next week we will go over beginning the installation and we will briefly discuss partitioning. Fedora partitioning is very similar to Ubuntu. If you need more details on this you can review the previous "[Linux Lessons](#)", dated November 20, where we covered partitioning in greater detail. The screens are a little different, but the concepts are the same.

As always, if you have any questions during any part of this series please submit them. We will likely post these on *ComputerEdge* for the benefit of all readers, unless you wish to stay out of the public eye, in which case we can post it anonymously.

## Linux Lessons: Fedora, Part 2

### "The Fedora Installation"

*by Pete Choppin*

Last week, we [introduced you to Fedora](#). This week we will begin the installation of Fedora and demonstrate the partition process. Since we have already discussed [partitions](#) at length in the presentation of Ubuntu, we will just cover the differences in Fedora. The basic partition layout we will create will be identical to how we set up Ubuntu.

## Begin the Setup

Put the [setup disc for Fedora](#) in the drive and then start up the computer (obviously you would need to have the computer on to insert the disc and would restart the computer in this case).

The computer should boot up to this disc. Refer to your computer's BIOS settings if you are unable to boot to a DVD. Once it boots up you are presented with the installation menu:

Select the first option to install Fedora. Some brief initiation and setup files will load, and then you will be presented with the option to check your media:

It is a good idea to go through this check the first time your setup disc is used. This will check for any physical errors on the media. If there is a problem with your disc, an error will be displayed indicating problems with the disc. You would then need to recreate your setup disc. I do not recommend attempting to install Fedora with a disc that has problems. You will likely have problems with the OS, and the setup will probably not go well, if at all. Once you have a successful disc check, it is not necessary to perform this check for future installations, and the check may be skipped.

After the media check is completed you will be able to continue with the installation. The next screen will display system files loading and other necessary installation prep functions. After a moment you will see the graphic interface load. At this point there will be help files and onscreen explanations that will assist you with the installation.

Continue through the next few screens. These should be fairly self-explanatory. You will see a screen that is asking for you to supply the name of the computer.

Just enter a name that makes most sense to you. This name will also appear in the command prompt on the command line (unless you modify the command-line prompt, which we will cover later).

The next screen allows you to select your geographic location. Select this, then go to the next screen, which is requesting you to create the root password. This is a particularly important password because it provides full access to your entire system. For security purposes, it is a good idea to make this reasonably difficult to guess. In fact, if you enter something simple or recognizable, Fedora will give you a warning to this effect. You can use any password you wish here, but it is good practice to choose a fairly secure password.

## **Partitioning**

Again, I would like to point out that this part of the installation is one of the more complicated processes. Of course you can simply use the default partition layout if you do not wish to get into this. This layout is intended for users who simply want to get their system up and running with the fewest complications.

The next screen after you set your root password begins the partition-creation process.

For your information, I am including an image of the default partition layout [[link to](#)

default\_part.png] in case you want to skip the partition process.

## **Custom Partition**

We will be creating a custom partition for this install, so change Replace existing Linux system to Create custom layout from the first partition screen:

This is all you need to change on this screen. Click Next.

The next screen is where you will define the custom layout of your partitions. To create a partition, click the New button:

When you click New, the Add Partition screen comes up:

You will be creating three partitions: a swap partition, a boot partition and a root partition (/). For each partition, change the (1) mount point, (2) file system type, (3) size. Select (4) fixed size for the swap and boot partitions, and select (5) Fill to maximum allowable size for the root partition. (See figure 9 below for each partition and its settings.)

You should end up with the following layout:

Click Format. You will receive a format warning message like this:

You will then see another warning that you will be writing these changes to disk. This is your final chance before the disk is written to. Click Write changes to disk. The file system is then created.

Let's stop here. Next week we will continue the Fedora installation and discuss repositories and selection of packages.

## **Linux Lessons: Fedora, Part 3** **“Completing the Fedora Installation”**

**by Pete Choppin**

I survived vacation, and I'm very glad to be back. Rumors of my having been buried in snow were slightly exaggerated.

Last time, [Linux Lessons: Fedora, Part 2](#) began the installation of Fedora, and we partitioned the hard drive. We will now complete the install. Also, we will discuss packages and the tasks that drive those packages.

Fedora is, in fact, a package-driven OS. Your choice of packages and how you use Fedora greatly depends on the tasks you will be doing with your computer. The installation is a guide to how you will set up your computer based on the tasks you will commonly perform.

After the partitioning is completed, you will get a screen where you set up the boot loader, which is typically grub, so no changes are necessary here.

The next screen introduces you to the Fedora packages. This screen first allows you to classify your tasks by what type of computing you normally do or will plan on doing. In this way, Fedora can gear your package setup based on your task selections—more or less.

Two things to note on this screen: You will notice there are selections for something called repositories. These are no more than storage places for all the packages you will be installing. A very smart person a while ago came up with the idea of creating these repositories to keep all the literally hundreds of software packages available for Fedora available to be downloaded and installed. Now, thousands of Linux users can benefit from this huge repository of software applications. You can select any of the repositories you wish. I added Fedora 12— i386 to my repository selection. When I do this I need to establish a connection to the repository location, which means the network connection must be enabled. You will see the following screen. Just click OK to proceed.

[image – center – eth0\_enable.png]

The other item to note is the option to either Customize now or Customize later. What this option allows you to do is to either accept the pre-configured package setup, based on whether you selected Office and Productivity, Software Development, or Web Server from the top section, or to further customize your packages now during the installation. We will leave the option selected on Office and Productivity only for this install.

We are going to chose Customize now to show the options available for this. Now click Next.

The next screen presents you with the following options:

[image – center – production\_categories1.png]

On the left are categories from which packages are selected. On the right are the packages available within each category. I recommend that you read through the packages and see what all the applications are. There are several, and for a typical installation I will peruse each one and choose the packages I need, one by one. I do this not only because I am very choosy about my packages, but also because I like to know about each piece of software that I install.

Also note the Optional Packages button on this screen. You can select this for each package option and further customize each individual application.

**Important:** Select whatever packages you wish for your install. For the purposes of this presentation, make sure to include the KDE (K Desktop Environment) with your package selections, as we will be discussing this in next week's Linux Lessons (this is highlighted in the screenshot above).

Once you have selected the package options you wish, click Next. At this point the installation process will begin. You will see a few messages indicating this. Once that is completed you will see the packages installing. This process could take some time, depending on the amount of packages you have selected.

The install will complete and then ask you to reboot. The system will come up and you will just have some final system setup items to complete. These should be self-explanatory.

The system will do a final reset and you will come up to the login screen.

We will stop here. Next week, we will take a look at another popular desktop environment called KDE and some basic Fedora setup to make your Linux experience a little easier.

## **Linux Lessons: Fedora, Part 4**

### **“Modifying Your Linux OS”**

*by Pete Choppin*

Last week, we completed the [installation of Fedora](#). We are now ready to login and make some modifications to the desktop as well as install a few tools that will help to make the OS more useful.

We are also going to introduce another popular desktop environment called [KDE](#).

Let's start the Fedora system that we've installed. When it boots up you should be presented with the login screen. Click on the login name. This should have been created during the installation, which we covered last week. Before you type your password, notice that some options appear on the toolbar at the bottom when you select your login name. The option I

want to discuss is the choice of desktop environments, which is shown here as sessions.

When you click on this option, you should see two options similar to this:

Go ahead and select KDE as shown. When you choose this option, the KDE desktop environment will be loaded when you log in. We are going to primarily discuss KDE for this Linux Lesson. The Ubuntu lessons went over the Gnome desktop environment. However, if you prefer to load Gnome, by all means go ahead. The same applications will be available in either environment, as you can see by comparing the two, but our screenshots and modifications will be within KDE for this presentation.

Once you've selected KDE as your session, type your password and click Log in. The desktop and your session are loaded. Without having made any modifications, your desktop should look similar to this:

(1) Application Launcher and desktop tools, (2) Task Manager, (3) System Tray, (4) Clock and Panel settings.

I will refer to this figure later as we discuss the different areas of the desktop.

## **Preferences**

We all have our own preferences and way of doing things on a computer. The strength of Linux is that it allows any user to adjust their work environment to suit their needs.

I will show you what my preferences are for my work environment, and hopefully this will demonstrate the vast array of options available for you to modify the desktop to suit your needs. This is by no means the only way or the right way; it is just my way.

Some users do not even load the Linux GUI. There is a way to bring up your system in the [command prompt only](#). These are for strictly command-line Linux users. One advantage to this is the system runs much faster without loading the GUI. I am not that much of a hard-core command-line user, so we will continue to run the GUI.

Feel free to set up your desktop preferences and your tools the way you work best. That is the point of the Linux Desktop Environment.

## **Application Launcher**

This tool is where you will find most of your applications, utilities and system settings. As you might expect, everything here can be modified. The default setting for this tool is Kickoff menu style. Although there may be some advantages to the way this is set up, I personally prefer to

change this to the Classic menu style. To do this simply right-click the Fedora icon in the lower-left corner and choose "Switch to Classic menu style." You can change it back to Kickoff the same way; however, I will be demonstrating in Classic style.

## **Multiple Desktops**

This is a concept which, among Microsoft users, may be somewhat foreign. This is because no version of Microsoft Windows has anything natively that really compares. Multiple desktops give you the ability to have several areas designated as additional desktop workspaces. The advantage, of course, is that your work area is greatly expanded. You do not view all the desktops at once; rather, you can switch between desktops as you work.

Right-click the Multiple Desktop icon. Choose "Configure Desktops." You will see the following screen:

This configuration screen allows you to indicate the amount of desktops as well as their labels. Labels are useful when you want to designate desktops for specific purposes.

## **System Tray**

The purpose of the System Tray is to provide quick access to services, utilities and small apps called Widgets. These are often presented with small icons from which you can make modifications to settings. For example, clicking the speaker icon will allow access to the sound volume, mute and mixer settings for other system sounds. Try clicking on the icons in the System Tray and see what options you have available to you. You can also delete existing icons or add new ones.

## **Other Desktop Tools**

There are a few other tools, such as the Desktop Folder and the Widget Tool, that you might want to try on the desktop. These are fairly self-explanatory, and most of the tools are readily available with a click of the mouse.

Many more tools and configurations are available to customize your desktop the way you want it to be. If there are specific areas of the desktop or KDE you have questions on, feel free to submit them and I will do my best to answer them.

Next week we will discuss more tips and tricks for Fedora 12.

## **Linux Lessons: Fedora, Part 5**

**"Tips and tricks for Linux functionality."**

***by Pete Choppin***

In the last [Linux Lessons](#), we introduced the KDE desktop and discussed some of the tools



available for the desktop. This week we will take a look at some tips and tricks that make Linux much more usable for many types of everyday tasks.

## Tips and Tricks

There are a few setup and configuration items you should take care of that will make your Linux life a lot easier. Many of these are best done on the command line, so let's open a terminal and jump right into the CLI (command line interface)!

## Configuring Yum

Yum (Yellowdog Updater, Modified) is a package manager that allows you to download, update and install your software. I suppose it is somewhat similar to Windows Updates for the Windows operating system. It is not the only package manager, but it is probably the most widely used.

In order to be able to obtain software now, and in the future, you must set a few things up for Yum to work properly. This includes [importing GPG keys](#) and installing proper repositories.

Fedora has two basic repositories named "fedora" and "updates." To use them and not get errors about unsigned packages, you must import their GPG keys. On the terminal, type:

```
su -c 'rpm --import /etc/pki/rpm-gpg/*'
```

\* Note : You may get a few error messages like "import failed" but this is OK.

Fedora software repositories don't include support for MP3, DVD and video playback/recording because of patent licenses. For this reason you have to install that software from third-party repositories. But don't worry, this is pretty easy!

At the terminal type the following:

```
su -  
rpm -ivh \  
http://download1.rpmfusion.org/free/fedora/rpmfusion-free-release-stable.noarch.rpm  
rpm -ivh \  
http://download1.rpmfusion.org/nonfree/fedora/rpmfusion-nonfree-release-stable.noarch.rpm
```

## Yum Extender

Yum is now ready, so let's do our first install using yum so you can see how it works.

We'll go ahead and install the GUI for yum called yumex (Yum Extender). This will make it a lot easier for you to install and update your packages.

At the terminal type:

```
su -
```

```
yum install yumex
```

You should see some text indicating packages being downloaded and getting ready for install. Just enter `y` to go ahead and install the Yumex package. When it completes, you will find the Yumex application in the System menu.

## **MS True Type Fonts**

Fedora uses Liberation and DejaVu fonts that are installed by default and look pretty smooth and nice, plus they are open source. However, you may want to install some True Type fonts so that you can view documents from your Windows friends.

Just type the following in the terminal:

```
wget http://www.my-guides.net/en/images/stories/fedora12/msttcore-fonts-2.0-3.noarch.rpm  
su -c 'rpm -ivh msttcore-fonts-2.0-3.noarch.rpm'
```

## **Adobe Reader**

Sure, Linux comes with its own [PDF reader](#), but I still prefer Adobe's PDF reader. It is just as free as any Linux alternative, and I am so used to the interface I still prefer it.

To install the Adobe Reader type the following in the terminal: `kpdf.kde.org/su -c 'yum install AdobeReader_enu'kpdf.kde.org/`

## **MP3 and DVD Players**

XMMS—This is an equivalent to Winamp or Windows Media Player that will play MP3 files. To install this, type the following in the terminal:

```
su -c 'yum install xmms xmms-libs xmms-mp3'
```

Xine—This is a DVD player. Install by typing the following at the terminal:

```
su -c 'yum install xine'
```

Let's stop here. Next week we will complete the Fedora tips with a few more additional installations.

As always, if you have any questions or problems, please submit them and I will do my best to answer them.

## **Linux Lessons: Fedora, Part 6**

## **“Helpful apps and utilities, as well as more information on commands.”**

*by Pete Choppin*

This week is the last session of the Fedora installation and configuration series. There are a few remaining small apps and utilities that I will discuss that may be helpful.

Also, I would like to go over a few basic commands from the command line, specifically those we have discussed on these tips. This will help clarify how these commands work. Hopefully this will also make it easier to work with the command line in general.

### **Messenger Clients**

There are a few Internet messenger clients out there for Linux, but one distinction that Linux makes with messengers, which seems to be so different for Windows users, is that Linux users tend to use clients that combine multiple chat networks. Windows users have a tendency to use separate clients for each network.

One such messenger client is called [Pidgin](#). With Pidgin you can connect to 16 different networks all at the same time. So it doesn't really matter what network your friends are using, Pidgin can connect with all of them.

Pidgin should already be installed with Fedora as long as the graphical Internet packages were installed during setup.

### **Author, Burn, Backup CD/DVDs**

There are several of these as well. My favorite by far is one called [K3b](#). K3b has all the functionality of the best Windows versions of CD-burning software.

K3b does not come installed on Fedora. To install, open a terminal and enter the following at the command prompt:

```
su -c 'yum install k3b'
```

That should be plenty to work with and make Fedora quite functional. If there are specific applications that you have questions about, please post them and I will try to find the answers.

### **Commands**

The commands we have been using have primarily been for installing software. There are also a few that we use that allow us to have the access rights on the system to do this.

First of all, you probably noticed that I use the command `su`. This command tells the shell (the part of Linux that we send commands through) to use the credentials of another user on the system. Most of the time, this is the root user. The root user is the system administrator and has permission to do anything on the system—and I do mean *anything*. So be very careful and pay close attention when using command under this login. You will need to know the

password for root to use this command.

## Switches

Some commands can be given special instructions or given certain ways to function when you use them. These are often indicated with switches. For example the command `su -c` carries the `-c` switch. This tells Linux to execute only the command that follows that line with the root user. It is a small distinction, but it can be a protection to prevent you from doing something you do not intend with root, because after the command is executed, the user will return back to your own credentials.

There are many switches, most of which are specific only to those commands that use them. For example, the command `cp` is used for copying files; `cp` does not have a `-c` switch. So using `cp -c` will return an error. It will not apply this switch for any command because it does not exist for `cp`.

## RPM

Another command we used was `rpm`. This command refers to the Red Hat Package Management system and will invoke specific package installations from that system. Our installations have been primarily referencing the packages available on the Red Hat repositories, and they use the `rpm` command. The switches are causing the command to install, use verbosity, use human readable formatting, etc. If you want more information on the `rpm` command, try entering `'man rpm'` at the command line. This will open a manual on the `rpm` command.

Incidentally, nearly all Linux commands are documented in a man page. Entering `man` plus the name of the command will probably give you a lot of great information on your command.

Another great way to get help with a command is by typing the command and then add `—help` after the command. This will give you a summary of the command and most of the switches available with a short description of the switch.

Please feel free to submit any questions you have about these commands or anything about the Linux Lessons and I will be glad to help.