# *Fedora Core 3 Installation, Configuration and Customization*

## By Whil Hentzen

Ever want to look over someone else's shoulder to see how they set up their desktop machine for day to day use? In this whitepaper, I'll discuss the installation of Fedora Core 3 on a ThinkPad T30. Then I'll configure it to connect to a Linux file server, and customize it as my primary day-to-day desktop machine for email, browsing, and office work.

# 1. Preface

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## 1.2 Revisions

### 1.2.1 History

| Version | Date | Synopsis | Author |
|---------|------------|----------|--------|
| 1.0.0 | 2004/12/12 | Original | WH |

### 1.2.2 New version
The newest version of this document will be found at www.hentzenwerke.com.

### 1.2.3 Feedback and Corrections
If you have questions, comments, or corrections about this document, please feel free to email me at 'books@hentzenwerke.com'. I am particularly interested in corrections to mistakes as well as clarification to descriptions that seemed clear at the time of writing but may not be obvious to the new reader.

## 1.3 Acknowldgements
Thanks to MLUG members Jon Detert, Joe Baker, Glenn Holmer, and many others.

## 1.4 Disclaimer
Use the concepts, examples and other content at your own risk. There may be errors and inaccuracies that in some configurations may be damaging to your system. The author(s) disavow all liability for the contents of this document.

You are strongly recommended to take a backup of your system before major installation and backups at regular intervals.

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## 1.5 Prerequisites
This document was written using Fedora Core 3.0 and assumes a beginner's familiarity with use of Linux via the GUI and the Command Window. In-depth procedures for some steps are covered in other Hentzenwerke whitepapers.

# 2. Why
Installing a new distro from scratch is sort of like having an enema. During the process, you can think of places you'd rather be, but once it's over, you feel so much better, clean and refreshed.

I installed Fedora Core 1.0 on a brand new ThinkPad T30 as soon at FC1 was released. I never even booted the version of Windows that came with it; the first time I booted the machine, I had the first Fedora Core CD already in the CD drive.

While there wasn't anything specifically wrong with that installation, there were a couple of reasons that I decided to move to Fedora Core 3, and to do a fresh install rather than to just try and upgrade.

First, since the FC1 install, I'd learned enough to find out that I wanted things set up differently. For example, there was a bug in FC1 that made setting up more than a couple of partitions nearly impossible for a new Linux user – you had to download a patch and recompile the kernel; not a likely scenario for someone who could, at the time, count the number of Linux installations he'd done on the fingers of one hand.

As a result, my FC1 installation had three partitions – one for boot, one for swap, and one for everything else. I wanted to move /home to its own partitions, and do the same for /var. And I wanted to change the size of those partitions, too.

The second reason was that there was a lot of cruft that had accumulated over the couple of years. Just like when you're working on your house, at some point, it's easier to just move into a bigger house than to try and add on again. Doing a fresh install meant I could do some serious housecleaning. Get rid of old apps I wasn't using, get the latest and greatest of some new ones. For example, my most recent installation of OpenOffice.org was 1.1.0, while FC3 was shipping with 1.1.2.

Other tools that had been upgraded significantly were The Gimp, from 1.somethign to 2.0, Mozilla to Firefox, and the new Thunderbird email client was also available. And who knows what other goodies might be available?

## 3. Preparing for installation - backing up the current machine

The ThinkPad T30 that I'm going to install FC3 on had been running Fedora Core 1.0 for a couple of years. It was always connected to a file server, so there wasn't much data on it, per se, but it wasn't completely devoid of stuff I wanted to keep around either. The trick is figuring out what I needed to backup, and then finding it.

All of my network file shares were mounted under my home directory, but I also had some local data in my home directory as well, and a few other ill-conceived folders in /home/whil as well. So /home is the first thing I had to sort out.

I got rid of all of my network shares first, and then went through the remaining directories and put everything that should have been on the server in the first place where it belonged.

Once /home was cleaned up, I dug through the directories for things I would want to keep but that I didn't put there myself. Kmail, my Linux email client, required you to keep your email on the local box. So I had to back up that folder. I also went through all of the hidden folders for things that applications might have kept around for me.

Once my data was all secure, it was time for configuration settings. The first file was ~/.bashrc, both for me and for the root user. These aren't sophisticated files, but they have custom prompts that remind me of which user I am when I have a command window open.

Next was the /etc directory. I knew which files I'd modified, since I'd kept a list that was reasonably up to date. fstab, initrd, samba, httpd.conf, and hosts were the important files that I was concerned about. I made copies of them, and I was good to go.

Finally, I made note of customizations for various programs, such as OpenOffice.org, and saved off a copy of my latest browser bookmarks. (I regularly migrate my bookmarks to a separate html page that I keep on the server so my bookmark list can be accessed from any machine I'm using.)

## 4. Installation

The Fedora Core 3 installation was as painless and effortless as an operating system installation can be.

There was one moment of nervousness when the machine wouldn't recognize my USB mouse; I quickly solved that with one of those green USB-serial mouse connectors. If you're new to a Fedora Core (or Linux) installation, see our whitepapers on installing and upgrading Fedora Core on our website.

Installation took a while, as I selected "Everything". Disk space is cheap, this machine is behind about a half dozen firewalls, and I use it on a day to day basis, so I wanted everything including the kitchen sink on it. I'll tweak things shortly. It's easier to remove (or ignore) things than it is to add them in later, I've found personally.

Four CDs worth of stuff to install took about 2 ½ hours, and then to update to the latest versions was another 2 hours or so.

The FC installation differs from previous versions in three significant places.

First, it doesn't get in your face about making an emergency boot diskette. That's because there is no longer an option; Fedora Core 3 does not come with floppy boot images. You must boot from CD these days. The fifth CD that now comes with FC3 is a rescue CD.

Second, bootup doesn't display the boot menu automatically anymore. In older versions of Fedora Core (and Red Hat), the grub menu that showed you all of the kernels (and other operating systems) from which you could choose to boot would display and wait for a few seconds before automatically loading the default choice. With Fedora Core 3, the grub menu no longer displays. Rather, a countdown displays on screen for a few seconds, and then the default kernel is automatically loaded. If you want the grub menu to be displayed, you need to strike a key during that few-second countdown.

Third, FC boots into the most recent kernel automatically. If you catch the boot menu quickly enough, you'll see that the most recent kernel is selected by default. In previous versions, when you updated your kernel, it was not automatically made the default; the reasoning being that you shouldn't just automatically launch into a new kernel without an explicit action. Now, the newly updated kernel is the default and you need to explicitly choose a different one. I can imagine that there were plenty of arguments of which choice is better, and I can see the point of both sides.

Ultimately, I'm OK with the new method. The kernel code and the development process are both mature enough that there's a fairly slim chance of the kernel not working after updating anymore. And it's a bit obscure to change the grub menu itself so that the new kernel becomes the default - a nuisance for an experienced user and something close to black magic for a new user.

## 5. What's New in Fedora Core 3

Once booted, you'll get the traditional login screen, and once past that, you'll get the new FC3 desktop, as shown in **Figure 1**.

**Figure 1**. *The default desktop for Fedora Core 3 is gorgeous.*

Let's take a look at the pieces.

First, you don't see a 'three' anywhere. I guess the blue light behind the logo is supposed to be a surrealistic 3. Maybe if you squint. In any case, I think the desktop wallpaper is gorgeous.

There are, by default, now a top and a bottom panel instead of just a single bottom panel. The left side of the top panel contains icons for the Applications and Actions menus (which were formerly both contained under the red Fedora icon) and a half dozen commonly used applications, such as email, Web browser, and office applications like OpenOffice.org Writer and Calc. The right side of the upper panel contains icons for utility-type application, such as the Red Hat Network Alert Notification Tool, the Date/Time applet, and the volume control.

The bottom panel contains the very handy (in my opinion) "Show Desktop" icon (which was buried in the menu structure in previous releases) on the left side, and the workspace switcher on the right side.

The Applications menu is virtually identical to the red Fedora menu in previous versions, with menus for Accessories, Games, Graphics, Internet, Office, Preferences, Sound and Video, System Settings and System Tools. New is the Edutainment menu and missing are the last couple choices from the old menu.

The Actions menu has options that used to be in the old Fedora menu, such as Log Out. Other options that were in the old menu and that are now in the Actions menu have been considerably enhanced, such as Search for Files and Run Application. A couple of options that are new to the menu (although they've been available elsewhere) are Lock Screen and Take Screenshot.

Another nice feature is the interface for adding items to the panel. Earlier releases required you to navigate through the application menu to find the item you want to add. Right clicking on the panel and

selecting "Add to panel" now brings up a dialog that displays many applications and functions that are commonly added to the panel, as shown in **Figure 2**.



*Figure 2. The Add to Panel dialog is much more friendly than previous versions.*

Selecting the Application Launcher item opens a second dialog that allows you to drill down through the application menu and choose an application that isn't in the primary list. Select a main menu area, then open it up to show the choices underneath it, as shown in **Figure 3**.



*Figure 3. You can drill down through the Application Launcher to navigate through the existing menu structure.*

If you want to add an application or function that isn't in the Fedora menu, you can create your own with the Custom Application Launcher option in the Add to Panel dialog in Figure 2.

## 6. Custom Configuration

Once the system is running, it's time to configure it. The first things I do are to change the display resolution, if necessary, then connect it to the network file server, and tweak a couple of infrastructure settings.

### 6.1. Display Resolution

Use the System Settings | Display menu to control the display parameters, including the maximum screen resolution that will be available. Then use the Preferences | Screen Resolution menu to set the resolution of the screen that you want to use.

### 6.2 Network connections

First, modify the /etc/hosts file to tell your machine about other machines on the network that it wants to know by name. By default, there is an entry for the loopback device (127.0.0.1). You can enter the names and IP addresses of other machines, like so:

```
127.0.0.1    localhost.localdomain localhost
192.168.1.1    machinename
```

Second, add mount points to your home directory on your local machine for network shares, like so:

```
/home/whil/prog_data
```

Then, open the /etc/fstab file and add the shares for each mount point (watch word wrap):

```
//machinename/prog_data    /home/whil/prog_data smbfs credentials=/etc/samba/cred,uid=wh,gid=wh
```

Finally, add the credentials files, /etc/samba/cred, that contains the credentials to log in to the server. If you're new to this, these steps are explained in more detail in other whitepapers on our site.

### 6.3 Infrastructure settings

Finally, I tweak the infrastructure of the box. First I open the /etc/inittab file and change the default runlevel from 5 to 3, so that the normal boot process doesn't automatically load the GUI.

Then I open the .bashrc files for my day-to-day user account and for root, and add a line that changes the prompt string and color, like so:

This string changes the prompt in the root user's command window to red:

```
PS1="\[\e[31m[\u@\h \w] I AM ROOT: \[\e[30m"
```

This string changes the prompt in my own user's command window to blue:

```
PS1="\[\e[34m[\u@\h \w] Dude? \[\e[30m"
```

Of course, change the text in the prompt string to suit your own personality.

### 6.4 Turn off unnecessary services

A side effect of my approach of installing everything including the kitchen sink is that many, many services are installed and turned on that aren't necessary. While it's good practice to do this anyway, with the multitude of software running in this installation, it's a must to go through and shut down things that aren't needed. Here are a couple ideas of things you might find unnecessary:

```
canna (Japanese Conversion Engine) - why this was started is a mystery.
cups (Common Unix Printing System) - if you're not printing via CUPS, then you don't need this.
isdn - it's a rare machine txhat is connected via ISDN any longer.
pcmcia (PCMCIA card services) - if you don't have a PCMCIA slot in your computer, or if you don't use
them, don't need this.
```

Make sure that you both stop the service AND uncheck the box so that the service doesn't start up again the next time your machine is started! See also http://www.linuxplanet.com/linuxplanet/reviews/5670/4/ for more ideas on services to investigate.

## 7. Customization

Now that the necessary part of tweaking the box is done, it's time to fine tune the appearance and functionality to my own personal tastes.

First, I change the wallpaper of the desktop to the wonderful artwork by Heather Schumacher, "flyguins.jpg" (shown in **Figure 4**.) Her work can be found at http://www.yerf.com/schuheat.

Next, I migrate all of the items on the top panel down to the bottom one. If you want to follow along, here's how. Right-click on an icon in one of the panels. You'll see either "Lock" and "Move" menu items, or "Unlock" and a disabled "Move" menu item. If "Move" is disabled, you'll have to select the "Unlock" menu item so that you can move the icon.

With that trick in hand, I moved the Applications and Actions icons to the far left on the bottom. To the right of those two are icons for the tools I use every day. In order, they are:

```
Show Desktop
Lock Screen
Command Window (found under
Konqueror File Manager
Firefox Web browser
Mozilla Web browser
Thunderbird Email client
OpenOffice.org Writer
```

Next come a series of utilities:

```
The GIMP drawing and graphics tool
Quanta Web Development Environment
Grip CD burner
XMMS Audio Player
Volume Control
```

Some of these you can add via the Application Launcher as discussed earlier while others need to be added more-or-less manually - open the Applications menu, navigate tot he menu option desired, but instead of selecting the option, right click on it's name and select the "Add this launcher to panel" item.

In the middle of the panel, I've moved the Workspace Switcher from its original spot on the far right, and then removed one of the panels, as I've found I only use three on a regular basis. I also set up hotkeys for the three workspaces, so I can switch between them while keeping my hands on the keyboard instead of having to mouse around. Use the Applications | Preferences | Keyboard Shortcuts menu to set up your own hotkeys.

To the right of the Workspace Switcher, I add the System Monitor (found under the System Tools menu). Open the icon's context menu with a right-click, then select Preferences, and then select which resources you want windows open for. I personally keep all five open while I'm getting used to a new release, and then close a couple of them once I'm used to how the release functions.

The next section on the panel is reserved for icons that represent running applications that have open windows - it's called the Window Selector area and allows you to switch between apps just by clicking. I usually use Alt-Tab to switch between apps so I keep that area as small as possible.

Finally, I drag the icons in the right side of the upper panel to the same position in the lower panel. These include the Red Hat Network Alert icon and the clock. I add the Battery Charge Monitor applet and the Weather Report applet to that corner as well.

My desktop now looks like that shown in **Figure 4**.
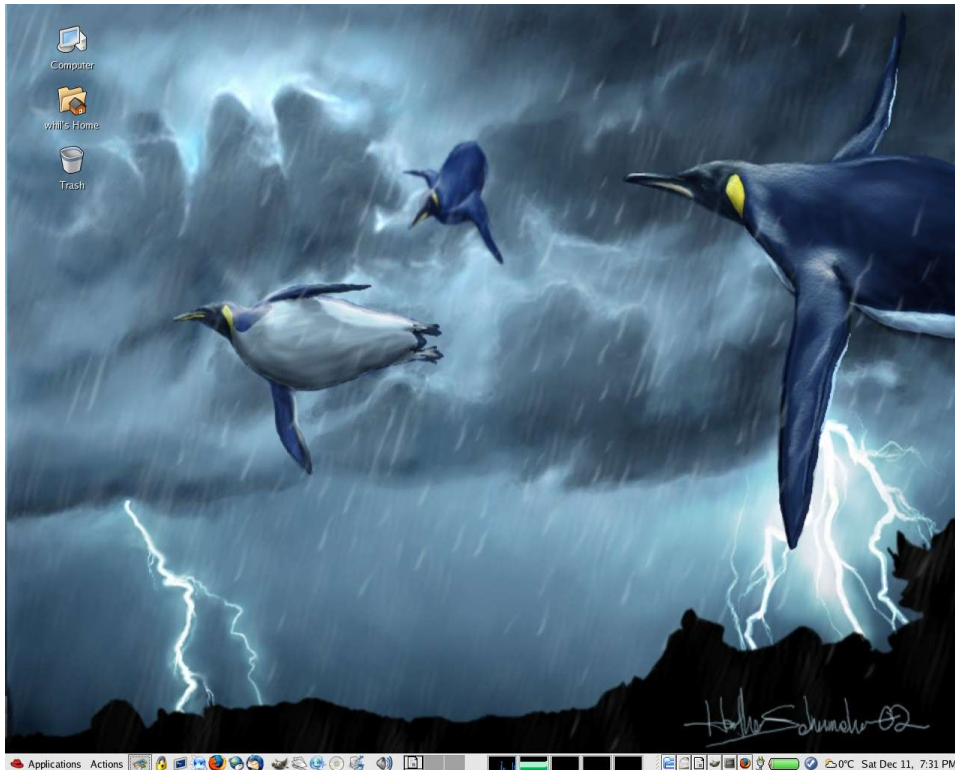


*Figure 4. My finished desktop, with one panel and Heather Schumacher's Flyguins wallpaper.*

## 8. Life isn't perfect

I've been very happy with this installation of Fedora Core, but it's not perfect. First, I've found that the response time is a little sluggish in some cases, to the extent that I wonder if the selection of an item has actually 'taken' or not. I've opened several instances of an application on occasion, thinking that I didn't click fast enough the first time.

And Konqueror does not recognize OpenOffice.org file formats - the native writer format, sxw, for example, is listed as "Unknown." Furthermore, right-clicking on an OpenOffice.org document and selecting Open With... doesn't provide Writer as a default choice.

## 9. Where to go for more information

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