



Managing Your Files

Files are what make the world of Linux go round. They're the currency of any kind of operating system, because every time you use your computer, you generate new files, even if they're only temporary.

How Linux views files, as well as the disks and partitions that contain them, varies somewhat from how Windows handles files. In many ways, the Linux system of file management is far simpler than that in Windows (which, ironically, was created as an attempt to make everything easy!).

In this chapter, we will explain how you can manage your files under Ubuntu. This isn't a definitive guide; you'll need to wait until Chapter 14 to learn the technical ins and outs of the file system and the all-important system of user accounts that goes hand-in-hand with files. However, this chapter provides enough information for you to understand how the system works, and where and how you should store your data.

Understanding File System Concepts

Just like Windows, Ubuntu has a file system that is shared among software components and your own personal data, which you generate within various applications, or perhaps download from the Internet. However, Ubuntu differs from Windows in a couple of important ways.

Drive References

Perhaps the most important differences between Linux and Windows are the following:

- The Linux file system doesn't use drive letters.
- The Linux file system uses a forward slash (/) instead of a backslash (\) in filename paths.

In other words, something like `/home/john/myfile` is typical under Ubuntu, as opposed to `C:\Documents and Settings\John\myfile` under Windows. The root of the hard disk partition is usually referred to as `C:\` under Windows. In Ubuntu, it's referred to simply with a forward slash (`/`).

If you have more than one drive, the drives are usually combined into one file system under Linux. This is done by *mounting*, so that the any additional drives appear as virtual folders under the file system. In other words, you browse the other hard disks by switching to various directories within the main file system. We'll explain mounting in Chapter 14.

Note If you're used to Mac OS X, then the Ubuntu file system shouldn't come as much of a surprise, because both OS X and Ubuntu are based on Unix and utilize similar concepts.

Names of Files

Another important difference between Ubuntu and Windows is that filenames in Ubuntu are case-sensitive. This means that `MyFile` is distinctly different from `myfile`. Uppercase letters are vitally important. In Windows, filenames might appear to have uppercase letters in them, but these actually are ignored when you rename or otherwise manipulate files.

Because of this case-sensitivity, you could have two separate files existing in the same place, one called `MyFile` and another called `myfile`. In fact, you could also have `myFile`, `Myfile`, `MYFILE`, and so on, as shown in Figure 12-1.

As with Windows, filenames can have spaces within them. This means it's possible to have file or folder names like `Pictures from Disneyland` or `party at bob's house.jpg`.

Note You might notice that some Linux old-hands avoid using spaces in filenames and use an underscore character (`_`) instead. There are two main reasons for this. The first is that it's tricky to manipulate filenames with spaces in them at the command prompt (discussed in Part 4 of this book). Secondly, Internet services are often incompatible with filenames with spaces in them, which means that to use those services, you would need to rename files (unless you put them in an archive first).

Unlike with Windows, filenames can include virtually any symbol, including an asterisk (`*`), backslash (`\`), question mark (`?`), less-than/greater-than signs (`<` and `>`), and so on. The only symbol that's prohibited is the forward slash (`/`), and that's because it has a special use in file paths, as described in the previous section. Be aware, however, that if you wish to share files with colleagues running Windows, you should stick to Windows conventions to avoid incompatibilities, and refrain from using the following symbols: `\/:*?"<>|`.

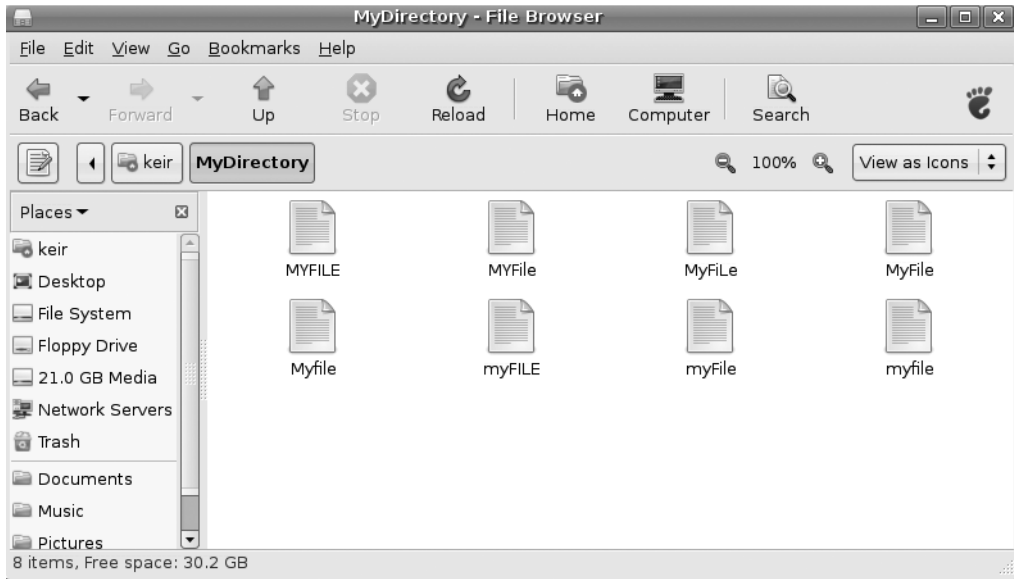


Figure 12-1. *Ubuntu filenames are case-sensitive, so many similar filenames can exist, differing only in which letters are capitalized.*

Note If you try to copy a file with illegal symbols to a Windows machine across a network, Ubuntu simply won't let you, and will report an Invalid Parameters error.

File Access and Storage

Windows Vista tightens up security and does not allow users to write files outside the Users directory unless they have permission. But under Windows XP, you have access to the entire hard disk. You can write, read, or delete files anywhere (unless the system has specifically been configured otherwise). You can save your personal files in C:\Windows, for example.

Under Ubuntu, ordinary users can browse most of the hard disk, but they aren't able to write files to the majority of folders (in some cases, they won't even be able to access files).

Although we'll cover the file system in much more depth in Chapter 14, for the moment, it's enough to know that you've been given your own part of the hard disk in which to store your stuff. This is a directory located within the /home directory, and its name is taken from your username. If your login name is louisessmith, your place for storing files will be /home/louisessmith. Figure 12-2 shows an example of a user's home directory.

Note Linux generally uses the terms *directory* and *subdirectory* for the places you put files, whereas Windows refers to them as *folders*. It's merely a matter of semantics. However, within the Nautilus file browser, directories are pictured as folders and are referred to as such.

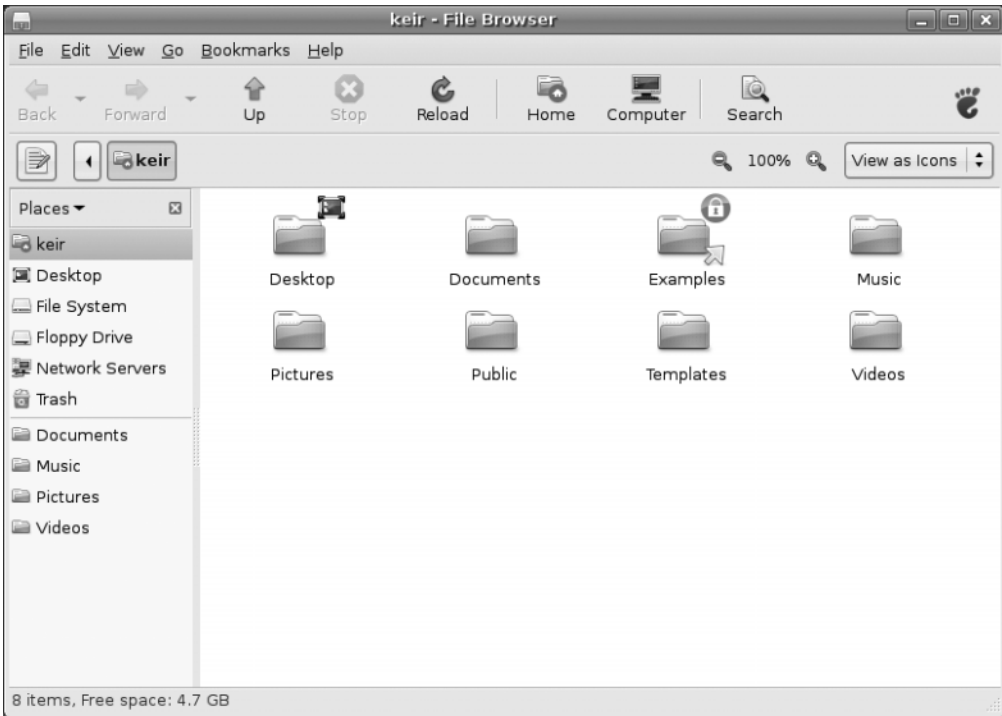


Figure 12-2. Your personal area on the hard disk is in the `/home` directory and is named after your username.

Some programs might create subdirectories in your home directory in order to store and organize their output. For example, a digital camera program might create a `Pictures` directory within your `/home` directory. It's up to you whether you use these. The standard practice within the Linux community is to simply save everything into your `/home` subdirectory (for example, `/home/keir`) and sort it out later!

Files within Ubuntu remember who owns them. If user `johnsmith` creates a file, he can make it so that only he can read or write the file (the default setting is that other users will be able to read the file, but not write any new data to it). Directories, too, are owned by

people, and the owner can set access permissions. By default, all users on a system can access each other's /home directories and read files, but they won't be able to change the files or write new files to any directory within /home that isn't theirs.

Note Any user with superuser powers has access to all of the system and can create, edit, and delete files in all directories. This is so the user can perform essential system maintenance.

Using Nautilus

Nautilus is the name of the default file browser in Ubuntu. It's similar to My Computer or Windows Explorer under Windows, in that it presents a list of files on the right side of the window and a series of shortcuts to popular locations within the file system on the left side.

Starting Nautilus is simply a matter of clicking the Places menu and choosing a location, as shown in Figure 12-3.



Figure 12-3. You can open a file browser window by selecting a location from the Places menu.

The Nautilus window (see Figures 12-1, 12-2, and 12-4) consists of several elements:

Menu bar: The Nautilus menu bar has File, Edit, View, Bookmarks, and Help menus. The View menu offers options for controlling the way files are displayed in the Nautilus window, as well as the look and feel of Nautilus itself. The Edit menu lets you manually cut, copy, and paste files. The Go menu lets you quickly jump to other locations in the file system. Using the Bookmarks menu options, you can create web browser-like shortcuts to certain locations in your file system, so you can access them instantly. There are also some ready-made bookmarks for folders in your /home directory: Documents, Music, Pictures, and Videos.

Toolbar: As in a web browser, the toolbar allows you to quickly move backward and forward from place to place in your browsing history. In addition, you can reload the file listing, in order to reflect any changes that might have taken place since the Nautilus window opened, and quickly navigate to popular file system locations, such as your /home directory.

Location bar: This feature, located beneath the toolbar, is unique to Nautilus and works in two modes. The first mode, which we'll call *button mode*, is activated by default. This shows individual directories as buttons on the location bar and lets you see where you are in your file system at a glance, as well as quickly and easily move through your file-browsing history. For example, if you start in /home/keir (displayed as the keir button), and then browse to /home/keir/Pictures/holiday/disneyworld, clicking the Pictures button will return you to /home/keir/Pictures. The other folders listed on the location bar (holiday and disneyworld in this example) won't disappear and will still have buttons, so you can return to those as well. It's best demonstrated by example, so give it a try! The second mode, activated by clicking the icon to the left of the location bar buttons, switches the location bar into a more traditional, text-based bar, where you can type paths and filenames manually. To switch back to button mode, click the icon again.

Zoom controls: To the right of the location bar are the zoom controls. These make the icons representing the files bigger or smaller. When you're browsing a lot of files at once, shrinking them will fit more in the window. On the other hand, when you're viewing photo thumbnails, it can be handy to increase the zoom setting, so you can see more detail in the pictures.

View As Icons/List: To the right of the zoom controls is a drop-down list that switches between icon and list view. List view shows details about the files, such as file size, the type of file, its permissions, and so on. Icon view presents the files as a series of large icons. In many cases, the icons will give a clue as to the nature of the file; for example, audio files appear with musical note graphics. If the folder you're browsing contains image files (or certain document files, such as PDFs), these will be automatically thumbnailed—the icon will be a small version of the contents of the file, as shown in Figure 12-4. This is very handy when browsing pictures for printing or editing.

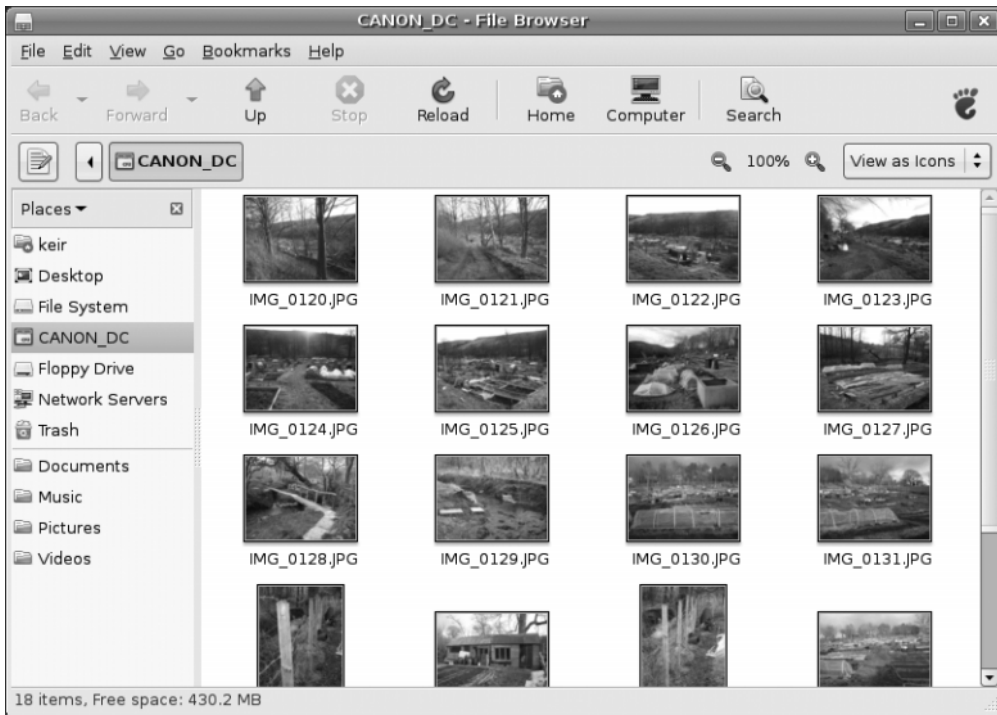


Figure 12-4. Whenever you view a folder full of pictures in icon view, they will be automatically thumbnailed.

Places pane: The Places pane on the left lists the most popular locations within the file system, as well as any locations that you've bookmarked. Double-clicking each icon takes you to that location instantly. Clicking the File System entry takes you to the root of the file system (/). There are also bookmarks for your floppy drive (if you have one), your deleted files in the Trash folder, and any servers available on the local network.

■ **Tip** To bookmark a location, drag a folder to the blank area beneath the currently bookmarked folders in the Places pane.

As under Windows, you can right-click each file in the file browser window to see a context menu with options to rename the file, delete it, open it with particular applications, and so on. The Properties option on the context menu lets you view information about the file and alter certain aspects of it, such as its access permissions (discussed in Chapter 14). You can even add some text notes about the file if you wish!

■ **Caution** You should never delete your /home folder. Doing so will most likely destroy your personal Ubuntu configuration and prevent you from logging in, since many personal system and program settings are also stored in your /home folder.

Searching for Files

Nautilus includes a simple search tool. Click the Search button on the toolbar, and you will see a text box below the toolbar. In this text box, type any part of the filename you want to find. For example, typing **festival** will return any filenames with *festival* in them.

By clicking the plus sign icon next to the Reload button after a search, you can specify an exact file type. To do this, click the Location drop-down list, and select File Type. Then click the Any drop-down list, and select the particular file type you want to find. For example, suppose you're searching for a picture taken at a festival, and you know the filename contains the word *festival*. You also have various documents you created related to attending the festival, and their filenames also contain the word *festival*. In this case, to find only photo files, you can select Picture from the drop-down list, as shown in Figure 12-5.

Note The simple search tool in Nautilus is not as powerful as the Search for Files option, available from the Places menu.

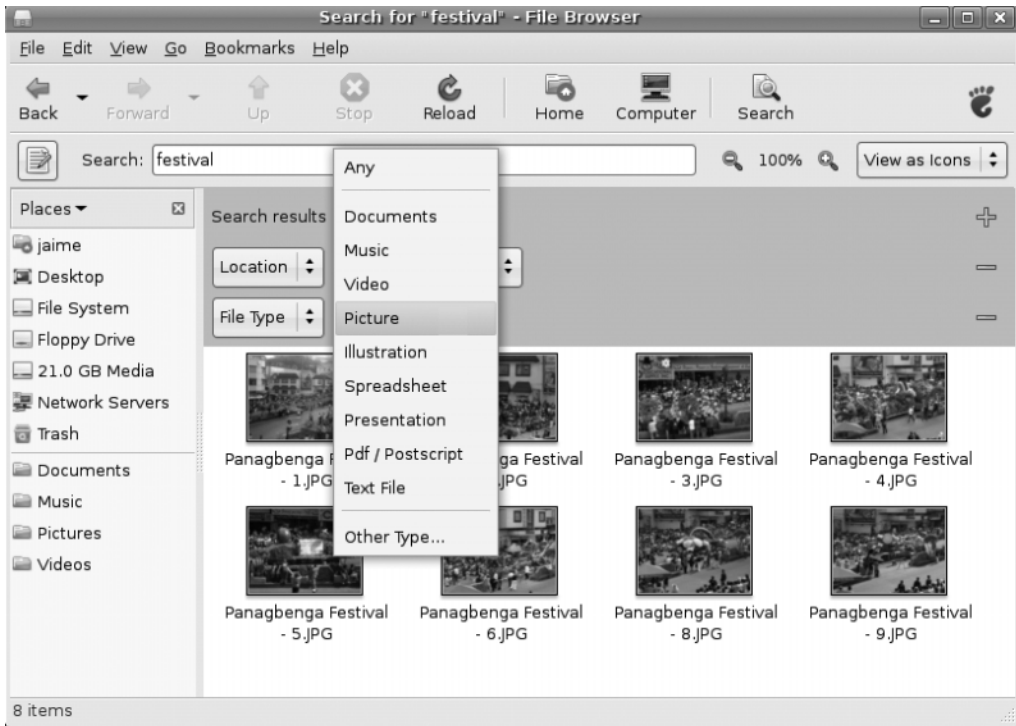


Figure 12-5. The Nautilus search function lets you filter by file type.

File and Folder Icons

Files and folders can have *emblems* assigned to them. These are smaller icons that are “tagged on” to the larger icons in both list view and icon view. Emblems are designed to give you quick clues about the nature of the file. To apply an emblem, right-click the file or folder, select Properties, and then click the Emblems tab. As shown in Figure 12-6, a range of icons is available; in fact, any file or folder can have several emblems applied at once. Simply put a check in the box beside the icons you wish to apply. Pick the ones that are meaningful to you. For example, a “cvs-conflict” emblem will probably be of interest only to programmers.

Nautilus makes use of a handful of emblem icons for its own needs, too. For example, a square with an X in it indicates that you don't have permissions to access that file or folder at all—not even to view it. In most cases, the file system emblems are self-explanatory.

Tip Want to have some fun with desktop icons? Right-click them, and select *Stretch Icon*. Then click and drag the handles at one of the corners. To restore an icon to its original size, right-click it, and select *Restore Icon's Original Size*.

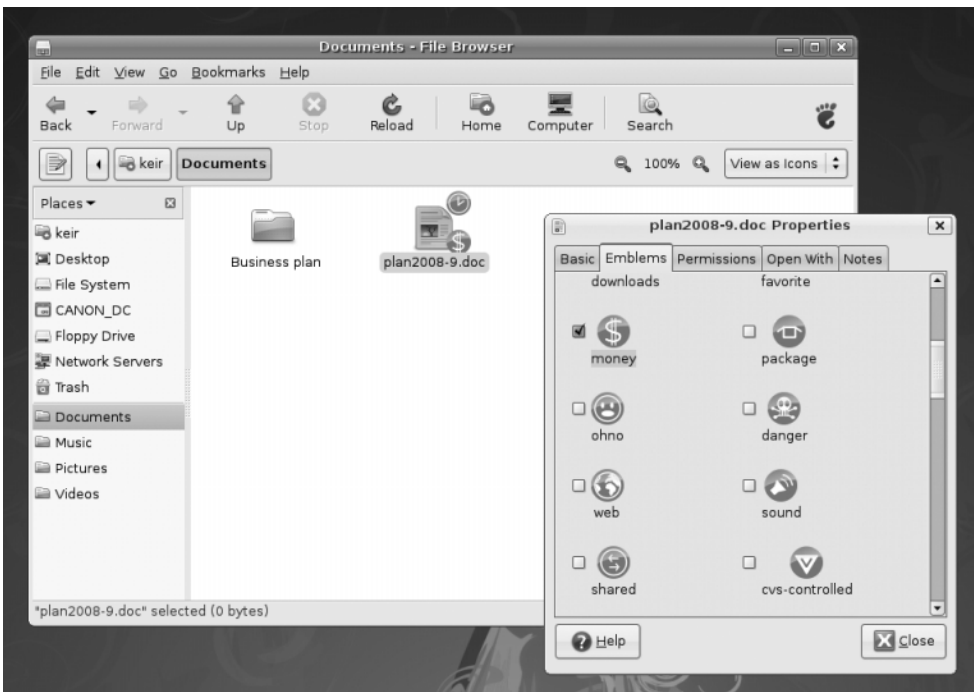


Figure 12-6. A variety of miniature emblems can be applied to an icon to aid recognition of the file.

Special Nautilus Windows

As well as letting you view your files, Nautilus has a number of object modes. This is a complicated way of saying that Nautilus lets you view things other than files.

The most obvious example of this is the *Computer* view of your file system, which presents an eagle's eye view of your storage devices. To access this view, click **Places** ► **Computer**. If you have a card reader attached, it will appear here, as will any Windows partitions that may be on your hard disk. Double-clicking each item opens a standard

Nautilus file browser window (for this to work with Windows partitions, they must be set up correctly, as described in the “Accessing Windows Files” section later in this chapter).

Another Nautilus object mode is the Fonts view, which lets you see at a glance any fonts installed on your computer. To access the Fonts view, click Go ► Location in any open Nautilus window, and then type `fonts://`.

Object mode comes into its own when viewing network locations. Clicking Places ► Network Servers brings up the browsing network object view, for example, which is a little like Network Neighborhood or My Network Places under Windows. You can also browse to FTP sites by clicking Go ► Location in a file browser window and entering an FTP address (prefacing it with `ftp://`).

Note You might be used to dragging and dropping files onto program windows or taskbar buttons within Windows in order to open the file. This works with only some programs within Ubuntu. Generally, the best policy is to try it and see what happens. If the program starts but your file isn't opened, it obviously didn't work.

HIDDEN FILES AND DIRECTORIES

When you view your `/home` directory via Nautilus, you're not seeing every file that's there. Several hidden files and directories relating to your system configuration also exist. You can take a look at them by clicking View ► Show Hidden Files in the Nautilus menu. Clicking this option again will hide the files and directories.

You might notice something curious about the hidden items: they all have a period before their file-names. In fact, this is all that's needed to hide any file or directory: simply place a period at the front of the filename. There's no magic involved above and beyond this.

For example, to hide the file `partypicture.jpg`, you could simply right-click it and rename it `.partypicture.jpg`. You'll need to click the Reload button on the toolbar for the file view to be updated and for the file to disappear. As you might expect, removing the period will unhide the file.

Files are usually hidden for a reason, and it's no coincidence that most of the hidden files are system files. In addition, every program that you install, or installed by default, will usually create its own hidden folder for its system configuration data. Deleting such files by accident will usually result in losing your personal settings for that particular program.

Launching Files and Running Programs

As with Windows or Mac OS X, most of the programs on your Ubuntu system automatically associate themselves with various file types that they understand. For example, double-clicking a picture will automatically open the Eye of GNOME image viewer application, and double-clicking a `.doc` file will start OpenOffice.org Writer.

Ubuntu is automatically set up to view common file types. Table 12-1 shows which programs are required for viewing certain types of documents.

Note Whenever you install new software from the installation CD or the official software repositories, it should add an entry to the Applications menu. If for some reason this doesn't happen, you can create a shortcut using the techniques explained in Chapter 10.

Table 12-1. *Common File Types*

File Type	File Extension	Viewer	Location on Applications Menu
Word processor document	.doc, .rtf	OpenOffice.org Writer	Office ► OpenOffice.org Word Processor
Spreadsheet	.xls	OpenOffice.org Calc	Office ► OpenOffice.org Spreadsheet
Presentation	.ppt	OpenOffice.org Impress	Office ► OpenOffice.org Presentation
PDF file	.pdf	Evince	Not on Applications menu ¹
Compressed file	.zip, .tar, .gz, .bz2, and others	File Roller	Not on Applications menu ¹
Image file	.jpg, .gif, .bmp, and others	Eye of GNOME	Not on Applications menu ¹
HTML file	.htm, .html	Firefox	Internet ► Firefox Web Browser
Text file	.txt, .log	Gedit	Accessories ► Text Editor
Audio file	.wav, .mp3, .ogg ²	Rhythmbox	Sound & Video ► Rhythmbox
Music Player Video file	.mpg, .mpeg, .avi ²	Totem	Sound & Video ► Movie Player

¹ *Evince, File Roller, and Eye of GNOME are not present on the Applications menu. If you wish, you can add your own shortcuts for these applications by following the instructions in Chapter 10.*

² *Playback of many media files is only possible after extra software is installed. See Chapters 18 and 19 for more information.*

If you want to temporarily open a file type with a different program, right-click the file, select **Open with Other Application**, and choose the other program. From that point on, every time you right-click, you'll be offered the choice of that program to open the file.

To make Nautilus automatically and permanently use the application to open the file type, right-click it and select **Properties**, and then click the **Open With** tab. Click the **Add** button to locate the application you wish to use if it's not in the list. Finally, ensure the radio button alongside the program you wish to use is highlighted (you may need to click twice for this to happen), as shown in Figure 12-7, and then click the **Close** button.

Note Under Windows, you can use Windows Explorer to launch program executables by just browsing to their locations within Program Files and double-clicking their .exe files. It's technically possible to run programs by browsing to their locations using Nautilus, but this is discouraged. One reason is that Ubuntu doesn't store all of its programs in one central folder, as does Windows. However, most programs that are used on a daily basis can be found in `/usr/bin`. If the program itself isn't stored in `/usr/bin`, it will contain a symbolic link (effectively, a shortcut) to the program's genuine location on the hard disk.

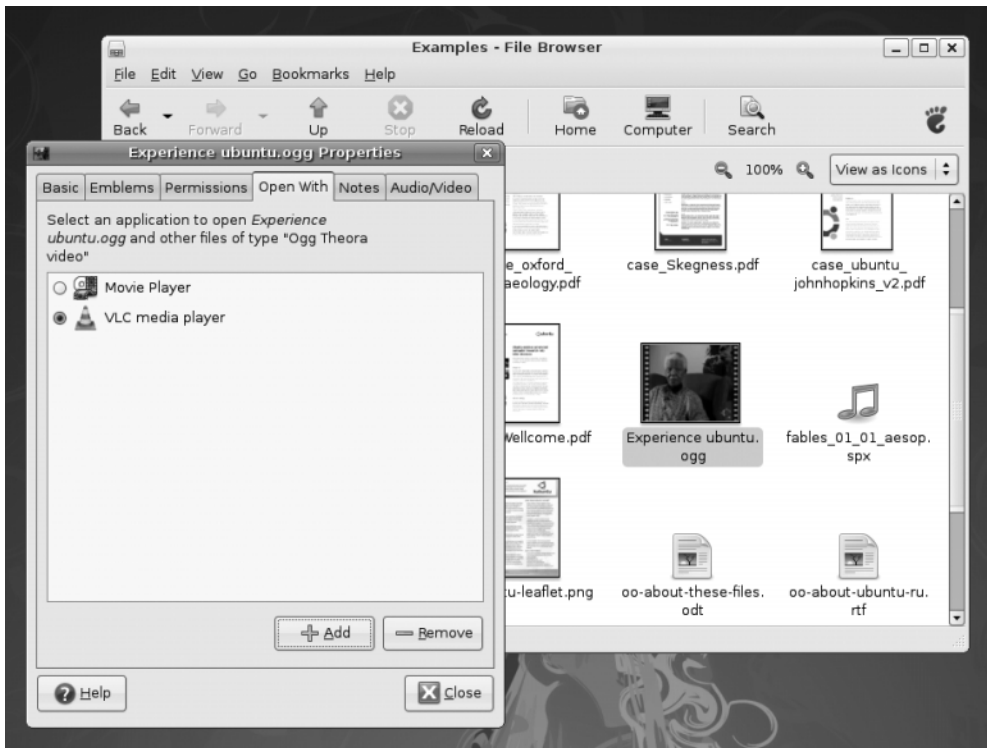


Figure 12-7. You can change which program opens a file by right-clicking, selecting Properties, and clicking the Open With tab.

Accessing Windows Files

Running Ubuntu on your PC makes you a relative stranger in a world of Windows users. It's likely that you'll need to access Windows files on a regular basis. If you've chosen to dual-boot with Windows, you might want to grab files from the Windows partition on your own hard disk. If your PC is part of a network, you might want to access files on a Windows-based server or workstation on which a shared folder has been created.

Note Accessing shared printers attached to Windows computers is explained in Chapter 8, in the “Configuring a Windows/SMB Shared Printer” section.

Working with Files in Windows Partitions

If you’ve chosen to dual-boot Ubuntu with Windows on the same hard disk, Ubuntu will attempt to make your Windows partitions available automatically.

Note It’s possible for an installation of Windows 2000 or XP to use FAT32 instead of NTFS, but this requires the user to make a deliberate choice during setup. Unless you know your Windows 2000 or XP system has been formatted with FAT32, it’s very likely that it is NTFS.

If the drive has automatically been made available, an icon for it should appear on the desktop. Double-clicking this should show your Windows partition contents. On a test system, the icon was identified by its partition designation, hda1.

If you find that your Windows partition isn’t visible, you can follow these instructions to make it visible. This involves mounting the Windows partition under your Ubuntu file system. Mounting is explained in more detail in Chapter 14.

1. These instructions need to be carried out at the command prompt, so start by opening a GNOME Terminal Window: click Applications ► Accessories ► Terminal.
2. You need to identify the Unique Udev ID (UUID) number of your Windows partition. This is simply the hexadecimal number that Ubuntu uses to identify the drive internally. If your computer is relatively new, it probably has an SATA hard disk, so type the following at the command prompt:

```
sudo vol_id -u /dev/sda1
```

If you’re using an IDE (PATA) hard disk, type the following to determine the UUID number:

```
sudo vol_id -u /dev/hda1
```

These instructions assume that the Windows partition is the first on the hard disk, which will be the case for most users. If you know the Windows partition is the second partition, replace /dev/sda1 or /dev/hda1 with /dev/sda2 or /dev/hda2.

3. You’ll be prompted to enter your password; do so.

4. Make a note of the output of the command. On our test PC, the line read 6284101A840FEEFB, but yours will almost certainly be different.
5. Now you need to create a mount point. This is a dummy folder that's used to make the contents of the Windows partition magically available. The Ubuntu convention is to create a directory within the `/media` directory, as follows:

```
sudo mkdir /media/Windows
```

6. You need to edit the `/etc/fstab` file. This is the configuration file that tells Ubuntu where to find all of the file systems it uses. This includes the root file system, without which Ubuntu can't operate, so you should take extra care when editing this file. To load the file into the Gedit text editor, type the following:

```
gksu gedit /etc/fstab
```

7. The file looks complicated, but don't worry. Simply scroll to the bottom and press Enter to create a new line. Then type the following:

```
UUID=<UUID> /media/Windows ntfs defaults,nls=utf8,umask=007,gid=46 0 0
```

Replace `<UUID>` with the hexadecimal number you noted earlier. For example, on our test PC, the line within `fstab` read as follows (see also Figure 12-8):

```
UUID=6284101A840FEEFB /media/Windows ntfs defaults,nls=utf8, umask=007,gid=46 0 0
```

8. Click File ► Save within Gedit to save your changes.

From now on, the Windows file system will be made available automatically whenever you boot, and it should appear as an icon both on the desktop and within the Computer view of Nautilus (click Places ► Computer to see it). However, you can mount it immediately by typing the following command at the prompt:

```
sudo mount /media/Windows
```

Note You can write to or edit files in an NTFS partition. However, be aware that you could easily destroy your Windows partition because on Ubuntu, all Windows files (even the system-critical files) can be overwritten without warning. On the positive side, this feature allows you to easily recover your files from Windows if it has crashed.

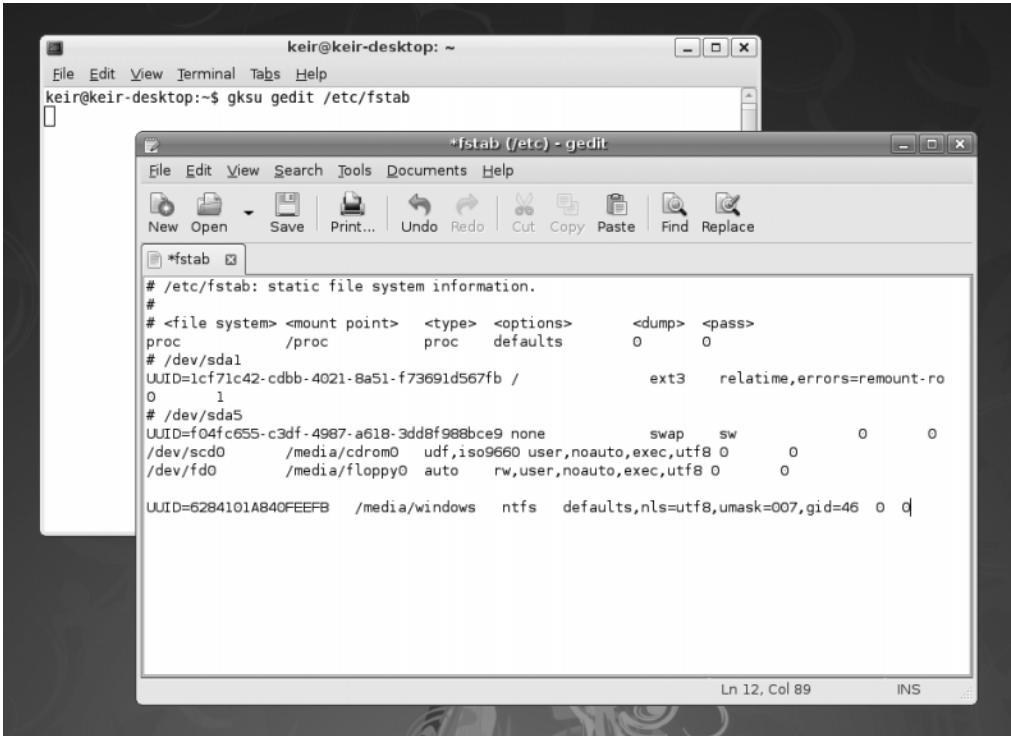


Figure 12-8. By editing the `/etc/fstab` file, you can make your Windows partition available under Ubuntu.

Accessing Networked Files

The easiest way to access shared folders on Windows workstations or servers over a network is to click **Places** ► **Network**. This will start Nautilus and attempt to search for Windows machines on your local network, just like with Network Neighborhood and My Network Places on the various versions of Windows.

Tip When using this method, if the icon for a computer or workgroup is a blank sheet of paper, click the Refresh button on the toolbar. The icon should then change to a computer. In our tests, we found that we couldn't access the network resource if the icon wasn't set correctly.

If you've ever used the network browsing services under Windows, you might already know how unreliable they can be—some computers simply don't appear in the list, others appear eventually after a wait, and others appear but then prove to be mysteriously inaccessible.

A far quicker and more reliable method of accessing a Windows shared folder is to manually specify its network name or IP address. The network name is simply the name of the computer that's used during networking. The IP address is the computer's identifying number and usually takes the form of four octets separated by periods, like this: 192.168.1.4.

You should try using the network name first when connecting to a computer. If that proves unreliable, try using the IP address instead. You can discover the network name and IP address as follows:

Network name: You can discover the network name of a Windows Vista computer by clicking Start and right-clicking Network on the menu. Click Properties on the menu, and in the window that appears, look at the name of This Computer on the diagram beneath the Network and Sharing Center heading. For example, the name of our test PC is keir-pc. To discover the network name within Windows XP, right-click My Computer, select Properties, and then click the Computer Name tab in the window that appears. Look under the Full Computer Name heading.

IP address: To find out the IP address, open an MS-DOS command prompt. To do this under Windows XP, click Start ► Run, and type `cmd`. Under Windows Vista, click the Start button and type `cmd` into the Start Search text box. Under both XP and Vista, type `ipconfig` at the prompt. Then, under XP, look for the line that reads "IP Address" and note the details. Under Windows Vista, look for the line that reads "IPv4 Address" and note the number (on our test computer, we had to scroll up the window to see the line).

To access a shared folder, open a Nautilus file browser window (Places ► Home), and then click Go ► Location. In the box, type the following:

```
smb://computer name/
```

Alternatively, if you wish to use the IP address, type the following:

```
smb://IP address/
```

Obviously, in both cases, you should replace *computer name* and *IP address* with the details you noted earlier.

You may also be prompted to enter a username and/or password to access the shared folder, as shown in Figure 12-9.

Note If you're accessing a Windows 95, 98, or Me shared folder, only password protection will have been set (these versions of Windows are unable to specify a username). However, when prompted by Nautilus, you still need to type something into the Username box to gain access—anything will do, as long as the password is correct. You cannot leave the Username box blank.

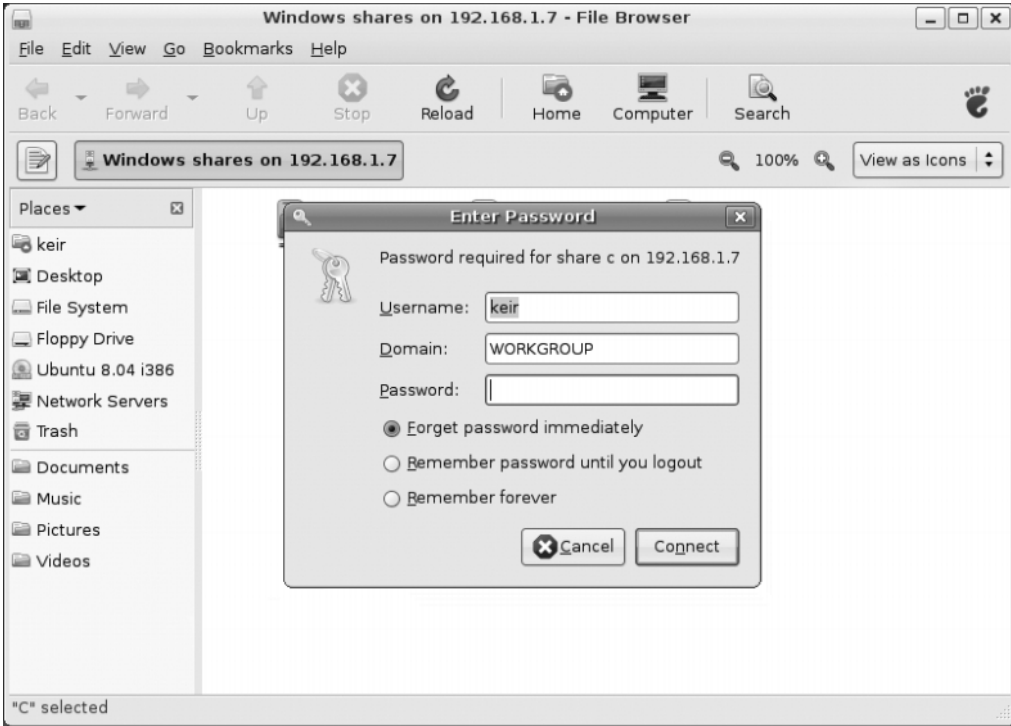


Figure 12-9. *If the shared folder requires a username and/or password, you'll be invited to enter these.*

To create a permanent desktop shortcut to the Windows folder, right-click a blank spot on the desktop and create a launcher. In the Command text box, enter `nautilus`, followed by the full network path to the share. You can discover this by browsing to the shared directory using Nautilus, as described previously, and then clicking the icon next to the location bar to switch to the text-mode view of the path. Then cut and paste the text into the Command box.

For example, on our Ubuntu setup, we created a shortcut to the Pictures directory on the computer `keir-office-pc` by typing the following into the Command box:

```
nautilus smb://keir-office-pc/pictures
```

For more information about creating desktop launchers, see Chapter 10.

When using the launcher after rebooting your Ubuntu system, you might notice the folder takes a few seconds to appear. This is normal and merely the result of the time Ubuntu takes to log on to the computer sharing the files.

Sharing a Folder from Within Ubuntu

As well as accessing the shared files of other Windows users, you can also set up your own shared folder under Ubuntu for Windows users to access (or, indeed, other Ubuntu computers). To do this, follow these instructions:

1. Right-click the folder you wish to share, and select Sharing Options from the menu.
2. In the dialog box that appears, put a check in the Share This Folder checkbox. If this is the first time you've shared a folder, a dialog box will appear telling you the sharing service software is not installed. Click the Install Service button to add it.
3. You'll be prompted to type your password because some additional software needs to be installed. Following this, Ubuntu will automatically download and install the Samba file-sharing components.
4. Once the installation has finished, cancel the Folder Sharing dialog box and log out of the computer (click System ► Quit ► Log Out). This performs some necessary background configuration. Then log back in again.
5. Right-click the folder you want to share again, and select Sharing Options again. Then put a check in Share This Folder again.
6. In the Share Name text box, type a name by which the share will be identified by other computers on the network. At the bottom of the dialog box you might see some warning messages. However, we found some of these were wrong or simply didn't make sense. This is obviously a bug, and our advice is to ignore them. If you genuinely do something wrong, like type too long a share name, Ubuntu will tell you later on.
7. By checking Allow Other People to Write in This Folder, the shared folder will be made writeable, rather than read only.

Caution Do not check the Guest Access box! At the time of writing, Ubuntu has a bug whereby allowing guest access (access without a username or password) results in files without ownership and with no read/write permissions for anybody. Effectively, any files placed in the folder will be unreadable by you unless you manually alter their permissions and ownership. This is described in Chapter 29, but is a long and annoying process to have to go through for each file placed in the shared folder.

8. Click the Create Share button. A dialog box might appear saying that the permissions of the folder you wish to share need to be changed. Agree to this by clicking the Add the Permissions Automatically button.

Following this, Windows users can access the shared folder using My Network Places/Network Neighborhood, where it should be “detected” alongside other Windows computers (under Vista, click Start ► Network). Users will be able to log in with your Ubuntu user-name and password.

Note To access the shared folder from another Ubuntu computer, you might need to specify its IP address. To find out the IP address, open a GNOME Terminal window (Applications ► Accessories ► Terminal) and type `ifconfig`. Then look for the numbers alongside the `inet addr` entry.

Accessing Removable Storage Devices

Ubuntu automatically makes available any CDs or DVDs you insert into your computer, and they’ll appear instantly as icons on the desktop. The same is true of any card readers or USB memory devices that you use. Alternatively, you can access the storage devices by clicking Places ► Computer.

Working in the Computer Window

In the Places ► Computer window, you’ll find icons for all of the storage devices attached to your computer, including the floppy disk drive, as shown in Figure 12-10. However, because of the way floppy disk drives work, Ubuntu isn’t able to automatically detect if a floppy has been inserted. Instead, you’ll need to double-click the icon, as with Windows.

Note In days of old, special tools were used to access MS-DOS floppies under Linux, and you might hear some Linux old-hands talking about them. Nowadays, you can simply use Nautilus without needing to take any special steps.

Whenever you double-click any entry in the Computer window, it will open a Nautilus file browser window. You can copy files by clicking and dragging, and right-clicking files offers virtually all the options you could need.

Tip You don’t need to use Places ► Computer each time to access your floppy, CD, or DVD drive. These drives are mounted in the `/media` folder on your hard disk. Just browse to `/media/floppy`, and `/media/cdrom`.

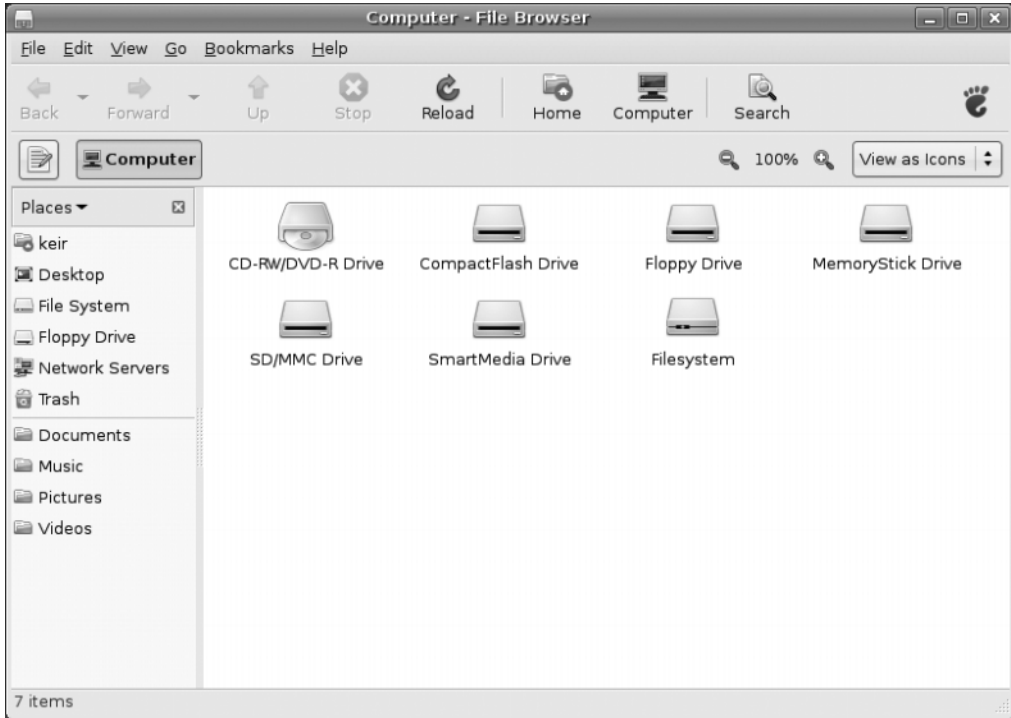


Figure 12-10. Select *Places* ► *Computer* to access your removable storage drives.

Ejecting Media

Ubuntu isn't quite like Windows when it comes to ejecting or unplugging removable storage devices. In some cases, devices must be unmounted, which is to say that you need to tell Ubuntu that you're finished with the device in question and that you're about to unplug it.

In the case of CD or DVD discs, you can simply press the Eject button on the drive itself. Ubuntu is able to detect that the disc is being ejected, so it will automatically unmount the drive. If the disc ever refuses to eject, right-click its icon on the desktop or within Computer and select Eject.

In the case of floppy disks, USB memory sticks, and other USB storage devices, you should always right-click the icon and select Unmount Volume. Then you can unplug or remove the device. This also applies when you're removing a memory card from a card reader—before pulling out the card from the reader, it needs to be unmounted.

Note It's necessary to close any files that were open on the device before unmounting, and even close any file browser windows that were accessing the device.

If you fail to unmount the device, Ubuntu will still believe the device is attached. This shouldn't cause too many problems, but it could crash any programs that were accessing the device. It might also mean the card isn't recognized properly when you reinsert it. In rare instances, data loss can occur.

Summary

This chapter has led you on your first steps in exploring the Linux file system. The file system is vitally important to how Linux works, and we'll go into it in much depth in upcoming chapters.

Here, you were introduced to elementary concepts, such as where personal files are stored and the basic rules that govern what you can and cannot do with files. We also looked at the principal method of accessing files via the GUI: the Nautilus file manager. Additionally, you learned how to run programs manually, as well as how to access any Windows partition or files that may exist on your hard disk or across a network.

In Part 4 of this book, starting in the next chapter, we will look at some of the underlying technology that makes Ubuntu work, and how you can gain more control over your computer. Chapter 13 introduces the BASH shell—perhaps the most powerful piece of software offered by Ubuntu to control your system.