

## » First Steps Beginner-level tutorials for users dipping their toes into Linux

# Security: control

It's good to protect your files from external threats, but **Andy Channelle** has identified a bigger risk factor for your data... your family!



» Go into the User Settings to add and remove users.

scanner or connecting to the internet. We're not, though, particularly worried about this aspect just yet.

Instead, open up your file manager and navigate to the **/home** folder, where you'll see folders named for each individual with an account on the system. In our example we're using Gnome, but the process in KDE is the same. We could take a sledgehammer approach and lock down the whole of our folder, but that would probably be counter-intuitive, because we'll probably want to share files among the family at some point.



### Our expert

#### Andy Channelle

Andy seems to have been taking his first steps in free software forever, and has been interested in technology since the advent of the Dragon 32.

Linux, it is always said, has a better security model than other operating systems because its root/user system prevents accidental or malicious damage to system files by prompting you for the root password when you're about to do anything major. This is great for your system, but for most desktop users the operating system files are the least important bit of the computer. The data – photos, accounts, contracts, emails, etc – are far more important. Vulnerabilities in the operating system can give attackers access to your data locally and remotely, but we're concerned here with preventing unauthorised or even accidental access to your data through more prosaic means.

Linux is a multi-user operating system. When you install your distro you will be asked to create one or more users (you can also create users post-installation) and each of these users has their own settings, desktop and folder for their files in **/home/username**. Ordinarily this is the only place in which normal users can save or write information and so it's where you'd tend to store your photos and documents, but there might also be some application-specific files here too such as user preferences and occasionally whole apps.

If you didn't create all the users needed during installation, you'll find the User Management under your distribution's Preferences section. Ubuntu has a selection of options to define privileges for each user, which could be used to prevent users mounting external devices, using the printer or

### Privileged users

To begin, double-click into your folder to see your files and folders. Select one folder, right-click on it and select Properties, then select the Permissions tab.

By default the folder should allow the owner to Read and Write, or Create and Delete files, while the settings for Group and Others should be Read Only or Access Only. This is adequate for most cases, but let's imagine that you're planning a party for your loved one and want to hide all your organisational stuff away from prying eyes. In the case of the default settings, your loved one would be able to read, but not alter, your documents.

The next step on the security ladder would be to set the Group and Others to List Files only. This means that other users would be able to navigate through your folders but any attempt to open a document would lead to an 'insufficient privileges' message. This is better, but still exposes significant metadata (creation dates, file size) etc, which might give the party plans away.

The next option is the equivalent of completely locking the doors, and involves setting the Folder Access to None. Now when another user attempts to enter your folder, they'll get the message that they don't have sufficient privileges to access it. Of course, you'll then have to find a way to explain why you're being so secretive...

» Last month We got to grips with keyboard shortcuts and spiced up Firefox.

# user privileges



## Step by step: Encrypt and decrypt your data

To be really safe, it's possible to scramble all the information in a folder or your entire **/home** directory. We're using Ubuntu for this procedure, but the process is the same in other Gnome-based distros.



### 1 Make an encryption key

To encrypt a whole directory, right-click on its icon and select the Encrypt option. It's likely, unless you've encrypted something before, that you'll get notification that you need to set up a key. Fortunately, this will also open up the appropriate dialog box where you can begin your encryption odyssey. You can also encrypt your system using an app called *Seahorse*. Press Alt+F2, type **seahorse** and hit Enter.



### 2 Define a key

Once *Seahorse* is running, click File > New and choose PGP Key from the list. PGP is a public/private key encryption system that enables you to securely share files with friends. Click Continue and then provide the information requested – Name, Email address and a comment. The latter could be a reminder of what you're using this encryption for.



### 3 Check the strength

Click on the small Advanced disclosure arrow to see some further settings. We're not going to change anything in here, but it's worth looking at. The encryption type is the algorithm used to scramble the content. The default above is the Digital Signature Algorithm (DSA) and its strength is 2,048 bits, which should stump all but the most determined hacker, as it would take a couple of years to crack it.



### 4 Encrypt your file

Click the Create button. You'll have a short wait while the encryption key is created and you can add a passphrase. It will then appear, ready for use under the My Personal Keys tab. Now go back to your folder, right-click and select Encrypt. Select the key from the list and click on OK. You'll be given the option to encrypt each file individually (you'll have to enter your password for each file) or as a zipped file.



### 5 Clear up the mess

Select the Encrypt packed together in a package, provide a name and choose a file extension such as .zip, .tar.gz or .jar and click OK to begin the encryption process. The result will be two new files. The first is an archive version of the folder; the second will be the same file but encrypted. The first file is insecure, so you should delete it.



### 6 Accessing your stuff

The final stage is that, some time in the future, you'll want to access the files once more. Simply drop the encrypted file into the location where you'd like to extract it and double-click the file. You'll be prompted for the passphrase once more, and once this is entered, a new folder will appear ready for use. **LXF**

» **If you missed last issue** Call 0870 837 4773 or +44 1858 438795.

# APT: Keep your

There's a world of software out there – all you have to do is keep it updated.

One of the advantages that Linux has over other operating systems is that each distro has a colossal amount of software specially packaged and available to you with just a couple of clicks. Ubuntu's package management system is based on Debian's *Advanced Package Tool (APT)*, which does an amazing job of identifying the various dependencies that a given package needs and then installing it in the correct order. For example, you may want to install Package A, but this relies on Package B, and Package B may need a newer version of Package C than you have installed. *APT* will nip off to the Ubuntu servers and find the updated version of Package C before it installs Package B, finally downloading and installing Package A. It does all this without you needing to know a thing about libraries, DLL files or anything technical.

### Quick tip

Make sure you have recent backups of your data before you perform a full system update.

Even if you're told your system is up to date it's worth checking every now and again.

You may already have seen this in action in the automatic update system that will occasionally prompt you to update your software for the sake of bugfixes, better security or more features. If you haven't seen the auto update in a while, you can force it to check for updates by doing System > Administration > Update Manager. On our test system, Update Manager said the machine was up to date, but a quick press of the Check button revealed that over 50 updates were available, including small things such as an Ogg Vorbis library update all the way up to more substantial updates, such as a new version of the *Thunderbird* email client.

To initiate an update, just click the Update button and sit back as the software is downloaded and installed. You may occasionally need to reboot to finish updating, but this is only the case in situations such as the installation of a new kernel.

The Update Manager really comes into its own when a new version of the distribution is release, such as the



Add/Remove is the simplest way to add new applications to your Ubuntu desktop.

impending update to Karmic Koala (9.10). When this is officially released there will be a new button on Update Manager labelled 'Upgrade' and a notification that a new version of the distro is available. Clicking this button will initiate an whole system upgrade, which could take some time and will almost inevitably involve a restart.

### Add new software

Ubuntu has three different methods of adding new software. One of these is through the command line, which is useful on occasion, but the graphical tools are so much easier that we're going to stick with those. The simplest of the graphical tools is the Add/Remove menu entry at the base of the Applications menu. This is populated with a range of applications that have been selected by Ubuntu engineers and arranged into the same categories available on the Applications menu itself. From games to graphics, communications to calculators, there are applications in here that cover every aspect of your computer life.

You can use the toolbar at the top of the window to filter applications shown or search for a specific package or task. In the main list, clicking on an application name will provide more information and a link to the project's home page. The column on the right show the popularity of the application – in installs – as a star rating from 1 to 5.

Anything that has a tick next to it is already installed; you can remove the tick to add it to the uninstall list, or click on applications that don't have a tick to add them to the install list. It's really that simple.

Once you've selected the apps you'd like to add and remove, click on the Apply Changes button to start the procedure. As with the Update Manager, the applications and their dependencies will be downloaded from Ubuntu's servers and installed. They will appear under the appropriate heading on your Applications menu.



» Never miss another issue Subscribe to the #1 source for Linux on page 102.

# distro fresh



› The quick search box allows you to refine your query so you get much more usable results.

There are hundreds of applications in the Add/Remove section of the desktop, but they're just a fraction of what's available for Ubuntu. The next step up, which will expose you to thousands of apps, is *Synaptic*, which itself is a graphical front-end for the *APT* system mentioned earlier. You'll find *Synaptic* under the System > Administration menu.

This is a little more complex than Add/Remove, but it works on the same principle. To find a piece of software, such as a calculator, type a search string in the bar (in this case we've used 'calculator') and watch as all the software that fits the bill shows up in the list. You can further refine the list by adding extra information. For instance, 'graphical scientific calculator' removes some options, but adds others.

In this case it's useful to hit the Search button to bring up a new dialog box, as this enables us to search based on additional criteria such as Name, Name and Description and Maintainer. In our search, 'graphical calculator' with the option of Name and Description provided the most usable list. We can now select each of these in turn to get a precise description of the application and, using the Get Screenshot button, a chance to see what the app looks like if a screenshot is available. You'll see more information if you right-click on an entry and select Properties. This will bring up a new tabbed box with information about versions, dependencies and more.

As with Add/Remove, a box to the left denotes whether an application is installed (it will be green if it is) or not, but this is not simply a two-option box: you can click to select whether to Mark for Installation, Upgrading, Removal or Complete Removal. Selecting Removal will remove the application but will preserve application settings, so that if you reinstall the app, your settings will be as you left them. Complete Removal gets rid of everything, this will give you a clean slate if you want to reinstall. Once you've defined what you'd like to install, remove or update, click on the Apply button to begin the procedure.

Smart as *Synaptic* is, it relies on the speed of Ubuntu's approval process to give you access to the latest applications,

and sometimes this isn't enough. In this case, it's time to break down the barriers and go your own way.

In many cases, upgrading or installing an application that isn't officially supported means simply downloading a Deb file for your particular version of Ubuntu and double-clicking it to open the installer. *APT* will usually take care of dependencies and you're good to go. However, the downloaded application will occasionally require some dependency not provided by Ubuntu. For this reason, many developers will provide a repository that contains the necessary updates to run their piece of software, often including dependencies.

## Going outside the walls

To use these, you'll need to add the developers' repository to *Synaptic*. This is a simple procedure that begins with launching *Synaptic* and selecting Settings > Repositories. This is a tabbed dialog box, and the section you need is labelled Third Party Software. On a vanilla installation this will be empty, so you need to add the repository.

Click on the Add button. In this following box you'll need to insert an *APT* line consisting of the repository type (binary or source, labelled with deb or deb-src respectively), a URL for the server, a distribution designation and a component.

As an example, let's set up Ubuntu to install the developer version of Google's *Chrome* browser. The *APT* line for this is: `deb http://ppa.launchpad.net/chromium-daily/ppa/ubuntu jaunty main`

If you're running an older version of Ubuntu, change the designation to **intrepid** or **hardy** (or **karmic** if you've taken the plunge and installed the latest version), and then hit the Add Source button. Finally, click Close.

Before any changes are made you need to hit the Reload button to force *Synaptic* to download the new information from the added repositories. Once this is done, search for the software and select it to install in the usual manner.

In a similar way, of course, you can remove repositories or use the Edit button to adjust the information. It's a useful idea to occasionally go through your repositories to see if you're still using everything you've added and, if not, to remove redundant entries. This is especially true if a repository you've defined is no longer available. **LXF**



## Quick tip

If you use apps from developer repositories you may have to update the software more often, owing to newer software having a faster rate of development.

› Adding repositories can increase the available software, but may have some hidden dangers if something gets updated incorrectly.

› **Next month** We'll keep SUSE fresh and test Google's new Chrome browser.