

Fresh Mint

Hot on the heels of Ubuntu's latest distro, Clement Lefebvre and his team have concocted their latest powerful and refreshing blend. Jonni Bidwell takes a sip of Mint 18.



Mint's motto, 'From freedom came elegance', speaks to an entirely different class of distribution (distro): one that isn't shackled by commercial interest and one that actually wants to be pleasurable for desktop users.

Linux Mint was born 10 years ago out of lead developer Clement Lefebvre's desire to build a distro that was both powerful and easy

to use. Now it has risen through the rankings to become one of the most popular Linux distros out there.

"Mint has risen through the rankings to become one of the most popular Linux distros."

Linux Mint has definitely become something much bigger than its first nickname 'Ubuntu with codecs'. It now

features its own desktop, core applications and support channels. Along the way there have been hiccups and detours, but the

project continues to innovate and show that it can stand up well alongside the major players that have deeper pockets. Using Ubuntu 16.04 as a base, the latest iteration

in the Mint family, Sarah, will be supported until 2021. And who knows what desktop Linux will look like by then.



Cinnamon 3 desktop

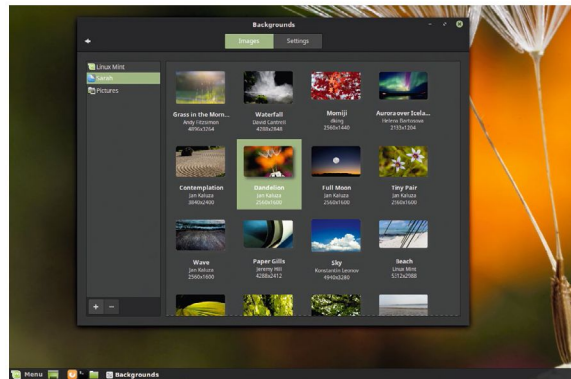
One of the most anticipated features of Mint 18 is Cinnamon 3.0. Let's see what it means to be a modern traditional desktop.

Cinnamon is Mint's unique and admired desktop environment and rebels against hyper-modern desktops, such as Unity and Gnome 3. It doesn't have an inexplicable moral objection towards tray icons, like the latter, and it doesn't insist that your taskbar/pager/launcher be super-glued to the left, like the former. Instead it provides what users have been used to: a taskbar at the bottom, a menu to its left and a system tray to its right. This metaphor has been refined and modernised over Cinnamon's five-year lifespan, where it has borrowed the best of other desktops and introduced its own innovations.

As is *de rigeuer* these days, you can search for programs by typing a few characters while the menu is activated. This has been the case for ages, but it's extra-useful in this case given the new places where settings can be altered. There's controls for desktop effects, extensions, window behaviour, power management and notifications etc. It would be overwhelming, but the default set up is perfectly usable so you're unlikely to find yourself clamouring for that one setting.

A lot of what's new is just gentle refinements. Cinnamon 2.8 was already a well regarded desktop, and this release sees it further tweaked. The window snapping feature (dragging windows to the edge of the desktop will resize them to that half of the screen) seems more fluid now. You also get helpful window previews by hovering over applications in the taskbar. These are updated in real time, so you can use the feature to check on whether a terminal command has completed. Similarly, the volume control is aware of any music playing applications and will display cover art and playback controls; it even works with Spotify (which someone really needs to sort out the Linux client for). The file manager, *Nemo*, has seen some improvements and is a little more robust in this outing. *Nemo* was forked from *Nautilus* (now just called *Files*) after it was trimmed down (ie features that people liked were removed) and restyled so that it would better fit with the minimal Gnome Shell look.

One of our favourite new things is the 'squidgy' context menu effect. It's hard to explain why this is so satisfying, but



» As in previous releases, there are some quite spectacular backgrounds that have been contributed by the community.

we challenge you to right click on the desktop and then not immediately right-click somewhere else just to make it happen again. If you look in the Effects settings, you'll find a handful of other menu effects, but this one (called Cinnamon) is by far the best. There's all kinds of other customisation in here, some people will want to turn off overlay scroll bars, and others will want to tweak their window animations.

Fantastic Mr. Desktop

While not part of Cinnamon, Mint's *Driver Manager* continues to make life much easier for beginners. It won't provide the very latest Nvidia drivers, but it reduces the process to a single click. Likewise, the update policy displayed when the system is first installed, rather than just baffling jargon about kernels etc, the user is given a slider to choose the strictness of the update policy. It ranges from the a soothing 'Don't break my computer' to the merciless 'Always update everything'. One major criticism of Windows is its relentless updates—some users will welcome the potential quiet of Mint.

Ultimately Mint is a fantastic desktop for new users or anyone wanting to get stuff done without a desktop getting in their way. Developer's might use Mint because they're more interested in developing stuff than fighting with the Gnome Tweak tool. Having access to the plethora of Ubuntu packages without being Ubuntu has its advantages.

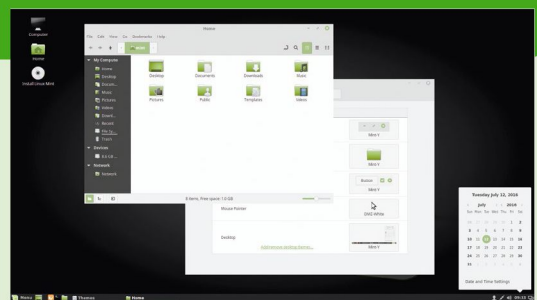


Mint-Y

For a long time, the default Cinnamon theme has been Mint-X. And with good reason, it offers a simple, clean look that subtly guides the user to where they want to be. In Mint 18, the default is still Mint-X, but poke around in the Theme settings and you'll find a new one called Mint-Y.

In Mint, different themes can be applied to different desktop components: window borders, icons, controls, mouse pointers and desktop etc. If you set all of

these to Mint-Y you'll see the future of Linux Mint. Apparently, it's not ready for the masses yet and will be tweaked further according to user feedback, eg it's only available in one colour. That said, it already looks pretty good to us. It's got some flattish elements without being entirely two-dimensional, and it has minimalism in the sense of being free of clutter, but not in the sense of there not being anything there.



» Gaze at the future of Mint and Cinnamon, and we're talking distros and desktops, not herbs and spices.

Getting started

Mint can be enjoyed by beginners and experts alike. Read on to see how simple it is to install it on your system.

» You'll find Mint 18 on the LXF DVD, just follow the quick guide below to get it installed. For the benefit of digital readers, those without optical drives or those that want to install a different edition (or indeed those whose discs have mysteriously gone walkabout), we'll tell you how to create your own installation media here. You can do this from any operating system.

The first step is to choose and download an ISO image from <https://linuxmint.com>, follow the Download link at the top and choose your version. At the time of writing, Cinnamon and Mate editions of Mint 18 are available, but hopefully Xfce and KDE editions will have been released by the time you read this. Also available is LMDE2, which is a rolling-release based on Debian Stable (more suited for advanced users). Choose the version that interests you and the appropriate architecture (32- or 64-bit) for your hardware. There's really no reason to choose 32-bit on newer hardware, despite the rubbish you may read some places. The most efficient way to

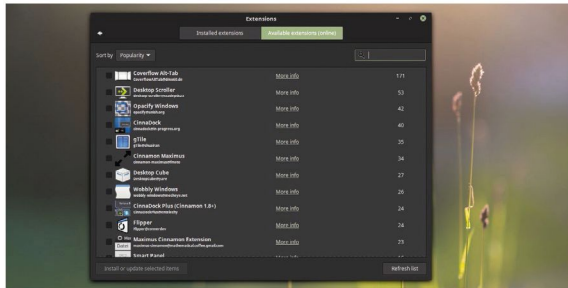
get the ISO is via BitTorrent, using a client such as *Transmission*, but there are plenty of mirrors if you just want to download from a single source.

In light of unfortunate events earlier this year, it's wise to verify your download afterwards (especially if not using BitTorrent) and you can find instructions for doing just this (see <https://linuxmint.com/verify.php>). Once you're happy the image can then be burned to a DVD (or written to a USB stick which we'll cover in a second). On Windows 10 DVDs can be burned directly from Explorer, or using a third-party program such as *ImgBurn*. Linux users can use *Brasero*, *k3b* or (from the terminal) *wodim* to burn a DVD. While programs such as *UNetbootin* allow you to write out images to USB drives, they often don't do a particularly good job. Our experience has always been best using good ol' fashioned `dd` from the command line. The important thing is to make sure you don't accidentally dump the image to your OS drive—that would be most inconvenient. So plug in your USB stick and use the command `lsblk` to list all block devices. Assuming the medium is `/dev/sdx` and that you have downloaded the image to the current directory, the next command will make a bootable USB stick. Change the image and device names:

```
$ sudo dd if=linuxmint18-cinnamon-64bit.iso of=/dev/sdx bs=1M  
$ sync
```

The second command is a good idea because the first may finish while writes are still buffered. Wait until the command prompt returns on the next line before rebooting from the USB stick.

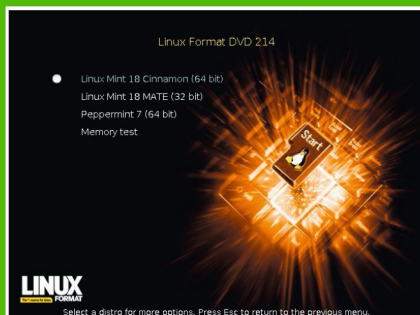
» A number of extensions are available to enhance the functionality of Cinnamon, or just to further prettify it.



Installing Mint 18

1. Boot the LXF DVD

Ideally, starting your computer with the DVD in the drive should bring up the stylish menu pictured below. Unfortunately there's a lot that can go wrong here, you'll need to make sure Secure Boot is switched off and also that your machine will boot from the optical drive before other devices that have operating systems on them. There are some pointers at <https://help.ubuntu.com/community/BootFromCD>.



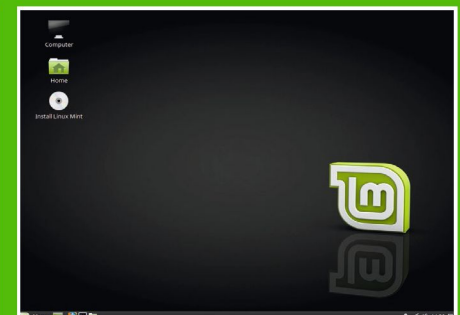
2. Choose your poison

We've provided the two most popular versions, Cinnamon and Mate on the disc. Mate is more suited to older hardware (it's also your only choice if you have a 32-bit CPU), but it will work just fine on newer machines. It's ideal if you yearn for the simpler days of Gnome 2. Choose your version and press 'Enter'. Start it from the next menu, if you run into problems try again in compatibility mode.



3. The Live Environment

You can get a feel for Mint from the live environment. This is a complete edition of Mint that looks and acts exactly like a proper install. It will be much more responsive when it's installed on your machine though, since at present everything is running from the DVD and potentially without graphical acceleration. So once you've familiarised yourself with the layout, hit the install icon on the desktop.





Advanced installs

Want to dual boot with Windows? Or not sure what you want but want to keep your options open? Then read on.

A standard install will create two partitions (three on UEFI machines): one for the OS and a swap partition. This is a perfectly reasonable set up, but some people prefer to tweak things a little, eg it's common to have a separate `/home` partition so that in the event that something terrible happens the OS partition can be wiped and reinstalled, without touching any user files or settings. Be aware that if you install a different distro with this trick, then the settings saved in the `/home` partition may not be valid and could cause problems.

A separate `home` partition is straightforward to do from the installer, just choose the 'Something else' option. The current disk layout will be displayed. Assuming we are nixing everything on the drive, we can delete the root partition (the one with mount point `/`) at this point, resizing it would be a waste of time. Now recreate a replacement root partition by clicking the '+' arrow at the bottom, choosing a filesystem (ext4 is a good choice, Btrfs if you like shiny new things) and setting the mount point. Mint requires about 6GB to install, but it's a good idea to allow significantly more. Unless you know better, we'd recommend at least 30GB here. Repeat the process and create a `/home` partition. If you (or other users of this machine) are planning on storing large files here, it's a good idea to make this as large as possible. It's entirely possible to have separate partitions for all the main system directories (`/boot`, `/usr`, `/var`).

Anyone that's ever decided to add another distro to their Linux armoury has probably run into partitioning difficulties before. Even if you nominally have the space to add another

partition, it can be a time-consuming operation to move all the data so that the partition can be resized. Even if you are patient, you might run into the three primary partition limit for MS-DOS style partition tables. Sometimes it would be nice to be able to 'extend' a partition to another drive, but it's just not possible with traditional partitioning. Enter the Logical Volume Manager (LVM). This abstracts away partitioning so that all of the operations we've mentioned can be carried out with ease. [See Tutorials, p72, **LXF205** for more on LVM]. The short version is that conventional partitions have Logical Volumes (LVs) as their LVM analogue. LVs in turn live inside Volume Groups (VGs), which are collections of Physical Volumes (the drives themselves). LVM is easily set up by checking the box in the installer which will set up a Volume Group called `mint-`

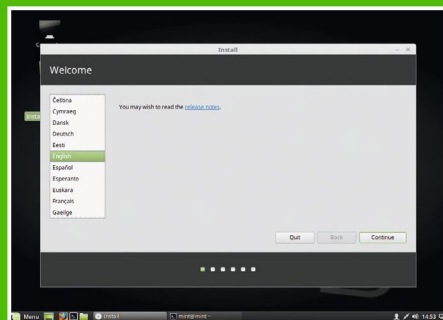
"A separate home partition is straightforward to do from the installer."

`vg` with logical volumes for root and swap. You can't tweak this set up from the installer, but you can do so afterwards. There are some caveats though: Windows doesn't support LVM, so if you put, eg, an NTFS filesystem on a LV it still won't be visible to Windows. Also, if you plan on dual-booting, make sure that Windows is installed first. It's very good at breaking `Grub` (and sometimes its own bootloader).



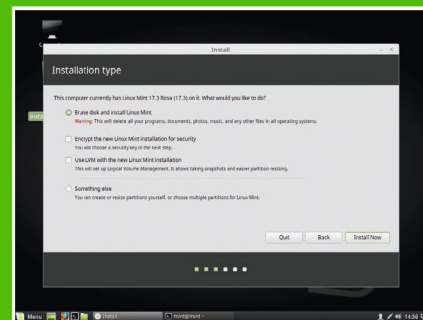
4. Language and codecs

You'll first be prompted to choose a language, one reason for Mint's popularity is that localisations and language packs for so many different locales exist. You may wish to read the release notes too. Next you'll be prompted to install proprietary drivers, codecs and the like which you should certainly do if you plan on gaming with a modern graphics card or your wireless card needs extra firmware to work.



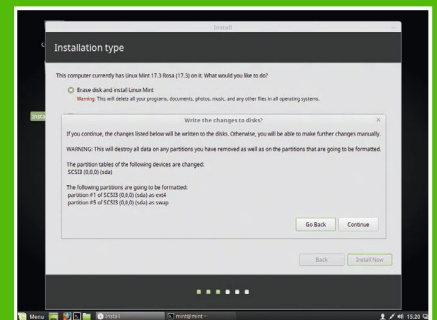
5. Installation Type

The first option here is the simplest, but also the most destructive: Mint will take over the whole target drive. Make sure there's nothing you care about on here before choosing this option. Those wishing to dual-boot with Windows should install that OS first (it's very rude about overwriting boot sectors) and choose 'Something else' here. If you want to use LVM, see the main feature (above).



6. Hit the button

Click the 'install' button and you'll be informed of any changes the Ubiquity installer will make. Once you're sure everything is as it should be (and do make sure—it will be difficult, if not outright impossible, to recover data from a device after it has been overwritten) click the 'Continue' button. Depending on the speed of your machine there may be time for a well-earned *Linux Format* Cup of Tea™ at this point.

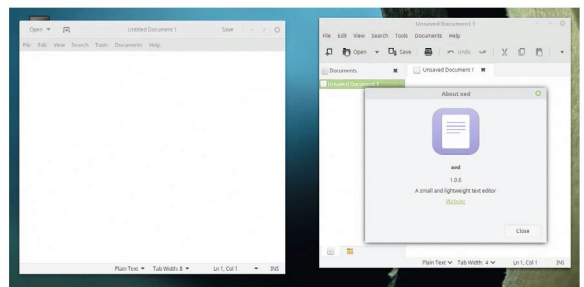


Using X-Apps

Some people don't get excited about text editors and image viewers, even when they have a cool sounding X in their names.

» **L**ead developer Clement Lefebvre explains that the X in X-Apps is a reference to the underlying X server, 'ex' as in the previous way of doing things, and also the algebraic notion, hinting at generality and universality. Any distribution aiming for ease of use needs its garrison of core applications. The discerning user expects a text editor, an image viewer, a media player and a document reader. Enter *xed*, *xviewer*, *xplayer* and *xreader*, respectively.

The 'X-Apps' initiative has as its goal the production of quality desktop- and distribution-agnostic bread and butter applications. Back in the halcyon Gnome 2 days, this need was satisfied by Gnome's own offerings (*gedit*, *Eye of Gnome* etc.). Beyond the *GTK2* widget library (which is probably installed on your computer no matter what your desktop) these didn't rely on any particular desktop libraries and so were reasonably portable. That is, it didn't matter if you used KDE or Fluxbox or Ratpoison, you could still open a PDF or play a movie etc. Sure, maybe you needed to apply a *GTK* theme manually or fiddle with font settings to make it look as nice as they did in Gnome, but you definitely didn't need to



» The venerable *Gedit* received a makeover in 3.14, it harmonises delightfully with Gnome, but without a toolbar it just looks silly and feels hobbled for other desktops.

layers of desktop entanglement and then possibly adding any Cinnamon or Mate-specific oddities.

Developing a custom fork of *GTK3* wouldn't make sense, since deviating from the Ubuntu base would break compatibility with all the *GTK* apps in the Ubuntu repos. Mint 17 relied on version 3.17 of *GTK*, where this Gnome-intertwining situation was not so bad. Any issues that arose could be solved with patching or downgrading of the offending applications. Mint 18 sees *GTK* bumped to 3.18 and the team decided that the effort spent fighting ever-increasing desktop coupling would be better employed to develop a universal application suite. Note that this doesn't apply to KDE versions of Mint, the Kapplications suite already provides perfectly good utilities.

“The production of quality desktop- and distro-agnostic bread and butter applications”

install masses of Gnome libraries just to use them. As Gnome 3 enters its middle age, its native applications have become increasingly tied to it. They integrate with Gnome-specific services and have been designed around its stylings.

The situation is particularly dire for Mint since it relies on the Ubuntu packages for *GTK* and other desktop libraries. These have already been heavily patched to work with the Unity desktop (which has some pretty funky ideas about window menus). So the Mint team is tasked with undoing two

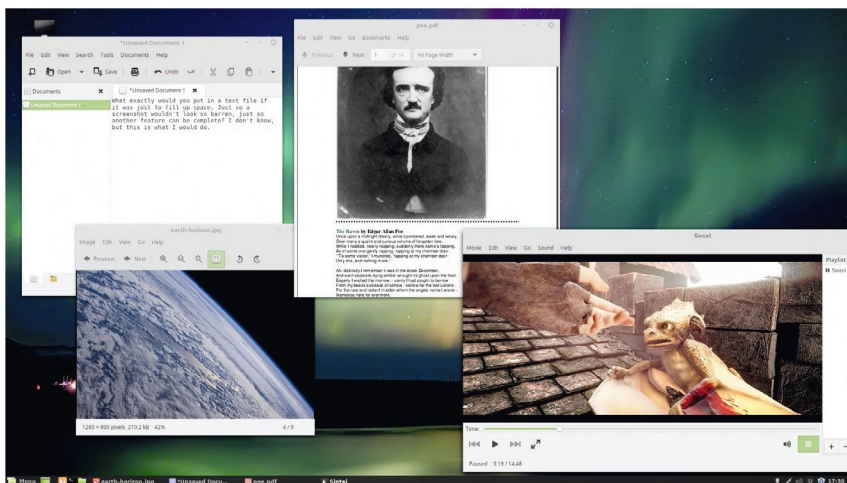
Anywhere apps

The Mint developers are primarily concerned with addressing the desktops offered by their distro. Since these have little in common beyond the more rudimentary *GTK3* features, a side-effect is that the xapps should largely work anywhere, not just within the confines of Cinnamon, Mate and Xfce.

There is some potential duplication of effort here since Mate

required its own applications to be crafted from the relics of Gnome 2.32. The Mate team are in the process of porting these to *GTK3* though, and so it makes sense for the Mint team to fork at least some of the Mate applications. This they duly did, *Pluma* became *xed*, *Atril* became *xreader* etc, and thus the first xapps were begat. The current tally of four forks will be expanded in future and users of traditional desktops can once again enjoy a consistent application experience that cares neither for desktop nor distro.

» The current cohort of xapps may not look like much, but these utilities are essential for any desktop worth its salt.





Mate and other editions

We find the Mint and Cinnamon combination to be quite delectable, but it's not for everybody so here we study the alternatives.

The Cinnamon desktop grew out of the Mint Gnome Shell Extensions (MGSE) and while it retains much of what many perceive as the traditional desktop metaphor, it also uses a number of shiny new features and desktop effects. There's all sorts of fancy things, such as the squidgy menus, that rely on modern OpenGL extensions to work. Many of these can be disabled, but users of older hardware (particularly graphics hardware) will likely want to install something with less demanding.

The natural choices here are Mate, KDE and Xfce since there are official Mint releases featuring these desktops. Xfce, which first appeared back in 1996, has long-positioned itself as a Ralph Nader type candidate, an alternative to Gnome and KDE. It aims to be lightweight, but not barren of features. Back in the day, this made it quite unusual, but now there are many other projects (LXDE, LXQt, not to mention Cinnamon and Mate) with similar goals, which has caused some to say that the project has lost its way. Regardless, Xfce is a great desktop, it's highly configurable and if you had to place it on desktop map it's somewhere between Gnome2-ville and KDE4-town. It has its own low-fat window manager (*Xfwm*), but this can be replaced with *Compiz* on hardware that supports it. In the same way as Sicily is seen as the largest 'small island', Xfce is probably the heaviest lightweight desktop. So it won't be ideal for old hardware, although some hardware is really beyond any desktop. Sure you could install just X and a lightweight window manager, such as *Openbox*, but you won't be able to run a modern browser or *LibreOffice*. Such machines can still be used with terminal-based applications.

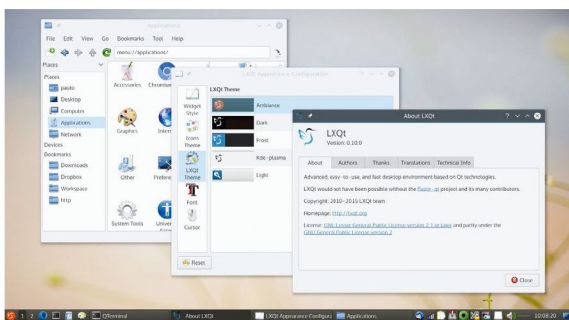


Like Mint's Xfce edition the KDE edition hasn't been released at the time of writing, but our admiration for the Plasma desktop is well-documented [see Features, p59, **LXF206**]. This will be Mint's first official foray into Plasma 5 world (modern Plasma releases have long been available via PPA) and we're confident the Mint developers have done some great things to it. This one won't be for users of old hardware, but if you have a modern system with more than 4GB of RAM and a graphics card manufactured within the last five years you'll be fine.

› **Mate is named after the mateine-based South American beverage so you should feel bad for pronouncing it wrong all this time.**

The friendly edition

So that leaves the Mate edition. This project was born five years ago when an Arch Linux user took it upon himself to fork Gnome 2. This was quite an undertaking, as many others had written off that code as deprecated, buggy and broken. But perseverance paid off, and the desktop has been part of the official Mint lineup since Mint 12. The development team has grown and now features none other than Clement Lefebvre as well as open-source titan, Martin Wimpress. Mate stays true to the stylings of Gnome 2. Many of its core applications are forked from the original Gnome 2 ones, eg the *Caja* file manager still looks a lot like Gnome's *Nautilus* and the *Engrampa* archiver looks like good ol' *File Roller* (or *Archive Manager* as it later became known). But Mate looks forward as well as back—it's entirely compatible with *GTK3* and its core applications are all in the process of being ported there. »



› **If none of the other editions appeal to you, it's easy to install a different desktop, such as LXQt.**

Installing other desktops

Of course, Linux is all about choice and Mint makes it easy to install other desktops. Some people use a different desktop depending on how they feel when their computer boots up. If we were to make a desktop it might be called Hopeless Indifference. But anyway, suppose you wanted to try out LXQt on Mint. The procedure

is exactly the same as in Ubuntu, and since LXQt is now in the Ubuntu repos, you don't even need to add a PPA:

```
$ sudo apt-get install lxqt
```

This will get you the latest 0.10 release. Not all desktops are in the repos, and even when they are you might be able to get a newer version

from a PPA, eg to get the latest stable version (there's a daily builds PPA too if you want to live on the edge) of Enlightenment do:

```
$ sudo add-apt-repository ppa:miko2040/e19
```

```
$ sudo apt-get update
```

```
$ sudo apt-get install enlightenment terminology
```

How it's made

Like several hundred other distros Mint is based on Ubuntu, but where does the former stop and the latter begin?

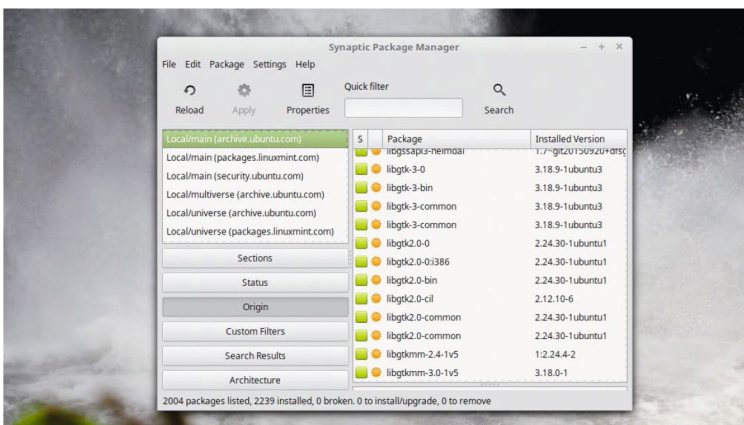
» **B**uilding a desktop is no mean feat and maintaining one is even harder. Especially when you're chasing a target moved by the evolution of upstream libraries. There are still a bunch of Gnome 3.18 libraries installed, but many are only there in an ancillary capacity, with Unity they are inextricably connected. On top of these are libraries specific to Cinnamon, some that are patched versions of Ubuntu counterparts. There's a few older libraries forked from Gnome 3 that need to be maintained too—the newer versions being inseparable from Gnome. And then there's all the applications. There's a lot that's easy to overlook too: The login screen that you don't think about (*MDM*), the window manager you don't see (*Muffin*), the update manager that helpfully finds the fastest mirror for you. All of these were carefully crafted based on user feedback. There's a lot of little things that are genuinely useful too, eg the Nvidia Prime applet, the simple backup tool and USB image writer. We also only just found out about the handy upload manager for sending files via (S)FTP, but it's been around for ages. Mint was inaugurated in 2006 with the Kubuntu-based Ada, which was only ever released as a beta. It gained popularity/notoriety with the Barbara release which featured a Gnome 2 desktop with the (hitherto unseen) convenience of proprietary and patent-encumbered multimedia codecs out of the box. Not only that, but also the luxury of NTFS write

support. By 2.2 (Bianca) things started to look more Minty—the top panel was gone and the customised menu, with its multi-column layout and search bar, it bore more than a passing resemblance to its modern Cinnamon counterpart. From Mint 5 (Elyssa) releases were synchronised with Ubuntu's biannual schedule, in this case Ubuntu 8.04. By this point Mint's main quintessences were the menu and software and update managers. Cosmetically it had come a long way too, featuring then state of the art *Compiz* Fusion effects as well as some great themes and artwork. Mint 5 was the first to feature the Mint logo which prevails to this day. Mint 8 introduced an LXDE edition and the Shiki GTK theme, which was replaced by Mint-X in Mint 10. Successive releases built on these staples and things might have continued nicely were it not for the great desktop meltdown of 2011.

I'm eighteen

With Ubuntu 11.04, Gnome 2 was replaced with a strange and new desktop called Unity by Canonical. Gnome 3 was deemed unsuitable, so Mint stayed loyal to Gnome 2, but for its twelfth outing, they were stuck between a rock and a hard place: Gnome 2 was already abandoned when Lisa was released, and to stick with it would accumulate massive technical debt. But neither Unity or Gnome Shell (they're both plugins for their respective window managers which run atop the Gnome 3 stack) seemed like the right fit. The solution was pretty ingenious—build extensions to Gnome 3 that recreated the elements to which Mint users had become accustomed. And thus the imaginatively titled Mint Gnome Shell Extensions (MGSE) were born. These evolved into the Cinnamon desktop in the next release. MGSE required 3D acceleration, so in order not to alienate users of older hardware (or just those seeking a lightweight experience) they inaugurated Mate edition.

Mint 16 featured Cinnamon 2.0 which marked a significant decoupling from the Gnome libraries. By this stage, Cinnamon was no longer a fork of Gnome Shell but its own complete desktop environment, making it much more portable to other Linux distros. Since 2014 and the release of Mint 17 the distro has been tied to the LTS releases of Ubuntu, with point releases coming shortly after Ubuntu's so that users need not be stuck with a two-year-old kernel towards the end of the cycle.



» More than 2,000 packages out of the 2,239 that made up this Linux Mint installation came straight from Ubuntu repos.

Linux Mint Debian Edition

Not content with a fixed-release product, in 2010 the Mint development team decided to launch a semi-rolling release (which is periodically supplemented with update packs) edition that is based on Debian Testing. This release was aimed at more hardcore users, since it required a more hands-on approach to

package management and had a higher propensity for breakage.

Linux Mint Debian Edition (LMDE) garnered reasonable interest, but last year a decision was made to make a second release, LMDE 2 "Betsy", based on Debian Stable (Jessie). Debian Stable is known for having older packages than

the more adventurous distros, but the latest updates to Cinnamon and other Mint applications are backported straight away, so you will see newer versions of these applications before they land in the next Mint release. Also included is the deb-multimedia repository since the Debian repos are free of proprietary bits.



Mint criticisms

Being the top distribution on Distrowatch puts you squarely in the crosshairs of many a detractor.

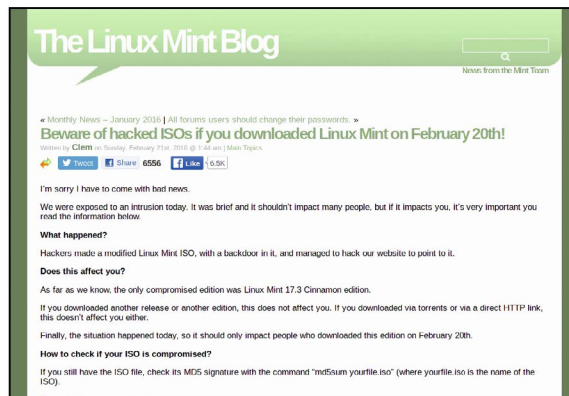
Like Ubuntu faced back in the day, Mint has faced criticism from various factions. This criticism had a resurgence in February when the official website (<http://linuxmint.com>) was hacked so that users attempting to download the Mint ISO were redirected to a malicious ISO of Mint with the Tsunami backdoor.

None of this has any bearing on Mint the distro (the hacker exploited weaknesses in the forum software and Wordpress to do the dirty deed) but it precipitated a wave of criticism nonetheless. Some of this was irrelevant, eg questions like why were Mint using MD5 to hash its images? When the attacker could also have used a more secure hashing algorithm and changed the target hash on the Wordpress site. Some of it less so, but all of it answerable.

Other charges have included being a FrankenDebian (a distro containing an heterogeneous package selection), which is true, but it's also a FrankenUbuntu. And the things it puts on top of Ubuntu seem far less invasive than what Ubuntu does to Debian. There is a genuine issue looking forwards, since *GTK's* roadmap sees it becoming less and less useful without the Gnome environment. In a few years when, say, *GTK5* comes out then something will need to be done. Perhaps there will be a fork or perhaps someone will have invented a new toolkit by then. Even package names have come under fire: Mint's display manager (*mdm*) shares its name with a Debian package containing some scripting utilities, so that package cannot be installed in Mint without renaming it. One wonders how many people would use the *mdm* package with Mint, though. Namespace pollution such as this was also threatened by the *xed* text editor, which was originally to be called *xedit*, the name of X.org's reference text editor that most people haven't heard of.

Security quibbles

The most serious criticism concerns the update policy. By default, Mint only offers up to Level 3 updates, which doesn't include the kernel or graphics stack. Thus, said the critics, Mint users were missing potential security fixes as bugs were discovered here. One could say that a home user is far less likely to be struck by, say, a kernel exploit than an Adobe Flash exploit, which is reasonable, but not watertight. Ultimately it boils down to a question of security versus stability;



► Clem was quick to provide a thorough post mortem following the attack, but it didn't stop all the ill-conceived commentary on Reddit *et al.*

occasionally kernel updates will break things, and if users understand and are happy with that then they can tick a box and receive them. Mint 18 even has a new kernel manager which might help if things go wrong. On a related note, Mint's lack of security advisories has been criticised. Other distros keep updated lists of which package versions are affected by which bugs, and how users should work around these (usually by upgrading a package), eg see Ubuntu's offering at www.ubuntu.com/usn/. Such advisories are useful for

“Mint only offers up to Level 3 updates, which doesn't include the kernel or graphics stack.”

sysadmins, but, again, one wonders how many home users will go out of their way to act on such things.

What marks out Mint from other distros is the community, and the engagement between it and the developers. Mint wants to be as friendly as possible. To achieve this it has done something quite rare—listened to users. Hence creating a whole new desktop for those used to the Windows 7 way of doing things. Hence the inclusion of Flash, Java, Wi-Fi firmware and media codecs. Hence not forcing risky (too many) updates upon the user. But this is the Bazaar, there will always be critics, and there will always be other choices. **LXF**

Rising from the ashes

Following the Mint hack, a number of companies and projects were quick to offer their services and aid the recovery. This was a great example of the community and industry pulling together to help fix a distro they cared about: Czech antivirus outfit Avast helped to analyse and identify the malware, and even blocked access to the site (to users of its

software) where the dodgy ISO was being hosted. Security firm, Sucuri provided incident response, hardware and general expertise.

The website was back up and running a few days later, now with HTTPS. Mint also provide more visible instructions on the download pages about how to verify checksums and (perhaps more relevantly) GPG signatures.

Sucuri later became a major Mint sponsor and has donated a firewall appliance and provides monitoring for Mint's servers.

Mint survives on donations and sponsorship to stay alive, so gestures like these are invaluable. If you're a regular Mint user with some money burning a hole in your pocket, consider donating to them.