

LINUX VOICE

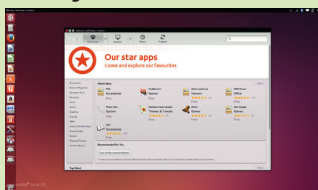
TOUCH
DESKTOPS

GROUP TEST

Graham Morrison and his trusty touch laptop explore the cutting edge of Linux desktops.

On Test

Unity



URL www.ubuntu.com
Version 7.1.2
Licence L/GPL v3
Promised touch enhancements didn't make it into 14.04, but does Unity still do enough?

Gnome



URL www.gnome.org
Version 3.9
Licence L/GPL
Gnome looks a little like Unity, but without the tablet and smartphone emphasis.

Plasma Active



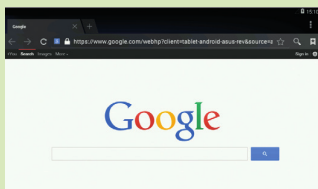
URL <http://plasma-active.org>
Version 4 (from Kubuntu daily)
Licence GPL
It's KDE with added touch and less KDE.

KDE



URL www.kde.org
Version 4.13 beta (Kubuntu)
Licence L/GPL
It's KDE.

Android x86



URL www.android-x86.org
Version 4.4 RC1
Licence Apache 2
It's just like the phone and tablet OS, only it's running off your laptop.

Touch Desktops

Don't let your touchscreen go to waste.

This is a technology that is still on the very cutting edge of what Linux desktops can do – desktops designed to be used with a touchscreen. There are several important reasons why we're doing this now, rather than waiting an indeterminate amount of time for the technology to mature.

The first is that it's fun. New technology, and new ways of interacting with it, is exciting, and Linux is going to have to find a way to work with touch. The second important reason is that the technology is already here, not just in the form of Android tablets, but increasingly in our laptops. Thanks to Microsoft's emphasis on touch for Windows 8, many new laptops now come with a touchscreen by default, and if you install Linux on one of these devices, you'll want to know which desktop is going to

work best. The third reason is that the touch interfaces of Apple's iOS and Google's Android have shaken up the old launch menu and file management desktop metaphor, and many newer Linux desktops have incorporated some of their features already.

Even if they're not designed specifically for touching, it's good to know whether the new style of design works with new hardware, or whether touch gets in the way. Which is exactly the challenge we've set ourselves for this group test.

We spent a few weeks with our multi-boot system playing with each desktop as we would a desktop in a real production environment. That meant we missed the latest GNOME release (see p52 for our review), but it also meant we took a pretty ruthless view on whether touch worked.

"New technology, and new ways of interacting with it, is fun."

THE CRUCIAL CRITERIA

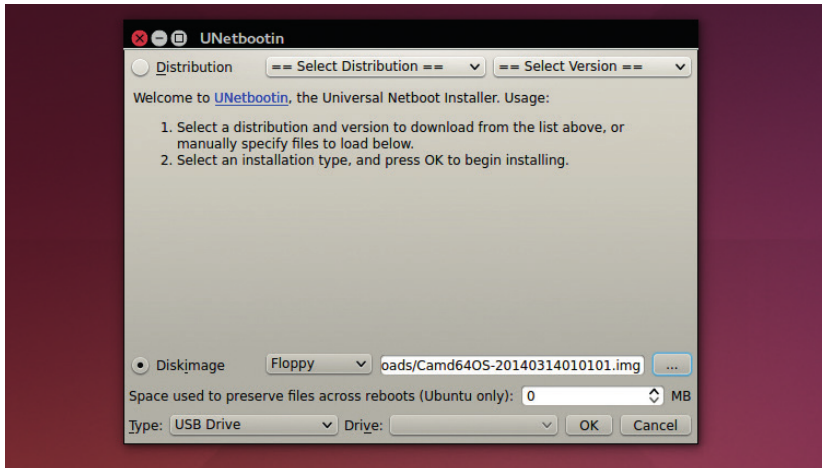
Our target is the standard x86 PC, rather than pure touch devices. We're using Dell's XPS 13, as reviewed last issue and as lent to us by www.aptnet.co.uk (thanks Alan!).

As such, any desktop can be made to work with a touchscreen, but we're not going to look at every desktop. We're going to pick those we've found to be the most effective. GNOME 3.x and Ubuntu's Unity are two obvious choices, because while they're not designed

specifically for touch, they borrow heavily from the full-screen design of Android and iOS. We can also look at Android itself. The latest x86 release of Android 4.4 works brilliantly and offers the other side of the touch coin – a touch desktop shoehorned into a laptop. For the others, we're going to use a base of Ubuntu as this ensures hardware configuration isn't the differentiator – only the way the desktops are designed to interact with touch input.

Installation and configuration

Working at the cutting edge isn't always easy.



Plasma Active is tricky to install on x86. We used Unetbootin and a recent Kubuntu daily image.

The Plasma Active and Android desktops we're looking at are so cutting-edge that they can't be installed in the way you may be used to. Not only that, you're going to need a more traditional Linux distribution installed alongside for those times when you don't want to be dealing with what are 'works in progress'. You won't have these problems with Unity, Gnome or KDE, but it is something you have to deal with when installing Plasma Active and Android, as both are different to most Linux desktops.

Plasma Active is best described as a remix of KDE for touchscreens. But it's not just a skin. It takes over the entire system and doesn't work particularly well installed alongside other KDE Plasma workspaces (as they're called), at least not in the way it's currently distributed.

Needs attention

Plasma Active in general suffers from a lack of love, despite early success, and it's a struggle to find a working configuration. As such, installation is best done through a custom Kubuntu re-spin, or by adding package repositories to vanilla Ubuntu or OpenSUSE. We went for the Kubuntu spin written to a USB stick before committing it to a section of the hard drive. Similarly, we dropped the USB image of Android 4.4 onto a USB stick booting with Easy2Boot,

and it worked amazingly well from there, including both multitouch from the screen, keyboard control and WiFi (an important consideration for Android), as well as touch control when needed.

For other desktops, the challenge is getting the touchscreen to work well, as most will be able to use touch as a mouse cursor. The best strategy is to find the very latest version of a distribution, as this will include the latest drivers. This approach worked for the Haswell XPS 13 for all the distributions and desktops we tried, especially as the XPS 13 Developer Edition originally shipped with Ubuntu 12.04, but this will also depend on your hardware.

Our touchscreen presents itself to the system as a multitouch Synaptic touchpad, which means it works out of the box. But this can also add complications if you're using a genuine Synaptic touchpad alongside the screen. When you combine these two aspects together, Ubuntu's Unity is the only desktop to have taken both the installation and configuration into consideration, by its nature, with Android coming a close second.

VERDICT

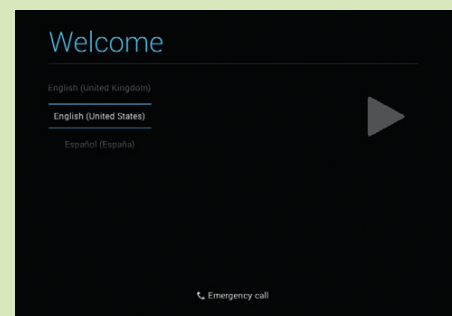
Android	★★★★★
Unity	★★★★★
Gnome	★★★★★
KDE	★★★★★
Plasma Active	★★★★★

Touch input

You've got the touch.

The Android-x86 build has come a long way since we first tried it a couple of years ago. It might initially seem counter-intuitive to install something designed for tablets onto what is essentially a touchscreen laptop, but we really enjoyed the results. It's like a very fast Nexus with built in keyboard. All the gestures from your smartphone work instantly, from sliding down notifications, or swiping across desktops, to pinch zoom, rotation with no further configuration. It's tough to write about Android as a legitimate alternative to a more traditional Linux distribution, but if it brings extended functionality to your touchscreen and you enjoy using it, we don't see the problem. It's still Linux.

Second to Android this time is Unity. This is because it does some sensible things to take into account the touch input. You can scroll up and down lists, for example, resize a window with three fingers and the cursor is hidden when you touch the screen. Those features alone put it in a different class. Plasma Active is pretty good, as you'd imagine, and KDE is acceptable, but not without modifications. Gnome running off both Fedora 20 and Ubuntu almost manages it. But only some window title bars register a touch, leaving certain windows unable to move without resorting to the touchpad.



Android comes closest to just working.

VERDICT

Android	★★★★★
Unity	★★★★★
Gnome	★★★★★
KDE	★★★★★
Plasma Active	★★★★★

Customisation

If it's not great, just what can you do to make things better?

The point of this group test is to see which desktop environments have implemented features that best work with touch. But it's also possible to change a great deal about how they look and behave even if they don't support touch. KDE comes out best because there's just so much you can change. You can dramatically increase the width of the scrollbars making them much easier to grab and move with your fingers. You can change the size of the title bar, and replace the icons with much more finger-friendly options.

A cut-down number of options is also available to Plasma Active users. Android is seriously restricted by not running traditional Linux applications, but this can be helped a little by using an open source repository such as F-Droid, or dual-booting your machine. Gnome has plenty of plugins and themes that can help, while there's not too much you can change in Unity.

Plasma Active also has a complete set of widgets that can be added to a specifically designed fullscreen background. These widgets, like the ones you find in Android, are a great way of creating something of the tablet experience with a Linux desktop, and they work well with touch and the widescreen form factor. We should also be able to pull down a task manager in Plasma Active, but in the three different x86 installations we tried, this doesn't work. Instead, we had to rely on KRunner to launch and configure the desktop.

In Unity, however, swiping down over the top-right corner of the display was enough to reveal the options of whatever icon we happened to touch. This was probably a side effect of touching the icon, but it's very similar in behaviour to the latest Ubuntu Touch builds running on phones, where you can slide down and horizontally to switch between the settings for those widgets running. Unity definitely has the best potential, and we just hope that the work that's gone into the mobile version isn't lost on x86 users, even if it's through a third-party repository.

VERDICT

Android	★★★★★
Unity	★★★★★
Gnome	★★★★★
KDE	★★★★★
Plasma Active	★★★★★

Usability

Does a touchscreen actually add anything?

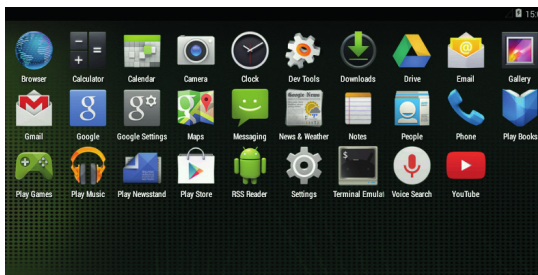
Here's the rub (sorry!) – just because your hardware has a touchscreen, it doesn't mean you should feel duty-bound to use it. If you are going to use it, the desktop has to make it worthwhile. We have used touch and keyboard devices for a few months, especially when travelling, and

our conclusion is that a touchscreen can genuinely help in some very specific cases, and the amount that they help is down to the desktop. In Android, for example, a gesture to open the settings makes a lot of sense. And Unity is obviously working on phones. But that's where all the others need most work.

Android ★★★★★

Not surprisingly, Android excels at touch. After all, input has been designed around fingers rather than mouse and keyboard input. But what most surprised us is that it feels very natural behind a laptop form-factor. You find yourself automatically launching apps and swiping through running processes by touching the screen, while at the same time using the keyboard or even reverting to the

touchpad (it works!). And using the computer in this way is quicker and more efficient than doing similar gestures the old fashioned way, or even though a launcher such as Gnome Do. As a laptop operating system, it feels much more mature than Chrome/Chromium OS. Though we're loath to use the word, there's some synergy between the touchscreen and the keyboard.

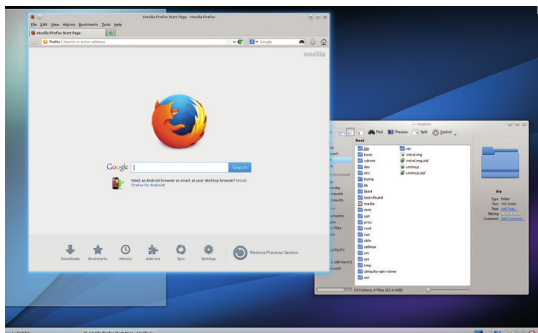


Android x86's cutting-edge nature means not everything works – Netflix, for example. But the touch experience is second to none.

KDE ★★★★★

By default, most things in KDE are small. This makes them difficult to use from a touchscreen. Clicking on an app to launch from the menu is difficult, for example, and resizing windows is almost impossible, although moving windows is slightly easier and is the only mouse function with any touch advantage potential. The single-click option for

launching an application associated with a file is useful, and KDE is perhaps the strongest desktop when it comes to configuration options. You can change almost anything about the desktop to make it more touch friendly. But perhaps because it's an area the KDE team might feel is covered by Plasma Active, concessions to touch in KDE are very few.



Without customisation, the touch KDE experience is difficult and clunky. You're better off with a mouse.

Unity 14.04 ★★★★★

Hitting the scroll bars at the side of the Unity desktop is a problem, as too is resizing a window from the bottom right corner. However, one of Unity's best features is multitouch support, and this works on the screen. Place three fingers on a window and you can move it around,

resize it using large anchor points or maximise and minimise without any difficulty. Tap three fingers and you can switch applications. A four finger tap will open the dash or bring the launcher back from a hidden state. These gestures transform Unity's touch possibilities.

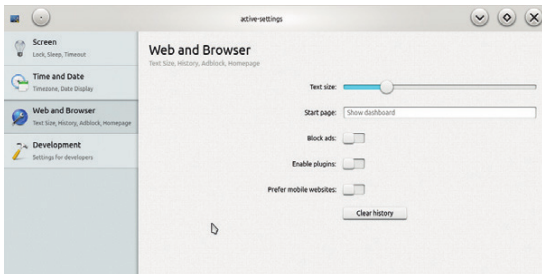


Most icons in Unity are large enough to prod, especially when it comes to restarting or shutting down your machine.

Plasma Active ★★★★★

There are many things to like about Plasma Active. It's the only big Linux desktop, bar Android, to have been designed for touch devices, so it has the potential to be the best of both worlds. By default, window management is easy thanks to the large icons and scroll bars, although there's nothing as

comprehensive as Unity's multitouch support. The large widgets you can place on the background can go some way to make Plasma Active feel like Android, and there's a primitive settings dialog that presents its options in large, slidable controllers. There's a customised version of KDE's web browser too.

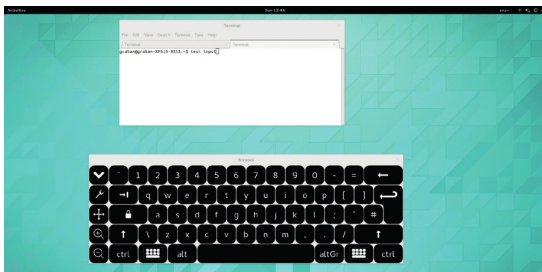


Plasma Active has plenty of potential, but a lack of development is holding it back from being a usable desktop.

Gnome ★★★★★

Gnome has some of the advantages of Unity, thanks to its launcher and panel. Applications and icons are easy to locate, and the application launcher view, along with its containers for other applications, is an excellent mechanism for navigating to the tools you want to run. It's difficult to close and resize windows without

changing the theme, and Gnome is really missing the multitouch features of Unity, but it's better than KDE because the shell makes more sense from a touch perspective. Thanks to the click zones being up against the edge of the top panel, you can also swipe down on the screen to do things like logout or open the settings.



Gnome is hampered by some of the window borders not working in the same way that others do.

Touch potential

Can touch help you do more?

This is going to depend on what you need to do. Android, for instance, is hobbled by not being a traditional Linux distribution. You can't install many of the applications you may be used to, and many tasks are impossible. There are no tools for specific kinds of software development, or 3D animation, or any number of other tasks. But there are many everyday tasks such as web browsing, writing words, staying on top of emails and playing Angry Birds that are arguably better accomplished on Android than on a Linux desktop.

Even the Rotate Screen feature was useful, as it was a perfect way of proofing pages for this very magazine. We'd love to see an Android mash-up where you had X11 desktop functionality and package compatibility. However, touch on other desktops can be more productive. Web browsing in Plasma Active, file management and app launching from Unity, and cursor placement in all of them makes a touchscreen worthwhile.

Plasma Active has a lock screen designed for touch, so you can easily slide open the screen when you want to resume a session. Android does the same, obviously, but it feels like the right thing to do – much better than flicking the Caps Lock on the keyboard, which is what we usually do to resume a sleeping laptop. The problem with Plasma Active is that everything is just too half-finished to be useful. Which is disappointing, because when we tried earlier versions actually running on a tablet, usability was top-notch. The problem we had then was with performance and efficiency, not usability, while running on an ARM CPU.

Gnome had a problem where we couldn't move the settings windows with the touch screen. This might have been a hardware issue, but as we experienced the same problem on both Fedora and Ubuntu, it might be a deeper issue with the different ways Gnome handles window management, or it might be interpreting touch differently.

VERDICT

Android	★★★★★
Unity	★★★★★
Gnome	★★★★★
KDE	★★★★★
Plasma Active	★★★★★

Productivity

Is touch a gimmick, or can it help you do real work?

During the course of this and the previous issue, we spent a considerable period of time with each desktop, doing the stuff that we normally do. We wanted to see whether the presence of a touchscreen would change the way we interact with the Linux desktop.

We've probably written more words about Android in this group test than we have about the other desktops, and that's because Android has surprised us by being remarkably productive. When you pull it out of the CPU- and memory-restrictive environment of a smartphone or a tablet, and put it onto a fully fledged Intel Core i7 CPU with 8GB of RAM, it flies.

Of course, the problem is that it's only going to be good for certain tasks. In particular, it doesn't make much sense when you can pick up a tablet for very little money in comparison to a laptop. It's not a stable operating system, and has quite specific hardware requirements, so it's not going to be a good choice for most people. If you're using a computer with a touchscreen,

the chances are you want to do some serious computing with it, so while Android is great at certain mobile-friendly jobs, it wouldn't be our desert island desktop.

Multitouch FTW

Thanks to its multitouch support, the issues of resizing and moving windows don't affect Unity, as you can just push three fingers across the screen to do what needs to be done. The same configuration can be made to work with other desktops, but that requires some tinkering. One slight hitch might be whether multitouch makes its way to the Mir display server, but considering Canonical's big push on mobile and tablets, it's more likely that touch will get better rather than worse for future versions of Unity.

We were able to work with both KDE and Gnome, but these desktops were used almost 99% of the time through the mouse and keyboard, reverting to touch only for cursor placement and occasionally to launch an app or editor in KDE. It's still better than nothing, but



Android made a shockingly good, and surprisingly productive, laptop operating system.

hardly worth buying a laptop with a touchscreen for. Finally, there's Plasma Active. The biggest problem we had with this was stability, so while some aspects were better than other desktops – such as the browser and settings support – we couldn't rely on the desktop enough to do any real work. Our time was better spent trying to make KDE look more like Plasma Active.

VERDICT

Android	★★★★★
Unity	★★★★★
Gnome	★★★★★
KDE	★★★★★
Plasma Active	★★★★★

Third-party support

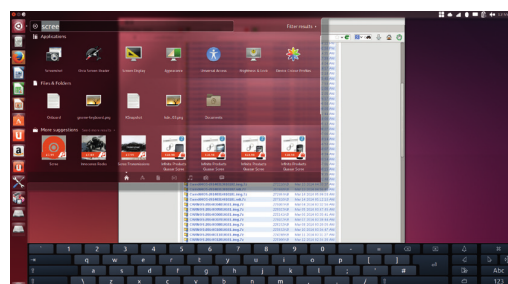
Can we make the touch experience more accessible?

There are many things you can do to make any of these desktops more friendly to touch. Gnome, Unity and KDE can quickly improve the touch experience in Firefox by installing the 'Grab & Drag' extension, for example. This replaces Firefox's default action of left-click text selection with a hand that grabs and scrolls the web page. It can even add momentum for the full tablet experience, and there's simple support for page up and page down gestures. This extension alone transforms the non-Android desktops. Even an on-screen keyboard can help, when you don't want to move your hand down to the keyboard.

Our favourite was Ubuntu's, which can be launched by typing **onboard** in

the shell. It was touch enabled without any further modification and can be latched onto the edge of the screen. It also has some useful features such as snippets and typing assistance/ auto-correction. The keyboard can also be hidden automatically, and quickly brought back to life by keeping a hovering icon on-screen.

We also liked Gnome's 'Florence' keyboard. It's scalable, has a touchscreen input mode, and you can clearly see when you've hit the key you're aiming for thanks to the focus zoom feature. Both Florence and Onboard can be set to have a transparency, so they don't have to get in the way of the remainder of the display, and while it may sound slightly crazy when there's a perfectly usable



Ubuntu does a great job at making touchscreen input a central part of its desktop experience.

real keyboard beneath the display, we found an on-screen keyboard to be almost essential for some tasks. Finally, we'd describe KDE's own on-screen keyboard as functional rather than useful for touchscreen users.

VERDICT

Android	★★★★★
Unity	★★★★★
Gnome	★★★★★
KDE	★★★★★
Plasma Active	★★★★★

OUR VERDICT

Touch desktops

Touch hasn't changed our desktops in the way we thought it might, but touch input is something developers and users still need to consider. Microsoft, for example, got things spectacularly wrong with its unified touch interface with Windows 8, backtracking to a more traditional appearance with each update. The open source community has taken a more pragmatic and sober approach, which we think has paid off, despite early versions of both Gnome 3.x and Unity seemingly

had to check to make sure it was still being developed. There's no easy way to install it, and very little documentation on using it. It could be a great initiative, but unless there's some reason for developers to get behind it – such as Aaron Siego's wonderful Spark tablet idea – it's not going to happen.


KDE comes next, although a properly configured KDE desktop for Linux would score higher. This result is purely because there's very little evidence of any changes being made to accommodate touch. Next

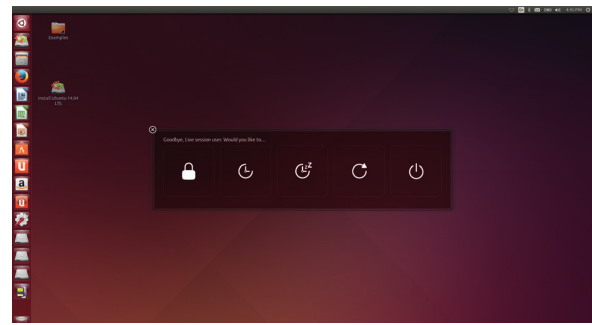
“The Unity launcher, on-screen keyboard and panel all work well with touch.”

embracing the idea. Touch isn't going to change the desktop overnight, but nor is it going to be a passing fad. The technology is seeping into standard PC/laptop/hardware, and Microsoft's hardware partners are determined to push for more tablet/PC convergence. As such, there's still a long way to go for the Linux desktop to be considered touch friendly.

We had highest hopes for Plasma Active, because it seems to be the only mainstream based Linux desktop taking touch seriously. But so little has happened over the last 12 months that we

comes Gnome. Finding and launching applications is good, as too is the on-screen keyboard, but there are some gotchas – such as some of the windows not responding in the same way to touch control.

Despite our falling for Android x86 4.4, we've only ranked it second. This is because Android x86 has no crossover with a traditional Linux distro. Unity wins because there were no big problems, the launcher, on-screen keyboard and panel all work well with touch, and the multitouch module makes all the difference. 



Unity is still easily the best Linux desktop for a touchscreen.

1st Unity

Licence GPL & LGPL v3 Version 7.1.2

www.ubuntu.com

Ubuntu is perhaps the distribution with the greatest motivation to make touch a central part of its desktop. And it shows.

2nd Android x86

Licence Apache 2 Version 4.13 beta (Kubuntu)

www.kde.org

We loved Android on a laptop. If only there were a way of installing the applications we're more used to, it would win.

3rd KDE

Licence GPL & LGPL Version 4.13 beta (Kubuntu)

www.kde.org

Just pulls ahead of Gnome because it's more configurable, and when you make the scrollbars large, it's very usable.

4th Gnome

Licence GPL & LGPL Version 3.9

www.gnome.org

Despite looking like Unity, there's no particular touch consideration in the GUI, but it has lots of potential.

5th Plasma Active

Licence GPL Version 4 (from Kubuntu daily)

<http://plasma-active.org>

We feel bad putting this last. We've used a build on an ARM tablet that worked brilliantly, but x86 is lacking love.

YOU MAY ALSO WISH TO TRY...

Any Linux desktop is going to be malleable enough to work with a touch interface. They can all be configured to use larger buttons, or place large launch icons in places that fingers will find easier to hit. Mate and Cinnamon, for example, both work well in our tests, as would XFCE. But there's nothing specifically touch friendly about them, which is why we

didn't make them part of this group test. Google recently announced a new Chromebook, the Acer C720P, and it comes with a touchscreen. It's running Google's own browser-centric Chrome OS, an OS that falls into the same category as Android for being non-standard in the way other Linux desktops are. But there is an open source build of the

operating system and we spent a considerable amount of time getting this to work on the XPS 13. As almost everything is browser based, touch helps when scrolling around and hitting links, but doesn't offer anything beyond Firefox with a touch plugin, but it may be worth a try if Android has given you a taste of cutting-edge touch desktops.