

## Ubuntu Frame

A secure and long term supported display server for embedded displays

Ubuntu Frame is the foundation for any embedded graphical display implementation. Secured by design, tested in the field and long term supported by Canonical.

### Ubuntu Frame, the standard foundation for graphical applications

Ubuntu Frame is a fullscreen shell based on Wayland used for embedded devices and digital signage. With Ubuntu Frame, the graphic application you choose or design gets a fullscreen window or windows and input from touch, keyboard and mouse without needing to deal with the specific hardware.

Its technology has been in development for over 7 years and in production for 5 years, using state-of-the-art techniques, and deployed in production to Linux desktop and mobile users. As such, Ubuntu Frame is one of the most mature graphical servers available today for embedded devices. It has been used in kiosk, IoT and digital signage solutions, including smart mirrors, health kiosks, industrial panels and more. It has been optimised to provide an easy configuration with efficient performance.

Ubuntu Frame supports a range of applications built with GTK3/4, Qt5/6, Flutter, Electron and SDL2, and it also has a solution for applications based on HTML5, Java. And while with Ubuntu Core you can maximize performance and security, Ubuntu Frame is compatible with any Linux operating system that supports snaps.

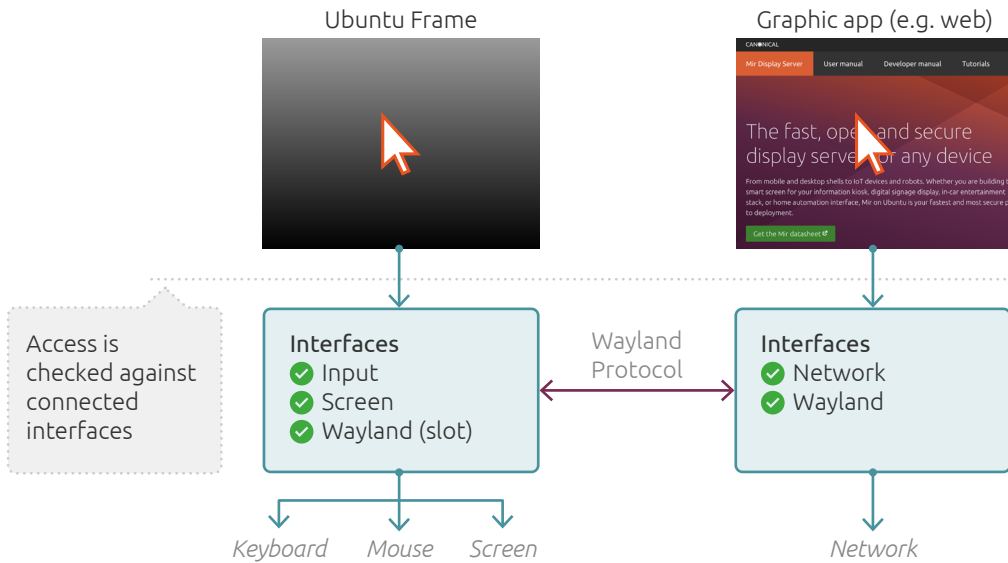
### Guarantee your device and user security

Ubuntu Frame adopts Wayland for a modern and secure approach to graphics. Thanks to Ubuntu Frame's own secure socket, applications can only talk exclusively to the Ubuntu Frame server. This reduces attack vectors since there is no inter-process communication to be snooped on by malicious code.

It also leverages the security benefits of Snaps. [Snaps](#) are containerised software packages, designed to work securely within any Linux environment across desktop, the cloud and IoT devices. By design, Ubuntu Frame and the apps running on top of it are isolated from one another and limited in the resources they can access from the main board. Snaps are controlled and operated in a manner that prevents unplanned or unauthorised access to privileged system APIs, portions of the OS, or non-application-specific user data. By default, Snaps have significant restrictions that reduce risk to the underlying system, including restrictions related to user changes, job scheduling, unapproved hardware access, user management, security policy, kernel runtime variable, sensitive kernel syscalls, and others.



Snap Confinement: Shell and App are confined separately



[Learn more about snaps security in this independent cybersecurity evaluation](#)

## Easy to deploy, fast to update, proven technology

Ubuntu Frame is available as a Snap, the next generation package format for Linux. Installing the full graphical stack is as simple as one single command. In addition, Snaps have enhanced features built in such as automatic updates, rollback on failure, and security sandboxing meaning your IoT device will be as secure and robust as possible. Updates are handled seamlessly in the cloud and full software rollouts are possible within hours, regardless of where the devices are installed.

## Cover your device for its lifetime with long term support

When used in conjunction with Ubuntu Core, the OS tailored for the IoT, Ubuntu Frame comes with 10 years of security updates. Increase your device security while enjoying a decade of security updates and CVE fixes.

Learn more about [Ubuntu Core](#)

## Experience how easy it is to deploy a web kiosk using Ubuntu Frame

Do you want to promote your business by building a digital signage solution? Or a point of purchase for your store based on your shopping website? Does it have to be secured so people cannot interfere or interrupt its application? Ubuntu Frame is all you need. Take your Raspberry Pi or favorite developers board and follow these simple steps:

### Setup your device

You need either [Ubuntu Core](#) or a version of Linux supporting Snaps.

### Install Ubuntu Frame

```
$ snap install ubuntu-frame
```

### Install a Web Kiosk

```
$ snap install wpe-webkit-mir-kiosk
```

### On any Snap compatible Linux other than Ubuntu Core

```
$ snap set wpe-webkit-mir-kiosk daemon=true
$ snap set ubuntu-frame daemon=true
```

### Display your website:

```
$ snap set wpe-webkit-mir-kiosk url=https://YOUR_WEBSITE.com
```

That's all you need to run a simple web kiosk.

## Spotlight on Ubuntu Frame

- Support for the latest Wayland protocol and associated technologies
- Touchscreen, keyboard and mouse support
- Security updates for up to 10 years while using Ubuntu Core
- Full confinement using kernel-level mandatory access controls through the power of Snaps
- Consulting for custom use cases, enhancements or other integrations
- Available for Ubuntu, Ubuntu Core, and other Linux Distributions
- When used in conjunction with Ubuntu Core, provides a fully secure solution including full disk encryption
- Optional training, support and integration services available

## 4 steps to your graphics-enabled device

### 1. Choose your device

Ubuntu Frames works with many popular, off-the-shelf devices like the Raspberry Pi, Qualcomm Dragonboard, Intel NUC, and most x86-based hardware. In addition, Ubuntu Frame runs well in a Virtual Machine which is especially useful during the development phase.

### 2. Choose your OS

Ubuntu is the best Linux-based operating system for the IoT and Ubuntu Frame works great with most flavours of Ubuntu including Server, Desktop, and Core. When used in conjunction with Ubuntu Core, the benefits include whole system containerisation, rollback, and auto updates. Ubuntu Frame is also available for other Snap compatible Linux OS.

### 3. Bring your application

Compatible with applications and toolkits including GTK, QT, Flutter, Java, Electron, HTML5, Chromium, and many more. Using native Wayland, Xwayland, or some combination of the two, applications should be able to use the full features of the Mir display server.

### 4. Deploy

Once you have your device ready it's time to ship it. In the field updates to Ubuntu Frame and Ubuntu are taken care of by Canonical and if you use Snaps, these are automatic.

## Resource Requirements

The resources required for an installation vary with the application used with Ubuntu Frame, the number of outputs and the number of pixels being rendered.

[More information about Ubuntu Frame graphic support](#)

## Further reading

The following tutorials will help you get your chosen application running on Ubuntu Frame.

- [Make a secure Ubuntu kiosk](#)
- [Make a Wayland-native Kiosk Snap](#)
- [Make a X11-based Kiosk Snap](#)
- [Make a HTML5/Electron-based Kiosk Snap](#)

The following article describes some useful debugging techniques that can be applied when using Ubuntu Frame.

- [Debugging Graphical Apps on Ubuntu Core](#)

## Contact Us

For more information about Ubuntu Frame, [contact us](#) or call direct (US Central) +1 888 986 1322 or (UK) +44 800 058 8704.