Oryx
EMBEDDED LINUX DISTRIBUTION

Bringing the benefits of containerisation to embedded Linux.

www.toganlabs.com
ONE MACHINE. ONE LAYER. MANY PROFILES.

Oryx Linux is an embedded Linux® distribution that realises the full potential of OpenEmbedded and the Yocto Project. It incorporates a lightweight container runtime engine, bringing the benefits of containerisation to the embedded sector within existing developer workflows.

Take everything you might ever want to change and remove it from the core operating system (OS). Then, take everything else and implement it in an environment purpose-built to make even the most radical change as simple and painless as possible.

Oryx brings previously unimaginable levels of control, freedom and flexibility to embedded systems development.

We pack just the barest Linux essentials, along with our own OryxCMD container micro-runtime, into the ultimate small, stable Linux distribution. Everything, from common OS packages and libraries, through communications and application stacks to end applications, is then implemented in a highly manageable, native container environment.

The spin-up-a-new-image flexibility of containerisation just hit the infamously rigid world of embedded devices, giving Oryx users an unparalleled technical and business advantage.

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Deeply Containerised Embedded Development

Oryx takes containerisation to new levels within the system. The entire software stack, down to and including significant portions of the OS itself, is run in containers. Developers and devops teams can perform live updates, rollbacks and even complete repurposing of an embedded device, all without the need for a reboot.

Far more (or in this case less) than just Docker, Oryx uses Togán’s own OryxCMD native container micro-runtime. This delivers the benefits of mainstream containerisation from a footprint that is several orders of magnitude smaller.

Painless in-field updates and the ability to adapt the entire software stack and large sections of the OS, change the entire scope of embedded development. Oryx brings devops, agile and continuous development to the embedded world - increasing the pace of innovation and dramatically reducing the cost and complexity of building and maintaining long-term supported solutions.
Oryx combines a future-proof environment for ongoing application innovation with the benefits of a stable embedded platform that offers long-term support.

Built on years of embedded experience, Oryx’s uniquely practical development architecture separates system and application profiles, with two distinct images for the host hardware and application framework.

An open source thoroughbred, Oryx runs on existing Yocto Project/OpenEmbedded board support packages (BSPs). And, once implemented, Oryx removes the need for complex application porting to new hardware. For application development, and even for definition of the higher layers within the OS, it offers a true write-once-run-anywhere experience.

Alongside this stable system image, Oryx provides future-proofing through a more flexible application profile that can evolve over time. With a working system image, devices can be flashed or even preloaded with multiple different application profiles. This allows for near-instant repurposing, simplifying maintenance and reducing the cost of holding spares.

Devices in the field can be updated to encompass changes in their surrounding system environment, they can be altered to handle new inputs and outputs, and even loaded with new functionality.
To manage device updates at scale, Oryx now integrates the Mender Over-The-Air (OTA) update framework, based around the tools provided by Mender.io.

Mender allows users to deploy a single image-based update from the server-side component to an individual targeted device or to an entire fleet of devices. The deployment is done securely using HTTPS, and the partitioned setup makes sure the device stays up and running even when the update process is interrupted.

For added security, Mender also supports code signing, providing assurance that devices can only be updated by a trusted party.

Oryx is built by licensing experts to simplify compliance.

Togan Labs is one of five certified global partners in the Linux Foundation’s OpenChain Project. OpenChain builds trust in open source by making open source license compliance more understandable, consistent and efficient.

Oryx incorporates FOSSology, an open source license compliance software system and toolkit endorsed by OpenChain. This enables users to run license, copyright and export control scans directly from the command line.

FOSSology also offers its own Web-based application and extensive package database to provide users with a full compliance workflow.