SYSGO
EMBEDDING INNOVATIONS

ELinOS

Industrial Grade Linux

There is no need any more to point out the benefits of Linux for embedded systems, including flexibility, broad range and hardware support. However, some issues remain for embedded Linux developers who have to sort out the continuous proliferation of new components. **ELinOS has been designed to allow developers and companies to save time and resources by helping them in focusing on their application – and only on it.** Industrial strength and user-friendly interface goes along with the best selection of technology to meet customer needs, and with the comfort of world-class support.

ELINOS AT A GLANCE

- Industrial Grade
- Eclipse-based IDE for embedded systems
- Multiple Linux kernel versions incl. Kernel 4.9 with real-time enhancements
- Supports Symmetric Multi-Processing (SMP)
- Quick and easy target system configuration
- Runs out-of-the-box
- One-year support included
- Validated and tested for PowerPC, x86 and ARM
- Support for 32- and 64-bit processors
- BSPs for major embedded boards and chip vendors included
- Cost effective licensing model

MANAGING EMBEDDED LINUX VERSATILITY

Creating an Embedded Linux-based system is like a puzzle. Putting the right pieces together will create the final image. This requires a deep knowledge of Linux's versatility and takes time for the selection of components, development of Board Support Packages, drivers, and testing of the whole system – not only for new-comers. With ELinOS Industrial Grade Linux SYSGO offers an 'out-of-the-box' experience which allows to concentrate on the development of competitive applications itself. ELinOS incorporates the appropriate tools to help you build the system and boost your project success, including a graphical configuration front-end with a built-in integrity validation.

APPLICATION DEVELOPMENT

Developing embedded applications requires different functionalities from the development environment to developing standard applications. Remote debugging, target system monitoring and timing behaviour analyses are features that an embedded developer almost always needs, in addition to standard application development. With CODEO, SYSGO offers a complete Eclipse-based development environment.

PROFESSIONAL SERVICES AND SUPPORT

Providing an outstanding peer-to-peer support and a broad range of professional services was the foundation of the success of ELinOS in the past years. With ELinOS Industrial Grade Linux we extend this support consequently to serve your needs more precisely. SYSGO strengthens its online support and training capabilities to accommodate the ongoing globalization of project teams.

"Using SYSGO's ELinOS minimized our development risks and gave us the freedom to concentrate on our essential tasks."

Stefan Bauer, Rohde & Schwarz, R&D Hardware Test Systems

VERSATILE EMBEDDED LINUX

Kernel
ELinOS 6.2 includes Kernel 4.9 with optimizations for embedded usage. Other kernel versions are available for selected BSPs. The Linux kernel is automatically tailored-based on the project's configuration and compiled within the CODEO IDE. The development toolchain is based on gcc-6.6, glibc 2.24 is provided as C library. Vendor kernels from a Yocto BSP can be easily imported into an ELinOS system.

Supported Hardware
Support for many CPU architectures, single- and multi-core platforms. ELinOS is tested and validated for:
- ARM 32- and 64-bit • Power PC
- Power PC 64 • x86 32- and 64-bit
- MIPS, SPARC, and SH support available on request

Supported Boards
Qualified BSPs are available for a large range of boards from our hardware partners, major embedded board and chip vendors.
- AMD • Intel • MEN • NXP • Phytec • Renesas
- TQ Components • Texas Instruments • Xilinx
- Others

Project Templates and customizable Feature Sets
Pre-configured templates and building blocks for typical Embedded Linux usage domains are supplied to support a fast and easy project start.
- Network Device • Webserver • QT embedded • GTK
- X11 • Wayland / Weston • Minimal footprint Linux
- Others

Simulation Targets
The CODEO IDE includes QEMU-based target hardware emulators. These allow to run the project on a desktop computer.

Supported File Systems
Typical Linux, Windows and embedded file systems can be chosen and easily exchanged.
- Ext4/3/2 • UBIFS • btrfs • JFFS2 • SquashFS • FAT
- NTFS • RAM file systems • NFS v4.1 • F2FS • Others

Security Features
Secure the target system against external or internal threats using provided security mechanisms and tools.
- Integrated rule-based firewall • Secure remote shell access • VPN

Industrial Automation
ELinOS Industrial Grade Linux explicitly supports the needs of industrial automation customers.
- CAN • VME • IPv6 • USB3.0 • WLAN
- Others (EtherCAT upon request, ...)

Precompiled Target Binaries
To accelerate the Embedded Linux configuration and building process, ELinOS Industrial Grade Linux includes more than 250 precompiled applications and libraries:
- BusyBox • QT 5.7 • GTK+3.22 • XOrg-7.7
- OpenSSH • OpenVPN • Lighttpd • Apache 2.4
- HTML5 browser-based on WebKit engine
- Network manager 1.6 • Wayland 1.12 • MariaDB 10.1
- Perl 5.24 • and many more

APPLICATION DEVELOPMENT

Developing embedded applications needs special support from the development environment. Direct target connection for remote debugging, timing analysisand to gather runtime information is provided by SYSGO's Eclipse-based CODEO, which is included in ELinOS.

Application Debugging
CODEO includes a debugger based on Eclipse utilizing GDB. Register contents, variable values and breakpoints can be displayed and edited.

Target Analysis
CODEO also includes a target analysing system based on Eclipse. The CODEO Trace Tool offers extended tracing capabilities, including SMP and 64-bit support.

SERVICE AND SUPPORT

Peer-to-Peer Support
Support requests are always handled by the ELinOS product team professionals who are able to solve problems live, together with the customer.

Training
SYSGO offers product training at SYSGO's premises or at customer's site.

Development Support
One year E-Mail-based support for all SYSGO tools is included in ELinOS Industrial Grade Linux by default.

Lifecycle Updates: Customers can benefit from ongoing improvements, by accessing the SYSGO customer portal, where the latest updates of target binaries, new BSPs, and add-ons are available.

SYSTEM REQUIREMENTS
- 32-/64-bit Linux distributions • Tested on Debian, Redhat, Suse, Ubuntu, and Fedora • Windows 7 + 8 (32-/64-bit) • 4 GB free disk space • 2GB RAM • Java runtime environment 8 or newer from Oracle or OpenJDK

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