Nano-X

The Graphics Windowing Standard for Embedded Linux.
Nano-X delivers the superior open source alternative to the X Window System for handheld and embedded Linux systems.

Nano-X is an Open Source project that brings some of the features of modern graphical windowing systems to the embedded programming community. Nano-X, unlike Microsoft Windows or the X Window System, has minimal disk and RAM requirements. Nano-X is designed to be very portable, and can run in a wide variety of hardware and software environments.

The development environment offered by Nano-X allows programmers familiar with Microsoft Windows or the X Window System to easily port applications to embedded platforms. This is accomplished by implementing a Win32/WinCE compatible API, as well as an Xlib-like API for graphics functions. The cross-development environment allows application creation and prototyping on the desktop using an emulation of the target's display device. All Linux framebuffer systems are supported, and new display devices are easily supported with the addition of standard screen drivers, without having to rewrite the application.

Nano-X provides support for Chinese, Taiwanese, and Korean fonts using four different character encoding standards. By implementing Unicode-16 and Unicode-32 and supporting TrueType font rendering many free and proprietary Chinese, Kanji, and Japanese fonts can be used. The Chinese National Standard GB2312 character encoding has been added along with the popular Big 5 encoding. In addition, a number of Han Zi Ku and Song fonts have also been contributed.

For OEM's, the Nano-X software development kit can significantly reduce time-to-market, and the memory savings can reduce the per-device hardware production costs. Nano-X applications are running today on all of the most common embedded processors.

Features

- Open Source with MPL or GPL license
- Royalty free
- Win32/WinCE-compatible and Xlib-like APIs supported
- Small 64-225k footprint
- Unicode-16, Unicode-32, UTF-8, TrueType and Adobe Type 1 fonts supported
- Chinese National Standard GB2313 character encoding
- Antialiasing and alpha blending
- Currently ported to Linux framebuffer, X11, RTEMS, MSDOS, SVGAlib
- Can run on any system that supports readpixel, writepixel, drawline and drawvline
- Screen drivers for 1, 2, 4, 8, 16, 24 and 32bpp, grayscale and color palettes
- Full RGB color support, optimized palette bitmap drawing, and a 3d look-and-feel
- JPEG and BMP image format decoding and display
- Easily extendable with custom screen, mouse/touchpad and keyboard drivers
- Full arbitrary clip region, offscreen drawing, and blitting supported
- Both client/server and linked applications models supported
- Shared memory option for fast client/server communications
- FLTK, GDK/GTK+ and other widget set ports underway

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