

Linux for TriCore TC1130

At last TriCore software developers can fully take advantage of numerous tested and ready-to-use Linux applications and software modules. The availability of Linux for TriCore gives a new meaning to how the development of embedded software can look like.

Among all other operating systems, Linux clearly stands out with its features: carrier-grade stability, process isolation, numerous third-party applications, and availability of the source code. And Linux for TriCore inherits them all.

TriCore is an advanced 32-bit embedded processor that unifies features of three distinct processor types: RISC, CISC, and DSP. Its architecture is blended by a rich set of peripherals, an advanced on-chip debugger, and in some TriCore implementations by a programmable Peripheral Communication Processor (PCP). TriCore's advanced features like fast context switching, memory protection mechanisms, and the availability of a memory management unit allowed us not only to port Linux without introducing any proprietary changes in the operating system's structure, but also to accomplish it efficiently.



All the features that constitute TriCore's advanced architecture require from programmers a significant learning effort. Linux helps to cut this learning curve by offering hardware-independent standard interfaces. This allows programmers to focus on their applications, and not on nuts and bolts of a target CPU architecture.

With Linux for TriCore as the operating system, applications gain a high reusability potential. Because Linux for TriCore is fully compatible with a standard Linux distribution, the programmers can leverage the investment in their application software: the code is easily portable not only between current and future TriCore versions, but also between different processor architectures. In this way, the actual code development can start on any available CPU platform - in many cases long before the target development board becomes available.

We offer Linux for TriCore in several distribution packages. Those packages address different needs of the developers by offering a wide range of content and maintenance levels. Adescom offers also a comprehensive training for Linux for TriCore, as well as customized services.

Product Packages

Linux for TC1130 comes in one main package and several extension packages:

- ▶ Developer Set Package
- ▶ Extension Packages: RTAI and Kaffe.

Developer Set Package contains GNU toolchain for TriCore, Linux kernel, glibc library, and TriCore evaluation hardware. It also contains several additional libraries, and device drivers for TC1130 -

all precompiled and ready to use. It also contains documentation that assists you in setting up the environment, recompiling the kernel and in compiling your first applications. It comes with installation support and a 1-year maintenance.

Extension packages contain libraries and modules necessary to implement additional functionality.

Visit our web site for more details.

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Developer Set Package

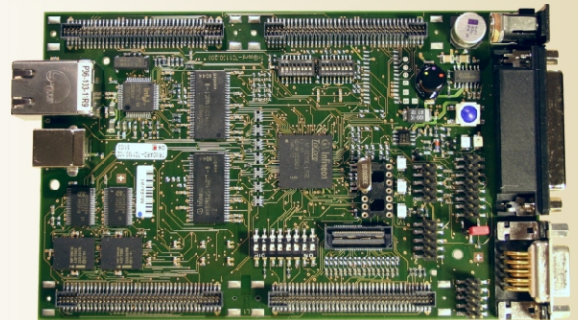
The Developer Set Package for TriCore contains:

- ▶ TC1130 port of the Linux kernel, compliant to 2.4.19 Linux release
- ▶ BusyBox: ar, ash, basename, busybox, cat, chgrp, chmod, chown, chroot, clear, cmp, cp, cut, date, dc, dd, df, dirname, dmesg, dos2unix, du, dumpkmap, dutmp, echo, env, false, fbset, fdflush, find, free, freeramdisk, fsck.minix, getopt, grep, gunzip, gzip, halt, head, hostid, hostname, hush, id, ifconfig, init, kill, killall, klogd, lash, length, linuxrc, ln, logger, logname, ls, lsmmod, makedevs, md5sum, mkdir, mkfifo, mkfs.minix, mknod, mkswap,

mktemp, modprobe, more, mount, msh, mt, mv, nc, nslookup, pidof, ping, pivot_root, poweroff, printf, ps, pwd, rdate, readlink, reboot, renice, reset, rm, rmdir, route, sed, sh, sleep, sort, stty, sync, syslogd, tail, tar, tee, telnet, test, tftp, touch, tr, traceroute, true, tty, umount, uname, uniq, unix2dos, update, uptime, usleep, uudecode, uuencode, vi, watchdog, wc, wget, which, whoami, xargs, yes, zcat

- ▶ RAM disk device driver
- ▶ Device drivers: UART, CAN, USB and Ethernet.

The kit contains also the Basic Package and a GNU compiler distribution. The board comes with a demo and a simple Linux library pre-compiled and installed, ready to be executed in simple applications.



The Developer Set Package addresses the needs of software developers that require a comprehensive set of hardware options and design environment tools. The design environment comprises the following modules:

- ▶ Full glibc and pthread libraries
- ▶ Bash shell; basic Unix utilities: cat, chmod, shown, cp, dd, dmesg, echo, false, free, halt, id, kill, ln, ls, mkdir, mv, ps, pwd, reboot, rm, rmdir, shm sync, tee, true, uptime, yes

- ▶ Network utilities
- ▶ JFFS2 flash file system.

The Developer Set Package comes with a flash file system functionality that constitutes a solid-state hard disk. It can be used to store the root file system and user applications - directly on board.

The Developer Set Package comes with extensive documentation, and with maintenance and basic installation support.

Extension Packages

Extension Packages offer additional modules that can be used on the top of the Developer Set Package.

For TriCore we offer the following Extension Packages: real-time extension RTAI, and Java (Kaffe). □

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