

# MontaVista Linux Professional Edition 4.0

## Optimized for High-Performance Embedded Applications

As today's application complexities increase, embedded projects face growing pressures to reduce costs and time-to-market. MontaVista® Linux® Professional Edition (Pro) is the ideal platform for developers who need a powerful yet flexible solution that allow projects to be delivered on-time and on-budget. Pro enables the development of state-of-the-art applications across a wide array of embedded markets, including networking and communications, instrumentation and control, aerospace and defense, SOHO devices, and medical electronics.

### Real Linux Designed for Embedded Applications

With a comprehensive development environment and a complete Linux distribution, Pro addresses your needs for predictable performance, robust stability and advanced I/O support. This makes Pro the most reliable operating system environment available today. Our unique experience in both the embedded systems and Linux markets allows us to deliver you a tailored and proven solution.

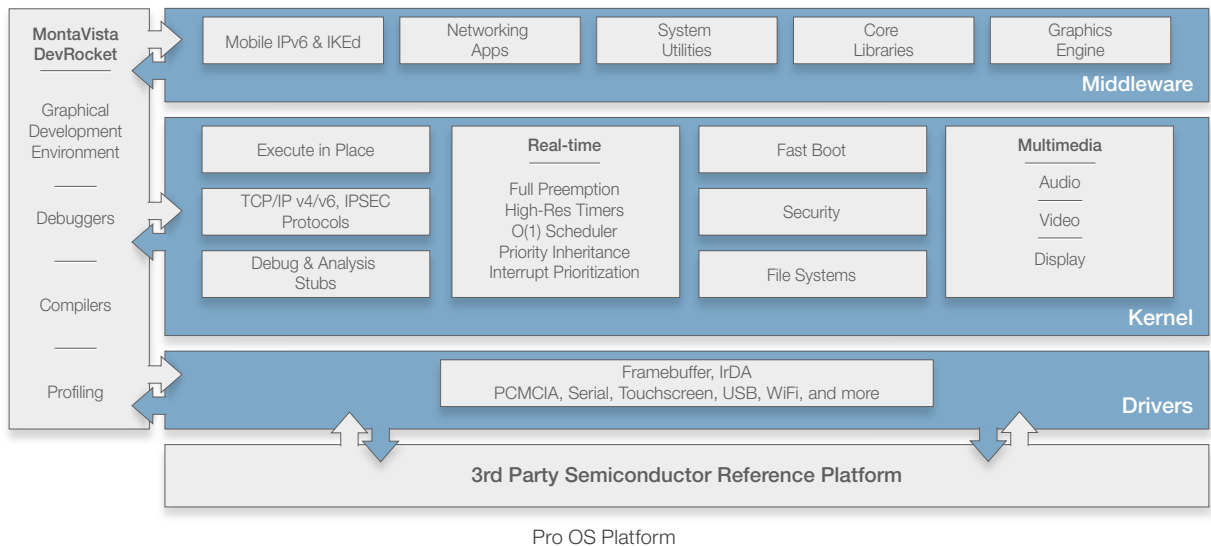
### Open Source Advantages

MontaVista Linux Professional Edition, based completely on open source, is a robust and powerful operating system capable of meeting the most stringent requirements. Pro incorporates both kernel and user space extensions to the standard Linux kernel, providing the features and

functionality you require. MontaVista delivers all of its kernel development, driver development, networking enhancements, security enhancements, application enhancements, and general bug fixes to the open source community. Thus, open source ensures that you receive the highest levels of stability and performance.

### Advanced Developer Tools

Built around an industry-standard Eclipse development framework, MontaVista DevRocket is a comprehensive suite of development tools designed to meet your needs. DevRocket is a complete application development and debug environment that includes a number of system measurement capabilities, memory usage analysis, and real-time measurement tracking.



## Broadest Hardware Support

MontaVista is unique in the embedded industry, with support for more than seven architectures, 30 processor variants, and over 50 modern board-level platforms. Through close relationships with all of the major silicon and board vendors, MontaVista is able to provide the most extensive hardware support available on a common source base. Pro delivers this support along with superior performance and reliability through unique processor family-specific tool chains. This comprehensive offering gives you the flexibility to choose the hardware that will maximize your performance at the lowest possible cost.

## Real Time Performance

MontaVista Linux delivers the real-time response required by many embedded applications. With real-time advances and preemptible kernel technology originally developed by MontaVista, worst case real-time response can scale to the sub-100-microsecond range. This meets or exceeds most real-time

processing requirements. We have achieved this performance through a number of technologies: O(1) scheduler, high resolution timers (HRT), and the Fast Real-time Domain (FRD) library. HRT provides developers with increased control over real-time application behavior. With HRT, programmers can implement time bases and event-driven algorithms with microsecond accuracy, eliminating the need for cycle-wasting polling and busy loops. Working with the new Native POSIX Thread Library (NPTL), FRD provides a thread-context interrupt handler to maintain the highest level of interrupt response.

## The MontaVista Advantage

Leading companies worldwide have adopted the MontaVista Linux family of products. In fact, hundreds of millions of devices have shipped running MontaVista Linux Professional Edition. Our open source and Linux experience, our reputation for innovation, and our proven technology are just a few reasons for selecting MontaVista Software as a partner in your success.

*For the latest information on Pro, visit [www.mvista.com/products/pro](http://www.mvista.com/products/pro)*

## Highlights

### Multi-threaded, multi-process, multiprocessor support in a single OS

- Native POSIX Thread Library (NPTL) implemented as a kernel component provides better performance with POSIX compliance.

### Low latency real-time performance in native Linux

- Preemptible kernel
- O(1) Scheduler provides a fixed priority, low-overhead real-time scheduler
- HRT provides microsecond timer resolution with IEEE 1003.b POSIX API

### Comprehensive development and analysis capabilities reduce project risk

- Multi-threaded Core Dump captures all information for active threads
- Linux Trace Toolkit extracts execution details of multiple programs

### Built-in memory protection blocks runtime faults

- VM Overcommit provides two mechanisms to manage out of memory conditions:
  - Strict Overcommit
  - Prioritized Out-Of-Memory (OOM)

### CPU Affinity on multi-processor systems provides control over process/thread execution

#### Enhanced I/O Support

- Serial ATA
- USB 2.0 Host
- Hot Plug

**Includes updates for over 250 Linux application packages and the addition of many more providing thousands of deployable software components to accelerate platform mage creation and application development.**

## Hardware Support

- ARM (ARM, Texas Instruments)
- MIPS (AMD, Broadcom, MTI, NEC, Toshiba)
- PowerPC ( AMCC, Freescale, IBM)
- XScale (ADI, Intel)
- X86 (586, Pentium 2, Pentium 3, Pentium 4)

*For a complete list, visit*

*<http://www.mvista.com/products/boards.html>*

## Development Hosts

- Red Hat Linux 9
- Red Hat Enterprise Linux 3.0
- SuSe Linux 9.2 Workstation
- SuSe Linux Enterprise Server 9.0
- Sun Solaris 8.0, 9.0
- Microsoft Windows 2000 SP4, XP SP1

## Device Support

- Storage (IDE, Serial ATA, SCSI, Flash)
- Display (serial console, framebuffer, touch screen, LCD)
- Multimedia (audio chipsets, MPEG decoders)
- USB (1.1 Host & Client, USB2.0 Host)
- Standard I/O (serial, IrDA, PS/2, parallel port)
- Ethernet (10/100/1000, 802.11b)

## Networking

- TCP/IP (IPv4/v6) MIPv6
- Wireless networking
- Remote access
- Internet access
- VLAN
- Web services
- IPSec (IKE)
- Routing (Zebra)
- E-mail, Chat
- Boot/Resolution
- Large number of networking utilities (clients & servers)

## File System Support

- EKT 2/3, JFFS, JFFS2, XFS, CRAMFS, NFSv3, YAFFS, XIA

## Graphics Support

Based on Xorg with support for:

- X Windows
- GLib, gpp, gtk2
- FreeType
- ATK
- IceWM, Matchbox
- Pango

Graphics support is provided on supported LSPs through a standard frame buffer I/O mechanism.

## MontaVista DevRocket

(Advanced IDE designed for platform & application developers)

- Platform Image wizard
- Library footprint optimization
- Platform Execution Tracing (Linux Trace Toolkit)
- Latest 3.4 based GNU Tool chains
- Memory leak detection
- GUI-based debugging
- MontaVista Target Tools