

## Texas Instruments OMAP™ platform and Linux® OS



Texas Instruments' (TI) OMAP™ platform delivers a comprehensive family of processors, software and support providing a wide range of real-time, multimedia-rich capabilities for 2.5G and 3G mobile devices. The industry-leading combination of high-performance and power-efficient processing enables compelling applications such as MMS, video and audio content, speech recognition, advanced security, 3D interactive gaming, m-commerce, location-based services, Java™ and productivity that will attract users to next-generation devices and services.

Linux® is a full-featured, Open Source operating system that is quickly becoming the OS of choice for many advanced consumer electronics applications, including 2.5G and 3G mobile devices. With full networking capabilities and a large array of development tools, middleware and applications, Linux offers many choices and flexibility. In addition, Linux offers developers convenience and more control and visibility compared to proprietary OSs:

- **Vendor independence** – OEMs have the choice to work with a commercial Linux vendor like MontaVista or develop system software entirely themselves through Open Source. OEMs can also do a combination of both. Linux code source is freely available for application and platform development to anyone who wants to develop with it.
- **Customization and optimization** – most of the Linux kernel and operating systems code is readily available in source form. OEMs and developers can easily leverage this open source base to tailor Linux to their particular applications; it also serves as in-depth system documentation. In short, open source Linux gives OEMs unprecedented control over their technological destiny.
- **Reference code** – the Open Source community supports a great diversity of standards, specifications, and application types. Linux, as the focus for much Open Source development, fosters significant code re-use and serves as a foundation for reference implementations for technologies in embedded systems, on the desktop, and in enterprise.

### O V E R V I E W

#### Linux OS software packages for the OMAP platform

In order to create a Linux OS software solution for OMAP using Open Source sites, a developer would need the stock kernel, the ARM-specific patch and the OMAP-specific patch. TI has placed sample open source code and documentation on an external web site for customers and application developers to evaluate Linux on TI wireless solutions. Go to [www.ti.com/linuxomap](http://www.ti.com/linuxomap) for the sample software and other resources. Support for any materials on this web site comes from the mailing list also located on this site.

For companies looking to accelerate the development of products built on OMAP and the Linux OS, commercial Linux platform products provide an out-of-the-box platform solution. Companies like MontaVista Software offer complete embedded Linux OS and cross development environments for TI OMAP processors. The MontaVista Linux Consumer Electronics Edition in particular targets the needs of consumer electronics manufacturers, and provides a range of features and functionality optimized for wireless and mobile applications, including:

- Enhanced embedded file systems that support rapid application launch, reduce memory footprint and promote secure and reliable device operation
- Dynamic Power Management to reduce device energy consumption and enhance battery life
- Tools that right-size Linux and help developers tune performance for hand-held devices
- Powerful cross-development tools for faster system and application development
- Extensive utilities, libraries and drivers for faster development and time-to-market
- Optimized real-time performance for maximum responsiveness

### *Development tools*

A full complement of easy-to-use, world-class tools is available for developing with Linux on the OMAP platform. These fully tested, industry standard tools give developers a more streamlined software development process and faster time-to-market:

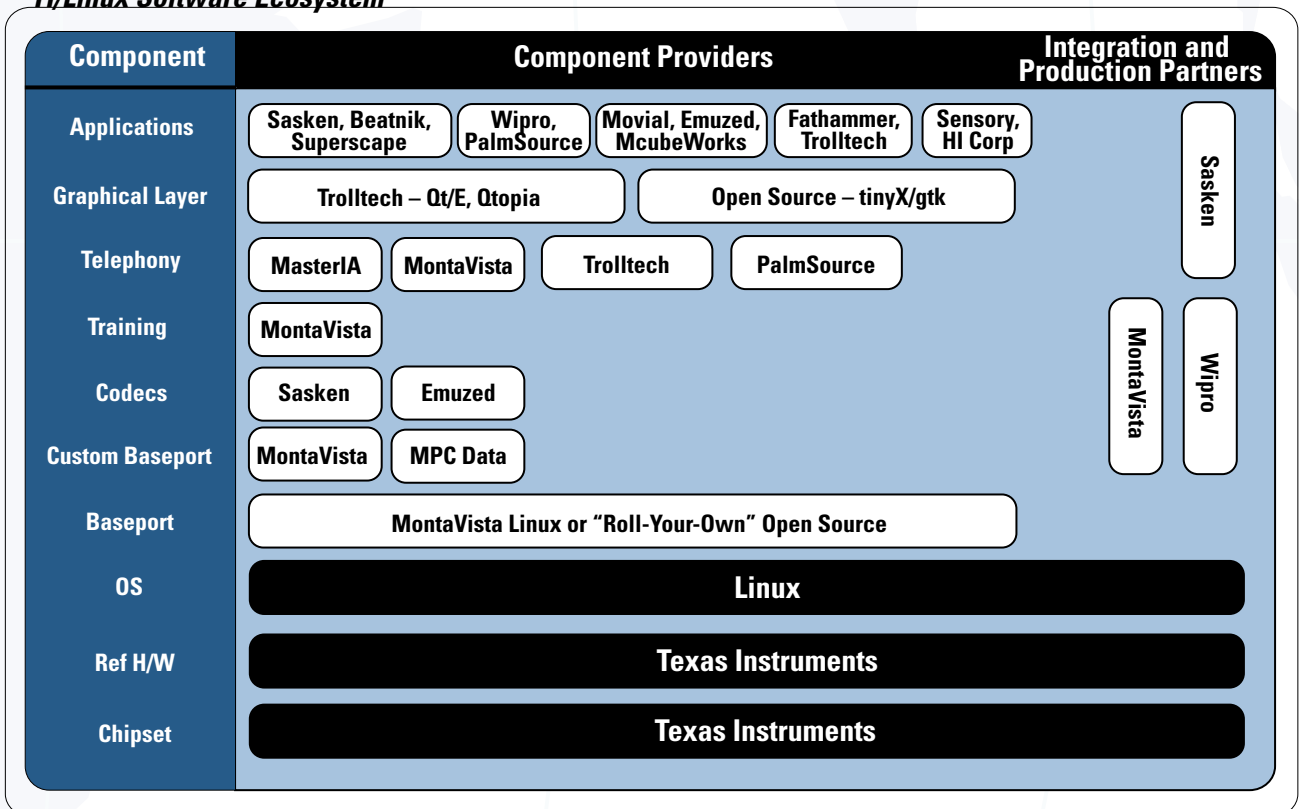
- DSP tools
- TI's Code Composer Studio™ for the OMAP Platform
- DSP IDE and debuggers
- ARM® tools for Linux OS
- Linux Open Source tools
- Standard GNU debugger
- Data Display Debugger (DDD) front end for GDB
- Other source-level debugging tools
- Linux trace tools
- Language tools (C, C++, Java)

MontaVista Software also offers the DevRocket graphical development environment for cross development (as part of MontaVista Linux product editions). MontaVista DevRocket provides:

- Powerful integrated tools and capabilities for developing and deploying Linux system software and applications
- Language support for C and C++ with optimizing GNU-based compilers targeted at OMAP CPUs
- Syntax-aware and language-aware code editing
- Performance analysis and optimization tools
- Project-creation wizards for kernels, drivers, and applications
- Integrated interface to revision control and configuration management tools and frameworks

These tools and deployment capabilities let developers easily create, optimize and fully leverage OMAP processor platform processing power and low-power operation capabilities.

### TI/Linux Software Ecosystem



## Industry support

### Mobile Applications



TI seeks to offer the best in technical support and business development services to help ensure success for developers using Linux OS on the OMAP platform. TI's OMAP Developer Network delivers full solutions and applications that allow differentiation, quick time-to-market and faster return on investment. OMAP Developer Network members are developing rich software applications and algorithms that drive next-generation applications in areas like MMS, video and audio content, speech recognition, advanced security, 3D interactive gaming, m-commerce, location-based services, Java and productivity.

TI's Independent OMAP Technology Centers (OTCs) provide development support by offering total solutions integration expertise. In addition to working on some of the same application areas as OMAP Developer Network members, OTCs provide:

- System integration
- Custom OS and driver support
- Software component development
- Hardware development
- Technology development

**MontaVista**  
**Sasken**  
**Wipro**

With hardware and software from TI along with support and software from the OMAP Developer Network, OTCs and Linux OS from Open Source or MontaVista, manufacturers have a full solution for developing their mobile device using Linux OS on the OMAP platform.

[www.ti.com/linuxomap](http://www.ti.com/linuxomap)

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