MontaVista Linux 6

Frequently Asked Questions

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MontaVista Linux 6 General

What challenges do embedded systems developers encounter?

Developers face challenges that are unique to the embedded market or Linux specific, including wasting valuable time getting hardware up and running, vendor-lock in, managing the constantly changing open source landscape, and finding the right information to get the job done.

- **Wasted time** - Systems developers waste time getting up and running, including experimenting with alternative solutions, integrating open source software, enabling hardware, booting up systems and enabling features.
- **One way path: No turning back** - Developers find themselves constrained, locked into early software choices, unable to fully leverage the power of the open source community, and without the right tools to customize the software to their specific application requirements.
- **Overwhelming amount of data** - Embedded Linux development is information intensive and finding assistance from documents, the Internet, or software experts who can help answer specific hardware and software questions is a challenge.

What are MontaVista Linux 6 key benefits?

MontaVista Linux 6 has four key benefits that help address the above three key challenges of embedded Linux development for systems engineers:

- **Faster Time-To-Development** - MontaVista Linux 6 provides a complete embedded Linux distribution and software development kit (SDK) so systems developers can be up and running sooner and focus on product-differentiating features. Using the MontaVista Integration Platform, built on the de-facto standard open source build system, developers can leverage their existing work and move to MontaVista Linux 6 with the assurance of feature compatibility with a clear migration path. MontaVista Linux 6 makes it easy to relocate and maintain local build environments in order to get teams developing sooner, leveraging open source software, while insulating projects from community changes.
- **Increased Flexibility in Integration and Customization** - With MontaVista Linux 6 systems developers can fetch and integrate code from other team members, internal company teams and even outside vendors including ISVs and contractors. This unprecedented flexibility in a commercial solution enables developers to more easily customize their software stacks including the kernel, device drivers, libraries and applications. Systems developers can consistently build all target software from source – with just one command – and reproduce multiple build configurations. Finally, optional pre-set features help optimize projects by minimizing file-system footprints in resource-constrained devices.
- **Expert Help** - With MontaVista Linux 6, systems developers get support from the leader in embedded Linux commercialization and top experts in their field. While working with MontaVista, developers are sure not to be alone, but backed by over 10 years of experience. Get help from these experts via email and Web support and enjoy quick access to all software, updates, maintenance, and training required to assist delivering projects on time.
- **Complete Developer Toolkit** - Using either command line or the included Eclipse-based MontaVista DevRocket, developers get a completely integrated set of tools including C/C++ compilers, run-time libraries, and a source- and assembly-level debugger, all optimized for specific hardware. Commonly executed commands can be automated in order to speed up development and reduce error-prone tasks. MontaVista Linux 6 takes you beyond the typical edit-compile-debug cycle and provides a full set of performance monitoring tools for profiling, memory leak detection, memory usage analysis and system and application level tracing.

How does MontaVista Linux 6 differ from other offerings in the market?

Other competitors create board support packages (BSP) which introduce the minimal set of changes necessary to run their horizontal products on a new hardware platform. Developers quickly find themselves on an island isolated from their semiconductor partner's valuable Linux technology and the open source community at large.

Only MontaVista engineers its product to be feature compatible with the respective semiconductor partner Linux distributions. With this new Market Specific Distribution (MSD) approach, developers can take a step forward to MontaVista's embedded Linux commercialization benefits rather than a step off a cliff.

Only MontaVista has the technology to build MSDs with this degree of market specific customization. MontaVista then empowers customers, via our Integration Platform, to use MSDs and introduce their own customizations that sculpt their finished product.

Do I have to start my project with MVL6, or can I use my semiconductor Linux?

When starting out with a new project, embedded Linux developers have the choice between open source, their semiconductor partner's Linux technology, or a commercial distribution. Without MVL6, that decision involves making compromises that are difficult to move away from once development begins. MontaVista Linux 6 (MVL6) provides our customers with the flexibility to start quickly using open source, or the semi distribution, and easily move to the commercial quality of MVL6, maximizing their hardware investment, and taking advantage of the full power of Linux and the open source community. MVL6 helps to align the supply chain by fitting closely with the network of semi partners and our customers who are involved in the ultimate provision of product to end customers. With MVL6, developers can maintain the quality, control, and consistency they require to deliver commercial-ready devices to market faster while having the flexibility to tailor their design to their specific application requirements.

What are the feature differences between MontaVista Linux 6 and Professional Edition 5.0 or Mobilinux 5.0?

MontaVista Linux 6 is not the next version of either Pro or Mobilinux. Each MontaVista Linux 6 MSD is designed for the hardware and will be compatible with the semiconductor's Linux technology. In addition, MontaVista adds hardware specific features, integrates and commercializes various technologies from the open source community, provides a hardening of the kernel, QA testing, and full support. MSDs allow customers to take full advantage of the available features for the specific hardware supported by the semiconductor vendor. Therefore, the difference between MontaVista Linux version 5 and 6 products will depend on each MSD.

Please contact a MontaVista sales representative at sales@mvista.com or 408-572-8000 for the details on what is included in each MSD, compared to the semi distribution.

How do Android and LiMo relate to MontaVista Linux 6?

MontaVista supports hardware based on customer demand. With its new product approach, MontaVista creates MSDs for specific hardware that can easily provide the Linux OS in environments like Android

and LiMo that customers build their devices in. These MSDs are feature comparable and include a fully tested environment.

How does Moblin relate to MontaVista Linux 6?

Recently, MontaVista announced its support of the Intel Atom platform and Moblin. MontaVista Linux supports the full feature set of the Intel® Atom processor, and combined with Moblin it is ideally suited for any embedded application demanding connectivity, or multimedia and graphics intensive application support, in a low-power envelope.

Market Specific Distributions

What comes in an MSD?

MontaVista Market Specific Distributions (MSD) are new Linux distributions (Linux OS), optimized for the respective hardware platform and its target market. An MSD is comprised of an embedded Linux kernel, appropriate device drivers, and userland necessary to support the breadth of functionality provided by the hardware platform. Each MSD is compatible with the semi distribution and provides the value-add features, expert support, and high quality MontaVista is known for.

How is an MSD different from an LSP?

To support an array of architectures with MontaVista's traditional horizontal edition products like Professional 5.0, MontaVista utilized generic drivers as to not create conflicts with other drivers and code. This approach, although good for some customers porting across multi-architectures, sacrificed the driver optimizations that semi partners have been creating in recent years. With MontaVista's MSD approach, those driver optimizations are now included and customers get to take advantage of the optimizations, be it in silicon or software.

What is in the MSD that is not in the semi partner's kernel?

Feature details on what MontaVista has added to a specific MSD and which bugs have been fixed varies for each platform and is documented in MSD specific collateral. Contact a MontaVista sales representative at sales@mvista.com or 408-572-8000 for the details of the MSD you are interested in.

Do our semi partners see MontaVista Linux 6 as complimentary to their offerings?

Yes, our semi partners work closely with MontaVista to create fully tested MSDs. These MSDs are more feature-complete than the distributions that the semi partners ship with their processors. See our announcements with Intel, Freescale, and Texas Instruments on http://www.mvista.com/hotnews.php.

Where can I find out which MSDs you have for Freescale, Intel, TI, and other semi partners' processors?

You can find a list of supported processors and boards at http://www.mvista.com/boards.php. For information on future support please contact a MontaVista sales representative at sales@mvista.com or 408-572-8000.

Can I use MontaVista Linux 6 on carrier-grade COTS boards?

MontaVista Linux 6 may run on carrier-grade COTS boards (please check with a MontaVista sales representative at sales@mvista.com or 408-572-8000 for MSD availability), but would not enable all carrier-grade relevant features. To get those features, customers need to purchase CGE licenses.

Which kernel version is MontaVista Linux 6 using?

Kernel versions for MontaVista Linux 6 MSDs vary. The kernel version used in MontaVista Linux 6 depends on the hardware board community project for each individual MSD, the kernel version used in the semiconductor vendor's Linux technology, as well as market momentum.

MontaVista Linux 6 licensing and pricing

How is MontaVista Linux 6 packaged?

1. MSD (Market Specific Distribution), consisting of
    a. Embedded Linux kernel
    b. Device drivers
    c. Libraries
    d. Userland and applications
2. MontaVista Software Development Kit (SDK), consisting of
    a. MontaVista Integration Platform,
    b. Cross-development toolchain
    c. MontaVista DevRocket 6,
3. Support and maintenance

How is MontaVista Linux 6 licensed and priced?

Please contact a MontaVista sales representative for information at sales@mvista.com or 408-572-8000.

Do I get access to MontaVista Linux 6 with my Pro 5.0/Mobilinux 5.0 subscription?

No. The MontaVista 5.x product subscriptions do not entitle a customer to MontaVista Linux 6 products. The products carry different licenses. Please contact your MontaVista sales representative for information or email us at sales@mvista.com.

How does support work, and can customers get support for their semiconductor provided Linux technology from MontaVista?

MontaVista provides support for its reference boards. A list of supported processors and boards can be found at http://www.mvista.com/boards.php. MontaVista goes to great length to ensure that each MSD is compatible with the semiconductor Linux technology and hardware. To receive MontaVista support, customers need to purchase MontaVista Linux 6 licenses and make the easy move from the semi distribution to the respective MontaVista Linux 6 MSD.

MontaVista has over 10 years of Linux experience. Our experts provide support via email and Web support, and customers enjoy quick access to all software, updates, maintenance, and training required to assist delivering projects on time.

What happened to the unified kernel?

In its latest product version, MontaVista Linux 6, MontaVista has moved away from the concept of the unified kernel, which allows us to provide our customers with more updated kernel versions for the latest hardware and brings us on parity with our semiconductor partners' kernel versions, thus eliminating the need for back-porting or forward-porting of code.

Are bug fixes applied to all MSDs they apply to?

Bugs reported by customers for a MontaVista Linux 6 MSD will only be fixed in that specific MSD and will not be applied to all other MSDs that contain the same feature, with the exception of CVE fixes. However, documentation on known bugs will be made available through the MontaVista customer site, the MontaVista Zone.

MontaVista Integration Platform and DevRocket

What is the technology behind the Integration Platform?

The Integration Platform is based on the BitBake methodology from the OpenEmbedded project, combined with the MontaVista add-ons of mirroring and the MontaVista Content Server. The Integration Platform now allows customers to fully customize their distribution with easy access to source code, patches, and recipes on how to build binaries, while at the same time providing MontaVista binaries for those customers who don't have a need for customization. The BitBake tool doesn't lock customers in and there is a large community with momentum behind it, continuously improving the technology. The tool is easy to use and highly customizable.

What is the difference between BitBake, MontaVista Linux 6, and OpenEmbedded?

Open Embedded is a community project that includes the BitBake tool, which allows users to create unique embedded Linux Distributions. With the new release of MontaVista Linux 6, MontaVista is shipping the MontaVista Integration Platform, which allows customers to customize and rebuild the MSD for their unique requirements. The Integration Platform works with all MontaVista Linux 6 MSDs and uses BitBake as its core technology, and we have added additional functionality on top of BitBake including:

- Pre-canned recipes for typical software configurations
- Pre-built configurations to reduce build time to minutes rather than hours
- Host tools that make the entire system more easily executable on current and future hosts
- Configuration signature (cfgsig) that invalidates prebuilts if the user changes to a different configuration

What does the MontaVista Integration Platform (MVIP) consist of?

The MontaVista Integration Platform (MVIP) is the center-piece of MontaVista's tools that deliver MSDs to our customers and empower developers to adapt MontaVista Linux to the needs of their design. The MVIP enables source-driven customization of the entire MontaVista Linux based software stack. The MVIP performs the following critical functions for developers:

- Automates cross-compilation of the target software stack for their design

- Creates binary packages that can be used for deployed system maintenance and upgrades
- Creates the root file system(s) for the design
- Creates one or more file system images formatted in various disk and flash compatible filesystems
- Manages customizations to the software stack so that the design can be easily reproduced and configuration managed

Why did MontaVista introduce the Integration Platform into MontaVista Linux 6?

MontaVista listened to its customers and their desire to be able to rebuild the entire distribution from source. The MontaVista Integration Platform (MVIP) offers capabilities of customization that go vastly beyond adding and removing packages. The unified tool provides capabilities ranging from building bootable images to modifiying software components at the sub-package level. Only a source based tool would offer this capacity.

What value does the Integration Platform add to BitBake to make it more productive for our customers?

The BitBake tool is easy to use and highly customizable, but using the tool by itself doesn't solve one of the biggest challenges embedded Linux developers run into: Engineers need continuous access to recipes and sources, not just during the design phase, but also for the entire time of maintenance. However, recipes and sources disappear from open source project websites and MontaVista therefore created a big value-add with its MontaVista Zone Content Server, which is part of the MVIP. The Content Server offers functionality that can't be found anywhere else, including:

- Archiving of recipes and sources
- Multiple releases of each collection
- Prebuilt binaries
- Mirroring of the above items

What is the MontaVista Zone Content Server?

The MontaVista Zone Content Server mirrors all the source needed for an MSD, and delivers that source code and pre-built binaries on-demand to the MontaVista Integration Platform, freeing the developer from the repetitive task of searching for new source code and updates. The developer can identify changes, updates, and dependencies in the code via the Integration Platform, with the option of incorporating these changes to the build environment. Features include source mirror, prebuildt staging packages, local mirroring, and proxy support.

Does the Integration Platform replace MontaVista DevRocket?

No, both the Integration Platform and MontaVista DevRocket 6 are part of the SDK that comes with a MontaVista Linux 6 subscription. The SDK also includes the cross-development toolchain.

What are MontaVista DevRocket 6 details?

MontaVista DevRocket 6 is the Integrated Development Environment (IDE) that supports MontaVista Linux 6. DevRocket 6 delivers a set of tools designed to streamline and automate common embedded Linux development and analysis tasks. DevRocket 6 is based on the Eclipse project and is delivered as a

set of Eclipse plugins that increase developer productivity by simplifying the complex development tasks of embedded Linux. DevRocket 6 plug-ins can work within standard Eclipse-based platforms based on the Ganymede release or with the bundled Eclipse runtime delivered with MVL6. Features include MVIP projects, MemTraq, target management, fully automated edit/compile/debug, and advanced analysis.

Where can I get an overview of MontaVista Linux 6?

The webinar "Streamlining the embedded Linux development process with MontaVista Linux 6" (https://event.on24.com/eventRegistration/EventLobbyServlet?target=registration.jsp&eventid=148433&sessionid=3&key=52AE71F349A1FE5AEA9D637455FC26F5&sourcepage=register) provides an overview of the product.

Where can I find more information on MontaVista Linux 6?

Additional information on the product can be found on the MontaVista website at http://www.mvista.com/product_detail_mvl6.php and in the embedded Linux developer community Meld at http://meld.mvista.com/group_view.aspx?GroupID=72953cdfd7804640b2f99aab8110dd32.

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