MontaVista
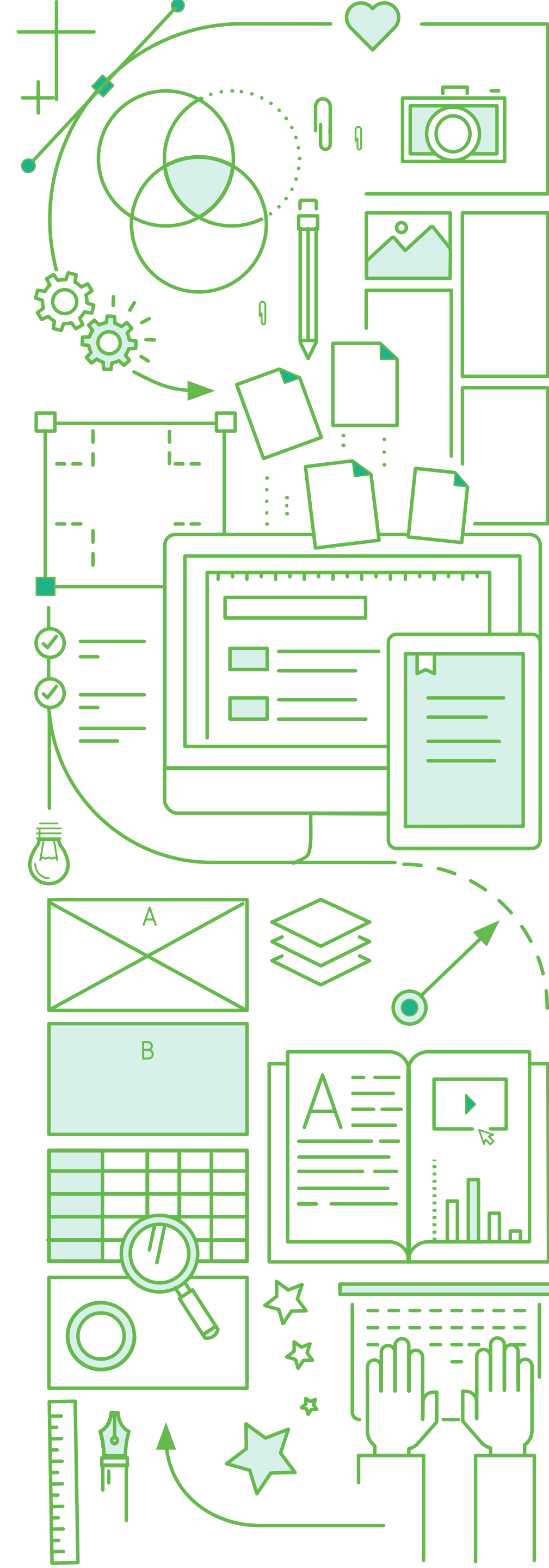
Carrier Grade Linux for the converged Healthcare

MontaVista CGX delivers reliable, secure, and serviceable Linux to interconnected embedded medical devices and high performance IoT for healthcare networks.

Medical Devices Transformation

Technology enhancements, especially the rise of connected devices has led to significant consumer behavioral change.

The world of intelligent devices has made it possible to deliver compelling business models through a cloud based service delivery platform i.e. you now not only have your device data at your disposal but a collective intelligence of the connected world to best interpret it given your needs.

Medical devices are seeing an increasing demand for these newer capabilities of improved network Infrastructure and advanced computing to rescue the ever increasing gap between the demand of medical facilities and the availability of physicians and hospital care, at affordable costs.

We are now witnessing an evolutionary change in next generation medical device development that utilizes enhancements to assimilate, aggregate and process data through multiple touch points and deliver medical services to a much larger base at a fraction of cost.

MontaVista® Linux® Carrier Grade eXpress (CGX), delivers Carrier Grade reliability, security, and serviceability that is highly configurable, flexible, and of consistent high quality.

CGX meets the demands of the interconnected intelligent devices, providing application portability, dynamic configuration, field maintenance, and real-time performance in a single platform.

Using Yocto project, MontaVista® Linux, offers an ideal platform for developers who want to leverage the flexibility of a true open source development platform, as well as the ability to achieve rapid time to market.

Benefits

IoT ready: Connectivity to Core and Sensors, Virtualization for scalability

CGL: Ease of development using packaged tooling and platform

Real-time: Enabling time critical data processing and control equipment

Security: CGL-level hardening, timely CVE fixing

Expertise: Years of embedded platform expertise, translating technology to medical use-cases

Key Features Highlights

Latest Yocto & Linux Kernel Long Term Support (LTS) with latest GCC toolchain

Carrier Grade: High Availability, Serviceability, Long Term Support

Pre-built cross architecture BSPs based on ARM®v7/v8 & Intel ® X86 64

Virtualization: Linux Containers (LXC), Docker TM , & KVM

Advanced Graphics profile

# Cybersecurity Threat and Prevention

Cybersecurity challenges for edge connected devices are on the rise, some experts say exponentially.

Linux and ARM offer native technologies readily available to help create solutions that secure onboarding and enable cryptographic security. Encryption for data at rest and in motion, integrity management, and secure boot will be a requirement to meet HIPAA laws for standards for electronic exchange, security, and privacy of patient health information.

As a trusted Operating System Vendor, MontaVista receives notification of all security fixes and CGX security team provides rapid updates to the CGX platform.

MontaVista meets FDA needs for COTS software through:

• Regular customer Audits (Quality Assurance Process)

• Open testing framework (MVTest)

• Extended product support lifecycle (10 Years +)

• CVE process and Common Criteria OSPP compliance.
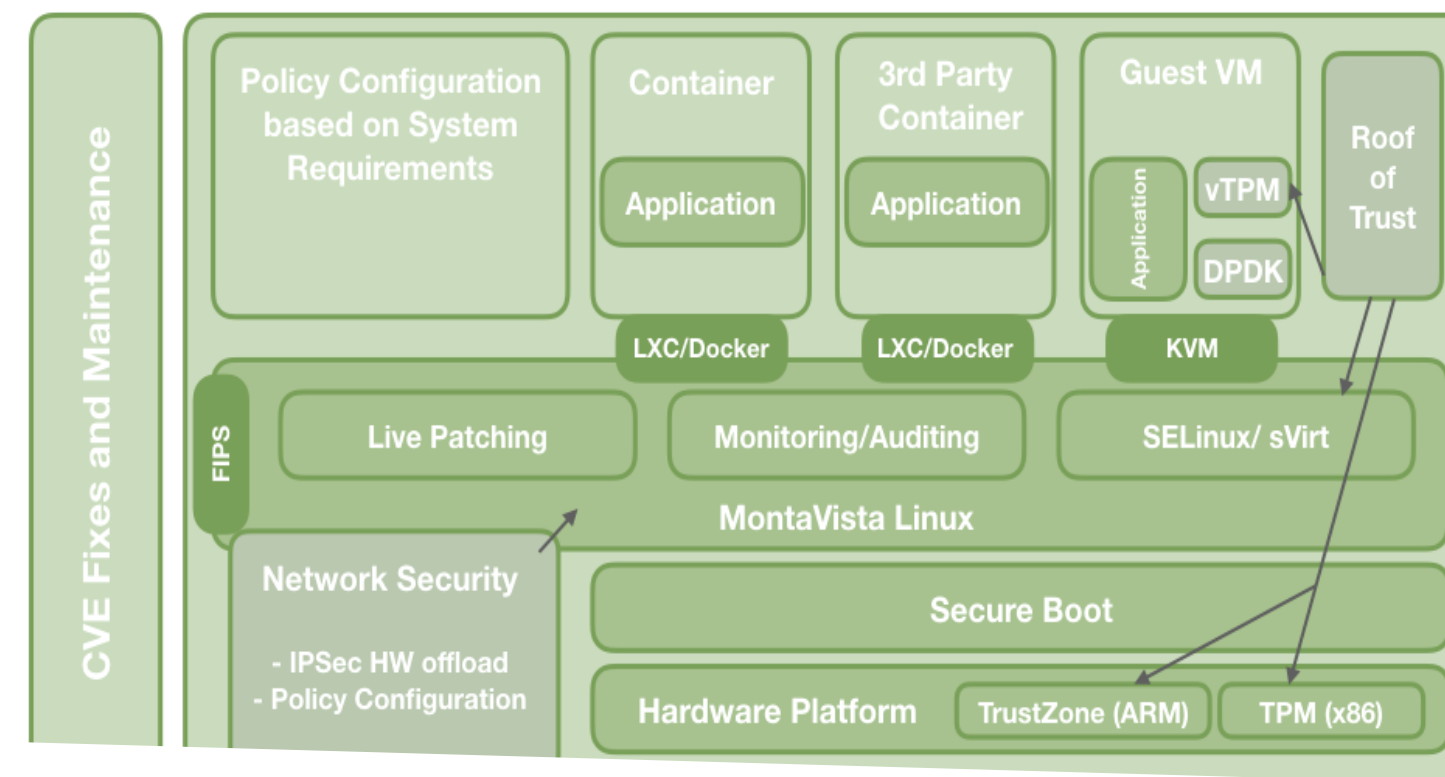
Native Virtualization

Native virtualization technologies like KVM, LXC/Docker & Kubernetes (Production-Grade Container Orchestration) for isolating Virtual Network Functions (VNFs), applications and system software.

Open Graphics

Open Graphics profile provides latest graphics middleware and UI toolkits (Qt & GTK) along with reference 2D/3D applications making it easier to build customer friendly graphical user interface for medical embedded devices.
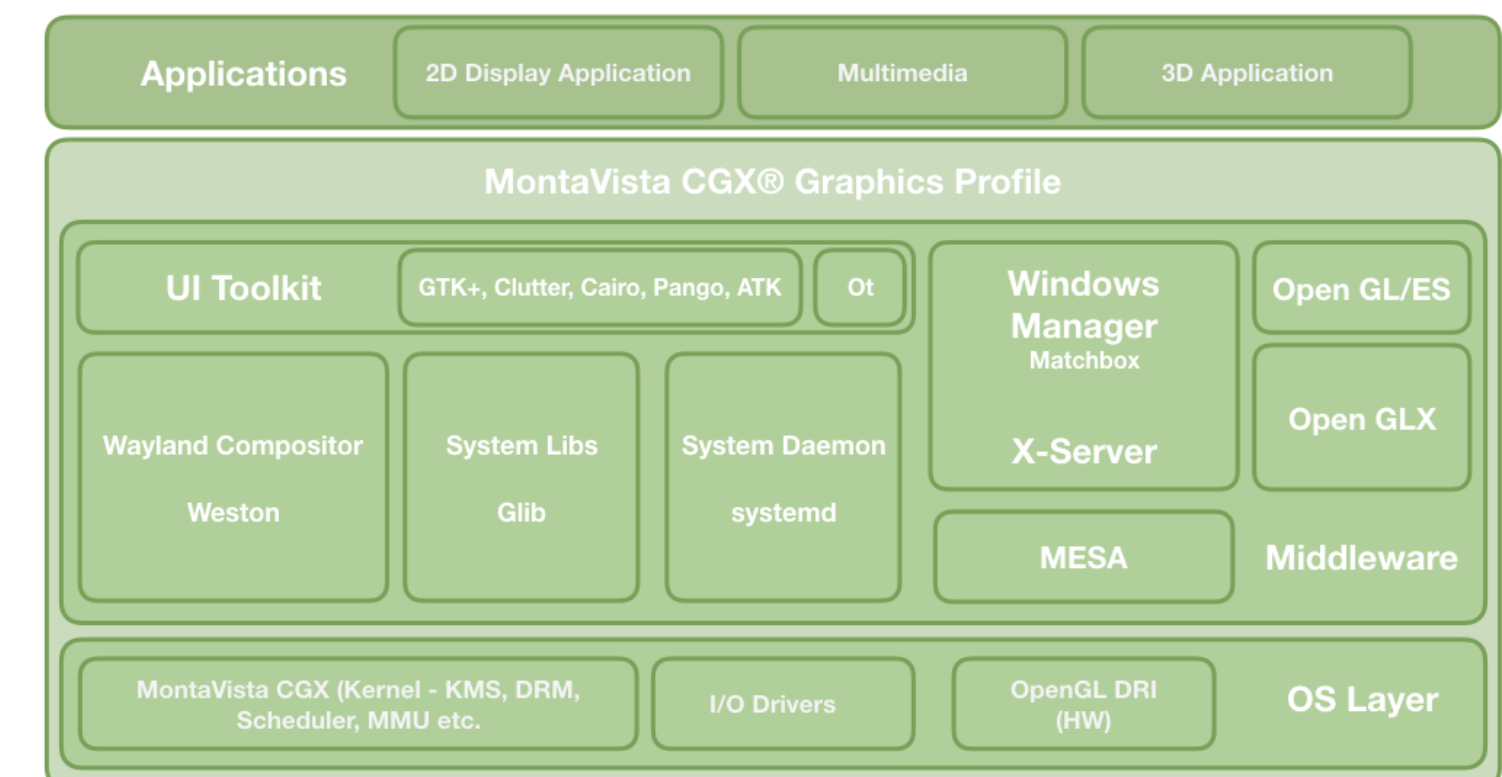

Success Story

MontaVista commercial Linux releases are powering multiple medical devices from leading manufacturers including St. Jude Medical (since 2006, Merlin PCS), BIAC (2004, PMS) among others. Medical device makers demand systems of the highest quality, and require support for extended lengths of time. At the same time, modern competitive development environment necessitates development environment that allows for rapid delivery of newer systems to market.

Key technical criteria for MontaVista's selection

• Real-time response time: MV Linux and sensor inputs are handled in real-time.
• Advanced Profiles for Virtualization (Docker & Kubernetes), Graphics (QT/X11), & Security (Secure Boot, IMA/EVM, "Authentik" & OP-TEE framework).
• Ease of development using packaged tooling and platform.
• Medical systems have a long life span, and need to be reliable and future proof.
• Selecting Linux over RTOS allowed St. Jude Medical to leverage the broad Linux skill set in the market.

About MontaVista Software

MontaVista Software is a leader in embedded Linux commercialization. For 20 years, MontaVista has been helping embedded developers get the most out of open source by adding commercial quality, integration, hardware enablement, expert support, and the resources of the MontaVista development community.
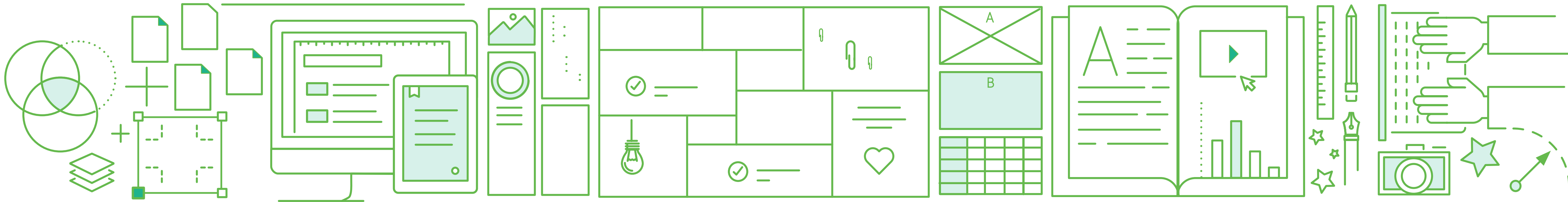
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