

# Helios Linux Software Development Kit (SDK)

## Quick Start Guide

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Thank you for purchasing the Helios Linux Software Development Kit (SDK). This SDK provides you with all the tools required for creating Linux 2.6.23 based platform images for your Helios single-board computer. The SDK includes the following two items: Diamond Linux SDK CD; Helios Linux FlashDisk.

The Helios Linux FlashDisk includes a bootable runtime Helios Linux OS image. In addition to demonstrating Linux operation, the OS image also contains programs that can be used for demonstrating and validating many of Helios's hardware capabilities. Functions exercised include:

- Ethernet support with local-area network installed
- DHCP, SSH, SCP, FTP
- PS/2 mouse and keyboard
- USB ports
- Serial ports
- IDE storage devices
- Diamond Universal Driver 6.0x for Linux 2.6.23
- Data acquisition demo programs (for AV model boards)

The Diamond Linux SDK CD provides a software development platform for customizing the Helios SBC's Linux OS. In order to minimize compatibility issues, the full source code for the Linux kernel that was used in creating the bootable Linux images on the Helios FlashDisk are also included, along with a GNU development tool-chain. Specifically, the Diamond Linux SDK CD includes:

- Bootable images of the Helios Linux board support package (BSP)
- Helios Linux BSP components and source code:
  - Helios Linux 2.6.23 kernel supporting the Vortex 86 SX/DX processors
  - Root file system
  - Grub boot-loader
- All required device driver binaries and sources (when applicable) required for Helios to be used with the BSP
- Complete Linux development tool-chain, including gcc, g++, gdb
- Step-by-step instructions on using Helios's BSP and device drivers to customize its Linux platform according to application requirements

To run the Helios demonstration:

- Install the flashdisk provided in this SDK on the Helios SBC
- Boot from the flashdisk
- The demo image will run

To build a new Linux image for Helios, start by reading the document entitled "Helios Linux BSP Manual.pdf" (located on the Diamond Linux SDK CD), which provides a comprehensive guide to developing new Linux system images and using the provided tools and utilities.

General information on customizing the Linux kernel, drivers, and utilities is available through numerous Linux websites, discussion forums, and mailing lists. For additional Helios technical information, visit the Technical Support area of Diamond's website at [www.diamondsystems.com/support](http://www.diamondsystems.com/support).