Inferno

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EMBEDDED FIRMWARE PLATFORM FOR QUATRO SOC'S

Product Brief

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Overview

Inferno is Zoran's Embedded Linux-based firmware and tools platform for developing printers, multifunction printers (MFPs) and scanners with Zoran's Quatro® system-on-chips (SOCs). Quatro is a family of highly integrated SOCs that features a powerful ARM CPU core and a highly programmable DSP for high performance, next-generation hardcopy imaging products.

Inferno runs on Zoran's Quatro development boards and implements functions such as printing, scanning, copying, connectivity, networking and user interface.

Inferno also features an API for easily integrating Zoran's industry-leading IPS print language interpreters, which have been optimized to take advantage of Quatro's dual-core CPU and DSP.

Benefits

Embedded Linux—Inferno leverages Linux's vast open source ecosystem allowing customers to utilize open source libraries and development tools

Architecture for Printers, MFPs and Scanners—Inferno provides real-time responsiveness needed in controlling high-speed printer and scanner engines, while ensuring customers proprietary technologies are kept separated from the open source Linux kernel

Optimized IPS Print Language Interpreters—Zoran's IPS interpreters ported to Inferno/Quatro have been tuned to maximize PDL (page description language) printing performance and ensure quality

Product Range—A common code base allows development of a wide range of hardcopy imaging products using the Quatro 4300 and 4500 series

No Cost—Inferno's standard code is provided to Quatro customers free of charge

Key Features

- Linux-based firmware platform
- Runs on Quatro 4300 and 4500 series
- Optimized IPS print language interpreters
- Leverages IPS's concurrent rendering architecture
- Printer, MFP and scanner functions
- Extended networking
- Comprehensive development tool chain
- Graphic user interface

Description

Firmware Platform for Printers, MFPs and Scanners

Inferno is Zoran's next-generation firmware platform for the Quatro 4300 and 4500 series of SOCs, and is targeted for a wide range of next-generation hardcopy imaging products:

- Low-end to high-performance
- Monochrome and color
- A3/Tabloid and A4/Letter paper size
- PDL and raster printing
- Optional graphical display
- Optional fax
- Optional Ethernet and Wi-Fi

Linux

Zoran uses Embedded Linux as Inferno's operating system (OS) because of advanced features such as SMP (Symmetric Multiprocessing) and the availability of extensive open source libraries and development tools. Using Inferno and the open source libraries, Zoran's customers can develop printers, MFPs and scanners with features such as advanced networking, wireless connections, and an attractive user interface. Customers can also take advantage of the wide range of free or low-cost development tools available for Linux.

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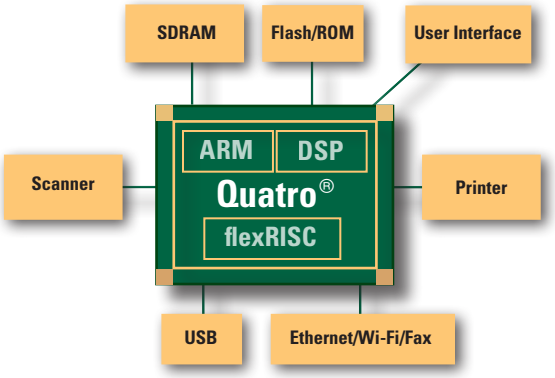
Product Brief

Description (continued)

Quatro Processing Model

The Quatro processing model is designed to maintain high-throughput image processing and real-time mechanism control, each has its own unique requirements, separated from each other and overall system functions.



ARM:	System control, PDL processing, user interface, communication
DSP:	Image processing
flexRISC:	Mechanism control

Inferno Architecture

Inferno's uses Embedded Linux as its OS and is designed to provide the real-time processing capability required by high-performance printers, MFPs and scanners. flexRISC microcontroller cores are used to offload the most time critical tasks in printer and scanner engine control.

Inferno implements an architecture that separates the printer and scanner device drivers into the generic and product-specific sections. Only the generic sections are open source under Linux's open source license. The product-specific sections, which reside in Linux application space, are not open source. Customers' application, middleware and image processing code, which often contains the customers' proprietary technologies, is also kept separated from the open source Linux kernel.

Inferno and Zoran's IPS Print Language Interpreters

Inferno and Zoran's IPS PDL interpreters take full advantage of each other. For example, IPS's concurrent rendering architecture leverages the SMP capability of Linux when running on Quatro's dual-core version. The full IPS suite has been ported to Inferno/Quatro and tuned to maximize PDL printing performance.

For customers who do not wish to do extensive customization, IPS can be delivered in binary form, allowing customers to focus on tuning the firmware to their printer engine rather than customizing and configuring IPS.

IPS print language interpreters are licensed separately.

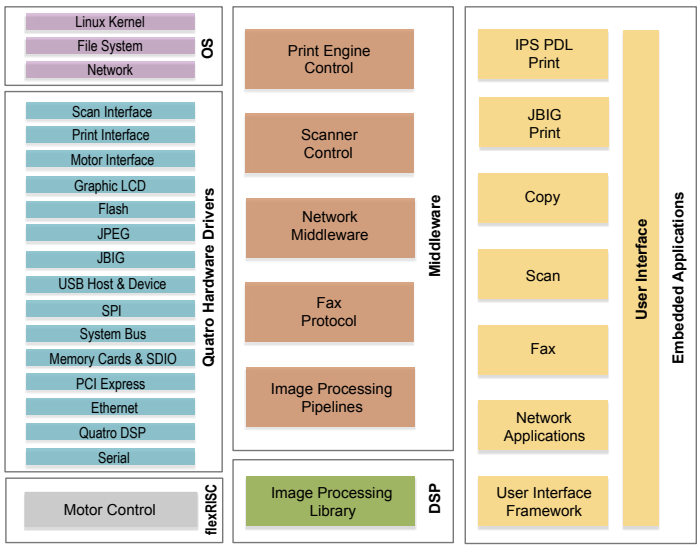
Product Development

Inferno is designed to meet the varying needs of customers who want different degrees of customization. Inferno comes with a complete basic feature set for fast time-to-market. Customers who want extensive customizations can modify the supplied firmware components and/or add new firmware components. Most of the code is provided in source form.

Development Tools

Inferno includes a comprehensive development tool chain, featuring open source and Zoran's proprietary development tools. The tool chain is provided free of charge. Additionally, optional development tools can be purchased from third party tool vendors.

Inferno Embedded Components



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