



Open Firmware System ROM Code

Open Firmware, formally described by IEEE Standard 1275-1994, is the first non-proprietary open-standard boot firmware that is usable on different processors and buses. The Open Firmware specification defines:

- A processor-independent *device interface* that allows an add-in peripheral card to identify itself and to supply a single boot driver that can be used, unchanged, on any CPU using Open Firmware.
- A *user interface* with powerful scripting and debugging capabilities.
- A *client program interface* that allows operating systems and their loaders to make use of Open Firmware services to assist in the configuration and initialization process.

FirmWorks has *complete* Open Firmware implementations for a range of system configurations.

- Most popular CPUs including:
 - ARM
 - Intel 80x86
 - MIPS®
 - PA-RISC
 - PowerPC™
 - SPARC™
 - 680x0

FirmWorks's Open Firmware implementation is extremely portable. If your CPU type is not listed, please call for current availability information.

- Buses including:
 - PCI
 - ISA
 - SBus
 - VME
- Operating systems including:
 - AIX
 - LynxOS
 - Mac™ OS
 - NetBSD
 - Solaris
 - VxWorks
 - Windows NT®

FirmWorks's Open Firmware implementations are available *now* and comply with:

- *IEEE Std 1275-1994 Standard for Boot (Initialization Configuration) Firmware: Core Requirements and Practices*
- Applicable *IEEE 1275* CPU Binding Specifications
- Applicable *IEEE 1275* Bus Binding Specifications
- Applicable *IEEE 1275* Recommended Practice Documents

The core technology of FirmWorks's Open Firmware implementations is a small, fast, efficient Forth micro-

kernel enabling powerful, interactive debugging and automated system configuration.

This mature code is based on a field-proven implementation and can be easily ported to your specific system architecture.

FirmWorks Implementation Features

- Provides machine-independent configuration and booting support for plug-in devices.
- Provides a framework for plug-in drivers so that user-installed peripherals boot "out-of-the-box".
- Provides a standard set of firmware functions for use by "client programs": operating systems, loaders, diagnostics, etc.
- Provides complete run-time configuration information to client programs.
- Contains a full ANS Forth interpreter for interactive programming, debugging and configuration.
- Off-the-shelf drivers are available for many commonly-used devices. (And, if we don't have what you need, we can create it for you easily.)
- Many experience-driven debugging and programming extensions that will enable you and your customers to be more productive.

Technical Support Available

- Telephone support.
- Consulting services.
- Training
 - At FirmWorks.
 - At your site.
- Porting to your system.
 - Modifications for your architecture.
 - Creation of custom drivers.
- Bring-up assistance with new systems.

Licensing

Source code licenses and object code distribution licenses are available.

For More Information

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