

ami | Fabric™

Fabric Management Firmware

Key Features

- Linux® Development Kit (LDK)
- Support for IPMI, including LAN and serial interface support
- Component Manager: features RAID, SAS/IT support and complete PCI switch management API
- NVMeMI with I2C and MCTP/I2C
- PCI Root Complex support
- Admin-level NVMe drive management via PCI-Express (PCIe) standard
- Web UI now updated with PCI Switch Management, NVMeMI and drive management capabilities
- Remote update capability for BMC and drive firmware
- Technology Pack Features
- Redfish™ 1.1 support
- Intel® RSD 2.1 support
- AMI® Composer™ Pod Management Software

A powerful firmware / software stack combining fabric management capabilities like PCIe switch and drive management together with all Redfish™ and IPMI 2.0-defined BMC management tasks

AMI® Fabric™ Fabric Management Firmware from AMI is a powerful firmware/software solution combining the complete functionality to support fabric management, like PCIe switch management and NVMe/drive management, with that of a baseboard management controller (BMC).

A key aspect of AMI Fabric is its inclusion all of the BMC management tasks as defined by Redfish™ and IPMI 2.0, along with Serial over LAN (SOL), complete out-of-band (OOB) connectivity, an extensive web UI and an advanced component management framework to support PCIe Switch based management, NVMe support, RAID/IT support and support for industry-standard drivers.

For remote access to fabric management tasks, AMI Fabric provides a secure embedded web server. It also features Secure-Shell (SSH)-based SOL for remote access, in addition to standard IPMI-based SOL. AMI Fabric support is available on all of the advanced System-On-Chip (SoC) devices from the industry's leading manufacturers.

AMI Fabric is based on the proven, highly stable and industry-leading MegaRAC® SP-X stack with which it shares a core codebase. Like SP-X on which it is founded, AMI Fabric firmware provides a high level of modularity, with the ability to easily configure the complete firmware / software stack by selecting and deselecting features that are available in package form.

Many stack components and OEM-level changes can be completely customized and enhanced using MegaRAC® Development Studio (DS), an Eclipse™-based Integrated Development Environment (IDE) for server management that gives developers the ability to customize the stack, build and debug all at once.

AMI Fabric Core Features

Stack Design and Packaging

- Robust PCIe switch management
- Each feature of AMI Fabric is built and available as a separate package, for a high level of stack modularity
- AMI Fabric offers the capability to generate customized source / binary packages*
- Each package contains clearly-defined, separate common and hardware-specific modules for easy portability across various SoC/hardware platforms
- A new Linux® kernel and boot loader (U-BOOT) base make use of the advanced features / components available in the latest release

**Dependent on feature licensing*

For more information please visit the request form at ami.com/fabric



MegaRAC Development Studio (DS) Integrated Development Environment (IDE)

- MegaRAC DS is a unified IDE used to customize, build and debug porting and development efforts in AMI Fabric and other MegaRAC platforms
- Customization, modification and addition of OEM features are possible even on the binary image
- Stack configuration is extremely simple and based on the specific SoC and hardware platforms
- Features sophisticated automated test tools for feature testing and validation
- A large repository of standard devices is included - to support nearly any hardware platform
- Provides an intuitive, GUI-based mechanism to quickly and easily extend support for new devices
- FRU generation and management is integrated within MegaRAC DS

The AMI Fabric Web Interface

AMI Fabric provides an intuitive, rich content-based web interface that makes management of the service processor from a single control point incredibly easy. Web sessions are established with user-based authentication and secured with the https secure web communication protocol. Features accessible via the web interface in AMI Fabric include:

- Dashboard & system information
- FRU information
- Platform health
- Configuration
- Remote control
- Maintenance and firmware update
- PCIe Switch configuration management
- NVMe controller management
- RAID/IT management, if applicable
- Drive management

AMI Fabric Features and Specifications

Standard Linux® kernel

- Includes complete peripheral support as required on fabric management node

IPMI 2.0 Support

- AMI Fabric features an enhanced IPMI 2.0 implementation
- Advanced node management via IPMI
- Support for overwriting / modifying standard command processing
- Complete platform / sensor porting support
- Support for LAN and serial interface
- Dynamically pluggable transport layers (both LAN and serial)
- GUID creation
- Serial over LAN (SOL)

Component Management Framework

- PCIe switch fabric management
 - Complete fabric management API support for Microsemi PCIe Switch
- NVMe controller management
 - Basic management support (I2C-based)
 - Complete management interface (MI) support (I2C or MCTP/I2C-based, as applicable)
- RAID/IT controller management

NVMe Driver Management (through PCIe standard)

- Enables NVMe administrator command support via PCIe

Enhanced User Interface

- Rich, dynamic HTML5-based web front end
- PCIe switch configuration management support
- NVMe basic management / MI configuration support
- RAID/IT configuration support
- Drive management support

Services

- Configure services from a single access point
- Support for Windows® Active Directory, OpenLDAP, RADIUS, Novell DS
- Support for industry-standard discovery methods, including WS-DISCOVER, UPNP, SLIP, DDNS, RMCP ping
- Support for industry standard name services, including NMBD, DDNS, WINS
- SP stack-level firewall support and IPMI-based firewall service

Authentication and Security

- Hardware-based encryption support, integrated with OpenSSL (hardware-dependent feature)
- SSL-based single-point, configurable encryption support for all out-of-band network access
- Unified authentication via PAM
- SMTP-AUTH support (LOGIN, PLAIN, and CRAM-MD5 only)
- Security auditing to identify and fix potential security holes
- Secure password reset

Auto-Recovery and Fault Tolerance

- Fail-safe configuration storage
- Redundant firmware/fail-safe image boot (may require hardware support)
- Shared MegaRAC SP-X core enables auto-recovery of services with near-zero downtime
- Ability to restore factory default configurations

Abstraction Layers

- MegaRAC class library to support object-oriented porting projects
- Abstraction layer to unify critical shared resource usage across various applications and services
- Abstraction layer can hide OS/system level details from the applications and libraries for easy OS migration
- Network Connection Management Library (NCML) abstracts network-related maintenance from individual system services for uniform method of network configuration and connectivity to all services

Extended Technologies

- NTP support
- IPv6 protocol support
- Industry-standard web servers, including Lighttpd
- VLAN interface support
- Encrypted flash support

Runtime Debug Support

- Configurable detailed log for each service integrated in the final image, for simple issue resolution in the field
- Remote debug support for flashed images

Firmware Upgrade

- Enhanced, fast, reliable firmware upgrade with YAFU and web UI

For more information please visit the request form at
ami.com/fabric



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