

MegaRAC® SP-X for Cavium®

System-on-Chip Remote Management Toolset



Powerful software / firmware server management solution based on industry standards like IPMI 2.0, SMASH, Serial over LAN (SOL) and key serviceability features like remote presence, CIM profiles and advanced automation.

MegaRAC® SP-X for Cavium is a powerful management stack enabling fast, realistic and high-quality remote management of server systems and now includes support for platforms based on the Cavium® ThunderX™ multiprocessor architecture, a 64-bit ARMv8 data center & cloud processor family.

Powering remote KVM management using MegaRAC SP-X, administrators enjoy complete Out-of-Band, OS-independent server control including power management, KVM redirection, Virtual Media and other features widely used by the world's leading server OEMs and ODMs.

AMI's third generation of MegaRAC® SP-X service processor firmware now features support for Cavium-based solutions, which are geared for the high performance computing (HPC), enterprise and scale out server market segments.

PLATFORM MANAGEMENT

MegaRAC SP-X for Cavium sensor management is based on the Intelligent Platform Management Interface (IPMI) standard and RESTful web APIs, which defines sensor management and command-line access to the platform based on Serial over LAN (SOL).

MegaRAC SP-X also implements support for the Data Center Manageability Interface (DCMI). DCMI focuses on the needs of High Density Data centers, selecting a frequently utilized sub-set of IPMI technologies and adding power and cooling management capabilities.

The DCMI specifications define a uniform set of monitoring, control features, and interfaces that target the common and fundamental hardware management needs of server systems that are used in large deployments within data centers.

REMOTE KVM

Virtual KVM ensures full graphical console redirection over IP at any operational state of the server. AMI's compact, highly efficient KVM server does not waste any significant CPU cycles and supports all possible resolutions and color depth supported by the hardware engine.

The user interacts with the KVM client via standard HTML5 inherent to the web browser – no special client software needs to be installed on the remote computer.

VIRTUAL MEDIA

Virtual Media (vMedia) enables software installation from a remote location at any time, including “bare-metal” hardware state. MegaRAC SP-X redirects CD/DVD, HDD, Floppy drive/ISO image or USB-Key based storage to the managed server by emulating a local storage. The vMedia server supports USB 2.0 (480Mbits) for fast device redirection, and includes the logical drive (partition-based) redirection.

In addition, the images on extended BMC storage can also be redirected to emulate the storage devices on the server. The extended BMC storage is supported for SD/eMMC and remote network share, accessible to the BMC.

DMTF STANDARDS & WEB SERVICES

MegaRAC SP-X supports the latest standards from the Distributed Management Task Force (DMTF), including CIM/CIMOM, SMASH/CLP and WS-Management. A CIM Object Manager (CIMOM) provides a central repository for management structures and objects, which can be added, modified or extended by OEMs.

HIGHLIGHTS:

- **Highly Modular:** Each feature built as a separate package, source or binary
- **Improve RAS:** Provides robust Reliability, Availability and Serviceability (RAS)
- **Supports Key Industry Standards:**
 - Compliant with DMTF CIM Profiles
 - CIM Object Manager (CIMOM)
 - Virtual KVM and Virtual Media
 - IPMI 2.0, version 1.1 compliant
 - DCMI 1.0 & 1.5
 - Power Management Support
 - SMASH/CLP
 - WSMAN
 - Web 2.0
 - IPv6 Network Protocol Support
 - SSI Compute Blade Support
 - MCTP (over I2C) Support
 - HPM Support

KEY FEATURES

Each feature in MegaRAC SP-X for Cavium is available and built as a separate package. Developers can generate customized source or binary firmware packages for customers, depending upon feature licensing. Each package will have clearly defined, separate common and hardware-specific modules to achieve easy portability across various SoC and hardware platforms.

MegaRAC SP-X for Cavium features flexible configuration capabilities offering multiple platforms support with a single image, dual image support and multiple BMC instance emulation for multi-server management using a single BMC.

FLEXIBLE SYSTEM CONFIGURATION SUPPORT

- Multiple platforms support within a single image
- Dual Image support
- Multiple BMC instances emulation for multi-server management using a single BMC (multi-node)

SYSTEM INTERFACE SUPPORT

- SSIF, IPMI, LAN, USB and I2C

IPMI 2.0-BASED MANAGEMENT

- BMC stack with a full IPMI 2.0, version 1.1 implementation
- DCMI Support
- Customizable sensor management
- Overwriting standard command processing
- Dynamically Pluggable Transport Layers
- GUID Creation
- Highly optimized for faster performance

MULTI MEDIA REDIRECTION

- CD/FD/HD redirection

KVM/MEDIA REDIRECTION

- Auto recording video
- Auto resizing
- SOL recording

ENCRYPTED PASSWORD SUPPORT

- OPEN SSL
- RMCP/RMCP+
- SSH
- DIRECT LDAP/OPEN LDAP
- Sophisticated user management

EVENT LOG & ALERTING

- Read Log events
- Sensor readings SNMP trap
- SNMP MIB (requires customization)

SUPPORT FOR STANDARD SERVICES

- Industry Standard Discovery Methods (UPNP, DDNS, RMCP, Ping)
- Support for Windows Active Directory, RADIUS, and LDAP

POWER MANAGEMENT

- Remote power On/Off control Reset
- Graceful shutdown

FIRMWARE UPGRADE

- TFTP support

UTILITY SUPPORT

- YafuFlash
- VMCLI

CAVIUM THUNDERX BOOT SEQUENCING SUPPORT

COMMON INFORMATION MODEL (CIM)

- CIM Object Manager (CIMOM)
- True Object Manager with CIM class handling Creating class, instance and working with the instances
- Core support for all DMTF profiles Extendible for additional OEM profiles

WEB INTERFACE SERVER SUPPORT

- GoAhead
- LIGHTTPD
- Telnet

TOOLS

- MegaRAC Development Studio
- Core customization - Web and sensors
- Customization to existing core
- Platform Porting
- Building and debugging during porting / development



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