

MEGARAC® SP-X

System-on-Chip Remote Management Toolset



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

MegaRAC® SP-X is a powerful management solution for responsive, high-quality remote management of server systems from anywhere in the world. With MegaRAC SP-X, administrators enjoy complete out-of-band, OS-independent server control including power management, KVM redirection and virtual media.

The latest generation of MegaRAC SP-X provides an even greater level of modularity than previous versions. Core firmware functionality, portability and ease of use are also significantly enhanced. Instead of acquiring just a monolithic software package, developers are now able to easily configure the software by selecting specific features and provide packages to their ODM partners with increased differentiation.

The new Feature Pack architecture allows developers to independently evaluate recently-added or upcoming features, contained in an optional module separate from the main SP-X core. This empowers them to choose the best time to enable these new features in the existing management solution. Since licensing and intellectual property information can be limited to a package, this modular approach ensures intellectual property protection.

Other improvements include a new Linux® kernel base, new automated test tools and easier portability and customization within the MegaRAC® Development Studio (DS) toolset.

MegaRAC SP-X is widely used by the world's leading server OEMs and ODMs. It supports Baseboard Management Controllers (BMCs) from all major silicon manufacturers, including ASPEED (Emulex), as well as non-x86 server architectures such as IBM POWER8®, Cavium ThunderX®, Applied Micro X-Gene™ and similar 64-bit ARM processors.

PLATFORM MANAGEMENT

MegaRAC SP-X sensor management is based on the Intelligent Platform Management Interface (IPMI) standard and RESTful web APIs like Redfish™. Management actions and interaction with the platform are through command-line access via the Serial over LAN (SOL) protocol.

MegaRAC SP-X IPMI modules offer enhanced features and allow OEMs to utilize standard command processing or overwrite it with selected IP versions. 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 to the firmware stack.

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 conserves significant CPU cycles and supports all possible resolutions and color depths

HIGHLIGHTS:

Highly Modular Architecture

- Each feature built as a separate package, source or binary

Hardware-specific Modules with Support for SoCs from Leading Manufacturers:

- ASPEED® (Emulex) Pilot 3 & 4
- ASPEED AST2300/1050, AST2400/1250 & AST2500/2520

HTML5 Support

- New Web UI
- HTML5-based KVM and vMedia; no Java™ applet required

Support for 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 / APML
- Power Management Support
- SMASH/CLP
- WSMAN
- Web 2.0
- IPv6 Support
- SSI Compute Blade Support
- Redfish™ (RESTful API) Support
- MCTP (over I2C) Support
- HPM Support

from the hardware engine. The user interacts with the KVM client via a standard HTML5 web browser; no special client software needs to be installed on the remote system.

VIRTUAL MEDIA

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

FOCUS ON MODULARITY AND PORTABILITY

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

FLEXIBLE SYSTEM CONFIGURATION SUPPORT

- Support multiple platforms within a single image
- Dual image support
- Emulation of multiple BMC instances for multi-node management with a single BMC

SYSTEM INTERFACE SUPPORT

- KCS, BT, SMBus, Serial, LAN and USB

MEDIA REDIRECTION

- Simultaneous floppy and CD/DVD redirection
- Multiple instances of each device type supported simultaneously
- Fast USB 2.0-based CD/DVD redirection; typical speed greater than 12x over CD (hardware-dependent)
- USB Key support
- PS2 keyboard & mouse support (SoC-dependent)
- Remote KVM and vMedia on macOS™ client
- Logical drive redirection (partition-level)
- Remote KVM and vMedia on 64-bit Linux®/Windows®

EXTENDED BMC STORAGE

- SD/eMMC support on BMC to extend storage capacity
- Multi-partition SD/eMMC support
- Remote network share as extended storage for BMC

IMAGE REDIRECTION

- Use images on CD/FDD/HD to emulate storage device on extended BMC storage (SD/eMMC or remote network share) on server
- Secured/authentication support for remote network share

SERVICE BASED LICENSING

- Runtime Service Activation based on uploaded license key
- Control and manage individual services using separate license keys

POWER MANAGEMENT

- Support for Intel® ME Power Management and APM from AMD

AUTHENTICATION & SECURITY

- SSL-based encryption
- Latest OpenSSL with updated security patches
- Single-point configurable encryption support for all network based access
- SMTP-AUTH support (Login, Plain, and CRAM-MD5 only)
- Restricted single-port access to all web, KVM and vMedia services

IPMI 2.0-BASED MANAGEMENT

- BMC stack features full IPMI 2.0 implementation, version 1.1
- DCMI support
- Customizable sensor management
- Ability to overwrite standard command processing with OEM versions
- Dynamically Pluggable Transport Layers
- GUID Creation
- Optimized for faster performance

EVENT LOG & ALERTING

- Ability to read/review log events
- Sensor readings via SNMP trap
- SNMP MIB available (requires customization)

INDUSTRY-STANDARD SERVICES

- Discovery methods: UPNP, DDNS, RMCP Ping
- DDNS Name Services
- Support for Windows Active Directory, RADIUS, and LDAP

SOPHISTICATED USER MANAGEMENT

- IPMI-based user management
- Robust security with SSL (HTTPS)
- Multiple user permission levels and profiles

FIRMWARE UPGRADE

- HPM support
- Command line firmware upgrade with YAFU

COMMON INFORMATION MODEL (CIM)

- CIM Object Manager (CIMOM)
- True Object Management with CIM class handling
- Creating and modify classes and instances
- Core support for all DMTF profiles; can be extended for additional OEM profiles

SMASH & CLP SUPPORT

- SSH-based Serial over LAN (SOL)
- Server power management via CLP commands
- Support for all DMTF profiles
- Complete command support
- Customizable parser simplifies future grammar updates
- Dynamic target discovery
- Firmware update capability
- Role-based authentication and authorization
- Output filtering capability
- Configurable profile-mapping: CIM-Methods to SMASHCLP command mapping
- OEM command and target support

WS-MANAGEMENT (WSMAN) SUPPORT

- Supports WS-Management and WS-CIM
- Rich set of SDK tools for OEM extensions
- Organic code with web server-agnostic library
- Integrated GoAhead and LIGHTTPD web server support
- HTTP / HTTPS support
- Complete WSMAN support includes Discovery, Enumeration, Get, Put, Subscribe and Eventing
- Rich client library support for C, Java™ and JavaScript®

WEB INTERFACE MULTILANGUAGE SUPPORT

- Complete Unicode support
- Simultaneous multilanguage support for multiple clients

WEB-BASED CONFIGURATION

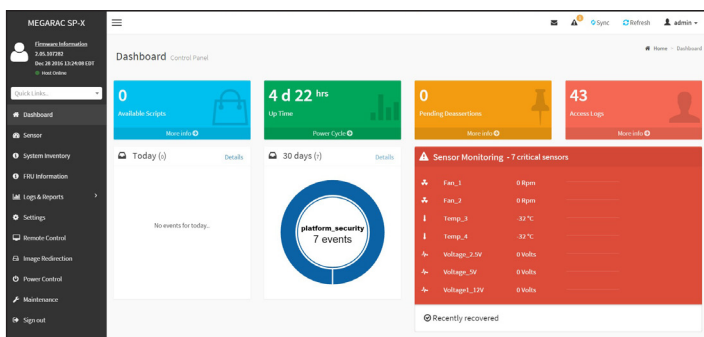
- Complete configuration via web-based user interface
- Fail-safe firmware upgrade capability

TOOLS & CUSTOMIZATION OPTIONS

- Extend and customize with the MegaRAC Development Studio (DS) Integrated Development Environment
- Core customization of web and sensors
- Ability to customize the existing core
- Platform porting support
- Access to build and debug tools during porting and development

FEATURES PACK (NEW)

- MCTP over PCIe Support
- Enhanced hardware encryption engine support
- QUADIO SPI support
- SPS 4.0 compliance support
- LLDP support
- SMBUS block read/write support
- eSPI support
- PCIe shared memory support
- Node manager (ME) firmware update support
- Multi SOL support
- HTML5-based automation engine



MegaRAC SP-X User Interface - Main Dashboard

For more information:

<https://ami.com/products/remote-management/service-processor/>

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