EPYC™ System Management Interface (E-SMI) In-band Library
Release v3.0

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1　EPYC™ System Management Interface (E-SMI) In-band Library

NEW! E-SMI library beta 4.1.2 is now available

The EPYC™ System Management Interface In-band Library, or E-SMI library, is a C library for Linux that provides a user space interface to monitor and control the CPU's power, energy, performance and other system management features.

1.1　Changes Notes

1.1.1　Highlights of release v4.1.2

- Bug fix release

1.1.2　Highlights of release v4.1.1

- Clang compiler is supported.

- Some of the bugs are fixed.

- tool option is added to read the HSMP driver version.

1.1.3 Highlights of release v4.0.0

- AMD Family 0x1A and model 0x00-0x1f processors are supported in this release.

- Any of the hsmp/amd_energy/msr_safe/msr driver can be used to monitor energy.

1.1.4 Highlights of release v3.0.0

- AMD MI300 processors are supported in this release.

- Library is modified to support platform specific check in each message in an organised way.

- tool options are modified to show valid input values

1.1.5 Highlights of minor release v2.1

- Library is updated to align with changes in the processor spec

1.1.6 Highlights of release v2.0

- Supports new HSMP protocol version 5 messages, defined for Family 19h Model 10h - SP5

    - New APIs are added for platform features
    - esmi_tool is update with platform specific features

1.1.7 Highlights of release v1.5

- Supports ioctl based implementation of hsmp driver with support for follwoing new APIs

    - Set XGMI link width for 2P connected systems
    - Set LCLK dpm level for NBIO id
    - APB Disable and Enable messages

1.1.8 Highlights of minor release v1.2

- Support to compile ESMI In-band library as static

- Support for new system management features in tool and library, such as

    - Get SMU Firmware version
    - Get PROCHOT status
    - Get clocks
        * CPU clock frequency limit
        * Data Fabric Clock(fclk),
        * DRAM Memory Clock(mclk) and
    - Provide maximum DDR bandwidth(theoritical) & DDR bandwidth utilization

- Add more options and improve tool's console output for readability

1.1.9 Highlights of minor release v1.1

- Support for creating RPM and DEB packages

- Auxiliary APIs to provide system topology

- An API to read all the Energy counters on the CPU at once.

- Single command to create doxygen based PDF document

- Updated e_smi_tool supporting all the above information

- Cosmetic changes to the tool

1.1.10 Highlights of major release v1.0

- Power

    - Current Power Consumed
    - Power Limit
    - Max Power Limit

- Performance

    - Boostlimit

- Energy

    - Energy Consumed

- e_smi_tool, user application supporting all the above information.

1.2 Specifications

1.2.1 Processors:

Target released for AMD EPYC™ processor Family 19h, model 0h-1Fh, 30h-3Fh, 90h-9Fh, A0h-AFh and Family 0x1A model 0h-1Fh.

1.2.2 Operating Systems

AMD ESMI In-band library is tested on following distributions

- Ubuntu 18.04, 20.04

- SUSE SLES 15 and

- RHEL 8.1

1.3 Dependency

This new e-smi release works well with `amd_hsmp` driver version 2.4. Not all features will work with version $<$ 2.4. Setting cpu rail iso frequency policy, df c-state enabling, xGMI pstate range setting etc will only work with 2.4 version of amd_hsmp driver.

1.4 Resources and Technical Support

1.4.1 Resources

- Documentation: https://github.com/amd/esmi_ib_library/blob/master/ESMI_↩
  Manual.pdf

- Source code: https://github.com/amd/esmi_ib_library

1.4.2 Support

Thank you for using AMD ESMI In-band Library. Please use ESMI In-band Support for bug reports, support and feature requests.

1.4.3 Known Issues

- In creating package if "make install" is used previously with "sudo", need to create package with sudo permission, "sudo make package", else permission denied error is popped.