

Aptio® V Key Value Adds for the Next Generation Intel EP Platform



A powerful, complete UEFI solution, Aptio® V delivers high modularity, flexibility and customization with its industry-class features that spans over multiple PC market segments.

INTRODUCTION TO APTIO V

AMI's Aptio® V is a solid foundation for the development of the next generation servers due to its stable, singular core and design flexibility. As the successor of legacy BIOS, Aptio V is equipped with features that comply with industry standards and support complete server platforms, allowing for a smooth transition from legacy BIOS to UEFI. Serving as a complete UEFI solution that is coupled with worldwide engineering support, Aptio V is consistently known as the BIOS of choice for cloud and OCP (Open Compute Project) motherboards.

THE APTIO ADVANTAGE

Standardized across many platforms, Aptio V supports multiple interfaces such as PCIe, ACPI, SMBIOS, TPM, NVMe, UEFI and PI.

Aptio V gives customers the ability to customize the PCIe infrastructure through many AMI-exclusive features. PCIe customers commonly want to change the PCIe infrastructure and Aptio V provides a graphical UI that allows customers to make quick changes. This in turn allow customers to quickly port their changes that require a lot of source modification.

Aptio V provides centralized ACPI module and support with an abstract interface allowing easy changes and additional OEM ASL code. In addition, with its centralized SMBIOS module and support, AMI provides a clean method of allowing OEMs to make changes to their SMBIOS.

An active member in a number of industry consortiums, AMI authored the TPM eModule code with multiple OEM hooks for customization as well as the NVMe eModule. The TPM eModule offers complete support for TCG 1.2 and TCG 2.0 specifications and Aptio V supports discrete TPMs along with Intel® fTPM, AMD PSP and cTPMs. The NVMe eModule provides complete NVMe support alongside AMI-specific features such as legacy boot and password support.

AMI is a board member of the UEFI development community and is constantly working to keep up with the latest UEFI and PI specifications to ensure compatibility and support. With this expertise, AMI is able to assist customers that have specific requirements in the early stages of the development cycle.

INTEGRATED SERVER SYSTEM

As an integrated server system, Aptio V serves as a comprehensive solution for board and system level firmware and the leading BIOS and BMC firmware in the industry. At the system level, the BIOS and manageability features are integrated to create a readily deployable solution on Intel® CRB boards. OEMs/ODMs are provided with high customization capabilities to create a platform that not only allows greater manageability, but also adheres to their desired specifications. AMI's in-house BIOS/BMC and corresponding tools are integrated to present Tier 1 class server features that allows its customers to develop Tier 1 EP and EX server features.

HIGHLIGHTS:

- **Modular Core Design**
- **Supports Multiple Silicon Vendors**
- **Single UEFI Core**
- **Standards Based Development**
- **Complete UEFI Solution**
- **Superior Development Tools**
- **Microsoft® Windows® 10 Support**
- **UEFI 2.5 Compliant**
- **Works alongside various deployment utilities designed for Aptio**
- **Full Redfish support**
- **Robust RAS support**
- **Local and remote BIOS update**

ROBUST RAS SUPPORT

Extensive robust RAS support is provided through AMI BIOS and BMC with features like:

- Live Post for video in one second to show errors early in initialization
- Last boot error handling & extensive error characterizations
- CPU and Memory configuration errors
- Failed component isolation

AMI BIOS: IPMI 2.0 FEATURES

- Multiple BMC Interfaces
 - KCS, BT, USB, SSIF
- System Event Log (SEL)
 - POST Error Logging
 - Runtime Error Logging
 - POST Progress Code Log
- BMC Time Stamp Sync
- BMC Self Test
- Serial MUX Control
- Fault Resilient Boot
- Synchronize ACPI Power State with the BMC
- Remote Boot Order Control
- LAN Configuration Management
- FRU/SDR Setup Display

SYSTEM INTEGRATION, CONFIGURATION & DEPLOYMENT

- Full Redfish support (version 1.0.3)
- Remote management of all BIOS settings
- Remote OS deployment
- Remote BIOS and OS updates
- Full JSON support for OEMs to build their own management tools
- Configuration cloning and migration

LOCAL AND REMOTE BIOS UPDATE

- No external tools required
- Secure BIOS update
- System can be recovered even when flash is corrupted or empty
- Automatic recovery upon FRB3 timer expiration
- Save/restore user configuration across firmware updates
- Integrated features of AMI BIOS and AMI BMC firmware

INDUSTRY-STANDARD FEATURES

To address the needs of the market, Aptio V is up-to-date with the latest industry standard features and supports a complete server silicon portfolio, including Intel. Aptio V supports Intel's next generation EP platform POR features with a configurable feature set. These features include:

- Enumeration of CPU sockets, memory and PCIe subsystem
- Extensive RAS and error handling
- Native Intel Support: BootGuard, TxT, Platform Trust Technology (PTT)
- NVDIMM module support
- Storage BIOS features
 - Intel® Asynchronous DRAM Refresh (ADR)
 - Intel® Non-Transparent Bridge (NTB)
 - Intel® Volume Management Device (VMD)
 - NVMe SW RAID (VROC)
 - Intel® QuickAssist Technology (QAT)

¹ Graphics chip specific code required from vendor

² Requires Si support



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