

## Design. Customize. Build.

MergePoint EMS advanced development package (ADP) is a software development kit (SDK) that decreases time to market for the OEMs and ODMs by facilitating the server platform customization and addition of OEM-specific features to MergePoint EMS. ADP allows OEMs and ODMs to architect and implement differentiating manageability features, while minimizing the engineering development time needed to enable standard manageability functions.

ADP is delivered in the form of a customized release targeted at, and optimized for, an application-specific integrated circuit (ASIC) platform, but the programming interface and most features are common across platforms. This enables engineers to easily move from one platform to another, leveraging the expertise acquired and increasing engineering efficiencies. MergePoint EMS ADP for a given platform is a complete SDK and includes firmware libraries, complete build environment, development utilities and documentation.

**DIFFERENTIATE WITH YOUR PROPRIETARY FEATURES.** The Avocent ADP is a software development kit that enables the addition of proprietary features such as OEM-specific commands, communication channels and sensors to the Avocent Intelligent Platform Management Interface (IPMI) 2.0 firmware package. The Avocent ADP allows you to architect and implement differentiating manageability features, while minimizing the amount of engineering development time needed to enable standard, manageability functions.

**EASY PLATFORM-SPECIFIC CUSTOMIZATION.** The Avocent ADP includes various tools and design guides to facilitate platform-specific customization. The System Integration Guide specifies the required system hardware and BIOS hooks necessary to support each manageability feature. A comprehensive pin connection guide, bus assignment guide, supported

parts list and other information relevant to platform integration are also included. Configuration tables capture platform-specific configuration information.

**EXTENSIBLE ARCHITECTURE.** Going beyond platform-specific customization, the Avocent ADP enables the implementation of proprietary features and allows these features to be integrated with the standard Avocent IPMI 2.0 firmware package. The Avocent ADP allows custom functions to be plugged in at various levels. Proprietary communication channels and OEM-specific commands can be created. Custom sensor drivers can be added along with unique sensor call-back actions. Proprietary tasks and interrupt handlers can also be created.

**CLEAR DESIGN GUIDES.** Taking full advantage of the Avocent IPMI 2.0 firmware's extensible architecture requires an understanding of the firmware framework. The Avocent ADP includes documentation that provides the familiarization of the Avocent IPMI 2.0 firmware architecture necessary to enable the design of new functions. The Avocent ADP also includes the build environment and tools to develop, compile and link new functions into the Avocent firmware.

**TAKE ADVANTAGE OF INTELLIGENT MANAGEMENT DESIGNS.** Avocent's OEM solutions can help reduce your overall engineering and build/bill of material (BOM) costs while accelerating time-to-revenue with innovative products and services. You can start with extensible firmware and software then grow by adding appliances and management consoles that are fully integrated. By incorporating the Avocent three-tiered intelligent management design into your business, you are able to differentiate in order to increase revenues, while future-proofing your customers' environments.

## Benefits

### Platform-Specific Customization:

- Pin and bus assignments
- Voltage A/D inputs
- Thermal inputs
- Fan monitoring and control signals
- Discrete sensor inputs (chassis intrusion, processor thermal trip, power supply status and error signals)
- Fault LED outputs
- 12C bus usage
- Reset and power control signals
- Sensor and device types, addresses and field replaceable unit (FRU) mappings
- Sensor handling
- Sensor scanning
- Thermal monitoring and control schemes
- Event-based LED indicators
- Handling of abnormal sensor readings
- Generate sensor data records (SDR) and FRU entries using provided utilities

### Add Proprietary Features:

- Communication channels
- IPMI commands
- Sensors and sensor handling actions
- Tasks and interrupt handler

# Specifications

## TABLEMAKER5 FEATURES

Provided with the Avocent ADP is a comprehensive, GUI-based utility called Tablemaker5. This utility is an integrated tool set for configuration and customization of the Avocent IPMI 2.0 firmware. Tablemaker5 provides the ability to:

- Set up pin and peripheral definitions
- Set up address offsets for private storage, IPMI device IDs, SDR, FRU and SEL
- Define I/O records for peripheral configuration of IPMI functionality
- Bind logical identifiers with physical devices
- Expand firmware functionality with OEM-specific functions
- Convert physical device to logical identifier mapping for all utility outputs into binary files for the build process
- Modify IPMI device ID data to brand FW with OEM-specific manufacturing and product information

## ADP CONTENTS

Avocent IPMI Firmware Libraries

### Build Environment

- Develop, compile and link proprietary features

### Development Utilities

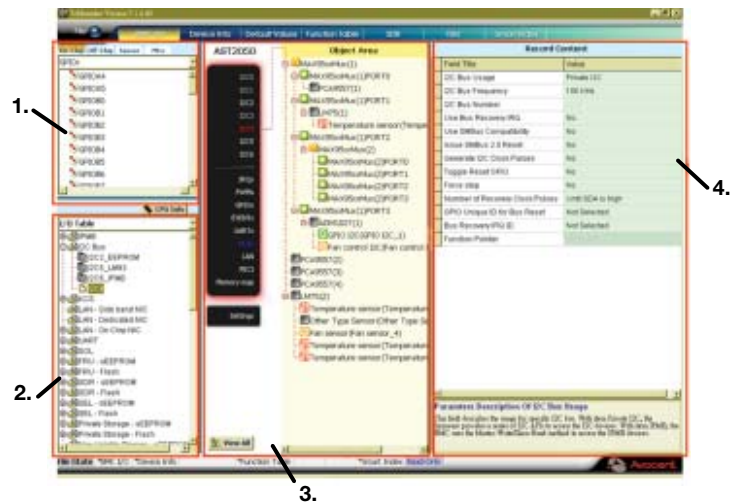
- Firmware update
- SDR generator
- SDR and FRU loader
- BMC configuration
- Test utilities
- Verify features

### Documentation

- Tablemaker5 Guide: describes basic operations including generation of BMC I/O Table (including I/O Table and I/O Sensor Table), device info, default values table, function table, SDR, FRU and smart index; also contains detailed description of table editing and definition for each configuration field
- Firmware Programming Guide: architectural overview and feature extensibility methodology

### Supported Silicon Platforms

- ASPEED AST2050
- Nuvoton WPCM450



## TABLEMAKER5 -I/O TABLE EXAMPLE

1. To configure IPMI I/O sensors, drag and drop objects from the Object Selection area to the Diagram area and connect to the appropriate bus.
2. All IPMI I/O Table and I/O Sensor Table objects are displayed in a tree structure.
3. Diagram area shows the platform and all the connected peripheral components one I2C bus at a time.
4. Detailed record content of the object currently selected in the I/O Table is displayed.

## About Avocent Corporation

Avocent is a global provider of IT infrastructure management solutions for enterprise data centers, small and medium businesses and branch offices. With more than two decades of experience, product innovations and strategic acquisitions, Avocent is a leader in advancing digital, embedded, wireless and mobile technologies.