

American Megatrends Inc.
Award Software International Inc.
Dell Computer Corporation
Intel Corporation
Phoenix Technologies Ltd.
SystemSoft Corporation

Desktop Management BIOS Specification

Version 2.00.1

July 18, 1996

This specification has been made available to the public. You are hereby granted the right to use, implement, reproduce and distribute this specification with the forgoing rights, at no charge. This specification is, and shall remain, the property of American Megatrends Inc. ("AMI"), Award Software International Inc. ("Award"), Dell Computer Corporation ("Dell"), Intel Corporation ("Intel"), Phoenix Technologies LTD ("Phoenix") and SystemSoft Corporation ("SystemSoft"). No license under any patents of other intellectual property rights are granted either expressly, or implied, by the publication of this document by AMI, Award, Dell, Intel, Phoenix, and SystemSoft. **NEITHER AMI, AWARD, DELL, INTEL, PHOENIX, NOR SYSTEMSOFT MAKE ANY REPRESENTATION OR WARRANTY REGARDING THIS SPECIFICATION OR ANY PRODUCT OR ITEM DEVELOPED BASED ON THIS SPECIFICATION. USE OF THIS SPECIFICATION FOR ANY PURPOSE IS AT THE RISK OF THE PERSON OR ENTITY USING IT. AMI, AWARD, DELL, INTEL, PHOENIX, AND SYSTEMSOFT DISCLAIM ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND FREEDOM FROM INFRINGEMENT. NEITHER AMI, AWARD, DELL, INTEL, PHOENIX, NOR SYSTEMSOFT WILL BE RESPONSIBLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL OR OTHER DAMAGES RELATING TO THE USE OF THIS SPECIFICATION. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, NEITHER AMI, AWARD, DELL, INTEL, PHOENIX, NOR SYSTEMSOFT MAKE ANY WARRANTY OF ANY KIND THAT ANY ITEM DEVELOPED BASED ON THIS SPECIFICATION, OR ANY PORTION OF IT, WILL NOT INFRINGE ANY COPYRIGHT, PATENT, TRADE SECRET OR OTHER INTELLECTUAL PROPERTY RIGHT OF ANY PERSON OR ENTITY IN ANY COUNTRY.**

Document Information

The softcopy version of this specification, in Microsoft Word for Windows 95 version 7.0 format, is available as DMIB20.DOC via ftp://ftp.ptltd.com/pub/phoenix_docs/dmib20.doc or from the Phoenix Technologies World Wide Web site at <http://www.ptltd.com/techs/specs.html>.

Document Revision History

Version 2.0D	09/14/95	Initial Release of DRAFT COPY
Version 2.0M	12/12/95	Final draft released, with the following changes: <ul style="list-style-type: none">- Specified that dmiStorageBase (Function 50h) and NVStorageBase (Function 55h) must be paragraph-aligned.- Added Command value to change a string to function 52h; Command enumeration values modified.- Removed redundant enumerations from Processor Family list- Corrected Memory Subsystem Example- Corrected/clarified Indexed I/O access-methods for event-log; Access Method enumeration values and Access Method Address union modified- Added clarifications to some of the event log types
Version 2.00	03/06/96	Final release, with the following changes: <ul style="list-style-type: none">- Specified that all structures end with a terminating NULL, even if the formatted portion of the structure contains string-reference fields and all the string fields are set to 0.- Corrected the Memory Subsystem Example, handles are now correctly created with a 'dw'.- Fixed formatting of some bit definition fields and function examples.
Version 2.00.1	07/18/96	Minor updates for new technology and clarifications. <ul style="list-style-type: none">- Added definitions for Pentium ® Pro, Burst EDO, and SDRAM.- Added clarifications to the Memory Controller Error Status.

Table Of Contents

1. OVERVIEW	5
1.1 REFERENCES	5
1.2 ENHANCEMENTS TO THE CURRENT BIOS ARCHITECTURE	5
2. ACCESSING DMI INFORMATION	6
2.1 CALLING CONVENTION	6
2.2 DMI BIOS FUNCTIONS	6
2.3 ERROR RETURN CODES	7
2.4 DMI BIOS STRUCTURE ACCESS INTERFACE	8
2.4.1 FUNCTION 50H – GET DMI INFORMATION	8
2.4.2 FUNCTION 51H – GET DMI STRUCTURE	9
2.4.3 FUNCTION 52H – SET DMI STRUCTURE	10
2.5 STRUCTURE CHANGE NOTIFICATION INTERFACE	13
2.5.1 FUNCTION 53H – GET STRUCTURE CHANGE INFORMATION	14
2.6 CONTROL INTERFACE	16
2.6.1 FUNCTION 54H – DMI CONTROL	16
2.6.2 DMI_CONTROL_LOGGING CONTROL WORD	17
2.7 GENERAL PURPOSE NONVOLATILE STORAGE INTERFACE	18
2.7.1 FUNCTION 55H – GET GENERAL-PURPOSE NONVOLATILE INFORMATION	19
2.7.2 FUNCTION 56H – READ GENERAL-PURPOSE NONVOLATILE DATA	20
2.7.3 FUNCTION 57H – WRITE GENERAL-PURPOSE NONVOLATILE DATA	21
3. DMI BIOS STRUCTURES	23
3.1 STRUCTURE STANDARDS	23
3.1.1 STRUCTURE HEADER FORMAT	23
3.1.2 TEXT STRINGS	24
3.2 STRUCTURE DEFINITIONS	25
3.2.1 BIOS INFORMATION (TYPE 0)	25
3.2.2 SYSTEM INFORMATION (TYPE 1)	27
3.2.3 BASE BOARD INFORMATION (TYPE 2)	27
3.2.4 SYSTEM ENCLOSURE OR CHASSIS (TYPE 3)	27
3.2.5 PROCESSOR INFORMATION (TYPE 4)	29
3.2.6 MEMORY CONTROLLER INFORMATION (TYPE 5)	32
3.2.7 MEMORY MODULE INFORMATION (TYPE 6)	34
3.2.8 CACHE INFORMATION (TYPE 7)	37
3.2.9 PORT CONNECTOR INFORMATION (TYPE 8)	38
3.2.10 SYSTEM SLOTS (TYPE 9)	41
3.2.11 ON BOARD DEVICES INFORMATION (TYPE 10)	43

3.2.12 OEM STRINGS (TYPE 11)	44
3.2.13 SYSTEM CONFIGURATION OPTIONS (TYPE 12)	44
3.2.14 BIOS LANGUAGE INFORMATION (TYPE 13)	44
3.2.15 GROUP ASSOCIATIONS (TYPE 14)	45
3.2.16 SYSTEM EVENT LOG (TYPE 15)	46

1. Overview

Desktop Management Interface (DMI) is a new method of managing computers in an enterprise. The main component of DMI is the Management Information Format Database, or MIF. This database contains all the information about the computing system and its components. Using DMI, a system administrator can obtain the types, capabilities, operational status, installation date, and other information about the system components.

The Desktop Management BIOS Specification documents a standard embedded tool-set to assist in the generation of a system MIF database.

1.1 References

Desktop Management Interface Specification, Version 1.0, April 29, 1994.

DMTF PC Systems Standard MIF Definition, Version 1.3, March 1, 1995.

DMTF Server Standard MIF Definition, Draft Version 0.3, March 1, 1995

Plug and Play BIOS Specification, Version 1.0A, May 5, 1994

PCI BIOS Specification, Version 2.1, August 26, 1994

1.2 Enhancements to the current BIOS architecture

The DMI specification requires that certain information about the System Board be made available to an applications program. For systems implementing DMI BIOS Extensions, user-defined information will be located in a series of data structures. These data structures are accessed by the method described in Section 2.

Vendors may decide to include all or any part of this information in their designs. For a complete solution that is compatible with the Service Layer distributed by the DMTF, vendors must also implement component instrumentation. This instrumentation allows the Service Layer to gain access to the information stored in the BIOS. In addition, a MIF file must be provided that describes that data that is provided by the BIOS and the method of accessing that data. As a minimum, the PC Standard System MIF provided by the DMTF can be used for this purpose.

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.