SYSID BIOS Support

Interface Requirements

Revision 1.2

Revision History

Revision	Date	By	Description
R1.0	4/18/97	Nick Yoke	First Supported Release of Document. Split from earlier unreleased versions of "DMI BIOS Support Interface Requirements Revision 2.3" document. - NJY
R1.1	5/6/97	Nick Yoke	Adjusted per legal recommendations. - NJY
R1.2	5/16/97	Nick Yoke	Corrected per feedback/errata. - NJY

CONTENTS

1.1 Introduction

The following information provides the details necessary to implement the required System BIOS interfaces for Intel's Desktop Management BIOS (DMI BIOS). Thus, this document can be used as a guide, along with the other referenced DMI documents, to aid DMI instrumentation efforts.

1.2 Definition of Terms

The following information is provided to define the terms used in this document.

DMI Desktop Management Interface— See "Desktop Management BIOS Specification" Version 2.0 dated October 16, 1995 for more details.

IETF Internet Engineering Task Force.

INTERNET-DRAFT Internet-Drafts are documents of the IETF and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts may be updated, replaced, or made at any time. It is inappropriate to use Internet Drafts as reference material or to cite them other than as "work in progress."

To learn the current status of any Internet Draft, please check the "1id-abstracts.txt" listing contained in the Internet Draft Shadow Directories on:

- ftp.is.co.za (Africa)
- nic.nordu.net (Europe)
- munnari.oz.au (Pacific Rim)
- ds.internic.net (US East Coast)
- ftp.isi.edu (US West Coast)

NVRAM Non-Volatile RAM—A type of storage device used to retain programmed information after power is removed from the CPU and main memory.

SYSID A superset of identifiers that allows definition and organization of unique identifiers. This superset is comprised of identifiers such as a UUID and 1394 GUIDs. A UUID is a SYSID, but a SYSID need not be a UUID.

SYSTEM EVENT LOG A log file used to store critical system status in an area of NV RAM.

UTC Coordinated Universal Time.

UUID and GUID Universally Unique Identifier and Globally Unique Identifiers—A UUID or GUID is 128 bits long, and if generated according to the one of the mechanisms in this document, is designed to be different from all other UUIDs/GUIDs generated until 3400 AD or extremely likely to be different (depending on the mechanism chosen).

1.3 Required Interfaces

This document is required to completely define the interfaces.

The following list explains the interface requirements of the SYSID BIOS support.

- Support in System BIOS to provide full DMI compliance according to the Version 2.0 specification, referred to above.
- Support in System BIOS to provide SYSID capability. One such SYSID provision is the UUID/GUID capability at a motherboard granularity level. This support is based upon the IETF Internet-Draft titled "UUIDs and GUIDs" by Paul J. Leach of Microsoft and Rich Salz of the Open Group. The intent is to provide a mechanism for the storage of a UUID without the BIOS being required to actually generate the UUID.

1.4 SYSID BIOS Table Interface

This SYSID BIOS interface takes into account the support of operating systems that do not provide easy software access to the existing programmatic BIOS interfaces. One example is Windows NT 3.51 or later.

There are two distinct interfaces required to provide this support:

- Support in System BIOS to provide a Table of SYSID BIOS Structure information that's compiled at POST Time and static at run-time. This is referred to as the "SYSID BIOS Structure Table Interface" and is described below.
- Additional details on SYSID BIOS Initialization/Reprogramming support that is different for operating systems that fit this model.

1.4.1 SYSID BIOS Structure Table Interface

The interface required to provide SYSID BIOS structure table interface support is:

Entry Point Structure—This will be found in the 000E0000h to 000FFFFFh physical address area of memory/RAM. **Important:** ***The Entry Point Structure is PARAGRAPH Aligned.***

Entry Point Structure

ELEMENT	LENGTH (in bytes)	DESCRIPTION
Header/Type	7	_SYSID_
Checksum	1	Checksum of the SYSID BIOS Entry Point Structure.
Length	2	Total length of SYSID BIOS Structure Table (set to 011h).
SYSID BIOS Structure Table Address	4	32-bit physical address of the beginning of the SYSID BIOS Structure Table. **Important:** ***This value is BYTE Aligned!!***
Number of SYSID BIOS Structures	2	Total number of structures within the SYSID BIOS Structure Table.
SYSID BIOS Revision	1	Revision of the SYSID BIOS Extensions (set to 00h).

where:

Header/Type—This is a fixed size for this entry point structure. It will always be seven bytes long. The first and last byte will always be the underscore ASCII characters. The middle five bytes are the ASCII characters of SYSID.

Checksum—This value is a two's complement based checksum that causes the addition of all bytes defined for this table interface to be equal to 00h. Please note that this is a 8-bit addition calculation (byte wide addition).

Length—This value is a total length of this entire SYSID BIOS entry point structure. In other words, it's the addition of all the bytes in this structure from the first byte of the Header/Type field to the last byte in the SYSID BIOS Revision field. This value is always 011h

Number of SYSID BIOS Structures—This allows expansion of this interface if more than one type of SYSID be required. This is a integer value in hex representation. Thus, if a single SYSID structure is included, this value is 0001h.

SYSID BIOS Revision—This value is used to define modification to the SYSID BIOS Structure Table Interface. A value of 00h refers to the initial revision of this header for backward compatibility. A value of 01h refers to the next version header, etc. The current revision is 00h.

Revision 00h translates into two defined and supported SYSID BIOS structures. These structures are provided to support:

- The IETF Internet-Draft on "UUIDs and GUIDs" by Paul J. Leach of Microsoft and Rich Salz of the Open Group.
- 1394 IDs.

SYSID BIOS Structure Table—This area is pointed to by the "SYSID BIOS Structure Table Address" element (which is part of the "Entry Point Structure"). The SYSID BIOS Structure Table contains all of the SYSID BIOS structures fully packed together. The SYSID BIOS structures in this table can then be parsed. Note that every supported SYSID BIOS structure uses the template in the following table:

SYSID Structure Format

ELEMENT	LENGTH (in bytes)	DESCRIPTION
Header/Type	6	_????_
Checksum	1	Checksum of the SYSID BIOS Structure.
Length	2	Total length of SYSID BIOS Structure.
Variable Data Portion	??	Depends on SYSID BIOS Structure Header/Type Field.

where:

Header/Type—This is a fixed size for all SYSID BIOS Structure Types. It will always be six bytes long. The first and last byte will always be the underscore ASCII characters. The middle four bytes are variable, depending on the type of SYSID BIOS Structure. The currently supported types are defined below.

Checksum—This value is a two's complement based checksum that causes the addition of all bytes defined for this table interface to be equal to 00h. Please note that this is a 8-bit addition calculation (byte wide addition).

Length—This value is a total length of the entire SYSID BIOS Structure type. In other words, it's the addition of all the bytes in this structure from the first byte of the Header/Type field to the last byte in the Variable Data Portion field. The minimum value for this field (for one byte in the Variable Data Portion) is 0Ah. The maximum value is 0FFFFh.

Variable Data Portion—This value depends on the Header/Type of SYSID BIOS Structure. The minimum size of this field is 01h bytes. The maximum size of this field is 0FFF6h. The size of 00h is invalid.

1.5 Types of SYSID BIOS Structures Supported

This section details the types of SYSID BIOS Structures that are supported in Revision 00h.

Revision 00h translates into two defined and supported SYSID BIOS Structures. These structures are provided to support:

- The IETF Internet-Draft on "UUIDs and GUIDs" by Paul J. Leach of Microsoft and Rich Salz of the Open Group.
- 1394 IDs.

1.5.1 UUID Type

UUID Structure Format

ELEMENT	LENGTH (in bytes)	DESCRIPTION
Header/Type	6	_UUID_
Checksum	1	Checksum of the UUID BIOS Structure.
Length	2	Total length of UUID BIOS Structure (set to 0019h).
Variable Data Portion	16	Actual UUID data (Initially set all bytes to 0FFh).

where:

Header/Type—This is a fixed size for all SYSID BIOS Structure Types. It will always be six bytes long. The first and last byte will always be the underscore ASCII characters. The middle four bytes are the ASCII characters of UUID.

Checksum—This value is a two's complement based checksum that causes the addition of all bytes defined for this table interface to be equal to 00h. Please note that this is a 8-bit addition calculation (byte wide addition).

Length—This value is a total length of the entire UUID BIOS Structure type. In other words, it's the addition of all the bytes in this structure from the first byte of the Header/Type field to the last byte in the Variable Data Portion field. The value for this field (for 16 bytes in the Variable Data Portion) is 019h.

Variable Data Portion—This value depends on the Header/Type of SYSID BIOS Structure. This field is a length of 10h bytes and the values are defined and programmed by using the "SYSID Programming Interface Specification." The System BIOS does not program these values. The initial value provided consists of 10h bytes of 0FFh.

1.5.2 1394 ID Type

1394 ID Structure Format

ELEMENT	LENGTH (in bytes)	DESCRIPTION
Header/Type	6	_1394_
Checksum	1	Checksum of the 1394 BIOS Structure.
Length	2	Total length of 1394 BIOS Structure (set to 0011h).
Variable Data Portion	8	Actual 1394 ID data (initially set all bytes to 0FFh).

where:

Header/Type—This is a fixed size for all SYSID BIOS Structure Types. It will always be 6 bytes long. The first and last byte will always be the underscore ASCII characters. The middle four bytes are the ASCII characters of 1394.

Checksum—This value is a two's complement based checksum that causes the addition of all bytes defined for this table interface to be equal to 00h. Please note that this is a 8-bit addition calculation (byte wide addition).

Length—This value is a total length of the entire 1394 ID BIOS Structure type. In other words, it's the addition of all the bytes in this structure from the first byte of the Header/Type field to the last byte in the Variable Data Portion field. The value for this field (for 8 bytes in the Variable Data Portion) is 011h.

Variable Data Portion—This value depends on the Header/Type of SYSID BIOS Structure. This field is a length of 08h bytes and the values are defined and programmed by using the "SYSID Programming Interface Specification". The System BIOS does not program these values. The initial value provided consists of 08h bytes of 0FFh.

1.5.3 Additional Details on SYSID BIOS Support

This section describes additional information for dealing with this type of Operating System Interface.

- Programming SYSID values into the BIOS will be performed via the "DMI BIOS Specification interface" Version 2.0.
- For details in programming the SYSID values, refer to the "SYSID Programming Interface Specification Revision 1.1" document.