

## dmidecode: Finding Out Hardware Details Without Opening The Computer Case

*By Falko Timme*

Published: 2008-11-12 12:29

# dmidecode: Finding Out Hardware Details Without Opening The Computer Case

Version 1.0

Author: Falko Timme <ft [at] falkotimme [dot] com>

Last edited 10/24/2008

dmidecode is a tool for dumping a computer's DMI (some say SMBIOS) table contents in a human-readable format. This table contains a description of the system's hardware components, as well as other useful pieces of information such as serial numbers and BIOS revision. Thanks to this table, you can retrieve this information without having to probe for the actual hardware.

Take a look at

```
man dmidecode
```

to find out all options. The most common option is the `--type` switch which takes one or more of the following keywords:

*bios, system, baseboard, chassis, processor, memory, cache, connector, slot*

You can as well specify one or more of the following numbers:

Type	Information
-----	
0	BIOS
1	System
2	Base Board
3	Chassis
4	Processor

- 5    *Memory Controller*
- 6    *Memory Module*
- 7    *Cache*
- 8    *Port Connector*
- 9    *System Slots*
- 10   *On Board Devices*
- 11   *OEM Strings*
- 12   *System Configuration Options*
- 13   *BIOS Language*
- 14   *Group Associations*
- 15   *System Event Log*
- 16   *Physical Memory Array*
- 17   *Memory Device*
- 18   *32-bit Memory Error*
- 19   *Memory Array Mapped Address*
- 20   *Memory Device Mapped Address*
- 21   *Built-in Pointing Device*
- 22   *Portable Battery*
- 23   *System Reset*
- 24   *Hardware Security*
- 25   *System Power Controls*
- 26   *Voltage Probe*
- 27   *Cooling Device*
- 28   *Temperature Probe*
- 29   *Electrical Current Probe*
- 30   *Out-of-band Remote Access*
- 31   *Boot Integrity Services*
- 32   *System Boot*
- 33   *64-bit Memory Error*
- 34   *Management Device*
- 35   *Management Device Component*
- 36   *Management Device Threshold Data*
- 37   *Memory Channel*

- 38 *IPMI Device*
- 39 *Power Supply*

Each keyword is equivalent to a list of type numbers:

<i>Keyword</i>	<i>Types</i>
-----	
<i>bios</i>	<i>0, 13</i>
<i>system</i>	<i>1, 12, 15, 23, 32</i>
<i>baseboard</i>	<i>2, 10</i>
<i>chassis</i>	<i>3</i>
<i>processor</i>	<i>4</i>
<i>memory</i>	<i>5, 6, 16, 17</i>
<i>cache</i>	<i>7</i>
<i>connector</i>	<i>8</i>
<i>slot</i>	<i>9</i>

Here are a few sample outputs from one of my servers:

```
dmiencode --type bios
```

```
server1:/home/admin# dmiencode --type bios
# dmiencode 2.8
SMBIOS 2.5 present.
```

```
Handle 0x0000, DMI type 0, 24 bytes
BIOS Information
```

```
Vendor: American Megatrends Inc.
Version: V1.5B2
Release Date: 10/31/2007
Address: 0xF0000
Runtime Size: 64 kB
```

ROM Size: 1024 kB

Characteristics:

ISA is supported  
PCI is supported  
PNP is supported  
APM is supported  
BIOS is upgradeable  
BIOS shadowing is allowed  
ESCD support is available  
Boot from CD is supported  
Selectable boot is supported  
BIOS ROM is socketed  
EDD is supported  
5.25"/1.2 MB floppy services are supported (int 13h)  
3.5"/720 KB floppy services are supported (int 13h)  
3.5"/2.88 MB floppy services are supported (int 13h)  
Print screen service is supported (int 5h)  
8042 keyboard services are supported (int 9h)  
Serial services are supported (int 14h)  
Printer services are supported (int 17h)  
CGA/mono video services are supported (int 10h)  
ACPI is supported  
USB legacy is supported  
LS-120 boot is supported  
ATAPI Zip drive boot is supported  
BIOS boot specification is supported  
Targeted content distribution is supported

BIOS Revision: 8.14

Handle 0x0028, DMI type 13, 22 bytes

BIOS Language Information

Installable Languages: 1  
en|US|iso8859-1

*Currently Installed Language: en|US|iso8859-1*

*server1:/home/admin#*

```
dmiencode --type system
```

*server1:/home/admin# dmiencode --type system*

*# dmiencode 2.8*

*SMBIOS 2.5 present.*

*Handle 0x0001, DMI type 1, 27 bytes*

*System Information*

*Manufacturer: MICRO-STAR INTERANTIONAL CO.,LTD*

*Product Name: MS-7368*

*Version: 1.0*

*Serial Number: To Be Filled By O.E.M.*

*UUID: Not Present*

*Wake-up Type: Power Switch*

*SKU Number: To Be Filled By O.E.M.*

*Family: To Be Filled By O.E.M.*

*Handle 0x0027, DMI type 12, 5 bytes*

*System Configuration Options*

*Option 1: To Be Filled By O.E.M.*

*server1:/home/admin#*

```
dmiencode --type baseboard
```

*server1:/home/admin# dmiencode --type baseboard*

*# dmiencode 2.8*

*SMBIOS 2.5 present.*

*Handle 0x0002, DMI type 2, 15 bytes*

*Base Board Information*

*Manufacturer: MICRO-STAR INTERANTIONAL CO.,LTD*

*Product Name: MS-7368*

*Version: 1.0*

*Serial Number: To be filled by O.E.M.*

*Asset Tag: To Be Filled By O.E.M.*

*Features:*

*Board is a hosting board*

*Board is replaceable*

*Location In Chassis: To Be Filled By O.E.M.*

*Chassis Handle: 0x0003*

*Type: Motherboard*

*Contained Object Handles: 0*

*Handle 0x0025, DMI type 10, 6 bytes*

*On Board Device Information*

*Type: Video*

*Status: Enabled*

*Description: To Be Filled By O.E.M.*

*server1:/home/admin#*

```
dmidecode --type chassis
```

*server1:/home/admin# dmidecode --type chassis*

*# dmidecode 2.8*

*SMBIOS 2.5 present.*

*Handle 0x0003, DMI type 3, 21 bytes*

### Chassis Information

Manufacturer: To Be Filled By O.E.M.  
Type: Desktop  
Lock: Not Present  
Version: To Be Filled By O.E.M.  
Serial Number: To Be Filled By O.E.M.  
Asset Tag: To Be Filled By O.E.M.  
Boot-up State: Safe  
Power Supply State: Safe  
Thermal State: Safe  
Security Status: None  
OEM Information: 0x00000000  
Height: Unspecified  
Number Of Power Cords: 1  
Contained Elements: 0

server1:/home/admin#

```
dmidecode --type processor
```

server1:/home/admin# dmidecode --type processor  
# dmidecode 2.8  
SMBIOS 2.5 present.

Handle 0x0004, DMI type 4, 40 bytes  
Processor Information

Socket Designation: CPU 1  
Type: Central Processor  
Family: Other  
Manufacturer: AMD  
ID: B2 0F 06 00 FF FB 8B 17  
Version: AMD Athlon(tm) 64 X2 Dual Core Processor 5600+

```

Voltage: 1.5 V
External Clock: 200 MHz
Max Speed: 2800 MHz
Current Speed: 2900 MHz
Status: Populated, Enabled
Upgrade: Other
L1 Cache Handle: 0x0005
L2 Cache Handle: 0x0006
L3 Cache Handle: 0x0007
Serial Number: To Be Filled By O.E.M.
Asset Tag: To Be Filled By O.E.M.
Part Number: To Be Filled By O.E.M.

```

server1:/home/admin#

```
dmidecode --type memory
```

```

server1:/home/admin# dmidecode --type memory
# dmidecode 2.8
SMBIOS 2.5 present.

```

Handle 0x0008, DMI type 5, 20 bytes

Memory Controller Information

Error Detecting Method: 64-bit ECC

Error Correcting Capabilities:

None

Supported Interleave: One-way Interleave

Current Interleave: One-way Interleave

Maximum Memory Module Size: 512 MB

Maximum Total Memory Size: 1024 MB

Supported Speeds:

70 ns



60 ns

Supported Memory Types:

SIMM

DIMM

SDRAM

Memory Module Voltage: 3.3 V

Associated Memory Slots: 2

0x0009

0x000A

Enabled Error Correcting Capabilities:

None

Handle 0x0009, DMI type 6, 12 bytes

Memory Module Information

Socket Designation: DIMM0

Bank Connections: 0 5

Current Speed: 161 ns

Type: ECC DIMM

Installed Size: 1024 MB (Double-bank Connection)

Enabled Size: 1024 MB (Double-bank Connection)

Error Status: OK

Handle 0x000A, DMI type 6, 12 bytes

Memory Module Information

Socket Designation: DIMM1

Bank Connections: 0 5

Current Speed: 163 ns

Type: ECC DIMM

Installed Size: 1024 MB (Double-bank Connection)

Enabled Size: 1024 MB (Double-bank Connection)

Error Status: OK

Handle 0x0029, DMI type 16, 15 bytes

*Physical Memory Array*

*Location: System Board Or Motherboard*  
*Use: System Memory*  
*Error Correction Type: None*  
*Maximum Capacity: 8 GB*  
*Error Information Handle: Not Provided*  
*Number Of Devices: 2*

*Handle 0x002B, DMI type 17, 27 bytes*

*Memory Device*

*Array Handle: 0x0029*  
*Error Information Handle: Not Provided*  
*Total Width: 64 bits*  
*Data Width: 72 bits*  
*Size: 1024 MB*  
*Form Factor: DIMM*  
*Set: None*  
*Locator: DIMM0*  
*Bank Locator: BANK0*  
*Type: DDR2*  
*Type Detail: Synchronous*  
*Speed: 333 MHz (3.0 ns)*  
*Manufacturer: Manufacturer0*  
*Serial Number: SerNum0*  
*Asset Tag: AssetTagNum0*  
*Part Number: PartNum0*

*Handle 0x002D, DMI type 17, 27 bytes*

*Memory Device*

*Array Handle: 0x0029*  
*Error Information Handle: Not Provided*  
*Total Width: 64 bits*  
*Data Width: 72 bits*

```
Size: 1024 MB
Form Factor: DIMM
Set: None
Locator: DIMM1
Bank Locator: BANK1
Type: DDR2
Type Detail: Synchronous
Speed: 333 MHz (3.0 ns)
Manufacturer: Manufacturer1
Serial Number: SerNum1
Asset Tag: AssetTagNum1
Part Number: PartNum1
```

```
server1:/home/admin#
```

```
dmidecode --type cache
```

```
server1:/home/admin# dmidecode --type cache
# dmidecode 2.8
SMBIOS 2.5 present.
```

```
Handle 0x0005, DMI type 7, 19 bytes
```

```
Cache Information
```

```
Socket Designation: L1-Cache
Configuration: Enabled, Not Socketed, Level 1
Operational Mode: Varies With Memory Address
Location: Internal
Installed Size: 256 KB
Maximum Size: 256 KB
Supported SRAM Types:
    Pipeline Burst
Installed SRAM Type: Pipeline Burst
```

*Speed: Unknown  
Error Correction Type: Single-bit ECC  
System Type: Data  
Associativity: 4-way Set-associative*

*Handle 0x0006, DMI type 7, 19 bytes*

*Cache Information*

*Socket Designation: L2-Cache  
Configuration: Enabled, Not Socketed, Level 2  
Operational Mode: Varies With Memory Address  
Location: Internal  
Installed Size: 1024 KB  
Maximum Size: 1024 KB  
Supported SRAM Types:  
    *Pipeline Burst*  
Installed SRAM Type: Pipeline Burst  
Speed: Unknown  
Error Correction Type: Single-bit ECC  
System Type: Unified  
Associativity: 4-way Set-associative*

*Handle 0x0007, DMI type 7, 19 bytes*

*Cache Information*

*Socket Designation: L3-Cache  
Configuration: Disabled, Not Socketed, Level 3  
Operational Mode: Unknown  
Location: Internal  
Installed Size: 0 KB  
Maximum Size: 0 KB  
Supported SRAM Types:  
    *Unknown*  
Installed SRAM Type: Unknown  
Speed: Unknown*

```
Error Correction Type: Unknown
System Type: Unknown
Associativity: Unknown
```

```
server1:/home/admin#
```

```
dmidecode --type connector
```

```
server1:/home/admin# dmidecode --type connector
# dmidecode 2.8
SMBIOS 2.5 present.
```

```
Handle 0x000B, DMI type 8, 9 bytes
Port Connector Information
    Internal Reference Designator: J1A1
    Internal Connector Type: None
    External Reference Designator: PS2Mouse
    External Connector Type: PS/2
    Port Type: Mouse Port
```

```
Handle 0x000C, DMI type 8, 9 bytes
Port Connector Information
    Internal Reference Designator: J1A1
    Internal Connector Type: None
    External Reference Designator: Keyboard
    External Connector Type: PS/2
    Port Type: Keyboard Port
```

```
Handle 0x000D, DMI type 8, 9 bytes
Port Connector Information
    Internal Reference Designator: J2A2
    Internal Connector Type: None
```

*External Reference Designator: USB1  
External Connector Type: Access Bus (USB)  
Port Type: USB*

*Handle 0x000E, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J2A2  
Internal Connector Type: None  
External Reference Designator: USB2  
External Connector Type: Access Bus (USB)  
Port Type: USB*

*Handle 0x000F, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J4A1  
Internal Connector Type: None  
External Reference Designator: LPT 1  
External Connector Type: DB-25 male  
Port Type: Parallel Port ECP/EPP*

*Handle 0x0010, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J2A1  
Internal Connector Type: None  
External Reference Designator: COM A  
External Connector Type: DB-9 male  
Port Type: Serial Port 16550A Compatible*

*Handle 0x0011, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J6A1  
Internal Connector Type: None  
External Reference Designator: Audio Mic In*

*External Connector Type: Mini Jack (headphones)*  
*Port Type: Audio Port*

*Handle 0x0012, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J6A1*  
*Internal Connector Type: None*  
*External Reference Designator: Audio Line In*  
*External Connector Type: Mini Jack (headphones)*  
*Port Type: Audio Port*

*Handle 0x0013, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J6B1 - AUX IN*  
*Internal Connector Type: On Board Sound Input From CD-ROM*  
*External Reference Designator: Not Specified*  
*External Connector Type: None*  
*Port Type: Audio Port*

*Handle 0x0014, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J6B2 - CDIN*  
*Internal Connector Type: On Board Sound Input From CD-ROM*  
*External Reference Designator: Not Specified*  
*External Connector Type: None*  
*Port Type: Audio Port*

*Handle 0x0015, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J6J2 - PRI IDE*  
*Internal Connector Type: On Board IDE*  
*External Reference Designator: Not Specified*  
*External Connector Type: None*

*Port Type: Other*

*Handle 0x0016, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J6J1 - SEC IDE*

*Internal Connector Type: On Board IDE*

*External Reference Designator: Not Specified*

*External Connector Type: None*

*Port Type: Other*

*Handle 0x0017, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J4J1 - FLOPPY*

*Internal Connector Type: On Board Floppy*

*External Reference Designator: Not Specified*

*External Connector Type: None*

*Port Type: Other*

*Handle 0x0018, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J9H1 - FRONT PNL*

*Internal Connector Type: 9 Pin Dual Inline (pin 10 cut)*

*External Reference Designator: Not Specified*

*External Connector Type: None*

*Port Type: Other*

*Handle 0x0019, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J1B1 - CHASSIS REAR FAN*

*Internal Connector Type: Other*

*External Reference Designator: Not Specified*

*External Connector Type: None*

*Port Type: Other*



*Handle 0x001A, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J2F1 - CPU FAN*

*Internal Connector Type: Other*

*External Reference Designator: Not Specified*

*External Connector Type: None*

*Port Type: Other*

*Handle 0x001B, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J8B4 - FRONT FAN*

*Internal Connector Type: Other*

*External Reference Designator: Not Specified*

*External Connector Type: None*

*Port Type: Other*

*Handle 0x001C, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J9G2 - FNT USB*

*Internal Connector Type: Other*

*External Reference Designator: Not Specified*

*External Connector Type: None*

*Port Type: Other*

*Handle 0x001D, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J6C3 - FP AUD*

*Internal Connector Type: Other*

*External Reference Designator: Not Specified*

*External Connector Type: None*

*Port Type: Other*

*Handle 0x001E, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J9G1 - CONFIG*  
*Internal Connector Type: Other*  
*External Reference Designator: Not Specified*  
*External Connector Type: None*  
*Port Type: Other*

*Handle 0x001F, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J8C1 - SCSI LED*  
*Internal Connector Type: Other*  
*External Reference Designator: Not Specified*  
*External Connector Type: None*  
*Port Type: Other*

*Handle 0x0020, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J9J2 - INTRUDER*  
*Internal Connector Type: Other*  
*External Reference Designator: Not Specified*  
*External Connector Type: None*  
*Port Type: Other*

*Handle 0x0021, DMI type 8, 9 bytes*

*Port Connector Information*

*Internal Reference Designator: J9G4 - ITP*  
*Internal Connector Type: Other*  
*External Reference Designator: Not Specified*  
*External Connector Type: None*  
*Port Type: Other*

*Handle 0x0022, DMI type 8, 9 bytes*

*Port Connector Information*

```
Internal Reference Designator: J2H1 - MAIN POWER
Internal Connector Type: Other
External Reference Designator: Not Specified
External Connector Type: None
Port Type: Other
```

```
server1:/home/admin#
```

```
dmidecode --type slot
```

```
server1:/home/admin# dmidecode --type slot
# dmidecode 2.8
SMBIOS 2.5 present.
```

```
Handle 0x0023, DMI type 9, 13 bytes
System Slot Information
  Designation: AGP
  Type: 32-bit AGP 4x
  Current Usage: In Use
  Length: Short
  ID: 0
  Characteristics:
    3.3 V is provided
    Opening is shared
    PME signal is supported
```

```
Handle 0x0024, DMI type 9, 13 bytes
System Slot Information
  Designation: PCI1
  Type: 32-bit PCI
  Current Usage: Available
  Length: Short
```

*ID: 1*

*Characteristics:*

*3.3 V is provided*

*Opening is shared*

*PME signal is supported*

*server1:/home/admin#*