

Prepoznavanje sklopovlja: podaci iz BIOS-a



Otkrivajući informacije o komponentama računala, sistemca će zanimati i one koje su upisane u BIOS. Pri tome će mu pomoći naredba *dmidecode*, koja je napisana kako bi pružila "informacije o hardveru upisane u BIOS prema [SMBIOS/DMI](#) [1] standardu". Radi se o proširenju BIOS-a koji bi trebao olakšati posao upravljačkim programima i smanjiti potrebu za rutinama čija je funkcija prepoznavnje hardvera.

Tu su obično podaci o proizvođaču računala, ime i serijski broj modela, verzija BIOS-a i slično. Ponekad ćete tu naći podatke o statusu CPU socketa, utora za proširenja (AGP, PCI..), popunjenosti memorijskih utora i listu ulazno/izlaznih portova (serijskih, paralelnih, USB...). No ispravnost tih informacija ovisi o proizvođaču računala. Nažalost, nisu svi proizvođači računala ozbiljno shvatili svoje obaveze, pa točnost podataka varira od proizvođača do proizvođača, čak i od modela do modela. BIOS bi trebao sadržavati informacije koje omogućuju operacijskim sustavima pokretanje i inicijalizaciju hardvera, no nažalost ponekad Linuxov kernel mora zanemariti te informacije ili ih sam provjeravati. No čak i sumnjajući u te informacije, ipak ćemo ih pogledati nadajući se da ćemo naći nešto korisno.

DMI standard grupira informacije prema zadanim tipovima:

Type	Information
0	BIOS
1	System
2	Baseboard
3	Chassis
4	Processor
5	Memory Controller
6	Memory Modul
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
40 Additional Information
41 Onboard Devices Extended Information
42 Management Controller Host Interface
```

Ako napišete naredbu *dmidecode* bez parametara, dobit ćete sve podatke upisane u SMBIOS. Informacije o samom BIOS-u su na početku, type 0:

```
$ dmidecode -t 0
Handle 0x0000, DMI type 0, 24 bytes
BIOS Information
    Vendor: American Megatrends Inc.
    Version: 1102
    Release Date: 01/30/2007
    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: 8.12
```

Informacije o matičnoj ploči, type 2:

```
Handle 0x0002, DMI type 2, 15 bytes
Base Board Information
  Manufacturer: ASUSTeK Computer INC.
  Product Name: P5B
  Version: Rev 1.xx
  Serial Number: MB-1234567890
  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
```

Ako vas zanima samo procesor, upit će izgledati ovako:

```
$ dmidecode -t 4
```

Evo i upitao ugrađenoj RAM memoriji:

```
$ sudo dmidecode -t 17
# dmidecode 2.11
SMBIOS 2.6 present.
Handle 0x0005, DMI type 17, 27 bytes
Memory Device
  Array Handle: 0x0004
  Error Information Handle: Not Provided
  Total Width: 64 bits
  Data Width: 64 bits
  Size: 2048 MB
  Form Factor: SODIMM
  Set: None
  Locator: Bottom-Slot 1(left)
  Bank Locator: BANK 0
  Type: DDR3
  Type Detail: Synchronous
  Speed: 1333 MHz
  Manufacturer: Ramaxel
  Serial Number: 431E6C04
  Asset Tag: Unknown
  Part Number: RMT3010EC58E8F1333
```

```
Handle 0x0007, DMI type 17, 27 bytes
Memory Device
  Array Handle: 0x0004
  Error Information Handle: Not Provided
  Total Width: 64 bits
  Data Width: 64 bits
  Size: 2048 MB
  Form Factor: SODIMM
  Set: None
  Locator: Bottom-Slot 2(right)
  Bank Locator: BANK 2
  Type: DDR3
  Type Detail: Synchronous
```

```
Speed: 1333 MHz
Manufacturer: Ramaxel
Serial Number: 433E6C04
Asset Tag: Unknown
Part Number: RMT3010EC58E8F1333
```

Popunjena su dva utora s "keksima" od po 2 GB 64 bitne DDR3 memorije koja radi na 1333 MHz.

Ponešto o bateriji notebooka saznat ćete ovako:

```
$ sudo dmidecode -t 22
# dmidecode 2.11
SMBIOS 2.6 present.
Handle 0x0014, DMI type 22, 26 bytes
Portable Battery
  Location: Primary
  Manufacturer: 32STL-SD20S
  Name: OT06039
  Design Capacity: 3600 mWh
  Design Voltage: 10800 mV
  SBDS Version: 1.1
  Maximum Error: Unknown
  SBDS Serial Number: 0A41
  SBDS Manufacture Date: 2011-03-02
  SBDS Chemistry: LION
  OEM-specific Information: 0x00000000
```

Na kraju, evo i malo egzotike. IBM i Lenovo upisuju takozvane "vitalne podatke o proizvodu" (Vital product data), koje možete pronaći naredbom *vpddecode*. Trebalo bi tek provjeriti da li to radi na svim modelima spomenutog proizvođača.

```
$ vpddecode
```

Compaqov BIOS dozvoljava da se upišu podaci o vlasniku, koje možete pogledati naredbom:

```
$ ownership
```

Nije zgoroga provjeriti kome je računalo pripadalo, zar ne? :)

Ukratko, MSBIOS/DMI standard je uveden kako bi proizvođači računala tu upisivali podatke o svom sklopovlju. No oni nisu uvijek dosljedni u tome, pa ćemo se ponekad razočarati. U svakom slučaju, naredba *dmidecode* sistemcu može biti izuzetna pomoć, pod uvjetom da je nauči koristiti "sa zrnem soli".

Vezani članci:

[Prepoznavanje sklopovlja računala](#) [2]

[Prepoznavanje sklopovlja: naredba lspci](#) [3]

pet, 2013-06-28 09:36 - Aco Dmitrović **Kuharice:** [Linux](#) [4]

Kategorije: [Hardware](#) [5]

Vote: 0

No votes yet

Source URL: <https://sysportal.carnet.hr/node/1287>

Links

- [1] <http://www.dmtf.org/standards/smbios>
- [2] <https://sysportal.carnet.hr/node/1286>
- [3] <https://sysportal.carnet.hr/node/1290>
- [4] <https://sysportal.carnet.hr/taxonomy/term/17>
- [5] <https://sysportal.carnet.hr/taxonomy/term/24>