XenClient SMBIOS

**From XenClient**

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[[edit](http://wiki.xci-test.com/index.php?title=XenClient_SMBIOS&action=edit&section=1)] Xen Vendor Table

This is a quick specification for using an SMBIOS vendor defined table to pass static platform information to guests running on the XenClient platform. A specific vendor table type is chosen along with several other values that will allow the HVMLOADER and the guest software to identify the table and determine what it supports. The following values are defined for revision 1 of the table. Flags can be added to control other features and quirks, the revision number allows for fields to be added to the table as necessary. Note that the definitions below are not product specific allowing the Xen SMBIOS table to be used across products and projects. The primary purpose of the Xen SMBIOS table is to provide product and platform specific information prior to having PV support in an HVM guest.

/\* SMBIOS Vendor type value for Xen \*/

#define XEN\_SMBIOS\_VENDOR\_TYPE 251

/\* Length in bytes of the fixed portion of the table for a given revision \*/

#define XEN\_SMBIOS\_TABLE\_LENGTH 20

/\* Magic value to help identify the XenClient table \*/

#define XEN\_SMBIOS\_MAGIC 0x222D3338 /\* "XSMB" \*/

/\* Current revision value \*/

#define XEN\_SMBIOS\_REVISION 1

/\* String number for the tag string \*/

#define XEN\_SMBIOS\_TAG\_STRING\_NUM 1

/\* String number for the manufacturer name \*/

#define XEN\_SMBIOS\_MANUFACTURER\_STRING\_NUM 2

/\* String number for the product name \*/

#define XEN\_SMBIOS\_PRODUCT\_STRING\_NUM 3

/\* Feature flags \*/

#define XEN\_SMBIOS\_FEATURES\_NONE 0x00000000

#define XEN\_SMBIOS\_FEATURES\_SEAMLESS 0x00000001 /\* Seamless app install allowed in VM \*/

/\* Quirks flags \*/

#define XEN\_SMBIOS\_QUIRKS\_NONE 0x00000000

/\* Table tag string identifier following fixed portion of the table \*/

#define XEN\_SMBIOS\_TAG\_STRING "XEN-SMBIOS-TABLE"

The table below shows the layout of the fixed portion of the table. As per the DMTF specifications for SMBIOS, the fixed portion is followed by a variable length portion containing NULL terminated strings with an extra NULL as the final terminator.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Byte** | **Value** | **Description** |
| Type | 1 | XEN\_SMBIOS\_VENDOR\_TYPE | Standard header - type from vendor range |
| Length | 1 | XEN\_SMBIOS\_TABLE\_LENGTH | Standard header - length in bytes of the fixed portion of table |
| Handle | 2 | Implementation specific | Standard header - table handle value |
| Magic | 4 | XEN\_SMBIOS\_MAGIC | Table identifier value |
| Revision | 1 | XEN\_SMBIOS\_REVISION | Table revision identifier value |
| TagString | 1 | XEN\_SMBIOS\_TAG\_STRING\_NUM | String number for the table tag string |
| ManufacturerString | 1 | XEN\_SMBIOS\_MANUFACTURER\_STRING\_NUM | String number for the table manufacturer name |
| ProductString | 1 | XEN\_SMBIOS\_PRODUCT\_STRING\_NUM | String number for the table product name |
| Features | 4 | Varies | OR'd feature flag values |
| Quirks | 4 | Varies | OR'd platform quirk flag values |

[[edit](http://wiki.xci-test.com/index.php?title=XenClient_SMBIOS&action=edit&section=2)] SMBIOS Control

There are several ways that SMBIOS can be controlled in the XenClient product.

**Pass-through**

XenClient provides a way to pass-through the main SMBIOS table types. Passing the tables through involves reading them directly from the firmware on the platform and passing them to the guest where they are written instead of the internal default version of the particular table. The tables that are passed through in XenClient are:

* Type 0: BIOS Information
* Type 1: System Information
* Type 2: System Board
* Type 3: System Enclosure
* Type 11: OEM Strings

SMBIOS pass-through is enabled by the toolstack via the UI by setting the configuration value *smbios-pt*. You can see the value using:

$ xec-vm -n <vm-name> get smbios-pt

In addition, OEM vendor tables (type > 127) can also be passed through to the VM. By default types 129, 130 and 131 are passed through when *smbios-pt* is on. These are the tables used by Intel AMT. This values can be overridden with something like this e.g.:

$ db-write /xenmgr/smbios-oem-types-pt 129,130,131,132,133

This sets a global value for OEM table pass-through. To see the current value use:

$ db-read /xenmgr/smbios-oem-types-pt

**XenStore override**

By default the hvmloader uses hard-coded internal values for the SMBIOS tables when pass-through is disabled. Some of the values in table types 0, 1 and 11 can be overridden using XenStore. The following XenStore paths are used to do this:

/local/domain/<n>/bios-strings/bios-vendor

/local/domain/<n>/bios-strings/bios-version

/local/domain/<n>/bios-strings/system-manufacturer

/local/domain/<n>/bios-strings/system-product-name

/local/domain/<n>/bios-strings/system-serial-number

/local/domain/<n>/bios-strings/oem-NN

Note that the last value allows up to 100 sequential OEM strings to be added to table type 11 by setting N from 00 to 99. Finally it should be noted that when pass-through is enabled, it take precedence over the default internal values or use of XenStore override values.

**Xen Vendor Values**  
In addition to setting SMBIOS override values, XenClient also uses XenStore to set the values used in the Xen vendor table discussed above. The current values that can be set for revision 1 are:

/local/domain/<n>/bios-strings/xenvendor-manufacturer

/local/domain/<n>/bios-strings/xenvendor-product

/local/domain/<n>/bios-strings/xenvendor-seamless-hint # set to "1" | "0"

The Xen vendor table uses internal default values as well when none are specified and is built into the guest SMBIOS tables by default. The Xen vendor table can be disabled by the following value in XenStore:

/local/domain/<n>/xenvendor-disable # set to "1" to disable

[[edit](http://wiki.xci-test.com/index.php?title=XenClient_SMBIOS&action=edit&section=3)] Resources

<http://stove.xci-test.com/xc_dist/Documents/XenClient_Guest_SMBIOS_Writeup_v1_6.pdf> - A write-up on our SMBIOS implementation done by Kamala Narasimhan  
<http://www.dmtf.org/standards/smbios> - The SMBIOS public specifications from DMTF