# MSI Properties Extender:

MSI Helper, extends the list of built-in public properties offered by the Windows Installer to support a rich hardware, devices configurations. The extension is offered as a binary for x86 and x64 platforms. Therefore, the binary can be easily attached to all modern IDE and Installation frameworks available (example; WIX, InstallShield, etc.).

# How can I use the MSI Property Extension?

The binary must be added to the installer framework as a binary Custom Action must be assigned to run under the UI, Execute and Admin sequences as Custom Action Type 1 (a.k.a Immediate Custom Action) Please see Microsoft link for more information https://msdn.microsoft.com/en-us/library/aa368075%28v=vs.85%29.aspx.

You must create a new property (`MSIPROPERTYEXT`) under the Property table in the installer framework of choice (please see windows installer property table reference https://msdn.microsoft.com/en-us/library/aa370908%28v=vs.85%29.aspx).

The property must include any of the aliases described in the aliases and properties table. The properties can accept any number of aliases and properties. To add more aliases simply separate each alias in the aliases list with a semicolon symbol (;). Aliases will list all of the properties designated (see Aliases and properties table below).

Example:

**MSIPROPERTYEXT=CPU;OS**

In order to refine the search and reduce the time spent searching for the configuration data during the installer initialization time, you can specify only the properties you are interested to be located on the target machine; list of the properties must be specified using the symbol colon (:) and separating each additional property with a comma symbol (,):

Example:

**MSIPROPERTYEXT=DISPLAY:DriverVersion,Name;NIC;PNP**

# How can I use the data:

Properties are assigned as a public properties and they are not restricted to be changed. You must be aware that data are a list of values obtained from the machine for example:

**WMIEXT_CPU_NUMBEROFCORES=2**

Then you can set a the value as a condition either on custom Action, component , feature ,etc. for example  you can use (WMIEXT_CPU_NUMBEROFCORES > "1") in order target machine with 2 and more processors on the machine.

WMIEXT_PNP_SERVICE=vwifimp,CmBatt,CmBatt,iaLPSS_I2C,iaLPSS_GPIO,volmgr,volsnap,volsnap,BasicDisplay,USBHUB3,intelppm,intelppm,intelppm,intelppm,tunnel,umbus,volsnap,WmiAcpi,VMnetAdapter,VMnetAdapter,BthLEEnum,NETwNb64,CompositeBus,vdrvroot,tunnel,tunnel,tunnel,spaceport,kbdhid,usbhub,HidUsb,kdnic,i8042prt,monitor,pci,msisadrv,HidUsb,usbehci,umbus,mouhid,DellRbtn,\Driver\ACPI_HAL,pci,volsnap

you can set the condition as:

**WMIEXT_PNP_SERVICE >< "HidUsb"**

the condition will search the string in the left (WMIEXT_PNP_SERVICE) side with (HidUsb) device service. If the string not found condition will fail.

# Aliases and Properties description:

| Alias | Properties | Description |
|---|---|---|
| **CPU** | | Represent process type and designated information on a computer running Microsoft Operating system. |

| Setting | MSI Property |
|---|---|
| Name | WMIEXT_CPU_NAME |
| ProcessorId | WMIEXT_CPU_PROCESSRID |
| SocketDesignation | WMIEXT_CPU_SOCKETDESIGNATION |
| Revision | WMIEXT_CPU_REVISION |
| NumberOfLogicalProcessors | WMIEXT_CPU_NUMBEROFLOGICALPROCESSORS |
| NumberOfCores | WMIEXT_CPU_NUMBEROFCORES |

**Name:**
Processor name
**ProcessorId:**
Processor information that describes the processor features. For an x86 class CPU, The first is an offset of 08h-0Bh. Only the first two bytes of the property are significant and contain the contents of the DX register at CPU reset.

**SocketDesignation:**
Type of chip socket used on the circuit.
Example: U3E1
**Revision:**
the value of the Processor version number that depends on the architecture.
Example: Model 2, Stepping 12
**NumberOfLogicalProcessors:**
Number of logical processors for the current instance of the processor. For processors capable of hyperthreading, this value includes only the processors which have hyperthreading enabled
**NumberOfCores:**
Number of cores for the current instance of the processor

(TBD):
VirtualizationFirmwareEnabled
VMMonitorModeExtensions
UpgradeMethod
StatusInfo
L2CacheSize
L3CacheSize
ExtClock
Family
DataWidth
CurrentVoltage
CurrentClockSpeed
Architecture

| Alias | Properties | Description |
|---|---|---|
| **SCSICONTROLLER** | | Information for the SCSI controller on the Windows operating system. |

| Setting | MSI Property |
|---|---|
| **Caption** | WMIEXT_SCSICONTROLLER_CAPTION |
| **Description** | WMIEXT_SCSICONTROLLER_DESCRIPTION |
| **DeviceID** | WMIEXT_SCSICONTROLLER_DEVICEID |
| **PNPDeviceID** | WMIEXT_SCSICONTROLLER_PNPDEVICEID |
| **Availability** | WMIEXT_SCSICONTROLLER_AVAILABILITY |

**Caption:**
Name of the SCSI host

**Description:**
Description of the SCSI host

**DeviceID:**
Unique identifier of the SCSI controller with other devices on the system

**PNPDeviceID:**
Windows Plug and Play device identifier of the logical device.

**Availability:**
Availability and status of the device (see table in https://msdn.microsoft.com/en-us/library/aa394400%28v=vs.85%29.aspx)

| | |
|---|---|
| **OS** | Information for the Windows operating system installation and settings. |

| Setting | MSI Property |
|---|---|
| **Name** | WMIEXT_OS_NAME |
| **HypervisorPresent** | WMIEXT_OS_HYPERVISORPRESENT |
| **Workgroup** | WMIEXT_OS_WORKGROUP |
| **TotalPhysicalMemory** | WMIEXT_OS_TOTALPHYSICALMEMORY |
| **UserName** | WMIEXT_OS_USERNAME |
| **PrimaryOwnerName** | WMIEXT_OS_PRIMARYOWNERNAME |
| **PartOfDomain** | WMIEXT_OS_PARTOFDOMAIN |

**Name:**
operating system name
**Hypersensitivity:**
True/False

**Workgroup:**
workgroup name

**TotalPhysicalMemory:**
the total physical memory

**UserName:**
the login user name

**PrimaryOwnerName:**
Name of the primary system owner.

**PartOfDomain:**
TRUE/FALSE

(TPD)
**PowerSupplyState**
**Model**
**PCSystemType**
**WakeUpType**

| | |
|---|---|
| **NIC** | Information for network adapter on the Windows operating system. |

| Setting | MSI Property |
|---|---|
| **Name** | WMIEXT_NIC_NAME |
| **MACAddress** | WMIEXT_NIC_MACADDRESS |
| **PNPDeviceID** | WMIEXT_NIC_PNPDEVICEID |

| Setting | MSI Property |
|---|---|
| **Speed** | WMIEXT_NIC_SPEED |
| **AdapterType** | WMIEXT_NIC_ADAPTERTYPE |

**Name:**
List of network adapters installed on the machine; the list is semi-colon delimited.
**MACAddress**
List of MAC address; the list is semi-colon delimited.
**PNPDeviceID:**
list of PNP Devices IDs for the all network adapters; the list is semi-colon delimited.

**Speed:**
A list of estimates of the current bandwidth in bits per second for all adapters. The list is semi-delimited.

**AdapterType:**
A list of adapters type (see below). The list is semi-delimited.

"Ethernet 802.3", "Token Ring 802.5" , "Fiber Distributed Data Interface (FDDI)" , "Wide Area Network (WAN)", "LocalTalk" , "Ethernet using DIX header format" , "ARCNET" ,"ARCNET (878.2)"
"ATM" , "Wireless" , "Infrared Wireless" , "Bpc", "CoWan", "1394"

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**BASEBOARD**

| Setting | MSI Property |
|---|---|
| **Name** | WMIEXT_BASEBOARD_NAME |

**Name:**
Windows operating system host-name.
(TBD)
Manufacturer
Model

Information for the motherboard or system board on Windows operating system.

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**PRINTER**

| Setting | MSI Property |
|---|---|
| **Caption** | WMIEXT_PRINTER_CAPTION |
| **DeviceID** | WMIEXT_PRINTER_DEVICEID |
| **PrintProcessor** | WMIEXT_PRINTER_PRINTPROCESSOR |
| **ShareName** | WMIEXT_PRINTER_SHARENAME |

**Caption:**
Name of the default printing device.

**DeviceID:**
The deviceID for the the default printing device.

**PrintProcessor:**
Name of the print spooler that handles print jobs

**ShareName:**
Share name of the Windows-based printing device.
Example: \\PRINTSERVER1\PRINTER2

**(TBD)**

Information for the Printer device on Windows operating system.

Network
VerticalResolution
HorizontalResolution
EnableBIDI
DefaultCapabilities
DefaultLanguage
DetectedErrorState
ExtendedPrinterStatus

| BOOTCONFIG | | Information for Windows operating System Boot configuration. |
|---|---|---|

| Setting | MSI Property |
|---|---|
| Caption | WMIEXT_BOOTCONFIG_CAPTION |
| BootDirectory | WMIEXT_BOOTCONFIG_BOOTDIRECTORY |

**Caption:**
Short description of the windows boot partition.

**BootDirectory:**
Path to the system files required for booting the system.
Example: "C:\Windows"

**(TBD)**
LastDrive
Description

| CSPRODUCT | | Information for the Computer System Hardware on Windows operating system. |
|---|---|---|

| Setting | MSI Property |
|---|---|
| UUID | WMIEXT_CSPRODUCT_UUID |

**UUID:**
Universally unique identifier (UUID) for this product. A UUID is a 128-bit identifier that is guaranteed to be different

(TBD)
Caption
IdentifyingNumber
Name
Vendor
Version

| BIOS | | Information for the computer system input/output services (BIOS) installed. |
|---|---|---|

| Setting | MSI Property |
|---|---|
| BIOSVersion | WMIEXT_BIOS_BIOSVERSION |
| Manufacturer | WMIEXT_BIOS_MANUFACTURER |
| SMBIOSBIOSVersion | WMIEXT_BIOS_SMBIOSBIOSVERSION |
| SMBIOSMajorVersion | WMIEXT_BIOS_SMBIOSMAJORVERSION |
| SMBIOSMinorVersion | WMIEXT_BIOS_SMBIOSMINORVERSION |

**BIOSVersion:**
complete system BIOS information.

**Manufacturer:**
Manufacturer of the Input/output services(BIOS).

**SMBIOSBIOSVersion:**
BIOS version as reported by SMBIOS.

| | | |
|---|---|---|
| | **SMBIOSMajorVersion:**<br>Major SMBIOS version number.<br><br>**SMBIOSMinorVersion:**<br>Minor SMBIOS version number.<br><br><br>(TBD)<br>Version<br>Caption<br>PrimaryBIOS | |
| **SOUNDDEV** | Caption | WMIEXT_SOUNDDEV_CAPTION | Information for the Source Device installed on the computer system. |
| | DeviceID | WMIEXT_SOUNDDEV_DEVICEID | |

For SOUNDDEV:

| Setting | MSI Property |
|---|---|
| Caption | WMIEXT_SOUNDDEV_CAPTION |
| DeviceID | WMIEXT_SOUNDDEV_DEVICEID |

**Caption:**
Name of the default sounde device installed.
**DeviceID:**
Unique identifier of the sound device , represent vendor ID and Class, etc.

(TBD)
Manufacturer
Description
StatusInfo
PowerManagementSupported

For VOLUME:

| Setting | MSI Property |
|---|---|
| SerialNumber | WMIEXT_VOLUME_SERIALNUMBER |
| DeviceID | WMIEXT_VOLUME_DEVICEID |
| Caption | WMIEXT_VOLUME_CAPTION |

**SerialNumber:**

**DeviceID:**

**Caption:**

For ONBOARDDEVICE:

| Setting | MSI Property |
|---|---|
| Description | WMIEXT_ONBOARDDEVICE_DESCRIPTION |
| DeviceType | WMIEXT_ONBOARDDEVICE_DEVICETYPE |

**Description:**
name of the built into motherboard device
**DeviceType:**
Type of device being represented.
1 (0x1) : Other
2 (0x2) : Unknown
3 (0x3) : Video
4 (0x4) : SCSI Controller
5 (0x5) : Ethernet
6 (0x6) : Token Ring
7 (0x7) : Sound

Information for common adapter devices built into the motherboard (system board).

| | (TBD)<br>Enabled | |
|---|---|---|

| **SYSTEMSLOT** | | represents physical connection points including ports, motherboard slots and peripherals, and proprietary connection points. |
|---|---|---|

| Setting | MSI Property |
|---|---|
| **SlotDesignation** | WMIEXT_SYSTEMSLOT_SLOTDESIGNATION |

**SlotDesignation:**
SMBIOS string that identifies the system slot designation of the slot on the motherboard.
Example: "J6D2"
(TBD):
MaxDataWidth
PMESignal

| **VOLTAGE** | | represents the properties of a voltage sensor (electronic voltmeter) |
|---|---|---|

| Setting | MSI Property |
|---|---|
| **Name** | WMIEXT_VOLTAGE_NAME |
| **Status** | WMIEXT_VOLTAGE_STATUS |

**Name:**
sensor name

**Status:**
Operational statuses, this include: "OK","Error", "Degraded" , "Unknown", "Pred Fail", "Starting", "Stopping", "Service", "Stressed", "NonRecover", "No Contact", "Lost Comm"

| **DISPLAY** | | represents the capabilities and management capacity of the video controller on a computer system running Windows (windows Vista and above). |
|---|---|---|

| Setting | MSI Property |
|---|---|
| **Name** | WMIEXT_DISPLAY_NAME |
| **AdapterRAM** | WMIEXT_DISPLAY_ADAPTERRAM |
| **CurrentNumberOfColors** | WMIEXT_DISPLAY_CURRENTNUMBEROFCOLORS |
| **CurrentHorizontalResolution** | WMIEXT_DISPLAY_CURRENTHORIZONTALRESOLUTION |
| **CurrentVerticalResolution** | WMIEXT_DISPLAY_CURRENTVERTICALRESOLUTION |
| **DriverDate** | WMIEXT_DISPLAY_DRIVERDATE |
| **InstalledDisplayDrivers** | WMIEXT_DISPLAY_INSTALLEDDISPLAYDRIVERS |
| **DeviceID** | WMIEXT_DISPLAY_DEVICEID |
| **DriverVersion** | WMIEXT_DISPLAY_DRIVERVERSION |
| **PNPDeviceID** | WMIEXT_DISPLAY_PNPDEVICEID |

**Name:**
display adapter name

**AdapterRAM:**
dispay adapater total memory

**CurrentNumberOfColors:**
Number of colors supported at the current resolution

**CurrentHorizontalResolution:**
Current number of horizontal pixels

**CurrentVerticalResolution:**
Current number of vertical pixels.

**DriverDate:**
Last modification date and time of the currently installed video driver.

**InstalledDisplayDrivers:**

Name of the installed display device driver.

**DeviceID:**
Identifier (unique to the computer system) for this video controller.

**DriverVersion:**
Version number of the video driver.

**PNPDeviceID:**
Windows Plug and Play device identifier of the logical device.

| | |
|---|---|
| **MONITOR** | represents the identifying information about a video monitor, such as manufacturer name, year of manufacture, or serial number. The data in this class correspond to data in the Vendor/Product Identification block of Video Input Definition of the Video Electronics Standard Association (VESA) Enhanced Extended Display Identification Data (E-EDID) standard. |

| Setting | MSI Property |
|---|---|
| InstanceName | WMIEXIT_MONITOR_INSTANCENAME |
| Active | WMIEXIT_MONITOR_ACTIVE |

**InstanceName:**
Name of the specific monitor instance.

**Active:**
Indicates the active monitor.
(TBD):
YearOfManufacture

| | |
|---|---|
| **BATTERY** | represents a battery connected information to the computer system. |

| Setting | MSI Property |
|---|---|
| Availability | WMIEXT_BATTERY_AVAILABILITY |
| Status | WMIEXT_BATTERY_STATUS |
| SystemName | WMIEXT_BATTERY_SYSTEMNAME |
| StatusInfo | WMIEXT_BATTERY_STATUSINFO |
| SmartBatteryVersion | WMIEXT_BATTERY_SMARTBATTERYVERSION |
| Caption | WMIEXT_BATTERY_CAPTION |
| BatteryStatus | WMIEXT_BATTERY_BATTERYSTATUS |
| EstimatedChargeRemaining | WMIEXT_BATTERY_ESTIMATEDCHARGEREMAINING |

**Availability:**
Availability and status of the device

**Status:**
1 (0x1) : Other
2 (0x2) : Unknown
3 (0x3) : Running or Full Power
4 (0x4) : Warning
5 (0x5) : In Test
6 (0x6) : Not Applicable
7 (0x7) : Power Off
8 (0x8) : Off Line
9 (0x9) : Off Duty
10 (0xA): Degraded
11 (0xB) : Not Installed
12 (0xC) : Install Error
13 (0xD) : Power Save - Unknown
The device is known to be in a power save mode, but its exact status is unknown.
14 (0xE) : Power Save - Low Power Mode
The device is in a power save state but still functioning, and may exhibit degraded performance.

15 (0xF) : Power Save - Standby
The device is not functioning, but could be brought to full power quickly.
16 (0x10) : Power Cycle
17 (0x11) : Power Save - Warning
The device is in a warning state, though also in a power save mode.

**SystemName**

**StatusInfo:**
State of the logical device

1 (0x1) : Other
2 (0x2) : Unknown
3 (0x3) : Enabled
4 (0x4) : Disabled
5 (0x5) : Not Applicable

**SmartBatteryVersion**

**Caption**

**BatteryStatus**
1 : The battery is discharging.
2 : The system has access to AC so no battery is being discharged. However, the battery is not necessarily charging.
3 : Fully Charged
4 : Low
5 : Critical
6 : Charging
7 : Charging and High
8 : Charging and Low
9 : Charging and Critical
10 : Undefined
11 : Partially Charged

**EstimatedChargeRemaining**
timate of the percentage of full charge remaining

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**PNP**

| Setting | MSI Property |
|---------|-------------|
| **DeviceID** | WMIEXT_BATTERY_DEVICEID |
| **Service** | WMIEXT_BATTERY_SERVICE |
| **Name** | WMIEXT_BATTERY_NAME |

**DeviceID:**
Identifier of the Plug and Play device.

**Service:**
Name of the service that supports this Plug and Play device.

**Name:**

represents a list of all the properties of a Plug and Play device.

| Account | | | Represent a list of all local user accounts on the local computer system. |
|---|---|---|---|
| | **Setting** | **MSI Property** | |
| | Domain | WMIEXT_ACCOUNT_DOMAIN | |
| | FullName | WMIEXT_ACCOUNT_FULLNAME | |
| | Name | WMIEXT_ACCOUNT_NAME | |

**Domain:**

Name of the Windows domain to which a user account belongs.
**FullName:** Full name of a local user
**Name:** Name of the Windows user account on the local system