Dell EMC OpenManage CIM Reference Guide

Version 9.1

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Notes, cautions, and warnings

ⓘ | **NOTE: A NOTE indicates important information that helps you make better use of your product.**

△ | **CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.**

⚠ | **WARNING: A WARNING indicates a potential for property damage, personal injury, or death.**

Contents

Introduction

This reference guide documents the OpenManage Server Administrator Common Information Model (CIM) provider contained in the Management Object File (MOF) **dccim32.mof**.

CIM provides a conceptual model for describing manageable objects in a systems management environment. CIM is a modeling tool rather than a programming language. CIM provides the structure for organizing objects into a model of a managed environment. For modeling a managed environment, CIM makes available a set of abstract and concrete classes of objects. These classes model the basic characteristics of systems, networks, and applications, as well as groupings of management-related data.

For more information about CIM, see the Distributed Management Task Force (DMTF) website at **dmtf.org** and the Microsoft website at **microsoft.com**.

Topics:

- Server Administrator
- Documenting CIM Classes and Their Properties
- Common Properties of Classes
- Other Documents You May Need
- Typographical Conventions

Server Administrator

Server Administrator provides a suite of systems management information for keeping track of your networked systems. In addition to providing systems management agents that are independent of the management console, Server Administrator supports these systems management standards: CIM and Simple Network Management Protocol (SNMP).

In addition to supporting systems management industry standards, Server Administrator provides additional systems management information about the specific components of your Dell system.

Documenting CIM Classes and Their Properties

The Dell CIM provider extends support to Dell-specific software and hardware components. The Dell MOF defines the classes for the Dell CIM provider. All of the supported classes and properties in the MOF are documented in this guide.

The following subsections define some of the basic building blocks of CIM classes that are used in describing the dccim32 provider name. These subsections also explain how the elements used in describing these classes are organized. This section does not document the entire CIM schema, but only those classes and properties supported by the dccim32 provider. The list of properties for each supported class varies greatly.

The property values being presented could be NULL or empty string on some systems, although in general, some non-empty values can be expected. Key properties (listed below) always carry non-empty values. It is recommended that you use only the following properties as key attributes:

- **CIM_PhysicalElement**: CreationClassName, Tag
- **CIM_System**: CreationClassName, Name
- **CIM_LogicalDevice**: SystemCreationClassName, SystemName, CreationClassName, DeviceID

- **CIM_Dependency**: Antecedent, Dependent
- **CIM_SoftwareElement**: Name, Version, SoftwareElementState, SoftwareElementID, TargetOperatingSystem
- **CIM_SoftwareFeature**: IdentifyingNumber, ProductName, Vendor, Version, Name
- **CIM_IRQ**: CSCreationClassName, CSName, CreationClassName, IRQNumber
- **CIM_MemoryMappedIO**: CSCreationClassName, CSName, CreationClassName, StartingAddress
- **CIM_DMA**: CSCreationClassName, CSName, CreationClassName, DMAChannel
- **CIM_RedundancyGroup**: CreationClassName, Name
- **DELL_EsmLog**: RecordNumber
- **DELL_PostLog**: RecordNumber
- **DELL_BIOSExtensions**: systemBIOSCharacteristics
- **DELL_BIOSSettings**: DisplayName
- **CIM_ServiceAccessPoint**: SystemCreationClassName, SystemName, CreationClassName, Name

Base Classes

The classes listed in the Server Administrator CIM provider class hierarchy do not have a parent property. These base classes do not derive from another class. The base classes are:

- CIM_ManagedSystemElement
- CIM_Dependency
- DELL_EsmLog
- DELL_PostLog
- DELL_CMApplication
- DELL_CMDevice
- DELL_CMDeviceApplications
- DELL_CMInventory
- DELL_CMOS
- DELL_CMProductInfo

The **CIM_ManagedSystemElement** class is the base class for the system element hierarchy from which all other CIM classes are derived. As a result, **CIM_ManagedSystemElement** has no parent. Examples of managed system elements include software components such as files, devices such as hard drives and controllers, and physical subcomponents of devices such as chip sets and cards. For the **CIM_ManagedSystemElement** properties, see Caption, CreationClassName, Description, Name, and Status in Common Properties of Classes

The Dell-defined classes are not defined in the official schema by the DMTF, the industry group that defines the standards for CIM, and hence do not have parent classes. **CIM_Dependency** does not have a parent class because it is a relationship or association between two managed system elements.

Parent Classes

Most classes in the dccim32 provider document both a *Class Name* and a *Parent Class* property. The parent class is the class from which any given class inherits its core properties. For example, the **CIM_Controller** class has the **CIM_LogicalDevice** class as its parent, and has various types of controllers (**CIM_ParallelController**, **CIM_SerialController**) as its children.

Classes That Describe Relationships

Classes that derive from **CIM_Dependency** have **CIM_Dependency** as their parent class, but they are documented in terms of *antecedent* and *dependent* elements in a relationship rather than in terms of common properties. Consider the following relationship between two **CIM_ManagedSystemElements**:

Table 1. Classes That Describe Relationships

Antecedent	CIM_PackageCurrentSensor
Dependent	CIM_PhysicalPackage

The **CIM_PackageCurrentSensor** class monitors an entire physical package, such as all the components contained in a given system chassis. The **CIM_PhysicalPackage** class is dependent on the **CIM_PackageCurrentSensor** class for this monitoring function.

Dell-Defined Classes

Server Administrator has extended some CIM classes and has created new classes to assist in managing systems and their components. In this document, the illustrations of the classes created and populated by Dell are represented by an orange circle icon.

Common Properties of Classes

Many classes have properties such as *Caption*, *Description*, and *CreationClassName*. Common Properties of Classes defines properties that have the same meaning in every class that has this property and are defined more than once in this guide.

Table 2. Common Properties of Classes

Property	Description	Data Type
Caption	Describes the object using a short textual description (one-line string).	string
CreationClassName	Indicates the name of the class or the subclass used in the creation of an instance. When used with the other key properties of this class, this property allows all instances of this class and its subclasses to be uniquely identified.	string
CSCreationClassName	Indicates the computer system's creation class name.	string
CSName	Indicates the computer system's name.	string
CurrentReading	Indicates the actual current value indicated by the sensor in amperes.	sint32
Description	Provides a textual description of the object.	string

Property	Description	Data Type
LowerThresholdNonCritical	If current reading is between lower threshold noncritical and upper threshold noncritical, the current state is normal. See Figure 3-2.	sint32
LowerThresholdCritical	If the current reading is between upper threshold critical and upper threshold fatal, the current state is critical. See Figure 3-2.	sint32
IsLinear	Indicates that the sensor is linear over its dynamic range.	Boolean
Manufacturer	Provides the name of the organization responsible for producing the CIM_PhysicalElement or CIM_SoftwareElement. This may be the entity from whom the element is purchased, but not necessarily. Purchase information is contained in the vendor property of CIM_Product.	string
Name	Defines the label by which the object is known. When subclassed, the *Name* property can be overridden to be a *Key* property.	string
Status	Provides a string indicating the status of the component. Status values include: Operational Status Values: • *OK* indicates that the object is functioning normally. • *Degraded* means that the item is functioning, but not optimally. • *Stressed* indicates that the element is functioning, but needs attention. Examples of *Stressed* states are overloaded, overheated, and so on. **Nonoperational Status Values:** • *Non-recover* means that a nonrecoverable error has occurred. • *Error* means that an element has encountered an operational condition that is severe as compared to its normal mode of operation.	string
SystemCreationClassName	Indicates the system's creation class name.	string
UnitModifier	Provides the unit multiplier for the values returned by this sensor. All the values returned by this sensor are represented in units of 10 raised to the power of the unit modifier. If the unit modifier is −6, then the units of the values returned are microvolts. The units apply to all numeric properties of the sensor, unless explicitly overridden by the units' qualifier.	sint32

Property	Description	Data Type
UpperThresholdCritical	If the current reading is between upper threshold critical and upper threshold fatal, the current status is critical. See Figure 3-2.	sint32
UpperThresholdNonCritical	If the current reading is between lower threshold noncritical and lower threshold critical, the current status is noncritical. See Figure 3-2.	sint32
Version	Version should be in the form *<major>.<minor>.<revision>* or *<major>.<minor><letter><revision>*; for example, 1.2.3 or 1.2a3.	string

Other Documents You May Need

Besides this *Dell EMC OpenManage Server Administrator CIM Reference Guide*, you can find the following documents on the Dell Support website at **dell.com/support/manuals**:

- *Dell EMC OpenManage Server Administrator User's Guide* documents the features, installation, and uninstallation of Server Administrator.
- *Dell EMC OpenManage Server Administrator Installation Guide* contains instructions to help you install Dell EMC OpenManage Server Administrator.
- *Dell EMC OpenManage Management Station Software Installation Guide* contains instructions to help you install Dell EMC OpenManage management station software that includes Baseboard Management Utility, iDRAC Tools, and Active Directory Snap-In.
- *Dell EMC OpenManage Server Administrator Command Line Interface User's Guide* explains how to perform tasks using the text-based command line interface.
- *Dell EMC OpenManage Server Administrator Messages Reference Guide* lists the messages that you can receive on your systems management console or on your operating system's event viewer. This guide explains the text, severity, and cause of each message that the Server Administrator issues.
- *Dell EMC OpenManage Server Administrator SNMP Reference Guide* documents the SNMP management information base (MIB). The SNMP MIB defines variables that cover the capabilities of Server Administrator systems management agents.
- The *Glossary* for information on terms used in this document.

Typographical Conventions

The following example shows how most of the classes in the Dell CIM provider are documented. CIM_DMA Properties shows a partial class description for the DELL_DMA class.

ⓘ **NOTE:** For a full class description, see CIM_DMA Properties.

Class Name appears in Courier typeface and provides the string that names the class in the MOF.

Parent Class appears in Courier typeface and provides the name of the class from which the present class is derived.

Property denotes the name of the attribute that is being defined for this class.

Description includes text that defines the property.

Data Type stipulates the format that the values of this property must take. Common data types include Boolean, string, and various types of integer. Boolean indicates that the property must be expressed as one of two alternatives.

CIM_Physical Element

CIM_PhysicalElement is a CIM-defined class. The CIM_PhysicalElement class contains the subclasses shown in Figure
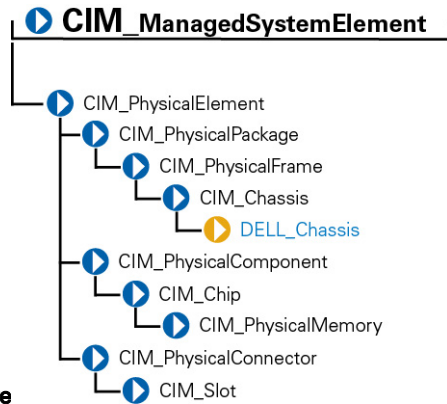
CIM_PhysicalElement Class Structure

Topics:

CIM_PhysicalElement

Subclasses of the **CIM_PhysicalElement** class listed in Table below define any component of a system that has a distinct physical identity. Physical elements are tangible managed system elements (usually actual hardware items) that have a physical manifestation of some sort. By contrast, processes, files, and logical devices are not classified as physical elements. A managed system element is not necessarily a discrete component. A single card (which is a type of physical element) can host more than one logical device.

One card, for example, could implement both a modem and a local area network (LAN) adapter. In this case, the card would be represented by a single physical element associated with multiple logical devices.

Table 3. CIM_PhysicalElement Properties

Class Name: CIM_PhysicalElement
Parent Class: CIM_ManagedSystemElement

Property	Description	Data Type
CreationClassName	See Common Properties of Classes	
Manufacturer	See Common Properties of Classes	
Model	The name by which the physical element is generally known.	string
SerialNumber	A manufacturer-allocated number used to identify the physical element.	string
Tag	Uniquely identifies the physical element and serves as the element's key. The Tag property can contain information such as asset tag or serial number data. The key for a physical element is placed very high in the object hierarchy in order to identify the hardware/entity independently, regardless of the physical placement in or on cabinets, adapters, and so on. For example, a hotswappable or removable component can be taken from its containing (scoping) package and be temporarily unused. The object still continues to exist and may even be inserted into a different scoping container. Therefore, the key for the physical element is an arbitrary string that is defined independently of any placement or location-oriented hierarchy.	string

CIM_PhysicalPackage

◉ **CIM_ManagedSystemElement**

    └─ ◉ **CIM_PhysicalElement**

        └─ ◉ CIM_PhysicalPackage
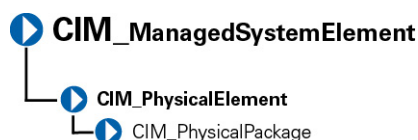
The **CIM_PhysicalPackage** class listed in Table below represents physical elements that contain or host other components. Examples are a rack enclosure or an adapter card with multiple functions.

Table 4. CIM_PhysicalPackage Properties

Class Name:	CIM_PhysicalPackage	
Parent Class:	CIM_PhysicalElement	
Property	Description	Data Type
Removable	A CIM_PhysicalPackage is removable if it is designed to be taken in and out of the physical container in which it is normally found without impairing the function of the overall package.	Boolean
Replaceable	A CIM_PhysicalPackage is replaceable if it is possible to substitute a physically different element for the original element, as in a field replaceable unit (FRU). For example, some computer systems allow the microprocessor to be upgraded to one of a higher clock rating. In this case, the microprocessor is said to be replaceable.	Boolean

CIM_PhysicalFrame

CIM_ManagedSystemElement

    CIM_PhysicalElement

        CIM_PhysicalPackage
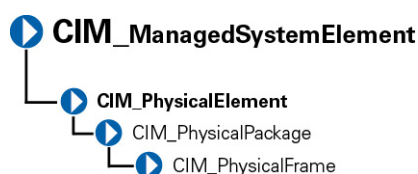
           CIM_PhysicalFrame

The **CIM_PhysicalFrame** class described in Table properties contains other frame enclosures such as racks and chassis. Properties like **VisibleAlarm** or **AudibleAlarm**, and data related to security breaches are also members of this class.

Table 5. CIM_Physical Frame Properties

Class Name:	CIM_PhysicalFrame	
Parent Class:	CIM_PhysicalPackage	
Property	Description	Data Type
LockPresent	Indicates whether the frame is protected with a lock.	Boolean
AudibleAlarm	Indicates whether the frame is equipped with an audible alarm.	Boolean
VisibleAlarm	Indicates that the equipment includes a visible alarm.	Boolean
SecurityBreach	An enumerated, integer-valued property indicating that a physical breach of the frame is in progress. Values for the **SecurityBreach** property are: **1 -** Other **2 -** Unknown **3** - No breach **4 -** Breach attempted **5** - Breach successful	uint16

Class Name:	`CIM_PhysicalFrame`	
Parent Class:	`CIM_PhysicalPackage`	
Property	**Description**	**Data Type**
IsLocked	Indicates that the frame is currently locked.	Boolean

CIM_Chassis

CIM_**ManagedSystemElement**

    CIM_PhysicalElement
        CIM_PhysicalPackage
            CIM_PhysicalFrame
                CIM_Chassis
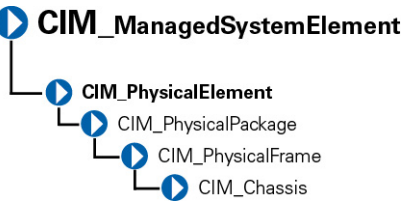
The **CIM_Chassis** class described in Table below represents the physical elements that enclose physical elements such as power supplies, fans, and processors.

Table 6. CIM_Chassis Parent Properties

Class Name: CIM_Chassis
Parent Class: CIM_PhysicalFrame

Property	Description	Data Type
ChassisTypes	Values for the **ChassisTypes** property are: 1 Other 2 Unknown 3 Mini-tower 4 Tower 5 Space-saving 6 Main system chassis 7 Expansion chassis 8 Subchassis 9 Space-saving 10 Main system chassis 11 Expansion chassis 12 Subchassis 13 Bus expansion chassis 14 Peripheral chassis 15 Storage chassis 16 Rack-mount chassis	uint16

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DELL_Chassis

CIM_ManagedSystemElement
- **CIM_PhysicalElement**
  - CIM_PhysicalPackage
    - CIM_PhysicalFrame
      - CIM_Chassis
        - DELL_Chassis
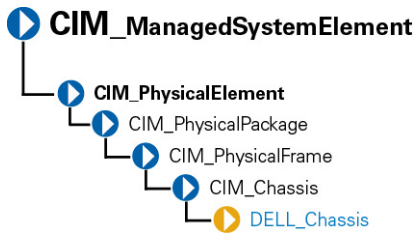
The **DELL_Chassis** class explained in Table below defines the identifying and status properties of the chassis. **DELL_Chassis** inherits from CIM-defined classes, but is populated by Dell properties.

Table 7. DELL_Chassis Properties

Class Name:	DELL_Chassis	
Parent Class:	CIM_Chassis	
Property	**Description**	**Data Type**
AssetTag	Indicates the container **AssetTag** string. This asset tag string is assigned by the system administrator.	string
SystemClass	Refers to the system type that is installed and running the instrumentation. Values for the **SystemClass** property are: **1** - Other **2** - Unknown **3** - Workstation **4** - Server **5** - Desktop **6** - Portable **7** - Net PC	uint16
SystemID	Indicates the system identifier code.	uint16
LogFormat	Defines whether the event log data is unicode formatted or binary (raw). Values for the event **LogFormat** property are: **1** - Formatted (event log only) **2** - Unformatted **3** - Events_and_POST_Formatted (both the event log and the power-on self-test (POST) log are unicode formatted)	uint16
FanStatus	Indicates the global status of fan sensors.	string
TempStatus	Indicates the global status of temperature sensors.	string
VoltStatus	Indicates the global status of voltage sensors.	string
AmpStatus	Indicates the global status of current sensors.	string
PsStatus	Indicates the global status of power supplies.	string

Class Name:	DELL_Chassis	
Parent Class:	CIM_Chassis	

Property	Description	Data Type
MemStatus	Indicates the global status of memory devices.	string
ProcStatus	Indicates the global status of processor devices.	string
FanRedStatus	Indicates the global status of the cooling unit.	string
PsRedStatus	Indicates the global status of the power unit.	string
IsDefaultThrSupported	Indicates whether resetting default thresholds are supported.	Boolean
ChassisSystemProperties	Indicates chassis characteristics, such as energy smart and so on.	uint16
ChassisSystemRevision	Indicates the chassis revision.	uint16
EsmLogStatus	Indicates the global status of ESM log.	string
MemoryRedStatus	Indicates the global status of memory redundancy.	string
ChassisExpressServiceCode	Indicates the chassis express service code.	string
ChassisNodeID	Chassis Node ID	string

CIM_PhysicalComponent

CIM_ManagedSystemElement
    CIM_PhysicalElement
        CIM_PhysicalComponent

The **CIM_PhysicalComponent** class listed in Table below represents any low-level or basic component within a package. A component object either cannot or does not need to be broken down into its constituent parts. For example, an application specific integrated circuit (ASIC) cannot be broken down into smaller discrete parts.

Table 8. CIM_PhysicalComponent Properties

Class Name:	CIM_PhysicalComponent
Parent Class:	CIM_PhysicalElement

CIM_Chip

CIM_ManagedSystemElement
    CIM_PhysicalElement
        CIM_PhysicalComponent
            CIM_Chip
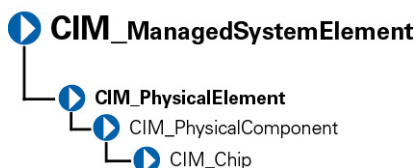
The **CIM_Chip** class listed in Chip Properties represents any type of integrated circuit hardware, including ASICs, processors, memory chips, and so on.

Table 9. CIM_Chip Properties

Class Name: CIM_Chip
Parent Class: CIM_PhysicalComponent

Property	Description	Data Type
FormFactor	**0** — Unknown	uint16
	1 — Other	
	2 — SIP	
	3 — DIP	
	4 — ZIP	
	5 — SOJ	
	6 — Proprietary	
	7 — SIMM	
	8 — DIMM	
	9 — TSOP	
	10 — PGA	
	11 — RIMM	
	12 — SODIMM	
	13 — SRIMM	
	14 — SMD	
	15 — SSMP	
	16 — QFP	
	17 — TQFP	
	18 — SOIC	
	19 — LCC	
	20 — PLCC	
	21 — BGA	
	22 — FPBGA	
	23 — LGA	
	24 — FB-DIMM	

CIM_PhysicalMemory

CIM_**ManagedSystemElement**

    CIM_PhysicalElement

        CIM_PhysicalComponent

            CIM_Chip

                CIM_PhysicalMemory
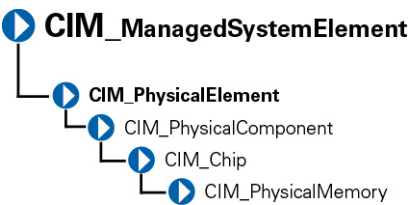
The **CIM_PhysicalMemory** class listed in PhysicalMemoryProperties is a subclass of CIM_Chip, representing low-level memory devices, such as SIMMs, DIMMs, and so on.

Table 10. CIM_PhysicalMemory Properties

Class Name: CIM_PhysicalMemory
Parent Class: CIM_Chip

Property	Description	Data Type
FormFactor	See Chip Properties	uint16
MemoryType	Indicates the type of physical memory. Values for the MemoryType property are: **0** - Unknown **1** - Other **2** - DRAM **3** - Synchronous DRAM **4** - Cache DRAM **5** - EDO **6** - EDRAM **7** - VRAM **8** - SRAM **9** - RAM **10** - ROM **11** — Flash **12** - EEPROM **13** - FEPROM **14** - EPROM **15** - CDRAM **16** - 3DRAM **17** - SDRAM	uint16

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18 - SGRAM

19 - RDRAM

20 - DDR

21 - DDR2

22 - DDR2 FB-DIMM

24 - DDR3

25 - FBD2

26 - DDR4

TotalWidth	Indicates the total width, in bits, of the physical memory, including check or error correction bits. If there are no error correction bits, the value in this property should match that specified for the **DataWidth** property.	uint16
DataWidth	Indicates the data width, in bits, of the physical memory. A data width of 0 and a total width of 8 would indicate that the memory is solely used to provide error correction bits.	uint16
Speed	Indicates the speed of the physical memory, in nanoseconds.	uint32
Rank	The Rank values of DIMM are: **0** - Unknown **1** - Single **2** - Dual **4** - Quad **8** - Octal **16** - Hexa	unit32
SpeedAsString	Indicates the accurate speed of the physical memory, in string format (with units).	string
Capacity	Indicates the total capacity of this physical memory, in bytes.	uint64
BankLabel	A string identifying the physically labeled bank where the memory is located, for example, "Bank 0" or "Bank A."	string
PositionInRow	Specifies the position of the physical memory in a "row." For example, if it takes two 8-bit memory devices to form a 16-bit	uint32

	row, then a value of 2 means that this memory is the second device. 0 is an invalid value for this property.	
InterleavePosition	Indicates the position of this physical memory in an interleave. 0 indicates noninterleaved. 1 indicates the first position, 2 the second position, and so on. For example, in a 2:1 interleave, a value of 1 indicates that the memory is in the "even" position.	uint32
Manufacturer	Indicates the manufacturer of the physical memory.	string
SerialNumber	Indicates the serial number of the physical memory.	string

CIM_PhysicalConnector

CIM_ManagedSystemElement

    CIM_PhysicalElement

        CIM_PhysicalConnector

The **CIM_PhysicalConnector** class listed in Physical Connector Properties includes physical elements such as plugs, jacks, or buses that connect physical elements. Any object that can be used to connect and transmit signals or power between two or more physical elements is a member of this class. For example, slots and D-shell connectors are types of physical connectors. See Connector Type Values for a list of valid connector type values.

Table 11. CIM_PhysicalConnector Properties

Class Name: CIM_PhysicalConnector
Parent Class: CIM_PhysicalElement

Property	Description	Data Type
ConnectorPinout	A free-form string describing the pin configuration and signal usage of a physical connector.	string
ConnectorType	An array of integers defining the type of physical connector. An array is specified to allow the description of "combinations" of connector information. For example, one array entry could specify RS-232, another DB-25, and a third entry could define the connector as male. See Connector Type Values for the values of the ConnectorType property.	uint16

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Table 12. Connector Type Values

0 - Unknown	30 - unused	60 - Micro-DIN	90 - On board IDE Connector
1 - Other	31 - unused	61 - PS/2	91 - On board floppy
2 - Male	32 - IEEE-48	62 - Infrared	92 - 9 Pin dual inline
3 - Female	33 - AUI	63 - unused	93 - 25 Pin dual inline
4- Shielded	34 - UTP Category 3	64 - Access bus	94 - 50 Pin dual inline
5 - Unshielded	35 - UTP Category 4	65 - unused	95 - 68 Pin dual inline
6 - SCSI (A) High-Density (50 pins)	36 - UTP Category 5	66 - Centronics	96 - On board sound connector
7 - SCSI (A) Low-Density (50 pins)	37 - BNC	67 - Mini-Centronics	97 - Mini-jack
8 - SCSI (P) High-Density (68 pins)	38 - RJ11	68 - Mini-Centronics Type-14	98 - PCI-X
9 - SCSI SCA-I (80 pins)	39 - RJ45	69 - Mini-Centronics Type-20	99 - Sbus IEEE 1396-1993 32-bit
10 - SCSI SCA-II (80 pins)	40 - Fiber MIC	70 - Mini-Centronics Type-26	100 - Sbus IEEE 1396-1993 64-bit
11 - Fibre Channel (DB-9 Copper)	41 - unused	71 - Bus mouse	101 - unused
12 - Fibre Channel (Fiber Optical)	42 - unused	72 - ADB	102 - GIO
13 - Fibre Channel SCAII (40 pins)	43 - PCI	73 - AGP	103 - XIO
14 - Fibre Channel SCAII (20 pins)	44 - ISA	74 - VME bus	104 - HIO
15 - Fibre Channel BNC	45 - unused	75 - VME64	105 - NGIO
16 - ATA 3-1/2 inch (40 pins)	46 - VESA	76 - Proprietary	106 - PMC
17 - ATA 2-1/2 inch (44 pins)	47 - unused	77 - Proprietary processor card slot	107 - MTRJ
18 - ATA-2	48 - unused	78 - Proprietary memory card slot	108 - VF-45
19 - ATA-3	49 - unused	79 - Proprietary I/O riser slot	109 - Future I/O
20 - ATA/66	50 - unused	80 - PCI-66 MHz	110 - SC
21 - DB-9	51 - unused	81 - AGP2X	111 - SG
22 - DB-15	52 - unused	82 - AGP4X	112 - Electrical
23 - DB-25	53 - USB	83 - PC-98	113 - Optical
24 - DB-36	54 - IEEE 1394	84 - PC-98-Hireso	114 - Ribbon
25 - RS-232C	55 - HIPPI	85 - PC-H98	115 - GLM
26 - RS-422	56 - HSSDC (6 pins)	86 - PC-98Note	116 - 1x9
27 - RS-423	57 - GBIC	87 - PC-98Full	117 - Mini SG
28 - RS-485	58 - DIN	88 - SSA SCSI	118 - LC
29 - RS-449	59 - Mini-DIN	89 - Circular	119 - HSSC

CIM_Slot

CIM_ManagedSystemElement

    CIM_PhysicalElement

        CIM_PhysicalConnector
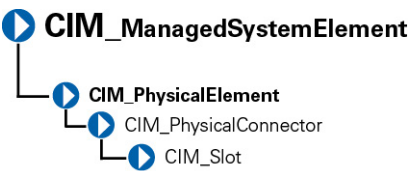
            CIM_Slot

The **CIM_Slot** class listed in Table below represents connectors into which packages are inserted. For example, a physical package that is a hard drive can be inserted into a small computer system interface-single connector attachment (SCSI-SCA) slot. As another example, a card can be inserted into a 16-, 32-, or 64-bit expansion slot on a host board

.

Table 13. CIM_Slot Properties

Class Name:class CIM_Slot

Parent Class: CIM_PhysicalConnector

Property	Description	Data Type
ConnectorType	See Connector Type Values	uint16
SupportsHotPlug	Indicates whether the slot supports hot-plug adapter cards.	Boolean
MaxDataWidth	Indicates the maximum bus width in bits of adapter cards that can be inserted into this slot. Values for the MaxDataWidth property are as follows: **0** - Unknown **1** - Other **8** - bits **16** - bits **32** - bits **64** - bits **128** - bits	uint16
SystemSlotType	Indicates the type of system slot. Values for the **SystemSlotType** property are as follows: **1** - Other **2** - Unknown **3** - ISA **4** - MCA **5** - EISA	

6 - PCI

7 - PCMCIA

8 - VL-VESA

9 - Proprietary

10 - Processor card Slot

11- Proprietary memory card slot

12- I/O Riser card slot

13 - NuBus

14- PCI - 66MHz capable

15 - AGP

16 - AGP 2X

17 - AGP 4X

18 - PCI-X

19 - AGP 8X

160 - PC-98/C20

161 - PC-98/C24

162 - PC-98/E

163 - PC-98/Local bus

164 - PC-98/Card

165 - PCI Express

166 - PCI Express x1

167 - PCI Express x2

168 - PCI Express x4

169 - PCI Express x8

170 - PCI Express x16

171 - PCI Express Gen 2

172 - PCI Express Gen 2 x1

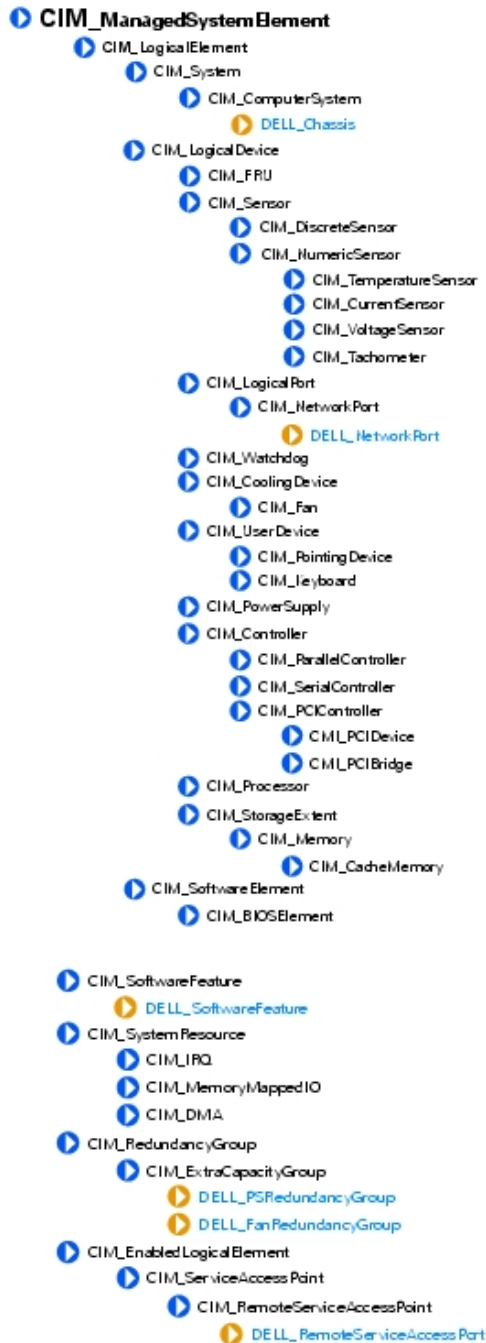**173** - PCI Express Gen 2 x2

174 - PCI Express Gen 2 x4

175 - PCI Express Gen 2 x8

176 - PCI Express Gen 2 x16

CIM_LogicalElement

CIM_LogicalElement is a CIM-defined class containing the subclasses described in below Figure.

Topics:

CIM_LogicalElement

Table properties list the following characteristics for members of the **CIM_LogicalElement** class:

· Represent abstractions used to manage and coordinate aspects of a physical environment such as files, processes, systems, system capabilities, and network components in the form of logical devices
· Represent devices, where devices are abstractions of hardware entities that may or may not be realized in physical hardware

Table 14. CIM_LogicalElement Properties

Class Name:	CIM_LogicalElement
Parent Class:	CIM_ManagedSystemElement

CIM_System

The **CIM_System** class described in Table below defines a collection of managed system elements that operates as a functional whole. An instance of the **CIM_System** class contains a well-defined list of components that work together to perform a specific function.

Table 15. CIM_System Properties

Class Name: CIM_System
Parent Class: CIM_LogicalElement

Property	Description	Data Type
CreationClassName	See Common Properties of Classes	string
Name	Indicates the name of a specific system, such as a particular storage system or server.	string
PrimaryOwnerContact	Provides information about how the primary system owner can be reached, for example, a phone number or e-mail address.	string
PrimaryOwnerName	Indicates the name of the primary system owner.	string
Roles	An array of strings that specifies the roles this system plays in the	string

IT environment. For example, for an instance of a network system, the **Roles** property might contain the string "storage system."

CIM_ComputerSystem

CIM_**ManagedSystemElement**
  CIM_LogicalElement
    CIM_System
      CIM_ComputerSystem
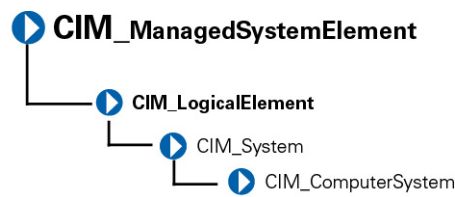
The **CIM_ComputerSystem** class described in Table below contains some or all of the following **CIM_ManagedSystemElements**: file system, operating system, processor, and memory (volatile and/or nonvolatile storage). For properties, see CIM_System Properties.

Table 16. CIM_ComputerSystem Properties

Class Name:	CIM_ComputerSystem
Parent Class:	CIM_System

DELL_System

CIM_**ManagedSystemElement**
  CIM_LogicalElement
    CIM_System
      CIM_ComputerSystem
        DELL_System
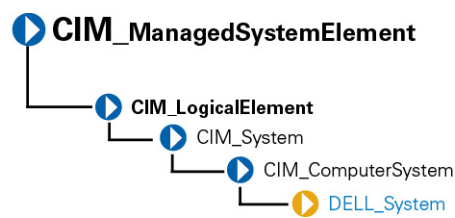
The **DELL_System** class described in Table below is the set of all Dell instrumented systems, including server, and storage systems. For properties, see CIM_System Properties

Table 17. DELL_System Properties

Class Name:	DELL_System
Parent Class:	CIM_ComputerSystem

CIM_LogicalDevice

CIM_**ManagedSystemElement**
  CIM_LogicalElement
    CIM_LogicalDevice

The **CIM_LogicalDevice** class described below Table models a hardware entity that may be realized in physical hardware. **CIM_LogicalDevice** includes any characteristics of a logical device that manages its operation or configuration. An example of a logical device is a temperature sensor's reading of the actual temperature.

Table 18. CIM_Logical Device Properties

Class Name: CIM_LogicalDevice
Parent Class: CIM_LogicalElement

Property	Description	Data Type
SystemCreationClassName	See Common Properties of Classes	string
SystemName	Indicates the scoping system's name.	string
CreationClassName	See Common Properties of Classes	string
DeviceID	Identifies an address or other identifying information to uniquely name the logical device.	string

CIM_FRU
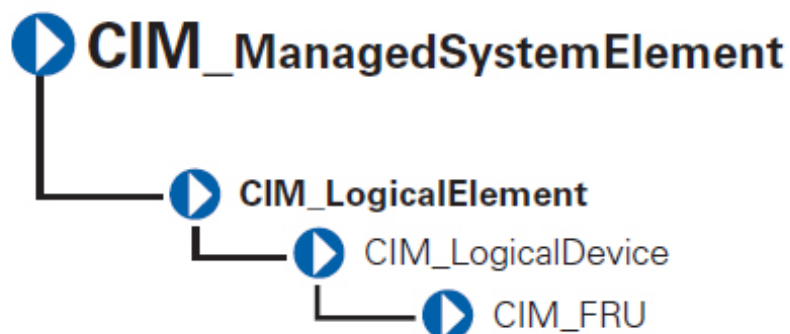
The **CIM_FRU** class described in FRU Properties contains manufacturing information related to the Field Replaceable Units (FRU) of a system such as a system planar or I/O riser card.

Table 19. CIM_FRU Properties

Class Name: CIM_FRU
Parent Class: CIM_LogicalDevice

Property	Description	Data Type
FRUInformationState	Indicates the state and availability of FRU information.	uint 16
FRUDeviceName	Indicates the device name of the FRU.	string
FRUManufacturingDateName	Indicates the manufacturing date of the FRU in ticks.	datetime

FRUManufacturerName	Indicates the name of the manufacturer.	string
FRUPartNumberName	Indicates the FRU part number.	string
FRUSerialNumberName	Indicates the FRU serial number.	string
FRURevisionName	Indicates the FRU revision number.	string

CIM_Sensor

CIM_ManagedSystemElement

    CIM_LogicalElement

        CIM_LogicalDevice

            CIM_Sensor

                CIM_NumericSensor

                    CIM_CurrentSensor
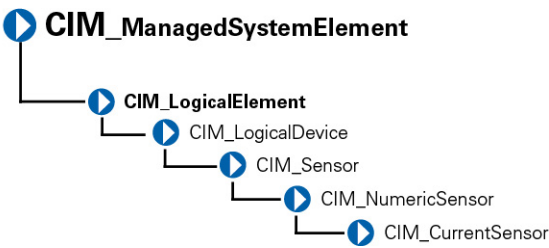
The **CIM_Sensor** class described in Table below contains hardware devices capable of measuring the characteristics of some physical property, for example, the temperature or voltage characteristics of a computer system

Table 20. CIM_Sensor Properties

Class Name: CIM_Sensor
Parent Class: CIM_LogicalDevice

Property	Description	Data Type
SensorType	Indicates the type of the sensor, for example, voltage or temperature sensor. Values for the SensorType property are: **0** - Unknown **1** - Other **2** - Temperature sensors measure the environmental temperature. **3** - Voltage sensors measure electrical voltage. **4** - Current sensors measure current readings. **5** - Tachometers measure speed/revolutions of a device. For example, a fan device can have an associated tachometer that measures its speed. **6** - Batteries maintain the time and date and save the system's	uint16

	BIOS configuration when the system is turned off.	
OtherSensorType	Description Indicates the type of sensor when the SensorType property is set to **Other**.	string
PossibleStates	Enumerates the string outputs of the sensor. For example, a NumericSensor can report states based on threshold readings.	string
CurrentState	Indicates the current state of the sensor. This value is always one of the Possible States.	string
PollingInterval	Indicates the polling interval, in nanoseconds, that the sensor hardware or instrumentation uses to determine the current state of the sensor.	uint64

CIM_DiscreteSensor

CIM_**ManagedSystemElement**
　　CIM_LogicalElement
　　　CIM_LogicalDevice
　　　　CIM_Sensor
　　　　　CIM_DiscreteSensor
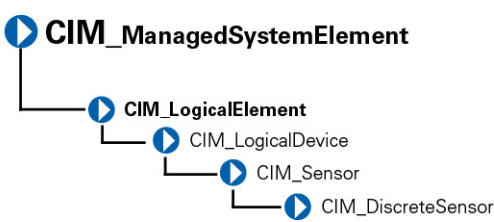
The **CIM_DiscreteSensor** class described in Table below has a set of legal string values that it can report. The **CIM_DiscreteSensor** always has a "current reading" that corresponds to one of the enumerated values.

Table 21. CIM_DiscreteSensor Properties

Class Name: CIM_DiscreteSensor
Parent Class: CIM_Sensor

Property	Description	Data Type
CurrentReading	See Common Properties of Classes	sint32
PossibleValues	Enumerates the string outputs that can be reported by the sensor.	sint32

CIM_NumericSensor

CIM_**ManagedSystemElement**
　　CIM_LogicalElement
　　　CIM_LogicalDevice
　　　　CIM_Sensor
　　　　　CIM_NumericSensor
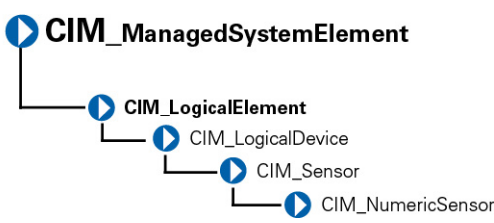
The **CIM_NumericSensor** class described in NumericSensor Properties returns numeric settings and may also support threshold settings. Figure below shows the relationship among upper and lower critical and upper and lower non-critical threshold values. The normal range falls between upper and lower non-critical thresholds.

Figure: Ranges for Threshold Values
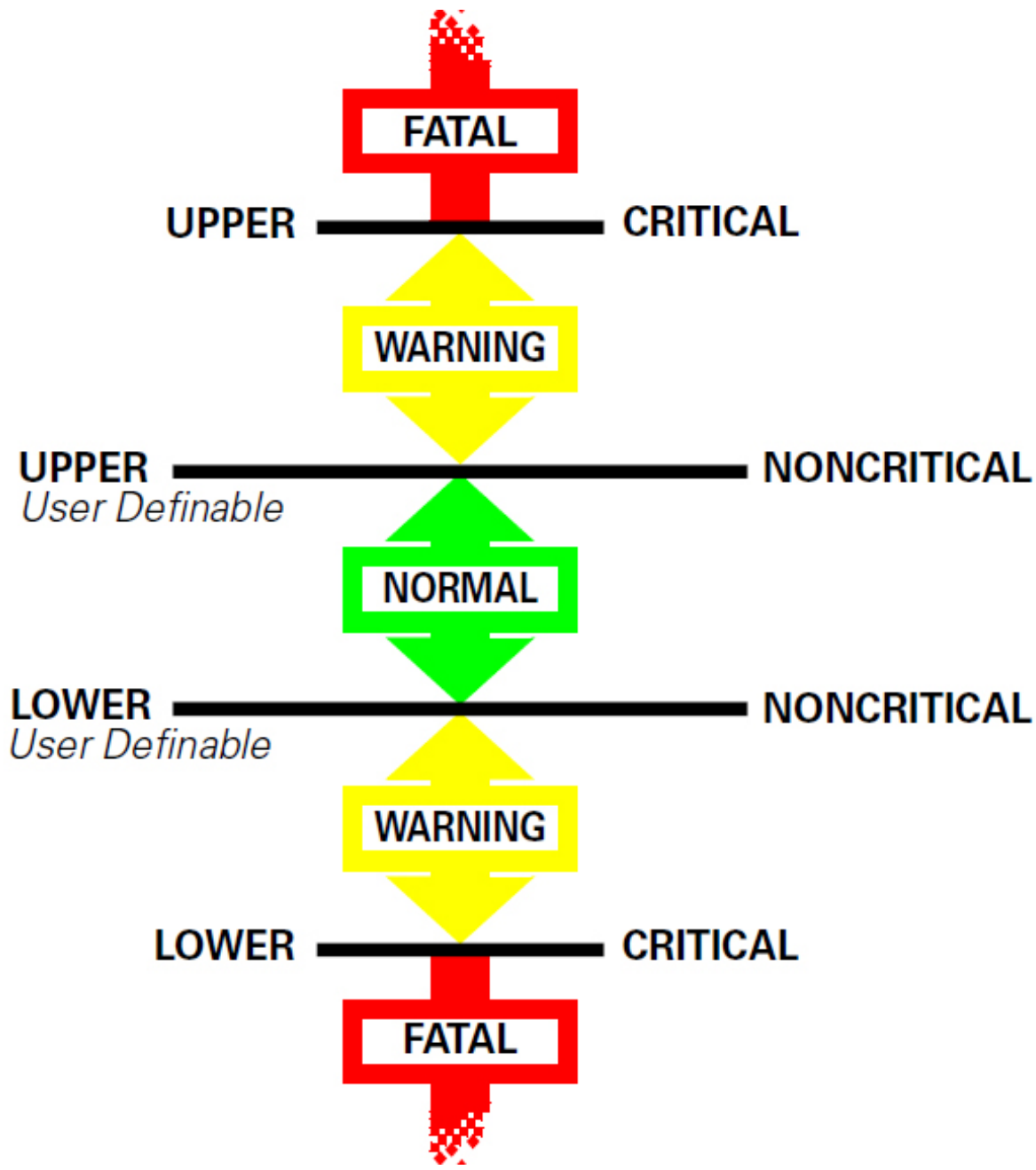
Table 22. CIM_NumericSensor Properties

Class Name: CIM_NumericSensor
Parent Class: CIM_Sensor

Property	Description	Data Type

UnitModifier	See Common Properties of Classes	sint32
CurrentReading	See Common Properties of Classes	sint32
IsLinear	See Common Properties of Classes	Boolean
LowerThresholdNonCritical	See Common Properties of Classes	sint32
UpperThresholdNonCritical	See Common Properties of Classes	sint32
LowerThresholdCritical	See Common Properties of Classes	sint32
UpperThresholdCritical	See Common Properties of Classes	sint32
SupportedThresholds	An array representing the thresholds supported by this sensor. The supported values are as follows: 1 - LowerThresholdNonCritical 2 - UpperThresholdNonCritical 3 - LowerThresholdCritical 4 - UpperThresholdCritical	uint16
EnabledThresholds	An array representing the thresholds that are currently enabled for this sensor. Enabled threshold values are as follows: 1 - LowerThresholdNonCritical 2 - UpperThresholdNonCritical 3 - LowerThresholdCritical 4 - UpperThresholdCritical	uint16
SettableThresholds	An array representing the writable thresholds supported by this sensor. Settable threshold values are: 1 - LowerThresholdNonCritical 2 - UpperThresholdNonCritical	uint16

CIM_TemperatureSensor

CIM_ManagedSystemElement

    CIM_LogicalElement

        CIM_LogicalDevice

            CIM_Sensor

                CIM_NumericSensor

                    CIM_TemperatureSensor
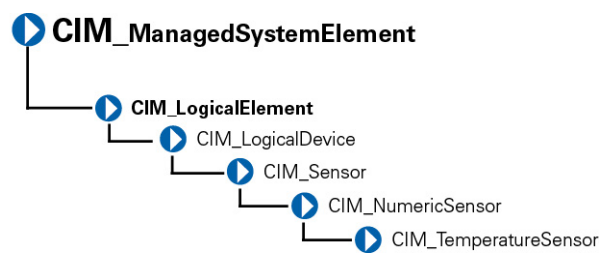
The **CIM_TemperatureSensor** class described in Table below contains sensors that sample ambient temperature and return a value in degrees celsius.

Table 23. CIM_TemperatureSensor Properties

Class Name: CIM_TemperatureSensor
Parent Class: CIM_NumericSensor

Property	Description	Data Type
UnitModifier	See Common Properties of Classes	sint32
CurrentReading	See Common Properties of Classes	sint32
IsLinear	See Common Properties of Classes	Boolean
LowerThresholdNonCritical	See Common Properties of Classes	sint32
UpperThresholdNonCritical	See Common Properties of Classes	sint32
LowerThresholdCritical	See Common Properties of Classes	sint32
UpperThresholdCritical	See Common Properties of Classes	sint32

CIM_CurrentSensor

CIM_ManagedSystemElement

    CIM_LogicalElement

        CIM_LogicalDevice

            CIM_Sensor

                CIM_NumericSensor
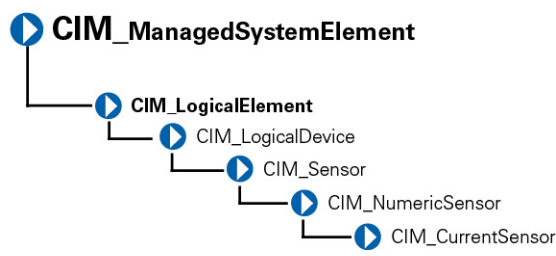
                    CIM_CurrentSensor

The **CIM_CurrentSensor** class described in Properties Table below contains sensors that measure amperage and return a value in amperes and watts.

Table 24. CIM_CurrentSensor Properties

Class Name: CIM_CurrentSensor
Parent Class: CIM_NumericSensor

Property	Description	Data Type
UnitModifier	See Common Properties of Classes	sint32
CurrentReading	See Common Properties of Classes	sint32

IsLinear	See Common Properties of Classes	Boolean
LowerThresholdNonCritical	See Common Properties of Classes	sint32
UpperThresholdNonCritical	See Common Properties of Classes	sint32
LowerThresholdCritical	See Common Properties of Classes	sint32
UpperThresholdCritical	See Common Properties of Classes	sint32

CIM_VoltageSensor
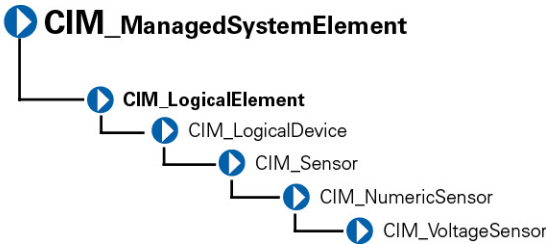
The **CIM_VoltageSensor** class described in Table below contains sensors that measure voltage and return a value in volts.

Class Name: CIM_VoltageSensor
Parent Class: CIM_NumericSensor

Property	Description	Data Type
UnitModifier	See Common Properties of Classes	sint32
CurrentReading	See Common Properties of Classes	sint32
IsLinear	See Common Properties of Classes	Boolean
LowerThresholdNonCritical	See Common Properties of Classes	sint32
UpperThresholdNonCritical	See Common Properties of Classes	sint32
LowerThresholdCritical	See Common Properties of Classes	sint32
UpperThresholdCritical	See Common Properties of Classes	sint32

CIM_Tachometer

The **CIM_Tachometer** class described in Table below contains devices that measure revolutions per minute (RPM) of a fan and return the value in RPMs.

Class Name: CIM_Tachometer

Parent Class: CIM_NumericSensor

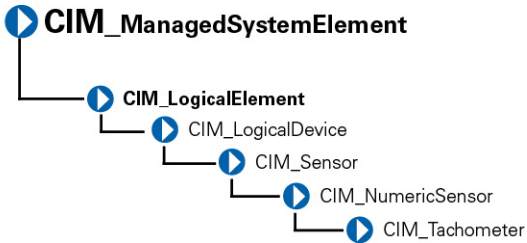| Property	Description	Data Type
SensorType	See Common Properties of Classes	uint16
UnitModifier	See Common Properties of Classes	sint32
CurrentReading	See Common Properties of Classes	sint32
IsLinear	See Common Properties of Classes	Boolean
LowerThresholdNonCritical	See Common Properties of Classes	sint32
UpperThresholdNonCritical	See Common Properties of Classes	sint32

CIM_WatchDog

CIM_ManagedSystemElement
- **CIM_LogicalElement**
  - CIM_LogicalDevice
    - CIM_Watchdog
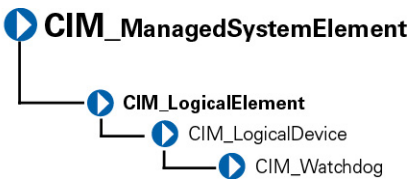
The **CIM_WatchDog** class described in Table below represents a timer that is implemented in system hardware. The watchdog feature allows the hardware to monitor the state of the operating system, BIOS, or a software component installed on the system. If the monitored component fails to rearm the timer before its expiration, the hardware assumes that the system is in a critical state and could reset the system. This feature can also be used as an application watchdog timer for a mission-critical application. In this case, the application would assume responsibility for rearming the timer before expiration.

Table 27. CIM_WatchDog Properties

Class Name:	`CIM_WatchDog`	
Parent Class:	`CIM_LogicalDevice`	

Property	Description	Data Type
MonitoredEntity	Indicates the entity that is currently being monitored by the watchdog feature. This property is used to identify the module that is responsible for rearming the watchdog at periodic intervals. Values for the **MonitoredEntity** property are: **1** - Unknown **2** - Other **3** - Operating System	uint16
MonitoredEntity Description	A string describing additional textual information about the monitored entity.	string
TimeoutInterval	Indicates the time-out interval used by the watchdog, in microseconds.	uint32
TimerResolution	Indicates the resolution of the watchdog timer. For example, if this value is 100, then	uint32

Class Name:	CIM_WatchDog	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
	the timer can expire anytime between –100 microseconds and +100 microseconds.	

CIM_CoolingDevice
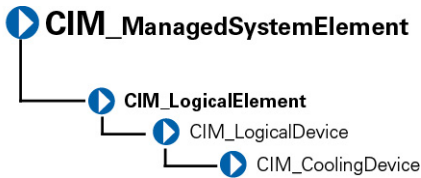
The **CIM_CoolingDevice** class described in CIM_CoolingDevice contains a set of devices that work to keep the ambient internal temperature of the system at a safe value.

Table 28. CIM_CoolingDevice Properties

Class Name:	CIM_CoolingDevice	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
ActiveCooling	Specifies whether the device provides active (as opposed to passive) cooling.	Boolean

CIM_Fan
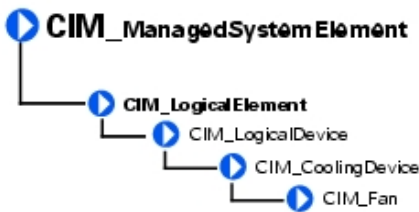
The **CIM_Fan class** described in below Table contains a set of devices that work to keep the ambient internal temperature of the system at a safe value by circulating air.

Table 29. CIM_Fan Properties

Class Name:	CIM_Fan	
Parent Class:	CIM_CoolingDevice	
Property	Description	Data Type
VariableSpeed	Specifies if the fan supports variable speeds.	Boolean

DesiredSpeed	Indicates the currently requested fan speed, defined in RPM. When the VariableSpeed value is TRUE, the fan supports variable speeds. When a variable speed fan is supported (VariableSpeed is TRUE), the actual speed is determined using a sensor (CIM_Tachometer) that is associated with the fan.	uint64

CIM_UserDevice
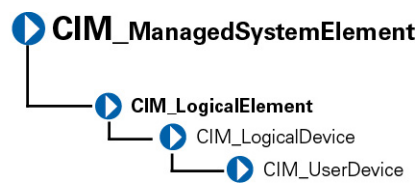
The **CIM_UserDevice** class described in Table below contains logical devices that allow a system's users to input or view data. Classes derived from **CIM_UserDevice** include **CIM_Keyboard** and **CIM_PointingDevice**.

Table 30. CIM_UserDevice Properties

Class Name:	CIM_UserDevice	
Parent Class:	CIM_LogicalDevice	
Property	**Description**	**Data Type**
IsLocked	Indicates if the device is locked, preventing user input or output.	Boolean

CIM_PointingDevice
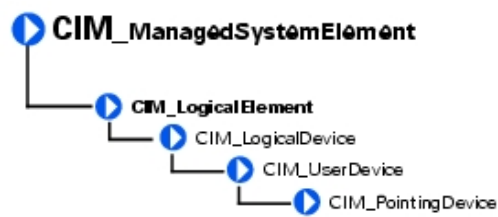
The **CIM_PointingDevice** class described in Table below includes those devices used to point to regions of a display. Examples of such devices are a mouse or a trackball.

Table 31. CIM_PointingDevice Properties

Class Name:	CIM_PointingDevice	
Parent Class:	CIM_UserDevice	
Property	**Description**	**Data Type**
PointingType	Indicates the type of pointing device. Values for the **PointingType** property are: **1** — Other	uint16

2 — Unknown

3 — Mouse

4 — Trackball

5 — Trackpoint

6 — Glidepoint

7 — Touch pad

8 — Touch screen

9 — Mouse — optical sensor

NumberOfButtons	Indicates the number of buttons. If the CIM_PointingDevice has no buttons, a value of 0 is returned.	uint8
Handedness	Integer indicating if the CIM_PointingDevice is configured for right- or left-handed operation. Values for the **Handedness** property are as follows:	uint16

0 — Unknown

1 — Not applicable

2 — Right-handed operation

3 — Left-handed operation

CIM_Keyboard
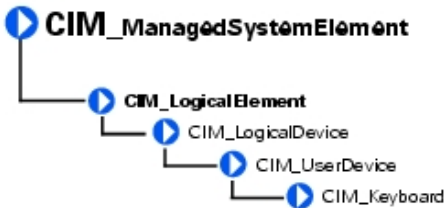
The **CIM_Keyboard** class described in Table below includes devices that allow users to enter data.

Table 32. CIM_Keyboard Properties

Class Name:	CIM_Keyboard
Parent Class:	CIM_UserDevice

Property	Description	Data Type
NumberOfFunctionKeys	Indicates the number of function keys on the keyboard.	uint16
Layout	A free-form string indicating the format and layout of the keyboard.	string
Password	An integer indicating if a hardware-level password is enabled at the keyboard,	uint16

preventing local input. Values for the
Password property are:

1 — Other

2 — Unknown

3 — Disabled

4 — Enabled

5 — Not implemented

CIM_PowerSupply
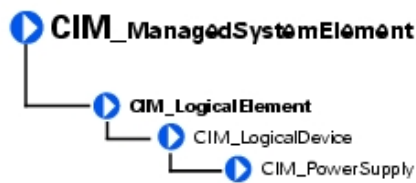
The **CIM_PowerSupply** class described in Table below contains devices that provide current and voltage for the operation of the system and its components

Table 33. CIM_PowerSupply Properties

Class Name:	CIM_PowerSupply	
Parent Class:	CIM_LogicalDevice	
Property	**Description**	**Data Type**
IsSwitchingSupply	Indicates that the power supply is a switching power supply and not a linear power supply.	Boolean
Range1InputVoltageLow	Indicates the low voltage in millivolts of input voltage range 1 for this power supply. A value of 0 denotes unknown.	uint32
Range1InputVoltageHigh	Indicates the high voltage in millivolts of input voltage range 1 for this power supply. A value of 0 denotes unknown.	uint32
ActiveInputVoltage	Indicates which input voltage range is currently in use. Range 1, range 2, or both can be specified using the values 3, 4, or 5, respectively. If the supply is not drawing power, a value of 6 (neither) can be specified. This information is necessary in the case of an uninterruptible power supply (UPS), a subclass of power supply. Values for the **ActiveInputVoltage** property are: **1**— Other **2** — Unknown **3** — Range 1	uint16

4 — Range 2

5 — Both range 1 and range 2

6 — Neither range 1 nor range 2

TotalOutputPower	Represents the total output power of the power supply in milliwatts. A value of 0 denotes that the power output is unknown.	uint32
PMCapable	Indicates the Power Monitoring capability.	Boolean

CIM_Controller
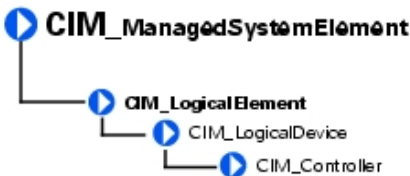
The **CIM_Controller** class described in below Table properties, groups miscellaneous control-related devices. Examples of controllers are small computer system interface (SCSI) controllers, Universal Serial Bus (USB) controllers, and serial controllers.

Table 34. CIM_Controller Properties

Class Name:	CIM_Controller	
Parent Class:	CIM_LogicalDevice	
Property	**Description**	**Data Type**
ProtocolSupported	The protocol used by the controller to access controlled devices. Values for the **ProtocolSupported** property are: **1** — Other **2** — Unknown **3** — PCI **4** — Parallel protocol	uint16

CIM_ParallelController

The **CIM_ParallelController** class described in below contains a set of objects that control parallel devices. Parallel controllers transfer 8 or 16 bits of data at a time to the devices they control, for example, a parallel port controlling a printer.

DELLEMC

Table 35. CIM_ParallelController Properties

Class Name:	CIM_ParallelController

Parent Class:	CIM_Controller

Property	Description	Data Type
DMASupport	Set to TRUE if the parallel controller supports DMA.	Boolean
Security	An enumeration indicating the operational security for the controller. Values for the **Security** property are: **1** — Other **2** — Unknown **3** — None **4** — External interface locked out **5** — External interface enabled **6** — Boot bypass	uint16

CIM_SerialController
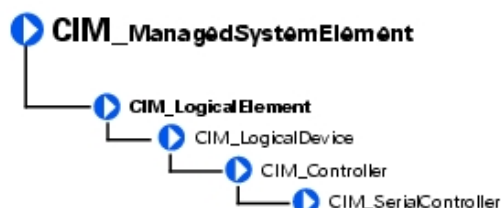
The **CIM_SerialController** class described in Table below contains controllers that transfer data one bit at a time to the devices they control, for example, a serial port controlling a modem.

Table 36. CIM_SerialController Properties

Class Name:	CIM_SerialController

Parent Class:	CIM_Controller

Property	Description	Data Type
MaxBaudRate	Indicates the maximum baud rate in bits per second supported by the serial controller.	uint32
Security	An enumeration indicating the operational security for the controller. Values for the **Security** property are: **1** — Other **2** — Unknown	uint16

3 — None

4 — External interface locked out

5 — External interface enabled

6 — Boot bypass

CIM_PCIController
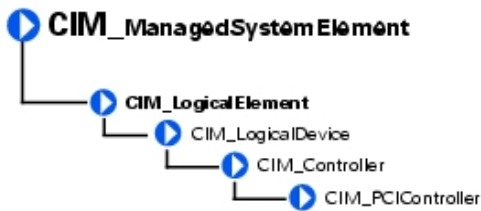
The **CIM_PCIController** class described in Table below contains a set of devices that follow the Peripheral Component Interconnect (PCI) protocol defined by the Personal Computer Memory Card International Association (PCMCIA). The PCI protocol defines how data is transferred between devices. The **CIM_PCIController** class contains PCI adapters and bridges.

Table 37. CIM_PCIController Properties

Class Name:	CIM_PCIController	
Parent Class:	CIM_Controller	
Property	**Description**	**Data Type**
CommandRegister	The current contents of the register that provide basic control over the device's ability to respond to, and/or perform PCI accesses. The data in the capabilities array is gathered from the PCI status register and the PCI capabilities list as defined in the PCI specification. Values for the **CommandRegister** property are: **0** — Unknown **1** — Other **2** — Supports 66 MHz **3** — Supports user-definable features **4** — Supports fast back-to-back transactions **5** — PCI-X capable **6** — PCI power management supported **7** — Message signaled interrupts supported	uint16

8 — Parity error recovery capable

9 — AGP supported

10 — Vital product data supported

11 — Provides slot identification

12 — Hot swap supported

CIM_PCIDevice
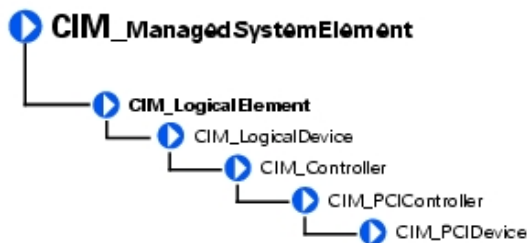
The **CIM_PCIDevice** class shown in Table below describes the capabilities and management of a PCI device controller on an adapter card.

Table 38. CIM_PCIDevice Properties

Class Name:	CIM_PCIDevice	
Parent Class:	CIM_PCIController	
Property	**Description**	**Data Type**
BaseAddress	Identifies an array of up to six double-word base memory addresses.	uint32
SubsystemID	Identifies a subsystem identifier code.	uint16
SubsystemVendorID	Identifies a subsystem vendor ID. ID information is reported from a PCI device via protocol-specific requests. This information is also present in the CIM_PhysicalElement class (the manufacturer property) for hardware, and the CIM_Product class (the vendor property) for information related to product acquisition.	uint16
ExpansionROMBaseAddress	Identifies a double-word expansion ROM base memory address.	uint32

CIM_PCIBridge
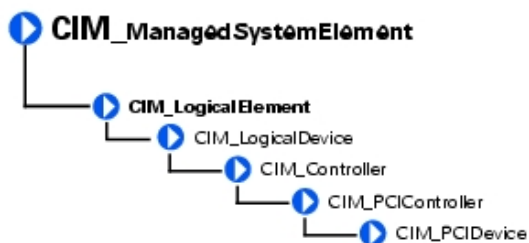
The **CIM_PCIBridge** class described in PCIBridge Properties describes the capabilities and management of a PCI controller providing bridge-to-bridge capability. An example is a PCI to Industry-Standard Architecture (ISA) bus bridge.

Table 39. CIM_PCIBridge Properties

Class Name:	CIM_PCIBridge	
Parent Class:	CIM_PCIController	
Property	**Description**	**Data Type**
BaseAddress	Identifies an array of double-word base memory addresses.	uint32
BridgeType	Indicates the type of bridge. A bridge is PCI to *<value>*, except for the Host, which is a host-to-PCI bridge. Values for the **BridgeType** property are as follows: **0** — Host **1** — ISA **128** — Other	uint16
BaseAddress	Identifies an array of double-word base memory addresses.	uint32

CIM_Processor

The **CIM_Processor** class described in Table below contains devices that interpret and execute commands, for example, the Intel Xeon microprocessor.

Table 40. CIM_Processor Properties

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	**Description**	**Data Type**
Role	A string describing the role of the microprocessor, for example, central microprocessor or math processor.	string
UpgradeMethod	Provides microprocessor socket information including data on how this microprocessor can be upgraded (if upgrades are supported). This property is an integer enumeration. Values for the UpgradeMethod property are as follows: **1** - Other	uint16

2 - Unknown

3 - Daughter board

4 - ZIF socket

5 - Replacement/piggy back

6 - None

7 - LIF socket

8 - Slot 1

9 - Slot 2

10 - 370-pin socket

19 - Socket mPGA604

20 - Socket LGA771

21 - Socket LGA775

22 - Socket S1

23 - Socket AM2

24 - Socket F (1207)

25— Socket LGA1366

MaxClockSpeed	Indicates the maximum speed (in MHz) of this microprocessor.	uint32
Core count	Indicates the number of core processors detected.	uint16
CoreEnabledCount	Indicates the number of core processors enabled.	uint16
CurrentClockSpeed	Indicates the current speed (in MHz) of this microprocessor.	uint32
DataWidth	Indicates the processor data width in bits.	uint16
AddressWidth	Indicates the processor address width in bits.	uint16
Stepping	Indicates the revision level of the processor within the microprocessor family.	string
UniqueID	Identifies a globally unique identifier for the microprocessor. This identifier may only be unique within a microprocessor family.	string
Brand	Indicates the brand name of the processor.	string
Model	Indicates the model name of the processor.	string
ExtendedCharacteristics	Indicates the extended capabilities of the processor. This attribute is a bit field. The following are the definitions of a bit when set to one: Bit 0 — Virtualization Technology (VT) supported	uint16

	Bit 1 — Demand-Based Switching (DBS) supported	
	Bit 2 — eXecute Disable (XD) supported	
	Bit 3 — Hyper Threading (HT) supported	
ExtendedStates	Indicates the setting of the extended capabilities of the processor. This attribute is a bit field. The following are the definitions of a bit when set to one:	uint16
	Bit 0 — Virtualization Technology (VT) enabled	
	Bit 1 — Demand-Based Switching (DBS) enabled	
	Bit 2 — eXecute Disable (XD) enabled	
	Bit 3 — Hyper Threading (HT) enabled	
CPUStatus	Indicates the current status of the microprocessor.	uint16
	For example, it may be disabled by the user through the BIOS or disabled due to a POST error. Values for the CPUStatus property are as follows:	
	0 - Unknown	
	1 - Microprocessor enabled	
	2 - Microprocessor disabled by user through BIOS setup	
	3 - Microprocessor disabled by BIOS (POST error)	
	4 - Microprocessor is idle	
	5 - Other	
Family	Refers to the processor family type. Values for the **Family** property are as follows:	uint16
	1 - Other	
	2 - Unknown	
	3 - 8086	
	4 - 80286	
	5 - 80386	
	6 - 80486	
	7 - 8087	
	8 - 80287	
	9 - 80387	

10 - 80487

11 - Pentium Brand

12 - Pentium Pro

13 - Pentium II

14 - Pentium processor with MMX technology

15 - Celeron

16 - Pentium II Xeon

17 - Pentium III

18 - M1 family

19 - M2 family

24 — AMD Duron processor

25 — K5 family

26 - K6 family

27 - K6 -2

28 - K6-3

29 - AMD Athlon processor family

30 - AMD29000 family

31 - K6-2+

32 - Power PC family

33 - Power PC 601

34 - Power PC 603

35 - Power PC 603+

36 - Power PC 604

37 - Power PC 620

38- Power PC X704

39- Power PC 750

40 - Intel Core Duo processor

41 - Intel Core Duo mobile processor

42 - Intel Core Solo mobile processor

43 - Intel Atom processor

48 - Alpha family

49 - Alpha 21064

50 - Alpha 21066

51 - Alpha 21164

52 - Alpha 21164

53 - Alpha 21164a

54 - Alpha 21264

55 - Alpha 21364

60 - AMD Opteron 4100 Series processor

64 - MIPS family

65 - MIPS R4000

66 - MIPS R4200

67 - MIPSR4400

68 - MIPS R4600

69 - MIPS R10000

80 - SPARC family

81 - SuperSPARC

82 - microSPARC II

83 - microSPARC IIep

84 - UltraSPARC

85 - UltraSPARC II

86 - UltraSPARC IIi

87 - UltraSPARC III

88 - UltraSPARC IIIi

96 - 68040

97 - 68xxx family

98 - 68000

99 - 68010

100 - 68020

101 - 68030

112 - Hobbit family

120 - Crusoe 5000 family

121 - Crusoe 3000 family

122 - Efficeon 8000 family

128 - Weitek

130 - Itanium processor

131 - AMD Athlon 64 processor family

132 - AMD Opteron processor family

133 - AMD Sempron processor family

134 - AMD Turion 64 Mobile technology

135 - Dual-Core AMD Opteron processor family

136 - AMD Athlon 64 X2 Dual-Core processor family

137 - AMD Turion 64 X2 Mobile technology

138 - Quad-Core AMD Opteron processor family

139 - Third-Generation AMD Opteron processor family

140 - AMD Phenom FX Quad-Core processor family

141 - AMD Phenom X4 Quad-Core processor family

142 - AMD Phenom X2 Dual-Core processor family

143 - AMD Athlon X2 Dual-Core processor family

144 - PA-RISC family

145 - PA-RISC 8500

146 - PA-RISC 8000

147 - PA-RISC 7300LC

148 - PA-RISC 7200

149 - PA-RISC 7100LC

150 - PA-RISC 7100

160 - V30 family

161 - Quad-Core Intel Xeon processor 3200 Series

162 - Dual-Core Intel Xeon processor 3000 Series

163 - Quad-Core Intel Xeon processor 5300 Series

164 - Dual-Core Intel Xeon processor 5100 Series

165 - Dual-Core Intel Xeon processor 5000 Series

166 - Dual-Core Intel Xeon processor LV

167 - Dual-Core Intel Xeon processor ULV

168 - Dual-Core Intel Xeon processor 7100 Series

169 - Quad-Core Intel Xeon processor 5400 Series

170 - Quad-Core Intel Xeon processor

171- Dual-Core Intel Xeon processor 5200 Series

172- Dual-Core Intel Xeon processor 7200 Series

173 - Quad-Core Intel Xeon processor 7300 Series

174- Quad-Core Intel Xeon processor 7400 Series

175- Multi-Core Intel Xeon processor 7400 Series

176 - Pentium III Xeon

177 - Pentium III Processor with Intel SpeedStep

178- Technology

179 - Pentium 4

180 - Intel Xeon

181- AS400 family

182 - Intel Xeon Processor MP

183 - AMD Athlon XP family

184 - AMD Athlon MP family

185 - Intel Itanium 2

186- Intel Pentium M processor

187 - Intel Celeron D processor

188 - Intel Pentium D processor

189 - Intel Pentium Extreme Edition processor

190- Intel Core 2 processor

192 - Intel Core 2 Solo processor

193 - Intel Core 2 Extreme processor

194- Intel Core 2 Quad processor

195 - Intel Core 2 Extreme mobile processor

196- Intel Core 2 Duo mobile processor

197- Intel Core 2 Solo mobile processor

198 - Intel Core i7 processor

199 - Dual-Core Intel Celeron processor

200 - S/390 and zSeries family

201- ESA/390 G4

202- ESA/390 G5

203- ESA/390 G6

204 - z/Architecture base

206 - CEh 206 Intel Core i3 processor

214 - Multi-Core Intel Xeon processor

215 - Dual-Core Intel Xeon processor 3xxx Series

216 - Quad-Core Intel Xeon processor 3xxx Series

217 - D9h 217 VIA Nano processor family

218 - Dual-Core Intel Xeon processor 5xxx Series

219 - Quad-Core Intel Xeon processor 5xxx Series

221 - Dual-Core Intel Xeon processor 7xxx Series

222- Dual-Core Intel Xeon processor 7xxx Series

223 Multi-Core Intel Xeon processor 7xxx Series

224 - E0h 224 Multi-Core Intel Xeon processor 3400 Series

230 - Embedded AMD Opteron Quad-Core processor family

231 - AMD Phenom Triple-Core processor family

232 - AMD Turion Ultra Dual-Core Mobile processor family

233 - AMD Turion Dual-Core Mobile
processor family

234 - AMD Turion Dual-Core Mobile
processor family

235- AMD Sempron SI processor family

238 - AMD Opteron Six-Core processor
family

250 - i860

251 - i960

260 - SH-3

261 - SH-4

280 - ARM

281 - StrongARM

300 - 6x86

301 - MediaGX

302 - MII

320 - WinChip

350- DSP

500 - Video processor

CIM_StorageExtent

The **CIM_StorageExtent** identified in Table below contains devices that manage data storage, for example, hard drives or microprocessor memory.

Table 41. CIM_StorageExtent Properties

Class Name:	CIM_StorageExtent
Parent Class:	CIM_LogicalDevice

CIM_Memory
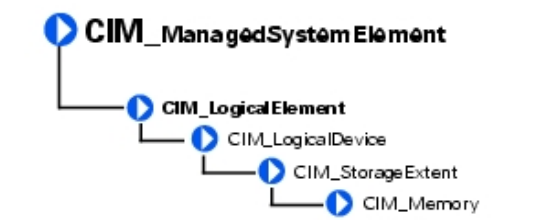
The **CIM_Memory** class identified in Table below describes the capabilities and management of storage extent devices, for example, cache memory or system memory.

Class Name:	CIM_Memory
Parent Class:	CIM_StorageExtent

CIM_CacheMemory
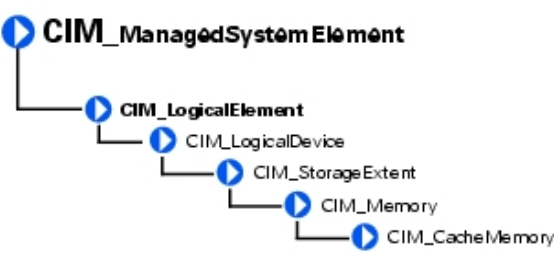
The **CIM_CacheMemory** class described in CacheMemoryProperties describes the capabilities and management of cache memory. Cache memory allows a microprocessor to access data and instructions faster than normal system memory

Class Name:	CIM_CacheMemory	
Parent Class:	CIM_Memory	
Property	**Description**	**Data Type**
Level	Defines if this is the primary, secondary, or tertiary cache. Values for the **Level** property are as follows: **1**- Other **2**- Unknown **3**- Primary **4** - Secondary **5**- Tertiary	uint16

6- Not applicable

WritePolicy	Defines if this cache is a write-back or write-through cache or if this information varies with address or is defined individually for each input/output (I/O). Values for the **WritePolicy** property are as follows: **1**- Other **2**- Unknown **3**- Write-back **4** - Write-through **5**- Varies with address **6**- Determination per I/O	uint16
CacheType	Defines if this cache is for instruction caching, data caching, or both (unified). Values for the **CacheType** property are as follows: **1**- Other **2**- Unknown **3**- Instruction **4**- Data **5**- Unified	uint16
LineSize	Indicates the size, in bytes, of a single cache bucket or line.	uint32
ReadPolicy	Defines the policy used by the cache for handling read requests. Values for the **ReadPolicy** property are as follows: **1**- Other **2**- Unknown **3**- Read **4**- Read-ahead **5**- Read and read-ahead **6**- Determination per I/O	uint16

DELL_SoftwareFeature

The **DELL_SoftwareFeature** described in Table below defines the universal resource locator (URL) of the systems management software and the language in which systems management information displays. Defining these properties enables users to manage a system using an Internet browser. You can access Server Administrator using the secure hypertext transfer protocol (https) and a preassigned port number of 1311, or you can specify a port number of your own choice.

Table 44. DELL_SoftwareFeature Properties

Class Name:	DELL_SoftwareFeature	
Parent Class:	CIM_SoftwareFeature	
Property	**Description**	**Data Type**
OmsaURL	Defines the URL for Server Administrator.	string
Language	Sets the language for systems management information.	string
AgentVersion	Defines the version information of local CIM agent (same as ISVC version.)	string

CIM_BIOSElement

The **CIM_BIOSElement** class listed in BIOSElement Properties describes the BIOS for the system. The BIOS controls the following:

- Communications between the microprocessor and peripheral devices, such as the keyboard and the video adapter.
- Miscellaneous functions, such as system messages.

Table 45. CIM_BIOSElement Properties

Class Name:	CIM_BIOSElement	
Parent Class:	CIM_SoftwareElement	
Property	**Description**	**Data Type**
Version	Provides the product version information.	string
Manufacturer	See Common Properties of Classes	string
PrimaryBIOS	Specifies whether a given BIOS is the primary BIOS for the system. When the value = TRUE, the BIOS is the primary BIOS.	Boolean

CIM_SoftwareFeature

The **CIM_SoftwareFeature** class described in Table properties below defines a particular function or capability of a product or application system. This class is intended to be meaningful to a consumer, or user of a product, rather than to explain how the product is built or packaged. When a software feature can exist on multiple platforms or operating systems (for example, a client component of a three-tiered client/server application might run on Windows Server 2003), a software feature is a collection of all the software elements for these different platforms. The users of the model must be aware of this situation because typically they are interested in a sub-collection of the software elements required for a particular platform.

Table 46. CIM_SoftwareFeature Properties

Class Name:	CIM_SoftwareFeature	
Parent Class:	CIM_LogicalElement	
Property	**Description**	**Data Type**
IdentifyingNumber	Provides product identification such as a serial number of the software	string
ProductName	Identifies the commonly used product name.	string
Vendor	Identifies the name of the product's supplier. Corresponds to the vendor property in the product object in the DMTF solution exchange standard.	string
Version	Identifies the product version information. Corresponds to the version property in the product object in the DMTF solution exchange standard.	string
Name	Defines the label by which the object is known to the users. This label is a user-defined name that uniquely identifies the element.	string

DELL_SoftwareFeature

The **DELL_SoftwareFeature** described in Table below defines the universal resource locator (URL) of the systems management software and the language in which systems management information displays. Defining these properties enables users to manage a system using an Internet browser. You can access Server Administrator using the secure hypertext transfer protocol (https) and a preassigned port number of 1311, or you can specify a port number of your own choice.

Table 47. DELL_SoftwareFeature Properties

Class Name:	`DELL_SoftwareFeature`
Parent Class:	`CIM_SoftwareFeature`

Property	Description	Data Type
OmsaURL	Defines the URL for Server Administrator.	string
Language	Sets the language for systems management information.	string
AgentVersion	Defines the version information of local CIM agent (same as ISVC version.)	string

CIM_SystemResource

The **CIM_SystemResource** class described in Table below provides access to system resources from an operating system. System resources consist of interrupt requests (IRQs) and direct memory access (DMA) capabilities.

Table 48. CIM_SystemResource Properties

Class Name:	CIM_SystemResource
Parent Class:	CIM_LogicalElement

CIM_IRQ
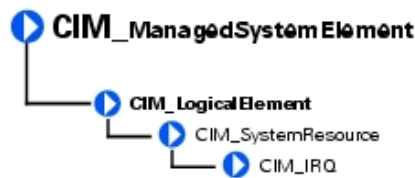
The **CIM_IRQ** class described in Properties Table below , contains IRQ information. An IRQ is a signal that data is about to be sent to or received by a peripheral device. The signal travels by an IRQ line to the microprocessor. Each peripheral connection must be assigned an IRQ number. For example, the first serial port in the computer (COM1) is assigned to IRQ4 by default.

Table 49. CIM_IRQ Properties

Class Name:	CIM_IRQ
Parent Class:	CIM_SystemResource

Property	Description	Data Type
CSCreationClassName	See Common Properties of Classes	string

CSName	See Common Properties of Classes	string
CreationClassName	See Common Properties of Classes	string
IRQNumber	Identifies the interrupt request number.	uint32
Availability	Indicates the availability of the IRQ. Values for the Availability property are as follows: **1**- Other **2**- Unknown **3**- Available **4** - In use/not available **5**- In use and available	uint16
TriggerLevel	Indicates if the interrupt is triggered by the hardware signal going high or low. Values for the TriggerLevel property are as follows: **1**- Other **2**- Unknown **3**- Active low **4**- Active high	uint16
TriggerType	Indicates if edge (value=4) or level triggered (value=3) interrupts occur. **1**- Other **2**- Unknown **3**- Level **4**- Edge	uint16
Shareable	Indicates if the IRQ can be shared. A value of TRUE indicates that the IRQ can be shared.	Boolean
Hardware	Indicates if the interrupt is hardware- or software-based. (A value of TRUE indicates that the interrupt is hardware based.) On a personal computer, a hardware IRQ is a physical wire to a programmable interrupt controller (PIC) chip set through which the microprocessor can be notified of time critical events. Some IRQ lines are reserved for standard devices such as the keyboard, diskette drive, and the system clock. A software interrupt is a programmatic mechanism to allow an application to get the attention of the processor.	Boolean

CIM_MemoryMappedIO

The **CIM_MemoryMappedIO** class described in properties Table below addresses both memory and port I/O resources for personal computer architecture memory mapped I/O.

Table 50. CIM_MemoryMappedIO Properties

Class Name:	`CIM_MemoryMappedIO`

Parent Class:	`CIM_SystemResource`

Property	Description	Data Type
CSCreationClassName	See Common Properties of Classes	string
CSName	See Common Properties of Classes	string
CreationClassName	See Common Properties of Classes	string
StartingAddress	Identifies the starting address of memory mapped I/O.	uint64
EndingAddress	Identifies the ending address of memory mapped I/O.	uint64
MappedResource	Indicates the type of memory mapped I/O. MappedResource defines if memory or I/O is mapped, and for I/O, if the mapping is to a memory or a port space. Memory mapped I/O values are as follows: **1**- Other **2**- Mapped memory **3** - I/O mapped to memory space **4**- I/O mapped to port space	uint16

CIM_DMA
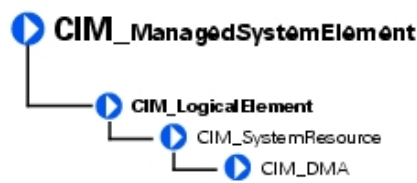
The **CIM_DMA** class described in DMA Properties contains DMA information. A DMA channel allows certain types of data transfer between RAM and a device to bypass the microprocessor.

Table 51. CIM_DMA Properties

Class Name:	`CIM_DMA`	
Parent Class:	`CIM_SystemResource`	

Property	Description	Data Type
CSCreationClassName	See Common Properties of Classes	string
CSName.	See Common Properties of Classes	string
CreationClassName	See Common Properties of Classes	string
DMAChannel	A part of the object's key value, the DMA channel number.	uint32
Availability	Availability of the DMA. **Availability** values are defined as follows: · **1** - Other · **2** - Unknown · **3** - Available · **4** - In Use/Not Available · **5** - In Use and Available/Shareable	uint16

CIM_RedundancyGroup

The **CIM_RedundancyGroup** class described in Table properties below is a set of components that provide more instances of a critical component than are required for the system's operation. The extra components are used in case of critical component failure. For example, multiple power supplies allow a working power supply to take over when another power supply has failed.

Table 52. CIM_RedundancyGroup Properties

Class Name:	CIM_RedundancyGroup	
Parent Class:	CIM_LogicalElement	

Property	Description	Data Type
CreationClassName	See Common Properties of Classes	string
Name	Serves as the key for the redundancy group's instance in an enterprise environment.	string
RedundancyStatus	Provides information on the state of the redundancy group. Values for the **RedundancyStatus** property are as follows: **0**- Unknown **1**- Other	uint16

2- Fully redundant. Fully redundant - all of
the configured redundancy is still available.

3 - Degraded redundancy. Degraded
redundancy - that some failures have been
experienced but some reduced amount of
redundancy is still available.

4 - Redundancy lost. Redundancy lost - that
a sufficient number of failures have occurred
so that no redundancy is available and the
next failure experienced causes overall
failure.

CIM_ExtraCapacityGroup

The **CIM_ExtraCapacityGroup** class described in below properties Table applies to systems that have more capability and components than
are required for normal operation, for example, systems that have extra fans or power supplies.

Table 53. CIM_ExtraCapacityGroup Properties

Class Name:	CIM_ExtraCapacityGroup	
Parent Class:	CIM_RedundancyGroup	
Property	**Description**	**Data Type**
MinNumberNeeded	Specifies the smallest number of elements that must be operational in order to have redundancy. For example, in an N+1 redundancy relationship, the MinNumberNeeded property should be set to N.	uint32

DELL_PSRedundancyGroup
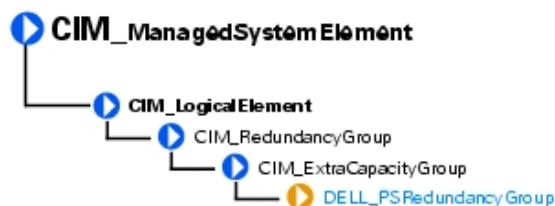
The **DELL_PSRedundancyGroup** described in Table below is a Dell-specific extension of the **CIM_ExtraCapacityGroup** class. The
DELL_PSRedundancyGroup class defines what constitutes power supply redundancy in a system.

Table 54. DELL_PSRedundancyGroup Properties

Class Name:	`DELL_PSRedundancyGroup`
Parent Class:	`CIM_ExtraCapacityGroup`

DELL_FanRedundancyGroup
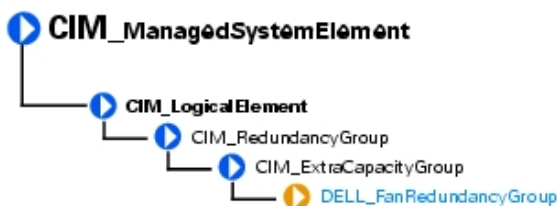
The **DELL_FanRedundancyGroup** described in Table below defines what constitutes fan redundancy in a system.

Table 55. DELL_FanRedundancyGroup Properties

Class Name:	`DELL_FanRedundancyGroup`
Parent Class:	`CIM_ExtraCapacityGroup`

CIM_EnabledLogicalElement

The **CIM_EnabledLogicalElement** class described in Table below extends the **CIM_LogicalElement** class to abstract the concept of an element that is enabled or disabled, such as a LogicalDevice or ServiceAccessPoint.

Table 56. CIM_EnabledLogicalElement Properties

Class Name:	`CIM_EnabledLogicalElementGroup`
Parent Class:	`CIM_LogicalElementGroup`

CIM_ServiceAccessPoint

The **CIM_ServiceAccessPoint** class described in Table below represents the ability to utilize or invoke a service. Access points indicate that a service is available to other entities for use.

Class Name:	CIM_ServiceAccessPoint
Parent Class:	CIM_EnabledLogicalElement

CIM_RemoteServiceAccessPoint
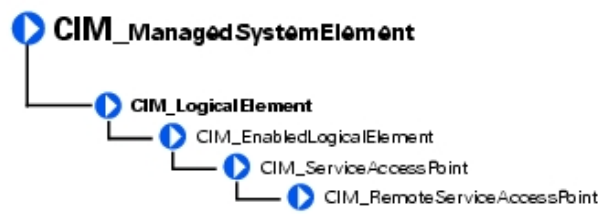
The **CIM_RemoteServiceAccessPoint** class identified in Table below describes the accessing and addressing of information for a remote connection that is known to a *local* network element. This information is contained in the *local* network element since this is the context in which it is *remote*. The relevance of the remote service access point and information on its use are described by subclassing or associating to the **CIM_RemoteServiceAccessPoint** class.

Class Name:	CIM_RemoteServiceAccessPointGroup	
Parent Class:	CIM_ServiceAccessPointGroup	

Property	Description	Data Type
AccessInfo	Describes accessing or addressing of information for a remote connection. This can be a host name, network address, and other similar information.	string
InfoFormat	Indicates an enumerated integer describing the format and interpretation of the AccessInfo property. This property can have the following values: **1** - Other **2** - Host Name **3** - IPv4 Address **4** - IPv6 Address **5** - IPX Address **6** - DECnet Address **7** - SNA Address	uint16

Class Name:	CIM_RemoteServiceAccessPointGroup	
Parent Class:	CIM_ServiceAccessPointGroup	
Property	**Description**	**Data Type**
	8 - Autonomous System Number	
	9 - MPLS Label	
	10..99 - DMTF Reserved	
	100 - Dial String	
	101 - Ethernet Address	
	102 - Token Ring Address	
	103 - ATM Address	
	104 - Frame Relay Address	
	105..199 - DMTF Reserved	
	200 - URL	
	32768..65535 - Vendor Specific	

DELL_RemoteServiceAccessPort
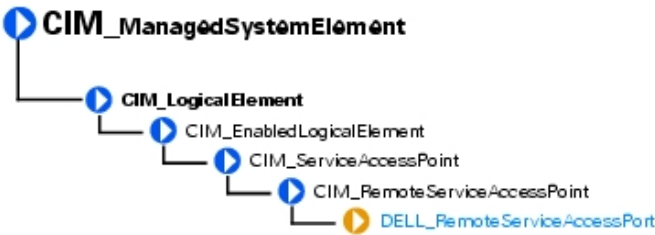
The **DELL_RemoteServiceAccessPort** class described in Table below is an extended class of the **CIM_RemoteServiceAccessPoint** class. The **DELL_RemoteServiceAccessPort** class provides information about Dell implementation-specific attributes

Table 59. DELL_RemoteServiceAccessPort Properties

Class Name:	DELL_RemoteServiceAccessPort	
Parent Class:	CIM_RemoteServiceAccessPoint	
Property	**Description**	**Data Type**
PortName	Displays the name of the service access port.	string
VersionString	Indicates the version of the access point service.	string
RemoteAccessType	Indicated the type of remote access service. This property can have the following values: **0**- BMC	uint16

8- IMC

9 - CMC

10- iDRAC6

11 - iDRAC6 for modular systems

13 - BMC

16 - iDRAC7

17 - iDRAC7 for modular systems

BladeFormFactor	Type of Blade Form Factor. This property can have the following values: **0**- singleWidthHalfHeight	uint16

1- dualWidthHalfHeight

2- singleWidthFullHeight

3- dualWidthFullHeight

4- singleWidthQuarterHeight

5- 1UHalfWidth

6- 1UQuarterWidth

7- 1UFullWidth

255- notApplicable

Dell-Defined Classes

Dell-defined classes are defined and populated by Dell rather than by the Common Information Model (CIM). For information on how the

CIM_ManagedSystemElement

DELL_EsmLog

logs are formatted, see DELL_Chassis Properties.

The `DELL_EsmLog` class described in DELL_EsmLog Properties records failure threshold violations collected by Server Administrator's embedded server management (ESM) capabilities.

Table 60. DELL_EsmLog Properties

Class Name: `DELL_EsmLog`

Parent Class: `None`

Property	Description	Data Type
recordNumber	Provides an index to the ESM table.	uint32
logRecord	Provides the ESM message content.	string
eventTime	Indicates the time that the message is generated.	datetime
status	Indicates the severity of the event that caused the log to be generated.	string

Topics:

- DELL_PostLog
- DELL_CMApplication
- DELL_CMDevice
- DELL_CMDeviceApplication
- DELL_CMInventory
- DELL_CMOS
- DELL_CMProductInfo
- DELL_BIOSExtensions
- DELL_BIOSSettings
- DELL_SDCardDevice
- DELL_NetworkPort
- DELL_PowerConsumptionAmpsSensor
- DELL_PowerConsumptionWattsSensor

- DELL_PowerConsumptionData
- DCIM_OEM_DataAccessModule
- DCIM_RegisteredProfile

DELL_PostLog

▶ CIM_ManagedSystemElement

▶ DELL_PostLog

The `DELL_PostLog` class described in DELL_PostLog Properties is a record of the system's power-on self-test (POST). When you turn on a system, the POST tests various system components, such as random-access memory (RAM), the hard drives, and the keyboard.

Table 61. DELL_PostLog Properties

Class Name: `DELL_PostLog`

Parent Class: `None`

DELL_CMApplication

(i) NOTE: **Dell-updateable components, such as BIOS and firmware, are considered applications.**

▶ CIM_ManagedSystemElement

▶ DELL_CMApplication

The `DELL_CMApplication` class described in DELL_CMApplication contains information related to the Dell change management applications.

Table 62. DELL_CMApplication

Class Name: `DELL_CMApplication`

Parent Class: `None`

Property	Description	Data Type
componentType	Defines the application type.	string
subComponentID	Defines an application string.	string
version	Indicates the current version of the application.	string
name	Indicates the name of the application.	string
deviceKey	Indicates the device key of the application.	string

DELL_CMDevice

◑ CIM_ManagedSystemElement

◐ DELL_CMDevice

The `DELL_CMDevice` class described in DELL_CMDevice Properties contains information related to the Dell change management device.

Table 63. DELL_CMDevice Properties

Class Name: `DELL_CMDevice`

Parent Class: `None`

Property	Description	Data Type
componentID	Defines a component string.	string
name	Indicates the name of the device.	string
vendorID	Defines an ID for vendor supplying the device.	string
subVendorID	Defines an ID for an additional vendor supplying the device.	string
deviceID	Indicates the ID of the device.	string
subDeviceID	Indicates the ID for additional device.	string
bus	Indicates the PCI bus number.	string
device	Indicates the PCI device number.	string
function	Indicates the PCI function number.	string

DELL_CMDeviceApplication

◑ CIM_ManagedSystemElement

◐ DELL_CMDeviceApplications

The `DELL_CMDeviceApplication` class described in CMDeviceApplication Properties contains information related to the Dell change management association between the device and application.

Table 64. DELL_CMDeviceApplication Properties

Class Name: `DELL_CMDeviceApplication`

Parent Class: `None`

Property	Description	Data Type
antecedent	Refers to the device.	string
dependent	Refers to the application.	string

DELL_CMInventory

The `DELL_CMInventory` class described in DELL _CMInventory Properties contains information related to the Dell Change Management inventory.

Table 65. DELL _CMInventory Properties

Class Name: `DELL_CMInventory`

Parent Class: `None`

Property	Description	Data Type
local	Indicates the locale of the system.	string
schemaVersion	Indicates the inventory schema implemented by the system.	string
systemID	Defines the system ID.	string

DELL_CMOS

The `DELL_CMOS` class described in DELL_CMOS Properties contains information related to the Dell change management operating system.

Table 66. DELL_CMOS Properties

Class Name: `DELL_CMOS`

Parent Class: `None`

Property	Description	Data Type

Property	Description	Data Type
architecture	Indicates the architecture of the operating system.	string
vendor	Indicates the vendor of the operating system.	string
majorVersion	Indicates the major version of the operating system.	string
minorVersion	Indicates the minor version of the operating system.	string
spMajorVersion	Indicates the current service pack number for the operating system's major version.	string
spMinorVersion	Indicates the current service pack number for the operating system's minor version.	string

DELL_CMProductInfo

◑ CIM_ManagedSystemElement

◑ DELL_CMProductInfo

The `DELL_CMProductInfo` class described in DELL_CMProductInfo Properties contains information related to the Dell change management product.

Table 67. DELL_CMProductInfo Properties

Class Name: `DELL_CMProductInfo`

Parent Class: `None`

Property	Description	Data Type
name	Indicates the name of the product.	string
description	Provides a short description of the product.	string
vendor	Indicates the name of the product manufacturer.	string
version	Indicates the current version number of the product.	string
timestamp	Indicate the timestamp value when the inventory information collected from the system.	string

DELL_BIOSExtensions

The DELL_BIOSExtensions identified in DELL_BIOSExtensions Properties contains information related to the specific extension of the data attributes on your system.

Class Name:	DELL_BIOSExtensions	
Parent Class:	CIM_ManagedSystemElement	
Property	Description	Data Type
systemBIOSCharacteristics	Indicates the characteristics of BIOS on your system.	uint64
systemBIOSCharacteristicsExt1	Indicates the specific extension of the data attributes on your system.	uint8
systemBIOSCharacteristicsExt2	Indicates the specific extension of the data attributes on your system.	uint8

DELL_BIOSSettings

The DELL_BIOSSettings identified in DELL_BIOSSettings Properties contains information related to setting parameters in the Dell System Management BIOS.

Class Name:	DELL_BIOSSettings	
Parent Class:	CIM_ManagedSystemElement	
Property	Description	Data Type
DellInstanceID	Defines the instance ID of this class.	uint32
TrustedPlatformModule	Enables or Disables the Trusted Platform Module (TPM). Values for the TPM property are: 0 - Other 1 - Unsupported 2 - Off 3 - On with BIOS Management 4 - On without BIOS Measurement	uint8

DELL_SDCardDevice

The **DELL_SDCard** Devices identified in DELL_SDCardDevice Properties contains information related to the SD card devices.

Table 70. DELL SDCardDevice Properties

Class Name:	`DELL_SDCardDevice`	
Parent Class:	`CIM_LogicalDevice`	
Property	Description	Data Type
sdType	An enumerated storage device type. The values for this property are: 1 - Other 2 - Unknown 3 - Hypervisor SD 4 - Virtual Flash SD	uint8
sdCertified	Indicates the licensing information of SD media. The values for this property are: 0 - Unknown 1 - Unlicensed 2 - Licensed	uint8
sdCardSizeMB	Indicates the size of the storage device in MB.	uint32
sdCardFreeSizeMB	Indicates the available size of SD Media in MB.	uint32
sdCardState	Indicates the value of the SD Card. The values for this property are: 0 - Present 1 and 2 - Reserved 3 - Offline Detected 4 - Failed Detectez 5 - Active 6 - Bootable 7 - Write Protected	

DELL_NetworkPort

CIM**_ManagedSystemElement**
 └ CIM_LogicalElement
   └ CIM_LogicalDevice
     └ CIM_LogicalPort
       └ CIM_NetworkPort
         └ DELL_NetworkPort
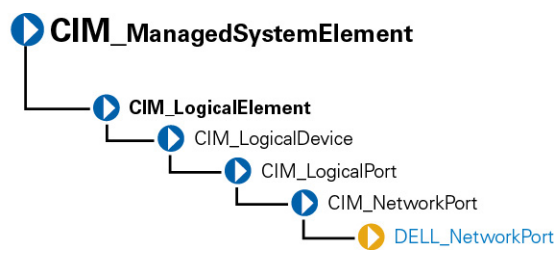
The **Dell_Network Port** class described in DELL_NetworkPort Properties represents the Dell-specific features of the network adapters.

Table 71. DELL NetworkPort Properties

Class Name:	DELL_NetworkPort	
Parent Class:	CIM_Network Port	

Property	Description	Data Type
NIC Capabilities	NIC Capabilities bitmask indicates the capabilities of the NIC. The bitmask for the NIC Capability property are: Bit 0, Value 0 - Reporting NIC capabilities through this attribute is not supported. Bit 0, Value 1 - Reporting NIC capabilities through this attribute is supported. Bit 1, Value 0 - NIC is not TOE capable. Bit 1, Value 1 - NIC is TOE capable. Bit 2, Value 0 - NIC is not iSOE capable. Bit 2, Value 1 - NIC is iSOE capable. Bit 3, Value 0 - NIC is not FCoE capable. Bit 3, Value 1 - NIC is FCoE capable.	uint 32
NIC TOE Capability	Defines the TOE capability of the NIC. Values for the NIC TOE Capability property are: 0 - NIC/driver does not support querying for capability. 1 - NIC/driver supports querying for capability but query returned an error. 2 - NIC/driver supports querying for capability and querying indicates that it is capable. 4 - NIC/driver supports querying for capability and querying indicates that it is not capable.	uint 32

8 - NIC/driver supports querying for capability but an error prevented querying the NIC/driver.

16 - NIC/driver supports querying for capability but NIC/driver did not respond to query.

> ⓘ **NOTE: Boolean value is defined if TOE is enabled (Boolean is TOEEnable).**

NIC RDMA Capability	Defines the RDMA capability of the NIC.	uint 32

Values for the NIC RDMA Capability property are:

0 - NIC/driver does not support querying for capability.

1 - NIC/driver supports querying for capability but query returned an error.

2 - NIC/driver supports querying for capability and querying indicates that it is capable.

4 - NIC/driver supports querying for capability and querying indicates that it is not capable.

8 - NIC/driver supports querying for capability but an error prevented querying the NIC/driver.

16 - NIC/driver supports querying for capability but NIC/driver did not respond to query.

> ⓘ **NOTE: Boolean value is defined if RDMA is enabled (Boolean is RDMAEnable).**

NIC iSCSI Capability	Defines the iSCSI capability of the NIC.	uint 32

Values for the NIC iSCSI Capability property are:

0 - NIC/driver does not support querying for capability.

1 - NIC/driver supports querying for capability but query returned an error.

2 - NIC/driver supports querying for capability and querying indicates that it is capable.

4 - NIC/driver supports querying for capability and querying indicates that it is not capable.

8 - NIC/driver supports querying for capability but an error prevented querying the NIC/driver.

	16 - NIC/driver supports querying for capability but NIC/driver did not respond to query.	
	ⓘ **NOTE: Boolean value is defined if iSCSI is enabled (Boolean is iSCSIEnable).**	
NIC Status	Indicates the status of the NIC or driver. The values for the NIC Status property are: 0 - Unknown 1 - Connected 2 - Disconnected 3 - Driver is bad 4 - Driver is disabled 10 - Hardware is initializing 12 - Hardware is closing 13 - Hardware is not ready	uint 32
NParEPEnable	Indicates the mode for NParEP. The values for the NParEPEnable are: 0 - Disabled 1 - Enabled 2 - Unknown	uint 32
BusNumber	Indicates the PCI bus number.	uint 8
DeviceNumber	Indicates the PCI device number.	uint 8
FunctionNumber	Indicates the PCI function number.	uint 8
DriverVersion	Indicates the NIC driver version.	string
IPAddresss	Indicates the NIC IP address.	string
SubnetMask	Indicates the NIC subnet mask.	string
DHCPServer	Indicates the DHCP server.	string
DefaultGateway	Indicates the default gateway.	string
CurrentMacAddress	Indicates the NIC's current MAC address.	string
OSAdapterDescription	Describes the operating system adapter.	string
OSProductName	Describes the product name of the operating system.	string
ServiceName	Indicates the service name.	string

DELL_PowerConsumptionAmpsSensor

The DELL_PowerConsumptionAmpsSensor identified in DELL_PowerConsumptionAmpsSensor contains information related to monitoring the power consumption.

Table 72. DELL_PowerConsumptionAmpsSensor

Class Name:	DELL_PowerConsumptionAmpsSensor	
Parent Class:	CIM_Numeric Sensor	
Property	Description	Data Type
UnitModifier	See Common Properties of Classes	sint32
CurrentReading	See Common Properties of Classes	sint32
IsLinear	See Common Properties of Classes	Boolean
LowerThresholdNonCritical	See Common Properties of Classes	sint32
UpperThresholdNonCritical	See Common Properties of Classes	sint32
LowerThresholdCritical	See Common Properties of Classes	sint32
UpperThresholdCritical	See Common Properties of Classes	sint32

DELL_PowerConsumptionWattsSensor

The **DELL_PowerConsumptionWattsSensor** identified in DELL_PowerConsumptionWattsSensor contains information related to monitoring the power consumption.

Table 73. DELL PowerConsumptionWattsSensor

Class Name:	DELL_PowerConsumptionWattsSensor	
Parent Class:	CIM_Numeric Sensor	
Property	Description	Data Type
UnitModifier	See Common Properties of Classes	sint32
CurrentReading	See Common Properties of Classes	sint32
IsLinear	See Common Properties of Classes	Boolean
LowerThresholdNonCritical	See Common Properties of Classes	sint32
UpperThresholdNonCritical	See Common Properties of Classes	sint32
LowerThresholdCritical	See Common Properties of Classes	sint32
UpperThresholdCritical	See Common Properties of Classes	sint32

DELL_PowerConsumptionData

The **DELL_PowerConsumptionData** identified in DELL_PowerConsumptionData contains information about the total power consumed from a start time and peak values registered during a time period.

Table 74. DELL PowerConsumptionData

Class Name:	`DELL_PowerConsumptionData`	
Parent Class:	`CIM_Logical Device`	

Property	Description	Data Type
cumulative PowerReading	Indicates the total power consumed from a start time.	uint 32
peakAmpReading	Indicates the time from which the peak amperage reading is being monitored.	uint 16
peakWattReading	Indicates the time from which the peak watt reading is being monitored.	uint 16
ResetCounters	Is the function used to reset the peak readings.	uint 32
powerCapSetting	This refers to the user configured power setting.	uint 16
instHeadroom	This refers to the instantaneous headroom.	uint 32
peakHeadRoom	Is the function used to set the power budget.	uint 32

DCIM_OEM_DataAccessModule

The `DCIM_OEM_DataAccessModule` class is derived from the `CIM_ManagedElement` class. This class models hardware information in a proprietary format.
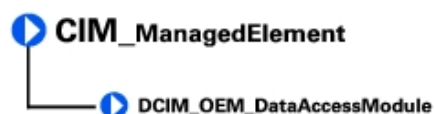
Table 75. DCIM OEM DataAccessModule

Class Name:	DCIM_OEM_DataAccessModule	
Parent Class:	CIM_ManagedElement	

Property	Description	Data Type
InstanceID	Identifies the instance.	string
GlobalStatus	Represents the global health status of the system. This property can have the following values: **0** - Other **1** - Unknown	sint32

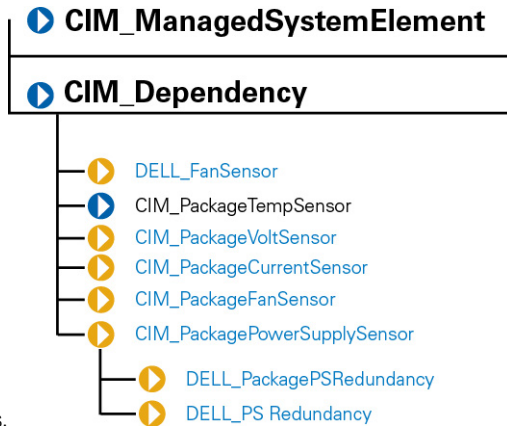| Class Name:	DCIM_OEM_DataAccessModule	
Parent Class:	CIM_ManagedElement	
Property	Description	Data Type
	2 - OK	
	3 - Warning / Non-Critical	
	4 - Critical	
	5 - Non-Recoverable	
	.. - Reserved	
	ⓘ **NOTE: GlobalStatus property is available only for Linux systems.**	
SendCmd	The SendCmd method is used to invoke proprietary hardware management operation.	string
iDRACIPv4	Provides Remote Access controller (iDRAC) IPv4 address.	string
iDRACIPv6	Provides Remote Access controller (iDRAC) IPv6 address.	string

DCIM_RegisteredProfile
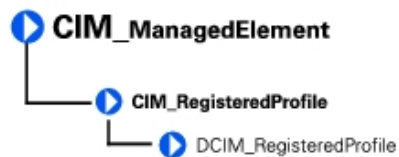
The `DCIM_RegisteredProfile` class is derived from the `CIM_RegisteredProfile` class. This class advertises the capabilities of `DCIM_OEM_DataAccessModule.`

CIM_Dependency

The CIM_Dependency class is an association used to establish dependency relationships between two managed system elements. The CIM_Dependency class described in the figure below does not have a parent class because it is a relationship or association between two

◗ CIM_ManagedSystemElement

◗ CIM_Dependency

- DELL_FanSensor
- CIM_PackageTempSensor
- CIM_PackageVoltSensor
- CIM_PackageCurrentSensor
- CIM_PackageFanSensor
- CIM_PackagePowerSupplySensor
  - DELL_PackagePSRedundancy
  - DELL_PS Redundancy

elements.

Each class derived from the `CIM_Dependency` class has an element called an antecedent that represents the independent object in this association, and another element called a dependent that represents the object that is dependent on the antecedent. For example, consider two managed system elements: Chassis1 and PowerSupply3. Chassis1 is the antecedent element because a managed power supply would always be either contained in, or grouped with, a chassis.

Topics:

- DELL_FanSensor
- CIM_PackageTempSensor
- CIM_PackageVoltSensor
- CIM_PackageCurrentSensor
- CIM_PackageFanSensor
- CIM_PackagePowerSupplySensor
- DELL_PackagePSRedundancy
- DELL_PSRedundancy
- DELL_AssociatedSupplyPCAmps
- DELL_AssociatedSystemPCWatts
- AssociatedSystemPCData
- DELL_PowerProfileData

DELL_FanSensor

◗ CIM_ManagedSystemElement

◗ CIM_Dependency
- DELL_FanSensor

The `DELL_FanSensor` class described in DELL_FanSensor Properties defines a Dell-specific association between a fan and a sensor. The `CIM_PackageFanSensor` class contains fans that assist in cooling the entire package as opposed to a fan dedicated to cooling only some of the components in the package.

Class Name: `DELL_FanSensor`

Parent Class: `CIM_Dependency`

Element	Description
Antecedent	`CIM_Tachometer` refers to the tachometer (fan sensor) that measures the RPM of the fan.
Dependent	`CIM_Fan` refers to the fan whose revolutions are measured by the tachometer.

CIM_PackageTempSensor

▶ CIM_ManagedSystemElement

▶ CIM_Dependency

    └─▶ CIM_PackageTempSensor

The `CIM_PackageTempSensor` class described in CIM_PackageTempSensor Properties contains temperature sensors that are often installed in a package such as a chassis or a rack to assist in the monitoring of the package in general. This relationship is described by the `CIM_PackageTempSensor` association.

Class Name: `CIM_PackageTempSensor`

Parent Class: `CIM_Dependency`

Element	Description
Antecedent	`CIM_TempSensor` refers to the temperature sensor for the package.
Dependent	`CIM_PhysicalPackage` refers to the physical package whose environment is being monitored.

CIM_PackageVoltSensor

▶ CIM_ManagedSystemElement

▶ CIM_Dependency

    └─▶ CIM_PackageVoltSensor

The `CIM_PackageVoltSensor` class described in CIM_PackageVoltage Properties contains voltage sensors that are often installed in a package such as a chassis or a rack to assist in the monitoring of the package in general. This relationship is described by the `CIM_PackageVoltSensor` association.

Class Name: `CIM_PackageVoltSensor`

Parent Class: `CIM_Dependency`

Element	Description
Antecedent	`CIM_PackageVoltSensor` refers to the voltage sensor for the package.
Dependent	`CIM_PhysicalPackage` refers to the physical package whose voltages are being monitored.

CIM_PackageCurrentSensor

▶ **CIM_ManagedSystemElement**

▶ **CIM_Dependency**

— ▶ CIM_PackageCurrentSensor

The `CIM_PackageCurrentSensor` class described in CIM_PackageCurrentSensor Properties contains amperage sensors that are often installed in a package such as a chassis or a rack to assist in the monitoring of the package in general. This relationship is described by the `CIM_PackageCurrentSensor` association.

Class Name: `CIM_PackageCurrentSensor`

Parent Class: `CIM_Dependency`

Element	Description
Antecedent	`CIM_CurrentSensor` refers to the amperage sensor for the package.
Dependent	`CIM_PhysicalPackage` refers to the physical package whose amperage is being monitored.

CIM_PackageFanSensor

▶ **CIM_ManagedSystemElement**

▶ **CIM_Dependency**

— ▶ CIM_PackageFanSensor

The `CIM_PackageFanSensor` class described in CIM_PackageFanSensor Properties contains fan sensors that monitor the whole package.

Table 80. CIM_PackageFanSensor Properties

Class Name:`CIM_PackageFanSensor`

Parent Class: `CIM_Dependency`

Element	Description
Antecedent	`CIM_Fan` refers to the cooling device for the package.
Dependent	`CIM_PhysicalPackage` refers to the physical package whose environment is being monitored.

CIM_PackagePowerSupplySensor

▶ **CIM_ManagedSystemElement**

▶ **CIM_Dependency**
　　└─ ▶ CIM_PackagePowerSupplySensor

The `CIM_PackagePowerSupplySensor` class described in CIM_PackagePowerSupplySensor Properties contains power supplies that provide power to the whole package.

Table 81. CIM_PackagePowerSupplySensor Properties

Class Name: `CIM_PackagePowerSupplySensor`

Parent Class: `CIM_Dependency`

Element	Description
Antecedent	`CIM_PowerSupplySensor` refers to the power supply sensor that monitors wattage for the entire package.
Dependent	`CIM_PhysicalPackage` refers to the package whose wattage is being monitored.

DELL_PackagePSRedundancy

▶ **CIM_ManagedSystemElement**

▶ **CIM_Dependency**
　　└─ ▶ DELL_PackagePSRedundancy
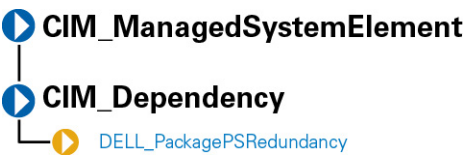
The `DELL_PackagePSRedundancy` class described in DELL_PackagePSRedundancy Properties defines what constitutes a power supply redundancy for an entire package.

Class Name: `DELL_PackagePSRedundancy`

Parent Class: `CIM_Dependency`

Element	Description
Antecedent	`DELL_PSRedundancyGroup` refers to power supplies that deliver wattage for the entire package.
Dependent	`CIM_PhysicalPackage`refers to the package to which the wattage is being supplied.

DELL_PSRedundancy

CIM_ManagedSystemElement

CIM_Dependency

DELL_PSRedundancy

The `DELL_PSRedundancy` class described in DELL_PSRedundancy Properties defines what constitutes a power supply redundancy for Dell systems.

Class Name: `DELL_PSRedundancy`

Parent Class: `CIM_Dependency`

Element	Description
Antecedent	`CIM_PowerSupplySensor` refers to the power supply sensor that monitors wattage for the entire package.
Dependent	`CIM_PhysicalPackage` refers to the package whose wattage is being monitored.

DELL_AssociatedSupplyPCAmps

The `DELL_AssociatedSupplyPCAmps` class described in DELL _AssociatedSupplyPCAmps is a `PowerConsumptionAmpsSensor` associated with a `CIM_PowerSupply` which is defined by this class.

Class Name:	DELL_AssociatedSupplyPCAmps	
Parent Class:	CIM_Dependency	
Property	Description	Data Type
Antecedent	Indicates the `PowerSupply` instance.	uint 16
Dependent	Indicates the `PowerConsumptionAmpsSensor` associated with the `CIM_PowerSupply`.	uint 16

DELL_AssociatedSystemPCWatts

The `DELL_AssociatedSystemPCWatts` class described in DELL_AssociatedSystemPCWatts is a`PowerConsumptionWattsSensor` associated with a `Dell_System` which is defined by this class.

Table 85. DELL _AssociatedSystemPCWatts

Class Name:	DELL_AssociatedSystemPCWatts	
Parent Class:	CIM_Dependency	
Property	Description	Data Type
Antecedent	Indicates the `Dell_System` instance.	uint 16
Dependent	Indicates the `PowerConsumptionWattsSensor` associated with the system.	uint 16

AssociatedSystemPCData

The `AssociatedSystemPCData` identified in AssociatedSystemPCData is a `PowerConsumptionData` associated with a `Dell_System` which is defined by this class.

Table 86. AssociatedSystemPCData

Class Name:	DELL_AssociatedSupplyPCAmps	
Parent Class:	CIM_Dependency	
Property	Description	Data Type
Antecedent	Indicates the `Dell_System` instance.	uint 16
Dependent	Indicates the `PowerConsumptionData` associated with the Power Supply.	uint 16

DELL_PowerProfileData

The `DELL_PowerProfileData` identified in DELL _PowerProfileData contains information related to power profiling and power knob data.

Class Name:	`DELL_PowerProfileData`	
Parent Class:	`CIM_LogicalDevice`	
Property	**Description**	**Data Type**
chassisIndex	Indicates the `chassisIndex` for this power profile.	uint 8
supportedProfile	Indicates the supported profiles.	uint 16
profileSetting	Indicates the Profile setting.	uint 16
customCPUCaps	Indicates the Custom Profile CPU management capability.	uint 16
customCPUSettings	Indicates the Custom Profile CPU management setting.	uint 16
customMemCaps	Indicates the Custom Profile memory management capability.	uint 16
customMemSettings	Indicates the Custom Profile memory management capability.	uint 16
customFanSettings	Indicates the Custom Profile fan management setting.	uint 16