



**Profile Error: This profile contains 1 errors (search for 'Error:')**



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## Example Physical Asset Profile

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## Foreword

This document was prepared by the Physical Platform Profiles Working Group and Server Management Working Group.

DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems management and interoperability.

**Design Note:** This document contains design notes (like this one), that provide information about the way the document is written, or to demonstrate certain things. Such design notes would not appear in a released version of this document.

**Design Note:** This MRP document represents DSP1011 1.0.2 as a machine readable profile in MRP 1.1 format. Since machine readable profiles need to be compliant to DSP1001 1.1, this document utilizes the newly introduced concepts, such as adaptations, features and collaboration diagrams.

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## Document conventions

Any text in this document is in normal text font, with the following exceptions:

- References to clause names use normal text font; if they consist of more than one word, the clause name is quoted using double quotes, such as in "CIM elements".
- Important terms that are used for the first time are marked in *italics*.
- The usage of terms link to the term definition defined in the "Terms and definitions" clause, enabling easy navigation to the term definition.

# Example Physical Asset Profile

## 1 Scope

The Physical Asset profile extends the management capability of the referencing profiles by adding the capability to represent the physical aspects of elements in the managed environment, the relationship with their logical aspects, and the implementation of this profile.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated or versioned references, only the edition cited (including any corrigenda or DMTF update versions) applies. For undated and unversioned references, the latest published edition of the referenced document (including any corrigenda or DMTF update versions) applies.

DMTF DSP0004, *CIM Infrastructure Specification 2.5*,  
[http://www.dmtf.org/standards/published\\_documents/DSP0004\\_2.5.pdf](http://www.dmtf.org/standards/published_documents/DSP0004_2.5.pdf)

DMTF DSP0223, *Generic Operations 1.0*,  
[http://www.dmtf.org/standards/published\\_documents/DSP0223\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP0223_1.0.pdf)

DMTF DSP1001, *Management Profile Specification Usage Guide 1.1*,  
[http://www.dmtf.org/standards/published\\_documents/DSP1001\\_1.1.pdf](http://www.dmtf.org/standards/published_documents/DSP1001_1.1.pdf)

DMTF XMP1033, *Example Profile Registration Profile (sample profile in DSP2023) 1.0*,  
[http://www.dmtf.org/standards/published\\_documents/DSP2023\\_1.0.zip](http://www.dmtf.org/standards/published_documents/DSP2023_1.0.zip)

ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*,  
<http://isotc.iso.org/livelink/livelink?func=ll&objId=4230456&objAction=browse&sort=subtype>

## 3 Terms and definitions

In this document, some terms have a specific meaning beyond the normal English meaning. Those terms are defined in this clause.

### 3.1 General

The terms "shall" ("required"), "shall not", "should" ("recommended"), "should not" ("not recommended"), "may", "need not" ("not required"), "can" and "cannot" in this document are to be interpreted as described in [ISO/IEC Directives, Part 2](#), Annex H. The terms in parenthesis are alternatives for the preceding term, for use in exceptional cases when the preceding term cannot be used for linguistic reasons. Note that [ISO/IEC Directives, Part 2](#), Annex H specifies additional alternatives. Occurrences of such additional alternatives shall be interpreted in their normal English meaning in this document.

The terms "clause", "subclause", "paragraph", "annex" in this document are to be interpreted as described in [ISO/IEC Directives, Part 2](#), Clause 5.

The terms "normative" and "informative" in this document are to be interpreted as described in [ISO/IEC Directives, Part 2](#), Clause 3. In this document, clauses, subclauses or annexes indicated with "(informative)" as well as notes and examples do not contain normative content.

The terms defined in [DSP0004](#), [DSP0223](#), and [DSP1001](#) apply to this document.

The following additional terms are defined in this document.

### 3.2

#### **connecting element**

A physical element that has the ability to connect with a physical connector . It is modeled through the abstract base adaptation `AbstractConnectingElement` .

### 3.3

#### **delimited substring**

A substring of a vendor compatibility string that starts at the beginning of the vendor compatibility string and ends at the end of the string, or at a character that precedes a colon (:) within the string. See features `PackageSlotCompatibilityForPackage` and `PackageSlotCompatibilityForSlot` .

### 3.4

#### **field replaceable unit**

A physical element that can be replaced in the field. Also sometimes called a *part* .

### 3.5

#### **FRU information**

Information that supports the replacement of a FRU in the field.

### 3.6

#### **FRU number**

A string that identifies the FRU . The uniqueness of that string and potential correspondence to a part number is defined by the manufacturer of the FRU . The FRU number is part of the FRU information .

### 3.7

#### **physical component**

A physical element that cannot be further decomposed. It is modeled through the adaptation `PhysicalComponent` .

### 3.8

#### **physical element**

An element in the managed environment that has a physical presence (e.g. could be touched). It is modeled through the abstract base adaptation `AbstractPhysicalElement` .

### 3.9

#### **physical package**

A physical element that has the ability to contain (or house, host) other physical elements . It is modeled through the adaptation `PhysicalPackage` .

### 3.10

#### **physical connector**

A physical element that has the ability to connect with a connecting element . It is modeled through the `PhysicalConnector` adaptation.

### 3.11

#### **slot**

A place to plug a physical package into.

### 3.12

#### **system chassis**

The physical package of the managed system.

## 4 Symbols and abbreviated terms

This clause defines the symbols and abbreviations used in this document.

### 4.1 General

The abbreviations defined in [DSP0004](#), [DSP0223](#), and [DSP1001](#) apply to this document.

The following additional abbreviations are defined in this document.

### 4.2

#### FRU

Field Replaceable Unit

## 5 Synopsis

**Profile name:** Example Physical Asset

**Version:** 1.0.3

**Organization:** DMTF

**Abstract:** No

**Profile type:** Component

**Schema:** DMTF CIM 2.22 (experimental)

**Central class adaptation:** AbstractPhysicalElement

**Scoping class adaptation:** AbstractSystem

**Scoping path:** Realizes, LogicalDevice, SystemDevice

The Physical Asset profile extends the management capability of the referencing profiles by adding the capability to represent the physical aspects of physical elements in the managed environment, the relationship with their logical aspects, and the implementation of this profile. Physical aspects include asset, inventory, and other descriptive physical information. The profile does not cover the geographic location of the physical assets.

Table 1 identifies the profile references defined in this profile.

**Table 1 – Profile references**

Profile reference name	Profile name	Organization	Version	Relationship	Description
PRP	<a href="#">Profile Registration</a>	DMTF	1.0	Mandatory	Used to represent the implementation of this profile.

Table 2 identifies the features defined in this profile.

**Table 2 – Features**

Feature	Requirement	Description
FRUInformation	Optional	See 7.1.1.

Feature	Requirement	Description
FieldReplaceability	Optional	See 7.1.2.
LogicalElementRelation	Optional	See 7.1.3.
PackageSlotCompatibilityForPackage	Optional	See 7.1.4.
PackageSlotCompatibilityForSlot	Optional	See 7.1.5.
SystemChassisForSystem	Optional	See 7.1.6.
SystemChassisForComputerSystem	Optional	See 7.1.7.
ConfigurationCapacity	Optional	See 7.1.8.
PackageContainmentHierarchy	Optional	See 7.1.9.
PackageSlotConnection	Optional	See 7.1.10.
ConnectorConnection	Optional	See 7.1.11.

Table 3 identifies the class adaptations defined in this profile.

**Table 3 – Adaptations**

Adaptation	Elements	Requirement	Description
<b>Instantiated, embedded and abstract adaptations</b>			
AbstractSystem	CIM_System	See derived adaptations	See 7.2.2.
ComputerSystem	CIM_ComputerSystem	ConditionalExclusive	See 7.2.3.
System	CIM_System	ConditionalExclusive	See 7.2.4.
ComputerSystemPackage	CIM_ComputerSystemPackage	ConditionalExclusive	See 7.2.5.
SystemPackaging	CIM_SystemPackaging	ConditionalExclusive	See 7.2.6.
SystemDevice	CIM_SystemDevice	Optional	See 7.2.7.
LogicalDevice	CIM_LogicalDevice	Conditional	See 7.2.8.
Realizes	CIM_Realizes	Conditional	See 7.2.9.
AbstractPhysicalElement	CIM_PhysicalElement	See derived adaptations	See 7.2.10.
AbstractConnectingElement	CIM_PhysicalElement	See derived adaptations	See 7.2.11.
AbstractPhysicalConnector	CIM_PhysicalConnector	See derived adaptations	See 7.2.12.
AbstractPhysicalComponent	CIM_PhysicalComponent	See derived adaptations	See 7.2.13.
AbstractPhysicalPackage	CIM_PhysicalPackage	See derived adaptations	See 7.2.14.
PhysicalPackage	CIM_PhysicalPackage	Mandatory	See 7.2.15.
PhysicalFrame	CIM_PhysicalFrame	Optional	See 7.2.16.
Chassis	CIM_Chassis	Optional	See 7.2.17.
SystemChassis	CIM_Chassis	Optional	See 7.2.18.
Rack	CIM_Rack	Optional	See 7.2.19.
Card	CIM_Card	Optional	See 7.2.20.
PhysicalConnector	CIM_PhysicalConnector	Mandatory	See 7.2.21.
Slot	CIM_Slot	Optional	See 7.2.22.
PhysicalComponent	CIM_PhysicalComponent	Mandatory	See 7.2.23.
Chip	CIM_Chip	Optional	See 7.2.24.
PhysicalMemory	CIM_PhysicalMemory	Optional	See 7.2.25.

Adaptation	Elements	Requirement	Description
PhysicalAssetCapabilities	CIM_PhysicalAssetCapabilities	Conditional	See 7.2.26.
ElementCapabilities	CIM_ElementCapabilities	Conditional	See 7.2.27.
ConfigurationCapacity	CIM_ConfigurationCapacity	Conditional	See 7.2.28.
ElementCapacityForPackage	CIM_ElementCapacity	Conditional	See 7.2.29.
ElementCapacityForSystemChassis	CIM_ElementCapacity	Conditional	See 7.2.30.
Container	CIM_Container	Mandatory	See 7.2.31.
ElementInConnector	CIM_ElementInConnector	Optional	See 7.2.32.
ConnectedTo	CIM_ConnectedTo	Optional	See 7.2.33.
<b>Indications and exceptions</b>			
This profile does not define any such adaptations.			

Table 4 identifies the use cases and state descriptions defined in this profile.

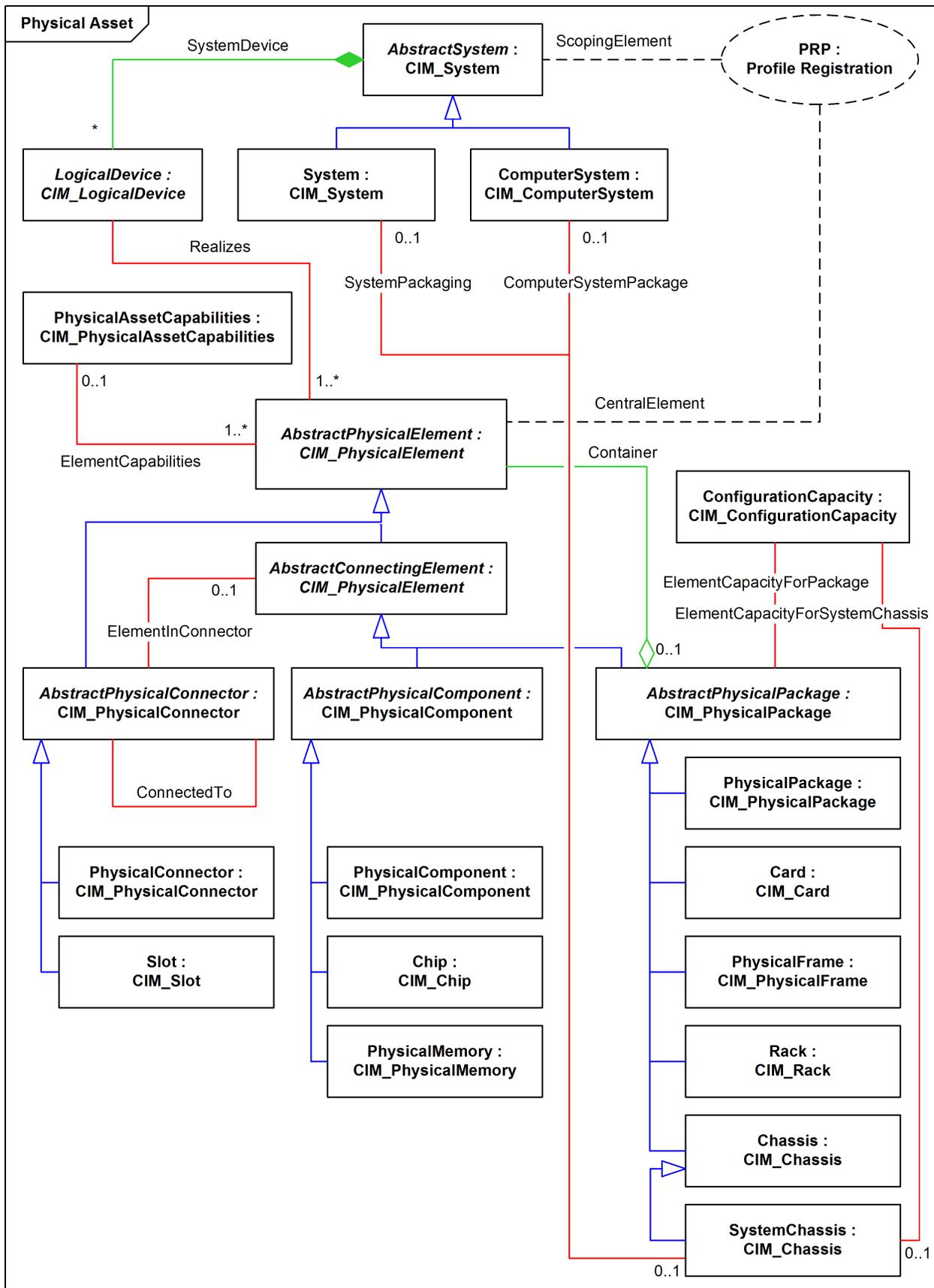
**Table 4 – Use cases and state descriptions**

Name	Description
State description: SystemChassis	See 8.1.
State description: FanPackage	See 8.2.
Use case: FindScopingInstance1	See 8.3.
Use case: FindScopingInstance2	See 8.4.
State description: PhysicalTopology	See 8.5.
State description: PhysicalMemory	See 8.6.
State description: ConfigurationCapacity1	See 8.7.
State description: ConfigurationCapacity2	See 8.8.
State description: NetworkPortConnector	See 8.9.
Use case: DeterminePartNumberOfComponent	See 8.10.
Use case: GetPhysicalInventoryOfSystem	See 8.11.
Use case: GetPhysicalInventoryOfSystemChassis	See 8.12.
Use case: DetermineSlotsEmpty	See 8.13.
Use case: GetFanCapacityOfChassis	See 8.14.
Use case: GetMaxFanCapacityOfChassis	See 8.15.

## 6 Description

**Design Note:** This description clause demonstrates how to define subclause headings in the profile, and how they line up with those headings that are created by the DSP8029 XSLT stylesheet.

## 6.1 General



**Figure 1 – DMTF collaboration structure diagram**

Todo: This subclause so far is a plain copy of the profile text and needs to be updated.

A Physical Element (see section 3.15) describes the physical properties, including the FRU information, of a managed element. The capabilities of the Physical Elements are described by the properties of the CIM\_PhysicalAssetCapabilities class. The Physical Elements could be associated to the logical representation of the managed element through the CIM\_Realizes association. The enclosures or chassis of the managed systems are represented by a CIM\_PhysicalElement or CIM\_Chassis instance that is associated to the CIM\_System/CIM\_ComputerSystem instance through the CIM\_SystemPackaging/CIM\_ComputerSystemPackage association and are referred to as a System Chassis (see section 3.17). Configuration capacity of the System Chassis is also represented within this profile by CIM\_ConfigurationCapacity instances.

Physical Elements can be also arranged in a topology. The CIM\_Container, CIM\_ConnectedTo, and CIM\_ElementInConnector associations are used to associate the Physical Elements and create the physical topology of the managed elements.

Figure 1 also represents the ecosystem of Physical Asset Profile classes, illustrating their relationship with classes of referencing profiles. The referencing profiles can identify the subclass of CIM\_PhysicalElement to be used for representing the physical aspects of the managed element. For example, the referencing profiles that contain a CIM\_LogicalDevice subclass can restrict the associated subclass of CIM\_PhysicalPackage to CIM\_PhysicalMemory for instantiation of the Physical Asset Profile. Such restrictions will be described in the referencing profiles.

The Physical Asset Profile is advertised through the CIM\_RegisteredProfile instance.

The Physical Asset Profile can be instantiated to represent a combination of the following scenarios:

- the physical aspects of a managed system, such as the FRU information for the chassis (see section 7.6)
- the physical aspects of a specific managed element, such as the FRU information of a fan (see section 7.3)
- the physical hierarchy of a managed system, such as the relationship between chassis, slots, and packages (see section 7.8)
- the configuration capacity of a managed element, such as the minimum and maximum number of certain types of packages that the managed system can handle (see section 7.7)

## 6.2 Relationship to logical elements

Physical elements represented by AbstractPhysicalElement instances can expose the relationship with the logical elements of which they represent a physical aspect and that are represented by LogicalDevice instances, if the LogicalElementRelation feature is implemented for the physical element . For details, see LogicalElementRelation .

## 6.3 FRU information of physical elements

Physical elements represented by AbstractPhysicalElement instances can expose their FRU information if the FRUInformation feature is implemented for the physical element . For details, see FRUInformation .

## 6.4 Plug compatibility of physical packages

Physical packages represented by `PhysicalPackage` instances and slots represented by `Slot` instances can expose their plug compatibility if the `PackageSlotCompatibilityForPackage` feature is implemented for the physical package and the `PackageSlotCompatibilityForSlot` feature is implemented for the slot .

## 6.5 System chassis

Systems represented by `System` or `ComputerSystem` instances can expose their system chassis if the `SystemChassisForSystem` or the `SystemChassisForComputerSystem` feature is implemented for the system.

## 6.6 Configuration capacity

Physical packages represented by `PhysicalPackage` instances (including the system itself) can expose their configuration capacity if the `ConfigurationCapacity` feature is implemented for the physical package . For details, see `ConfigurationCapacity` .

## 6.7 Physical topology

The following aspects of physical topology can be exposed:

- Package containment hierarchy: The containment hierarchy of physical packages can be exposed if the `PackageContainmentHierarchy` feature is implemented. For details, see `PackageContainmentHierarchy` .
- Package to slot connections: The connections between physical packages and slots can be exposed if the `PackageSlotConnection` feature is implemented. For details, see `PackageSlotConnection` .
- Connections between connectors: The connections between physical connectors can be exposed if the `ConnectorConnection` feature is implemented. For details, see `ConnectorConnection` .

# 7 Implementation

## 7.1 Features

### 7.1.1 Feature: `FRUInformation`

Implementing this feature provides support for exposing FRU information for a physical element that is represented by an `AbstractPhysicalElement` instance.

FRU information is represented by a combination of the values of the following properties of the `AbstractPhysicalElement` instance:

- `Manufacturer`
- `Model`
- `PartNumber`
- `SerialNumber`
- `SKU`

If the `SKU` property is non-NULL, it shall be used to convey the FRU number .

The requirement level for this feature is optional.

The implementation of this feature is not required for a physical element to expose its replaceability in the field (see FieldReplaceability feature), or to be replaceable.

This feature can be made available to clients at the granularity of AbstractPhysicalElement instances.

It can be concluded that the feature is available for a AbstractPhysicalElement instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A AbstractPhysicalElement instance.

```
derive: self.ElementCapabilities::Capabilities.FRUInfoSupported
```

Otherwise, it can be concluded that the feature is not available.

### 7.1.2 Feature: FieldReplaceability

Implementing this feature provides support for exposing the ability for physical elements to be replaced in the field, via values TRUE or FALSE of the CanBeFRUed property of the AbstractPhysicalElement instance representing the physical element .

The requirement level for this feature is optional.

The implementation of this feature or replaceability in the field is not required for a physical element to expose its FRU information (see FRUInformation feature).

This feature can be made available to clients at the granularity of AbstractPhysicalElement instances.

It can be concluded that the feature is available for a AbstractPhysicalElement instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A AbstractPhysicalElement instance.

```
derive: self.CanBeFRUed.isNotNull()
```

Otherwise, it can be concluded that the feature is not available.

### 7.1.3 Feature: LogicalElementRelation

This feature provides support for exposing the relationship of physical elements to the logical elements of which they represent a physical aspect.

**Design Note:** The profile is not particularly clear as to whether physical and logical elements are two distinct managed object types, or different aspects of the same managed object type (and if so, what is that one managed object type). This MRP profile did not attempt to resolve that questions and lives with any ambiguities resulting from that.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of AbstractPhysicalElement instances.

It can be concluded that the feature is available for a AbstractPhysicalElement instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A AbstractPhysicalElement instance.

```
derive: self.Realizes::Dependent->size() > 0
```

Otherwise, it can be concluded that the feature is not available.

#### 7.1.4 Feature: PackageSlotCompatibilityForPackage

Implementing this feature for a physical package represented by an `PhysicalPackage` instance and for a slot represented by a `Slot` instance provides support for indicating the compatibility of that physical package with that slot . Only if a physical package is compatible with a slot , it can be plugged into that slot .

Note that physical components represented by `PhysicalComponent` instances may be compatible with physical connectors represented by `PhysicalConnector` instances without being able to indicate that compatibility.

See the `AbstractPhysicalPackage . VendorCompatibilityStrings` and `Slot . VendorCompatibilityStrings` properties for a description of their format.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of `AbstractPhysicalPackage` instances.

It can be concluded that the feature is available for a `AbstractPhysicalPackage` instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A `AbstractPhysicalPackage` instance.

```
derive: self.VendorCompatibilityStrings.isNotNull()
```

Otherwise, it can be concluded that the feature is not available.

#### 7.1.5 Feature: PackageSlotCompatibilityForSlot

Implementing this feature for a physical package represented by an `PhysicalPackage` instance and for a slot represented by a `Slot` instance provides support for indicating the compatibility of that physical package with that slot . Only if a physical package is compatible with a slot , it can be plugged into that slot .

Note that physical components represented by `PhysicalComponent` instances may be compatible with physical connectors represented by `PhysicalConnector` instances without being able to indicate that compatibility.

See the `AbstractPhysicalPackage . VendorCompatibilityStrings` and `Slot . VendorCompatibilityStrings` properties for a description of their format.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of `Slot` instances.

It can be concluded that the feature is available for a `Slot` instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A `Slot` instance.

```
derive: self.VendorCompatibilityStrings.isNotNull()
```

Otherwise, it can be concluded that the feature is not available.

### 7.1.6 Feature: SystemChassisForSystem

Implementing this feature for a system provides support for exposing the system chassis of the system, represented by a Chassis instance.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of System instances.

It can be concluded that the feature is available for a System instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A System instance.

```
derive: self.SystemPackaging::Dependent->size() > 0
```

Otherwise, it can be concluded that the feature is not available.

### 7.1.7 Feature: SystemChassisForComputerSystem

Implementing this feature for a system provides support for exposing the system chassis of the system, represented by a Chassis instance.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of ComputerSystem instances.

It can be concluded that the feature is available for a ComputerSystem instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A ComputerSystem instance.

```
derive: self.ComputerSystemPackage::Dependent->size() > 0
```

Otherwise, it can be concluded that the feature is not available.

### 7.1.8 Feature: ConfigurationCapacity

The implementation of this feature for a physical package provides support for exposing the configuration capacity of that physical package, including of a system chassis.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of AbstractPhysicalPackage instances.

It can be concluded that the feature is available for a AbstractPhysicalPackage instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A AbstractPhysicalPackage instance.

```
derive: self.ElementCapacityForPackage::Capacity->size() > 0
```

Otherwise, it can be concluded that the feature is not available.

### 7.1.9 Feature: PackageContainmentHierarchy

This feature provides support for exposing the containment hierarchy of physical packages as follows:

- For any physical element that resides within a physical package , that relationship shall be represented by a Container instance.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of AbstractPhysicalElement instances.

It can be concluded that the feature is available for a AbstractPhysicalElement instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A AbstractPhysicalElement instance.

```
derive: self.Container::PartComponent->size() > 0
```

Otherwise, it can be concluded that the feature is not available.

### 7.1.10 Feature: PackageSlotConnection

This feature provides support for exposing the connections between physical packages and slots as follows:

- For any physical package that is is plugged in or connected to a slot , that relationship shall be represented by an ElementInConnector instance.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of AbstractPhysicalPackage instances.

It can be concluded that the feature is available for a AbstractPhysicalPackage instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A AbstractPhysicalPackage instance.

```
derive: self.ElementInConnector::Antecedent->size() > 0
```

Otherwise, it can be concluded that the feature is not available.

### 7.1.11 Feature: ConnectorConnection

Physical connectors may be connected to each other at a certain level of abstraction. For example, the ports of a non-switching network router may be considered connected at the abstraction level of electrical connections, while the ports of an IP-layer switch may be considered connected at the abstraction level of IP communication. The level of abstraction and whether each connector provides the exact same capabilities as one that is connected to it, is not modeled in this profile.

This feature provides support for exposing connections between physical connectors as follows:

- For any physical connector that is connected to another one, that relationship shall be represented by a ConnectedTo instance.

The requirement level for this feature is optional.

This feature can be made available to clients at the granularity of AbstractPhysicalConnector instances.

It can be concluded that the feature is available for a AbstractPhysicalConnector instance if:

- The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A AbstractPhysicalConnector instance.

```
derive: self.ConnectedTo::Dependent->size() > 0
```

Otherwise, it can be concluded that the feature is not available.

## 7.2 Adaptations

### 7.2.1 Conventions

This profile defines operation requirements based on [DSP0223](#).

For adaptations of ordinary classes and of associations, the requirements for operations are defined in adaptation-specific subclauses of subclause 7.2.

For association traversal operation requirements that are specified only in the elements table of an adaptation (i.e., without operation-specific subclauses), the names of the association adaptations to be traversed are listed in the elements table.

The default initialization requirement level for property requirements is optional.

The default modification requirement level for property requirements is optional.

This profile repeats the effective values of certain Boolean qualifiers as part of property, method parameter, or method return value requirements. The following convention is established: If the name of a qualifier is listed, its effective value is True; if the qualifier name is not listed, its effective value is False. The convention is applied in the following cases:

- In: indicates that the parameter is an input parameter
- Out: indicates that the parameter is an output parameter
- Key: indicates that the property is a key (that is, its value is part of the instance path)
- Required: indicates that the element value shall be non-Null
- Null OK: indicates explicitly that the element value may be Null for mandatory, conditional or conditional exclusive properties. This information is not specified as a qualifier in the schema but as an indicator in the profile.

### 7.2.2 Adaptation: AbstractSystem: CIM\_System

This abstract adaptation provides a basis for derived adaptations representing specific types of systems.

The implementation type of this adaptation is abstract ordinary adaptation.

The requirement level for this abstract adaptation is left to be defined in its derived adaptations.

### 7.2.3 Adaptation: ComputerSystem: CIM\_ComputerSystem

This adaptation models managed systems.

Implementation of this adaptation is mutually exclusive with the System adaptation; the choice is determined by referencing profiles.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is conditional exclusive, with the following condition:

The following is NOT true:

- The System adaptation is implemented.

Table 5 identifies the element requirements for this adaptation.

**Table 5 – ComputerSystem: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractSystem	Optional	See AbstractSystem.
<b>Operations</b>		
Associators( ) for ComputerSystemPackage	Mandatory	See <a href="#">DSP0223</a> .
AssociatorNames( ) for ComputerSystemPackage	Mandatory	See <a href="#">DSP0223</a> .
References( ) for ComputerSystemPackage	Mandatory	See <a href="#">DSP0223</a> .
ReferenceNames( ) for ComputerSystemPackage	Mandatory	See <a href="#">DSP0223</a> .

## 7.2.4 Adaptation: System: CIM\_System

This adaptation models managed systems.

Implementation of this adaptation is mutually exclusive with the ComputerSystem adaptation; the choice is determined by referencing profiles.

The implementation type of this adaptation is instantiated ordinary adaptation.

A concrete subclass of the abstract schema class CIM\_System needs to be implemented.

The requirement level for this adaptation is conditional exclusive, with the following condition:

The following is NOT true:

- The ComputerSystem adaptation is implemented.

Table 6 identifies the element requirements for this adaptation.

**Table 6 – System: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractSystem	Optional	See AbstractSystem.
<b>Operations</b>		
Associators( ) for SystemPackaging	Mandatory	See <a href="#">DSP0223</a> .
AssociatorNames( ) for SystemPackaging	Mandatory	See <a href="#">DSP0223</a> .
References( ) for SystemPackaging	Mandatory	See <a href="#">DSP0223</a> .
ReferenceNames( ) for SystemPackaging	Mandatory	See <a href="#">DSP0223</a> .

## 7.2.5 Adaptation: ComputerSystemPackage: CIM\_ComputerSystemPackage

### 7.2.5.1 General

This adaptation models the relationship between managed systems modeled with ComputerSystem and the system chassis of these managed systems modeled with SystemChassis .

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is conditional exclusive, with the following condition:

The ComputerSystem adaptation is implemented.

Table 7 identifies the element requirements for this adaptation.

**Table 7 – ComputerSystemPackage: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
Antecedent	Mandatory	Key, see 7.2.5.2.
Dependent	Mandatory	Key, see 7.2.5.3.
PlatformGUID	Mandatory	See 7.2.5.4.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.5.2 Property: Antecedent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation SystemChassis.
- The multiplicity of [0 .. \*] defined in the schema is constrained to [1 .. 1].

### 7.2.5.3 Property: Dependent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation ComputerSystem.
- The multiplicity of [0 .. \*] defined in the schema is constrained to [0 .. 1].

### 7.2.5.4 Property: PlatformGUID

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraint for this property:

OCIL constraint with context of a ComputerSystemPackage instance:

```
inv: self.PlatformGUID.mrpMatchesPattern('^ [0-9A-F] {32} $|0')
```

## 7.2.6 Adaptation: SystemPackaging: CIM\_SystemPackaging

### 7.2.6.1 General

This adaptation models the relationship between managed systems modeled with System and the system chassis of these managed systems modeled with SystemChassis .

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is conditional exclusive, with the following condition:

The System adaptation is implemented.

Table 8 identifies the element requirements for this adaptation.

**Table 8 – SystemPackaging: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
Antecedent	Mandatory	Key, see 7.2.6.2.
Dependent	Mandatory	Key, see 7.2.6.3.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.6.2 Property: Antecedent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation SystemChassis.
- The multiplicity of [0 .. \*] defined in the schema is constrained to [1 .. 1].

### 7.2.6.3 Property: Dependent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation System.
- The multiplicity of [0 .. \*] defined in the schema is constrained to [0 .. 1].

## 7.2.7 Adaptation: SystemDevice: CIM\_SystemDevice

### 7.2.7.1 General

This adaptation models the relationship between managed systems and the logical elements on these systems.

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is optional.

Table 9 identifies the element requirements for this adaptation.

**Table 9 – SystemDevice: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
GroupComponent	Mandatory	Key, see 7.2.7.2.
PartComponent	Mandatory	Key, see 7.2.7.3.

### 7.2.7.2 Property: GroupComponent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractSystem.

- The multiplicity of [1 .. 1] defined in the schema is not further constrained.

### 7.2.7.3 Property: PartComponent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation LogicalDevice.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

### 7.2.8 Adaptation: LogicalDevice: CIM\_LogicalDevice

This adaptation models logical elements that are realized by a physical element .

The implementation type of this adaptation is instantiated ordinary adaptation.

A concrete subclass of the abstract schema class CIM\_LogicalDevice needs to be implemented.

The requirement level for this adaptation is conditional, with the following condition:

The LogicalElementRelation feature is implemented.

Table 10 identifies the element requirements for this adaptation.

**Table 10 – LogicalDevice: Element requirements**

Element	Requirement	Description
<b>Operations</b>		
Associators( ) for Realizes and SystemDevice	Mandatory	See <a href="#">DSP0223</a> .
AssociatorNames( ) for Realizes and SystemDevice	Mandatory	See <a href="#">DSP0223</a> .
References( ) for Realizes and SystemDevice	Mandatory	See <a href="#">DSP0223</a> .
ReferenceNames( ) for Realizes and SystemDevice	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.9 Adaptation: Realizes: CIM\_Realizes

#### 7.2.9.1 General

This adaptation models the relationship between physical elements and the logical elements realized by them.

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is conditional, with the following condition:

The LogicalElementRelation feature is implemented.

Table 11 identifies the element requirements for this adaptation.

**Table 11 – Realizes: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
Antecedent	Mandatory	Key, see 7.2.9.2.
Dependent	Mandatory	Key, see 7.2.9.3.

**7.2.9.2 Property: Antecedent**

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractPhysicalElement.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

**7.2.9.3 Property: Dependent**

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation LogicalDevice.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

**7.2.10 Adaptation: AbstractPhysicalElement: CIM\_PhysicalElement**

**7.2.10.1 General**

This abstract adaptation provides a basis for derived adaptations by modeling properties and behaviours of physical elements that are common for more specific types of physical elements and provides a common end point for referencing associations.

The implementation type of this adaptation is abstract ordinary adaptation.

The requirement level for this abstract adaptation is left to be defined in its derived adaptations.

Table 12 identifies the element requirements for this adaptation.

**Table 12 – AbstractPhysicalElement: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
Manufacturer	Conditional	See 7.2.10.2.
Model	Conditional	See 7.2.10.3.
SerialNumber	Conditional	See 7.2.10.4.
PartNumber	Conditional	See 7.2.10.5.
SKU	Conditional	See 7.2.10.6.
CanBeFRUed	Conditional	See 7.2.10.7.
ElementName	Mandatory	See 7.2.10.8.
<b>Operations</b>		
Associators( ) for Container and others	Mandatory	See 7.2.10.9.
AssociatorNames( ) for Container and others	Mandatory	See 7.2.10.10.
References( ) for Container and others	Mandatory	See 7.2.10.11.
ReferenceNames( ) for Container and others	Mandatory	See 7.2.10.12.

**7.2.10.2 Property: Manufacturer**

The presentation requirement level for this property is conditional, with the following condition:

The FRUInformation feature is implemented.

The implementation shall satisfy the following constraint for this property:

OCL constraint with context of a AbstractPhysicalElement instance:

```
inv: self.Manufacturer.mrpMatchesPattern('[^WSP]+')
```

Explanation:

**Design Note:** Clarify whether this pattern means "no whitespace".

### 7.2.10.3 Property: Model

The presentation requirement level for this property is conditional, with the following condition:

The FRUInformation feature is implemented.

The implementation shall satisfy the following constraint for this property:

OCL constraint with context of a AbstractPhysicalElement instance:

```
inv: self.Model.mrpMatchesPattern('[^WSP]+')
```

Explanation:

**Design Note:** Clarify whether this pattern means "no whitespace".

### 7.2.10.4 Property: SerialNumber

The presentation requirement level for this property is conditional, with the following condition:

The FRUInformation feature is implemented.

The implementation shall satisfy the following constraint for this property:

OCL constraint with context of a AbstractPhysicalElement instance:

```
inv: self.SerialNumber.mrpMatchesPattern('[^WSP]+')
```

Explanation:

**Design Note:** Clarify whether this pattern means "no whitespace".

### 7.2.10.5 Property: PartNumber

The presentation requirement level for this property is conditional, with the following condition:

The FRUInformation feature is implemented.

The implementation shall satisfy the following constraint for this property:

OCL constraint with context of a AbstractPhysicalElement instance:

```
inv: self.PartNumber.mrpMatchesPattern('[^WSP]+')
```

Explanation:

**Design Note:** Clarify whether this pattern means "no whitespace".

### 7.2.10.6 Property: SKU

The presentation requirement level for this property is conditional, with the following condition:

The FRUInformation feature is implemented.

The implementation shall satisfy the following constraint for this property:

OCL constraint with context of a AbstractPhysicalElement instance:

```
inv: self.SKU.mrpMatchesPattern('[^WSP]+')
```

Explanation:

**Design Note:** Clarify whether this pattern means "no whitespace".

### 7.2.10.7 Property: CanBeFRUed

The presentation requirement level for this property is conditional, with the following condition:

The FieldReplaceability feature is implemented.

### 7.2.10.8 Property: ElementName

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraint for this property:

OCL constraint with context of a AbstractPhysicalElement instance:

```
inv: self.ElementName.isNotNull()
```

### 7.2.10.9 Operation: Associators( ) for Container and others

For general requirements on the implementation of this operation, see [DSP0223](#).

The requirement level for this operation is mandatory.

This operation requirement applies when traversing the following association adaptations:

- Container
- ElementCapabilities
- Realizes

### 7.2.10.10 Operation: AssociatorNames( ) for Container and others

For general requirements on the implementation of this operation, see [DSP0223](#).

The requirement level for this operation is mandatory.

This operation requirement applies when traversing the following association adaptations:

- Container
- ElementCapabilities
- Realizes

### 7.2.10.11 Operation: References( ) for Container and others

For general requirements on the implementation of this operation, see [DSP0223](#).

The requirement level for this operation is mandatory.

This operation requirement applies when traversing the following association adaptations:

- Container
- ElementCapabilities
- Realizes

### 7.2.10.12 Operation: ReferenceNames( ) for Container and others

For general requirements on the implementation of this operation, see [DSP0223](#).

The requirement level for this operation is mandatory.

This operation requirement applies when traversing the following association adaptations:

- Container
- ElementCapabilities
- Realizes

## 7.2.11 Adaptation: AbstractConnectingElement: CIM\_PhysicalElement

This abstract adaptation provides a basis for derived adaptations by modeling properties and behaviours of connecting elements that are common for more specific types of connecting elements and provides a common end point for referencing associations.

The implementation type of this adaptation is abstract ordinary adaptation.

The requirement level for this abstract adaptation is left to be defined in its derived adaptations.

Table 13 identifies the element requirements for this adaptation.

**Table 13 – AbstractConnectingElement: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalElement	Optional	See AbstractPhysicalElement.
<b>Operations</b>		
Associators( ) for ElementInConnector	Mandatory	See <a href="#">DSP0223</a> .
AssociatorNames( ) for ElementInConnector	Mandatory	See <a href="#">DSP0223</a> .
References( ) for ElementInConnector	Mandatory	See <a href="#">DSP0223</a> .
ReferenceNames( ) for ElementInConnector	Mandatory	See <a href="#">DSP0223</a> .

## 7.2.12 Adaptation: AbstractPhysicalConnector: CIM\_PhysicalConnector

This abstract adaptation provides a basis for derived adaptations by modeling properties and behaviours of physical connectors that are common for more specific types of connectors and provides a common end point for referencing associations.

The implementation type of this adaptation is abstract ordinary adaptation.

The requirement level for this abstract adaptation is left to be defined in its derived adaptations.

Table 14 identifies the element requirements for this adaptation.

**Table 14 – AbstractPhysicalConnector: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalComponent	Optional	See AbstractPhysicalComponent.
<b>Properties</b>		
CreationClassName	Mandatory	Key, see schema definition.
Tag	Mandatory	Key, see schema definition.
ConnectorLayout	Mandatory	See schema definition.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.13 Adaptation: AbstractPhysicalComponent: CIM\_PhysicalComponent

This abstract adaptation provides a basis for derived adaptations by modeling properties and behaviours of physical components (i.e. physical elements that cannot be further decomposed) that are common for more specific types of components and provides a common end point for referencing associations.

The implementation type of this adaptation is abstract ordinary adaptation.

The requirement level for this abstract adaptation is left to be defined in its derived adaptations.

Table 15 identifies the element requirements for this adaptation.

**Table 15 – AbstractPhysicalComponent: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractConnectingElement	Optional	See AbstractConnectingElement.
<b>Properties</b>		
CreationClassName	Mandatory	Key, see schema definition.
Tag	Mandatory	Key, see schema definition.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.14 Adaptation: AbstractPhysicalPackage: CIM\_PhysicalPackage

#### 7.2.14.1 General

This abstract adaptation provides a basis for derived adaptations by modeling properties and behaviours of physical packages (i.e. physical elements that have the ability to contain other physical elements) that are common for more specific types of packages and provides a common end point for referencing associations.

The implementation type of this adaptation is abstract ordinary adaptation.

The requirement level for this abstract adaptation is left to be defined in its derived adaptations.

Table 16 identifies the element requirements for this adaptation.

**Table 16 – AbstractPhysicalPackage: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractConnectingElement	Optional	See AbstractConnectingElement.
<b>Properties</b>		
CreationClassName	Mandatory	Key, see schema definition.
Tag	Mandatory	Key, see schema definition.
PackageType	Mandatory	See schema definition.
VendorCompatibilityStrings	Mandatory	See 7.2.14.2.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .
Associators( ) for Container and ElementCapacityForPackage	Mandatory	See <a href="#">DSP0223</a> .
AssociatorNames( ) for Container and ElementCapacityForPackage	Mandatory	See <a href="#">DSP0223</a> .
References( ) for Container and ElementCapacityForPackage	Mandatory	See <a href="#">DSP0223</a> .
ReferenceNames( ) for Container and ElementCapacityForPackage	Mandatory	See <a href="#">DSP0223</a> .

#### 7.2.14.2 Property: VendorCompatibilityStrings

The presentation requirement level for this property is mandatory.

See feature PackageSlotCompatibilityForPackage .

The implementation shall satisfy the following constraint for this property:

OCL constraint with context of a AbstractPhysicalPackage instance:

```
inv: self.VendorCompatibilityStrings.mrpMatchesPattern('[^:]+(:[^\:]+)+')
```

#### 7.2.15 Adaptation: PhysicalPackage: CIM\_PhysicalPackage

This adaptation models physical packages for which no other sibling adaptation in this profile matches.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is mandatory.

Table 17 identifies the element requirements for this adaptation.

**Table 17 – PhysicalPackage: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalPackage	Optional	See AbstractPhysicalPackage.

### 7.2.16 Adaptation: PhysicalFrame: CIM\_PhysicalFrame

This adaptation models physical packages that are frames.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is optional.

Table 18 identifies the element requirements for this adaptation.

**Table 18 – PhysicalFrame: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalPackage	Optional	See AbstractPhysicalPackage.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.17 Adaptation: Chassis: CIM\_Chassis

#### 7.2.17.1 General

This adaptation models physical packages that are chassis'.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is optional.

Table 19 identifies the element requirements for this adaptation.

**Table 19 – Chassis: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalPackage	Optional	See AbstractPhysicalPackage.
<b>Properties</b>		
PackageType	Mandatory	See 7.2.17.2.
ChassisPackageType	Mandatory	See schema definition.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

#### 7.2.17.2 Property: PackageType

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraint for this property:

OCIL constraint with context of a Chassis instance:

```
inv: self.PackageType = 3 /* Chassis/Frame */
```

## 7.2.18 Adaptation: SystemChassis: CIM\_Chassis

### 7.2.18.1 General

This adaptation models physical packages that are the chassis of the managed system (called a system chassis).

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is optional.

Table 20 identifies the element requirements for this adaptation.

**Table 20 – SystemChassis: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
Chassis	Optional	See Chassis.
<b>Operations</b>		
Associators( ) for ComputerSystemPackage and others	Mandatory	See 7.2.18.2.
AssociatorNames( ) for ComputerSystemPackage and others	Mandatory	See 7.2.18.3.
References( ) for ComputerSystemPackage and others	Mandatory	See 7.2.18.4.
ReferenceNames( ) for ComputerSystemPackage and others	Mandatory	See 7.2.18.5.

### 7.2.18.2 Operation: Associators( ) for ComputerSystemPackage and others

For general requirements on the implementation of this operation, see [DSP0223](#).

The requirement level for this operation is mandatory.

This operation requirement applies when traversing the following association adaptations:

- ComputerSystemPackage
- ElementCapacityForSystemChassis
- SystemPackaging

### 7.2.18.3 Operation: AssociatorNames( ) for ComputerSystemPackage and others

For general requirements on the implementation of this operation, see [DSP0223](#).

The requirement level for this operation is mandatory.

This operation requirement applies when traversing the following association adaptations:

- ComputerSystemPackage
- ElementCapacityForSystemChassis
- SystemPackaging

### 7.2.18.4 Operation: References( ) for ComputerSystemPackage and others

For general requirements on the implementation of this operation, see [DSP0223](#).

The requirement level for this operation is mandatory.

This operation requirement applies when traversing the following association adaptations:

- ComputerSystemPackage
- ElementCapacityForSystemChassis
- SystemPackaging

**7.2.18.5 Operation: ReferenceNames( ) for ComputerSystemPackage and others**

For general requirements on the implementation of this operation, see [DSP0223](#).

The requirement level for this operation is mandatory.

This operation requirement applies when traversing the following association adaptations:

- ComputerSystemPackage
- ElementCapacityForSystemChassis
- SystemPackaging

**7.2.19 Adaptation: Rack: CIM\_Rack**

**7.2.19.1 General**

This adaptation models physical packages that are racks.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is optional.

Table 21 identifies the element requirements for this adaptation.

**Table 21 – Rack: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalPackage	Optional	See AbstractPhysicalPackage.
<b>Properties</b>		
PackageType	Mandatory	See 7.2.19.2.
TypeOfRack	Mandatory	See schema definition.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

**7.2.19.2 Property: PackageType**

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraint for this property:

OCLE constraint with context of a Rack instance:

```
inv: self.PackageType = 2 /* Rack */
```

### 7.2.20 Adaptation: Card: CIM\_Card

This adaptation models physical packages that are cards.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is optional.

Table 22 identifies the element requirements for this adaptation.

**Table 22 – Card: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalPackage	Optional	See AbstractPhysicalPackage.
<b>Properties</b>		
HostingBoard	Mandatory	See schema definition.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.21 Adaptation: PhysicalConnector: CIM\_PhysicalConnector

This adaptation models physical connectors for which no other sibling adaptation in this profile matches.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is mandatory.

Table 23 identifies the element requirements for this adaptation.

**Table 23 – PhysicalConnector: Element requirements**

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalConnector	Optional	See AbstractPhysicalConnector.

### 7.2.22 Adaptation: Slot: CIM\_Slot

#### 7.2.22.1 General

This adaptation models physical packages that are slots.

Slots have the optional ability to expose their plug compatibility, for details see feature PackageSlotCompatibilityForSlot .

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is optional.

Table 24 identifies the element requirements for this adaptation.

Table 24 – Slot: Element requirements

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalConnector	Optional	See AbstractPhysicalConnector.
<b>Properties</b>		
ConnectorLayout	Mandatory	See schema definition.
VendorCompatibilityStrings	Mandatory	See 7.2.22.2.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.22.2 Property: VendorCompatibilityStrings

The presentation requirement level for this property is mandatory.

See feature PackageSlotCompatibilityForSlot .

The implementation shall satisfy the following constraint for this property:

OCL constraint with context of a Slot instance:

```
inv: self.VendorCompatibilityStrings.mrpMatchesPattern('[^:]+(:[^:]+)')
```

### 7.2.23 Adaptation: PhysicalComponent: CIM\_PhysicalComponent

This adaptation models physical components for which no other sibling adaptation in this profile matches.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is mandatory.

Table 25 identifies the element requirements for this adaptation.

Table 25 – PhysicalComponent: Element requirements

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalComponent	Optional	See AbstractPhysicalComponent.

### 7.2.24 Adaptation: Chip: CIM\_Chip

This adaptation models physical components that are chips.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is optional.

Table 26 identifies the element requirements for this adaptation.

Table 26 – Chip: Element requirements

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalComponent	Optional	See AbstractPhysicalComponent.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

## 7.2.25 Adaptation: PhysicalMemory: CIM\_PhysicalMemory

### 7.2.25.1 General

This adaptation models physical components that are memory chips.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is optional.

Table 27 identifies the element requirements for this adaptation.

Table 27 – PhysicalMemory: Element requirements

Element	Requirement	Description
<b>Base adaptations</b>		
AbstractPhysicalComponent	Optional	See AbstractPhysicalComponent.
<b>Properties</b>		
FormFactor	Mandatory	See schema definition.
Speed	Mandatory	See 7.2.25.2.
Capacity	Mandatory	See schema definition.
BankLabel	Mandatory	See schema definition.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.25.2 Property: Speed

The presentation requirement level for this property is mandatory.

This property shall represent the speed of the memory chip in a unit of nanoseconds. If the speed of the memory chip is less than one nanosecond or unknown, this property shall have a value of 0. If the speed of the memory chip is variable over time, this property shall have a value of 2<sup>32</sup>-1.

## 7.2.26 Adaptation: PhysicalAssetCapabilities: CIM\_PhysicalAssetCapabilities

### 7.2.26.1 General

This adaptation models the capability of physical elements to indicate whether they expose FRU data.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is conditional, with the following condition:

The FRUInformation feature is implemented.

Table 28 identifies the element requirements for this adaptation.

**Table 28 – PhysicalAssetCapabilities: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
InstanceID	Mandatory	Key, see schema definition.
ElementName	Mandatory	Required, see schema definition.
FRUInfoSupported	Mandatory	See 7.2.26.2.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .
Associators( ) for ElementCapabilities	Mandatory	See <a href="#">DSP0223</a> .
AssociatorNames( ) for ElementCapabilities	Mandatory	See <a href="#">DSP0223</a> .
References( ) for ElementCapabilities	Mandatory	See <a href="#">DSP0223</a> .
ReferenceNames( ) for ElementCapabilities	Mandatory	See <a href="#">DSP0223</a> .

**7.2.26.2 Property: FRUInfoSupported**

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraint for this property:

OCIL constraint with context of a PhysicalAssetCapabilities instance:

```

inv: if
self.ElementCapabilities::Element.mrpIsFeatureSupported('FRUInformation')
then self.FRUInfoSupported = true
else self.FRUInfoSupported = false
    
```

Explanation:

If the FRUInformation feature is implemented for an AbstractPhysicalElement instance, the value of this property in the associated instance of this adaptation shall be True. Otherwise, the value of this property shall be False.

**7.2.27 Adaptation: ElementCapabilities: CIM\_ElementCapabilities**

**7.2.27.1 General**

Todo: Shall associate an instance of a subclass of CIM\_PhysicalElement representing a physical element with the CIM\_PhysicalAssetCapabilities instance representing the capabilities of that physical element.

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is conditional, with the following condition:

The FRUInformation feature is implemented.

Table 29 identifies the element requirements for this adaptation.

**Table 29 – ElementCapabilities: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
ManagedElement	Mandatory	Key, see 7.2.27.2.
Capabilities	Mandatory	Key, see 7.2.27.3.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.27.2 Property: ManagedElement

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractPhysicalElement.
- The multiplicity of [1 .. \*] defined in the schema is not further constrained.

### 7.2.27.3 Property: Capabilities

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation PhysicalAssetCapabilities.
- The multiplicity of [0 .. \*] defined in the schema is constrained to [0 .. 1].

## 7.2.28 Adaptation: ConfigurationCapacity: CIM\_ConfigurationCapacity

### 7.2.28.1 General

Todo: Class adaptation CIM\_ConfigurationCapacity advertises the possible configurations of a system chassis.

The implementation type of this adaptation is instantiated ordinary adaptation.

The requirement level for this adaptation is conditional, with the following condition:

The ConfigurationCapacity feature is implemented.

For each unique value of the VendorCompatibilityStrings property in any Slot instances, a ConfigurationCapacity instance shall exist that has one or more array entry values in its VendorCompatibilityStrings array property that are equal to that unique value.

Table 30 identifies the element requirements for this adaptation.

**Table 30 – ConfigurationCapacity: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
Name	Mandatory	Key, see schema definition.
ElementName	Mandatory	See schema definition.

Element	Requirement	Description
ObjectType	Mandatory	Key, see schema definition.
OtherTypeDescription	Mandatory	See 7.2.28.2.
MinimumCapacity	Optional	See 7.2.28.3.
MaximumCapacity	Mandatory	See 7.2.28.4.
Increment	Mandatory	See 7.2.28.5.
VendorCompatibilityStrings	Mandatory	See 7.2.28.6.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstances( )	Mandatory	See <a href="#">DSP0223</a> .
EnumerateInstanceNames( )	Mandatory	See <a href="#">DSP0223</a> .
Associators( ) for ElementCapacityForPackage and ElementCapacityForSystemChassis	Mandatory	See <a href="#">DSP0223</a> .
AssociatorNames( ) for ElementCapacityForPackage and ElementCapacityForSystemChassis	Mandatory	See <a href="#">DSP0223</a> .
References( ) for ElementCapacityForPackage and ElementCapacityForSystemChassis	Mandatory	See <a href="#">DSP0223</a> .
ReferenceNames( ) for ElementCapacityForPackage and ElementCapacityForSystemChassis	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.28.2 Property: OtherTypeDescription

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraint for this property:

OCIL constraint with context of a ConfigurationCapacity instance:

```
inv: if self.ObjectType = 0 /* Other */
then self.OtherTypeDescription != null
else self.OtherTypeDescription = null
```

Explanation:

If the ObjectType property has a value of 0 (Other), this property shall be non-Null. Otherwise, it shall be Null.

### 7.2.28.3 Property: MinimumCapacity

The presentation requirement level for this property is optional.

This property should be implemented.

### 7.2.28.4 Property: MaximumCapacity

The presentation requirement level for this property is mandatory.

A value of 0 shall mean that the maximum capacity is unknown.

### 7.2.28.5 Property: Increment

The presentation requirement level for this property is mandatory.

A value of 0 shall mean that the increment is unknown.

### 7.2.28.6 Property: VendorCompatibilityStrings

The presentation requirement level for this property is mandatory.

See features PackageSlotCompatibilityForPackage and PackageSlotCompatibilityForSlot .

The implementation shall satisfy the following constraint for this property:

OCML constraint with context of a ConfigurationCapacity instance:

```
inv: if self.VendorCompatibilityStrings.mrpMatchesPattern('[^:]+(:[^:]+)')
```

## 7.2.29 Adaptation: ElementCapacityForPackage: CIM\_ElementCapacity

### 7.2.29.1 General

Todo: Shall associate an instance of a subclass of CIM\_PhysicalPackage representing a physical package within the chassis, including the chassis itself, with the CIM\_ConfigurationCapacity instance representing the configuration capacity of that element.

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is conditional, with the following condition:

The ConfigurationCapacity feature is implemented.

Table 31 identifies the element requirements for this adaptation.

**Table 31 – ElementCapacityForPackage: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
Element	Mandatory	Key, see 7.2.29.2.
Capacity	Mandatory	Key, see 7.2.29.3.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.29.2 Property: Element

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractPhysicalPackage.
- The multiplicity of [1 .. \*] defined in the schema is constrained to [0 .. \*]. **Profile Error: Reference "Element" defined in association class adaptation "ElementCapacityForPackage" constrains its minimum multiplicity to "0", which is invalid because it is less than the minimum multiplicity "1" defined in schema association class "CIM\_ElementCapacity".**

### 7.2.29.3 Property: Capacity

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation ConfigurationCapacity.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

## 7.2.30 Adaptation: ElementCapacityForSystemChassis: CIM\_ElementCapacity

### 7.2.30.1 General

Todo: Shall associate an instance of a subclass of CIM\_PhysicalPackage representing a physical package within the chassis, including the chassis itself, with the CIM\_ConfigurationCapacity instance representing the configuration capacity of that element.

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is conditional, with the following condition:

The ConfigurationCapacity feature is implemented.

Table 32 identifies the element requirements for this adaptation.

**Table 32 – ElementCapacityForSystemChassis: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
Element	Mandatory	Key, see 7.2.30.2.
Capacity	Mandatory	Key, see 7.2.30.3.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.30.2 Property: Element

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation SystemChassis.
- The multiplicity of [1 .. \*] defined in the schema is constrained to [1 .. 1].

### 7.2.30.3 Property: Capacity

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation ConfigurationCapacity.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

### 7.2.31 Adaptation: Container: CIM\_Container

#### 7.2.31.1 General

Todo: Shall associate a physical package (represented by an instance of class adaptation CIM\_PhysicalPackage) with the physical elements (represented by instances of class adaptation CIM\_PhysicalElement) that reside within the package.

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is mandatory.

Table 33 identifies the element requirements for this adaptation.

**Table 33 – Container: Element requirements**

Element	Requirement	Description
<b>Properties</b>		
GroupComponent	Mandatory	Key, see 7.2.31.2.
PartComponent	Mandatory	Key, see 7.2.31.3.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .

#### 7.2.31.2 Property: GroupComponent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractPhysicalPackage.
- The multiplicity of [0 .. 1] defined in the schema is not further constrained.

#### 7.2.31.3 Property: PartComponent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractPhysicalElement.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

### 7.2.32 Adaptation: ElementInConnector: CIM\_ElementInConnector

#### 7.2.32.1 General

Todo: Shall associate a CIM\_PhysicalConnector or CIM\_Slot instance (representing a connector or slot), with physical packages (represented by instances of class adaptation CIM\_PhysicalPackage).

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is optional.

Table 34 identifies the element requirements for this adaptation.

Table 34 – ElementInConnector: Element requirements

Element	Requirement	Description
<b>Properties</b>		
Antecedent	Mandatory	Key, see 7.2.32.2.
Dependent	Mandatory	Key, see 7.2.32.3.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.32.2 Property: Antecedent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractPhysicalConnector.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

### 7.2.32.3 Property: Dependent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractConnectingElement.
- The multiplicity of [0 .. 1] defined in the schema is not further constrained.

## 7.2.33 Adaptation: ConnectedTo: CIM\_ConnectedTo

### 7.2.33.1 General

Todo: Shall associate the CIM\_PhysicalConnector or CIM\_Slot instances that represent connectors that are connected together.

The implementation type of this adaptation is instantiated association adaptation.

The requirement level for this adaptation is optional.

Table 35 identifies the element requirements for this adaptation.

Table 35 – ConnectedTo: Element requirements

Element	Requirement	Description
<b>Properties</b>		
Antecedent	Mandatory	Key, see 7.2.33.2.
Dependent	Mandatory	Key, see 7.2.33.3.
<b>Operations</b>		
GetInstance( )	Mandatory	See <a href="#">DSP0223</a> .

### 7.2.33.2 Property: Antecedent

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractPhysicalConnector.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

**7.2.33.3 Property: Dependent**

The presentation requirement level for this property is mandatory.

The implementation shall satisfy the following constraints for this reference property:

- Referenced instances shall be of class adaptation AbstractPhysicalConnector.
- The multiplicity of [0 .. \*] defined in the schema is not further constrained.

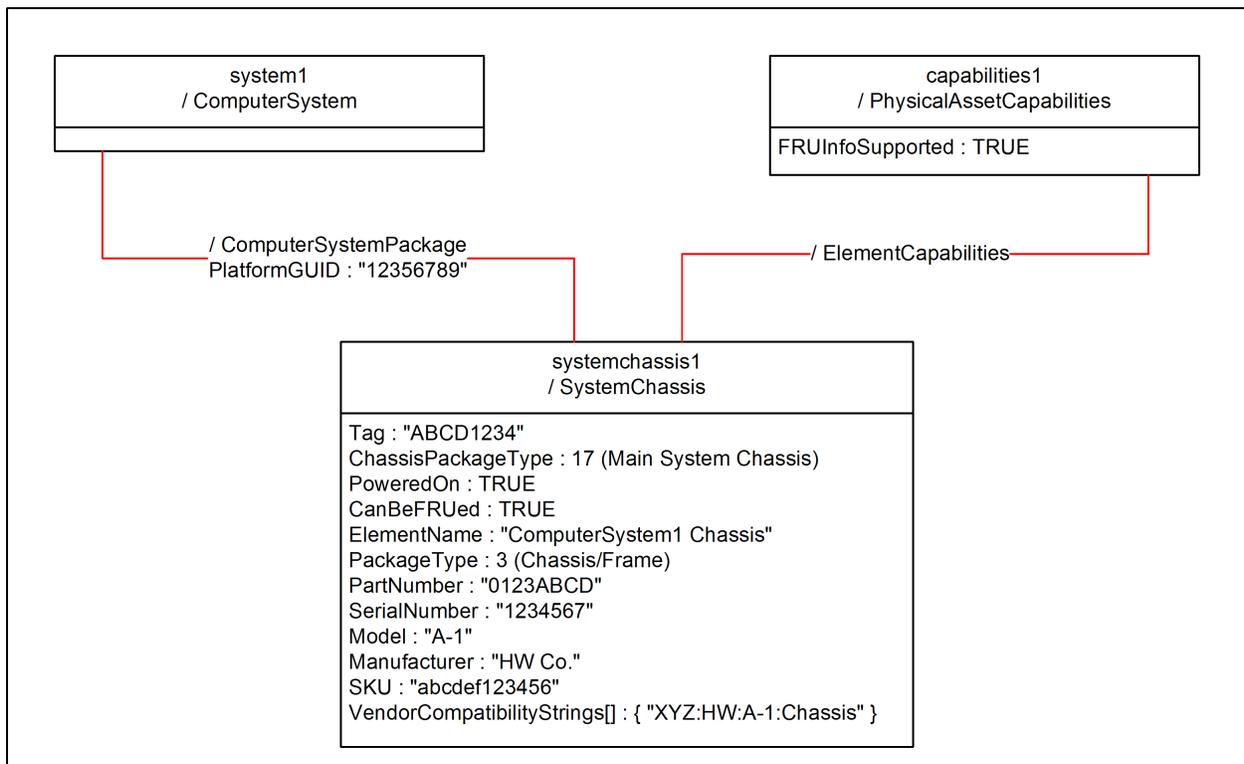
**8 Use cases and state descriptions**

**8.1 State description: SystemChassis**

The following figure shows a simple object diagram that represents a scenario that conforms to the requirements of this profile. In that scenario, there is a system chassis that is represented by a SystemChassis instance. The value 17 (Main System Chassis) of the ChassisPackageType property indicates that the represented chassis is a system chassis . As a system chassis , it represents its relationship with the managed system it hosts through a ComputerSystemPackage instance.

The Tag property of the systemchassis1 instance represents the asset tag of the chassis.

The FRUInfoSupported property of the PhysicalAssetCapabilities instance fancapabilities1 indicates by its value of TRUE that the systemchassis1 instance contains FRU information (see FRUInformation ).



**Figure 2 – System chassis object diagram**

### 8.2 State description: FanPackage

The following figure shows a simple object diagram that represents a scenario that conforms to the requirements of this profile. In that scenario, there is a physical package that is a fan and that is represented by the PhysicalPackage instance fanpackage1. The logical aspect of the fan is represented by the LogicalDevice instance fan1 that is associated to the PhysicalPackage instance through Realizes .

The FRUInfoSupported property of the PhysicalAssetCapabilities instance fancapabilities1 indicates by its value of TRUE that the fanpackage1 instance contains FRU information (see FRUInformation ).

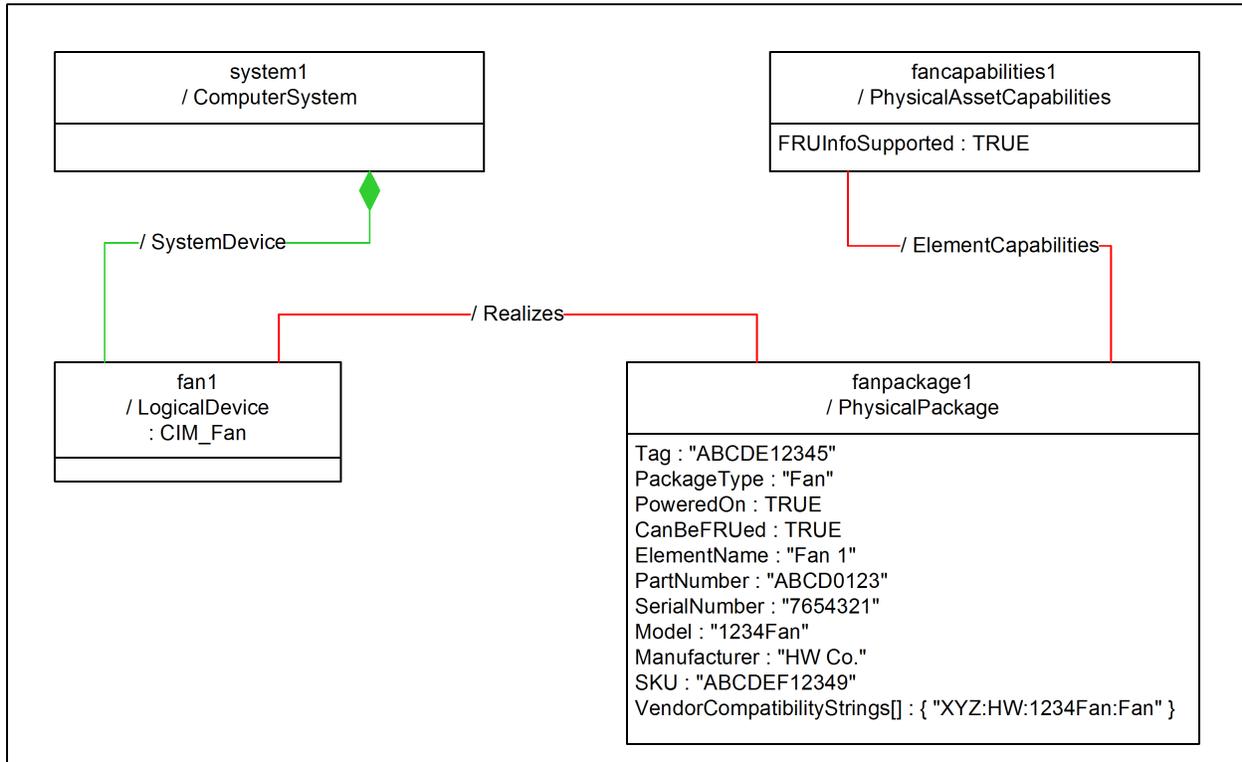
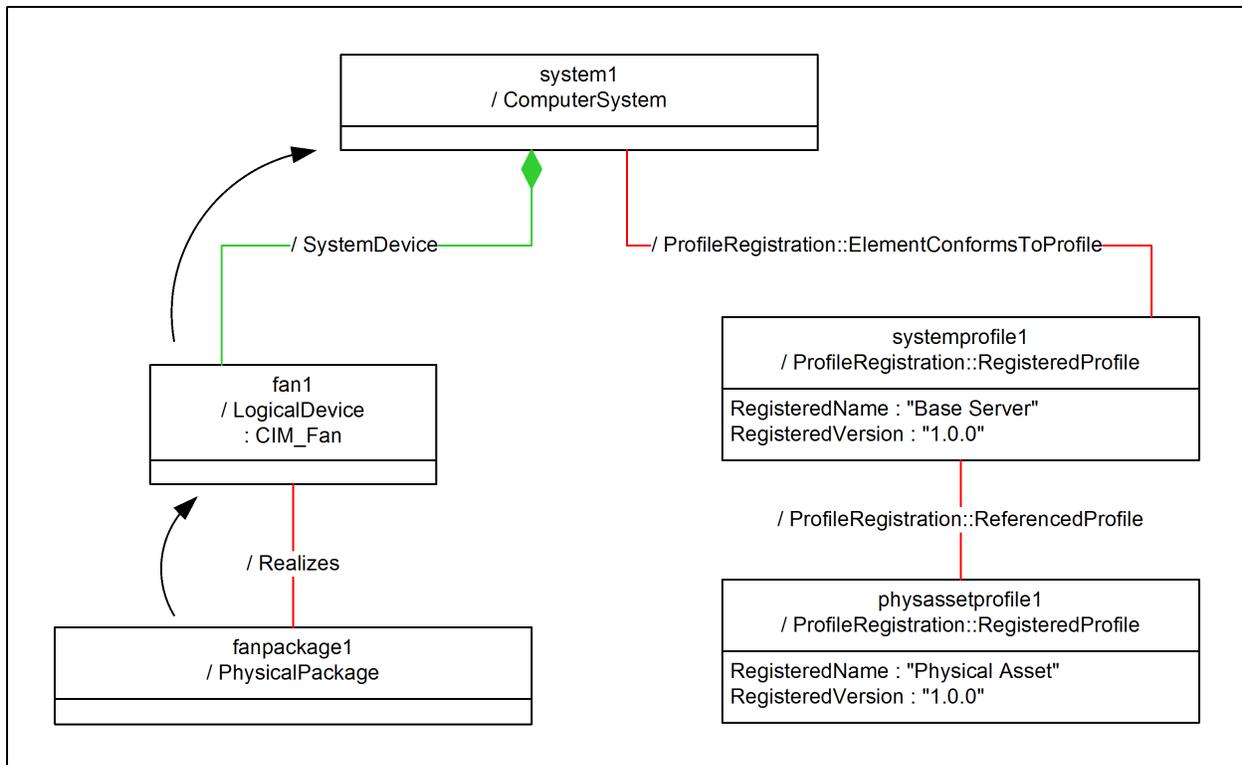


Figure 3 – Fan package object diagram

### 8.3 Use case: FindScopingInstance1

This use case describes the flow to find the scoping instance of a PhysicalPackage instance.



**Figure 4 – Find scoping instance use case 1**

This use case has the following preconditions:

- The LogicalElementRelation feature has been implemented for the PhysicalPackage instance.
- A PhysicalPackage instance is known.

The main flow for this use case consists of the following steps:

1. Invoke the Associators( ) for Realizes operation on that PhysicalPackage instance. This will retrieve all LogicalDevice instances representing logical elements of the physical package represented by that PhysicalPackage instance.
2. For any one of the returned LogicalDevice instances, determine its scoping instance as described in the Fan Profile. This will result in a ComputerSystem instance.
3. Optional: The CIM\_RegisteredProfile instance physassetprofile1 representing the implementation of this profile can be found from the scoping instance as described in the Profile Registration Profile.

#### 8.4 Use case: FindScopingInstance2

This use case describes the flow to find the scoping instance of a PhysicalPackage instance in a physical containment hierarchy.

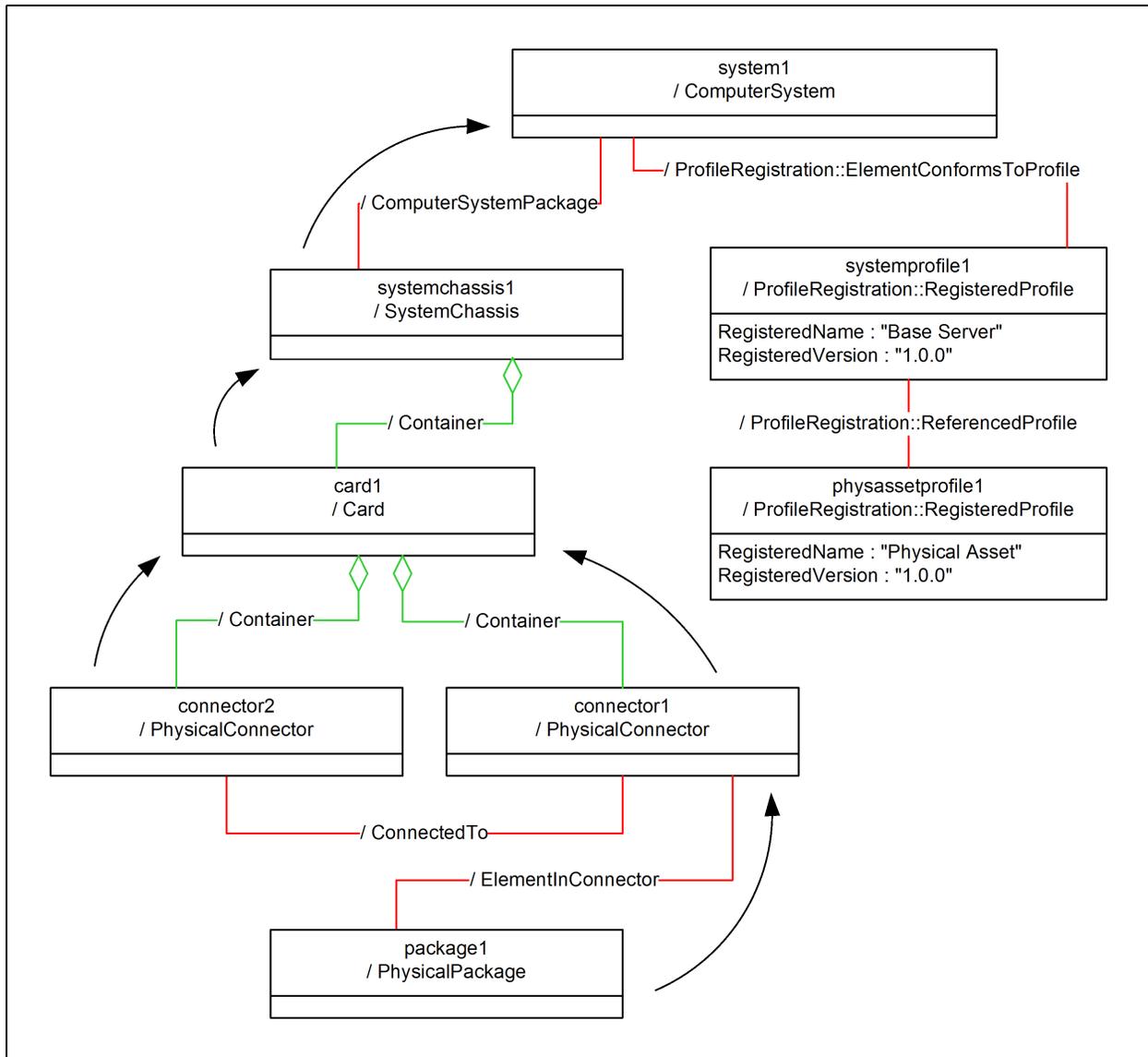


Figure 5 – Find scoping instance use case 2

This use case has the following preconditions:

- The SystemChassisForSystem feature has been implemented for the scoping instance System or the SystemChassisForComputerSystem feature has been implemented for the scoping instance ComputerSystem .
- A PhysicalPackage instance is known.

The main flow for this use case consists of the following steps:

1. Because the PhysicalPackage instance package1 is referenced by the ElementInConnector . Dependent property, the client needs to traverse that association, resulting in the PhysicalConnector instance connector1.

2. Because the PhysicalConnector instance connector1 is referenced by the Container . PartComponent property, the client needs to traverse that association, resulting in the Card instance card1.

NOTE: To enable finding the scoping instance of connector2, the implementation has instantiated an instance of Container that references card1 and connector2. Merely instantiating the instance of ConnectedTo referencing connector2 will not conform to the scoping class method.

3. Because the Card instance card1 is referenced by the Container . PartComponent property, the client needs to traverse that association, resulting in the Chassis instance systemchassis1.
4. Because the Chassis instance systemchassis1 is referenced by ComputerSystemPackage , the client needs to traverse that association, resulting in the ComputerSystem instance system1, which is the scoping instance of the PhysicalPackage instance package1.
5. Optional: The CIM\_RegisteredProfile instance physassetprofile1 representing the implementation of this profile can be found from the scoping instance as described in the Profile Registration Profile.

## 8.5 State description: PhysicalTopology

The following figure shows an object diagram that represents another possible instantiation of this profile that exposes information about the physical containment hierarchy.

The systemchassis1 instance represents the system chassis of the managed system represented by the system1 instance.

The fanpackage1 instance represents the physical package of the fan represented by the fan1 instance.

The physical topology of the system chassis represented by systemchassis1 contains a single level of hierarchy because the instances card1, slot1, chip1, pmem1, component1, connector1, and fanpackage1 are all directly associated to the systemchassis1 instance through instances of Container .

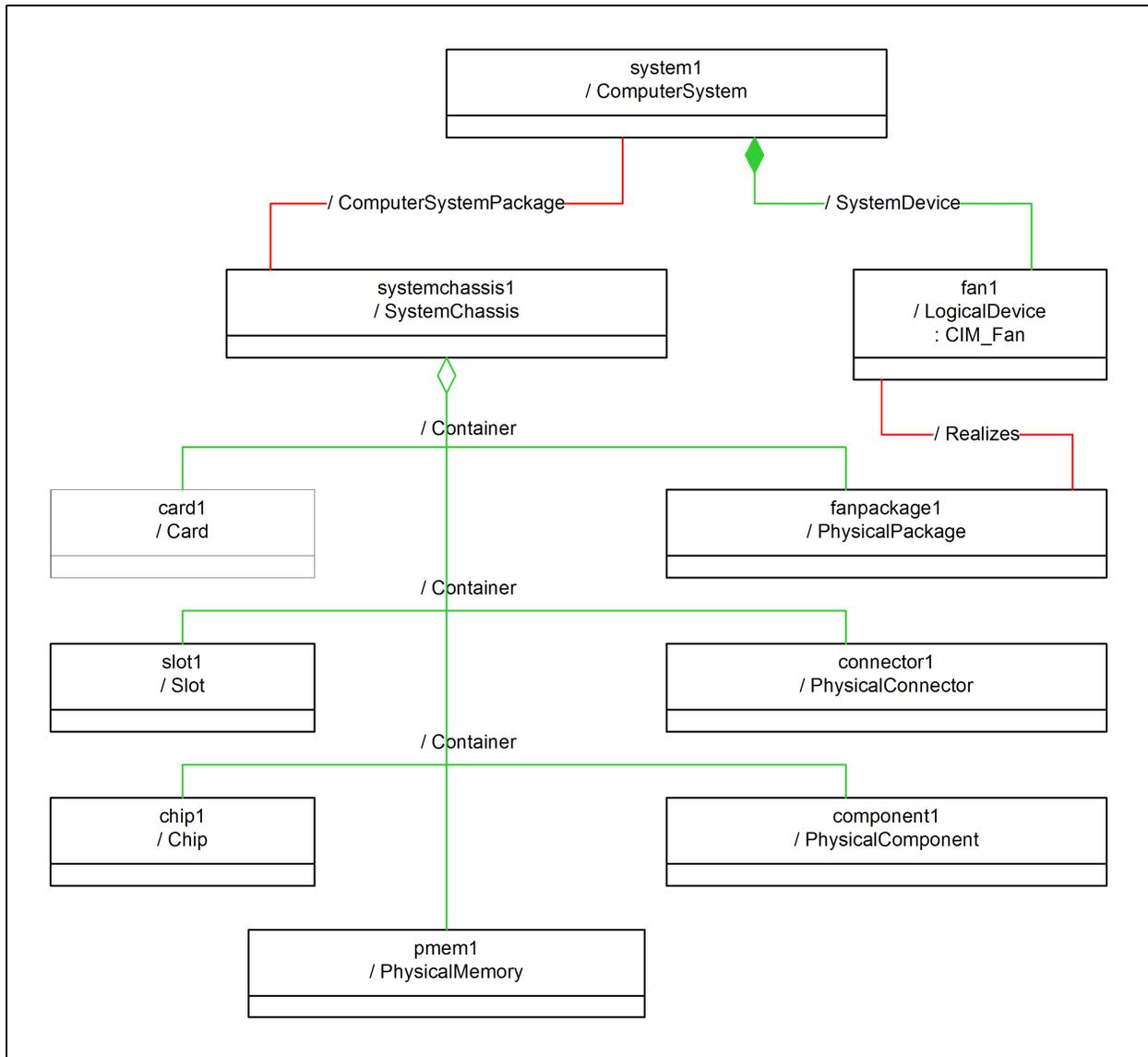


Figure 6 – Physical topology object diagram

### 8.6 State description: PhysicalMemory

The following figure shows an object diagram that represents another possible instantiation of this profile that exposes information about physical memory packaging.

The memory of the system represented by the system1 instance is represented by the memory1 instance.

The physical aspects of that memory is represented by the pmem1 instance.

The system chassis of the managed system represented by the system1 instance is represented by the systemchassis1 instance.

The system chassis represented by the systemchassis1 instance contains a slot represented by the slot1 instance, into which the memory package represented by the memorypkg1 instance is plugged.

The memory package represented by the memorypkg1 instance contains the physical component that is the memory chip, represented by the pmem1 instance.

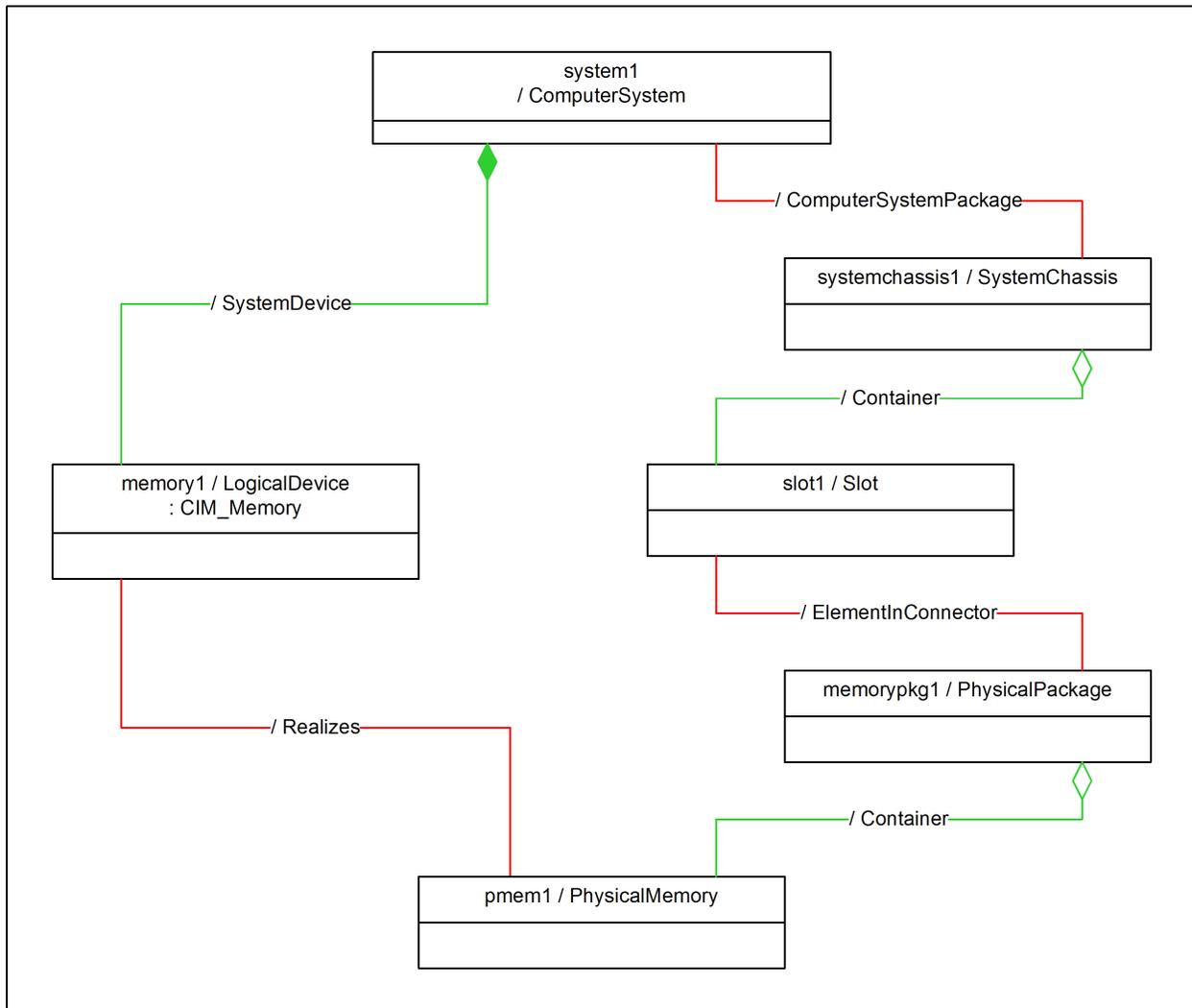


Figure 7 – Physical memory object diagram

## 8.7 State description: ConfigurationCapacity1

The following figure shows an object diagram that represents another possible instantiation of this profile that exposes information about the configuration capacity of the managed system.

**Todo:** This description so far is a plain copy of the profile text and needs to be updated.

In this instantiation, the chassis1 has two slots: slot1 and slot2. The slots are compatible with any type of XYZ:HW:1235Fan packages, as advertised through the CIM\_Slot.VendorCompatibilityStrings property. slot1 and package1, which is plugged into it, are compatible because the Delimited Substring matches for the VendorCompatibilityStrings property. slot2 and package2, which is plugged into it, are compatible because an element in the VendorCompatibilityStrings property of the CIM\_Slot instance is a Delimited Substring of the element in the VendorCompatibilityStrings property of the CIM\_PhysicalPackage instance. chassis1 also has a representation of its fan configuration capacity through capacity1. capacity1 indicates that chassis1 can have a maximum of two fans and should have at least one fan.

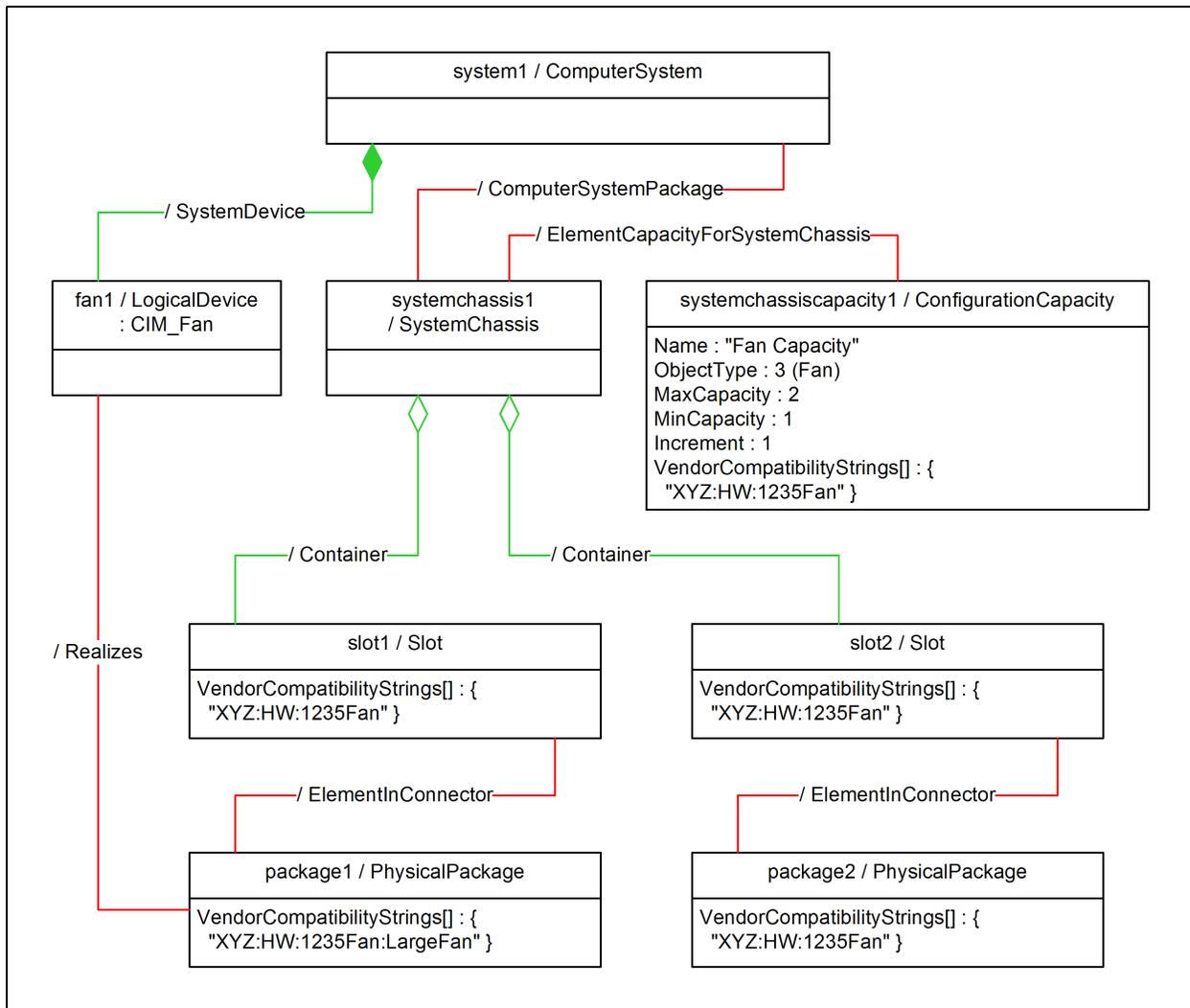


Figure 8 – Configuration capacity 1 object diagram

### 8.8 State description: ConfigurationCapacity2

The following figure shows an object diagram that represents another possible instantiation of this profile that exposes information about the configuration capacity of two cards.

*Todo: This description so far is a plain copy of the profile text and needs to be updated.*

In this instantiation, the chassis1 has two cards (card1 and card2) that hold processors. The configuration capacity for card1 is represented by capacity1 because they are associated through the instance of CIM\_ElementCapacity. In the same way, card2's configuration capacity is represented by capacity2. Because the VendorCompatibilityStrings property value for capacity1 is equal to the VendorCompatibilityStrings property value for capacity2, the maximum number of compatible processors could be determined by adding the MaxCapacity property value of capacity1 to the MaxCapacity property value of capacity2. In this case, the chassis1 could contain a maximum of four processors.

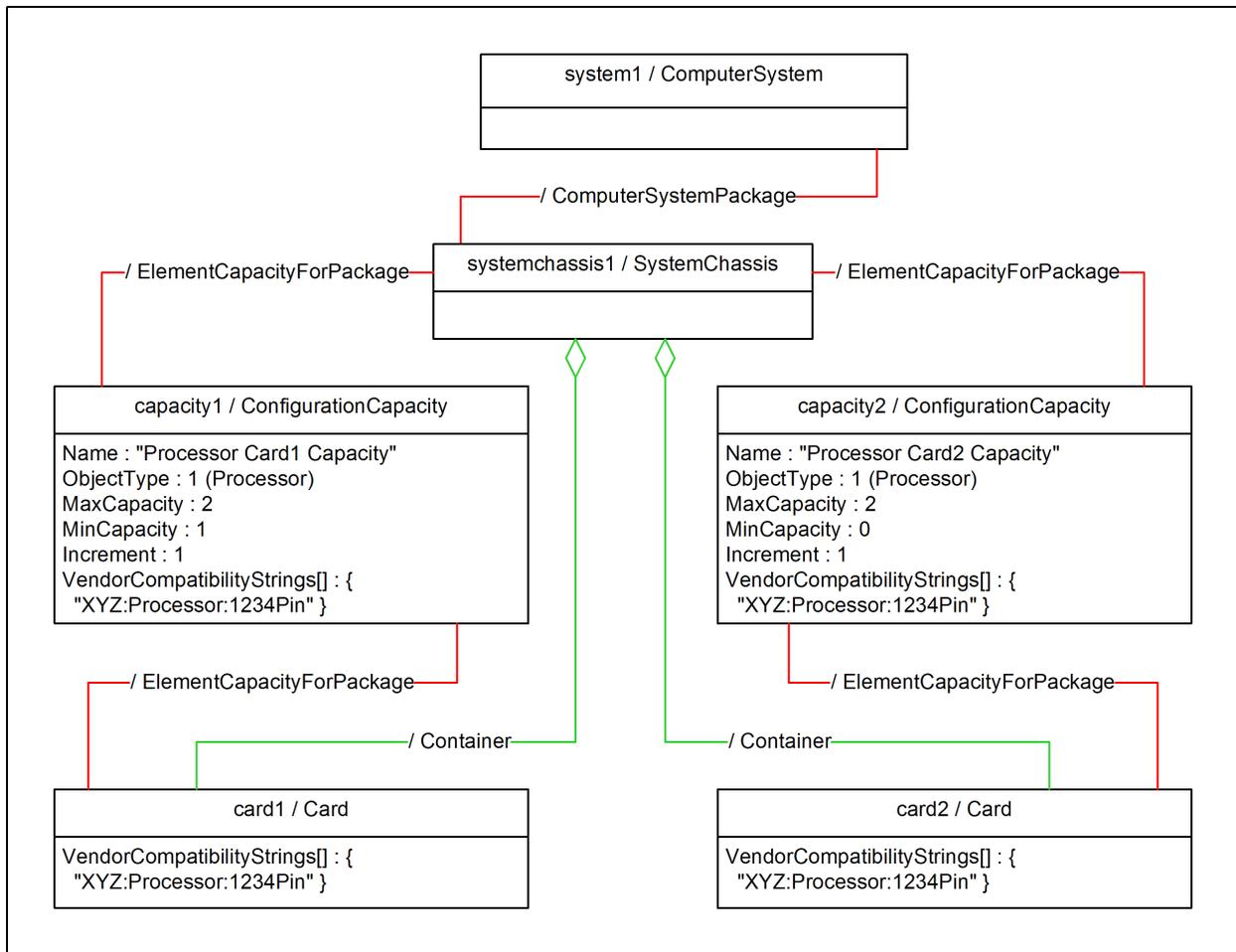


Figure 9 – Configuration capacity 2 object diagram

### 8.9 State description: NetworkPortConnector

The following figure shows an object diagram that represents another possible instantiation of this profile that exposes information about the connector of a network card.

*Todo: This description so far is a plain copy of the profile text and needs to be updated.*

In this instance, chassis1 contains a network card, card1. card1 has an RJ45 connector, connector1. connector1 is the physical representation of nic1 network port within system1.

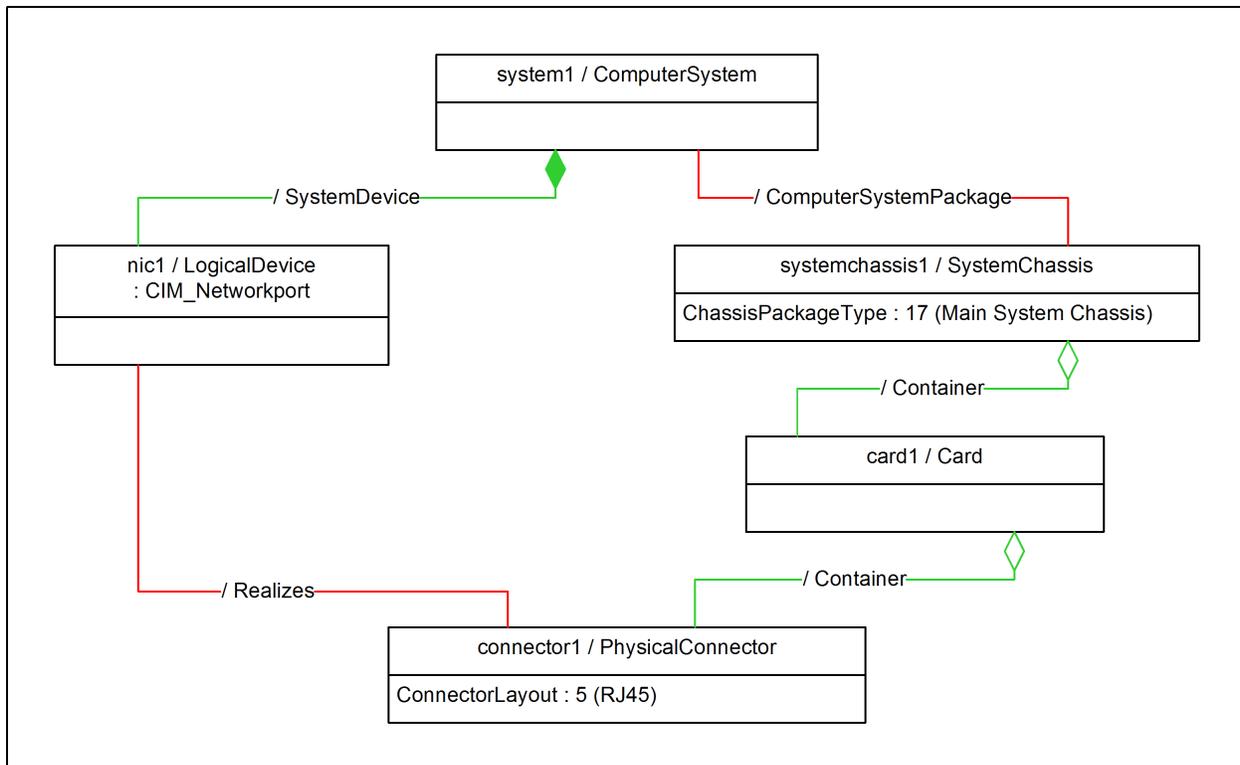


Figure 10 – Network port connector object diagram

## 8.10 Use case: DeterminePartNumberOfComponent

This use case describes the flow to determine the part number of a failing physical element.

The main flow for this use case consists of the following step:

1. **Todo: This description so far is a plain copy of the profile text and needs to be updated.**

Select the CIM\_PhysicalElement subclass instance that is associated through the CIM\_Realizes association to the CIM\_LogicalDevice component that has a HealthState or OperationalStatus property value indicating that the component is in a failure mode. Get the PartNumber property value for the selected CIM\_PhysicalElement subclass instance.

## 8.11 Use case: GetPhysicalInventoryOfSystem

This use case describes the flow to obtain the physical inventory for all devices within a system.

The main flow for this use case consists of the following step:

1. **Todo: This description so far is a plain copy of the profile text and needs to be updated.**

Select the CIM\_System instance representing the given system. Select all the CIM\_LogicalDevice subclass instances that are associated with the CIM\_System instance through the CIM\_SystemDevice association, and select all the CIM\_System instances associated through CIM\_SystemComponent associations, and then follow the CIM\_SystemDevice association to select all the CIM\_LogicalDevice subclass instances. Get all the property values of the CIM\_PhysicalElement subclass instances that are associated to the selected CIM\_LogicalDevice subclass instances through the CIM\_Realizes association and to the selected CIM\_System instances through the CIM\_SystemPackage association.

## 8.12 Use case: GetPhysicalInventoryOfSystemChassis

This use case describes the flow to obtain the physical inventory for a system chassis.

The main flow for this use case consists of the following step:

1. **Todo: This description so far is a plain copy of the profile text and needs to be updated.**

Get all the property values of the Physical Package instances that are associated through the CIM\_SystemPackaging association with the CIM\_System instance representing the given system.

## 8.13 Use case: DetermineSlotsEmpty

This use case describes the flow to determine whether a slot is empty.

The main flow for this use case consists of the following step:

1. **Todo: This description so far is a plain copy of the profile text and needs to be updated.**

Select all the CIM\_ElementInConnector instances that reference the CIM\_Slot instance that represents the given slot. If no instances of CIM\_ElementInConnector that reference the CIM\_Slot instance exist, then the slot is empty; otherwise the slot is occupied by the physical package represented by the instance of CIM\_PhysicalPackage referenced by the CIM\_ElementInConnector association instance.

## 8.14 Use case: GetFanCapacityOfChassis

This use case describes the flow to retrieve the fan capacity for a chassis.

The main flow for this use case consists of the following step:

1. **Todo: This description so far is a plain copy of the profile text and needs to be updated.**

For the CIM\_Chassis instance that represents the given chassis, select the associated instances of CIM\_ConfigurationCapacity through the CIM\_ElementCapacity associations. Select CIM\_ConfigurationCapacity instances that have the CIM\_ConfigurationCapacity.ObjectType property of 3 (Fan).

## 8.15 Use case: GetMaxFanCapacityOfChassis

This use case describes the flow to retrieve the maximum capacity of the type of fan package within a chassis.

The main flow for this use case consists of the following step:

1. **Todo: This description so far is a plain copy of the profile text and needs to be updated.**

The particular type of fan package is identified through the given string, which is an element of the VendorCompatibilityStrings array property of the Physical Package representing the fan package. Select all the instances of CIM\_ConfigurationCapacity associated with the CIM\_Chassis instance through instances of CIM\_ElementCapacity where the VendorCompatibilityStrings array property of the instance of CIM\_ConfigurationCapacity contains elements equal to the given string. Add all the values for the MaxCapacity property of the selected CIM\_ConfigurationCapacity instances.

## ANNEX A (informative)

### Change log

Table 36 – Change log

Version	Date	Description
1.0.0b	2006-06-28	DSP1011: Preliminary Standard
1.0.0	2007-11-12	DSP1011: Final Standard
1.0.1	2008-06-09	DSP1011: Incorporated errata submitted for the Final Standard.
1.0.2	2009-06-04	DSP1011: DMTF Standard Release. Incorporated errata on CIM_PhysicalMemory.Speed property values for unknown or variable speeds.
1.0.3m	2011-08-31	XMP1011: Included as a sample profile into DSP2023

## Bibliography

This clause lists references that are helpful for the application of this document.

DMTF DSP1000, *Management Profile Specification Template 1.1*,  
[http://www.dmtf.org/standards/published\\_documents/DSP1000\\_1.1.pdf](http://www.dmtf.org/standards/published_documents/DSP1000_1.1.pdf)