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Host LAN Network Port Profile

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Foreword

The *Host LAN Network Port Profile* (DSP1035) was prepared by the Physical Platform Profiles Working Group.

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Acknowledgments

The authors wish to acknowledge the following people.

Editors:

- Hemal Shah – Broadcom
- Jeff Hilland – HP
- Aaron Merkin – IBM

Contributors:

- Hemal Shah – Broadcom
- Jon Hass – Dell
- Khachatur Papanyan – Dell
- Enoch Suen – Dell
- Jeff Hilland – HP
- Christina Shaw – HP
- Aaron Merkin – IBM
- Perry Vincent – Intel
- John Leung – Intel

Introduction

The information in this specification should be sufficient for a provider or consumer of this data to identify unambiguously the classes, properties, methods, and values that shall be instantiated and manipulated to represent and manage a network port that provides a LAN interface to a host and its associated configuration information. The target audience for this specification is implementers who are writing CIM-based providers or consumers of management interfaces that represent the component described in this document.

Host LAN Network Port Profile

1 Scope

The *Host LAN Network Port Profile* extends the management capability of referencing profiles by adding the capability to represent a network port that provides a LAN interface to a host system, its associated controller, and network interfaces. Associations with the port's physical aspects and profile-implementation version information are modeled in this profile.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

DMTF DSP0004, *CIM Infrastructure Specification 2.6*,
http://www.dmtf.org/standards/published_documents/DSP0004_2.6.pdf

DMTF DSP0200, *CIM Operations over HTTP 1.3*,
http://www.dmtf.org/standards/published_documents/DSP0200_1.3.pdf

DMTF DSP1001, *Management Profile Specification Usage Guide 1.0*,
http://www.dmtf.org/standards/published_documents/DSP1001_1.0.pdf

DMTF DSP1011, *Physical Asset Profile 1.0*,
http://www.dmtf.org/standards/published_documents/DSP1011_1.0.pdf

DMTF DSP1033, *Profile Registration Profile 1.0*,
http://www.dmtf.org/standards/published_documents/DSP1033_1.0.pdf

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

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

1.

can

used for statements of possibility and capability, whether material, physical, or causal

2.

cannot

used for statements of possibility and capability, whether material, physical, or causal

3.

conditional

indicates requirements to be followed strictly in order to conform to the document when the specified conditions are met

4.

mandatory

indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted

5.

may

indicates a course of action permissible within the limits of the document

6.

need not

indicates a course of action permissible within the limits of the document

7.

optional

indicates a course of action permissible within the limits of the document

8.

referencing profile

indicates a profile that owns the definition of this class and can include a reference to this profile in its “Related Profiles” table

9.

shall

indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted

10.

shall not

indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted

11.

should

indicates that among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required

12.

should not

indicates that a certain possibility or course of action is deprecated but not prohibited

4 Symbols and Abbreviated Terms

The following symbols and abbreviations are used in this document.

4.1

DNS

Domain Name System

4.2

DHCP

Dynamic Host Configuration Protocol

4.3
LAN
Local Area Network

5 Synopsis

Profile Name: Host LAN Network Port

Version: 1.0.2

Organization: DMTF

CIM Schema version: 2.22

Central Class: CIM_NetworkPort

Scoping Class: CIM_ComputerSystem

This abstract profile specification shall not be directly implemented; implementations shall be based on a profile specification that specializes the requirements of this profile.

The *Host LAN Network Port Profile* extends the management capability of referencing profiles by adding the capability to represent a network port that provides a LAN interface in a managed system. This profile includes a specification of the network port, associated controller, associated network endpoint, and the realization of the connection in a physical connector.

CIM_NetworkPort shall be the Central Class of this profile. The instance of CIM_NetworkPort shall be the Central Instance of this profile. CIM_ComputerSystem shall be the Scoping Class of this profile. The instance of CIM_ComputerSystem with which the Central Instance is associated through an instance of CIM_SystemDevice shall be the Scoping Instance of this profile.

Table 1 identifies profiles on which this profile has a dependency.

Table 1 – Referenced Profiles

Profile Name	Organization	Version	Description
Profile Registration	DMTF	1.0	Mandatory
Physical Asset	DMTF	1.0	Optional. See 7.1.6.

6 Description

The *Host LAN Network Port Profile* describes a network port and, optionally, an associated controller, associated network interfaces, and the realization of the connection in a physical connector.

The following functionality is mandatory within the scope of this profile:

- a specification of the network port and related hardware
- network interfaces active over the network port

The following functionality is optional within the scope of this profile:

- modeling of the controller and its relationship with the network port

The following functionality is not covered in this profile:

- modeling of the networks in which the network interface participates

Figure 1 represents the class schema for the *Host LAN Network Port Profile*. For simplicity, the prefix CIM_ has been removed from the names of the classes. The CIM_NetworkPort class represents a network port of the system with one or more communication endpoints (that is, a communication interface) represented through CIM_LANEndpoint. A given CIM_LANEndpoint on the network port is identified by a MAC address to which the network port will respond. A network port can have an associated controller. The controller is represented by an instance of CIM_PortController. The relationship between the controller and port is modeled through the CIM_ControlledBy association. The CIM_NetworkPortConfigurationService class provides the ability to manage network interfaces associated with a network port.

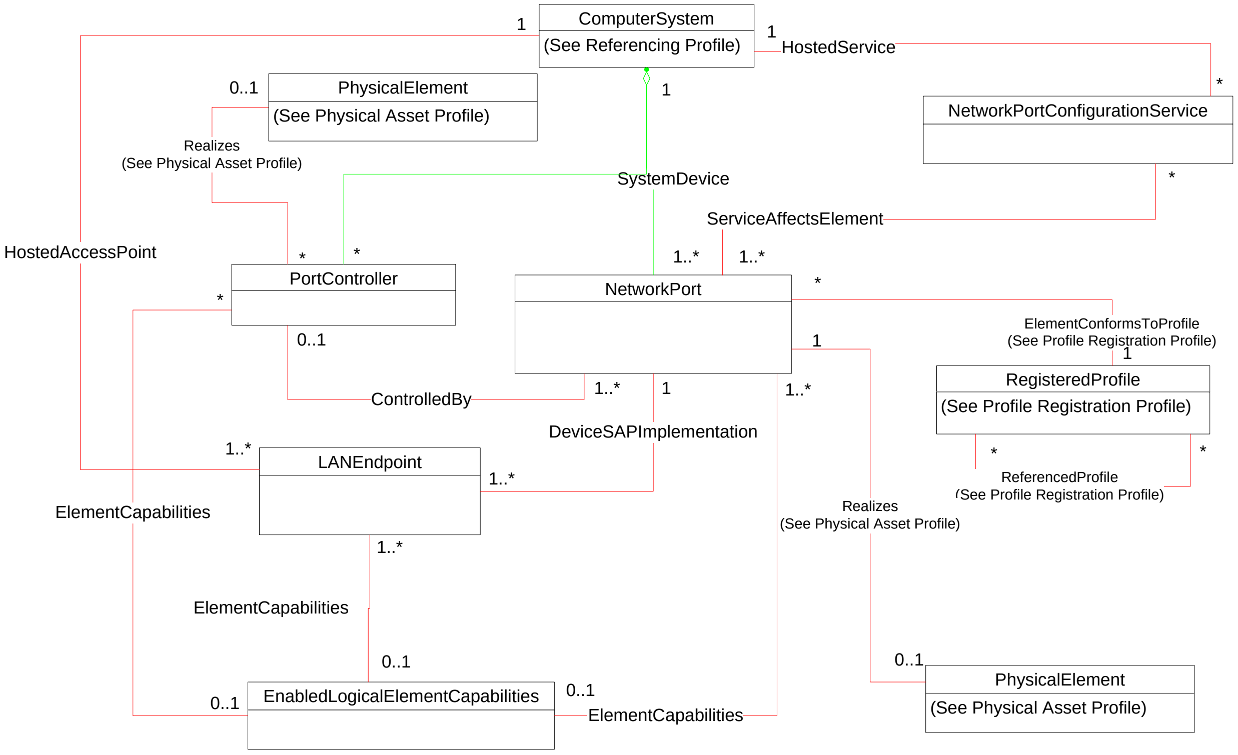


Figure 1 – Host LAN Network Port Profile: Class Diagram

7 Implementation Requirements

This clause details the requirements related to the arrangement of instances and properties of instances for implementations of this profile.

7.1 Representing a Network Port

An instance of CIM_NetworkPort shall represent the network port.

7.1.1 CIM_NetworkPort.EnabledState — Enabled but Offline

A value of 6 (Enabled but Offline) shall indicate that the underlying device is enabled but cannot communicate with the physical network. For example, this state is appropriate if the network cable is not attached to the physical connector.

7.1.2 Network Port State Management Is Supported — Conditional

When management of the state of a Network Port is supported, exactly one instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_NetworkPort instance through an instance of CIM_ElementCapabilities.

Support for managing the state of the Network Port is optional behavior. This clause describes the CIM elements and behaviors that shall be implemented when this behavior is supported.

Conditional Determination: A client can determine whether state management is supported as follows:

1) Find the CIM_EnabledLogicalElementCapabilities instance that is associated with the CIM_NetworkPort instance.

2) Query the value of the RequestedStatesSupported property. If at least one value is specified, state management is supported.

7.1.2.1 CIM_EnabledLogicalElementCapabilities

When state management is supported, exactly one instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_NetworkPort instance through an instance of the CIM_ElementCapabilities association and it shall be subject to the conditions in this clause.

7.1.2.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported

The RequestedStatesSupported property may contain one or more of the following values: 2 (Enabled), 3 (Disabled), or 11 (Reset).

7.1.2.2 CIM_NetworkPort.RequestedState

When the CIM_NetworkPort.RequestStateChange( ) method is successfully invoked, the value of the RequestedState property shall be the value of the RequestedState parameter. If the method is not successfully invoked, the value of the RequestedState property is indeterminate.

The CIM_NetworkPort.RequestedState property shall have one of the values specified in the CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property or 5 (No Change).

7.1.2.3 CIM_NetworkPort.EnabledState

When the RequestedState parameter has a value of 2 (Enabled) or 3 (Disabled) and the CIM_NetworkPort.RequestStateChange( ) method completes successfully, the value of the EnabledState property shall equal the value of the CIM_NetworkPort.RequestedState property.

If the method does not complete successfully, the value of the EnabledState property is indeterminate.

The EnabledState property shall have the value 2 (Enabled), 3 (Disabled), or 6 (Enabled but Offline).

7.1.3 Network Port State Management Is Not Supported

This clause describes the CIM elements and behaviors that shall be implemented when management of the Network Port state is not supported.

7.1.3.1 CIM_EnabledLogicalElementCapabilities

When state management is not supported, exactly one instance of CIM_EnabledLogicalElementCapabilities may be associated with the CIM_NetworkPort instance through an instance of the CIM_ElementCapabilities association and it shall be subject to the conditions in this clause.

7.1.3.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported

The CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property shall not contain any values.

7.1.3.2 CIM_NetworkPort.RequestedState

The RequestedState property shall have the value 12 (Not Applicable).

7.1.3.3 CIM_NetworkPort.EnabledState

The EnabledState property shall have one of the following values: 2 (Enabled), 3 (Disabled), 5 (Not Applicable), or 6 (Enabled but Offline).

7.1.4 Modifying ElementName Is Supported — Conditional

The CIM_NetworkPort.ElementName property may support being modified by the ModifyInstance operation. See 8.13.1.1. This behavior is conditional. This clause describes the CIM elements and behavior requirements when an implementation supports client modification of the CIM_NetworkPort.ElementName property.

Client Determination: A client can determine whether it can modify the ElementName as follows:

1) Find the CIM_EnabledLogicalElementCapabilities instance that is associated with the CIM_NetworkPort instance.

2) Query the value of the ElementNameEditSupported property of the instance. If the value is TRUE, the client can modify the CIM_NetworkPort.ElementName property.

7.1.4.1 CIM_EnabledLogicalElementCapabilities

An instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_NetworkPort instance through an instance of CIM_ElementCapabilities.

7.1.4.1.1 CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported

This property shall have a value of TRUE when the implementation supports client modification of the CIM_NetworkPort.ElementName property.

7.1.4.1.2 CIM_EnabledLogicalElement.MaxElementNameLen

The MaxElementNameLen property shall be implemented.

7.1.5 Modifying ElementName Is Not Supported

This clause describes the CIM elements and behaviors that shall be implemented when the CIM_NetworkPort.ElementName does not support being modified by the ModifyInstance operation.

7.1.5.1 CIM_EnabledLogicalElementCapabilities

An instance of CIM_EnabledLogicalElementCapabilities may be associated with the CIM_NetworkPort instance through an instance of CIM_ElementCapabilities.

7.1.5.1.1 CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported

This property shall have a value of FALSE when the implementation does not support client modification of the CIM_NetworkPort.ElementName property.

7.1.5.1.2 CIM_EnabledLogicalElement.MaxElementNameLen

The MaxElementNameLen property may be implemented. The MaxElementNameLen property is irrelevant in this context.

7.1.6 Representing the Physical Packaging

Support for representing the physical packaging of the network device is optional. The physical packaging may be modeled using one or more instances of CIM_PhysicalElement in accordance with the *Physical Asset Profile*.

In addition, an implementation may use an instance of CIM_PhysicalConnector to represent the physical connector. When an implementation instruments an instance of CIM_PhysicalConnector to represent the physical connector of the network device for connecting to the network, the instance of CIM_PhysicalConnector shall be compliant with the *Physical Asset Profile*. Instrumentation of the CIM_Realizes class is conditional. If a corresponding instance of CIM_PhysicalConnector is instantiated, it shall be associated to the corresponding CIM_NetworkPort via a CIM_Realizes instance.

7.2 Representing a Communication Endpoint

At least one instance of CIM_LANEndpoint shall represent a communication endpoint at the data-link layer.

7.2.1 Endpoint Identified by Hardware MAC

There shall be exactly one instance of CIM_LANEndpoint in which the MACAddress property has the same value as the PermanentAddress property of the associated CIM_NetworkPort instance.

7.2.2 Communication Endpoint Identified by Assigned MAC

For each communication endpoint of the network port, there shall be exactly one instance of CIM_LANEndpoint in which the MACAddress property contains the value of a MAC address to which the network port will respond.

7.2.3 Relationship between the Interface and Port

For each instance of CIM_LANEndpoint, one instance of CIM_DeviceSAPImplementation shall associate the CIM_LANEndpoint with the CIM_NetworkPort.

7.2.4 Endpoint State Management Is Supported — Conditional

When management of the state of a port endpoint is supported, exactly one instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_LANEndpoint instance through an instance of CIM_ElementCapabilities.

Support for managing the state of the port endpoint is optional behavior. This clause describes the CIM elements and behaviors that shall be implemented when this behavior is supported.

7.2.4.1 CIM_EnabledLogicalElementCapabilities

When state management is supported, exactly one instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_LANEndpoint instance through an instance of the CIM_ElementCapabilities association.

7.2.4.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported

The RequestedStatesSupported property may contain zero or more of the following values: 2 (Enabled), 3 (Disabled), or 11 (Reset).

7.2.4.2 CIM_LANEndpoint.RequestedState

When the CIM_LANEndpoint.RequestStateChange( ) method is successfully invoked, the value of the RequestedState property shall be the value of the RequestedState parameter. If the method is not successfully invoked, the value of the RequestedState property is indeterminate.

The CIM_LANEndpoint.RequestedState property shall have one of the values specified in the CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property or 5 (No Change).

7.2.4.3 CIM_LANEndpoint.EnabledState

When the RequestedState parameter has a value of 2 (Enabled) or 3 (Disabled) and the CIM_LANEndpoint.RequestStateChange( ) method completes successfully, the value of the EnabledState property shall equal the value of the CIM_LANEndpoint.RequestedState property.

If the method does not complete successfully, the value of the EnabledState property is indeterminate. The EnabledState property shall have the value 2 (Enabled) or 3 (Disabled).

7.2.5 Endpoint State Management Is Not Supported

This clause describes the CIM elements and behaviors that shall be implemented when management of the endpoint state is not supported.

7.2.5.1 CIM_EnabledLogicalElementCapabilities

When state management is not supported, exactly one instance of CIM_EnabledLogicalElementCapabilities may be associated with the CIM_LANEndpoint instance through an instance of the CIM_ElementCapabilities association.

7.2.5.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported

The CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property shall not contain any values.

7.2.5.2 CIM_LANEndpoint.RequestedState

The RequestedState property shall have the value 12 (Not Applicable).

7.2.5.3 CIM_LANEndpoint.EnabledState

The EnabledState property shall have one of the following values: 2 (Enabled), 3 (Disabled), or 5 (Not Applicable).

7.2.6 Modifying ElementName Is Supported — Conditional

The CIM_LANEndpoint.ElementName property may support being modified by the ModifyInstance operation. See 8.12.2.2. This behavior is conditional. This clause describes the CIM elements and behavior requirements when an implementation supports client modification of the CIM_LANEndpoint.ElementName property.

7.2.6.1 CIM_EnabledLogicalElementCapabilities

An instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_LANEndpoint instance through an instance of CIM_ElementCapabilities.

7.2.6.1.1 CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported

This property shall have a value of TRUE when the implementation supports client modification of the CIM_LANEndpoint.ElementName property.

7.2.6.1.2 CIM_EnabledLogicalElement.MaxElementNameLen

The MaxElementNameLen property shall be implemented.

7.2.7 Modifying ElementName Is Not Supported

This clause describes the CIM elements and behaviors that shall be implemented when the CIM_LANEndpoint.ElementName does not support being modified by the ModifyInstance operation.

7.2.7.1 CIM_EnabledLogicalElementCapabilities

An instance of CIM_EnabledLogicalElementCapabilities may be associated with the CIM_LANEndpoint instance through an instance of CIM_ElementCapabilities.

7.2.7.1.1 CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported

This property shall have a value of FALSE when the implementation does not support client modification of the CIM_LANEndpoint.ElementName property.

7.2.7.1.2 CIM_EnabledLogicalElement.MaxElementNameLen

The MaxElementNameLen property may be implemented. The MaxElementNameLen property is irrelevant in this context.

7.3 Managing Network Endpoints

An implementation may support the creation and deletion of network endpoints for the network port.

When an implementation supports the creation of network endpoints, there shall be an instance of CIM_NetworkPortConfigurationService. An instance of CIM_ServiceAffectsElement is conditional. When an instance of CIM_NetworkPortConfigurationService is instrumented, there shall be an instance of CIM_ServiceAffectsElement that references the Central Instance and the CIM_NetworkPortConfigurationService instance. The CIM_NetworkPortConfigurationService instance shall be associated to an instance of CIM_ComputerSystem through an instance of CIM_HostedService. A network endpoint can be created using the AddLANEndpoint( ) method of the CIM_NetworkPortConfigurationService, as described in 8.1.

An implementation can remove a network endpoint by using the intrinsic DeleteInstance operation defined in 8.12.1.

7.4 Representing Multiple Ports Controlled from a Single Controller

In some implementations, a single chip or device provides multiple network interfaces to a system. In other implementations, there is a one-to-one correspondence between the controller component and the actual network interface. An implementation may explicitly instrument the relationship between the controller and interfaces. This behavior is optional. When this optional behavior is supported, the requirements outlined in this clause shall be met.

A client can determine if the port controller is modeled by looking for an instance of CIM_PortController that is associated with the Central Instance of this profile through an instance of CIM_ControlledBy.

7.4.1 Modeling the Controller

An instance of CIM_PortController shall represent the controller.

7.4.2 Relationship between Controller and Port

For each port controlled by the controller, an instance of CIM_ControlledBy shall associate the instance of CIM_PortController with the instance of CIM_NetworkPort.

7.4.3 Controller State Management Is Supported — Conditional

When management of the state of a port controller is supported, exactly one instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_PortController instance through an instance of CIM_ElementCapabilities.

Support for managing the state of the port controller is optional behavior. This clause describes the CIM elements and behaviors that shall be implemented when this behavior is supported.

Conditional Determination: A client can determine whether state management is supported as follows:

1) Find the CIM_EnabledLogicalElementCapabilities instance that is associated with the CIM_PortController instance.

2) Query the value of the RequestedStatesSupported property. If at least one value is specified, state management is supported.

7.4.3.1 CIM_EnabledLogicalElementCapabilities

When state management is supported, exactly one instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_PortController instance through an instance of the CIM_ElementCapabilities association.

7.4.3.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported

The RequestedStatesSupported property may contain zero or more of the following values: 2 (Enabled), 3 (Disabled), or 11 (Reset).

7.4.3.2 CIM_PortController.RequestedState

When the CIM_PortController.RequestStateChange( ) method is successfully invoked, the value of the RequestedState property shall be the value of the RequestedState parameter. If the method is not successfully invoked, the value of the RequestedState property is indeterminate.

The CIM_PortController.RequestedState property shall have one of the values specified in the CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property or 5 (No Change).

7.4.3.3 CIM_PortController.EnabledState

When the RequestedState parameter has a value of 2 (Enabled) or 3 (Disabled) and the CIM_PortController.RequestStateChange( ) method completes successfully, the value of the EnabledState property shall equal the value of the CIM_PortController.RequestedState property.

If the method does not complete successfully, the value of the EnabledState property is indeterminate. The EnabledState property shall have the value 2 (Enabled) or 3 (Disabled).

7.4.4 Controller State Management Is Not Supported

This clause describes the CIM elements and behaviors that shall be implemented when management of the controller state is not supported.

7.4.4.1 CIM_EnabledLogicalElementCapabilities

When state management is not supported, exactly one instance of CIM_EnabledLogicalElementCapabilities may be associated with the CIM_PortController instance through an instance of the CIM_ElementCapabilities association.

7.4.4.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported

The CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property shall not contain any values.

7.4.4.2 CIM_PortController.RequestedState

The RequestedState property shall have the value 12 (Not Applicable).

7.4.4.3 CIM_PortController.EnabledState

The EnabledState property shall have one of the following values: 2 (Enabled), 3 (Disabled), or 5 (Not Applicable).

7.4.5 Modifying ElementName Is Supported—Conditional

The CIM_PortController.ElementName property may support being modified by the ModifyInstance operation. See 8.15.1.1. This behavior is conditional. This clause describes the CIM elements and behavior requirements when an implementation supports client modification of the CIM_PortController.ElementName property.

Client Determination: A client can determine whether it can modify the ElementName as follows:

1) Find the CIM_EnabledLogicalElementCapabilities instance that is associated with the CIM_PortController instance.

2) Query the value of the ElementNameEditSupported property of the instance. If the value is TRUE, the client can modify the CIM_PortController.ElementName property.

7.4.5.1 CIM_EnabledLogicalElementCapabilities

An instance of CIM_EnabledLogicalElementCapabilities shall be associated with the CIM_PortController instance through an instance of CIM_ElementCapabilities.

7.4.5.1.1 CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported

The ElementNameEditSupported property shall have a value of TRUE when the implementation supports client modification of the CIM_PortController.ElementName property.

7.4.5.1.2 CIM_EnabledLogicalElement.MaxElementNameLen

The MaxElementNameLen property shall be implemented.

7.4.6 Modifying ElementName Is Not Supported

This clause describes the CIM elements and behaviors that shall be implemented when the CIM_PortController.ElementName does not support being modified by the ModifyInstance operation.

7.4.6.1 CIM_EnabledLogicalElementCapabilities

An instance of CIM_EnabledLogicalElementCapabilities may be associated with the CIM_PortController instance through an instance of CIM_ElementCapabilities.

7.4.6.1.1 CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported

The ElementNameEditSupported property shall have a value of FALSE when the implementation does not support client modification of the CIM_PortController.ElementName property.

7.4.6.1.2 CIM_EnabledLogicalElement.MaxElementNameLen

The MaxElementNameLen property may be implemented. The MaxElementNameLen property is irrelevant in this context.

8 Methods

This clause details the requirements for supporting intrinsic operations and extrinsic methods for the CIM elements defined by this profile.

8.1 CIM_NetworkPortConfigurationService.AddLANEndpoint( )

The AddLANEndpoint( ) method is used to create a new endpoint on a network port. This method shall be supported when the CIM_NetworkPortConfigurationService is instrumented. When this method is invoked, the implementation shall attempt to create a new instance of CIM_LANEndpoint. The MACAddress property of the CIM_LANEndpoint instance shall have the value of the Address parameter of the method invocation.

When the LANID parameter is specified in the method invocation, the LANID property of the CIM_LANEndpoint instance shall have the value of the LANID parameter. When the LANID parameter is not specified in the method invocation, the LANID property of the CIM_LANEndpoint instance shall have a value of NULL.

When the AliasAddresses parameter is specified in the method invocation, the AliasAddresses property of the CIM_LANEndpoint instance shall have the value of the AliasAddresses parameter. When the AliasAddresses parameter is not specified in the method invocation, the AliasAddresses property of the CIM_LANEndpoint instance shall have a value of NULL.

When the GroupAddresses parameter is specified in the method invocation, the GroupAddresses property of the CIM_LANEndpoint instance shall have the value of the GroupAddresses parameter. When the GroupAddresses parameter is not specified in the method invocation, the GroupAddresses property of the CIM_LANEndpoint instance shall have a value of NULL.

Before creating the instance of CIM_LANEndpoint, the implementation shall verify that the communication endpoint represented by the resultant CIM_LANEndpoint instance is valid for the CIM_NetworkPort instance that is identified by the Port parameter of the method invocation. If the resultant CIM_LANEndpoint represents a valid endpoint for the identified CIM_NetworkPort instance, the implementation shall create the following instances:

- the instance of CIM_LANEndpoint described in the preceding paragraph
- an instance of CIM_DeviceSAPImplementation that references the newly created instance of CIM_LANEndpoint and the instance of CIM_NetworkPort that is identified by the Port parameter of the method invocation
- an instance of CIM_HostedAccessPoint that references the CIM_LANEndpoint and references the instance of CIM_ComputerSystem with which the instance of CIM_NetworkPort that the Port parameter identified is associated through the CIM_SystemDevice association

If an implementation is unable to create the three required instances, the implementation shall not create any of the instances and shall return a value of 2 (Error Occurred) as the return code of the method invocation. A method invocation might fail, for example, if a network port supports *N* communication endpoints, *N* communication endpoints are already associated with the network port, and the client attempts to create another endpoint.

Detailed requirements of the AddLANEndpoint( ) method are specified in Table 2 and Table 3.

No standard messages are defined.

Table 2 – CIM_NetworkPortConfigurationService.AddLANEndpoint( ) Method: Return Code Values

Value	Description
0	Request was successfully executed.
2	Error occurred

Table 3 – CIM_NetworkPortConfigurationService.AddLANEndpoint( ) Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, REQ	Port	CIM_NetworkPort REF	None
OUT	Endpoint	CIM_LANEndpoint REF	None
IN, REQ	Address	string	None
IN	LANID	string	None
IN	AliasAddresses	string	None
IN	GroupAddresses	string	None

8.2 CIM_NetworkPort.RequestStateChange( )

Invocation of the RequestStateChange( ) method changes the element's state to the value specified in the RequestedState parameter. The 2 (Enabled) and 3 (Disabled) values of the RequestedState parameter shall correspond to enabling or disabling the network interface that the CIM_NetworkPort instance represents. A value of 11 (Reset) for the RequestedState parameter shall be equivalent to disabling and then enabling the network interface that the CIM_NetworkPort instance represents.

Detailed requirements of the RequestStateChange( ) method are specified in Table 4 and Table 5.

No standard messages are defined.

Invoking the RequestStateChange( ) method multiple times could result in earlier requests being overwritten or lost.

Table 4 – CIM_NetworkPort.RequestStateChange( ) Method: Return Code Values

Value	Description
0	Request was successfully executed
2	Error occurred
0x1000	Job started: REF returned to started CIM_ConcreteJob

Table 5 – CIM_NetworkPort.RequestStateChange( ) Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, REQ	RequestedState	uint16	Valid state values: 2 (Enabled) 3 (Disabled) 11 (Reset)
OUT	Job	CIM_ConcreteJob REF	Returned if job started
IN, REQ	TimeoutPeriod	datetime	Client specified maximum amount of time the transition to a new state is supposed to take: 0 or NULL – No time requirements <interval> – Maximum time allowed

8.2.1.1 CIM_NetworkPort.RequestStateChange( ) ConditionalSupport

When an instance of CIM_EnabledLogicalElementCapabilities is associated with the CIM_NetworkPort instance and the CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property contains at least one value, the CIM_NetworkPort.RequestStateChange( ) method shall be implemented and supported. The CIM_NetworkPort.RequestStateChange( ) method shall not return a value of 1 (Not Supported).

8.3 CIM_LANEndpoint.RequestStateChange( )

Invocation of the RequestStateChange( ) method changes the element's state to the value specified in the RequestedState parameter. The 2 (Enabled) and 3 (Disabled) values of the RequestedState parameter will correspond to enabling or disabling the endpoint that the CIM_LANEndpoint instance represents. A value of 11 (Reset) for the RequestedState parameter shall be equivalent to disabling and then enabling the endpoint that the CIM_LANEndpoint instance represents.

Detailed requirements of the RequestStateChange( ) method are specified in Table 6 and Table 7.

No standard messages are defined.

Invoking the RequestStateChange method multiple times could result in earlier requests being overwritten or lost.

Table 6 – CIM_LANEndpoint.RequestStateChange( ) Method: Return Code Values

Value	Description
0	Request was successfully executed
2	Error occurred
0x1000	Job started: REF returned to started CIM_ConcreteJob

Table 7 – CIM_LANEndpoint.RequestStateChange( ) Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, REQ	RequestedState	uint16	Valid state values: 2 (Enabled) 3 (Disabled) 11 (Reset)
OUT	Job	CIM_ConcreteJob REF	Returned if job started
IN, REQ	TimeoutPeriod	datetime	Client specified maximum amount of time the transition to a new state is supposed to take: 0 or NULL – No time requirements <interval> – Maximum time allowed

8.3.1.1 CIM_LANEndpoint.RequestStateChange( ) Supported

When an instance of CIM_EnabledLogicalElementCapabilities is associated with the CIM_LANEndpoint instance and the CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property contains at least one value, the CIM_LANEndpoint.RequestStateChange( ) method shall be implemented and supported. The CIM_LANEndpoint.RequestStateChange( ) method shall not return a value of 1 (Not Supported).

8.4 CIM_PortController.RequestStateChange( )

Invocation of the RequestStateChange( ) method changes the element's state to the value specified in the RequestedState parameter. The 2 (Enabled) and 3 (Disabled) values of the RequestedState parameter shall correspond to enabling or disabling the controller that the CIM_PortController instance represents. A value of 11 (Reset) for the RequestedState parameter shall be equivalent to disabling and then enabling the controller that the CIM_PortController instance represents.

Detailed requirements of the RequestStateChange( ) method are specified in Table 8 and Table 9.

No standard messages are defined.

Invoking the RequestStateChange method multiple times could result in earlier requests being overwritten or lost.

Table 8 – CIM_PortController.RequestStateChange( ) Method: Return Code Values

Value	Description
0	Request was successfully executed.
2	Error occurred
0x1000	Job started: REF returned to started CIM_ConcreteJob

Table 9 – CIM_PortController.RequestStateChange( ) Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, REQ	RequestedState	uint16	Valid state values: 2 (Enabled) 3 (Disabled) 11 (Reset)
OUT	Job	CIM_ConcreteJob REF	Returned if job started
IN, REQ	TimeoutPeriod	datetime	Client specified maximum amount of time the transition to a new state is supposed to take: 0 or NULL – No time requirements <interval> – Maximum time allowed

8.4.1.1 CIM_PortController.RequestStateChange( ) Supported

When an instance of CIM_EnabledLogicalElementCapabilities is associated with the CIM_PortController instance and the CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property contains at least one value, the CIM_PortController.RequestStateChange( ) method shall be implemented and supported. The CIM_PortController.RequestStateChange( ) method shall not return a value of 1 (Not Supported).

8.5 Profile Conventions for Operations

For each profile class (including associations), the implementation requirements for operations, including those in the following default list, are specified in class-specific subclauses of this clause.

The default list of operations is as follows:

- GetInstance
- Associators
- AssociatorNames
- References
- ReferenceNames
- EnumerateInstances
- EnumerateInstanceNames

8.6 CIM_ControlledBy

Table 10 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 10, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 10 – Operations: CIM_ControlledBy

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

8.7 CIM_DeviceSAPImplementation

Table 11 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 11, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 11 – Operations: CIM_DeviceSAPImplementation

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

8.8 CIM_ElementCapabilities

Table 12 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 12, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 12 – Operations: CIM_ElementCapabilities

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

8.9 CIM_EnabledLogicalElementCapabilities

All operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

8.10 CIM_HostedAccessPoint

Table 13, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 13 – Operations: CIM_HostedAccessPoint

Operation	**Requirement**	**Messages**
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

8.11 CIM_HostedService

Table 14, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 14 – Operations: CIM_HostedService

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

8.12 CIM_LANEndpoint

Table 15 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 15, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 15 – Operations: CIM_LANEndpoint

Operation	**Requirement**	**Messages**
DeleteInstance	Optional. See 8.12.1.	None
ModifyInstance	Optional. See 8.12.2.	None

8.12.1 CIM_LANEndpoint — DeleteInstance

An implementation may support the DeleteInstance operation for instances of CIM_LANEndpoint. When the implementation supports the DeleteInstance operation, it may support the operation for some or all of the CIM_LANEndpoint instances implemented. When the DeleteInstance operation is supported for an instance of CIM_LANEndpoint, the implementation shall delete the instance of CIM_LANEndpoint and the instances of CIM_DeviceSAPImplementation and CIM_HostedAccessPoint that reference the CIM_LANEndpoint instance.

The implementation shall not support the DeleteInstance operation for the CIM_LANEndpoint instance that is identified in 7.2.1.

8.12.2 CIM_LANEndpoint — ModifyInstance

This details the requirements for the ModifyInstance operation that is applied to an instance of CIM_LANEndpoint.

8.12.2.1 CIM_LANEndpoint.MACAddress

The ModifyInstance operation shall not modify the MACAddress property of a CIM_LANEndpoint instance.

8.12.2.2 CIM_LANEndpoint.ElementName

When an instance of CIM_EnabledLogicalElementCapabilities is associated with the CIM_LANEndpoint instance and the CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported property has a value of TRUE, the implementation shall allow the ModifyInstance operation to change the value of the ElementName property of the CIM_LANEndpoint instance. The ModifyInstance operation shall enforce the length restriction specified in the MaxElementNameLen property of the CIM_EnabledLogicalElementCapabilities instance.

When an instance of CIM_EnabledLogicalElementCapabilities is not associated with the CIM_LANEndpoint instance, or the ElementNameEditSupported property of the CIM_EnabledLogicalElementCapabilities instance has a value of FALSE, the implementation shall not allow the ModifyInstance operation to change the value of the ElementName property of the CIM_LANEndpoint instance.

8.13 CIM_NetworkPort

Table 16 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 16, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 16 – Operations: CIM_NetworkPort

Operation	Requirement	Messages
ModifyInstance	Optional. See 8.13.1.1.	None

8.13.1 CIM_NetworkPort — ModifyInstance Operation

This details the specific requirements for the ModifyInstance operation that is applied to an instance of CIM_NetworkPort.

8.13.1.1 CIM_NetworkPort.ElementName

When an instance of CIM_EnabledLogicalElementCapabilities is associated with the CIM_NetworkPort instance and the CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported property has a value of TRUE, the implementation shall allow the ModifyInstance operation to change the value of the ElementName property of the CIM_NetworkPort instance. The ModifyInstance operation shall enforce the length restriction specified in the MaxElementNameLen property of the CIM_EnabledLogicalElementCapabilities instance.

When an instance of CIM_EnabledLogicalElementCapabilities is not associated with the CIM_NetworkPort instance, or the ElementNameEditSupported property of the

CIM_EnabledLogicalElementCapabilities instance has a value of FALSE, the implementation shall not allow the ModifyInstance operation to change the value of the ElementName property of the CIM_NetworkPort instance.

8.14 CIM_NetworkPortConfigurationService

All operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

8.15 CIM_PortController

Table 17 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 17, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 17 – Operations: CIM_PortController

Operation	Requirement	Messages
ModifyInstance	Optional. See 8.15.1.1.	None

8.15.1 CIM_PortController — ModifyInstance Operation

This clause details the specific requirements for the ModifyInstance operation that is applied to an instance of CIM_PortController.

8.15.1.1 CIM_PortController.ElementName Property

When an instance of CIM_EnabledLogicalElementCapabilities is associated with the CIM_PortController instance and the CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported property has a value of TRUE, the implementation shall allow the ModifyInstance operation to change the value of the ElementName property of the CIM_PortController instance. The ModifyInstance operation shall enforce the length restriction specified in the MaxElementNameLen property of the CIM_EnabledLogicalElementCapabilities instance.

When an instance of CIM_EnabledLogicalElementCapabilities is not associated with the CIM_PortController instance, or the ElementNameEditSupported property of the CIM_EnabledLogicalElementCapabilities instance has a value of FALSE, the implementation shall not allow the ModifyInstance operation to change the value of the ElementName property of the CIM_PortController instance.

8.16 CIM_Realizes

Table 19 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 19, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 18 – Operations: CIM_Realizes

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

8.17 CIM_ServiceAffectsElement

Table 19 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 19, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 19 – Operations: CIM_ServiceAffectsElement

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

8.18 CIM_SystemDevice

Table 20 lists implementation requirements for operations. If implemented, these operations shall be implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 20, all operations in the default list in 8.5 shall be implemented as defined in DSP0200.

NOTE: Related profiles may define additional requirements on operations for the profile class.

Table 20 – Operations: CIM_SystemDevice

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

9 Use Cases

This clause contains object diagrams and use cases for the *Host LAN Network Port Profile*.

9.1 Object Diagrams

The object diagram in Figure 2 shows how instances of CIM_RegisteredProfile are used to identify the version of the *Host LAN Network Port Profile* with which an instance of CIM_NetworkPort and its associated instances are conformant. An instance of CIM_RegisteredProfile exists for each profile that is instrumented in the system. One instance of CIM_RegisteredProfile identifies the DMTF *Base Server Profile*, version 1.0.0. The other instance identifies the DMTF *Network Port Profile*, version 1.0.0.

The CIM_NetworkPort instance is scoped to an instance of CIM_ComputerSystem. This instance of CIM_ComputerSystem is conformant with the DMTF *Base Server Profile,* version 1.0.0 as indicated by the CIM_ElementConformsToProfile association to the CIM_RegisteredProfile instance. The Scoping Instance in Figure 2 is the CIM_ComputerSystem instance. The Central Instance is the CIM_NetworkPort. The CIM_ReferencedProfile relationship between *BaseSystem* and *net* places the CIM_NetworkPort instance within the scope of *net.* Thus, the CIM_NetworkPort instance is conformant with the *Host LAN Network Port Profile,* version 1.0.0.

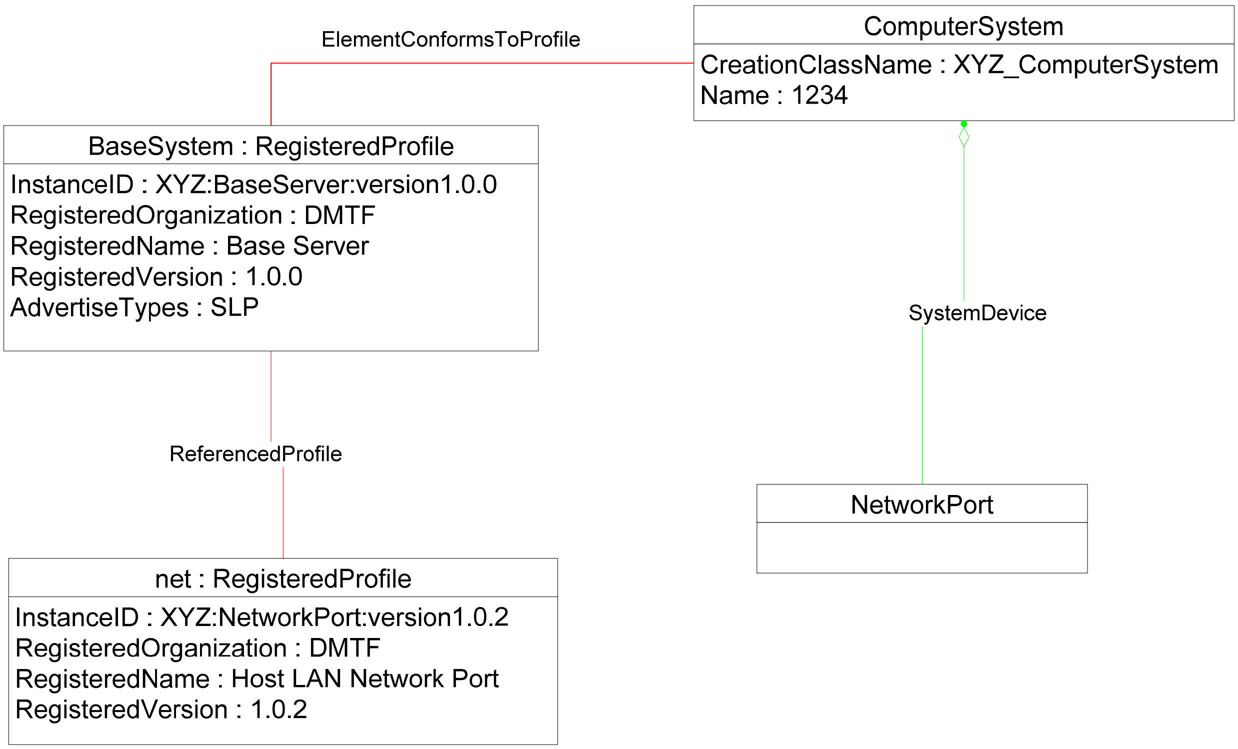
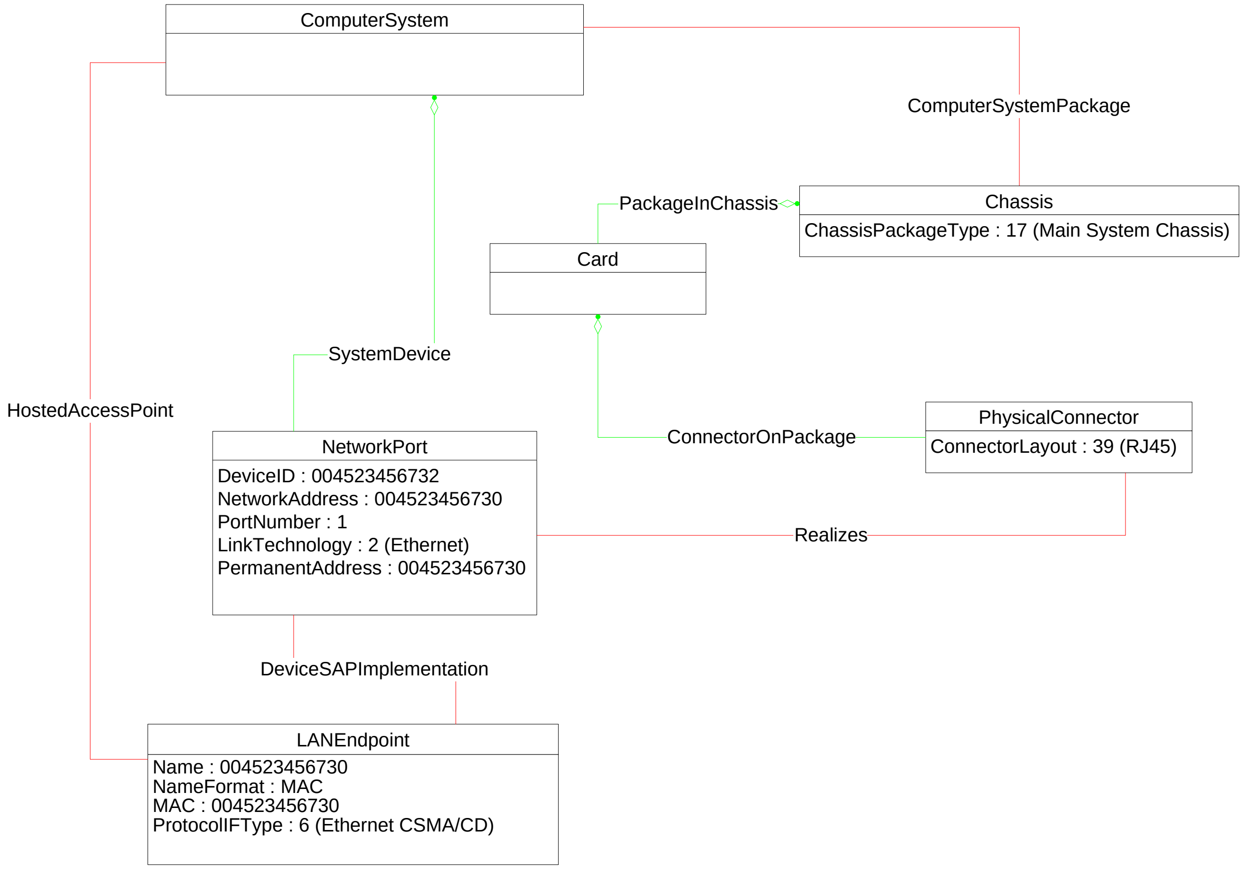

ElementConformsToProfile
ComputerSystem
CreationClassName : XYZ_ComputerSystem
Name : 1234
BaseSystem : RegisteredProfile
InstanceID : XYZ:BaseServer:version1.0.0
RegisteredOrganization : DMTF
RegisteredName : Base Server
RegisteredVersion : 1.0.0
AdvertiseTypes : SLP
SystemDevice
ReferencedProfile
NetworkPort
net : RegisteredProfile
InstanceID : XYZ:NetworkPort:version1.0.2
RegisteredOrganization : DMTF
RegisteredName : Host LAN Network Port
RegisteredVersion : 1.0.2

Figure 2 – Registered Profile

Figure 3 is a simple object diagram for a single network port with a single active network interface. The network port is represented by an instance of CIM_NetworkPort. The active interface is represented by an instance of CIM_LANEndpoint, which is associated with the CIM_NetworkPort instance through the CIM_DeviceSAPImplementation association. In the system modeled, the network port is reached through an RJ-45 connector located directly on the motherboard of the system. This connection is indicated by the

821 CIM_Realizes association between the CIM_NetworkPort instance and the CIM_PhysicalConnector
822 instance.



823

824 **Figure 3 – Single Interface**

The object diagram in Figure 4 illustrates the classes used to represent a network device located on a card that is plugged into a system board.

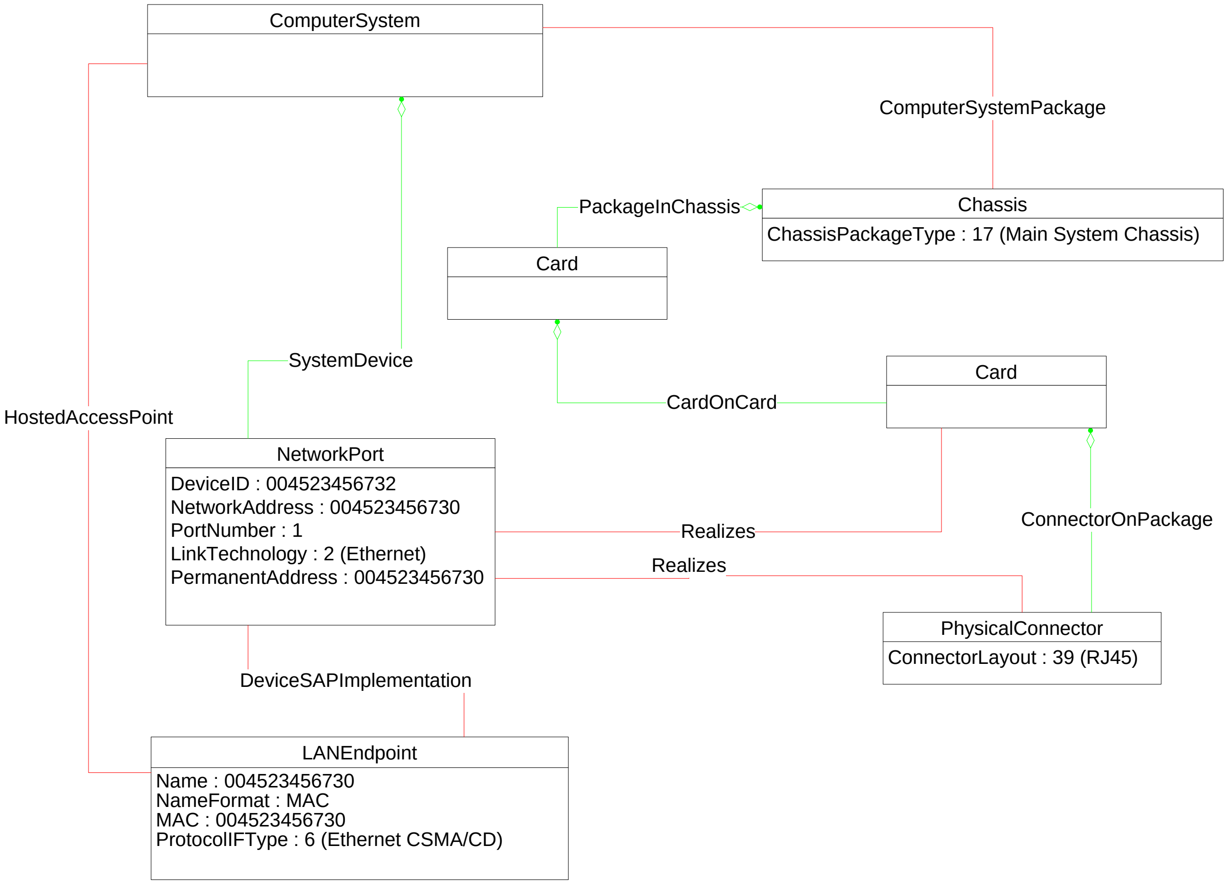


Figure 4 – Single Interface, Separate Card

The object diagram in Figure 5 provides an example of the classes used to represent a single controller that controls two network ports. The controller is represented by an instance of CIM_PortController. Each port is represented by an instance of CIM_NetworkPort. The ports being controlled by the port controller are indicated by the CIM_ControlledBy associations between the CIM_PortController instance and the CIM_NetworkPort instances. Each port has a single RJ-45 connector associated with it.

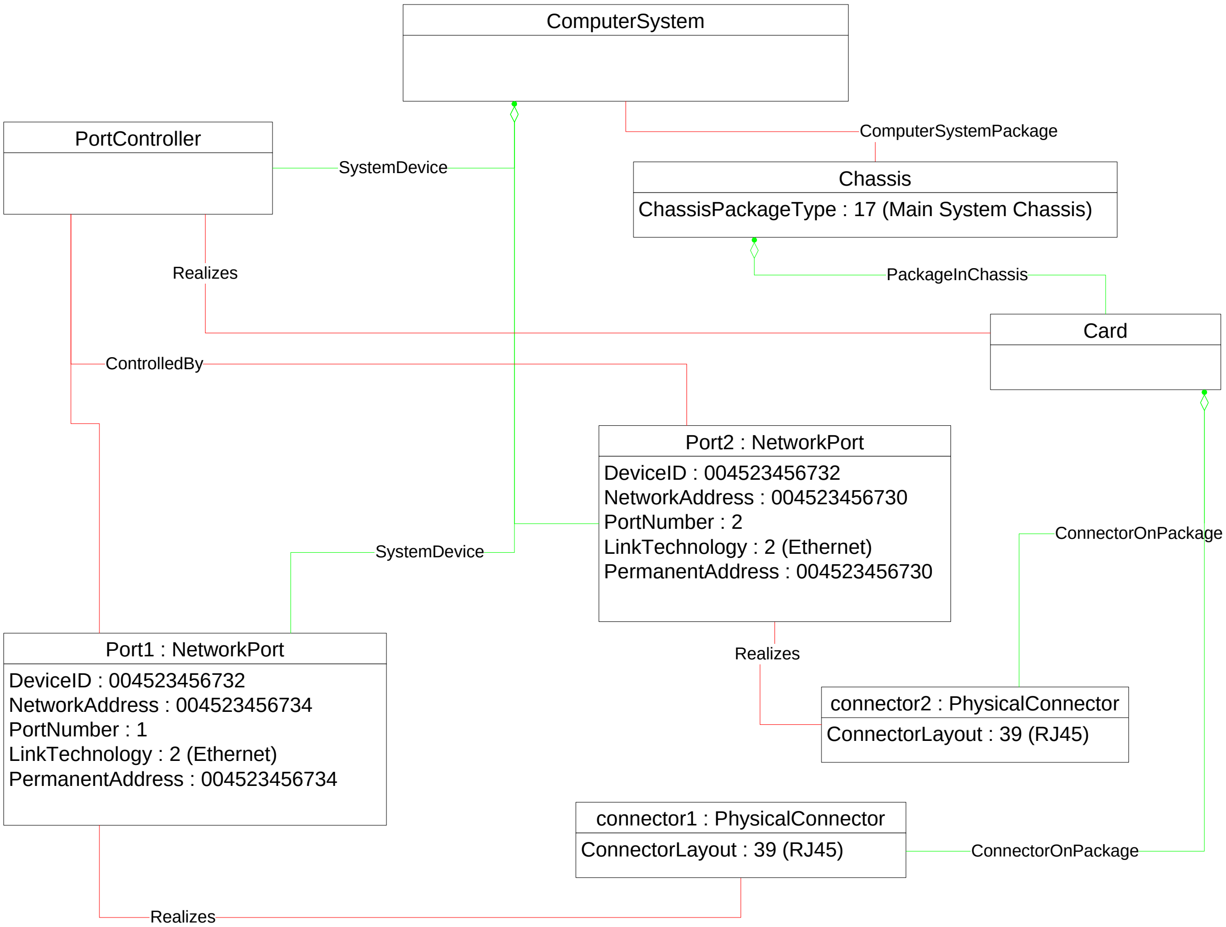

ComputerSystem
ComputerSystemPackage
PortController
SystemDevice
Chassis
ChassisPackageType : 17 (Main System Chassis)
Realizes
PackageInChassis
Card
ControlledBy
Port2 : NetworkPort
DeviceID : 004523456732
NetworkAddress : 004523456730
PortNumber : 2
LinkTechnology : 2 (Ethernet)
PermanentAddress : 004523456730
ConnectorOnPackage
SystemDevice
Port1 : NetworkPort
DeviceID : 004523456732
NetworkAddress : 004523456734
PortNumber : 1
LinkTechnology : 2 (Ethernet)
PermanentAddress : 004523456734
Realizes
connector2 : PhysicalConnector
ConnectorLayout : 39 (RJ45)
connector1 : PhysicalConnector
ConnectorLayout : 39 (RJ45)
ConnectorOnPackage
Realizes

Figure 5 – One Controller for Two Ports

9.2 Querying MAC Address for an Interface

A client can determine the MAC addresses in use for a network interface as follows:

1) Find all instances of CIM_LANEndpoint that are associated with the CIM_NetworkPort instance through instances of CIM_DeviceSAPImplementation.

2) Query the MACAddress property of each instance of CIM_LANEndpoint.

9.3 Determining Physical Connector for a Network Address

One or more MAC addresses may be associated with a given physical network interface. It is useful for a client to be able to determine which CIM_PhysicalConnector is associated with a given network address.

1) Find the instance of CIM_NetworkPort that is associated with the CIM_LANEndpoint instance through an instance of CIM_DeviceSAPImplementation.

2) Find the instance of CIM_PhysicalConnector that is associated with the CIM_NetworkPort instance through an instance of CIM_Realizes.

9.4 Determining If Physical Communication Is Possible

A client can determine whether the physical link for a Network interface is present as follows:

Query the value of the CIM_NetworkPort.EnabledState property. If the value of the property is "Enabled but Offline", there is a problem with the underlying physical link.

9.5 Correlating Controller and Port

Multiple network ports may be controlled by a single controller. A client can determine which controller controls a network port as follows:

Find the instance of CIM_PortController that is associated with the CIM_NetworkPort instance through an instance of CIM_ControlledBy.

9.6 Adding an Endpoint to the Port

Some implementations support creating additional endpoints associated with the network port. A client can determine whether the implementation supports adding endpoints to a port by looking for an instance of CIM_NetworkPortConfigurationService that is associated with the CIM_NetworkPort instance through an instance of CIM_ServiceAffectsElement. The client can then invoke the AddLANEndpoint( ) method on the CIM_NetworkPortConfigurationService instance, specifying a MAC address, LAN ID, and so on.

Figure 6 illustrates an example of a single endpoint associated with the network port. The endpoint corresponds to the real physical address burned into the network port.

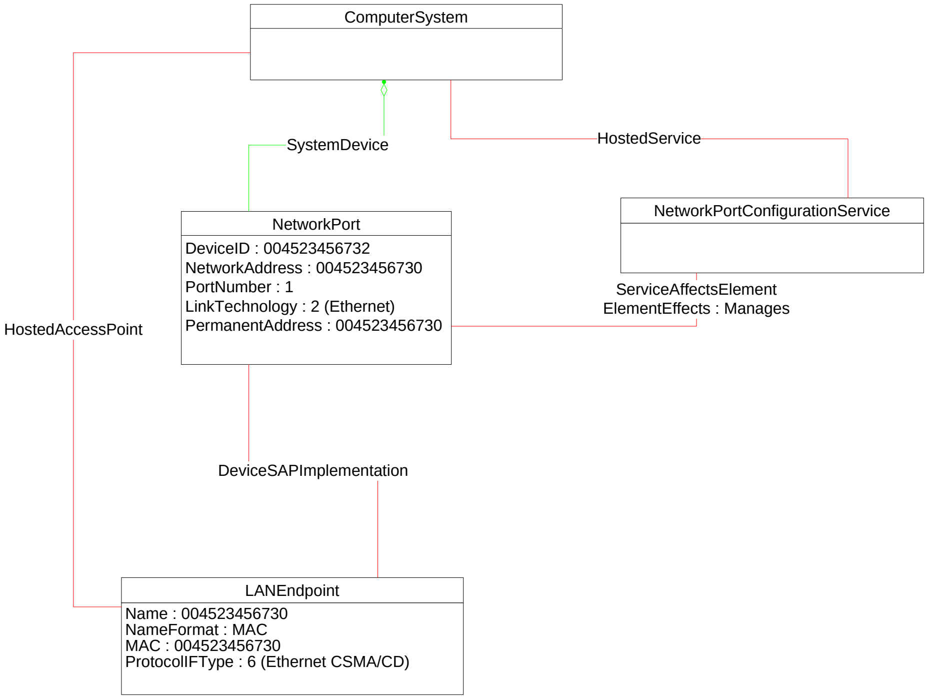


Figure 6 – Endpoint Management Supported

To add an endpoint to the port in Figure 6, the client invokes the AddLANEndpoint( ) method and specifies a value of 004523456731 for the address parameter. Method invocation is successful, and an additional CIM_LANEndpoint is created and associated with the CIM_NetworkPort instance. This result is illustrated in Figure 7. Each endpoint is identified by its MAC address property.

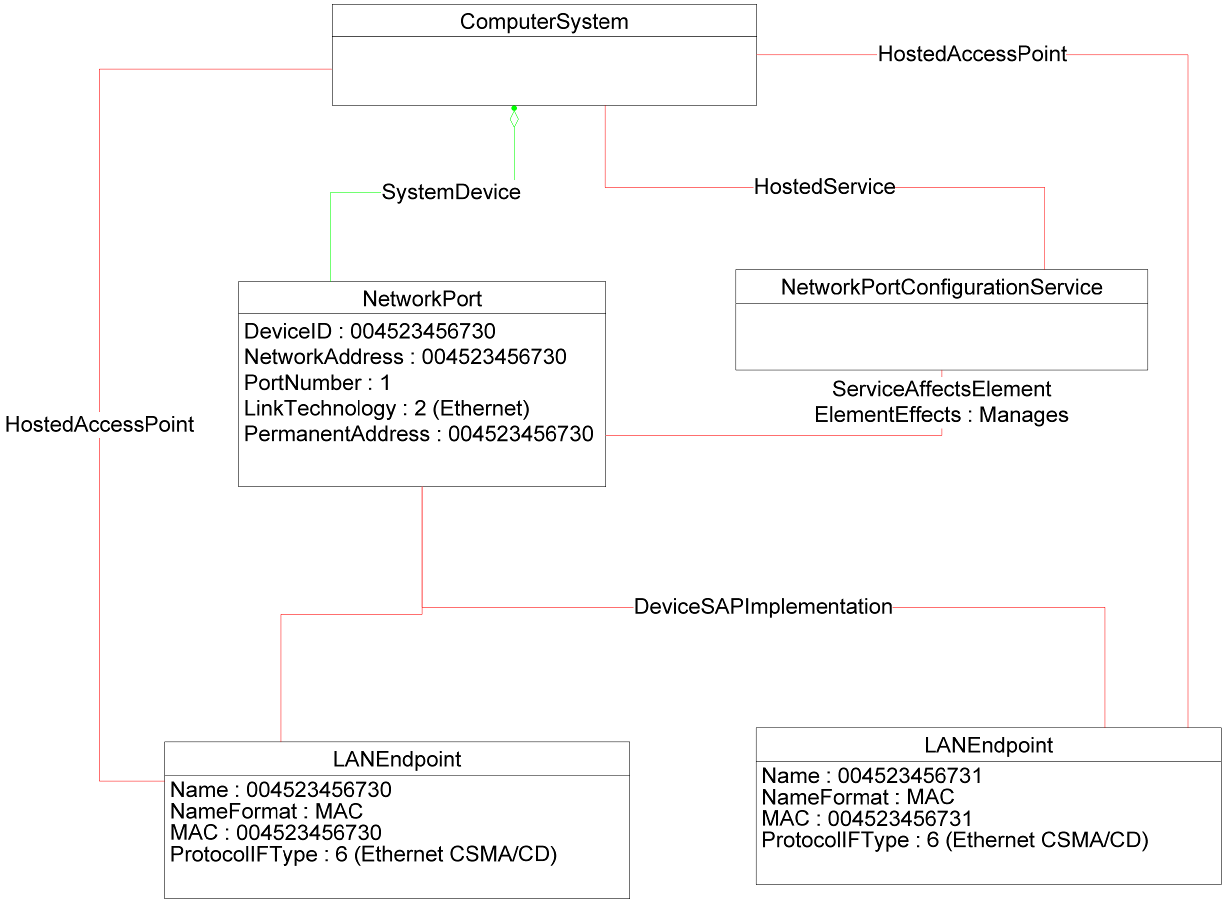


Figure 7 – Second Endpoint Added

9.7 Determining If ElementName Can Be Modified

For a given instance of CIM_LANEndpoint, CIM_PortController, or CIM_NetworkPort, a client can determine whether it can modify the ElementName as follows:

1) Find the CIM_EnabledLogicalElementCapabilities instance that is associated with the target instance.

2) Query the value of the ElementNameEditSupported property of the CIM_EnabledLogicalElementCapabilities instance. If the value is TRUE, the client can modify the ElementName property of the target instance.

9.8 Determining If State Management Is Supported

For a given instance of CIM_LANEndpoint, CIM_PortController, or CIM_NetworkPort, a client can determine whether state management is supported as follows:

1) Find the CIM_EnabledLogicalElementCapabilities instance that is associated with the CIM_LANEndpoint instance.

2) Query the value of the RequestedStatesSupported property. If at least one value is specified, state management is supported.

10 CIM Elements

Table 21 shows the instances of CIM Elements for this profile. Instances of the CIM Elements shall be implemented as described in Table 21. Clauses 7 ("Implementation Requirements") and 8 ("Methods") may impose additional requirements on these elements.

Table 21 – CIM Elements: Network Port Profile

Element Name	Requirement	Description
Classes		
CIM_ControlledBy	Optional	See 10.1.
CIM_DeviceSAPImplementation	Mandatory	See 10.2.
CIM_ElementCapabilities	Mandatory	See 10.3, 10.4, and 10.5.
CIM_EnabledLogicalElementCapabilities	Optional	See 10.6, 10.7, and 10.8.
CIM_HostedAccessPoint	Mandatory	See 10.9.
CIM_HostedService	Conditional	See 10.10.
CIM_LANEndpoint	Mandatory	See 10.11.
CIM_NetworkPort	Mandatory	See 10.12.
CIM_NetworkPortConfigurationService	Optional	See 10.13.
CIM_PhysicalConnector	Optional	See 10.14 .
CIM_PortController	Optional	See 10.15.
CIM_Realizes	Conditional	See 7.1.6 and 10.16.
CIM_RegisteredProfile	Mandatory	See 10.17.
CIM_ServiceAffectsElement	Conditional	See 7.3 and 10.18.
CIM_SystemDevice	Mandatory	See 10.19 and 10.20.
Indications		
None defined in this profile		

10.1 CIM_ControlledBy

CIM_ControlledBy is used to associate an instance of CIM_NetworkPort with the instance of CIM_PortController that controls the port, if the port controller is modeled. Table 22 provides information about the properties of CIM_ControlledBy.

Table 22 – Class: CIM_ControlledBy

Properties	Requirement	Description
Antecedent	Mandatory	See 7.4.2. Cardinality 0..1
Dependent	Mandatory	See 7.4.2. Cardinality 1..*

10.2 CIM_DeviceSAPImplementation

CIM_DeviceSAPImplementation is used to associate the CIM_LANEndpoint instance with the CIM_NetworkPort instance that provides the network access. Table 23 provides information about the properties of CIM_DeviceSAPImplementation.

Table 23 – Class: CIM_DeviceSAPImplementation

Properties	Requirement	Description
Antecedent	Mandatory	This property shall be an instance of CIM_NetworkPort. Cardinality 1..*
Dependent	Mandatory	This property shall be an instance of CIM_LANEndpoint. Cardinality 1..*

10.3 CIM_ElementCapabilities — LANEndpoint

CIM_ElementCapabilities is used to associate an instance of CIM_EnabledLogicalElementCapabilities with an instance of CIM_LANEndpoint. Table 24 provides information about the properties of CIM_ElementCapabilities in this context.

Table 24 – Class: CIM_ElementCapabilities — LANEndpoint

Properties	Requirement	Description
ManagedElement	Mandatory	**Key** This property shall be a reference to an instance of CIM_LANEndpoint. Cardinality 1..*
Capabilities	Mandatory	This property shall be a reference to the instance of CIM_EnabledLogicalElementCapabilities. Cardinality 0..1

10.4 CIM_ElementCapabilities — NetworkPort

CIM_ElementCapabilities is used to associate an instance of CIM_EnabledLogicalElementCapabilities with an instance of CIM_NetworkPort. Table 25 provides information about the properties of CIM_ElementCapabilities in this context.

Table 25 – Class: CIM_ElementCapabilities — NetworkPort

Properties	Requirement	Description
ManagedElement	Mandatory	This property shall be a reference to an instance of CIM_NetworkPort. Cardinality 1..*
Capabilities	Mandatory	This property shall be a reference to the instance of CIM_EnabledLogicalElementCapabilities. Cardinality 0..1

10.5 CIM_ElementCapabilities — PortController

CIM_ElementCapabilities is used to associate an instance of CIM_EnabledLogicalElementCapabilities with an instance of CIM_PortController. Table 26 provides information about the properties of CIM_ElementCapabilities in this context.

Table 26 – Class: CIM_ElementCapabilities — PortController

Properties	Requirement	Description
ManagedElement	Mandatory	This property shall be a reference to an instance of CIM_PortController. Cardinality 1..*
Capabilities	Mandatory	This property shall be a reference to the instance of CIM_EnabledLogicalElementCapabilities. Cardinality 0..1

10.6 CIM_EnabledLogicalElementCapabilities — LANEndpoint

CIM_EnabledLogicalElementCapabilities is used to indicate support for managing the state of the network interface. Table 27 provides information about the properties of CIM_EnabledLogicalElementCapabilities in this context.

Table 27 – Class: CIM_EnabledLogicalElementCapabilities — LANEndpoint

Properties	Requirement	Description
InstanceID	Mandatory	None
RequestedStatesSupported	Mandatory	See 7.2.4.1.1 and 7.2.5.1.1.
ElementNameEditSupported	Mandatory	See 7.2.6.1.1 and 7.2.7.1.1.
MaxElementNameLen	Conditional	See 7.2.6.1.2 and 7.2.7.1.2.

10.7 CIM_EnabledLogicalElementCapabilities — NetworkPort

CIM_EnabledLogicalElementCapabilities is used to indicate support for managing the state of the network port. Table 28 provides information about the properties of CIM_EnabledLogicalElementCapabilities in this context.

Table 28 – Class: CIM_EnabledLogicalElementCapabilities — NetworkPort

Properties	Requirement	Description
InstanceID	Mandatory	None
RequestedStatesSupported	Mandatory	See 7.1.2.1.1 and 7.1.3.1.1.
ElementNameEditSupported	Mandatory	See 7.1.4.1.1 and 7.1.5.1.1.
MaxElementNameLen	Conditional	See 7.1.4.1.2 and 7.1.5.1.2.

10.8 CIM_EnabledLogicalElementCapabilities — PortController

CIM_EnabledLogicalElementCapabilities is used to indicate support for managing the state of the port controller. Table 29 provides information about the properties of CIM_EnabledLogicalElementCapabilities in this context.

Table 29 – Class: CIM_EnabledLogicalElementCapabilities — PortController

Properties	Requirement	Description
InstanceID	Mandatory	None
RequestedStatesSupported	Mandatory	See 7.4.3.1.1 and 7.4.4.1.1.
ElementNameEditSupported	Mandatory	See 7.4.5.1.1 and 7.4.6.1.1.
MaxElementNameLen	Conditional	See 7.4.5.1.2 and 7.4.6.1.2.

10.9 CIM_HostedAccessPoint

CIM_HostedAccessPoint is used to relate a CIM_LANEndpoint instance to its scoping CIM_ComputerSystem instance. Table 30 provides information about the properties of CIM_HostedAccessPoint.

Table 30 – Class: CIM_HostedAccessPoint

Properties	Requirement	Description
Antecedent	Mandatory	This property shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	This property shall be a reference to an instance of CIM_LANEndpoint. Cardinality 1..*

10.10 CIM_HostedService

CIM_HostedService is used to associate the CIM_NetworkPortConfigurationService instance with the CIM_ComputerSystem instance to which it is scoped. Table 31 provides information about the properties of CIM_HostedService.

Table 31 – Class: CIM_HostedService

Properties	Requirement	Description
Antecedent	Mandatory	This property shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	This property shall be a reference to CIM_NetworkPortConfigurationService. Cardinality *

10.11 CIM_LANEndpoint

CIM_LANEndpoint represents a MAC address to which the network port will respond on the LAN. Table 32 provides information about the properties of CIM_LANEndpoint.

Table 32 – Class: CIM_LANEndpoint

Properties and Methods	Requirement	Description
SystemCreationClassName	Mandatory	None
CreationClassName	Mandatory	None
SystemName	Mandatory	None
Name	Mandatory	None
NameFormat	Mandatory	None
ProtocolIFType	Mandatory	None
MACAddress	Mandatory	None
LANID	Optional	See 8.1.
AliasAddresses	Optional	See 8.1.
GroupAddresses	Optional	See 8.1.
RequestedState	Mandatory	See 7.2.4.2 and 7.2.5.2.
EnabledState	Mandatory	See 7.2.5.3 and 7.2.4.3.
ElementName	Mandatory	See 7.2.6 and 7.2.7.
RequestStateChange( )	Conditional	See 8.3.

10.12 CIM_NetworkPort

CIM_NetworkPort represents the hardware and device aspects of a physical network interface. Table 33 provides information about the properties of CIM_NetworkPort.

Table 33 – Class: CIM_NetworkPort

Properties and Methods	Requirement	Description
SystemCreationClassName	Mandatory	None
CreationClassName	Mandatory	None
SystemName	Mandatory	None
Name	Mandatory	None
Speed	Optional	A value of 0 (zero) shall indicate that the actual value is unknown.
LinkTechnology	Mandatory	None
PermanentAddress	Mandatory	This property shall be a character string of length 0 to 64. pattern.{0,64}
MaxSpeed	Optional	A value of 0 (zero) shall indicate that the actual value is unknown.
RequestedSpeed	Optional	A value of 0 (zero) shall indicate that the actual value is unknown.
DeviceID	Mandatory	None
EnabledState	Mandatory	See 7.1.2.3 and 7.1.3.3.
RequestedState	Mandatory	See 7.1.2.2 and 7.1.3.2.
ElementName	Mandatory	See 7.1.4 and 7.1.5.
RequestStateChange( )	Conditional	See 8.2.

10.13 CIM_NetworkPortConfigurationService

CIM_NetworkPortConfigurationService represents the ability to add endpoints to the network port. Table 34 provides information about the properties of CIM_NetworkPortConfigurationService.

Table 34 – Class: NetworkPortConfigurationService

Properties and Methods	Requirement	Description
SystemCreationClassName	Mandatory	None
CreationClassName	Mandatory	None
SystemName	Mandatory	None
Name	Mandatory	None
ElementName	Mandatory	This property shall be formatted as a free-form string of variable length. (pattern ".*")
AddLANEndpoint( )	Mandatory	See 8.1.

10.14 CIM_PhysicalConnector

CIM_PhysicalConnector is used to represent the physical connector that connects the network port to the physical network. This class is defined by the *Physical Asset Profile*. The behavior specified in Table 35 is in addition to that specified by the *Physical Asset Profile*.

Table 35 – Class: CIM_PhysicalConnector

Properties	Requirement	Description
ConnectorLayout	Mandatory	None

10.15 CIM_PortController

CIM_PortController represents a network controller. Table 36 provides information about the properties of CIM_PortController.

Table 36 – Class: CIM_PortController

Properties	Requirement	Description
ControllerType	Mandatory	None
ProtocolSupported	Mandatory	None
MaxNumberControlled	Mandatory	A value of 0 (zero) shall indicate that the actual value is unknown.
SystemCreationClassName	Mandatory	None
SystemName	Mandatory	None
CreationClassName	Mandatory	None
Name	Mandatory	None
DeviceID	Mandatory	None
EnabledState	Mandatory	See 7.4.3.3.
RequestedState	Mandatory	See 7.4.3.2.
ElementName	Mandatory	See 7.4.5 and 7.4.6.
RequestStateChange( )	Conditional	See 8.4.

10.16 CIM_Realizes

The CIM_Realizes association is used to associate the CIM_NetworkPort with an instance of CIM_PhysicalConnector when an instance of CIM_PhysicalConnector is instrumented. This class is defined by the *Physical Asset Profile*. The behavior specified in Table 37 is in addition to that specified by the *Physical Asset Profile*.

Table 37 – Class: CIM_Realizes

Properties	Requirement	Description
Antecedent	Mandatory	This property shall be a reference to CIM_PhysicalConnector. Cardinality 0..1
Dependent	Mandatory	This property shall be a reference to the Central Instance. Cardinality 1..*

10.17 CIM_RegisteredProfile

CIM_RegisteredProfile identifies the *Host LAN Network Port Profile* in order for a client to determine whether an instance of CIM_LogicalModule is conformant with this profile. The CIM_RegisteredProfile class is defined by the *Profile Registration Profile*. With the exception of the mandatory values specified for the properties in Table 38, the behavior of the CIM_RegisteredProfile instance is in accordance with the constraints specified in the *Profile Registration Profile*.

Table 38 – Class: CIM_RegisteredProfile

Properties	Requirement	Description
RegisteredName	Mandatory	This property shall have a value of "Host LAN Network Port".
RegisteredVersion	Mandatory	This property shall have a value of "1.0.2".
RegisteredOrganization	Mandatory	This property shall have a value of "DMTF".

NOTE: Previous versions of this document included the suffix "Profile" for the RegisteredName value. If implementations querying for the RegisteredName value find the suffix "Profile", they should ignore the suffix, with any surrounding white spaces, before any comparison is done with the value as specified in this document.

10.18 CIM_ServiceAffectsElement

CIM_ServiceAffectsElement is used to associate an instance of CIM_NetworkPortConfigurationService with an instance of CIM_NetworkPort that the service is able to configure. Table 39 provides information about the properties of CIM_ServiceAffectsElement.

Table 39 – Class: CIM_ServiceAffectsElement

Properties	Requirement	Description
AffectingElement	Mandatory	This property shall be a reference to the instance of CIM_NetworkPortConfigurationService. Cardinality *
AffectedElement	Mandatory	This property shall be a reference to an instance of CIM_NetworkPort. Cardinality 1..*
ElementAffects	Mandatory	Matches 5 (Manages)

10.19 CIM_SystemDevice — CIM_NetworkPort

CIM_SystemDevice is used to associate an instance of CIM_NetworkPort with the instance of CIM_ComputerSystem to which the CIM_NetworkPort is scoped. Table 40 provides information about the properties of CIM_SystemDevice.

Table 40 – Class: CIM_SystemDevice

Properties	Requirement	Description
GroupComponent	Mandatory	This property shall be a reference to an instance of CIM_ComputerSystem. Cardinality 1
PartComponent	Mandatory	This property shall be a reference to CIM_NetworkPort. Cardinality 1..*

10.20 CIM_SystemDevice — CIM_PortController

CIM_SystemDevice is used to associate an instance of CIM_PortController with an instance of CIM_ComputerSystem when CIM_PortController is implemented. Table 41 provides information about the properties of CIM_SystemDevice.

Table 41 – Class: CIM_SystemDevice

Properties	Requirement	Description
GroupComponent	Mandatory	This property shall be a reference to an instance of CIM_ComputerSystem. Cardinality 1
PartComponent	Mandatory	This property shall be a reference to CIM_PortController. Cardinality *

ANNEX A
(informative)

Change Log

Version	Date	Description
1.0.0	2008-06-03	Final Standard
1.0.1	2010-09-15	Final Standard formatted for DMTF Standard release
1.0.2	2011-06-30	Errata version. Added operations tables in Section 8 for CIM_DeviceSAPImplementation and CIM_Realizes.