

# Simple NIC Profile

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|--------------------|---------------|
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# 1. Scope

The Simple NIC Profile extends the management capabilities of referencing profiles by adding the capability to represent the configuration of NIC network controllers. The NIC controllers are modeled as views and attributes where there is a view for each individual controller and multiple attributes that allow NIC configuration.

# 2. Normative References

Refer to the following documents for more information.

**NOTE:** For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- DMTF DSP1033, Profile Registration Profile 1.0.0
- DMTF DSP1061, Management Profile 1.0.0
- DMTF DSP0200, CIM Operations over HTTP 1.2.0
- DMTF DSP0004, CIM Infrastructure Specification 2.3.0
- DMTF DSP1000, Management Profile Specification Template
- DMTF DSP1001, Management Profile Specification Usage Guide
- DMTF DSP0226, Web Services for Management (WS-Management) Specification 1.1.0
- DMTF DSP0227, WS-Management CIM Binding Specification 1.0.0
- Dell Lifecycle Controller Best Practices Guide 1.0,  
[http://en.community.dell.com/techcenter/extras/m/white\\_papers/20066173.aspx](http://en.community.dell.com/techcenter/extras/m/white_papers/20066173.aspx)
- Dell WSMAN Licenses and Privileges 1.0
- 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>
- Unified Modeling Language (UML) from the Open Management Group (OMG): <http://www.uml.org>
- Dell Tech Center MOF Library: <http://www.delltechcenter.com/page/DCIM.Library.MOF>
- Related Managed Object Format (MOF) files:
  - o DCIM\_NICService.mof
  - o DCIM\_NICView.mof
  - o DCIM\_NICEnumeration.mof
  - o DCIM\_NICInteger.mof
  - o DCIM\_NICString.mof
  - o DCIM\_LCElementConformsToProfile.mof
  - o DCIM\_LCRegisteredProfile.mof

## 3. Terms and Definitions

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

### 3.1. Can

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

### 3.2. Cannot

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

### 3.3. Conditional

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

### 3.4. Mandatory

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

### 3.5. May

Indicates a course of action permissible within the limits of the document.

### 3.6. Need not

Indicates a course of action permissible within the limits of the document.

### 3.7. Optional

Indicates a course of action permissible within the limits of the document.

### 3.8. 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.

### 3.9. Shall

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

### 3.10. Shall not

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

### 3.11. 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.

### 3.12. Should not

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

### 3.13. Interop Namespace: root/interop

Interop Namespace: root/interop is where instrumentation instantiates classes to advertise its capabilities for client discovery.

### 3.14. Implementation Namespace: root/dcim

Implementation Namespace: root/dcim is where instrumentation instantiates classes relevant to executing core management tasks.

### 3.15. ENUMERATE

Refers to WS-MAN ENUMERATE operation as described in Section 8.2 of DSP0226\_V1.1 and Section 9.1 of DSP0227\_V1.0

### 3.16. GET

Refers to WS-MAN GET operation as defined in Section 7.3 of DSP0226\_V1.1 and Section 7.1 of DSP0227\_V1.0

## 4. Symbols and Abbreviated Terms

### 4.1. CIM

Common Information Model

### 4.2. iDRAC

Integrated Dell Remote Access Controller – management controller for blades and monolithic servers

### 4.3. CMC

Chassis Management Controller – management controller for the modular chassis

### 4.4. iSCSI

Internet Small Computer System Interface, an Internet Protocol (IP)-based storage networking standard for linking data storage facilities.

### 4.5. WBEM

Web-Based Enterprise Management

### 4.6. SRIOV

Singel Root I/O Virtualization

### 4.7. NPIV

N\_Port ID Virtualization

### 4.8. DCB

Data Center Bridging

### 4.9. FCF

FCoE Forwarders

## 5. Synopsis

Profile Name: Simple NIC

Version: 4.0.0

Organization: Dell Inc.

CIM Schema Version: 2.41 Final

Central Class: DCIM\_NICService Scoping Class: CIM\_ComputerSystem

The Simple NIC Profile extends the management capability of the referencing profiles by adding the capability to describe NIC controllers in a simple way. In this profile, a NIC is represented by a view instance that aggregates zero or more instances of the DCIM\_NICAttribute class, each representing a NIC controller related configurable property.

DCIM\_NICService shall be the Central Class. CIM\_ComputerSystem shall be the Scoping Class.

Instance of DCIM\_NICService shall be the Central Instance. Instance of CIM\_ComputerSystem shall be the Scoping Instance. Table 1 identifies profiles that are related to this profile.

**Table 1.** Related Profiles

| Profile Name         | Organization | Version | Relationship |
|----------------------|--------------|---------|--------------|
| Profile Registration | DCIM         | 1.0     | Reference    |

## 6. Description

The Simple NIC Profile describes NIC controller's representation and configuration. The profile also describes the relationship of the Simple NIC classes to the DMTF/Dell profile version information.

Figure 1 represents the class schema for the Simple NIC Profile. For simplicity, the prefix CIM\_ has been removed from the names of the classes.

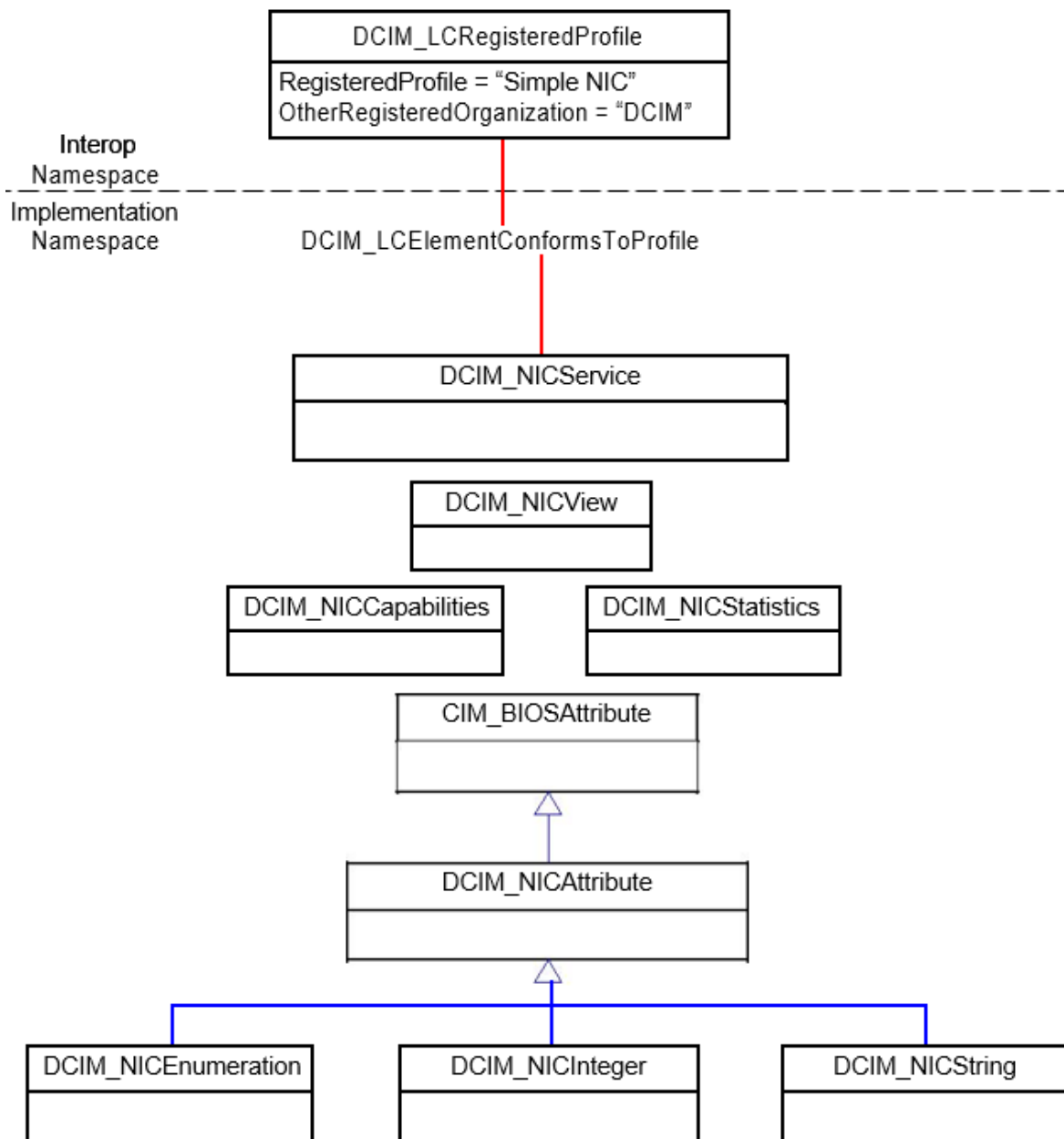
The DCIM\_NICView class is a NIC controller's representation that contains controllers' properties.

The DCIM\_NICAttribute class derives from the CIM\_BIOSAttribute class and represents each NIC's configurable attribute. Depending on the data type of the attribute, DCIM\_NICAttribute is either instantiated as DCIM\_NICEnumeration, DCIM\_NICString, or DCIM\_NICInteger instance.

DCIM\_NICView instance represents the NIC/CNA properties.

The DCIM\_NICService class is used to configure the NIC through its attributes. The SetAttribute() and SetAttributes() methods on the DCIM\_NICService class configure NIC attributes, DCIM\_NICAttribute subclass instances.

The Simple NIC profile information is represented with the instance of CIM\_RegisteredProfile.



**Figure 1. Simple NIC Profile: Class Diagram**

## 6.1. Fully Qualified Device Descriptor (FQDD)

Fully Qualified Device Descriptor (FQDD) is a component identifier that uniquely represents a specific system device or component in a platform independent of the operating system, and the device vendor.

The Dell CIM data model utilizes FQDDs to correlate different aspects of representing a component, such as hardware inventory view, configurable attribute, software inventory, and so on. FQDDs are used by software, such as BIOS, UEFI applications that link Unified Server Configurator (USC), and remote management applications to identify various system components in a persistent way.

For NIC devices, the FQDD is used to uniquely identify a particular port. For CNA devices, FQDD is used to uniquely identify a partition. See Table 2 - NIC FQDD examples and Table 3 - CNA FQDD Example for examples.

**Table 2.** NIC FQDD examples

| FQDD                 | Friendly Name                         |
|----------------------|---------------------------------------|
| NIC.Integrated.1-2-3 | Integrated NIC 1 Port 2 Partition 3   |
| NIC.Slot.3-2-1       | NIC in Slot 3 Port 2 Partition 1      |
| NIC.Mezzanine.1B-1-2 | NIC in Mezzanine 1 Port 1 Partition 2 |

**Table 3.** CNA FQDD Example

| Physical Port | Function Instance off Physical Port | PCI Func # | Config 1 NIC.Slot.n | Config 2 NIC.Slot.n |
|---------------|-------------------------------------|------------|---------------------|---------------------|
| 1             | 1                                   | 0          | NIC.Slot.1-1-1      | NIC.Slot.1-1-1      |
|               | 2                                   | 2          | NIC.Slot.1-1-2      | NIC.Slot.1-1-2      |
|               | 3                                   | 4          | NIC.Slot.1-1-3      | NIC.Slot.1-1-3      |
|               | 4                                   | 6          | NIC.Slot.1-1-4      | NIC.Slot.1-1-4      |
| 2             | 1                                   | 1          | NIC.Slot.1-2-1      | NIC.Slot.1-2-1      |
|               | 2                                   | 3          | NIC.Slot.1-2-2      | NIC.Slot.1-2-2      |
|               | 3                                   | 5          | NIC.Slot.1-2-3      | Disabled            |
|               | 4                                   | 7          | NIC.Slot.1-2-4      | NIC.Slot.1-2-4      |

## 6.2. CNA Representation

For CNA devices, an instance of DCIM\_NICView is created for each partition of a port. Each partition can have the following personalities:

- NIC
- Fibre Channel Over Ethernet (FCoE)
- Internet Small Computer System Interface Over Ethernet (ISOE).

DCIM\_NICView instances are read-only. For traditional NIC devices or CNA devices that have partitioning turned off, one instance of DCIM\_NICView is created for each device port.

The following DCIM\_NICView properties represent the CNA behavior. See Table 4 – CNA Properties in DCIM\_NICView.

**Table 4.** CNA Properties in DCIM\_NICView

| Personality      | Detail                                                                                                                    |
|------------------|---------------------------------------------------------------------------------------------------------------------------|
| NicMode          | Indicates if the NIC personality is enabled or disabled on the current partition                                          |
| FCoEOffloadMode  | Indicates if the Fibre Channel over Ethernet (FCoE) personality is enabled or disabled on the current partition.          |
| iScsiOffloadMode | Indicates if the Internet Small Computer System Interface (iSCSI) personality is enabled or disabled on current partition |
| MaxBandwidth     | Indicates maximum bandwidth on current partition.                                                                         |
| MinBandwidth     | Indicates minimum bandwidth on current partition.                                                                         |
| WWPN             | Indicates World Wide Port Name of a port.                                                                                 |

CNA devices allow a user to provide a range of bandwidth for each partition, which is represented in terms of percentage of total bandwidth.

## 6.3. Changing personalities on a partition

User can enable or disable a personality of a partition by changing the corresponding attribute. Table 5 lists the attribute names that represent each personality.

**Table 5.** Changing personalities on a partition

| Personality                                      | AttributeName    | Detail                                                 |
|--------------------------------------------------|------------------|--------------------------------------------------------|
| NIC                                              | NicMode          | Enables or disables NIC personality on the partition.  |
| Fibre Channel Over Ethernet (FCoE)               | FCoEOffloadMode  | Enables or disables FC personality on the partition.   |
| Internet Small Computer System Interface (iSCSI) | iScsiOffloadMode | Enables or disable iSCSI personality on the partition. |

Use SetAttribute() or SetAttributes() method on an attribute to change its value. See Section 8.1 and 8.2 for more details.

## 6.4. Enabling or disabling a partition

There are four partitions on each port of a CNA device. Partition 1 cannot be disabled on any port. Enabling any personality on a partition enables the partition. Disabling all the personalities on a partition disables the partition (see section 6.3 for information to enable or disable a partition personality).

To disable partitioning functionality altogether on all ports simultaneously, set the NicPartitioning attribute to Disabled. After the host system restarts, the CNA device will no longer expose multiple partitions to the host system. Instead, a DCIM\_NICView will be created for each port. See section 7.7.2 for more details.

## 6.5. Changing bandwidth on a partition

Use the MaxBandwidth and MinBandwidth attributes to change the bandwidth range of a partition. MinBandwidth is the relative bandwidth allocated to a partition with respect to the entire port. Make sure that the sum of all MinBandwidth should not be greater than 100% and MinBandwidth should be less than MaxBandwidth. See Section 7.7.2 for more details.

## 6.6. Virtual Address attributes

Virtual address attributes include the following attributes:

- VirtMacAddr
- VirtIscsiMacAddr
- VirtFIPMacAddr
- VirtWWN
- VirtWWPN
- VirtualizationMode

The default values of these virtual attributes is equal to the permanent addresses programmed onto the controller. For example, the VirtMacAddr default value is MacAddr on that port or partition.

To set these attributes, see Section 8.1 and 8.2 for more details. Virtual address attributes behave differently from the other attributes in the following way:

### 6.6.1. Read Write behavior

The virtual address attributes listed above behave as Read-Only attributes if accessed via the System Settings (F2 during POST) → Device Settings menu. However, they behave as Read-Write attributes through the Lifecycle Controller Remote Services interface used by WSMAN clients. This allows a remote application to change the

virtual identities of NIC/CNA controllers, similar to the FlexAddress feature that allows a chassis management controller (CMC) to distribute a predefined list of identities across all blade NIC/CNA controllers on a chassis.

### 6.6.2. Reset behavior

Setting a particular Input/Output (IO) attribute to zeros causes that particular address to be erased and reset to the default permanent address. The attributes can be set to default permanent values: as equivalent to resetting to factory default and removing a virtual address attribute from a system.

When there is AC Power loss to the system, all the virtual address attributes are erased and reset to default addresses when AC Power is restored to the system. AC Power loss includes power loss to both MAIN and AUX power bus.

NOTE: This behavior may not be available on the Broadcom CNA.

## 6.7. Behavior Differences between Broadcom and QLogic CNAs

There are few key differences between CNA manufacturers: Broadcom and QLogic. The supported CNAs for Broadcom and QLogic include:

- Broadcom:
  - o M710HD Dual Port 10Gig 57712 NDC,
- QLogic:
  - o Qlogic QMD8252-K Dual Port 10GbE NDC
  - o Qlogic QME8242 10GbE Embedded Mezz Card

Table 6 lists the behavioral differences between Broadcom and QLogic CNAs.

**Table 6.** Behavior Differences between Broadcom and QLogic CNAs

| Difference            | Broadcom                                                                                                           | QLogic                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Offload personalities | Only two Offload personalities (FCoEOffloadMode and iScsiOffloadMode) are allowed per port.                        | Partition 3 allows iScsiOffloadMode personality and Partition 4 allows FCoEOffloadMode personality. |
| Port level            | If NicPartitioning attribute is disabled, then enumeration and get operations only displays port level attributes. | Not applicable as NicPartitioning cannot be disabled.                                               |

| Difference                                        | Broadcom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | QLogic                                                                                          |                      |                  |   |    |    |   |    |    |   |    |    |   |    |    |                                             |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------|------------------|---|----|----|---|----|----|---|----|----|---|----|----|---------------------------------------------|
| MinBandwidth                                      | <p>If the MinBandwidth attribute(s) are set, the total sum of all the MinBandwidth attributes for all partitions on a port must add up to 0 or 100 at the conclusion of set operation. For example, if the MinBandwidth needs to be changed to 50 on partition 1, then the Minbandwidth must be changed on other partition(s) to make sure the MinBandwidth for all partitions on the port adds to a 100.</p> <table border="1"> <thead> <tr> <th>Port Partition</th><th>Current Minbandwidth</th><th>New Minbandwidth</th></tr> </thead> <tbody> <tr> <td>1</td><td>30</td><td>50</td></tr> <tr> <td>2</td><td>30</td><td>20</td></tr> <tr> <td>3</td><td>20</td><td>20</td></tr> <tr> <td>4</td><td>20</td><td>10</td></tr> </tbody> </table> <p>If the Minbandwidth does not add up to 0 or 100, then USC advanced configuration may not set any other attribute until this error condition of MinBandWidth is rectified. USC Advanced Configuration does not notify about this error condition.</p> <p>Note: MinBandwidth summation can be done independently through USC Advanced Configuration or through Remote Services interface that is used by WSMAN clients.</p> | Port Partition                                                                                  | Current Minbandwidth | New Minbandwidth | 1 | 30 | 50 | 2 | 30 | 20 | 3 | 20 | 20 | 4 | 20 | 10 | The same behavior is applicable for QLogic. |
| Port Partition                                    | Current Minbandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | New Minbandwidth                                                                                |                      |                  |   |    |    |   |    |    |   |    |    |   |    |    |                                             |
| 1                                                 | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 50                                                                                              |                      |                  |   |    |    |   |    |    |   |    |    |   |    |    |                                             |
| 2                                                 | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 20                                                                                              |                      |                  |   |    |    |   |    |    |   |    |    |   |    |    |                                             |
| 3                                                 | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 20                                                                                              |                      |                  |   |    |    |   |    |    |   |    |    |   |    |    |                                             |
| 4                                                 | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10                                                                                              |                      |                  |   |    |    |   |    |    |   |    |    |   |    |    |                                             |
| NicPartitioning and partition specific attributes | <p>After NicPartitioning attribute is disabled, partition specific attributes (See the following table) does not exist anymore. Therefore, do not disable NicPartitioning attribute and set partition specific attributes together, and CreateTargetedConfigJob() method.</p> <p><b>Partition specific attributes</b></p> <ul style="list-style-type: none"> <li>• MinBandwidth</li> <li>• MaxBandwidth</li> <li>• NicMode</li> <li>• iScsiOffloadMode</li> <li>• FCoEOffloadMode</li> <li>• VirtMacAddr</li> <li>• VirtIscsiMacAddr</li> <li>• VirtFIPMacAddr</li> <li>• VirtWWN</li> <li>• VirtWWPN VirtualizationMode</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Not applicable as NicPartitioning cannot be disabled in QLogic.                                 |                      |                  |   |    |    |   |    |    |   |    |    |   |    |    |                                             |
| NicMode                                           | NicMode is used to enable or disable NIC personality on a partition. NIC personality can be disabled on all partitions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NIC personality cannot be disabled on partition 1, but can be disabled on remaining partitions. |                      |                  |   |    |    |   |    |    |   |    |    |   |    |    |                                             |

## 7. Implementation Description

Requirements and guidelines for propagating and formulating certain properties of the classes are discussed in this section. Methods are listed in section 8.

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

**Table 7.** CIM Elements: Simple NIC Profile

| Element Name                    | Requirement | Description                                                                                   |
|---------------------------------|-------------|-----------------------------------------------------------------------------------------------|
| Classes                         |             |                                                                                               |
| DCIM_NICService                 | Mandatory   | The class maybe implemented in the Implementation Namespace: root/dcim.<br>See sections 7.8   |
| DCIM_NICView                    | Mandatory   | The class shall be implemented in the Implementation Namespace: root/dcim.<br>See section 7.1 |
| DCIM_NICCapabilities            | Mandatory   | The class shall be implemented in the Implementation Namespace: root/dcim.<br>See section 7.2 |
| DCIM_NICStatistics              | Mandatory   | The class shall be implemented in the Implementation Namespace: root/dcim.<br>See section 7.3 |
| DCIM_NICEnumeration             | Mandatory   | The class shall be implemented in the Implementation Namespace: root/dcim.<br>See section 7.4 |
| DCIM_NICInteger                 | Mandatory   | The class shall be implemented in the Implementation Namespace: root/dcim.<br>See section 7.6 |
| DCIM_NICString                  | Mandatory   | The class shall be implemented in the Implementation Namespace: root/dcim.<br>See section 7.5 |
| DCIM_LCElementConformsToProfile | Mandatory   | The class shall be implemented in the Implementation Namespace: root/dcim.                    |
| DCIM_LCElementConformsToProfile | Mandatory   | The class shall be implemented in the Interop Namespace: root/interop.                        |
| DCIM_LCRegisteredProfile        | Mandatory   | The class shall be implemented in the Interop Namespace: root/interop.<br>See section 7.7     |
| Indications                     |             |                                                                                               |
| None defined in this profile    |             |                                                                                               |

## 7.1. NIC View – DCIM\_NICView

This section describes the implementation for the DCIM\_NICView class. This class shall be instantiated in the Implementation Namespace: root/dcim.

### 7.1.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICView? cimnamespace=root/dcim”

The key property shall be the InstanceID.

The instance Resource URI for DCIM\_NICView instance shall be: “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICView? cimnamespace=root/dcim+InstanceID=<FQDD>”

### 7.1.2. Operations

The following table lists the implemented operations on DCIM\_NICView.

**Table 8.** DCIM\_NICView - Operations

| Operation Name | Requirements | Required Input |
|----------------|--------------|----------------|
| Get            | Mandatory    | Instance URI   |
| Enumerate      | Mandatory    | Class URI      |

### 7.1.3. Class Properties

The following table details the implemented properties for DCIM\_NICView instance representing a NIC in a system. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

**Table 9.** DCIM\_NICView – Properties

| Property Name         | Requirement | Type   | Requirement and description                                                                                                                     |
|-----------------------|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| InstanceID            | Mandatory   | String | The property value shall be the FQDD property                                                                                                   |
| FQDD                  | Mandatory   | String | A string containing the Fully Qualified Device Description, a user-friendly name for the object.                                                |
| DeviceDescription     | Mandatory   | String | A string containing the friendly Fully Qualified Device Description, a property that describes the device and its location                      |
| AutoNegotiation       | Mandatory   | uint8  | Indicates if the auto negotiation is <ul style="list-style-type: none"><li>• 0 → Unknown</li><li>• 2 → Enabled</li><li>• 3 → Disabled</li></ul> |
| BusNumber             | Mandatory   | uint8  | The bus number where this PCI device resides.                                                                                                   |
| ControllerBIOSVersion | Mandatory   | String | Controller BIOS Version.                                                                                                                        |
| CurrentMACAddress     | Mandatory   | String | A string containing the current MAC address.                                                                                                    |

| Property Name   | Requirement | Type   | Requirement and description                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DataBusWidth    | Mandatory   | string | DataBusWidth of the PCI. <ul style="list-style-type: none"> <li>• 0001 → Other</li> <li>• 0002 → Unknown</li> <li>• 0003 → 8 bit</li> <li>• 0004 → 16 bit</li> <li>• 0005 → 32 bit</li> <li>• 0006 → 64 bit</li> <li>• 0007 → 128 bit</li> <li>• 0008 → 1x or x1</li> <li>• 0009 → 2x or x2</li> <li>• 000A → 4x or x4</li> <li>• 000B → 8x or x8</li> <li>• 000D → 16x or x16</li> <li>• 000E → 32x or x32</li> </ul> |
| DeviceNumber    | Mandatory   | uint8  | The device number assigned to this PCI device for this bus.                                                                                                                                                                                                                                                                                                                                                            |
| EFIVersion      | Mandatory   | String | EFI Version.                                                                                                                                                                                                                                                                                                                                                                                                           |
| FCoEOffloadMode | Mandatory   | uint8  | Indicates if the partition has FC personality enabled. <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 2 → Enabled</li> <li>• 3 → Disabled</li> </ul>                                                                                                                                                                                                                                                  |
| FCoEWWNN        | Mandatory   | String | Indicates FCoE World Wide Node Name.                                                                                                                                                                                                                                                                                                                                                                                   |
| FamilyVersion   | Mandatory   | String | Indicates the firmware family version.                                                                                                                                                                                                                                                                                                                                                                                 |
| FunctionNumber  | Mandatory   | uint8  | The function number for this PCI device.                                                                                                                                                                                                                                                                                                                                                                               |
| LinkDuplex      | Mandatory   | uint8  | Indicates whether the Link is full or half duplex. <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 1 → Full Duplex</li> <li>• 2 → Half Duplex</li> </ul>                                                                                                                                                                                                                                               |
| LinkSpeed       | Mandatory   | String | Indicates the link speed. <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 1 → 10 Mbps</li> <li>• 2 → 100 Mbps</li> <li>• 3 → 1000 Mbps</li> <li>• 4 → 2.5 Gbps</li> <li>• 5 → 10 Gbps</li> <li>• 6 → 20 Gbps</li> <li>• 7 → 40 Gbps</li> <li>• 8 → 100 Gbps</li> <li>• 9 → 25 Gbps</li> <li>• 10 → 50 Gbps</li> </ul>                                                                                  |
| MaxBandwidth    | Mandatory   | uint16 | Indicates the maximum bandwidth of current partition of this NIC or Converged Network Adapter. It is represented in percentage.                                                                                                                                                                                                                                                                                        |
| MediaType       | Mandatory   | String | Indicates the different media types.                                                                                                                                                                                                                                                                                                                                                                                   |
| MinBandwidth    | Mandatory   | uint16 | Indicates the minimum bandwidth of current partition of this NIC or Converged Network Adapter. It is represented in percentage.                                                                                                                                                                                                                                                                                        |

| Property Name            | Requirement | Type   | Requirement and description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NicMode                  | Mandatory   | uint8  | Indicates if the partition has NIC personality enabled. <ul style="list-style-type: none"> <li>0 → Unknown</li> <li>2 → Enabled</li> <li>3 → Disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                            |
| PCIDeviceID              | Mandatory   | string | The property contains a value assigned by the device manufacturer used to identify the type of device.                                                                                                                                                                                                                                                                                                                                                                                                      |
| PCISubDeviceID           | Mandatory   | string | The property contains a value assigned by the vendor manufacturer used to identify the type of device.                                                                                                                                                                                                                                                                                                                                                                                                      |
| PCISubVendorID           | Mandatory   | string | Indicates the subsystem vendor ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| PCIVendorID              | Mandatory   | string | The property contains a value assigned by the PCI SIG used to identify the manufacturer of the device.                                                                                                                                                                                                                                                                                                                                                                                                      |
| PermanentFCOEMACAddress  | Mandatory   | string | Indicates the permanent FCoE MAC Address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| PermanentMACAddress      | Mandatory   | string | PermanentMACAddress defines the network address that is hardcoded into a port.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| PermanentiSCSIMACAddress | Mandatory   | string | Defines the network address that is hardcoded into a port and dedicated to iSCSI usage.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ProductName              | Mandatory   | string | A string containing the product name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ReceiveFlowControl       | Mandatory   | uint8  | Indicates if receive flow control is <ul style="list-style-type: none"> <li>0 → Unknown</li> <li>2 → On</li> <li>3 → Off</li> </ul>                                                                                                                                                                                                                                                                                                                                                                         |
| SlotLength               | Mandatory   | string | Slot length of the PCI. <ul style="list-style-type: none"> <li>0001 → Other</li> <li>0002 → Unknown</li> <li>0003 → Short Length</li> <li>0004 → Long Length</li> </ul>                                                                                                                                                                                                                                                                                                                                     |
| SlotType                 | Mandatory   | string | Slot type of the PCI. <ul style="list-style-type: none"> <li>0001 → Other</li> <li>0002 → Unknown</li> <li>0003 → ISA</li> <li>0004 → MCA</li> <li>0005 → EISA</li> <li>0006 → PCI</li> <li>0007 → C Card (PCMCIA)</li> <li>0008 → VL-VESA</li> <li>0009 → Proprietary</li> <li>000A → Processor Card Slot</li> <li>000B → Proprietary Memory Card Slot</li> <li>000C → I/O Riser Card Slot</li> <li>000D → NuBus</li> <li>000E → PCI - 66MHz Capable</li> <li>000F → AGP</li> <li>0010 → AGP 2X</li> </ul> |

| Property Name           | Requirement | Type   | Requirement and description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |             |        | <ul style="list-style-type: none"> <li>• 0011 → AGP 4X</li> <li>• 0012 → PCI-X</li> <li>• 0013 → AGP 8X</li> <li>• 00A0 → PC-98/C20</li> <li>• 00A1 → PC-98/C24</li> <li>• 00A2 → PC-98/E</li> <li>• 00A3 → PC-98/Local Bus</li> <li>• 00A4 → PC-98/Card</li> <li>• 00A5 → PCI Express</li> <li>• 00A6 → PCI Express x1</li> <li>• 00A7 → PCI Express x2</li> <li>• 00A8 → PCI Express x4</li> <li>• 00A9 → PCI Express x8</li> <li>• 00AA → PCI Express x16</li> <li>• 00AB → PCI Express Gen 2</li> <li>• 00AC → PCI Express Gen 2 x1</li> <li>• 00AD → PCI Express Gen 2 x2</li> <li>• 00AE → PCI Express Gen 2 x4</li> <li>• 00AF → PCI Express Gen 2 x8</li> <li>• 00B0 → PCI Express Gen 2 x16</li> <li>• 00B1 → PCI Express Gen 3</li> <li>• 00B2 → PCI Express Gen 3 x1</li> <li>• 00B3 → PCI Express Gen 3 x2</li> <li>• 00B4 → PCI Express Gen 3 x4</li> <li>• 00B5 → PCI Express Gen 3 x8</li> <li>• 00B6 → PCI Express Gen 3 x16</li> </ul> |
| TransmitFlowControl     | Mandatory   | uint8  | Indicates if the transmit flow control is <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 2 → On</li> <li>• 3 → Off</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| VendorName              | Mandatory   | String | Indicates the NIC Vendor Name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| WWPN                    | Mandatory   | String | Indicates the Worldwide Port Name of this port.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| WWN                     | Mandatory   | String | Indicates the Worldwide Name of a port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Protocol                | Mandatory   | String | Indicates supported protocol type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| iScsiOffloadMode        | Mandatory   | uint8  | Indicates if the partition has iSCSI personality enabled. <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 2 → Enabled</li> <li>• 3 → Disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| LastSystemInventoryTime | Mandatory   | String | This property provides the last time "\"System\"Inventory Collection On Reboot(CSIOR)\" was performed. The value is represented as yyyyymmddHHMMSS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| LastUpdateTime          | Mandatory   | String | This property provides the last time the data was updated. The value is represented as yyyyymmddHHMMSS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| VirtWWN                 | Mandatory   | String | Indicates Programmatically assignable Fibre Channel World Wide Node Name identifier for FCoE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Property Name | Requirement | Type   | Requirement and description                                                                  |
|---------------|-------------|--------|----------------------------------------------------------------------------------------------|
| VirtWWPN      | Mandatory   | String | Programmatically assignable Fibre Channel World Wide Port Name identifier for partition FCoE |

## 7.2. NIC Capabilities – DCIM\_NICCapabilities

This section describes the implementation for the DCIM\_NICCapabilities class. This class shall be instantiated in the Implementation Namespace: root/dcim.

### 7.2.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICCapabilities?cimnamespace=root/dcim”

The key property shall be the InstanceID.

The instance Resource URI for DCIM\_NICCapabilities instance shall be:

“http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICCapabilities?cimnamespace=root/dcim+InstanceID=<FQDD>”

### 7.2.2. Operations

The following table lists the implemented operations on DCIM\_NICCapabilities.

**Table 10.** DCIM\_NICCapabilities - Operations

| Operation Name | Requirements | Required Input |
|----------------|--------------|----------------|
| Get            | Mandatory    | Instance URI   |
| Enumerate      | Mandatory    | Class URI      |

### 7.2.3. Class Properties

The following table lists the implemented properties for DCIM\_NICCapabilities instance representing a NIC in a system. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

**Table 11.** DCIM\_NICCapabilities - Properties

| Property Name           | Requirement | Type   | Requirement and description                                                              |
|-------------------------|-------------|--------|------------------------------------------------------------------------------------------|
| CongestionNotification  | Mandatory   | uint8  | The property shall represent congestion notification support for a NIC port.             |
| DCBExchangeProtocol     | Mandatory   | uint8  | The property shall represent DCB Exchange protocol support for a NIC port.               |
| ETS                     | Mandatory   | uint8  | The property shall represent Enhanced Transmission Selection support for a NIC port.     |
| EnergyEfficientEthernet | Mandatory   | uint8  | The property shall represent energy efficient Ethernet support for a NIC port.           |
| FCoEBootSupport         | Mandatory   | uint8  | The property shall represent FCoE boot support for a NIC port.                           |
| FCoEMaxIOsPerSession    | Mandatory   | uint16 | The property shall represent maximum number of IOs per connection supported for the NIC. |
| FCoEMaxNPiVPerPort      | Mandatory   | uint16 | The property shall represent maximum number of FCoE targets supported for the NIC.       |

| Property Name                    | Requirement | Type   | Requirement and description                                                                                       |
|----------------------------------|-------------|--------|-------------------------------------------------------------------------------------------------------------------|
| FCoEMaxNumberExchanges           | Mandatory   | uint16 | The property shall represent maximum number of exchanges for the NIC.                                             |
| FCoEMaxNumberLogins              | Mandatory   | uint16 | The property shall represent maximum logins per port for the NIC.                                                 |
| FCoEMaxNumberOfFCTargets         | Mandatory   | uint16 | The property shall represent maximum number of FCoE targets supported for the NIC.                                |
| FCoEMaxNumberOutStandingCommands | Mandatory   | uint16 | The property shall represent maximum number of outstanding commands supported across all connections for the NIC. |
| FCoEOffloadSupport               | Mandatory   | uint8  | The property shall represent FCoE offload support for the NIC.                                                    |
| FQDD                             | Mandatory   | string | A string containing the Fully Qualified Device Description a user-friendly name for the object.                   |
| FeatureLicensingSupport          | Mandatory   | uint8  | The property shall represent feature licensing support for the NIC.                                               |
| FlexAddressingSupport            | Mandatory   | uint8  | The property shall represent flex addressing support for a NIC port.                                              |
| IPSecOffloadSupport              | Mandatory   | uint8  | The property shall represent IPSec offload support for a NIC port.                                                |
| InstanceID                       | Mandatory   | string | The property value shall be the FQDD property value.                                                              |
| MACSecSupport                    | Mandatory   | uint8  | The property shall represent secure MAC support for a NIC port.                                                   |
| NWManagementPassThrough          | Mandatory   | uint8  | The property shall represent network management pass through support for a NIC port.                              |
| NicPartitioningSupport           | Mandatory   | uint8  | The property shall represent partitioning support for the NIC.                                                    |
| OSBMCMManagementPassThrough      | Mandatory   | uint8  | The property shall represent OS-inband to BMC-out-of-band management pass through support for a NIC port.         |
| OnChipThermalSensor              | Mandatory   | uint8  | The property shall represent on chip thermal sensor support for the NIC.                                          |
| OpenFlowSupport                  | Mandatory   | uint8  | The property shall represent open flow support for a NIC port.                                                    |
| PXEBootSupport                   | Mandatory   | uint8  | The property shall represent PXE boot support for a NIC port.                                                     |
| PartitionWOLSupport              | Mandatory   | uint8  | The property shall represent Wake-On-LAN support for a NIC partition.                                             |
| PriorityFlowControl              | Mandatory   | uint8  | The property shall represent priority flow control support for a NIC port.                                        |
| RDMASupport                      | Mandatory   | uint8  | The property shall represent RDMA support for a NIC port.                                                         |
| RXFlowControl                    | Mandatory   | uint8  | The property shall represent RX flow control support for a NIC port.                                              |

| Property Name             | Requirement | Type  | Requirement and description                                                                                                                                                                                                                                       |
|---------------------------|-------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RemotePHY                 | Mandatory   | uint8 | The property shall represent remote PHY support for a NIC port.                                                                                                                                                                                                   |
| TCPChimneySupport         | Mandatory   | uint8 | The property shall represent TCP Chimney support for a NIC port.                                                                                                                                                                                                  |
| TXBandwidthControlMaximum | Mandatory   | uint8 | The property shall represent open flow support for a NIC partition.                                                                                                                                                                                               |
| TXBandwidthControlMinimum | Mandatory   | uint8 | The property shall represent open flow support for a NIC partition.                                                                                                                                                                                               |
| TXFlowControl             | Mandatory   | uint8 | The property shall represent TX flow control support for a NIC partition.                                                                                                                                                                                         |
| VEB                       | Mandatory   | uint8 | The property shall represent VEB(Virtual Ethernet Bridging) - single channel support for NIC port <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 2 → Supported</li> <li>• 3 → Not Supported</li> </ul>                                           |
| VEBVEPAMultiChannel       | Mandatory   | uint8 | The property shall represent VEB-VEPA(Virtual Ethernet Bridging and Virtual Ethernet Port Aggregator) - Multi channel support for NIC port <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 2 → Supported</li> <li>• 3 → Not Supported</li> </ul>  |
| VEBVEPASingleChannel      | Mandatory   | uint8 | The property shall represent VEB-VEPA(Virtual Ethernet Bridging and Virtual Ethernet Port Aggregator) - single channel support for NIC port <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 2 → Supported</li> <li>• 3 → Not Supported</li> </ul> |
| EVBModesSupport           | Mandatory   | uint8 | The property shall represent EVB – Edge Virtual Bridging) – mode support NIC port <ul style="list-style-type: none"> <li>• 0 → Unknown</li> <li>• 2 → Supported</li> <li>• 3 → Not Supported</li> </ul>                                                           |
| VFSRIOVSupport            | Mandatory   | uint8 | The property shall represent for Virtual Function of Single Root I/O Virtualization support for a NIC port.                                                                                                                                                       |
| VirtualLinkControl        | Mandatory   | uint8 | The property shall represent virtual link control support for a NIC partition.                                                                                                                                                                                    |
| WOLSupport                | Mandatory   | uint8 | The property shall represent Wake-On-LAN support for a NIC port.                                                                                                                                                                                                  |
| iSCSIBootSupport          | Mandatory   | uint8 | The property shall represent iSCSI boot support for a NIC port.                                                                                                                                                                                                   |
| iSCSIOffloadSupport       | Mandatory   | uint8 | The property shall represent iSCSI offload support for a NIC port.                                                                                                                                                                                                |
| uEFISupport               | Mandatory   | uint8 | The property shall represent UEFI support for a NIC port.                                                                                                                                                                                                         |

| Property Name            | Requirement | Type  | Requirement and description                                      |
|--------------------------|-------------|-------|------------------------------------------------------------------|
| PersistencePolicySupport | Mandatory   | uint8 | This property specifies if the card supports persistence policy. |

## 7.3. NIC Statistics – DCIM\_NICStatistics

This section describes the implementation for the DCIM\_NICStatistics class. This class shall be instantiated in the Implementation Namespace:root/dcim.

### 7.3.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICStatistics?cimnamespace=root/dcim”

The key property shall be the InstanceID.

The instance Resource URI for DCIM\_NICStatistics instance shall be:

“http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICStatistics?cimnamespace=root/dcim+InstanceID=<FQDD>”

### 7.3.2. Operations

The following table lists the implemented operations on DCIM\_NICStatistics.

**Table 12.** DCIM\_NICStatistics - Operations

| Operation Name | Requirements | Required Input |
|----------------|--------------|----------------|
| Get            | Mandatory    | Instance URI   |
| Enumerate      | Mandatory    | Class URI      |

### 7.3.3. Properties

The following table details the implemented properties for DCIM\_NICStatistics instance representing a NIC in a system. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

**Table 13.** DCIM\_NICStatistics - Properties

| Property Name         | Requirement | Type   | Requirement and description                                                                                   |
|-----------------------|-------------|--------|---------------------------------------------------------------------------------------------------------------|
| DiscardedPkts         | Mandatory   | uint32 | Counts the total number of discarded packets.                                                                 |
| FCCRCErrorCount       | Mandatory   | uint32 | Counts the number of FC frames with CRC errors.                                                               |
| FCOELinkFailures      | Mandatory   | uint32 | Counts the number of FCoE/FIP Login failures.                                                                 |
| FCOEPktRxCount        | Mandatory   | uint64 | Counts the number of good (FCS valid) packets received with the partition's active FCoE MAC address.          |
| FCOEPktTxCount        | Mandatory   | uint64 | Counts the number of good (FCS valid) packets transmitted that passed L2 filtering by a specific MAC address. |
| FCOERxPktDroppedCount | Mandatory   | uint32 | Counts the number of receive packets with FCS errors.                                                         |
| FQDD                  | Mandatory   | string | A string containing the Fully Qualified Device Description, a user-friendly name for the object.              |
| InstanceID            | Mandatory   | string | The property value shall be the FQDD property value.                                                          |
| LinkStatus            | Mandatory   | uint8  | Indicates whether the link is up (OK) or down (Error).                                                        |
| OSDriverState         | Mandatory   | uint8  | Indicates operating system driver states.                                                                     |

| Property Name                | Requirement | Type     | Requirement and description                                                                                                                                                                               |
|------------------------------|-------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PartitionLinkStatus          | Mandatory   | uint8    | Indicates whether the partition link is up (OK) or down (Error).                                                                                                                                          |
| PartitionOSDriverState       | Mandatory   | uint8    | Indicates partitions operating system driver states.                                                                                                                                                      |
| RxBroadcast                  | Mandatory   | uint64   | Counts the total number of good broadcast packets received.                                                                                                                                               |
| RxBytes                      | Mandatory   | uint64   | Counts the total number of bytes received, including host and remote management pass through traffic (remote management pass through traffic is applicable to LOMs only).                                 |
| RxErrorPktAlignmentErrors    | Mandatory   | uint32   | Counts the total number of packets received with alignment errors.                                                                                                                                        |
| RxErrorPktFCSErrors          | Mandatory   | uint32   | Counts the total number of packets received with FCS errors.                                                                                                                                              |
| RxFalseCarrierDetection      | Mandatory   | uint32   | Counts the total number of false carrier errors received from PHY.                                                                                                                                        |
| RxJabberPkt                  | Mandatory   | uint32   | Counts the total number of frames that are too long.                                                                                                                                                      |
| RxMulticast                  | Mandatory   | uint64   | Counts the total number of good multicast packets transmitted.                                                                                                                                            |
| RxPauseXOFFFrames            | Mandatory   | uint32   | Counts the flow control frames from the network to pause transmission.                                                                                                                                    |
| RxPauseXONFrames             | Mandatory   | uint32   | Counts the flow control frames from the network to resume transmission.                                                                                                                                   |
| RxRuntPkt                    | Mandatory   | uint32   | Counts the total number of frames that are too short (< 64 bytes).                                                                                                                                        |
| RxUnicast                    | Mandatory   | uint64   | Counts the total number of good unicast packets transmitted.                                                                                                                                              |
| StartStatisticTime           | Mandatory   | datetime | Indicates the measurement time for the first NIC statistics. The property shall be used with the StatisticTime property to calculate the duration over which the NIC statistics has been gathered.        |
| StatisticTime                | Mandatory   | datetime | Indicates the most recent measurement time for NIC statistics. The property shall be used with the StatisticStartTime property to calculate the duration over which the NIC statistics has been gathered. |
| TxBroadcast                  | Mandatory   | uint64   | Counts the total number of good broadcast packets transmitted.                                                                                                                                            |
| TxBytes                      | Mandatory   | uint64   | Counts the total number of bytes transmitted, including host and remote management pass through traffic (remote management pass through traffic is applicable to LOMs only).                              |
| TxErrorPktExcessiveCollision | Mandatory   | uint32   | Counts the number of times that 16 or more collisions occurred on a single transmit packet.                                                                                                               |

| Property Name               | Requirement | Type   | Requirement and description                                                                                 |
|-----------------------------|-------------|--------|-------------------------------------------------------------------------------------------------------------|
| TxErrorPktLateCollision     | Mandatory   | uint32 | Counts the number of collisions that occurred after one slot time (defined by IEEE 802.3).                  |
| TxErrorPktMultipleCollision | Mandatory   | uint32 | Counts the number of times that a transmitted packet encountered more than one collision but fewer than 16. |
| TxErrorPktSingleCollision   | Mandatory   | uint32 | Counts the number of times that a successfully transmitted packet encountered a single collision.           |
| TxMutlicast                 | Mandatory   | uint64 | Counts the total number of good multicast packets transmitted.                                              |
| TxPauseXONFrames            | Mandatory   | uint32 | Counts the number of XON packets transmitted to the network.                                                |
| TxPauseXOFFFrames           | Mandatory   | uint32 | Counts the number of XOFF packets transmitted to the network.                                               |
| TxUnicast                   | Mandatory   | uint64 | Counts the total number of good unicast packets transmitted.                                                |
| LanUnicastPktRXCount        | Mandatory   | uint64 | Counts the total number of Lan Unicast Packets Received                                                     |
| LanUnicastPktTXCount        | Mandatory   | uint64 | Counts the total number of Lan Unicast Packets Transmitted                                                  |
| LanFCSRxErros               | Mandatory   | Uint32 | Lan FCS Receive Errors                                                                                      |
| RDMA RxTotalPackets         | Optional    | uint64 | This property specifies the total number of RDMA packets received                                           |
| RDMA RxTotalBytes           | Optional    | uint64 | This property specifies the total number of RDMA bytes received                                             |
| RDMA TxTotalPackets         | Optional    | uint64 | This property specifies the total number of RDMA packets transmitted                                        |
| RDMA TxTotalBytes           | Optional    | uint64 | This property specifies the total number of RDMA bytes transmitted                                          |
| RDMA TxTotalReadReqPkts     | Optional    | uint64 | This property specifies the total number of RDMA ReadRequest packets transmitted                            |
| RDMA TxTotalSendPkts        | Optional    | uint64 | This property specifies the total number of RDMA Send packets transmitted.                                  |
| RDMA TxTotalWritePkts       | Optional    | uint64 | This property specifies the total number of RDMA Write packets transmitted.                                 |
| RDMA TotalProtocolErrors    | Optional    | uint32 | This property specifies the total number of RDMA Protocol errors                                            |
| RDMA TotalProtectionErrors  | Optional    | uint32 | This property specifies the total number of RDMA Protection errors                                          |

## 7.4. DCIM\_NICEnumeration

This section describes the implementation for the DCIM\_NICEnumeration class.

Each DCIM\_NICEnumeration instance is logically associated to a DCIM\_NICView instance, where the DCIM\_NICEnumeration.FQDD property is equal to the FQDD property on the DCIM\_NICView instance.

This class shall be instantiated in the Implementation Namespace:root/dcim.

### 7.4.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICEnumeration? cimnamespace=root/dcim”

The key property shall be the InstanceID.

The instance Resource URI for DCIM\_NICEnumeration instance shall be:

“http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICEnumeration? cimnamespace=root/dcim+InstanceID= <FQDD>:<AttributeName>” where <FQDD> is the FQDD property value and <AttributeName> is the AttributeName property value.

### 7.4.2. Operations

The following table lists the implemented operations on DCIM\_NICEnumeration.

**Table 14.** DCIM\_NICEnumeration - Operations

| Operation Name                  | Requirements | Required Input  |
|---------------------------------|--------------|-----------------|
| Get                             | Mandatory    | Instance URI    |
| Enumerate                       | Mandatory    | Class URI       |
| DCIM_NICService.SetAttribute()  | Mandatory    | See section 8.1 |
| DCIM_NICService.SetAttributes() | Mandatory    | See section 8.2 |

### 7.4.3. Class Properties

The following table details the implemented properties for DCIM\_NICEnumeration instance representing a NIC controller enumeration attribute. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

**Table 15.** Class: DCIM\_NICEnumeration

| Properties           | Type    | Notes     | Additional Requirements                                                                                                         |
|----------------------|---------|-----------|---------------------------------------------------------------------------------------------------------------------------------|
| InstanceID           | String  | Mandatory | The property value shall be formed as follows: “<FQDD property value>:<AttributeName property value>”.                          |
| AttributeName        | String  | Mandatory | The property value shall be from the “AttributeName” column in Tables in section 7.7.                                           |
| AttributeDisplayName | String  | Mandatory | The property value shall be from the “AttributeDisplayName” column in Tables in section 7.7.                                    |
| GroupID              | String  | Mandatory | See section 7.7.                                                                                                                |
| GroupDisplayName     | String  | Mandatory | See section 7.7.                                                                                                                |
| CurrentValue[]       | String  | Mandatory | The property value shall be one of the values in the “PossibleValues” column in the corresponding row in Tables in section 7.7. |
| PendingValue[]       | String  | Mandatory | The property value shall be one of the values in the “PossibleValues” column in the corresponding row in Tables in section 7.7. |
| IsReadOnly           | Boolean | Mandatory | The property value shall be from the “IsReadOnly” column in Tables in section 7.7.                                              |

| Properties                | Type   | Notes     | Additional Requirements                                                                                                                      |
|---------------------------|--------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| FQDD                      | String | Mandatory | FQDD of the NIC that the attribute belongs to.                                                                                               |
| DisplayOrder              | uint16 | Mandatory | The property shall represent the sequence number denoting the preferred placement of the attribute in the list of all NIC attributes.        |
| Dependency                | String | Optional  | The property shall be formatted as XML describing the attributes dependence on other attribute(s).                                           |
| PossibleValues            | String | Mandatory | The property value shall be equal to the array of the values in "PossibleValues" column in the corresponding row in Tables in section 7.7.   |
| PossibleValuesDescription | String | Mandatory | The array property's each value shall represent the description of the value in the PossibleValue array property at the corresponding index. |

## 7.5. DCIM\_NICString

This section describes the implementation for the DCIM\_NICString class.

Each DCIM\_NICString instance is logically associated to a DCIM\_NICView instance, where the DCIM\_NICString.FQDD property is equal to the FQDD property on the DCIM\_NICView instance.

This class shall be instantiated in the Implementation Namespace:root/dcim.

### 7.5.1. Resource URIs for WinRM®

The class Resource URI shall be "http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICString?cimnamespace=root/dcim"

The key property shall be the InstanceID.

The instance Resource URI for DCIM\_NICString instance shall be:

http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICString?cimnamespace=root/dcim+InstanceID=<FQDD>:<AttributeName where <FQDD> is the FQDD property value, and <AttributeName> is the AttributeName property value.

### 7.5.2. Operations

The following table lists the Implemented operations on DCIM\_NICString.

**Table 16.** DCIM\_NICString - Operations

| Operation Name                  | Requirements | Required Input  |
|---------------------------------|--------------|-----------------|
| Get                             | Mandatory    | Instance URI    |
| Enumerate                       | Mandatory    | Class URI       |
| DCIM_NICService.SetAttribute()  | Mandatory    | See section 8.1 |
| DCIM_NICService.SetAttributes() | Mandatory    | See section 8.2 |

### 7.5.3. Class Properties

The following table details the implemented properties for DCIM\_NICString instance representing a NIC controller string attribute. The "Requirements" column shall denote whether the property is implemented (for requirement definitions, see section 3). The "Additional Requirements" column shall denote either possible values for the property, or requirements on the value formulation.

**Table 17.** Class: DCIM\_NICString

| Properties           | Type    | Notes       | Additional Requirements                                                                                                                                                                                                                     |
|----------------------|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InstanceID           | String  | Mandatory   | The property value shall be formed as follows:<br>“<FQDD property value>:<AttributeName property value>”.                                                                                                                                   |
| AttributeName        | String  | Mandatory   | The property value shall be from the “AttributeName” column in Tables in section 7.7.                                                                                                                                                       |
| AttributeDisplayName | String  | Mandatory   | The property value shall be from the “AttributeDisplayName” column in in Tables in section 7.7.                                                                                                                                             |
| GroupID              | String  | Mandatory   | See section 7.7.                                                                                                                                                                                                                            |
| GroupDisplayName     | String  | Mandatory   | See section 7.7.                                                                                                                                                                                                                            |
| CurrentValue[]       | String  | Mandatory   | The property value shall be one of the values in the “PossibleValues” column at the corresponding row in Tables in section 7.7.                                                                                                             |
| PendingValue[]       | String  | Mandatory   | The property value shall be one of the values in the “PossibleValues” column at the corresponding row in Tables in section 7.7.                                                                                                             |
| IsReadOnly           | Boolean | Mandatory   | The property value shall be from the “IsReadOnly” column in Tables in section 7.7.                                                                                                                                                          |
| FQDD                 | String  | Mandatory   | FQDD of the NIC that the attribute belongs to.                                                                                                                                                                                              |
| DisplayOrder         | uint16  | Mandatory   | The property shall represent the sequence number denoting the preferred placement of the attribute in the list of all NIC attributes.                                                                                                       |
| Dependency           | String  | Optional    | The property shall be formatted as XML describing the attributes dependence on other attribute(s).                                                                                                                                          |
| MinLength            | uint64  | Mandatory   | The property value shall be the value in the “MinLength” column at the corresponding row in in Tables in section 7.7.<br>The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties. |
| MaxLength            | uint64  | Mandatory   | The property value shall be the value in the “MaxLength” column at the corresponding row in in Tables in section 7.7.<br>The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties. |
| ValueExpression      | String  | Conditional | The property shall be implemented, if the IsReadOnly property has value FALSE.<br>The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties.                                        |

## 7.6. DCIM\_NICInteger

This section describes the implementation for the DCIM\_NICInteger class.

Each DCIM\_NICInteger instance is logically associated to a DCIM\_NICView instance, where the DCIM\_NICInteger.FQDD property is equal to the FQDD property on the DCIM\_NICView instance.

This class shall be instantiated in the Implementation Namespace:root/dcim.

### 7.6.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim- schema/2/DCIM\_NICInteger? cimnamespace=root/dcim”

The key property shall be the InstanceID.

The instance Resource URI for DCIM\_NICInteger instance shall be:

http://schemas.dell.com/wbem/wscim/1/cim- schema/2/DCIM\_NICInteger?

cimnamespace=root/dcim+InstanceID= <FQDD>:<AttributeName where <FQDD> is the FQDD property value, and <AttributeName> is the AttributeName property value.

### 7.6.2. Operations

The following table lists the implemented operations on DCIM\_NICInteger.

**Table 18.** DCIM\_NICInteger - Operations

| Operation Name                  | Requirements | Required Input  |
|---------------------------------|--------------|-----------------|
| Get                             | Mandatory    | Instance URI    |
| Enumerate                       | Mandatory    | Class URI       |
| DCIM_NICService.SetAttribute()  | Mandatory    | See section 8.1 |
| DCIM_NICService.SetAttributes() | Mandatory    | See section 8.2 |

### 7.6.3. Properties

The following table details the implemented properties for DCIM\_NICInteger instance representing a NIC controller integer attribute. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

**Table 19.** Class: DCIM\_NICInteger

| Properties           | Type    | Requirement | Additional Requirements                                                                                                         |
|----------------------|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------|
| InstanceID           | String  | Mandatory   | The property value shall be formed as follows:<br>“<FQDD property value>:<AttributeName property value>”.                       |
| AttributeName        | String  | Mandatory   | The property value shall be from the “AttributeName” column in Tables in section 7.7.                                           |
| AttributeDisplayName | String  | Mandatory   | The property value shall be from the “AttributeDisplayName” column in in Tables in section 7.7.                                 |
| GroupID              | String  | Mandatory   | See section 7.7.                                                                                                                |
| GroupDisplayName     | String  | Mandatory   | See section 7.7.                                                                                                                |
| CurrentValue[]       | String  | Mandatory   | The property value shall be one of the values in the “PossibleValues” column at the corresponding row in Tables in section 7.7. |
| PendingValue[]       | String  | Mandatory   | The property value shall be one of the values in the “PossibleValues” column at the corresponding row in Tables in section 7.7. |
| IsReadOnly           | Boolean | Mandatory   | The property value shall be from the “IsReadOnly” column in Tables in section 7.7.                                              |
| FQDD                 | String  | Mandatory   | FQDD of the NIC that the attribute belongs to.                                                                                  |

| Properties   | Type   | Requirement | Additional Requirements                                                                                                                                                                                                                   |
|--------------|--------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DisplayOrder | uint16 | Mandatory   | The property shall represent the sequence number denoting the preferred placement of the attribute in the list of all NIC attributes.                                                                                                     |
| Dependency   | String | Optional    | The property shall be formatted as XML describing the attributes dependence on other attribute(s).                                                                                                                                        |
| LowerBound   | uint64 | Mandatory   | The property value shall be the value in the “LowerBound” column in the corresponding row in Tables in section 7.7.<br>The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties. |
| UpperBound   | uint64 | Mandatory   | The property value shall be the value in the “UpperBound” column at the corresponding row in Tables in section 7.7.<br>The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties. |

## 7.7. NIC Attributes

This section lists and describes the attributes and their logical grouping.

### 7.7.1. NIC Configuration

This section describes the attributes for NIC’s Configuration.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “NICConfig”.

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “NIC Configuration”.

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 20.** DCIM\_NICEnumeration NIC Configuration

| AttributeName                | AttributeDisplayName | IsReadOnly | DisplayOrder | PossibleValues                                                                                                                                                                         | Description                                                    |
|------------------------------|----------------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| BootStrapType                | Boot Strap Type      | FALSE      | 911          | <ul style="list-style-type: none"> <li>• “AutoDetect”</li> <li>• “BBS”</li> <li>• “Int 18h”</li> <li>• “Int 19h”</li> </ul>                                                            | Boot strap method to boot the OS                               |
| HideSetupPrompt              | Hide Setup Prompt    | FALSE      | 909          | <ul style="list-style-type: none"> <li>• “Enabled”</li> <li>• “Disabled”</li> </ul>                                                                                                    | Display or hide the legacy option ROM setup prompt during POST |
| LegacyBootProto <sup>1</sup> | Legacy Boot Protocol | FALSE      | 902          | <ul style="list-style-type: none"> <li>• “PXE”, “iSCSI”<sup>1</sup></li> <li>• “iSCSIPrimary”<sup>1</sup></li> <li>• “iSCSISecondary”<sup>1</sup></li> <li>• “FCoE”, “NONE”</li> </ul> | Non-UEFI Boot Protocol                                         |

| AttributeName     | AttributeDisplayName                              | IsReadOnly | DisplayOrder | PossibleValues                                                                                                                                                      | Description                  |
|-------------------|---------------------------------------------------|------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| LnkSpeed          | Configure link speed for Managed Boot Agent.      | FALSE      | 907          | <ul style="list-style-type: none"> <li>• “AutoNeg”</li> <li>• “10Mbps Half”</li> <li>• “10Mbps Full”</li> <li>• “100Mbps Half”</li> <li>• “100Mbps Full”</li> </ul> | Link Speed                   |
| VLanMode          | Virtual LAN mode for Managed Boot Agent.          | FALSE      | 905          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul>                                                                                 | Virtual LAN mode             |
| WakeOnLan         | Preboot Wake on LAN (WOL) for Managed Boot Agent. | FALSE      | 903          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul>                                                                                 | Preboot Wake on LAN          |
| WakeOnLanLnkSpeed | WOL Link Speed**                                  | FALSE      | 904          | <ul style="list-style-type: none"> <li>• “AutoNeg”</li> <li>• “10Mbps Half”</li> <li>• “10Mbps Full”</li> <li>• “100Mbps Half”</li> <li>• “100Mbps Full”</li> </ul> | Wake On LAN (WOL) link speed |

NOTE: 1 – PossibleValues property shall contain either “iSCSI” value or “iSCSIPrimary” and “iSCSISecondary” values. “iSCSI” value denotes that the selection of the NIC in the non-UEFI boot sequence shall boot the system to an iSCSI target. Further, the IPVer attribute in the iSCSI General Parameters group shall denote the IP version of the configured target’s IP address for iSCSI.

“iSCSIPrimary” value denotes that the NIC is the primary iSCSI boot source in the non-UEFI boot sequence. Thus, if the booting to this iSCSI NIC fails, the iSCSI target configured in the secondary iSCSI NIC shall be attempted automatically. The secondary iSCSI NIC shall be denoted by “iSCSISecondary” value for this attribute.

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 21.** DCIM\_NICInteger NIC Configuration

| AttributeName        | AttributeDisplayName   | IsReadOnly | DisplayOrder | LowerBound | UpperBound |
|----------------------|------------------------|------------|--------------|------------|------------|
| VLanId               | Virtual LAN ID         | FALSE      | 906          | 0          | 4095       |
| BannerMessageTimeout | Banner Message Timeout | FALSE      | 912          | 0          | 14         |

## 7.7.2. Main Configuration

This section describes the attributes for NIC’s Main Configuration.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “VndrConfigPage”.

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “Main Configuration Page”.

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 22.** DCIM\_NICEnumeration Main Configuration Page

| AttributeName     | AttributeDisplayName                             | IsRead Only | Display Order | PossibleValues                                                                        | Description                                                        |
|-------------------|--------------------------------------------------|-------------|---------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| FCoEOffloadMode   | Enable/Disable FC personality on the partition.  | FALSE       | 113           | <ul style="list-style-type: none"> <li>“Disabled”</li> <li>“Enabled”</li> </ul>       | FCoE Offload Mode                                                  |
| iScsiOffloadMode  | iSCSI personality on the partition.              | FALSE       | 112           | <ul style="list-style-type: none"> <li>“Disabled”</li> <li>“Enabled”</li> </ul>       | iSCSI Offload Mode                                                 |
| LinkStatus        | Link Status                                      | TRUE        | 119           | <ul style="list-style-type: none"> <li>“Connected”</li> <li>“Disconnected”</li> </ul> | Link Status                                                        |
| NicMode           | Enable/Disable NIC personality on the partition. | FALSE       | 111           | <ul style="list-style-type: none"> <li>“Disabled”</li> <li>“Enabled”</li> </ul>       | NIC Mode                                                           |
| LogicalPortEnable | Logical Port Enable                              | FALSE       | 151           | <ul style="list-style-type: none"> <li>“Enabled”</li> <li>“Disabled”</li> </ul>       | Enables or disables the port from appearing as a physical function |
| RDMANicModeOnPort | NIC + RDMA mode                                  | FALSE       | 1802          | <ul style="list-style-type: none"> <li>“Enabled”</li> <li>“Disabled”</li> </ul>       | Use Port for L2- Ethernet and RDMA traffic                         |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 23.** DCIM\_NICString Main Configuration Page

| AttributeName             | AttributeDescription                                                            | IsRead Only | Display Order | MinLength | MaxLength | ValueExpression |
|---------------------------|---------------------------------------------------------------------------------|-------------|---------------|-----------|-----------|-----------------|
| BusDeviceFunction         | Bus, Device, Function values                                                    | TRUE        | 118           |           |           |                 |
| ChipMdl                   | Chip Type/Revision                                                              | TRUE        | 116           |           |           |                 |
| DCBXSupport               | DCB XSupport                                                                    | TRUE        | 130           | 0         | 0         |                 |
| DeviceName                | This name should be consistent with the name displayed in the operating system. | TRUE        | 115           |           |           |                 |
| EnergyEfficientEthernet   | Energy efficient Ethernet (EEE)                                                 | TRUE        | 140           | 0         | 0         |                 |
| FCoEBootSupport           | FCoE Boot Support                                                               | TRUE        | 137           | 0         | 0         |                 |
| FCoEOffloadSupport        | FCoE offload support                                                            | TRUE        | 132           | 0         | 0         |                 |
| FeatureLicensingSupport   | Feature Licensing Support                                                       | TRUE        | 143           | 0         | 0         |                 |
| FIPMacAddr                | CNA FIP MAC Address                                                             | FALSE       | 124           |           |           | MAC Address     |
| FlexAddressing            | Flex Addressing                                                                 | TRUE        | 134           | 0         | 0         |                 |
| iSCSIBootSupport          | iSCSI Boot Support                                                              | TRUE        | 135           | 0         | 0         |                 |
| iSCSIOffloadSupport       | iSCSI offload support                                                           | TRUE        | 31            | 0         | 0         |                 |
| iSCSIDualIPVersionSupport | iSCSI Dual IP Version Support                                                   | TRUE        | 150           |           | 17        |                 |
| iScsiMacAddr              | iSCSI Offload MAC Address                                                       | TRUE        | 122           |           |           |                 |
| iSCSIOffloadSupport       | iSCSI Offload Support                                                           | TRUE        | 131           |           |           |                 |
| MacAddr                   | CNA MAC Address                                                                 | TRUE        | 120           |           |           |                 |

| AttributeName               | AttributeDescription             | IsRead Only | Display Order | MinLength | MaxLength | ValueExpression |
|-----------------------------|----------------------------------|-------------|---------------|-----------|-----------|-----------------|
| NicPartitioningSupport      | Nic Partitioning Support         | TRUE        | 141           | 0         | 0         |                 |
| NWManagementPassThrough     | NW Management Pass Through       | TRUE        | 139           | 0         | 0         |                 |
| OnChipThermalSensor         | On-Chip Thermal Sensor           | TRUE        | 133           | 0         | 0         |                 |
| OSBMCMManagementPassThrough | OS BMC Management Pass Through   | TRUE        | 149           | 0         | 0         |                 |
| PCIDeviceID                 | PCI Device ID                    | TRUE        | 117           |           |           |                 |
| PXEBootSupport              | PXE Boot Support                 | TRUE        | 138           | 0         | 0         |                 |
| RemotePHY                   | RemotePHY                        | TRUE        | 142           | 0         | 0         |                 |
| RXFlowControl               | RX Flow Control                  | TRUE        | 145           | 0         | 0         |                 |
| TOESupport                  | TOE Support                      | TRUE        | 136           | 0         | 0         |                 |
| TXBandwidthControlMaximum   | TX Bandwidth Control Maximum     | TRUE        | 147           | 0         | 0         |                 |
| TXBandwidthControlMinimum   | TX Bandwidth Control Minimum     | TRUE        | 148           | 0         | 0         |                 |
| TXFlowControl               | TX Flow Control                  | TRUE        | 146           | 0         | 0         |                 |
| VirtFIPMacAddr              | Virtual FIP Mac Address          | FALSE       | 125           | 0         | 0         | MAC Address     |
| VirtIscsiMacAddr            | Virtual iSCSI MAC Address        | FALSE       | 123           |           |           | MAC Address     |
| VirtMacAddr                 | CNA Part1 Virtual MAC Address    | FALSE       | 121           |           |           | MAC Address     |
| VirtWWN                     | CNA Virtual World Wide Name      | FALSE       | 127           |           |           |                 |
| VirtWWPN                    | CNA Virtual World Wide Part Name | FALSE       | 129           |           |           |                 |
| WWN                         | CNA World Wide Name              | TRUE        | 126           |           |           |                 |
| WWPN                        | CNA World Wide Part Name         | TRUE        | 128           |           |           |                 |

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 24.** DCIM\_NICInteger Main Configuration Page

| AttributeName | AttributeDisplayName                        | IsReadOnly | Display Order | LowerBound | UpperBound |
|---------------|---------------------------------------------|------------|---------------|------------|------------|
| BlnkLeds      | Blink LEDs for a duration up to 15 seconds. | FALSE      | 1201          | 0          | 15         |

### 7.7.3. NIC Partitioning Configuration

This section describes the attributes for NIC's Partitioning Configuration.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "NICPartitioningConfig".

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “NIC Partitioning Configuration”.

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 25.** DCIM\_NICEnumeration NIC Partitioning Configuration

| AttributeName               | AttributeDisplayName | IsRead Only | Display Order | PossibleValues                                                                                                                                | Description                                 |
|-----------------------------|----------------------|-------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| NicPartitioning             | NIC Partitioning     | FALSE       | 303           | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul>                                                           | NIC Partitioning                            |
| FlowControlSetting          | Flow Control Setting | FALSE       | 205           | <ul style="list-style-type: none"> <li>• “Auto”</li> <li>• “TxFlowControl”</li> <li>• “RxFlowControl”</li> <li>• “TxRxFlowControl”</li> </ul> | Flow Control used by the port in NPAR mode  |
| PartitionState[Partition:n] | Partition n          | TRUE        | 304           | <ul style="list-style-type: none"> <li>• “Enabled”</li> <li>• “Disabled”</li> </ul>                                                           | Current enablement state of the partition   |
| RDMANICModeOnPartition      | NIC + RDMA Mode      | FALSE       | 1803          | <ul style="list-style-type: none"> <li>• “Enabled”</li> <li>• “Disabled”</li> </ul>                                                           | Specify use of L2-Ethernet and RDMA traffic |

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 26.** DCIM\_NICInteger NIC Partitioning Configuration

| AttributeName                | AttributeDisplayName                           | IsReadOnly | Display Order | LowerBound | UpperBound |
|------------------------------|------------------------------------------------|------------|---------------|------------|------------|
| NumberPCIEFunctionsEnabled   | Number of Functions currently enabled per port | TRUE       | 307           | 1          |            |
| NumberPCIEFunctionsSupported | Number of PCI-e functions supported per port   | TRUE       | 306           | 1          |            |
| MgmtSVID                     | Management SVID                                | TRUE       | 822           | 0          | 4095       |

#### 7.7.4. Partition Configuration

This section describes the attributes for NIC’s Partition 1 Configuration. Partition attributes are also used to configure the physical port.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “ConfigureForm<n>” where <n> is the partition number.

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “Partition <n> Configuration” where <n> is the partition number.

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 27.** DCIM\_NICEnumeration Partition Configuration

| AttributeName    | AttributeDisplayName | IsReadOnly | DisplayOrder | PossibleValues                                                                      | Description           |
|------------------|----------------------|------------|--------------|-------------------------------------------------------------------------------------|-----------------------|
| FCoEOffloadMode  | FCoE Mode            | FALSE      | 804          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul> | Enable FCoE traffic   |
| iScsiOffloadMode | iSCSI Offload Mode   | FALSE      | 803          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul> | iSCSI offload traffic |
| NicMode          | NIC Mode             | FALSE      | 802          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul> | L2-Ethernet traffic   |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 28.** DCIM\_NICString Partition Configuration

| AttributeName     | Attribute Description             | IsReadOnly | DisplayOrder | MinLength | MaxLength |
|-------------------|-----------------------------------|------------|--------------|-----------|-----------|
| BusDeviceFunction | PCI Address                       | TRUE       | 806          | 3         | 8         |
| FIPMacAddr        | FIP MAC Address                   | TRUE       | 809          |           | 17        |
| IscsiMacAddr      | iSCSI Offload MAC Address         | TRUE       | 808          |           | 17        |
| MacAddr           | MAC Address                       | TRUE       | 807          |           | 17        |
| PCIDeviceID       | PCI Device ID                     | TRUE       | 805          |           | 4         |
| VirtFIPMacAddr    | Virtual FIP MAC Address           | FALSE      | 814          |           | 17        |
| VirtIscsiMacAddr  | Virtual iSCSI Offload MAC Address | FALSE      | 813          |           | 17        |
| VirtMacAddr       | Virtual MAC Address               | FALSE      | 812          |           | 17        |
| VirtWWN           | Virtual World Wide Node Name      | FALSE      | 815          |           | 23        |
| VirtWWPN          | Virtual World Wide Port Name      | FALSE      | 816          |           | 23        |
| WWN               | World Wide Node Name              | TRUE       | 810          |           | 23        |
| WWPN              | World Wide Port Name              | TRUE       | 811          |           | 23        |

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 29.** DCIM\_NICInteger Partition Configuration

| AttributeName      | AttributeDisplayName                                | IsReadOnly | DisplayOrder | LowerBound | UpperBound |
|--------------------|-----------------------------------------------------|------------|--------------|------------|------------|
| InstanceNumber     | Instance Number                                     | FALSE      | 818          | 1          |            |
| PortNumber         | Port Number                                         | FALSE      | 817          | 1          |            |
| NumberVFAdvertised | PCI Virtual Functions Advertised                    | FALSE      | 821          | 0          | 256        |
| NumberVFSupported  | Number of Virtual Functions Supported per partition | TRUE       | 820          | 1          |            |
| SVID               | SVID                                                | FALSE      | 819          | 0          | 4095       |

## 7.7.5. DCB Settings

This section describes the attributes for the NIC's DCB Settings.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "DCBSettings".

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "DCB Settings".

The following table describes the values for the DCIM\_NICEnumeration of this group

**Table 30.** DCIM\_NICEnumeration DCB Settings

| AttributeName                     | AttributeDisplayName                  | IsReadOnly | DisplayOrder | PossibleValues                                                                                                                       | Description               |
|-----------------------------------|---------------------------------------|------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| LocalDCBXWillingMode              | Local DCBX Willing Mode               | FALSE      | 1900         | <ul style="list-style-type: none"><li>• "Disabled"</li><li>• "Enabled"</li></ul>                                                     | Local DCBX Willing Mode   |
| PriorityGroup0ProtocolAssignment  | Priority Group 0 Protocol Assignment  | FALSE      | 1901         | <ul style="list-style-type: none"><li>• "AllOtherLAN"</li><li>• "iSCSI"</li><li>• "FCoE"</li><li>• "RoCE"</li><li>• "None"</li></ul> | Priority Group 0 Traffic  |
| PriorityGroup15ProtocolAssignment | Priority Group 15 Protocol Assignment | FALSE      | 1919         | <ul style="list-style-type: none"><li>• "AllOtherLAN"</li><li>• "iSCSI"</li><li>• "FCoE"</li><li>• "RoCE"</li><li>• "None"</li></ul> | Priority Group 15 Traffic |
| PriorityGroup1ProtocolAssignment  | Priority Group 1 Protocol Assignment  | FALSE      | 1903         | <ul style="list-style-type: none"><li>• "AllOtherLAN"</li><li>• "iSCSI"</li><li>• "FCoE"</li><li>• "RoCE"</li><li>• "None"</li></ul> | Priority Group 1 Traffic  |
| PriorityGroup2ProtocolAssignment  | Priority Group 2 Protocol Assignment  | FALSE      | 1905         | <ul style="list-style-type: none"><li>• "AllOtherLAN"</li><li>• "iSCSI"</li><li>• "FCoE"</li><li>• "RoCE"</li><li>• "None"</li></ul> | Priority Group 2 Traffic  |
| PriorityGroup3ProtocolAssignment  | Priority Group 3 Protocol Assignment  | FALSE      | 1907         | <ul style="list-style-type: none"><li>• "AllOtherLAN"</li><li>• "iSCSI"</li><li>• "FCoE"</li><li>• "RoCE"</li><li>• "None"</li></ul> | Priority Group 3 Traffic  |
| PriorityGroup4ProtocolAssignment  | Priority Group 4 Protocol Assignment  | FALSE      | 1909         | <ul style="list-style-type: none"><li>• "AllOtherLAN"</li><li>• "iSCSI"</li><li>• "FCoE"</li><li>• "RoCE"</li><li>• "None"</li></ul> | Priority Group 4 Traffic  |
| PriorityGroup5ProtocolAssignment  | Priority Group 5 Protocol Assignment  | FALSE      | 1911         | <ul style="list-style-type: none"><li>• "AllOtherLAN"</li><li>• "iSCSI"</li><li>• "FCoE"</li><li>• "RoCE"</li><li>• "None"</li></ul> | Priority Group 5 Traffic  |

| AttributeName                    | AttributeDisplayName                 | IsReadOnly | DisplayOrder | PossibleValues                                                                                                                             | Description              |
|----------------------------------|--------------------------------------|------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| PriorityGroup6ProtocolAssignment | Priority Group 6 Protocol Assignment | FALSE      | 1913         | <ul style="list-style-type: none"> <li>• "AllOtherLAN"</li> <li>• "iSCSI"</li> <li>• "FCoE"</li> <li>• "RoCE"</li> <li>• "None"</li> </ul> | Priority Group 6 Traffic |
| PriorityGroup7ProtocolAssignment | Priority Group 7 Protocol Assignment | FALSE      | 1915         | <ul style="list-style-type: none"> <li>• "AllOtherLAN"</li> <li>• "iSCSI"</li> <li>• "FCoE"</li> <li>• "RoCE"</li> <li>• "None"</li> </ul> | Priority Group 7 Traffic |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 31.** DCIM\_NICString DCB Settings

| AttributeName                 | AttributeDescription            | IsReadOnly | DisplayOrder | MinLength | MaxLength |
|-------------------------------|---------------------------------|------------|--------------|-----------|-----------|
| CongestionNotification        | Congestion Notification         | TRUE       | 405          | 0         | 0         |
| EnhancedTransmissionSelection | Enhanced Transmission Selection | TRUE       | 402          | 0         | 0         |
| PriorityFlowControl           | Priority Flow Control           | TRUE       | 403          | 0         | 0         |

The following table describes the values for the DCIM\_NICInteger of this group.

**Table 32.** DCIM\_NICInteger DCB Settings

| AttributeName                      | AttributeDisplayName                   | IsReadOnly | Display Order | Lower Bound | Upper Bound |
|------------------------------------|----------------------------------------|------------|---------------|-------------|-------------|
| PriorityGroup0BandwidthAllocation  | Priority Group 0 Bandwidth Allocation  | FALSE      | 1902          | 0           | 100         |
| PriorityGroup15BandwidthAllocation | Priority Group 15 Bandwidth Allocation | FALSE      | 1918          | 0           | 100         |
| PriorityGroup1BandwidthAllocation  | Priority Group 1 Bandwidth Allocation  | FALSE      | 1904          | 0           | 100         |
| PriorityGroup2BandwidthAllocation  | Priority Group 2 Bandwidth Allocation  | FALSE      | 1906          | 0           | 100         |
| PriorityGroup3BandwidthAllocation  | Priority Group 3 Bandwidth Allocation  | FALSE      | 1908          | 0           | 100         |
| PriorityGroup4BandwidthAllocation  | Priority Group 4 Bandwidth Allocation  | FALSE      | 1910          | 0           | 100         |
| PriorityGroup5BandwidthAllocation  | Priority Group 5 Bandwidth Allocation  | FALSE      | 1912          | 0           | 100         |
| PriorityGroup6BandwidthAllocation  | Priority Group 6 Bandwidth Allocation  | FALSE      | 1914          | 0           | 100         |
| PriorityGroup7BandwidthAllocation  | Priority Group 7 Bandwidth Allocation  | FALSE      | 1916          | 0           | 100         |

### 7.7.6. Device Level Configuration

This section describes the attributes for the NIC's Device Level Configuration.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "DeviceLevelConfig".

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "Device Level Configuration".

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 33.** DCIM\_NICEnumeration Device Level Configuration

| AttributeName                | AttributeDisplayName                  | IsRead Only | Display Order | PossibleValues                                                                                                         | Description                           |
|------------------------------|---------------------------------------|-------------|---------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| NetworkPartitioningMode      | Partitioning Mode                     | FALSE       | 314           | <ul style="list-style-type: none"> <li>• "SIP"</li> <li>• "SDP"</li> </ul>                                             | Partitioning Mode                     |
| NParEP                       | NParEP Mode                           | FALSE       | 206           | <ul style="list-style-type: none"> <li>• "Enabled"</li> <li>• "Disabled"</li> </ul>                                    | NPAR with 8 Partitions                |
| NPCP                         | Network Partitioning Control Protocol | FALSE       |               | <ul style="list-style-type: none"> <li>• "Enabled", "Disabled"</li> </ul>                                              | Network Partitioning Control Protocol |
| PartitionStateInterpretation | Partition State Interpretation        | TRUE        | 315           | <ul style="list-style-type: none"> <li>• "Fixed", "Variable"</li> </ul>                                                | Partition State Interpretation        |
| RDMAApplicationProfile       | RDMA Application Profile              | FALSE       | 1801          | <ul style="list-style-type: none"> <li>• "Storage"</li> <li>• "HPCC"</li> <li>• "RoCE1"</li> <li>• "RoCE2"</li> </ul>  | RDMA Application Profile              |
| RDMAProtocolSupport          | RDMA Protocol Support                 | TRUE        | 1800          | <ul style="list-style-type: none"> <li>• "iWARP"</li> <li>• "RoCE"</li> <li>• "iWARP+RoCE"</li> </ul>                  | RDMA Protocol Support                 |
| TotalNumberLogicalPorts      | Total Number of Logical Ports         | FALSE       | 208           | <ul style="list-style-type: none"> <li>• "2"</li> <li>• "8"</li> </ul>                                                 | Total Number of Logical Ports         |
| VFAllocBasis                 | VF Allocation Basis                   | TRUE        | 316           | <ul style="list-style-type: none"> <li>• "Port"</li> <li>• "Device"</li> </ul>                                         | VF Allocation Basis                   |
| VirtualizationMode           | Virtualization Mode                   | FALSE       | 110           | <ul style="list-style-type: none"> <li>• "NONE"</li> <li>• "NPAR"</li> <li>• "SRIOV"</li> <li>• "NPARSRIOV"</li> </ul> | Virtualization Mode                   |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 34.** DCIM\_NICString Device Level Configuration

| AttributeName                | AttributeDescription            | IsRead Only | DisplayOrder | MinLength | MaxLength |
|------------------------------|---------------------------------|-------------|--------------|-----------|-----------|
| EVBModesSupport              | EV B Modes Support              | TRUE        | 203          | 0         | 0         |
| ConfigureLogicalPortsSupport | Configure Logical Ports Support | TRUE        | 207          |           |           |
| RDMASupport                  | RDMA Support                    | TRUE        | 151          |           |           |
| SRIOVSupport                 | SR-IOV Support                  | TRUE        | 202          |           |           |

The following table describes the values for the DCIM\_NICInteger of this group

**Table 35.** DCIM\_NICInteger DeviceLevelConfig Settings

| AttributeName                | AttributeDisplayName                      | IsRead Only | Display Order | Lower Bound | Upper Bound |
|------------------------------|-------------------------------------------|-------------|---------------|-------------|-------------|
| MaxNumberVFSupportedByDevice | Number of PCI Virtual Functions Supported | TRUE        | 313           | 0           |             |
| NumberPCIFunctions           | Number of Physical Functions Supported    | TRUE        |               | 1           | 256         |
| Supported                    | Functions Supported                       |             |               |             |             |
| NumberVFSupported            | Number of Virtual Functions Supported     | TRUE        | 310           | 0           | 256         |
| VFAllocMult                  | VF Allocation Multiple                    | TRUE        | 317           | 1           | 255         |

### 7.7.7. FCoE Capabilities

This section describes the attributes for NIC's FCoE Capabilities.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "FCOECapabilities".

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "FCoE Capabilities".

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 36.** DCIM\_NICString FCoE Capabilities

| AttributeName             | AttributeDescription        | IsReadOnly | DisplayOrder | MinLength | MaxLength |
|---------------------------|-----------------------------|------------|--------------|-----------|-----------|
| AddressingMode            | Addressing Mode             | TRUE       | 603          | 0         | 0         |
| MTUReconfigurationSupport | MTU Reconfiguration Support | TRUE       | 602          | 0         | 0         |

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 37.** DCIM\_NICInteger FCoE Capabilities

| AttributeName                | AttributeDisplayName                                             | IsRead Only | Display Order | Lower Bound | Upper Bound |
|------------------------------|------------------------------------------------------------------|-------------|---------------|-------------|-------------|
| MaxFrameSize                 | Max Frame Size                                                   | TRUE        | 604           | 0           |             |
| MaxIOsPerSession             | Max Number of IOs per session supported                          | TRUE        | 605           |             |             |
| MaxNPIVPerPort               | Max NPIV WWN per port                                            | TRUE        | 608           |             |             |
| MaxNumberExchanges           | Max Number of exchanges                                          | TRUE        | 607           |             |             |
| MaxNumberLogins              | Max Number LOGINs per port                                       | TRUE        | 606           |             |             |
| MaxNumberOfFCTargets         | Max Number of FC Targets Supported                               | TRUE        | 609           |             |             |
| MaxNumberOutStandingCommands | Max Number of outstanding commands supported across all sessions | TRUE        | 610           |             |             |

## 7.7.8. FCoE Configuration

This section describes the attributes for NIC's FCoE Configuration.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "FCoEConfiguration".

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "FCoE Configuration".

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 38.** DCIM\_NICEnumeration FCoE Configuration

| AttributeName          | AttributeDisplayName | IsReadOnly | Display Order | PossibleValues                                                                                                           | Description                  |
|------------------------|----------------------|------------|---------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------|
| ConnectFirstFCoETarget | Connect              | FALSE      | 1604          | <ul style="list-style-type: none"><li>• "Disabled"</li><li>• "Enabled"</li></ul>                                         | Connect FCoE Boot Lun Target |
| MTUParams              | CNA MTU Setting      | FALSE      | 1603          | <ul style="list-style-type: none"><li>• "Global"</li><li>• "Per DCB"</li><li>• "Priority"</li><li>• "Per VLAN"</li></ul> | MTU Parameters               |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 39.** DCIM\_NICString FCoE Configuration

| AttributeName       | AttributeDescription        | IsReadOnly | DisplayOrder | MinLength | MaxLength |
|---------------------|-----------------------------|------------|--------------|-----------|-----------|
| FirstFCoEWWPNTarget | World Wide Port Name Target | FALSE      | 1605         |           |           |

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 40.** DCIM\_NICInteger FCoE Configuration

| AttributeName             | AttributeDisplayName | IsReadOnly | DisplayOrder | LowerBound | UpperBound |
|---------------------------|----------------------|------------|--------------|------------|------------|
| FirstFCoEBootTargetLUN    | Boot LUN             | FALSE      | 1606         |            |            |
| FirstFCoEFCFVLANID        | Virtual LAN ID       | FALSE      | 1607         |            |            |
| BootOrderFirstFCoETarget  | Boot Order           | FALSE      | 1610         |            |            |
| BootOrderFourthFCoETarget | Boot Order           | FALSE      | 1613         |            |            |
| BootOrderSecondFCoETarget | Boot Order           | FALSE      | 1611         |            |            |
| BootOrderThirdFCoETarget  | Boot Order           | FALSE      | 1612         |            |            |

## 7.7.9. Firmware Image Properties

This section describes the attributes for NIC's Firmware Image Properties.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "FrmwImgMenu".

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “Firmware Image Properties”.

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 41.** DCIM\_NICString Firmware Image Properties

| AttributeName         | AttributeDescription    | IsReadOnly | DisplayOrder | MinLength | MaxLength |
|-----------------------|-------------------------|------------|--------------|-----------|-----------|
| FamilyVersion         | Family Version          | TRUE       | 415          |           |           |
| ControllerBIOSVersion | Controller BIOS Version | TRUE       | 503          | 1         |           |
| EFIVersion            | EFI Version             | TRUE       | 504          | 1         |           |
| FamilyVersion         | Family Firmware Version | TRUE       | 502          | 5         | 11        |

### 7.7.10. Global Bandwidth Allocation

This section describes the attributes for NIC’s Partition 1 Configuration.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “GlobalBandwidthAllocation”.

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “Global Bandwidth Allocation”.

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 42.** DCIM\_NICInteger Global Bandwidth Allocation

| AttributeName | AttributeDisplayName                                                             | IsRead Only | Display Order | Lower Bound | Upper Bound |
|---------------|----------------------------------------------------------------------------------|-------------|---------------|-------------|-------------|
| MaxBandwidth  | Maximum bandwidth of current partition of this NIC or Converged Network Adapter. | FALSE       | 703           | 0           | 100         |
| MinBandwidth  | Minimum bandwidth of current partition of this NIC or Converged Network Adapter. | FALSE       | 702           | 0           | 100         |

### 7.7.11. iSCSI First Target Parameters

This section describes the attributes for NIC’s iSCSI First Target Parameters.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “IscsiFirstTgtParams”.

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “iSCSI First Target Parameters”.

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 43.** DCIM\_NICEnumeration iSCSI First Target Parameters

| AttributeName   | AttributeDisplayName               | IsReadOnly | DisplayOrder | PossibleValues                                                                                    | Description              |
|-----------------|------------------------------------|------------|--------------|---------------------------------------------------------------------------------------------------|--------------------------|
| ConnectFirstTgt | First target                       | FALSE      | 1302         | <ul style="list-style-type: none"> <li>• “Disabled”,</li> </ul>                                   | First Target             |
| FirstTgtIpVer   | Establishment for iSCSI.IP Version | FALSE      | 1309         | <ul style="list-style-type: none"> <li>• “Enabled”</li> <li>• “IPv4”</li> <li>• “IPv6”</li> </ul> | Establishment IP version |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 44.** DCIM\_NICString iSCSI First Target Parameters

| AttributeName     | AttributeDescription     | IsRead Only | Display Order | MinLength | MaxLength | ValueExpression |
|-------------------|--------------------------|-------------|---------------|-----------|-----------|-----------------|
| FirstTgtChapId    | CHAP ID.                 | FALSE       | 1307          |           | 128       | String          |
| FirstTgtIpAddress | IP Address               | FALSE       | 1303          | 2         | 39        | IP Address      |
| FirstTgtIscsiName | iSCSI first target name. | FALSE       | 1306          | 0         | 128       | String          |
| FirstTgtChapPwd   | CHAP Secret              | FALSE       | 1308          | 0         | 16        |                 |

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 45.** DCIM\_NICInteger iSCSI First Target Parameters

| AttributeName   | AttributeDisplayName | IsReadOnly | Display Order | LowerBound | UpperBound  |
|-----------------|----------------------|------------|---------------|------------|-------------|
| FirstTgtBootLun | Boot LUN             | FALSE      | 1305          | 0          | 1.84467E+19 |
| FirstTgtTcpPort | TCP Port             | FALSE      | 1306          |            | 223         |

### 7.7.12. iSCSI General Parameters

This section describes the attributes for NIC's iSCSI General Parameters.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “IscsiGenParams”.

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “iSCSI General Parameters”.

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 46.** DCIM\_NICEnumeration iSCSI General Parameters

| AttributeName  | AttributeDisplayName | IsRead Only | Display Order | PossibleValues                                                                      | Description               |
|----------------|----------------------|-------------|---------------|-------------------------------------------------------------------------------------|---------------------------|
| FirstHDDTarget | Target as First HDD  | FALSE       | 1114          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul> | iSCSI target as first HDD |
| ChapAuthEnable | CHAP Authentication  | FALSE       | 1105          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul> | CHAP Authentication       |

| AttributeName  | AttributeDisplayName       | IsRead Only | Display Order | PossibleValues                                                                                        | Description                                                                   |
|----------------|----------------------------|-------------|---------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| ChapMutualAuth | CHAP Mutual Authentication | FALSE       | 1106          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> <li>• “NONE”</li> </ul> | CHAP Mutual Authentication                                                    |
| IpAutoConfig   | IP Auto-Configuration      | FALSE       | 1103          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul>                   | TCP/IP Configuration via Stateful or Stateless AutoConfiguration              |
| IpVer          | IP Version                 | FALSE       | 1109          | <ul style="list-style-type: none"> <li>• “IPv4”</li> <li>• “IPv6”</li> <li>• “None”</li> </ul>        | IP Version support. Modifying this parameter will reset all IP-related fields |
| IscsiViaDHCP   | iSCSI parameters via DHCP  | FALSE       | 1104          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul>                   | iSCSI parameters via DHCP                                                     |
| TcpIpViaDHCP   | TCP/IP Parameters via DHCP | FALSE       | 1102          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul>                   | TCP/IP configuration via DHCP                                                 |
| TcpTimestmp    | TCP Timestamp              | FALSE       | 1107          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul>                   | TCP Timestamp                                                                 |
| IscsiTgtBoot   | Boot To Target             | FALSE       | 1110          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul>                   | Boot To Target                                                                |
| IscsiVLanMode  | Virtual LAN Mode           | FALSE       | 1115          | <ul style="list-style-type: none"> <li>• “Enabled”</li> <li>• “Disabled”</li> </ul>                   | Virtual LAN mode                                                              |
| WinHbaBootMode | HBA Boot Mode              | FALSE       | 1111          | <ul style="list-style-type: none"> <li>• “Enabled”</li> <li>• “Disable”</li> </ul>                    | HBA boot mode                                                                 |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 47.** DCIM\_NICString iSCSI General Parameters

| AttributeName | AttributeDescription | IsRead Only | Display Order | MinLength | MaxLength | ValueExpression |
|---------------|----------------------|-------------|---------------|-----------|-----------|-----------------|
| DhcpVendId    | DHCP Vendor ID       | FALSE       | 1112          | 0         | 255       |                 |

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 48.** DCIM\_NICInteger iSCSI General Parameters

| AttributeName   | AttributeDisplayName | IsReadOnly | DisplayOrder | LowerBound | UpperBound |
|-----------------|----------------------|------------|--------------|------------|------------|
| LinkUpDelayTime | Link Up Delay Time   | FALSE      | 1113         | 0          | 255        |
| LunBusyRetryCnt | LUN Busy Retry Count | TRUE       | 1108         | 0          | 60         |
| IscsiVLanId     | Virtual LAN ID       | FALSE      | 1116         | 1          | 4094       |

### 7.7.13. iSCSI Initiator Parameters

This section describes the attributes for NIC's iSCSI Initiator Parameters.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “IscsiInitiatorParams”.

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be “iSCSI Initiator Parameters”.

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 49.** DCIM\_NICString iSCSI Initiator Parameters

| AttributeName              | AttributeDescription                                                                                                   | IsRead Only | Display Order | MinLength | MaxLength | ValueExpression |
|----------------------------|------------------------------------------------------------------------------------------------------------------------|-------------|---------------|-----------|-----------|-----------------|
| IscsiInitiatorChapId       | iSCSI initiator CHAP ID.                                                                                               | FALSE       | 1217          | 0         | 128       | String          |
| IscsiInitiatorChapPwd      | Initiator CHAP Secret (12 to 16 characters in length).Note: this attribute can either take a value of '0' or 12 to 16. | FALSE       | 1218          | 0         | 16        |                 |
| IscsiInitiatorGateway      | iSCSI initiator default gateway IP address.                                                                            | FALSE       | 1207          | 2         | 39        | IP Address      |
| IscsiInitiatorIpAddr       | iSCSI initiator IP address.                                                                                            | FALSE       | 1202          | 2         | 39        | IP Address      |
| IscsiInitiatorIpv4Addr     | IPv4 address of the iSCSI initiator                                                                                    | FALSE       | 1203          | 7         | 15        | IP Address      |
| IscsiInitiatorIpv4Gateway  | IPv4 IP address of the default Gateway used by the iSCSI initiator                                                     | FALSE       | 1208          | 7         | 15        | IP Address      |
| IscsiInitiatorIpv4PrimDns  | IPv4 IP address of the Primary DNS                                                                                     | FALSE       | 1211          | 7         | 15        | IP Address      |
| IscsiInitiatorIpv4SecDns   | IPv4 IP address of the Secondary DNS                                                                                   | FALSE       | 1214          | 7         | 15        | IP Address      |
| IscsiInitiatorIpv6Addr     | IPv6 IP address of the iSCSI initiator                                                                                 | FALSE       | 1204          | 2         | 39        | IP Address      |
| IscsiInitiatorIpv6Gateway  | IPv6 IP address of the default Gateway                                                                                 | FALSE       | 1209          | 2         | 39        | IP Address      |
| IscsiInitiatorIpv6PrimDns  | IPv6 IP address of the Primary DNS                                                                                     | FALSE       | 1212          | 2         | 39        | IP Address      |
| IscsiInitiatorIpv6SecDns   | IPv6 IP address of the Secondary DNS                                                                                   | FALSE       | 1215          | 2         | 39        | IP Address      |
| IscsiInitiatorName         | iSCSI initiator name.                                                                                                  | FALSE       | 1216          | 0         | 128       | String          |
| IscsiInitiatorPrimDns      | iSCSI initiator primary DNS IP address.                                                                                | FALSE       | 1210          | 2         | 39        | IP Address      |
| IscsiInitiatorSecDns       | iSCSI initiator secondary DNS IP address.                                                                              | FALSE       | 1213          | 2         | 39        | IP Address      |
| IscsiInitiatorSubnet       | iSCSI initiator subnet mask.                                                                                           | FALSE       | 1205          | 2         | 39        | IP Address      |
| IscsiInitiatorSubnetPrefix | Initiator IP Subnet Mask Prefix                                                                                        | FALSE       | 1206          |           |           |                 |

| AttributeName | AttributeDescription | IsRead Only | Display Order | MinLength | MaxLength | ValueExpression |
|---------------|----------------------|-------------|---------------|-----------|-----------|-----------------|
| IscsiMacAddr  | iSCSI MAC Address    | FALSE       | 810           |           |           | MAC Address     |

#### 7.7.14. iSCSI Secondary Device Parameters

This section describes the attributes for NIC's iSCSI Secondary Device Parameters. The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "IscsiSecondaryDeviceParams". The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "iSCSI Secondary Device Parameters". The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 50.** DCIM\_NICEnumeration iSCSI Secondary Device Parameters

| AttributeName   | AttributeDisplayName                                         | IsRead Only | Display Order | PossibleValues                                                                      | Description                                                 |
|-----------------|--------------------------------------------------------------|-------------|---------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------|
| UseIndTgtName   | Use independent target name when multipath I/O is enabled.   | FALSE       | 1504          | <ul style="list-style-type: none"> <li>• "Disabled"</li> <li>• "Enabled"</li> </ul> | Use Independent Target Name when multipath I/O is enabled   |
| UseIndTgtPortal | Use independent target portal when multipath I/O is enabled. | FALSE       | 1503          | <ul style="list-style-type: none"> <li>• "Disabled"</li> <li>• "Enabled"</li> </ul> | Use Independent Target Portal when multipath I/O is enabled |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 51.** DCIM\_NICString iSCSI Secondary Device Parameters

| AttributeName          | AttributeDescription          | IsRead Only | Display Order | MinLength | MaxLength | ValueExpression |
|------------------------|-------------------------------|-------------|---------------|-----------|-----------|-----------------|
| SecondaryDeviceMacAddr | Secondary device MAC address. | FALSE       | 1502          | 17        | 17        | MAC address     |

#### 7.7.15. iSCSI Second Target Parameters

This section describes the attributes for NIC's iSCSI Second Target Parameters.

The GroupID property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "IscsiSecondTgtParams".

The GroupDisplayName property for the DCIM\_NICEnumeration, DCIM\_NICString, and DCIM\_NICInteger shall be "iSCSI Second Target Parameters".

The following table describes the values for the DCIM\_NICEnumeration of this group. Each of the column headings correspond to a property name on the DCIM\_NICEnumeration class. The Description column contains the description for each of the attribute. Each of the rows contain the values for the properties listed in the column headings. The PossibleValues property is an array property represented in the table as comma delimited list.

**Table 52.** DCIM\_NICEnumeration iSCSI Second Target Parameters

| AttributeName    | AttributeDisplayName                  | IsRead Only | Display Order | PossibleValues                                                                      | Description                                                              |
|------------------|---------------------------------------|-------------|---------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| ConnectSecondTgt | First target establishment for iSCSI. | FALSE       | 1402          | <ul style="list-style-type: none"> <li>• “Disabled”</li> <li>• “Enabled”</li> </ul> | Second Target establishment                                              |
| SecondTgtIpVer   | IP Version                            | FALSE       | 1409          | <ul style="list-style-type: none"> <li>• “Enabled”</li> <li>• “Disabled”</li> </ul> | IPv4 or IPv6 network addressing will be used for the second iSCSI target |

The following table describes the values for the DCIM\_NICString of this group. Each of the column headings correspond to a property name on the DCIM\_NICString class. The Value Expression column contains constraints on string value formulation. Each of the rows contain the values for the properties listed in the column headings.

**Table 53.** DCIM\_NICString iSCSI Second Target Parameters

| AttributeName      | AttributeDescription            | IsRead Only | Display Order | MinLength | MaxLength | ValueExpression |
|--------------------|---------------------------------|-------------|---------------|-----------|-----------|-----------------|
| SecondTgtChapId    | iSCSI second target CHAP ID.    | FALSE       | 1407          | 0         | 32        | String          |
| SecondTgtChapPwd   | CHAP Secret                     | FALSE       | 1408          |           |           | N/A             |
| SecondTgtIpAddress | iSCSI second target IP address. | FALSE       | 1403          | 2         | 39        | IP address      |
| SecondTgtIscsiName | iSCSI second target name.       | FALSE       | 1406          | 0         | 223       | String          |

The following table describes the values for the DCIM\_NICInteger of this group. Each of the column headings correspond to a property name on the DCIM\_NICInteger class. Each of the rows contain the values for the properties listed in the column headings.

**Table 54.** DCIM\_NICInteger iSCSI Second Target Parameters

| AttributeName    | AttributeDisplayName                     | IsRead Only | Display Order | Lower Bound | Upper Bound |
|------------------|------------------------------------------|-------------|---------------|-------------|-------------|
| SecondTgtBootLun | Second Target Boot LUN number (0..255)   | FALSE       | 1405          | 0           | 255         |
| SecondTgtTcpPort | Second Target TCP Port number (1..65535) | FALSE       | 1404          | 1           | 65535       |

## 7.8. DCIM\_NICService

This section describes the implementation for the DCIM\_NICService class. This class shall be instantiated in the Implementation Namespace:root/dcim.

The DCIM\_LCElementConformsToProfile association(s)' ManagedElement property shall reference the DCIM\_NICService instance(s).

### 7.8.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICService? cimnamespace=root/dcim”

The key properties shall be the SystemCreationClassName, CreationClassName, SystemName, and Name.

The instance Resource URI for DCIM\_NICService instance shall be: “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM\_NICService? cimnamespace=root/dcim+SystemCreationClassName=DCIM\_ComputerSystem+CreationClassName=DCIM\_NICService+ SystemName=DCIM:ComputerSystem+Name= DCIM:NICService”

### 7.8.2. Operations

The following table lists the implemented operations on DCIM\_NICService.

**Table 55.** DCIM\_NICService – Operations

| Operation Name | Requirements | Required Input |
|----------------|--------------|----------------|
| Get            | Mandatory    | Instance URI   |
| Enumerate      | Mandatory    | Class URI      |
| Invoke         | Mandatory    | Instance URI   |

### 7.8.3. Properties

The following table details the implemented properties for DCIM\_NICService instance representing a system in a system. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

**Table 56.** Class: DCIM\_NICService

| Properties and Methods  | Requirement | Description                                        |
|-------------------------|-------------|----------------------------------------------------|
| SystemCreationClassName | Mandatory   | The property value shall be “DCIM_ComputerSystem”. |
| CreationClassName       | Mandatory   | The property value shall be “DCIM_NICService”.     |
| ElementName             | Mandatory   | The property value shall be “NIC Service”          |
| SystemName              | Mandatory   | The property value shall be “DCIM:ComputerSystem”. |
| Name                    | Mandatory   | The property value shall be “DCIM:NICService”      |

## 7.9. Simple NIC Profile Registration

This section describes the implementation for the DCIM\_LCRegisteredProfile class. This class shall be instantiated in the Interop Namespace: root/interop.

The DCIM\_ElementConformsToProfile association(s)’ ConformantStandard property shall reference the DCIM\_LCRegisteredProfile instance.

### 7.9.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dmtf.org/wbem/wscim/1/cim- schema/2/CIM\_RegisteredProfile? cimnamespace=root/interop”

The key property shall be the InstanceID property.

The instance Resource URI shall be: “http://schemas.dell.com/wbem/wscim/1/cim- schema/2/DCIM\_LCRegisteredProfile? cimnamespace=root/interop+InstanceID= DCIM:SimpleNIC:1.0.0”

### 7.9.2. Operations

The following table lists the implemented operations on DCIM\_NICView.

**Table 57.** DCIM\_LCRegisteredProfile - Operations

| Operation Name | Requirements | Required Input |
|----------------|--------------|----------------|
| Get            | Mandatory    | Instance URI   |
| Enumerate      | Mandatory    | Class URI      |

### 7.9.3. Properties

The following table details the implemented properties for DCIM\_LCRegisteredProfile instance representing Simple NIC Profile implementation. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

**Table 58.** Class: DCIM\_LCRegisteredProfile

| Properties                    | Requirement | Type   | Description                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InstanceID                    | Mandatory   | String | "DCIM:SimpleNIC:1.0.0"                                                                                                                                                                                                                                                                                                                                                    |
| RegisteredName                | Mandatory   | String | This property shall have a value of "Simple NIC".                                                                                                                                                                                                                                                                                                                         |
| RegisteredVersion             | Mandatory   | String | This property shall have a value of "1.4.0".                                                                                                                                                                                                                                                                                                                              |
| RegisteredOrganization        | Mandatory   | String | This property shall have a value of 1(Other).                                                                                                                                                                                                                                                                                                                             |
| OtherRegisteredOrganization   | Mandatory   | Uint16 | This property shall match "DCIM"                                                                                                                                                                                                                                                                                                                                          |
| AdvertisedTypes[]             | Mandatory   | Uint16 | This property array shall contain [1(Other), 1 (Other)].                                                                                                                                                                                                                                                                                                                  |
| AdvertiseTypeDescriptions[]   | Mandatory   | String | This property array shall contain ["WS-Identify", "Interop Namespace"].                                                                                                                                                                                                                                                                                                   |
| ProfileRequireLicense[]       | Mandatory   | String | This property array shall describe the required licenses for this profile. If no license is required for the profile, the property shall have value NULL.                                                                                                                                                                                                                 |
| ProfileRequireLicenseStatus[] | Mandatory   | String | <p>This property array shall contain the status for the corresponding license in the same element index of the ProfileRequireLicense array property. Each array element shall contain:</p> <ul style="list-style-type: none"> <li>• "LICENSED"</li> <li>• "NOT_LICENSED"</li> </ul> <p>If no license is required for the profile, the property shall have value NULL.</p> |

## 8. Methods

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

### 8.1. DCIM\_NICService.SetAttribute( )

The SetAttribute( ) method is used to set or change the value of a NIC attribute. Invocation of the SetAttribute( ) method shall change the value of the DCIM\_NICAttribute.CurrentValue or DCIM\_NICAttribute.PendingValue property to the value specified by the AttributeValue parameter if the DCIM\_NICAttribute.IsReadOnly property is FALSE. Invocation of this method when the DCIM\_NICAttribute.IsReadOnly property is TRUE shall result in no change to the value of the DCIM\_NICAttribute.CurrentValue property. The results of changing this value is described with the SetResult parameter.

Return code values for the SetAttribute( ) method are specified in Table 59 and parameters are specified in Table 60. Invoking the SetAttribute( ) method multiple times can result in the earlier requests being overwritten or lost.

**Table 59.** DCIM\_NICService.SetAttribute( ) Method: Return Code Values

| Value | Description             |
|-------|-------------------------|
| 0     | Completed with no error |
| 2     | Failed                  |

**Table 60.** DCIM\_NICService.SetAttribute( ) Method: Parameters

| Qualifiers | Name   | Type   | Description/Values |
|------------|--------|--------|--------------------|
| IN, REQ    | Target | String | FQDD of the NIC    |

| Qualifiers | Name               | Type   | Description/Values                                                                                                                                                                                         |
|------------|--------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IN, REQ    | AttributeName[]    | String | Shall be formatted in the following way:<br><GroupID property value>#<AttributeName property value><br>Example: "MyGroup#MyAttribute"                                                                      |
| IN, REQ    | AttributeValue[]   | String | Shall contain the desired attribute value. If the value is valid, the CurrentValue or PendingValue property of the specified attribute will be modified.                                                   |
| OUT        | SetResult[]        | String | Returns: <ul style="list-style-type: none"> <li>• "Set CurrentValue property" when the attributes current value is set.</li> <li>• "Set PendingValue" when the attributes pending value is set.</li> </ul> |
| OUT        | RebootRequired[]   | String | Returns: <ul style="list-style-type: none"> <li>• "Yes" if reboot is required.</li> <li>• "No" if reboot is not required.</li> </ul>                                                                       |
| OUT        | MessageID[]        | String | Error MessageID                                                                                                                                                                                            |
| OUT        | Message[]          | String | Error Message                                                                                                                                                                                              |
| OUT        | MessageArguments[] | String | Error MessageArguments                                                                                                                                                                                     |

**Table 61.** DCIM\_NICService.SetAttribute( ) Method: Standard Messages

| MessageID (OUT parameter) | Message                                                                                                                                 | MessageArguments[] |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| NIC007                    | Configuration job already created, cannot create another config job on specified target until existing job is completed or is cancelled |                    |
| NIC008                    | No pending data is present to create a Configuration job                                                                                |                    |
| NIC009                    | System Services is currently in use, cannot create Configuration job                                                                    |                    |
| NIC010                    | System Services is disabled, cannot create Configuration job                                                                            |                    |
| NIC011                    | Configuration job already created, pending data cannot be deleted                                                                       |                    |
| NIC012                    | No pending data present to delete                                                                                                       |                    |
| NIC013                    | Invalid AttributeName %s                                                                                                                | AttributeName      |
| NIC014                    | Invalid AttributeValue for AttributeName %s                                                                                             | AttributeName      |
| NIC015                    | AttributeValue cannot be changed for ReadOnly AttributeName %s                                                                          | AttributeName      |
| NIC016                    | AttributeValue cannot be changed for Disabled AttributeName %s                                                                          | AttributeName      |
| NIC017                    | Unable to delete vFlash pending one- time boot configuration                                                                            |                    |
| LC062                     | An instance of Export or Import System Configuration is already running.                                                                |                    |

## 8.2. DCIM\_NICService.SetAttributes( )

The SetAttributes( ) method is used to set or change the values of a group of attributes. Successful SetAttributes( ) method invocation shall change the values of the CurrentValue or

PendingValue properties of the DCIM\_NICAttribute instance that correspond to the names specified by the AttributeName parameter, with the values specified by the AttributeValue parameter.

If the respective DCIM\_NICAttribute.IsReadOnly property is TRUE, the method invocation shall fail and shall result in no change to the corresponding value of the DCIM\_NICAttribute.CurrentValue property.

Return code values for the SetAttributes( ) method are specified in Table 62 and parameters are specified in Table 63.

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

**Table 62.** DCIM\_NICService.SetAttributes( ) Method: Return Code Values

| Value | Description             |
|-------|-------------------------|
| 0     | Completed with no error |
| 2     | Failed                  |

**Table 63.** DCIM\_NICService.SetAttributes( ) Method: Parameters

| Qualifiers | Name               | Type   | Description/Values                                                                                                                                                                                              |
|------------|--------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IN, REQ    | Target             | String | FQDD of the NIC                                                                                                                                                                                                 |
| IN, REQ    | AttributeName[]    | String | An array of values where each value shall be formatted in the following way:<br><GroupID property value>#<AttributeName property value>.<br>Example: "MyGroup#MyAttribute"                                      |
| IN, REQ    | AttributeValue[]   | String | Shall contain the desired attribute values. If the value is valid, the CurrentValue or PendingValue property of the specified attribute will be modified.                                                       |
| OUT        | SetResult[]        | String | Returns: <ul style="list-style-type: none"> <li>"Set CurrentValue property" when the attributes current value is set.</li> <li>"Set PendingValue property" when the attributes pending value is set.</li> </ul> |
| OUT        | RebootRequired[]   | String | Returns: <ul style="list-style-type: none"> <li>"Yes" if reboot is required.</li> <li>"No" if reboot is not required.</li> </ul>                                                                                |
| OUT        | MessageID[]        | String | Error MessageID                                                                                                                                                                                                 |
| OUT        | Message[]          | String | Error Message                                                                                                                                                                                                   |
| OUT        | MessageArguments[] | String | Error MessageArguments                                                                                                                                                                                          |

**Table 64.** DCIM\_NICService.SetAttribute( ) Method: Standard Messages

| MessageID (OUT parameter) | Message                                                        | MessageArguments[] |
|---------------------------|----------------------------------------------------------------|--------------------|
| NIC001                    | The command was successful                                     |                    |
| NIC002                    | Resource allocation failure                                    |                    |
| NIC003                    | Missing required parameter                                     |                    |
| NIC004                    | Invalid parameter value for <parameter name>                   | Parameter          |
| NIC005                    | Mismatch in AttributeName and AttributeValue count             |                    |
| NIC013                    | Invalid AttributeName %s                                       | AttributeName      |
| NIC014                    | Invalid AttributeValue for AttributeName %s                    | AttributeName      |
| NIC015                    | AttributeValue cannot be changed for ReadOnly AttributeName %s | AttributeName      |

| MessageID (OUT parameter) | Message                                                                  | MessageArguments[] |
|---------------------------|--------------------------------------------------------------------------|--------------------|
| NIC016                    | AttributeValue cannot be changed for Disabled AttributeName %s           | AttributeName      |
| LC062                     | An instance of Export or Import System Configuration is already running. |                    |

### 8.3. DCIM\_NICService.CreateTargetedConfigJob( )

The CreateTargetedConfigJob( ) method is used to apply the pending values created by the SetAttribute and SetAttributes methods. The successful execution of this method creates a job for application of pending attribute values.

CreateTargetedConfigJob method supports the following optional input parameters

1. RebootJobType: When provided in the input parameters, creates a specific reboot job to “PowerCycle”, “Graceful Reboot without forced shutdown”, or “Graceful Reboot with forced shutdown”. This parameter only creates the RebootJob and does not schedule it.
2. ScheduledStartTime: When provided in the input parameters, schedules the “configuration job” and the optional “reboot job” at the specified start time. A special value of “TIME\_NOW” schedules the job(s) immediately.
3. UntilTime: This parameter has a dependency on “ScheduledStartTime”, together “ScheduledStartTime” and “UntilTime” define a time window for scheduling the job(s). Once scheduled, jobs will be executed within the time window.

If CreateTargetedConfigJob method is executed without the three optional parameters discussed above, then configuration job is created but not scheduled. However, this configuration job can be scheduled later using the DCIM\_JobService.SetupJobQueue ( ) method from the “Job Control Profile”. DCIM\_JobService.SetupJobQueue ( ) can be executed to schedule several configuration jobs including the reboot job. Refer to “Job Control Profile” for more details.

Return code values for the CreateTargetedConfigJob( ) method are specified in Table 65, and parameters are specified in Table 66.

Subsequent calls to CreateTargetedConfigJob after the first CreateTargetedConfigJob will result in error until the first job is completed.

**Table 65.** DCIM\_NICService.CreateTargetedConfigJob( ) Method: Return Code Values

| Value             | Description              |
|-------------------|--------------------------|
| 2                 | Failed                   |
| 4096 <sup>1</sup> | Job Created <sup>1</sup> |

**Table 66.** DCIM\_NICService.CreateTargetedConfigJob( ) Method: Method parameters

| Qualifiers | Name               | Type               | Description/Values                                                         |
|------------|--------------------|--------------------|----------------------------------------------------------------------------|
| OUT        | Job <sup>1</sup>   | CIM_ConcreteJobREF | Reference to the newly created pending value application job. <sup>1</sup> |
| OUT        | MessageID          | String             | Error MessageID                                                            |
| OUT        | Message            | String             | Error Message                                                              |
| OUT        | MessageArguments[] | String             | Error MessageArguments                                                     |

NOTE: 1 – If return code is 4096 (Job Created), the newly created job will not execute if the LC core services are not running (DCIM\_LCEnumeration with AttributeName equal to “LifecycleControllerState” has the CurrentValue property equal to “Disabled”).

**Table 67.** DCIM\_NICService.CreateTargetedConfigJob( ) Method: Standard Messages

| MessageID (OUT parameter) | Message                                                                                                                                 | MessageArguments[] |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| NIC001                    | The command was successful                                                                                                              |                    |
| NIC002                    | Resource allocation failure                                                                                                             |                    |
| NIC003                    | Missing required parameter                                                                                                              |                    |
| NIC004                    | Invalid parameter value for <parameter name>                                                                                            | Parameter          |
| NIC007                    | Configuration job already created, cannot create another config job on specified target until existing job is completed or is cancelled |                    |
| NIC008                    | No pending data is present to create a Configuration job                                                                                |                    |
| NIC009                    | System Services is currently in use, cannot create Configuration job                                                                    |                    |
| NIC010                    | System Services is disabled, cannot create Configuration job                                                                            |                    |
| NIC011                    | Configuration job already created, pending data cannot be deleted                                                                       |                    |
| NIC012                    | No pending data present to delete                                                                                                       |                    |
| NIC017                    | Unable to delete vFlash pending one- time boot configuration                                                                            |                    |
| LC062                     | An instance of Export or Import System Configuration is already running.                                                                |                    |

## 8.4. DCIM\_NICService.DeletePendingConfiguration( )

The DeletePendingConfiguration( ) method is used to cancel the pending values created by the SetAttribute and SetAttributes methods. The DeletePendingConfiguration( ) method cancels the pending configuration changes made before the configuration job is created with CreateTargetedConfigJob(). This method only operates on the pending changes prior to CreateTargetedConfigJob() being called. After the configuration job is created, the pending changes can only be canceled by calling DeleteJobQueue() method in the Job Control profile.

Return code values for the DeletePendingConfiguration( ) method are specified in Table 68 and parameters are specified in Table 69.

**Table 68.** DCIM\_NICService.DeletePendingConfiguration( ) Method: Return Code Values

| Value | Description |
|-------|-------------|
| 0     | Success     |
| 2     | Failed      |

**Table 69.** DCIM\_NICService.DeletePendingConfiguration( ) Method: Parameters

| Qualifiers | Name               | Type   | Description/Values     |
|------------|--------------------|--------|------------------------|
| IN, REQ    | Target             | String | FQDD of the NIC        |
| OUT        | MessageID          | String | Error MessageID        |
| OUT        | Message            | String | Error Message          |
| OUT        | MessageArguments[] | String | Error MessageArguments |

**Table 70.** DCIM\_NICService.DeletePendingConfiguration( ) Method: Standard Messages

| MessageID (OUT parameter) | Message                    | MessageArguments[] |
|---------------------------|----------------------------|--------------------|
| NIC001                    | The command was successful |                    |

| MessageID (OUT parameter) | Message                                                                  | MessageArguments[] |
|---------------------------|--------------------------------------------------------------------------|--------------------|
| NIC002                    | Resource allocation failure                                              |                    |
| NIC003                    | Missing required parameter                                               |                    |
| NIC004                    | Invalid parameter value for <parameter name>                             | Parameter          |
| NIC011                    | Configuration job already created, pending data cannot be deleted        |                    |
| NIC012                    | No pending data present to delete                                        |                    |
| NIC017                    | Unable to delete vFlash pending one-time boot configuration              |                    |
| LC062                     | An instance of Export or Import System Configuration is already running. |                    |

## 9. Use Cases

See Lifecycle Controller (LC) Integration Best Practices Guide.

## 10. CIM Elements

No additional details specified.

## 11. Privilege and License Requirement

The following table describes the privilege and license requirements for the listed operations. For the detailed explanation of the privileges and licenses, refer to the Dell WSMAN Licenses and Privileges specification.

**Table 71.** Privilege and License Requirements

| Class and Method                                 | Operation      | User Privilege Required | License Required          |
|--------------------------------------------------|----------------|-------------------------|---------------------------|
| DCIM_NICEnumeration                              | ENUMERATE, GET | Login                   | LM_REMOTE_CONFIGURATION   |
| DCIM_NICInteger                                  | ENUMERATE, GET | Login                   | LM_REMOTE_CONFIGURATION   |
| DCIM_NICString                                   | ENUMERATE, GET | Login                   | LM_REMOTE_CONFIGURATION   |
| DCIM_NICView                                     | ENUMERATE, GET | Login                   | LM_REMOTE_ASSET_INVENTORY |
| DCIM_NICStatistics                               | ENUMERATE, GET | Login                   | LM_DEVICE_MONITORING      |
| DCIM_NICCapabilities                             | ENUMERATE, GET | Login                   | LM_REMOTE_ASSET_INVENTORY |
| DCIM_NICService                                  | ENUMERATE, GET | Login                   | None.                     |
| DCIM_NICService.SetAttribute()                   | INVOKE         | Login, Server Control   | LM_REMOTE_CONFIGURATION   |
| DCIM_NICService.SetAttributes()                  | INVOKE         | Login, Server Control   | LM_REMOTE_CONFIGURATION   |
| DCIM_NICService.CreateTargetedConfigurationJob() | INVOKE         | Login, Server Control   | LM_REMOTE_CONFIGURATION   |
| DCIM_NICService.DeletePendingConfiguration()     | INVOKE         | Login, Server Control   | LM_REMOTE_CONFIGURATION   |
| DCIM_LCRegisteredProfile                         | ENUMERATE, GET | Login                   | None.                     |
| DCIM_LCElementConformsToProfile                  | ENUMERATE, GET | Login                   | None.                     |

## 12. Change log

| Version | Date        | Description                                |
|---------|-------------|--------------------------------------------|
| 4.0.0   | 20-Jun-2017 | Added VEB property in DCIM_NICCapabilities |