

Simple NIC Profile

Document Number: DCIM1032

Document Type: Specification

Document Status: Published

Document Language: E

Date: 05/22/2015

Version: 1.4.2



32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66

THIS PROFILE IS FOR INFORMATIONAL PURPOSES ONLY, AND MAY CONTAIN TYPOGRAPHICAL ERRORS AND TECHNICAL INACCURACIES. THE CONTENT IS PROVIDED AS IS, WITHOUT EXPRESS OR IMPLIED WARRANTIES OF ANY KIND. ABSENT A SEPARATE AGREEMENT BETWEEN YOU AND DELL™ WITH REGARD TO FEEDBACK TO DELL ON THIS PROFILE SPECIFICATION, YOU AGREE ANY FEEDBACK YOU PROVIDE TO DELL REGARDING THIS PROFILE SPECIFICATION WILL BE OWNED AND CAN BE FREELY USED BY DELL.

© 2013-2014 Dell Inc. All rights reserved. Reproduction in any manner whatsoever without the express written permission of Dell, Inc. is strictly forbidden. For more information, contact Dell.

Dell and the *DELL* logo are trademarks of Dell Inc. *Microsoft* and *WinRM* are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell disclaims proprietary interest in the marks and names of others.

CONTENTS

67			
68	1	Scope	7
69	2	Normative References	7
70	3	Terms and Definitions	8
71	4	Symbols and Abbreviated Terms	9
72	5	Synopsis	10
73	6	Description	10
74	6.1	Fully Qualified Device Descriptor (FQDD)	11
75	6.2	CNA Representation	12
76	6.3	Changing personalities on a partition	13
77	6.4	Enabling or disabling a partition	13
78	6.5	Changing bandwidth on a partition	13
79	6.6	Virtual Address attributes	14
80	6.7	Behavior Differences between Broadcom and QLogic CNAs	14
81	7	Implementation Description	17
82	7.1	NIC View – DCIM_NICView	18
83	7.2	NIC Capabilities – DCIM_NICCapabilities	21
84	7.3	NIC Statistics – DCIM_NICStatistics	23
85	7.4	DCIM_NICEnumeration	25
86	7.5	DCIM_NICString	27
87	7.6	DCIM_NICInteger	29
88	7.7	NIC Attributes	31
89	7.8	DCIM_NICService	47
90	7.9	Simple NIC Profile Registration	48
91	8	Methods	49
92	8.1	DCIM_NICService.SetAttribute()	49
93	8.2	DCIM_NICService.SetAttributes()	51
94	8.3	DCIM_NICService.CreateTargetedConfigJob()	53
95	8.4	DCIM_NICService.DeletePendingConfiguration()	54
96	9	Use Cases	55
97	10	CIM Elements	55
98	11	Privilege and License Requirement	55
99		ANNEX A (informative) Change Log	57
100			

101 **Figures**

102	Figure 1 – Simple NIC Profile: Class Diagram	11
103		

104 **Tables**

105	Table 1 – Related Profiles	10
106	Table 7 – CIM Elements: Simple NIC Profile	17
107	Table 8 – DCIM_NICView - Operations	18
108	Table 9 – DCIM_NICView - Properties	18
109	Table 10 – DCIM_NICCapabilities - Operations	21
110	Table 11 – DCIM_NICCapabilities - Properties	21
111	Table 12 – DCIM_NICStatistics - Operations	24
112	Table 13 – DCIM_NICStatistics - Properties.....	24
113	Table 14 – DCIM_NICEnumeration - Operations	26
114	Table 15 – Class: DCIM_NICEnumeration	27
115	Table 16 – DCIM_NICString - Operations	28
116	Table 17 – Class: DCIM_NICString	29
117	Table 18 – DCIM_NICInteger - Operations	30
118	Table 19 – Class: DCIM_NICInteger	31
119	Table 20 – DCIM_NICEnumeration NIC Configuration	32
120	Table 21 – DCIM_NICInteger NIC Configuration	32
121	Table 22 – DCIM_NICEnumeration Main Configuration Page	33
122	Table 23 – DCIM_NICString Main Configuration Page	33
123	Table 24 – DCIM_NICInteger Main Configuration Page	35
124	Table 25 – DCIM_NICEnumeration NIC Partitioning Configuration	36
125	Table 26 – DCIM_NICInteger NIC Partitioning Configuration	36
126	Table 27 – DCIM_NICEnumeration Partition Configuration	37
127	Table 28 – DCIM_NICString Partition Configuration	37
128	Table 29 – DCIM_NICInteger Partition Configuration	37
129	Table 30 – DCIM_NICString DCB Settings	37
130	Table 31 – DCIM_NICEnumeration Device Level Configuration	38
131	Table 32 – DCIM_NICString Device Level Configuration	38
132	Table 33 – DCIM_NICString FCoE Capabilities	39
133	Table 34 – DCIM_NICInteger FCoE Capabilities.....	39
134	Table 35 – DCIM_NICEnumeration FCoE Configuration	40
135	Table 36 – DCIM_NICString FCoE Configuration.....	40
136	Table 37 – DCIM_NICInteger FCoE Configuration	40
137	Table 38 – DCIM_NICString Firmware Image Properties	41
138	Table 39 – DCIM_NICInteger Global Bandwidth Allocation	41
139	Table 40 – DCIM_NICEnumeration iSCSI First Target Parameters	41
140	Table 41 – DCIM_NICString iSCSI First Target Parameters	42
141	Table 42 – DCIM_NICInteger iSCSI First Target Parameters	42
142	Table 43 – DCIM_NICEnumeration iSCSI General Parameters	42
143	Table 44 – DCIM_NICString iSCSI General Parameters	43
144	Table 45 – DCIM_NICInteger iSCSI General Parameters	43
145	Table 46 – DCIM_NICString iSCSI Initiator Parameters	44
146	Table 47 – DCIM_NICEnumeration iSCSI Secondary Device Parameters	45

147 Table 48 – DCIM_NICString iSCSI Secondary Device Parameters 46

148 Table 49 – DCIM_NICEnumeration iSCSI Second Target Parameters 46

149 Table 50 – DCIM_NICString iSCSI Second Target Parameters 47

150 Table 51 – DCIM_NICInteger iSCSI Second Target Parameters 47

151 Table 52 – DCIM_NICService – Operations 47

152 Table 53 – Class: DCIM_NICService 48

153 Table 54 – DCIM_LCRegisteredProfile - Operations 48

154 Table 55 – Class: DCIM_LCRegisteredProfile 49

155 Table 56 – DCIM_NICService.SetAttribute() Method: Return Code Values 50

156 Table 57 – DCIM_NICService.SetAttribute() Method: Parameters 50

157 Table 58 – DCIM_NICService.SetAttribute() Method: Standard Messages 50

158 Table 59 – DCIM_NICService.SetAttributes() Method: Return Code Values 51

159 Table 60 – DCIM_NICService.SetAttributes() Method: Parameters 52

160 Table 61 – DCIM_NICService.SetAttribute() Method: Standard Messages 52

161 Table 62 – DCIM_NICService.CreateTargetedConfigJob() Method: Return Code Values 53

162 Table 63 – DCIM_NICService.CreateTargetedConfigJob() Method: Parameters 53

163 Table 64 – DCIM_NICService.CreateTargetedConfigJob() Method: Standard Messages 54

164 Table 65 – DCIM_NICService.DeletePendingConfiguration() Method: Return Code Values 55

165 Table 66 – DCIM_NICService.DeletePendingConfiguration() Method: Parameters 55

166 Table 67 – DCIM_NICService.DeletePendingConfiguration() Method: Standard Messages 55

167 Table 68 – Privilege and License Requirements 55

168

Simple NIC Profile

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
 - *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:
 - DCIM_NICService.mof
 - DCIM_NICView.mof
 - DCIM_NICEnumeration.mof
 - DCIM_NICInteger.mof
 - DCIM_NICString.mof
 - DCIM_LCElementConformsToProfile.mof
 - 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.

237 **3.13**
238 **Interop Namespace: root/interop**
239 Interop Namespace: root/interop is where instrumentation instantiates classes to advertise its capabilities
240 for client discovery.

241 **3.14**
242 **Implementation Namespace: root/dcim**

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

245 **3.15**
246 **ENUMERATE** – Refers to WS-MAN **ENUMERATE** operation as described in Section 8.2 of
247 DSP0226_V1.1 and Section 9.1 of DSP0227_V1.0

248 **3.16**
249 **GET** – Refers to WS-MAN **GET** operation as defined in Section 7.3 of DSP00226_V1.1 and Section
250 7.1 of DSP0227_V1.0

251 **4 Symbols and Abbreviated Terms**

252 **4.1**
253 **CIM** - Common Information Model

254 **4.2**
255 **iDRAC** - Integrated Dell Remote Access Controller – management controller for blades and monolithic
256 servers

257 **4.3**
258 **CMC** - Chassis Management Controller – management controller for the modular chassis

259 **4.4**
260 **iSCSI** - Internet Small Computer System Interface, an Internet Protocol (IP)-based storage networking
261 standard for linking data storage facilities.

262 **4.5**
263 **WBEM** - Web-Based Enterprise Management

264 **4.6**
265 **SRIOV** - Singel Root I/O Virtualization

266 **4.7**
267 **NPIV** - N_Port ID Virtualization

268 **4.8**
269 **DCB** - Data Center Bridging

270 **4.9**
271 **FCF** - FCoE Forwarders

272
273

5 Synopsis

Profile Name: Simple NIC

Version: 1.4.01.4.0

Organization: Dell Inc.

CIM Schema Version: 2.26 Experimental

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.

10
1.4.01.4.0

Version

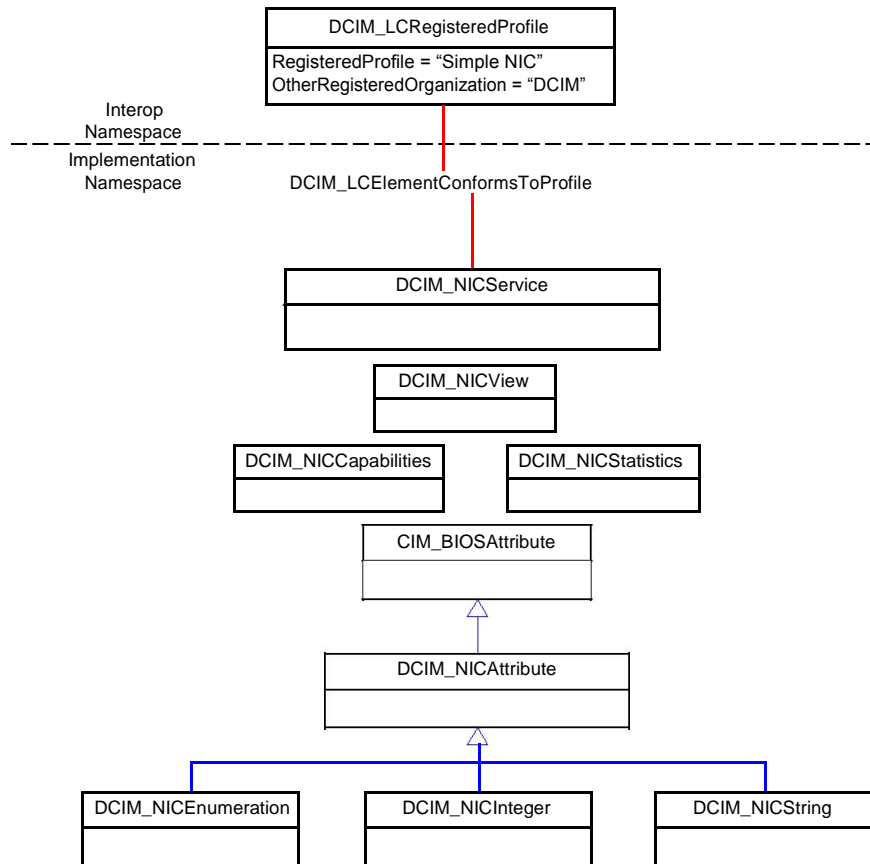


Figure 1 – Simple NIC Profile: Class Diagram

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.

320

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

321

322

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

323

324 6.2 CNA Representation

325 For CNA devices, an instance of DCIM_NICView is created for each partition of a port. Each partition can
 326 have the following personalities:

- 327 • NIC
- 328 • Fibre Channel Over Ethernet (FCoE)
- 329 • Internet Small Computer System Interface Over Ethernet (iSOE).

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

332 The following DCIM_NICView properties represent the CNA behavior. See Table 4 – CNA Properties in
 333 DCIM_NICView.

334

335

336

337

338

12
1.4.01.4.0

Version

339

340

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.

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

343 6.3 Changing personalities on a partition

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

346

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.

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

349 6.4 Enabling or disabling a partition

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

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

356 6.5 Changing bandwidth on a partition

357 Use the MaxBandwidth and MinBandwidth attributes to change the bandwidth range of a partition.
 358 MinBandwidth is the relative bandwidth allocated to a partition with respect to the entire port. Make sure
 359 that the sum of all MinBandwidth should not be greater than 100% and MinBandwidth should be less than
 360 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:

M710HD Dual Port 10Gig 57712 NDC,

QLogic:

Qlogic QMD8252-K Dual Port 10GbE NDC

Qlogic QME8242 10GbE Embedded Mezz Card

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

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.

14
1.4.01.4.0

Version

Difference	Broadcom	QLogic
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															
MinBandwith	<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><tr><th>Port Partition</th><th>Current Minbandwidth</th><th>New Minbandwidth</th></tr><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></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 (Seethe following table) does not exist anymore. Therefore, do not disable NicPartitioning attribute and set partition specific attributes together, and then invoke the CreateTargetedConfigJob() method.</p> <table><tr><th>Partition specific attributes</th></tr><tr><td>MinBandwidth</td></tr><tr><td>MaxBandwidth</td></tr><tr><td>NicMode</td></tr><tr><td>iScsiOffloadMode</td></tr><tr><td>FCoEOffloadMode</td></tr><tr><td>VirtMacAddr</td></tr><tr><td>VirtIscsiMacAddr</td></tr><tr><td>VirtFIPMacAddr</td></tr><tr><td>VirtWWN</td></tr><tr><td>VirtWWPN</td></tr><tr><td>VirtualizationMode</td></tr></table>	Partition specific attributes	MinBandwidth	MaxBandwidth	NicMode	iScsiOffloadMode	FCoEOffloadMode	VirtMacAddr	VirtIscsiMacAddr	VirtFIPMacAddr	VirtWWN	VirtWWPN	VirtualizationMode	Not applicable as NicPartitioning cannot be disabled in QLogic.			
Partition specific attributes																	
MinBandwidth																	
MaxBandwidth																	
NicMode																	
iScsiOffloadMode																	
FCoEOffloadMode																	
VirtMacAddr																	
VirtIscsiMacAddr																	
VirtFIPMacAddr																	
VirtWWN																	
VirtWWPN																	
VirtualizationMode																	

16
1.4.01.4.0

Version

Difference	Broadcom	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 <i>Implementation Namespace: root/dcim</i> . See sections 7.8
DCIM_NICView	Mandatory	The class shall be implemented in the <i>Implementation Namespace: root/dcim</i> . See section 7.1
DCIM_NICCapabilities	Mandatory	The class shall be implemented in the <i>Implementation Namespace: root/dcim</i> . See section 7.2
DCIM_NICStatistics	Mandatory	The class shall be implemented in the <i>Implementation Namespace: root/dcim</i> . See section 7.3
DCIM_NICEnumeration	Mandatory	The class shall be implemented in the <i>Implementation Namespace: root/dcim</i> . See section 7.4
DCIM_NICInteger	Mandatory	The class shall be implemented in the <i>Implementation Namespace: root/dcim</i> . See section 7.6
DCIM_NICString	Mandatory	The class shall be implemented in the <i>Implementation Namespace: root/dcim</i> . See section 7.5
DCIM_LCElementConformsToProfile	Mandatory	The class shall be implemented in the <i>Implementation Namespace: root/dcim</i> .
DCIM_LCElementConformsToProfile	Mandatory	The class shall be implemented in the <i>Interop Namespace: root/interop</i> .
DCIM_LCRegisteredProfile	Mandatory	The class shall be implemented in the <i>Interop Namespace: root/interop</i> . 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 value.
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 Off/On/Unknown.
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.
DataBusWidth	Mandatory	String	DataBusWidth of the PCI.
DeviceNumber	Mandatory	uint8	The device number assigned to this PCI device for this bus.
EFIVersion	Mandatory	String	EFI Version.
FCoEOffloadMode	Mandatory	String	Indicates if the partition has FC personality enabled.

Property Name	Requirement	Type	Requirement and description
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	String	Indicates whether the Link is full or half duplex.
LinkSpeed	Mandatory	String	Indicates the link speed.
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.
NicMode	Mandatory	String	Indicates if the partition has NIC personality enabled.
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	string	Indicates if receive flow control is Off or On.
SlotLength	Mandatory	string	Slot length of the PCI.
SlotType	Mandatory	string	Slot type of the PCI.
TransmitFlowControl	Mandatory	string	Indicates if the transmit flow control is Off or On.
VendorName	Mandatory	string	Indicates the NIC Vendor Name.
WWPN	Mandatory	String	Indicates the Worldwide Port Name of this port.
iScsiOffloadMode	Mandatory	String	Indicates if the partition has iSCSI personality enabled.
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

20
1.4.01.4.0

Version

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
BPESupport	Mandatory	uint8	The property shall represent the BPE support for a NIC port.
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.
EVBModesSupport	Mandatory	uint8	The property shall represent EVB - Edge Virtual Bridging modes 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.

Property Name	Requirement	Type	Requirement and description
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.
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.

22
1.4.01.4.0

Version

Property Name	Requirement	Type	Requirement and description
RXFlowControl	Mandatory	uint8	The property shall represent RX flow control support for a NIC port.
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.
VEBVEPAMultiChannel	Mandatory	uint8	The property shall represent VEB-VEPA (Virtual Ethernet Bridging and Virtual Ethernet Port Aggregator) multi channel for a NIC port.
VEBVEPASingleChannel	Mandatory	uint8	The property shall represent VEB-VEPA (Virtual Ethernet Bridging and Virtual Ethernet Port Aggregator) - single channel support for a NIC port.
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.
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

457 The following table lists the implemented operations on DCIM_NICStatistics.

Version 1.4.0

23

Table 12 – DCIM_NICStatistics - Operations

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

459 7.3.3 Properties

460 The following table details the implemented properties for DCIM_NICStatistics instance representing a
 461 NIC in a system. The “Requirements” column shall denote whether the property is implemented (for
 462 requirement definitions, see section 3). The “Additional Requirements” column shall denote either
 463 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
FCOEPktTxCount	Mandatory	uint64	Counts the number of good (FCS valid) packets transmitted that
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.
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.

Property Name	Requirement	Type	Requirement and description
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.
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.
TxMulticast	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
LanFCSRxErrors	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.

RDMATxTotalWritePkts	Optional	uint64	This property specifies the total number of RDMA Write packets transmitted.
RDMATotalProtocolErrors	Optional	uint32	This property specifies the total number of RDMA Protocol errors
RDMATotalProtectionErrors	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.SetAttributte()	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.

26
1.4.01.4.0

Version

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.
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 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](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.

28
1.4.01.4.0

Version

Table 17 – Class: DCIM_NICString

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 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 Tables in section 7.7. 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 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. The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties.

511 7.6 DCIM_NICInteger

512 This section describes the implementation for the DCIM_NICInteger class.

513 Each DCIM_NICInteger instance is logically associated to a DCIM_NICView instance, where the
514 DCIM_NICInteger.FQDD property is equal to the FQDD property on the DCIM_NICView instance.

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

516 7.6.1 Resource URIs for WinRM®

517 The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-
518 schema/2/DCIM_NICInteger?__cimnamespace=root/dcim”

519 The key property shall be the InstanceID.

520 The instance Resource URI for DCIM_NICInteger instance shall be:

521 <http://schemas.dell.com/wbem/wscim/1/cim->
522 [schema/2/DCIM_NICInteger?__cimnamespace=root/dcim+InstanceID= <FQDD>:<AttributeName>](http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_NICInteger?__cimnamespace=root/dcim+InstanceID= <FQDD>:<AttributeName>)

523 where <FQDD> is the FQDD property value, and <AttributeName> is the AttributeName property value.

524 7.6.2 Operations

525 The following table lists the implemented operations on DCIM_NICInteger.

526 **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

527

528 7.6.3 Properties

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

30
1.4.01.4.0

Version

Table 19 – Class: DCIM_NICInteger

Properties	Type	Requirement	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 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).
LowerBound	uint64	Mandatory	The property value shall be the value in the “LowerBound” column in the corresponding row in Tables in section 7.7. 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. The omission or NULL shall denote that no known constraint exists on the CurrentValue and PendingValue properties.

535 7.7 NIC Attributes

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

537 7.7.1 NIC Configuration

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

539 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
540 “NICConfig”.

541 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
542 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	Display Order	PossibleValues	Description
BootStrapType	Boot Strap Type	FALSE	911	"AutoDetect", "BBS", "Int 18h", "Int 19h"	Boot strap method to boot the OS
HideSetupPrompt	Hide Setup Prompt	FALSE	909	"Enabled", "Disabled"	Display or hide the legacy option ROM setup prompt during POST
LegacyBootProto ¹	Legacy Boot Protocol	FALSE	902	"PXE", "iSCSI" ¹ , "iSCSIPrimary" ¹ , "iSCSISecondary" ¹ , "FCoE", "NONE"	Non-UEFI Boot Protocol
LnkSpeed	Configure link speed for Managed Boot Agent.	FALSE	907	"AutoNeg", "10Mbps Half", "10Mbps Full", "100Mbps Half", "100Mbps Full"	Link Speed
VlanMode	Virtual LAN mode for Managed Boot Agent.	FALSE	905	"Disabled", "Enabled"	Virtual LAN mode
WakeOnLan	Preboot Wake on LAN (WOL) for Managed Boot Agent..	FALSE	903	"Disabled", "Enabled"	Preboot Wake on LAN
WakeOnLanLnkSpeed	WOL Link Speed**	FALSE	904	"AutoNeg", "10Mbps Half", "10Mbps Full", "100Mbps Half", "100Mbps Full"	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	Display Order	LowerBound	UpperBound
VlanId	Virtual LAN ID	FALSE	906	0	4095
BannerMessageTimeout	Banner Message Timeout	FALSE	912	0	14

561 **7.7.2 Main Configuration**

562 This section describes the attributes for NIC's Main Configuration.

563 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
564 "VndrConfigPage".

565 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
566 DCIM_NICInteger shall be "Main Configuration Page".

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

572 **Table 22 – DCIM_NICEnumeration Main Configuration Page**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
FCoEOffloadMode	Enable/Disable FC personality on the partition.	FALSE	113	"Disabled", "Enabled"	FCoE Offload Mode
iScsiOffloadMode	iSCSI personality on the partition.	FALSE	112	"Disabled", "Enabled"	iSCSI Offload Mode
LinkStatus	Link Status	TRUE	119	"Connected", "Disconnected"	Link Status
NicMode	Enable/Disable NIC personality on the partition.	FALSE	111	"Disabled", "Enabled"	NIC Mode
LogicalPortEnable	Logical Port Enable	FALSE	151	"Enabled", "Disabled"	Enables or disables the port from appearing as a physical function Use Port for L2-Ethernet and RDMA traffic
RDMANicModeOnPort	NIC + RDMA mode	FALSE	1802	"Enabled", "Disabled"	

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

577 **Table 23 – DCIM_NICString Main Configuration Page**

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
---------------	-----------------------	------------	---------------	-----------	-----------	------------------

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
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			
IscsiMacAddr	iSCSI Offload MAC Address	TRUE	122		17	
iSCSIOffloadSupport	iSCSI Offload Support	TRUE	131			
MacAddr	CNA MAC Address	TRUE	120			
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	

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
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			

578 The following table describes the values for the DCIM_NICInteger of this group. Each of the column
579 headings correspond to a property name on the DCIM_NICInteger class. Each of the rows contain the
580 values for the properties listed in the column headings.

581

Table 24 – DCIM_NICInteger Main Configuration Page

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	LowerBound	UpperBound
---------------	----------------------	------------	---------------	------------	------------

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	IsReadOnly	Display Order	PossibleValues	Description
NicPartitioning	NIC Partitioning	FALSE	303	"Disabled", "Enabled"	NIC Partitioning
FlowControlSetting	Flow Control Setting	FALSE	205	"Auto", "TxFlowControl", "RxFlowControl", "TxRxFlowControl"	Flow Control used by the port in NPAR mode
PartitionState[Partition:n]	Partition n	TRUE	304	"Enabled", "Disabled"	Current enablement state of the partition
RDMANICModeOnPartition	NIC + RDMA Mode	FALSE	1803	"Enabled", "Disabled"	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

600 to configure the physical port.

601 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
602 "ConfigureForm<n>" where <n> is the partition number.

603 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
604 DCIM_NICInteger shall be "Partition <n> Configuration" where <n> is the partition number.

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

610 **Table 27 – DCIM_NICenumeration Partition Configuration**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
FCoEOffloadMode	FCoE Mode	FALSE	804	"Disabled", "Enabled"	Enable FCoE traffic
iScsiOffloadMode	iSCSI Offload Mode	FALSE	803	"Disabled", "Enabled"	iSCSI offload traffic
NicMode	NIC Mode	FALSE	802	"Disabled", "Enabled"	L2-Ethernet traffic

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

615 **Table 28 – DCIM_NICString Partition Configuration**

AttributeName	Attribute Description	IsReadOnly	Display Order	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

616 The following table describes the values for the DCIM_NICInteger of this group. Each of the column
617 headings correspond to a property name on the DCIM_NICInteger class. Each of the rows contain the
618 values for the properties listed in the column headings.

619 **Table 29 – DCIM_NICInteger Partition Configuration**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	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

620 7.7.5 DCB Settings

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

622 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
623 "DCBSettings".

624 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
625 DCIM_NICInteger shall be "DCB Settings".

The following table describes the values for the DCIM_NICEnumeration of this group

Table 27 – DCIM_NICEnumeration DCB Settings

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
LocalDCBXWillingMode	Local DCBX Willing Mode	FALSE	1900	"Disabled", "Enabled"	Local DCBX Willing Mode
PriorityGroup0ProtocolAssignment	Priority Group 0 Protocol Assignment	FALSE	1901	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 0 Traffic
PriorityGroup15ProtocolAssignment	Priority Group 15 Protocol Assignment	FALSE	1919	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 15 Traffic
PriorityGroup1ProtocolAssignment	Priority Group 1 Protocol Assignment	FALSE	1903	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 1 Traffic
PriorityGroup2ProtocolAssignment	Priority Group 2 Protocol Assignment	FALSE	1905	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 2 Traffic
PriorityGroup3ProtocolAssignment	Priority Group 3 Protocol Assignment	FALSE	1907	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 3 Traffic
PriorityGroup4ProtocolAssignment	Priority Group 4 Protocol Assignment	FALSE	1909	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 4 Traffic
PriorityGroup5ProtocolAssignment	Priority Group 5 Protocol Assignment	FALSE	1911	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 5 Traffic
PriorityGroup6ProtocolAssignment	Priority Group 6 Protocol Assignment	FALSE	1913	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 6 Traffic
PriorityGroup7ProtocolAssignment	Priority Group 7 Protocol Assignment	FALSE	1915	"AllOtherLAN", "iSCSI", "FCoE", "RoCE", "None"	Priority Group 7 Traffic

626
627 The following table describes the values for the DCIM_NICString of this group. Each of the column
628 headings correspond to a property name on the DCIM_NICString class. The Value Expression column
629 contains constraints on string value formulation. Each of the rows contain the values for the properties
630 listed in the column headings.

Table 30 – DCIM_NICString DCB Settings

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength
---------------	-----------------------	------------	---------------	-----------	-----------

AttributeName	Attribute Description	IsReadOnly	Display Order	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

619

Table 29 – DCIM_NICInteger DCB Settings

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	LowerBound	UpperBound
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

631 7.7.6 Device Level Configuration

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

633 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
634 "DeviceLevelConfig".

635 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
636 DCIM_NICInteger shall be "Device Level Configuration".

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

642

Table 31 – DCIM_NICEnumeration Device Level Configuration

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
---------------	----------------------	------------	---------------	----------------	-------------

NetworkPartitioningMode	Partitioning Mode	FALSE	314		Partitioning Mode
NParEP	NParEP Mode	FALSE	206	"SIP", "SDP" "Enabled", "Disabled"	NPar with 8 Partitions
NPCP	Network Partitioning Control Protocol	FALSE		"Enabled", "Disabled"	Network Partitioning Control Protocol
PartitionStateInterpretation	Partition State Interpretation	TRUE	315	"Fixed", "Variable", "Storage", "HPCC", "RoCE1", "RoCE2", "iWARP", "RoCE", "iWARP+RoCE"	Partition State Interpretation
RDMAApplicationProfile	RDMA Application Profile	FALSE	1801		RDMA Application Profile
RDMAProtocolSupport	RDMA Protocol Support	TRUE	1800		RDMA Protocol Support
TotalNumberLogicalPorts	Total Number of Logical Ports	FALSE	208	"2", "8"	Total Number of Logical Ports
VFAllocBasis	VF Allocation Basis	TRUE	316	"Port", "Device", "NONE", "NPAR", "SRIOV", "NPARSRIOV"	VF Allocation Basis
VirtualizationMode	Virtualization Mode	FALSE	110		Virtualization Mode

643

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

648

Table 32 – DCIM_NICString Device Level Configuration

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength
EVBModesSupport	EVB Modes Support	TRUE	203	0	0
ConfigureLogicalPortsSupport	Configure Logical Ports Support	TRUE	207		
RDMASupport	RDMA Support	TRUE	151		
SRIOVSupport	SR-IOV Support	TRUE	202		

649

The following table describes the values for the DCIM_NICInteger of this group

619

Table 29 – DCIM_NICInteger DeviceLevelConfig Settings

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	LowerBound	UpperBound
MaxNumberVFSupportedByDevice	Number of PCI Virtual Functions Supported	TRUE	313	0	
NumberPCIFunctionsSupported	Number of Physical Functions Supported	TRUE		1	256
NumberVFSupported	Number of Virtual Functions Supported	TRUE	310	0	256

VFAllocMult	VF Allocation Multiple	TRUE	317	1	255	
-------------	------------------------	------	-----	---	-----	--

38
1.4.01.4.0

Version

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 33 – DCIM_NICString FCoE Capabilities

AttributeName	Attribute Description	IsReadOnly	Display Order	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 34 – DCIM_NICInteger FCoE Capabilities

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	LowerBound	UpperBound
MaxFrameSize	Max Frame Size	TRUE	604	0	
MaxIOsPerSession	Max Number of IOs per session supported	TRUE	605		
MaxNPVPerPort	Max NPV 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".

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

676 **Table 35 – DCIM_NICEnumeration FCoE Configuration**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
ConnectFirstFCoETarget	Connect	FALSE	1604	“Disabled”, “Enabled”	Connect FCoE Boot Lun Target
MTUParams	CNA MTU Setting	FALSE	1603	“Global”, “Per DCB”, “Priority”, “Per VLAN”	MTU Parameters

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

681 **Table 36 – DCIM_NICString FCoE Configuration**

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength
FirstFCoEWWPNTarget	World Wide Port Name Target	FALSE	1605		

682 The following table describes the values for the DCIM_NICInteger of this group. Each of the column
683 headings correspond to a property name on the DCIM_NICInteger class. Each of the rows contain the
684 values for the properties listed in the column headings.

685 **Table 37 – DCIM_NICInteger FCoE Configuration**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	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		

686

687 **7.7.9 Firmware Image Properties**

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

689 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
690 “FrmwImgMenu”.

691 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
692 DCIM_NICInteger shall be “Firmware Image Properties”.

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

40	Version
1.4.01.4.0	

697

Table 38 – DCIM_NICString Firmware Image Properties

AttributeName	Attribute Description	IsReadOnly	Display Order	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

698 7.7.10 Global Bandwidth Allocation

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

700 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
701 "GlobalBandwidthAllocation".

702 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
703 DCIM_NICInteger shall be "Global Bandwidth Allocation".

704 The following table describes the values for the DCIM_NICInteger of this group. Each of the column
705 headings correspond to a property name on the DCIM_NICInteger class. Each of the rows contain the
706 values for the properties listed in the column headings.

707 Table 39 – DCIM_NICInteger Global Bandwidth Allocation

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	LowerBound	UpperBound
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

708 7.7.11 iSCSI First Target Parameters

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

710 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
711 "IscsiFirstTgtParams".

712 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
713 DCIM_NICInteger shall be "iSCSI First Target Parameters".

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

719 Table 40 – DCIM_NICEnumeration iSCSI First Target Parameters

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
ConnectFirstTgt	First target establishment for iSCSI.	FALSE	1302	"Disabled", "Enabled"	First Target establishment

FirstTgtIpVer	IP Version	FALSE	1309	"IPV4", "IPV6"	IP version
---------------	------------	-------	------	----------------	------------

720 The following table describes the values for the DCIM_NICString of this group. Each of the column
721 headings correspond to a property name on the DCIM_NICString class. The Value Expression column

722 contains constraints on string value formulation. Each of the rows contain the values for the properties
 723 listed in the column headings.

724 **Table 41 – DCIM_NICString iSCSI First Target Parameters**

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
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	

725 The following table describes the values for the DCIM_NICInteger of this group. Each of the column
 726 headings correspond to a property name on the DCIM_NICInteger class. Each of the rows contain the
 727 values for the properties listed in the column headings.

728 **Table 42 – 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

729 7.7.12 iSCSI General Parameters

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

731 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
 732 "IscsiGenParams".

733 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
 734 DCIM_NICInteger shall be "iSCSI General Parameters".

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

740 **Table 43 – DCIM_NICEnumeration iSCSI General Parameters**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
---------------	----------------------	------------	---------------	----------------	-------------

42
1.4.01.4.0

Version

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
FirstHDDTarget	Target as First HDD	FALSE	1114	"Disabled", "Enabled"	iSCSI target as first HDD
ChapAuthEnable	CHAP Authentication	FALSE	1105	"Disabled", "Enabled"	CHAP Authentication
ChapMutualAuth	CHAP Mutual Authentication	FALSE	1106	"Disabled", "Enabled", "NONE"	CHAP Mutual Authentication
IpAutoConfig	IP Auto-Configuration	FALSE	1103	"Disabled", "Enabled"	TCP/IP Configuration via Stateful or Stateless AutoConfiguration
IpVer	IP Version	FALSE	1109	"IPv4", "IPv6", "None"	IP Version support. Modifying this parameter will reset all IP-related fields
IscsiViaDHCP	iSCSI parameters via DHCP	FALSE	1104	"Disabled", "Enabled"	iSCSI parameters via DHCP
TcpIpViaDHCP	TCP/IP Parameters via DHCP	FALSE	1102	"Disabled", "Enabled"	TCP/IP configuration via DHCP
TcpTimestmp	TCP Timestamp	FALSE	1107	"Disabled", "Enabled"	TCP Timestamp
IscsiTgtBoot	Boot To Target	FALSE	1110	"Disabled", "Enabled"	Boot To Target
IscsiVLanMode	Virtual LAN Mode	FALSE	1115	"Disabled", "Enabled"	Virtual LAN mode
WinHbaBootMode	HBA Boot Mode	FALSE	1111	"Disable"	HBA boot mode

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

745 **Table 44 – DCIM_NICString iSCSI General Parameters**

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
DhcpVendId	DHCP Vendor ID	FALSE	1112	0	255	

746 The following table describes the values for the DCIM_NICInteger of this group. Each of the column
747 headings correspond to a property name on the DCIM_NICInteger class. Each of the rows contain the
748 values for the properties listed in the column headings.

749 **Table 45 – DCIM_NICInteger iSCSI General Parameters**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	LowerBound	UpperBound
---------------	----------------------	------------	------------------	------------	------------

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	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 46 – DCIM_NICString iSCSI Initiator Parameters

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
---------------	-----------------------	------------	---------------	-----------	-----------	------------------

44
1.4.01.4.0

Version

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
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			
IscsiMacAddr	iSCSI MAC Address	FALSE	810			MAC Address

762 This section describes the attributes for NIC's iSCSI Secondary Device Parameters.

763 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
 764 "IscsiSecondaryDeviceParams".

765 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
 766 DCIM_NICInteger shall be "iSCSI Secondary Device Parameters".

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

772 **Table 47 – DCIM_NICEnumeration iSCSI Secondary Device Parameters**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
---------------	----------------------	------------	---------------	----------------	-------------

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
UseIndTgtName	Use independent target name when multipath I/O is enabled.	FALSE	1504	"Disabled", "Enabled"	Use Independent Target Name when multipath I/O is enabled
UseIndTgtPortal	Use independent target portal when multipath I/O is enabled.	FALSE	1503	"Disabled", "Enabled"	Use Independent Target Portal when multipath I/O is enabled

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

777 **Table 48 – DCIM_NICString iSCSI Secondary Device Parameters**

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
SecondaryDeviceMacAddr	Secondary device MAC address.	FALSE	1502	17	17	MAC address

778 7.7.15 iSCSI Second Target Parameters

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

780 The GroupID property for the DCIM_NICEnumeration, DCIM_NICString, and DCIM_NICInteger shall be
781 "IscsiSecondTgtParams".

782 The GroupDisplayName property for the DCIM_NICEnumeration, DCIM_NICString, and
783 DCIM_NICInteger shall be "iSCSI Second Target Parameters".

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

789 **Table 49 – DCIM_NICEnumeration iSCSI Second Target Parameters**

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	PossibleValues	Description
ConnectSecondTgt	First target establishment for iSCSI.	FALSE	1402	"Disabled", "Enabled"	Second Target establishment
SecondTgtIpVer	IP Version	FALSE	1409	"Enabled", "Disabled"	IPv4 or IPv4 network addressing will be used for the second iSCSI target

790 The following table describes the values for the DCIM_NICString of this group. Each of the column
791 headings correspond to a property name on the DCIM_NICString class. The Value Expression column

792 contains constraints on string value formulation. Each of the rows contain the values for the properties
793 listed in the column headings.

46

1.4.01.4.0

Version

794

Table 50 – DCIM_NICString iSCSI Second Target Parameters

AttributeName	Attribute Description	IsReadOnly	Display Order	MinLength	MaxLength	Value Expression
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

795 The following table describes the values for the DCIM_NICInteger of this group. Each of the column
796 headings correspond to a property name on the DCIM_NICInteger class. Each of the rows contain the
797 values for the properties listed in the column headings.

798

Table 51 – DCIM_NICInteger iSCSI Second Target Parameters

AttributeName	AttributeDisplayName	IsReadOnly	Display Order	LowerBound	UpperBound
SecondTgtBootLun	Second Target Boot LUN number (0 .. 255)	FALSE	1405	0	255
SecondTgtTcpPort	Second Target TCP Port number (1..65535)	FALSE	1404	1	65535

799 7.8 DCIM_NICService

800 This section describes the implementation for the DCIM_NICService class.

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

802 The DCIM_LCElementConformsToProfile association(s)' ManagedElement property shall reference the
803 DCIM_NICService instance(s).

804 7.8.1 Resource URIs for WinRM®

805 The class Resource URI shall be "http://schemas.dell.com/wbem/wscim/1/cim-
806 schema/2/DCIM_NICService?__cimnamespace=root/dcim"

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

809 The instance Resource URI for DCIM_NICService instance shall be:
810 "http://schemas.dell.com/wbem/wscim/1/cim-
811 schema/2/DCIM_NICService?__cimnamespace=root/dcim+SystemCreationClassName=DCIM_ComputerSyst
812 em+CreationClassName=DCIM_NICService+ SystemName=DCIM:ComputerSystem+Name= DCIM:NICService"

813 7.8.2 Operations

814 The following table lists the implemented operations on DCIM_NICService.

815

Table 52 – DCIM_NICService – Operations

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

Invoke	Mandatory	Instance URI
--------	-----------	--------------

816

817 7.8.3 Properties

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

822

823 **Table 53 – 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”

824 7.9 Simple NIC Profile Registration

825 This section describes the implementation for the DCIM_LCRegisteredProfile class.

826 This class shall be instantiated in the Interop Namespace: root/interop.

827 The DCIM_ElementConformsToProfile association(s)’ ConformantStandard property shall reference the
828 DCIM_LCRegisteredProfile instance.

829 7.9.1 Resource URIs for WinRM®

830 The class Resource URI shall be "http://schemas.dmtf.org/wbem/wscim/1/cim-
831 schema/2/CIM_RegisteredProfile?__cimnamespace=root/interop"

832 The key property shall be the InstanceID property.

833 The instance Resource URI shall be: “http://schemas.dell.com/wbem/wscim/1/cim-
834 schema/2/DCIM_LCRegisteredProfile?__cimnamespace=root/interop+InstanceID=
835 DCIM:SimpleNIC:1.0.0”

836 7.9.2 Operations

837 The following table lists the implemented operations on DCIM_NICView.

838 **Table 54 – DCIM_LCRegisteredProfile - Operations**

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

839

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 55 – 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	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: <ul style="list-style-type: none">• "LICENSED"• "NOT_LICENSED" If no license is required for the profile, the property shall have value NULL.

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

853 DCIM_NICAttribute.IsReadOnly property is FALSE. Invocation of this method when the
 854 DCIM_NICAttribute.IsReadOnly property is TRUE shall result in no change to the value of the
 855 DCIM_NICAttribute.CurrentValue property. The results of changing this value is described with the
 856 SetResult parameter.

857 Return code values for the SetAttribute() method are specified in Table 56 and parameters are specified
 858 in Table 57. Invoking the SetAttribute() method multiple times can result in the earlier requests being
 859 overwritten or lost.

860 **Table 56 – DCIM_NICService.SetAttribute() Method: Return Code Values**

Value	Description
0	Completed with no error
2	Failed

861 **Table 57 – DCIM_NICService.SetAttribute() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	Target	String	FQDD of the NIC
IN, REQ	AttributeName[]	String	Shall be formatted in the following way: <GroupID property value>#<AttributeName property value>. 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"> • "Set CurrentValue property" when the attributes current value is set. • "Set PendingValue" when the attributes pending value is set.
OUT	RebootRequired[]	String	Returns: <ul style="list-style-type: none"> • "Yes" if reboot is required, • "No" if reboot is not required.
OUT	MessageID[]	String	Error MessageID
OUT	Message[]	String	Error Message
OUT	MessageArguments[]	String	Error MessageArguments

862 **Table 58 – 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	
NIC006	Configuration job already created, cannot set attribute on specified target until existing job is completed	

MessageID (OUT parameter)	Message	MessageArguments[]
	or is cancelled	
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.	

863

864 8.2 DCIM_NICService.SetAttributes()

865 The SetAttributes() method is used to set or change the values of a group of attributes.

866 Successful SetAttributes() method invocation shall change the values of the CurrentValue or
867 PendingValue properties of the DCIM_NICAttribute instance that correspond to the names specified by
868 the AttributeName parameter, with the values specified by the AttributeValue parameter.

869 If the respective DCIM_NICAttribute.IsReadOnly property is TRUE, the method invocation shall fail and
870 shall result in no change to the corresponding value of the DCIM_NICAttribute.CurrentValue property.

871 Return code values for the SetAttributes() method are specified in Table 59, and parameters are
872 specified in Table 60.

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

875 **Table 59 – DCIM_NICService.SetAttributes() Method: Return Code Values**

Value	Description
0	Completed with no error
2	Failed

Table 60 – 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: <GroupID property value>#<AttributeName property value>. 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"> • "Set CurrentValue property" when the attributes current value is set. • "Set PendingValue property" when the attributes pending value is set.
OUT	RebootRequired[]	String	Returns: <ul style="list-style-type: none"> • "Yes" if reboot is required, • "No" if reboot is not required.
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[]
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
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 62, and parameters are specified in Table 63.

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

Table 62 – DCIM_NICService.CreateTargetedConfigJob() Method: Return Code Values

Value	Description
2	Failed
4096 ¹	Job Created ¹

Table 63 – DCIM_NICService.CreateTargetedConfigJob() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, REQ	Target	String	FQDD of the NIC
IN	RebootJobType	Uint16	Shall contain the requested reboot type: <ul style="list-style-type: none">• 1 - PowerCycle• 2 - Graceful Reboot without forced shutdown• 3 - Graceful Reboot with forced shutdown.
IN	ScheduledStartTime	String	Start time for the job execution in format: yyyyymmddhhmmss. The string "TIME_NOW" means immediate.
IN	UntilTime	String	End time for the job execution in format: yyyyymmddhhmmss. : If this parameter is not NULL, then ScheduledStartTime parameter shall also be specified.

Qualifiers	Name	Type	Description/Values
OUT	Job ¹	CIM_ConcreteJob REF	Reference to the newly created pending value application job. ¹
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 64 – 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 65, and parameters are specified in Table 66.

917 **Table 65 – DCIM_NICService.DeletePendingConfiguration() Method: Return Code Values**

Value	Description
0	Success
2	Failed

918 **Table 66 – 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

919 **Table 67 – DCIM_NICService.DeletePendingConfiguration() 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
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.	

920 **9 Use Cases**

921 See *Lifecycle Controller (LC) Integration Best Practices Guide*.

922 **10 CIM Elements**

923 No additional details specified.

924 **11 Privilege and License Requirement**

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

928 **Table 68 – Privilege and License Requirements**

Class and Method	Operation	User Privilege Required	License Required
------------------	-----------	-------------------------------	------------------

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.CreateTargetedConfigJob()	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.

ANNEX A
(informative)

Change Log

Version	Date	Description
1.4.0	2012	Added LC062 error message to the SetAttribute(), SetAttributes(), CreateTargetedConfigJob(), and DeletePendingConfiguration() methods.
1.4.0	3/18/2013	Added VirWWN VirtWWPN properties in the Nic View which were Missing
1.4.0	10/12/2014	Update for 13th Generation of Dell PowerEdge Servers
1.4.1	4/15/2015	Added property PersistencePolicySupport under DCIM_NICCapabilities
1.4.2	5/22/2015	Added RDMA statistics properties under DCIM_NICStatistics