

Base Metrics Profile

Document Number: DCIM1036
Document Type: Specification
Document Status: Draft
Document Language: E
Date: 2015-03-26

Version: 1.3.1



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

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.

© 2008 – 2009 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. 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

66			
67	1	Scope	7
68	2	Normative References.....	7
69	3	Terms and Definitions	8
70	4	Symbols and Abbreviated Terms	8
71	5	Synopsis	9
72	6	Description	10
73	7	Implementation Requirements	14
74	7.1	Maximum Power Consumption Metric in Watts.....	15
75	7.2	Maximum Headroom Power Consumption Metric in Watts	18
76	7.3	Maximum Power Consumption Metric in Amperes.....	20
77	7.4	Maximum Power Consumption Metric for Last Hour, Day and Week	22
78	7.5	Minimum Power Consumption Metric for Last Hour, Day and Week	25
79	7.6	Average Power Consumption Metric for Last Hour, Day and Week	28
80	7.7	Energy Consumption Metric	30
81	7.8	Instantaneous Power Consumption Headroom Metric	33
82	7.9	Maximum Inlet Temperature Metric for Last Hour, Day, Week, Month and Year	36
83	7.10	Average Inlet Temperature Metric for Last Hour, Day, Week, Month and Year	38
84	7.11	Statistical Data Associated to OOB Sensors	41
85	7.12	Inlet Temperature Time above Thresholds Metric.....	43
86	7.13	DCIM_MetricDefForME.....	46
87	7.14	DCIM_MetricServiceCapabilities	47
88	7.15	DCIM_MetricService	48
89	7.16	DMTF Base Metrics Profile Registration.....	49
90	7.17	Dell Base Metrics Profile Registration	50
91	8	Methods.....	51
92	8.1	CIM_MetricService.ControlMetrics()	51
93	8.2	DCIM_MetricService.ExportThermalHistory()	52
94	8.3	DCIM_MetricService.PeakReset()	54
95	9	Use Cases	55
96	10	CIM Elements	55
97	11	Privilege and License Requirement	55
98		ANNEX A Change Log	57
99			

Figures

Figure 1 – Class Diagram	10
Figure 2 – Maximum, Headroom Power and Energy Consumption Metrics.....	11
Figure 3 – Minimum Power Consumption for Last Hour, Day and Week	12
Figure 4 – Maximum Power Consumption for Last Hour, Day and Week	13
Figure 5 – Average Power Consumption for Last Hour, Day and Week	14

Tables

Table 1 – Related Profiles	9
Table 2 – Class Requirements: Base Metrics Profile	14
Table 3 – DCIM_AggregationMetricDefinition Operations	16
Table 4 – DCIM_AggregationMetricDefinition: Maximum Power Consumption Metric in Watts Properties.....	16
Table 5 – DCIM_AggregationMetricValue Operations.....	17
Table 6 – DCIM_AggregationMetricValue: Maximum Power Consumption Metric in Watts Properties.....	18
Table 7 – DCIM_AggregationMetricValue Operations.....	19
Table 8 – DCIM_AggregationMetricValue: Maximum Power Consumption Metric in Watts Properties.....	19
Table 9 – DCIM_AggregationMetricDefinition Operations	20
Table 10 – DCIM_AggregationMetricDefinition: Maximum Power Consumption Metric in Amperes Properties	21
Table 11 – DCIM_AggregationMetricValue Operations.....	22
Table 12 – DCIM_AggregationMetricValue: Maximum Power Consumption Metric in Amperes Properties.....	22
Table 13 – DCIM_AggregationMetricDefinition Operations	23
Table 14 – DCIM_AggregationMetricDefinition: Maximum Power Consumption Metric for Last Hour, Day and Week Properties.....	23
Table 15 – DCIM_AggregationMetricValue Operations.....	24
Table 16 – DCIM_AggregationMetricValue: Maximum Power Consumption Metric for Last Hour, Day and Week Properties.....	24
Table 17 – DCIM_AggregationMetricDefinition Operations.....	26
Table 18 – DCIM_AggregationMetricDefinition: Minimum Power Consumption Metric in Watts for Last Hour, Day and Week Properties	26
Table 19 – DCIM_AggregationMetricValue Operations.....	27
Table 20 – DCIM_AggregationMetricValue: Minimum Power Consumption Metric in Watts for Last Hour, Day and Week Properties	27
Table 21 – DCIM_AggregationMetricDefinition Operations.....	29
Table 22 – DCIM_AggregationMetricDefinition: Average Power Consumption Metric in Watts for Last Hour, Day and Week Properties	29
Table 23 – DCIM_AggregationMetricValue Operations.....	30
Table 24 – DCIM_AggregationMetricValue: Average Power Consumption Metric in Watts for Last Hour, Day and Week Properties	30
Table 25 – DCIM_BaseMetricDefinition Operations	31
Table 26 – DCIM_BaseMetricDefinition: Energy Consumption Metric Properties.....	31
Table 27 – DCIM_BaseMetricValue Operations	32
Table 28 – DCIM_BaseMetricValue: Energy Consumption Metric in Amperes Properties	33
Table 29 – DCIM_BaseMetricDefinition Operations	34
Table 30 – DCIM_BaseMetricDefinition: Instantaneous Power Metric Properties	34
Table 31 – DCIM_BaseMetricValue Operations	35
Table 32 – DCIM_BaseMetricValue: Instantaneous Power Consumption Headroom Metric in Amperes Properties.....	35

148	Table 33 – DCIM_AggregationMetricDefinition Operations.....	36
149	Table 34 – DCIM_AggregationMetricDefinition: Maximum Inlet Temperature Metric for Last Hour, Day and	
150	Week Properties.....	37
151	Table 35 – DCIM_AggregationMetricValue Operations.....	37
152	Table 36 – DCIM_AggregationMetricValue: Maximum Inlet Temperature Metric for Last Hour, Day Week,	
153	Month and Year Properties	38
154	Table 37 – DCIM_AggregationMetricDefinition Operations.....	39
155	Table 38 – DCIM_AggregationMetricDefinition: Average Inlet temperature Metric in Watts for Last Hour,	
156	Day and Week Properties	39
157	Table 39 – DCIM_AggregationMetricValue Operations.....	40
158	Table 40 – DCIM_AggregationMetricValue: Average Inlet temperature Metric in Celsius for Last Hour,	
159	Day and Week Properties	40
160	Table 41 – DCIM_BaseMetricDefinition Operations	43
161	Table 42 – DCIM_BaseMetricDefinition: Inlet Temperature Time above Thresholds Metric Properties	44
162	Table 43 – DCIM_BaseMetricValue Operations	45
163	Table 44 – DCIM_BaseMetricValue: Inlet temperature Time above Thresholds Metric Properties	45
164	Table 45 – DCIM_MetricDefForME Operations	46
165	Table 46 – DCIM_MetricDefForME Properties	47
166	Table 47 – DCIM_MetricServiceCapabilities Operations.....	47
167	Table 48 – DCIM_MetricServiceCapabilities Properties.....	47
168	Table 49 – DCIM_MetricService Operations	49
169	Table 50 – DCIM_MetricService Properties.....	49
170	Table 51 – DCIM_RegisteredProfile - Operations	50
171	Table 52 – DCIM_RegisteredProfile - Properties	50
172	Table 53 – DCIM_LCRegisteredProfile - Operations.....	51
173	Table 54 – DCIM_LCRegisteredProfile - Properties.....	51
174	Table 55 – CIM_MetricService.ControlMetrics() Method: Return Code Values	51
175	Table 56 – CIM_MetricService.ControlMetrics() Method: Standard Messages.....	52
176	Table 57 – CIM_MetricService.ControlMetrics() Method: Parameters	52
177	Table 58 – DCIM_MetricService.ExportThermalHistory() Method: Return Code Values	53
178	Table 59 – DCIM_MetricService.ExportThermalHistory() Method: Parameters.....	53
179	Table 60 – DCIM_MetricService.ExportThermalHistory() Method: Standard Messages	53
180	Table 61 – CIM_MetricService.PeakReset() Method: Return Code Values.....	54
181	Table 62 – CIM_MetricService.PeakReset() Method: Standard Messages	54
182	Table 63 – CIM_MetricService.PeakReset() Method: Parameters.....	54
183	Table 64 – Privilege and License Requirements	55
184		

1 Scope

The DCIM Base Metrics Profile extends the DMTF Base Metrics Profile to add Dell specific implementation requirements for power related metrics. The profile standardizes the units and description for the metrics as well as provides static methodology for the clients to query the metrics without substantial traversal of the model.

The metrics covered in this profile are:

- For power:
 - Maximum power consumption metric in Watts,
 - Maximum power consumption metric in Amperes,
 - Minimum power consumption metric in Watts,
 - Energy consumption metric in kilowatt-hours (kWh),
 - Maximum power consumption metric in Watts for last hour, day, week,
 - Minimum power consumption metric in Watts for last hour, day, week,
 - Average power consumption metric in Watts for last hour, day, week,
 - Maximum headroom power consumption metric,
 - Instantaneous headroom power consumption metric,
- For inlet temperature
 - Maximum inlet temperature metric for last hour, day, week, month and year,
 - Average inlet temperature metric for last hour, day, week, month and year,
 - Inlet temperature time spent above thresholds.
- For Out-of Band sensors i.e., CPU, Memory, IO Utilization & System Utilization
 - Maximum utilization metric in percentage for last hour, day and week,
 - Minimum utilization metric in percentage for last hour, day and week,
 - Average utilization metric in percentage for last hour, day and week,
 - Peak Values in percentage.

2 Normative References

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

DMTF DSP1033, *Profile Registration Profile 1.0.0*

DMTF DSPxxxxx, *Base Metric Profile 1.0.0*

Dell Lifecycle Controller Best Practices Guide v1.0, <link TBD>

219 **3 Terms and Definitions**

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

221 **3.1**

222 **conditional**

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

225 **3.2**

226 **mandatory**

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

229 **3.3**

230 **may**

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

232 **3.4**

233 **optional**

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

235 **3.5**

236 **referencing profile**

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

239 **3.6**

240 **shall**

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

243 **4 Symbols and Abbreviated Terms**

244 **4.1**

245 **CIM**

246 Common Information Model

247 **4.2**

248 **iDRAC**

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

250 **4.3**

251 **CMC**

252 Chassis Manager Controller – management controller for the modular chassis

253

5 Synopsis

Profile Name: Base Metrics

Version: 1.2.0

Organization: Dell

CIM Schema Version: 2.22.0

Central Class: CIM_MetricService

Scoping Class: CIM_ComputerSystem

The Dell Base Metrics Profile is derived from the DMTF Base Metrics Profile and contains additional Dell specific implementation requirements.

Table 1 identifies profiles that are related to this profile.

Table 1 – Related Profiles

Profile Name	Organization	Version	Relationship
Base Metrics Profile	DMTF	1.0	Specializes

6 Description

The Dell Base Metrics Profile describes platform's power related metrics required to represent power monitoring information using the CIM model. The metrics represented by the CIM instrumentations should be the same as presented in the GUI.

Figure 1 represents the class diagram of the profile.

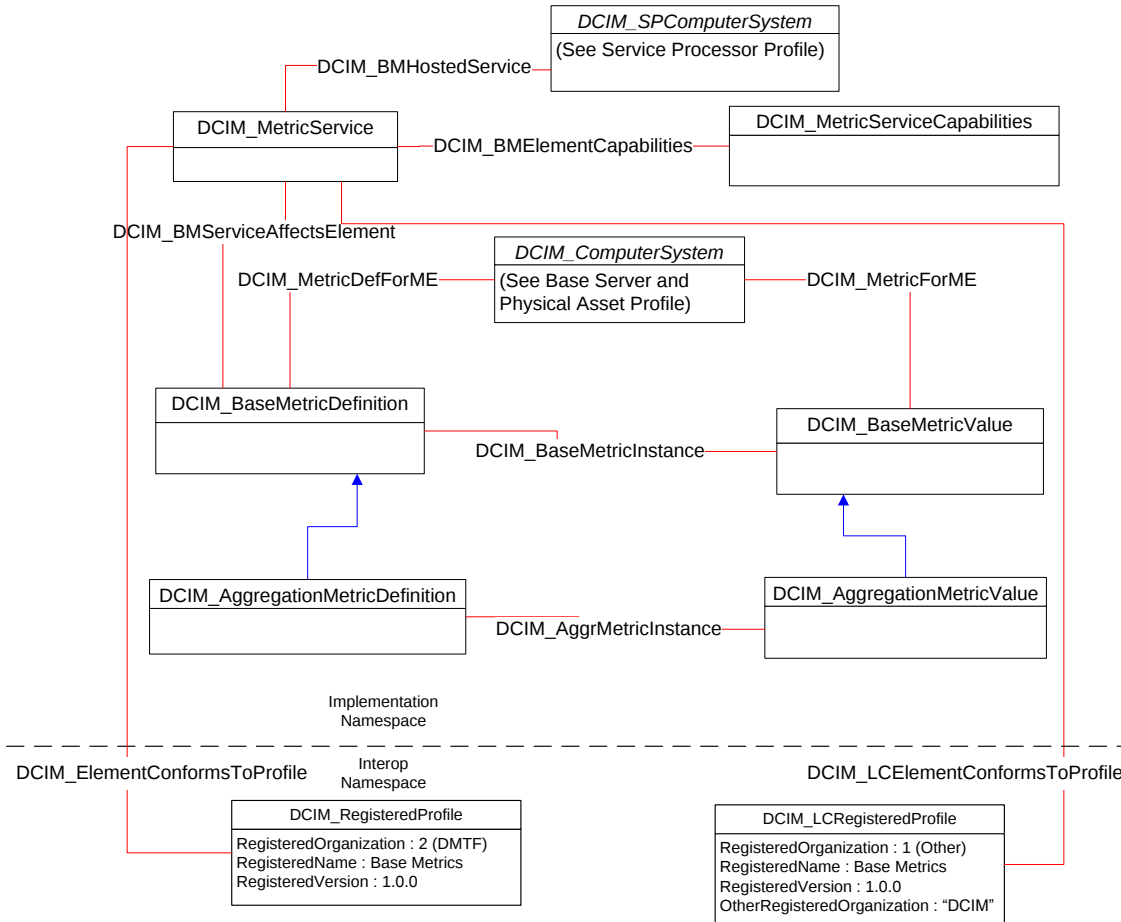


Figure 1 – Class Diagram

Figure 2 details maximum power and energy consumption metrics for a platform.

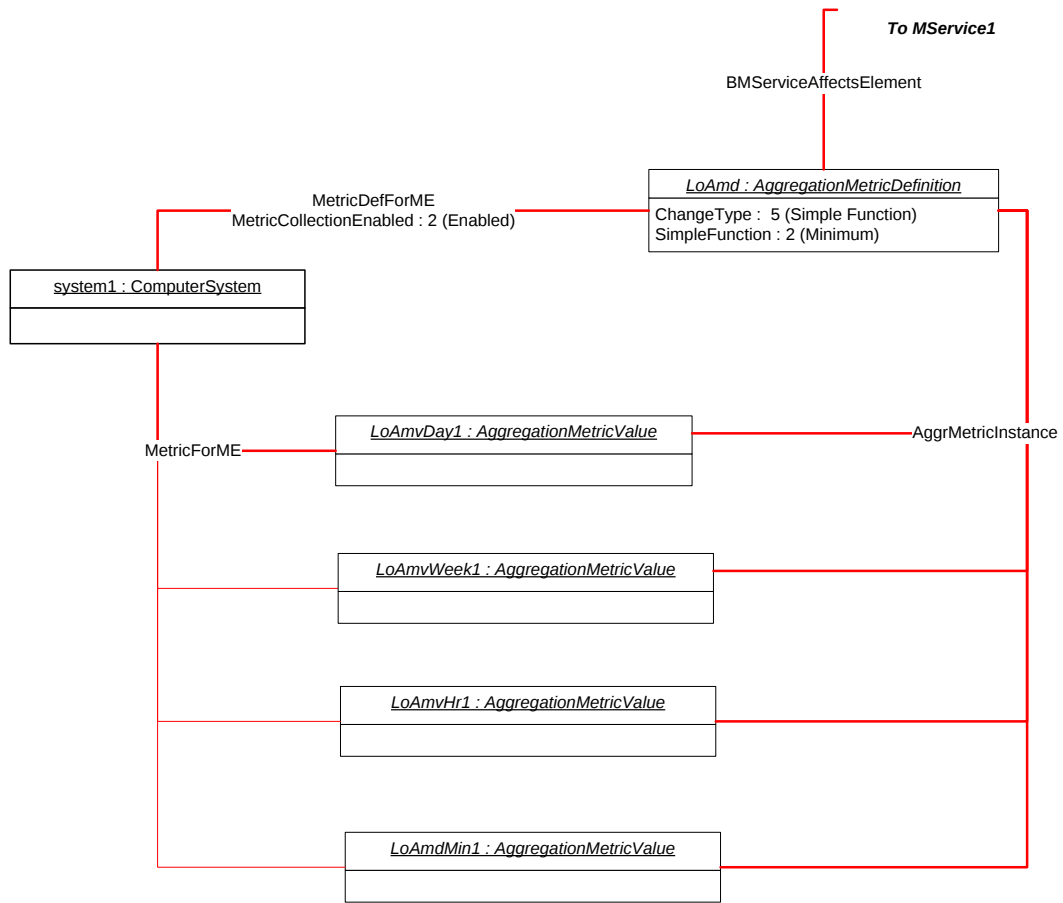


Figure 3 – Minimum Power Consumption for Last Hour, Day and Week

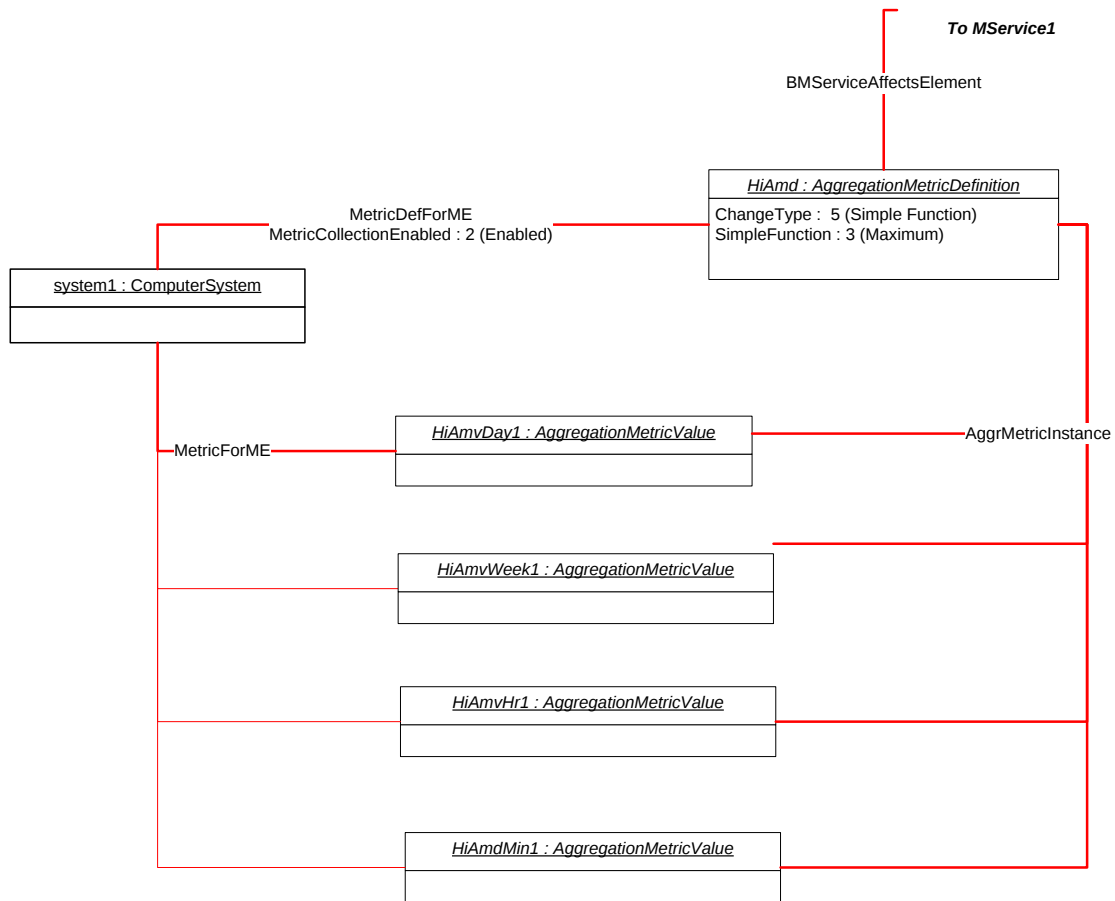


Figure 4 – Maximum Power Consumption for Last Hour, Day and Week

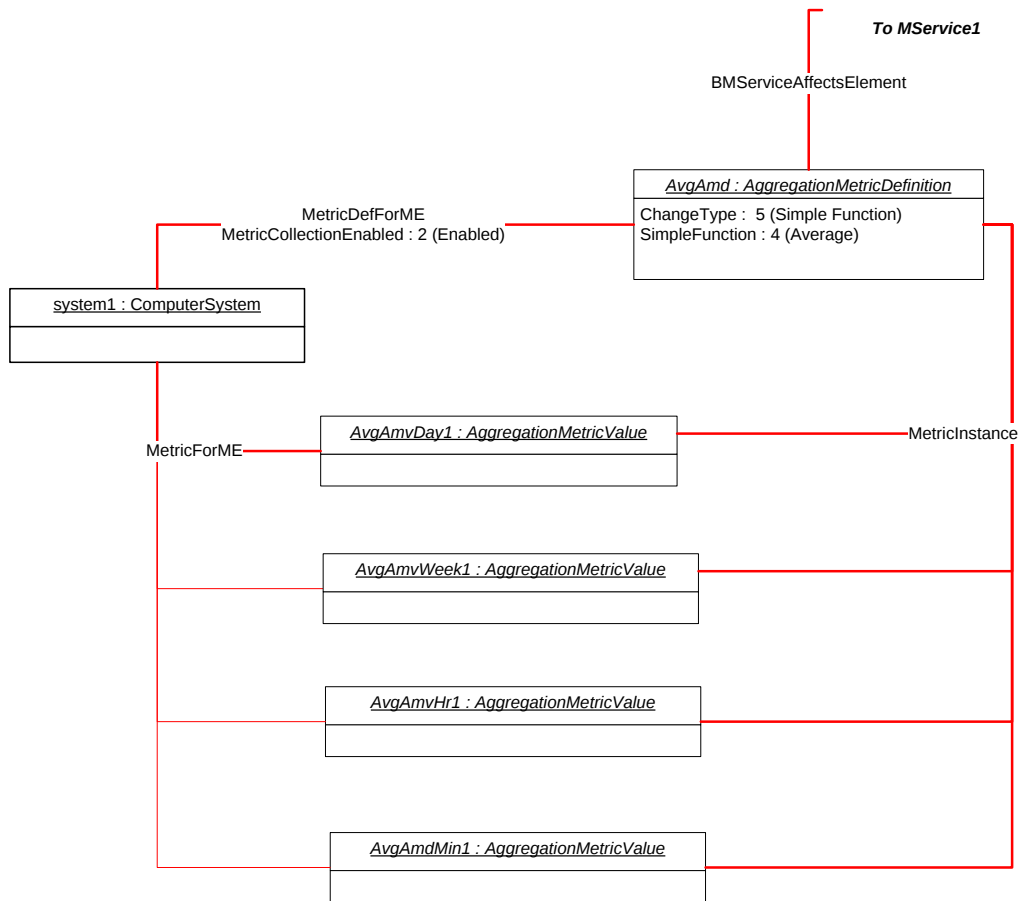


Figure 5 – Average Power Consumption for Last Hour, Day and Week

7 Implementation Requirements

The requirements and guidelines for propagating and formulating certain properties of the classes discussed in this section are the Dell extensions to the requirements in the parent profile: DMTF Base Metric Profile 1.0.

Table 2 – Class Requirements: Base Metrics Profile

Class Name	Requirement	Description
DCIM_AggregationMetricDefinition	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.1.1, 7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.9.1 and 7.10.1.
DCIM_AggregationMetricValue	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.1.2, 7.2.2, 7.3.2, 7.4.2, 7.5.2, 7.6.2, 7.9.2 and 7.10.2.
DCIM_BaseMetricDefinition	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.7.1, 7.8.1, 7.12.1.

Class Name	Requirement	Description
DCIM_BaseMetricValue	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.7.2, 7.8.2 and 7.12.2. Error! Reference source not found..
DCIM_AggrMetricInstance	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.1.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.1.2, 7.3.2, 7.4.2, 7.5.2 and 7.6.2.
DCIM_BaseMetricInstance	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.7.1, 7.8.1, 7.7.2, and 7.8.2.
DCIM_BMElementCapabilities	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.14 and 7.15.
DCIM_MetricDefForME	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.9.
DCIM_MetricForME	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.1.2, 7.3.2, 7.4.2, 7.5.2, 7.6.2, 7.7.2 and 7.8.2.
DCIM_BMServiceAffectsElement	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.1.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1 and 7.8.1.
DCIM_MetricServiceCapabilities	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.14.
DCIM_MetricService	Mandatory	The class shall be implemented in the <i>Implementation Namespaces</i> . See section 7.15.
DCIM_ElementConformsToProfile	Mandatory	The class shall be implemented in both the <i>Interop</i> and <i>Implementation Namespaces</i> . See section 7.15 and 7.16
DCIM_RegisteredProfile	Mandatory	The class shall be implemented in the <i>Interop Namespace</i> . See section 7.16
DCIM_LCElementConformsToProfile	Mandatory	The class shall be implemented in both the <i>Interop</i> and <i>Implementation Namespaces</i> . See section 7.15 and 7.17.
DCIM_LCRegisteredProfile	Mandatory	The class shall be implemented in the <i>Interop Namespace</i> . See section 7.17.

291

292 7.1 Maximum Power Consumption Metric in Watts

293 The following defines the requirements of the DCIM_AggregationMetricDefinition instance for the
294 maximum power consumption metric in watts.

7.1.1 DCIM_AggregationMetricDefinition

The following clauses define the requirements for the DCIM_AggregationMetricDefinition class. DCIM_AggregationMetricDefinition is a derivation of CIM_AggregationMetricDefinition.

The DCIM_BMServiceAffectsElement association's AffectedElement property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_BMServiceAffectsElement association's ElementEffects array property shall contain value 5 (Manages).

The DCIM_MetricDefForME association's Dependant property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_AggrMetricInstance association's Antecedent property shall reference DCIM_AggregationMetricDefinition instances.

7.1.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI DCIM_AggregationMetricDefinition instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/ DCIM_AggregationMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>"

7.1.1.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricDefinition.

Table 3 – DCIM_AggregationMetricDefinition Operations

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

7.1.1.3 Properties

The following table details the requirements for implementing the DCIM_AggregationMetricDefinition instance representing maximum power consumption metric in Watts. The most derived class name of this instance shall be DCIM_AggregationMetricDefinition.

If the column "Property Name" matches the property name, the property either shall have the value denoted in the corresponding column "Additional Requirements", or shall be implemented according to the requirements in the corresponding column "Additional Requirements".

Table 4 – DCIM_AggregationMetricDefinition: Maximum Power Consumption Metric in Watts Properties

Property Name	Type	Requirement	Additional Requirement
ChangeType	uint16	Mandatory	The property shall have value 5 (Simple Function).
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value

			"Peak Watt Power Consumption"
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property is the key and shall have value "AggrMetricDef:0"
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value "DMTF:System Input Power"
ProgrammaticUnits	string	Mandatory	The property shall have value "watt"
SampleInterval	datetime	Mandatory	The property value shall be in W3C representation in WS-CIM with the corresponding value equal to CIM datetime 00000000000500.000000:000.
SimpleFunction	uint16	Mandatory	The property shall have value 3 (Maximum)
TimeScope	uint16	Mandatory	The property shall have value 2 (Point)

7.1.2 DCIM_AggregationMetricValue

The following clauses define the requirements for the DCIM_AggregationMetricValue class.
DCIM_AggregationMetricValue is a derivation of CIM_AggregationMetricValue.

The DCIM_AggrMetricInstance association's Dependent property shall reference DCIM_AggregationMetricValue instances.

The DCIM_MetricForME association's Dependent property shall reference DCIM_AggregationMetricValue instances.

7.1.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_AggregationMetricValue instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_AggregationMetricValue?
?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

7.1.2.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricValue.

Table 5 – DCIM_AggregationMetricValue Operations

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

7.1.2.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricValue instance representing maximum power consumption metric in Watts. The most derived class name of this instance shall be DCIM_AggregationMetricValue.

If the column "Property Name" matches the property name, the property either shall have the value denoted in the corresponding column "Additional Requirements", or shall be implemented according to the requirements in the corresponding column "Additional Requirements".

Table 6 – DCIM_AggregationMetricValue: Maximum Power Consumption Metric in Watts Properties

Property Name	Type	Requirement	Additional Requirements
AggregationDuration	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current Time minus Start time of MaxPeak Reading.
AggregationTimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current timestamp.
BreakdownDimension	string	Mandatory	The property shall have value NULL
BreakdownValue	string	Mandatory	The property shall have value NULL
InstanceID	string	Mandatory	The property shall have value "DCIM:System:Max:Power:Cont"
MetricDefinitionId	string	Mandatory	The property shall have value "AggrMetricDef:0"
MetricValue	string	Mandatory	The property shall have value equal to the MaxPeak Watts Reading in whole watts
TimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to the Current Time.
Volatile	boolean	Mandatory	The property shall have value TRUE.

7.2 Maximum Headroom Power Consumption Metric in Watts

The following defines the requirements for the maximum headroom power consumption metric.

7.2.1 DCIM_AggregationMetricDefinition

See section 7.1.1.

7.2.2 DCIM_AggregationMetricValue

The following clauses define the requirements for the DCIM_AggregationMetricValue class.
DCIM_AggregationMetricValue is a derivation of CIM_AggregationMetricValue.

The DCIM_AggrMetricInstance association's Dependent property shall reference DCIM_AggregationMetricValue instances.

The DCIM_MetricForME association's Dependent property shall reference DCIM_AggregationMetricValue instances.

7.2.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_AggregationMetricValue instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_AggregationMetricValue?
?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

7.2.2.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricValue.

Table 7 – DCIM_AggregationMetricValue Operations

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

7.2.2.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricValue instance representing peak (maximum) headroom power metric in Watts. The most derived class name of this instance shall be DCIM_AggregationMetricValue.

If the column "Property Name" matches the property name, the property either shall have the value denoted in the corresponding column "Additional Requirements", or shall be implemented according to the requirements in the corresponding column "Additional Requirements".

Table 8 – DCIM_AggregationMetricValue: Maximum Power Consumption Metric in Watts Properties

Property Name	Type	Requirement	Additional Requirements
AggregationDuration	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current Time minus Start time of MaxPeak Reading.
AggregationTimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current timestamp.
BreakdownDimension	string	Mandatory	The property shall be NULL

BreakdownValue	string	Mandatory	The property shall be NULL
InstanceID	string	Mandatory	The property shall have value "DCIM:System:Max:PowerHdrm:Cont"
MetricDefinitionId	string	Mandatory	The property shall have value "AggrMetricDef:0"
MetricValue	string	Mandatory	The property shall have value equal to the Peak Headroom Watts Reading in whole watts
TimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to the Current Time.
Volatile	boolean	Mandatory	The property shall have value TRUE.

7.3 Maximum Power Consumption Metric in Amperes

The following defines the requirements of the DCIM_AggregationMetricDefinition instance for the maximum power consumption metric in amperes.

7.3.1 DCIM_AggregationMetricDefinition

The following clauses define the requirements for the DCIM_AggregationMetricDefinition class. DCIM_AggregationMetricDefinition is a derivation of CIM_AggregationMetricDefinition.

The DCIM_BMServiceAffectsElement association's AffectedElement property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_BMServiceAffectsElement association's ElementEffects array property shall contain value 5 (Manages).

The DCIM_MetricDefForME association's Dependant property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_AggrMetricInstance association's Antecedent property shall reference DCIM_AggregationMetricDefinition instances.

7.3.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI DCIM_AggregationMetricDefinition instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/ DCIM_AggregationMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>"

7.3.1.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricDefinition.

Table 9 – DCIM_AggregationMetricDefinition Operations

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

References	Mandatory	Instance URI
------------	-----------	--------------

7.3.1.3 Properties

The following table details the requirements for implementing the DCIM_AggregationMetricDefinition instance representing max power consumption metric in Amperes. The most derived class name of this instance shall be DCIM_AggregationMetricDefinition.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

Table 10 – DCIM_AggregationMetricDefinition: Maximum Power Consumption Metric in Amperes Properties

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 5 (Simple Function)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value “Peak Amp Power Consumption”
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property shall have value “AggrMetricDef:3”
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value “DMTF:System Input Power”
ProgrammaticUnits	string	Mandatory	The property shall have value “ampere * 10 ⁻¹ ”
SampleInterval	datetime	Mandatory	The property value shall be in W3C representation in WS-CIM with the corresponding value equal to CIM datetime 000000000000500.000000:000.
SimpleFunction	uint16	Mandatory	The property shall have value 3 (Maximum)
TimeScope	uint16	Mandatory	The property shall have value 2 (Point)

7.3.2 DCIM_AggregationMetricValue

The following clauses define the requirements for the DCIM_AggregationMetricValue class. DCIM_AggregationMetricValue is a derivation of CIM_AggregationMetricValue.

The DCIM_AggrMetricInstance association’s Dependent property shall reference DCIM_AggregationMetricValue instances.

The DCIM_MetricForME association’s Dependent property shall reference DCIM_AggregationMetricValue instances.

7.3.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_AggregationMetricValue instance shall be: “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_AggregationMetricValue?__cimnamespace=root/dcim+InstanceID=<InstanceID>”

7.3.2.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricValue.

433

Table 11 – DCIM_AggregationMetricValue Operations

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

434 **7.3.2.3 Properties**

435 The following table details the requirements for implementing DCIM_AggregationMetricValue instance
 436 representing max power consumption metric in amperes. The most derived class name of this instance
 437 shall be DCIM_AggregationMetricValue.

438 If the column “Property Name” matches the property name, the property either shall have the value
 439 denoted in the corresponding column “Additional Requirements”, or shall be implemented according to
 440 the requirements in the corresponding column “Additional Requirements”.

441 **Table 12 – DCIM_AggregationMetricValue: Maximum Power Consumption Metric in Amperes**
 442 **Properties**

Property Name	Type	Requirement	Additional Requirements
AggregationDuration	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current Time minus Start time of MaxPeak Reading
AggregationTimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current timestamp.
InstanceID	string	Mandatory	The property shall have value “DCIM:System:Max:Current:Cont”
MetricDefinitionId	string	Mandatory	The property shall have value “AggrMetricDef:3”
MetricValue	string	Mandatory	The property shall have value equal to the MaxPeak Amp Reading in 100 mAmps.
TimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current Time
Volatile	boolean	Mandatory	The property shall have value TRUE

443 **7.4 Maximum Power Consumption Metric for Last Hour, Day and Week**

444 The following defines the requirements of the DCIM_AggregationMetricValue instance for the maximum
 445 power consumption metric for last hour, day, and week.

446 One instance of DCIM_AggregationMetricValue shall be instantiated for maximum power consumption
 447 last hour.

448 One instance of DCIM_AggregationMetricValue shall be instantiated for maximum power consumption
 449 last day.

450 One instance of DCIM_AggregationMetricValue shall be instantiated for maximum power consumption
 451 last week.

7.4.1 DCIM_AggregationMetricDefinition

The following clauses define the requirements for the DCIM_AggregationMetricDefinition class.
DCIM_AggregationMetricDefinition is a derivation of CIM_AggregationMetricDefinition.

The DCIM_BMServiceAffectsElement association's AffectedElement property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_BMServiceAffectsElement association's ElementEffects array property shall contain value 5 (Manages).

The DCIM_MetricDefForME association's Dependant property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_AggrMetricInstance association's Antecedent property shall reference DCIM_AggregationMetricDefinition instances.

7.4.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI DCIM_AggregationMetricDefinition instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/ DCIM_AggregationMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>"

7.4.1.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricDefinition.

Table 13 – DCIM_AggregationMetricDefinition Operations

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

7.4.1.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricDefinition instance representing maximum power consumption metric in Watts for Last Hour, Day and Week. The most derived class name of this instance shall be DCIM_AggregationMetricDefinition.

If the column "Property Name" matches the property name, the property either shall have the value denoted in the corresponding column "Additional Requirements", or shall be implemented according to the requirements in the corresponding column "Additional Requirements".

Table 14 – DCIM_AggregationMetricDefinition: Maximum Power Consumption Metric for Last Hour, Day and Week Properties

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 5 (Simple Function)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value "Timed Peak Power Consumption"
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)

Id	string	Mandatory	The property shall have value "AggrMetricDef:4"
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value "DMTF:System Input Power"
ProgrammaticUnits	string	Mandatory	The property shall have value "watt"
SampleInterval	datetime	Mandatory	The property shall represent the datetime interval for sampling the metric.
SimpleFunction	uint16	Mandatory	The property shall have value 3 (Maximum)
TimeScope	uint16	Mandatory	The property shall have value 2 (Point)

7.4.2 DCIM_AggregationMetricValue

The following clauses define the requirements for the DCIM_AggregationMetricValue class.
DCIM_AggregationMetricValue is a derivation of CIM_AggregationMetricValue.

The DCIM_AggrMetricInstance association's Dependent property shall reference DCIM_AggregationMetricValue instances.

The DCIM_MetricForME association's Dependent property shall reference DCIM_AggregationMetricValue instances.

7.4.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_AggregationMetricValue instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_AggregationMetricValue?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

7.4.2.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricValue.

Table 15 – DCIM_AggregationMetricValue Operations

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

7.4.2.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricValue instance representing maximum power consumption metric in Watts for Last Hour, Day and Week. The most derived class name of this instance shall be DCIM_AggregationMetricValue.

If the column "Property Name" matches the property name, the property either shall have the value denoted in the corresponding column "Additional Requirements", or shall be implemented according to the requirements in the corresponding column "Additional Requirements".

Table 16 – DCIM_AggregationMetricValue: Maximum Power Consumption Metric for Last Hour, Day and Week Properties

Property Name	Type	Requirement	Additional Requirements
---------------	------	-------------	-------------------------

AggregationDuration	datetime	Mandatory	shall be in W3C representation in WS-CIM with the corresponding value equal to 1 hour or 1 day or 1 week.
AggregationTimeStamp	datetime	Mandatory	shall be in W3C representation in WS-CIM with the corresponding value equal to current timestamp.
InstanceId	string	Mandatory	shall have one of the following values: DCIM:System:Max:Power:1H DCIM:System:Max:Power:1D DCIM:System:Max:Power:1W
MetricDefinitionId	string	Mandatory	"AggrMetricDef:4"
MetricValue	string	Mandatory	shall be equal to the collection value for last 1 hour or 1 day or 1 week in whole watts
TimeStamp	datetime	Mandatory	shall be in W3C representation in WS-CIM with the corresponding value equal to the value collection timestamp.
Volatile	boolean	Mandatory	TRUE

7.5 Minimum Power Consumption Metric for Last Hour, Day and Week

The following defines the requirements of the DCIM_AggregationMetricValue instance for the minimum power consumption metric for last hour, day, and week.

One instance of DCIM_AggregationMetricValue shall be instantiated for minimum power consumption last hour.

One instance of DCIM_AggregationMetricValue shall be instantiated for minimum power consumption last day.

One instance of DCIM_AggregationMetricValue shall be instantiated for minimum power consumption last week.

7.5.1 DCIM_AggregationMetricDefinition

The following clauses define the requirements for the DCIM_AggregationMetricDefinition class. DCIM_AggregationMetricDefinition is a derivation of CIM_AggregationMetricDefinition.

The DCIM_BMServiceAffectsElement association's AffectedElement property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_BMServiceAffectsElement association's ElementEffects array property shall contain value 5 (Manages).

The DCIM_MetricDefForME association's Dependent property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_AggrMetricInstance association's Antecedent property shall reference DCIM_AggregationMetricDefinition instances.

7.5.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

532 The instance Resource URI DCIM_AggregationMetricDefinition instance shall be:
 533 "http://schemas.dell.com/wbem/wscim/1/cim-schema/2/ DCIM_AggregationMetricDefinition?
 534 ?__cimnamespace=root/dcim+Id=<Id>"

535 7.5.1.2 Operations

536 The following table details the implemented operations on DCIM_AggregationMetricDefinition.

537 **Table 17 – DCIM_AggregationMetricDefinition Operations**

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

538 7.5.1.3 Properties

539 The following table details the requirements for implementing DCIM_AggregationMetricDefinition instance
 540 representing minimum power consumption metric in Watts for Last Hour, Day and Week. The most
 541 derived class name of this instance shall be DCIM_AggregationMetricDefinition.

542 If the column "Property Name" matches the property name, the property either shall have the value
 543 denoted in the corresponding column "Additional Requirements", or shall be implemented according to
 544 the requirements in the corresponding column "Additional Requirements".

545 **Table 18 – DCIM_AggregationMetricDefinition: Minimum Power Consumption Metric in Watts for**
 546 **Last Hour, Day and Week Properties**

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 5 (Simple Function)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value "Timed Minimum Power Consumption"
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property shall have value "AggrMetricDef:1"
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value "DMTF:System Input Power"
ProgrammaticUnits	string	Mandatory	The property shall have value "watt"
SampleInterval	datetime	Mandatory	The property shall represent the datetime interval for sampling the metric.
SimpleFunction	uint16	Mandatory	The property shall have value 2 (Minimum)
TimeScope	uint16	Mandatory	The property shall have value 2 (Point)

7.5.2 DCIM_AggregationMetricValue

The following clauses define the requirements for the DCIM_AggregationMetricValue class.
DCIM_AggregationMetricValue is a derivation of CIM_AggregationMetricValue.

The DCIM_AggrMetricInstance association's Dependent property shall reference DCIM_AggregationMetricValue instances.

The DCIM_MetricForME association's Dependent property shall reference DCIM_AggregationMetricValue instances.

7.5.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_AggregationMetricValue instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_AggregationMetricValue?
?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

7.5.2.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricValue.

Table 19 – DCIM_AggregationMetricValue Operations

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

7.5.2.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricValue instance representing minimum power consumption metric in Watts for Last Hour, Day and Week. The most derived class name of this instance shall be DCIM_AggregationMetricValue.

If the column "Property Name" matches the property name, the property either shall have the value denoted in the corresponding column "Additional Requirements", or shall be implemented according to the requirements in the corresponding column "Additional Requirements".

Table 20 – DCIM_AggregationMetricValue: Minimum Power Consumption Metric in Watts for Last Hour, Day and Week Properties

Property Name	Type	Requirement	Additional Requirements
AggregationDuration	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to 1 hour or 1 day or 1 week.
AggregationTimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to current timestamp.

InstanceID	string	Mandatory	The property shall have value have one of the following values: "DCIM:System:Min:Power:1H", "DCIM:System:Min:Power:1D", "DCIM:System:Min:Power:1W"
MetricDefinitionId	string	Mandatory	The property shall have value "AggrMetricDef:1"
MetricValue	string	Mandatory	The property shall have value equal to the collection value for last 1 hour or 1 day or 1 week in whole watts
TimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to the value collection timestamp.
Volatile	boolean	Mandatory	The property shall have value TRUE.

7.6 Average Power Consumption Metric for Last Hour, Day and Week

The following defines the requirements of the DCIM_AggregationMetricValue instance for the average power consumption metric for last hour, day, and week.

One instance of DCIM_AggregationMetricValue shall be instantiated for average power consumption last hour.

One instance of DCIM_AggregationMetricValue shall be instantiated for average power consumption last day.

One instance of DCIM_AggregationMetricValue shall be instantiated for average power consumption last week.

7.6.1 DCIM_AggregationMetricDefinition

The following clauses define the requirements for the DCIM_AggregationMetricDefinition class. DCIM_AggregationMetricDefinition is a derivation of CIM_AggregationMetricDefinition.

The DCIM_BMServiceAffectsElement association's AffectedElement property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_BMServiceAffectsElement association's ElementEffects array property shall contain value 5 (Manages).

The DCIM_MetricDefForME association's Dependent property shall reference DCIM_AggregationMetricDefinition instances.

The DCIM_AggrMetricInstance association's Antecedent property shall reference DCIM_AggregationMetricDefinition instances.

7.6.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI DCIM_AggregationMetricDefinition instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/ DCIM_AggregationMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>"

7.6.1.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricDefinition.

Table 21 – DCIM_AggregationMetricDefinition Operations

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

7.6.1.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricDefinition instance representing average power consumption metric in Watts for Last Hour, Day and Week. The most derived class name of this instance shall be DCIM_AggregationMetricDefinition.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

Table 22 – DCIM_AggregationMetricDefinition: Average Power Consumption Metric in Watts for Last Hour, Day and Week Properties

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 5 (Simple Function)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value “Timed Average Power Consumption”
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property shall have value “AggrMetricDef:2”
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value “DMTF:System Input Power”
ProgrammaticUnits	string	Mandatory	The property shall have value “watt”
SampleInterval	datetime	Mandatory	The property shall represent the datetime interval for sampling the metric.
SimpleFunction	uint16	Mandatory	The property shall have value 4 (Average)
TimeScope	uint16	Mandatory	The property shall have value 2 (Point)

7.6.2 DCIM_AggregationMetricValue

The following clauses define the requirements for the DCIM_AggregationMetricValue class. DCIM_AggregationMetricValue is a derivation of CIM_AggregationMetricValue.

The DCIM_AggrMetricInstance association’s Dependent property shall reference DCIM_AggregationMetricValue instances.

The DCIM_MetricForME association’s Dependent property shall reference DCIM_AggregationMetricValue instances.

7.6.2.1 Resource URIs for WinRM®

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

623 The key property shall be the InstanceID.

624 The instance Resource URI for this DCIM_AggregationMetricValue instance shall be:
625 "http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_AggregationMetricValue?
626 ?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

627 7.6.2.2 Operations

628 The following table details the implemented operations on DCIM_AggregationMetricValue.

629 **Table 23 – DCIM_AggregationMetricValue Operations**

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

630 7.6.2.3 Properties

631 The following table details the requirements for implementing DCIM_AggregationMetricValue instance
632 representing average power consumption metric in Watts for Last Hour, Day and Week. The most derived
633 class name of this instance shall be DCIM_AggregationMetricValue.

634 If the column "Property Name" matches the property name, the property either shall have the value
635 denoted in the corresponding column "Additional Requirements", or shall be implemented according to
636 the requirements in the corresponding column "Additional Requirements".

637

638 **Table 24 – DCIM_AggregationMetricValue: Average Power Consumption Metric in Watts for Last**
639 **Hour, Day and Week Properties**

Property Name	Type	Requirement	Additional Requirements
AggregationDuration	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to 1 hour or 1 day or 1 week.
AggregationTimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to current timestamp.
InstanceID	string	Mandatory	The property shall have one of the below values: "DCIM:System:Avg:Power:1H" "DCIM:System:Avg:Power:1D" "DCIM:System:Avg:Power:1W"
MetricDefinitionId	string	Mandatory	The property shall have value "AggrMetricDef:2"
MetricValue	datetime	Mandatory	The property shall be equal to the collection value for last 1 hour or 1 day or 1 week in whole watts
Volatile	boolean	Mandatory	The property shall have value TRUE.

640 7.7 Energy Consumption Metric

641 The following defines the requirements of the DCIM_BaseMetricDefinition instance of the energy
642 consumption metric.

7.7.1 DCIM_BaseMetricDefinition

The following clauses define the requirements for the DCIM_BaseMetricDefinition class.

DCIM_BaseMetricDefinition is derived from CIM_BaseMetricDefinition.

The DCIM_BMServiceAffectsElement association's AffectedElement property shall reference DCIM_BaseMetricDefinition instances.

The DCIM_BMServiceAffectsElement association's ElementEffects array property shall contain value 5 (Manages).

The DCIM_MetricDefForME association's Dependent property shall reference DCIM_BaseMetricDefinition instances.

The DCIM_MetricDefForME association's MetricCollectionEnabled property shall have value 2 (Enabled).

The DCIM_BaseMetricInstance association's Antecedent property shall reference DCIM_BaseMetricDefinition instances.

7.7.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI for DCIM_BaseMetricDefinition instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_BaseMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>"

7.7.1.2 Operations

The following table details the implemented operations on DCIM_BaseMetricDefinition.

Table 25 – DCIM_BaseMetricDefinition Operations

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

7.7.1.3 Properties

The following table details the requirements for implementing DCIM_BaseMetricDefinition instance representing energy consumption metric. The most derived class name of this instance shall be DCIM_BaseMetricDefinition.

If the column "Property Name" matches the property name, the property either shall have the value denoted in the corresponding column "Additional Requirements", or shall be implemented according to the requirements in the corresponding column "Additional Requirements".

Table 26 – DCIM_BaseMetricDefinition: Energy Consumption Metric Properties

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 3 (Counter)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)

ElementName	string	Mandatory	The property shall have value "Energy Consumption"
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property shall have value "DCIM:BaseMetricDefinition:1"
IsContinuous	boolean	Mandatory	The property shall have value TRUE.
Name	string	Mandatory	The property shall have value "DMTF:System Aggregate Input Energy"
ProgrammaticUnits	string	Mandatory	The property shall have value "watt * hour * 10^3"
SampleInterval	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to 000000000000500.000000:000 in CIM datetime format.
TimeScope	uint16	Mandatory	The property shall have value 4 (Startup Interval).

7.7.2 DCIM_BaseMetricValue

The following clauses define the requirements for the DCIM_BaseMetricValue class.

DCIM_BaseMetricValue is derived from CIM_BaseMetricValue.

The DCIM_BaseMetricInstance association's Dependent property shall reference DCIM_BaseMetricValue instances.

The DCIM_MetricForME association's Dependent property shall reference DCIM_BaseMetricValue instances.

7.7.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_BaseMetricValue instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_BaseMetricValue?
?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

7.7.2.2 Operations

The following table details the implemented operations on DCIM_BaseMetricValue.

Table 27 – DCIM_BaseMetricValue Operations

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

7.7.2.3 Properties

The following table details the requirements for implementing DCIM_BaseMetricValue instance representing energy consumption metric. The most derived class name of this instance shall be DCIM_BaseMetricValue.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

Table 28 – DCIM_BaseMetricValue: Energy Consumption Metric in Amperes Properties

Property Name	Type	Requirement	Additional Requirements
Duration	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current timestamp minus Start Time of cumulative reading
InstanceID	string	Mandatory	The property shall have value “DCIM:System:Point:Energy:Cont”
MetricDefinitionId	string	Mandatory	The property shall have value “DCIM:BaseMetricDefinition:1”
MetricValue	string	Mandatory	The property shall have value be equal to the value of the cumulative reading in kilowatt-hour (kWh).
TimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current timestamp
Volatile	boolean	Mandatory	The property shall have value TRUE

7.8 Instantaneous Power Consumption Headroom Metric

The following defines the requirements for the instantaneous power consumption headroom metric.

7.8.1 DCIM_BaseMetricDefinition

The following clauses define the requirements for the DCIM_BaseMetricDefinition class. DCIM_BaseMetricDefinition is derived from CIM_BaseMetricDefinition.

7.8.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI for DCIM_BaseMetricDefinition instance shall be:
“http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_BaseMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>”

7.8.1.2 Operations

The following table details the implemented operations on DCIM_BaseMetricDefinition.

712

Table 29 – DCIM_BaseMetricDefinition Operations

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

7.8.1.3 Properties

714 The following table details the requirements for implementing DCIM_BaseMetricDefinition instance
 715 representing the instantaneous power consumption metric. The most derived class name of this instance
 716 shall be DCIM_BaseMetricDefinition.

717 If the column “Property Name” matches the property name, the property either shall have the value
 718 denoted in the corresponding column “Additional Requirements”, or shall be implemented according to
 719 the requirements in the corresponding column “Additional Requirements”.

720

Table 30 – DCIM_BaseMetricDefinition: Instantaneous Power Metric Properties

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 4 (Gauge)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value “Instantaneous Power”
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property shall have value “DCIM:System:Point:Power”
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value “DMTF:System Input Power”
ProgrammaticUnits	string	Mandatory	The property shall have value “watt”
SampleInterval	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to 00000000000500.000000:000 in CIM datetime format.
TimeScope	uint16	Mandatory	The property shall have value 2 (Point)

7.8.2 DCIM_BaseMetricValue

The following clauses define the requirements for the DCIM_BaseMetricValue class.
DCIM_BaseMetricValue is derived from CIM_BaseMetricValue.

7.8.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_BaseMetricValue instance shall be:
“http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_BaseMetricValue?
?__cimnamespace=root/dcim+InstanceID=<InstanceID>”

7.8.2.2 Operations

The following table details the implemented operations on DCIM_BaseMetricValue.

Table 31 – DCIM_BaseMetricValue Operations

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

7.8.2.3 Properties

The following table details the requirements for implementing DCIM_BaseMetricValue instance representing the instantaneous power consumption headroom metric. The most derived class name of this instance shall be DCIM_BaseMetricValue.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

Table 32 – DCIM_BaseMetricValue: Instantaneous Power Consumption Headroom Metric in Amperes Properties

Property Name	Type	Requirement	Additional Requirements
Duration	datetime	Mandatory	The property shall be NULL.
InstanceID	string	Mandatory	The property shall have value “DCIM:System:Point:PowerHdrm:Cont”
MetricDefinitionId	string	Mandatory	The property shall have value “DCIM:System:Point:Power”
MetricValue	string	Mandatory	The property shall have value equal to the value of the instantaneous power headroom in watts.

			The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current timestamp
TimeStamp	datetime	Mandatory	
Volatile	boolean	Mandatory	The property shall have value TRUE

7.9 Maximum Inlet Temperature Metric for Last Hour, Day, Week, Month and Year

The following defines the requirements of the DCIM_AggregationMetricValue instance for the maximum inlet temperature metric for the last hour, day, week, month and year.

One instance of DCIM_AggregationMetricValue shall be instantiated for maximum inlet temperature last hour.

One instance of DCIM_AggregationMetricValue shall be instantiated for maximum inlet temperature last day.

One instance of DCIM_AggregationMetricValue shall be instantiated for maximum inlet temperature last week.

One instance of DCIM_AggregationMetricValue shall be instantiated for maximum inlet temperature last month.

One instance of DCIM_AggregationMetricValue shall be instantiated for maximum inlet temperature last year.

7.9.1 DCIM_AggregationMetricDefinition

The following clauses define the requirements for the DCIM_AggregationMetricDefinition class. DCIM_AggregationMetricDefinition is a derivation of CIM_AggregationMetricDefinition.

7.9.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI DCIM_AggregationMetricDefinition instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/ DCIM_AggregationMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>"

7.9.1.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricDefinition.

Table 33 – DCIM_AggregationMetricDefinition Operations

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

7.9.1.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricDefinition instance representing maximum inlet temperature metric in Watts for Last Hour, Day and Week. The most derived class name of this instance shall be DCIM_AggregationMetricDefinition.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

Table 34 – DCIM_AggregationMetricDefinition: Maximum Inlet Temperature Metric for Last Hour, Day and Week Properties

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 5 (Simple Function)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value “System Peak Inlet Temp”
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property shall have value “DCIM:System:Max:InletTemp”
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value " DCIM:System Peak Inlet Temperature"
ProgrammaticUnits	string	Mandatory	The property shall have value "degree celsius"
SampleInterval	datetime	Mandatory	The property shall represent the datetime interval for sampling the metric.
SimpleFunction	uint16	Mandatory	The property shall have value 3 (Maximum)
TimeScope	uint16	Mandatory	The property shall have value 2 (Point)

7.9.2 DCIM_AggregationMetricValue

The following clauses define the requirements for the DCIM_AggregationMetricValue class. DCIM_AggregationMetricValue is a derivation of CIM_AggregationMetricValue.

7.9.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_AggregationMetricValue instance shall be: “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_AggregationMetricValue?__cimnamespace=root/dcim+InstanceID=<InstanceID>”

7.9.2.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricValue.

Table 35 – DCIM_AggregationMetricValue Operations

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

7.9.2.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricValue instance representing maximum inlet temperature metric in Watts for Last Hour, Day and Week. The most derived class name of this instance shall be DCIM_AggregationMetricValue.

If the column "Property Name" matches the property name, the property either shall have the value denoted in the corresponding column "Additional Requirements", or shall be implemented according to the requirements in the corresponding column "Additional Requirements".

Table 36 – DCIM_AggregationMetricValue: Maximum Inlet Temperature Metric for Last Hour, Day Week, Month and Year Properties

Property Name	Type	Requirement	Additional Requirements
AggregationDuration	datetime	Mandatory	shall be in W3C representation in WS-CIM with the corresponding value equal to 1 hour or 1 day or 1 week or 1 month or 1 year.
AggregationTimeStamp	datetime	Mandatory	shall be in W3C representation in WS-CIM with the corresponding value equal to current timestamp.
ElementName	string	Mandatory	shall represent the user-friendly name for the metric.
InstanceID	string	Mandatory	shall have one of the following values: DCIM:System:Max:InletTemp:1H DCIM:System:Max:InletTemp:1D DCIM:System:Max:InletTemp:1W DCIM:System:Max:InletTemp:1M DCIM:System:Max:InletTemp:1Y
MetricDefinitionId	string	Mandatory	"DCIM:System:Max:InletTemp"
MetricValue	string	Mandatory	shall be equal to the collection value for the last hour or day or week or month or year in Celsius.
TimeStamp	datetime	Mandatory	shall be in W3C representation in WS-CIM with the corresponding value equal to the value collection timestamp.
Volatile	boolean	Mandatory	TRUE

7.10 Average Inlet Temperature Metric for Last Hour, Day, Week, Month and Year

The following defines the requirements of the DCIM_AggregationMetricValue instance for the average inlet temperature metric for last hour, day, week, month and year.

One instance of DCIM_AggregationMetricValue shall be instantiated for average inlet temperature last hour.

One instance of DCIM_AggregationMetricValue shall be instantiated for average inlet temperature last day.

One instance of DCIM_AggregationMetricValue shall be instantiated for average inlet temperature last week.

One instance of DCIM_AggregationMetricValue shall be instantiated for average inlet temperature last month.

One instance of DCIM_AggregationMetricValue shall be instantiated for average inlet temperature last year.

7.10.1 DCIM_AggregationMetricDefinition

The following clauses define the requirements for the DCIM_AggregationMetricDefinition class.
DCIM_AggregationMetricDefinition is a derivation of CIM_AggregationMetricDefinition.

7.10.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI DCIM_AggregationMetricDefinition instance shall be:
“http://schemas.dell.com/wbem/wscim/1/cim-schema/2/ DCIM_AggregationMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>”

7.10.1.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricDefinition.

Table 37 – DCIM_AggregationMetricDefinition Operations

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

7.10.1.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricDefinition instance representing average inlet temperature metric in Watts for Last Hour, Day and Week. The most derived class name of this instance shall be DCIM_AggregationMetricDefinition.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

Table 38 – DCIM_AggregationMetricDefinition: Average Inlet temperature Metric in Watts for Last Hour, Day and Week Properties

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 5 (Simple Function)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value “System Average Inlet Temperature”
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property shall have value “DCIM:System:Avg:InletTemp”
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value " DCIM:System Average Inlet Temperature"
ProgrammaticUnits	string	Mandatory	The property shall have value "degree celsius"
SampleInterval	datetime	Mandatory	The property shall represent the datetime interval for sampling the metric.
SimpleFunction	uint16	Mandatory	The property shall have value 4 (Average)

Property Name	Type	Requirement	Additional Requirements
TimeScope	uint16	Mandatory	The property shall have value 2 (Point)

7.10.2 DCIM_AggregationMetricValue

The following clauses define the requirements for the DCIM_AggregationMetricValue class.

DCIM_AggregationMetricValue is a derivation of CIM_AggregationMetricValue.

7.10.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

The instance Resource URI for this DCIM_AggregationMetricValue instance shall be:
“http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_AggregationMetricValue?
?__cimnamespace=root/dcim+InstanceID=<InstanceID>”

7.10.2.2 Operations

The following table details the implemented operations on DCIM_AggregationMetricValue.

Table 39 – DCIM_AggregationMetricValue Operations

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

7.10.2.3 Properties

The following table details the requirements for implementing DCIM_AggregationMetricValue instance representing average inlet temperature metric in Watts for Last Hour, Day and Week. The most derived class name of this instance shall be DCIM_AggregationMetricValue.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

Table 40 – DCIM_AggregationMetricValue: Average Inlet temperature Metric in Celsius for Last Hour, Day and Week Properties

Property Name	Type	Requirement	Additional Requirements
AggregationDuration	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to 1 hour or 1 day or 1 week or 1 month or 1 year.
AggregationTimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to current timestamp.
ElementName	string	Mandatory	The property shall represent the user-friendly name for the metric.

InstanceID	string	Mandatory	The property shall have one of the below values: "DCIM:System:Avg:InletTemp:1H" "DCIM:System:Avg:InletTemp:1D" "DCIM:System:Avg:InletTemp:1W" "DCIM:System:Avg:InletTemp:1M" "DCIM:System:Avg:InletTemp:1Y"
MetricDefinitionId	string	Mandatory	The property shall have value "DCIM:System:Avg:InletTemp"
MetricValue	datetime	Mandatory	The property shall be equal to the collection value for the last hour or day or week or month or year in Celsius.
Timestamp	datetime	Mandatory	The property shall represent the timestamp of the metric.
ElementName	string	Mandatory	The property shall represent the user friendly name for the metric.
Volatile	boolean	Mandatory	The property shall have value TRUE.

7.11 Statistical Data Associated to OOB Sensors

All the statistical data associated to OOB Sensors are modelled under BaseMetrics profile.

The various categories of statistical data is presented as sensor instances of DCIM_AggregationMetricDefinition class. So the instances are: i.e., CPUPerfStatistics, MemoryPerfStatistics, IOPerfStatistics, CUPSIndexStatistics. The detailed explanation of properties of this class is presented under 7.11.1.

The statistical data is exposed to user under various instances of DCIM_AggregationMetricValues class. The values & associated timestamps are properties of these instances. The instances are MinLastHour, MinLastday, MinLastWeek, MaxLastHour, MaxLastday, MaxLastWeek, PeakUtilization, AverageLastHour, AverageLastDay, AverageLastWeek. The detailed explanation of properties of this class is presented under 7.11.2.

This statistical data is license dependent. To view the instance of OOB sensors either feature license or Enterprise license is must.

7.11.1 DCIM_AggregationMetricDefinition

The following table shows properites of the class DCIM_AggregationMetricDefinition. The values are presented in percentage form. The most derived class name of this instance shall be DCIM_AggregationMetricDefinition.

Table Properties of DCIM_AggregationMetricDefinition

Property Name	Type	Requirement	Possible Values
ChangeType	uint16	Mandatory	The property shall have value 5 (Simple Function).
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have appropriate name. For e.g: Timed Average IO Usage Statistics.
GatheringType	uint16	Mandatory	The property shall have value 3

			(periodic)
Id	string	Mandatory	The property shall have value similar to the given example: "DCIM:SystemBoardCPUUsageStat" OR "DCIM:SystemBoardIOUsageStat" OR "DCIM:SystemBoardMEMUsageStat" OR "DCIM:SystemBoardSYSUsageStat"
IsContinuous	boolean	Mandatory	The property shall have value TRUE
Name	string	Mandatory	The property shall have value "DCIM:System CPU Usage Statistics" OR "Timed Average IO Usage Statistics" OR "DCIM:System Memory Usage Statistics" OR "DCIM:System CUPS Index Statistics"
ProgrammaticUnits	string	Mandatory	The property shall have value "percentage"
SampleInterval	datetime	Mandatory	The property value shall be in W3C representation in WS-CIM with the corresponding value equal to CIM datetime 00000000000600.000000:000 as the interval is 6sec.
SimpleFunction	uint16	Mandatory	The property shall have value 3 (Maximum)
TimeScope	uint16	Mandatory	The property shall have value 3 (Interval)

7.11.2 DCIM_AggregationMetricValue

The following table details the properties of DCIM_AggregationMetricValue instance representing statistical data in percentage for Last Hour, Day and Week for the below metric Instances:

Table Properties of DCIM_AggregationMetricValue

Property Name	Type	Requirement	Possible Values
AggregationDuration	datetime	Mandatory	For 1Hour: 00000000010000.000000:000 1Day: 00000001000000.000000:000 1Week: 00000007000000.000000:000 None: 00000000000000.000000:000
AggregationTimeStamp	datetime	Mandatory	Current timestamp.

Property Name	Type	Requirement	Possible Values
ElementName	string	Mandatory	Shall represent the user-friendly name for the metric.Example: Maximum CPU Usage for the last week
InstanceID	string	Mandatory	shall have appropriate value as shown in below example:" DCIM:SystemBoard:Avg:SYSUsage:1W"
MetricDefinitionId	string	Mandatory	This property shall have value in the format shown below.E.g.: DCIM:iDRAC:Embedded.1:SystemBoardCPUUsageStat
MetricValue	string	Mandatory	Shall be equal to the collection value for last 1 hour or 1 day or 1 week in percentage.
TimeStamp	datetime	Mandatory	Shall be in W3C representation in WS-CIM with the corresponding value equal to the value collection timestamp.
Volatile	boolean	Mandatory	TRUE

Note:

1. The value of property MetricDefinitionID (DCIM_AggregationMetricValue) should match to property Id (DCIM_AggregationMetricDefinition).
2. Timestamp is not applicable for Average metric Values. So in that case timestamp will be NULL.

7.12 Inlet Temperature Time above Thresholds Metric

The following defines the requirements for the inlet temperature time above thresholds metric. The metric describes the percentage of time for which system inlet temperature have been above the warning and fatal thresholds.

7.12.1 DCIM_BaseMetricDefinition

The following clauses define the requirements for the DCIM_BaseMetricDefinition class.
DCIM_BaseMetricDefinition is derived from CIM_BaseMetricDefinition.

7.12.1.1 Resource URIs for WinRM®

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

The key property shall be the Id.

The instance Resource URI for DCIM_BaseMetricDefinition instance shall be:
"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_BaseMetricDefinition?
?__cimnamespace=root/dcim+Id=<Id>"

7.12.1.2 Operations

The following table details the implemented operations on DCIM_BaseMetricDefinition.

Table 41 – DCIM_BaseMetricDefinition Operations

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI

Enumerate	Mandatory	Class URI
Associators	Mandatory	Instance URI
References	Mandatory	Instance URI

7.12.1.3 Properties

The following table details the requirements for implementing DCIM_BaseMetricDefinition instance representing inlet temperature time above thresholds metric. The most derived class name of this instance shall be DCIM_BaseMetricDefinition.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

Table 42 – DCIM_BaseMetricDefinition: Inlet Temperature Time above Thresholds Metric Properties

Property Name	Type	Requirement	Additional Requirements
ChangeType	uint16	Mandatory	The property shall have value 3 (Counter)
DataType	uint16	Mandatory	The property shall have value 12 (uint32)
ElementName	string	Mandatory	The property shall have value “Percentage of Time Spent in Inlet Temperature Threshold Limits”
GatheringType	uint16	Mandatory	The property shall have value 3 (periodic)
Id	string	Mandatory	The property shall have value “DCIM:System:InletTemp:Percent”
IsContinuous	boolean	Mandatory	The property shall have value TRUE.
Name	string	Mandatory	The property shall have value "DCIM:System Inlet Temperature Percent"
ProgrammaticUnits	string	Mandatory	The property shall have value "percent"
SampleInterval	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to 00000000000005.000000:000 in CIM datetime format.
TimeScope	uint16	Mandatory	The property shall have value 4 (Startup Interval).

7.12.2 DCIM_BaseMetricValue

The following clauses define the requirements for the DCIM_BaseMetricValue class. DCIM_BaseMetricValue is derived from CIM_BaseMetricValue.

7.12.2.1 Resource URIs for WinRM®

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

The key property shall be the InstanceID.

925 The instance Resource URI for this DCIM_BaseMetricValue instance shall be:
 926 "http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_BaseMetricValue?
 927 ?__cimnamespace=root/dcim+InstanceID=<InstanceID>"

928 7.12.2.2 Operations

929 The following table details the implemented operations on DCIM_BaseMetricValue.

930 **Table 43 – DCIM_BaseMetricValue Operations**

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

931 7.12.2.3 Properties

932 The following table details the requirements for implementing DCIM_BaseMetricValue instance
 933 representing inlet temperature time above thresholds metric. The most derived class name of this
 934 instance shall be DCIM_BaseMetricValue.

935 If the column "Property Name" matches the property name, the property either shall have the value
 936 denoted in the corresponding column "Additional Requirements", or shall be implemented according to
 937 the requirements in the corresponding column "Additional Requirements".

938 **Table 44 – DCIM_BaseMetricValue: Inlet temperature Time above Thresholds Metric Properties**

Property Name	Type	Requirement	Additional Requirements
Duration	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to current timestamp minus start time of the metric.
ElementName	string	Mandatory	The property shall represent the user-friendly name for the metric.
InstanceID	string	Mandatory	The property shall have one of the following values: "DCIM:System:Point:InletTempCriticalPerc:Cont", or "DCIM:System:Point:InletTempWarnPerc:Cont"
MetricDefinitionId	string	Mandatory	The property shall have the value of "DCIM:System:InletTemp:Percent".
MetricValue	string	Mandatory	The property shall be a percentage value.
TimeStamp	datetime	Mandatory	The property shall be in W3C representation in WS-CIM with the corresponding value equal to Current timestamp
Volatile	boolean	Mandatory	The property shall have value TRUE

7.13 DCIM_MetricDefForME

The following clauses define the requirements for the DCIM_MetricDefForME class.
DCIM_MetricDefForME is derived from CIM_MetricDefForME.

7.13.1 Resource URIs for WinRM®

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

The key properties shall be the Antecedent and Dependent.

The instance Resource URI for this DCIM_MetricDefForME instance shall be:
http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricDefForME?__cimnamespace=root/dcim+Antecedent=<Reference To DCIM_ComputerSystem>+Dependent=<Reference to DCIM_BaseMetricDefinition or DCIM_AggregationMetricDefinition>

7.13.2 Operations

The following table details the implemented operations on DCIM_MetricDefForME.

Table 45 – DCIM_MetricDefForME Operations

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

7.13.3 Properties

The following table details the requirements for implementing DCIM_MetricDefForME instance representing an association between DCIM_ComputerSystem and both DCIM_BaseMetricDefinition and DCIM_AggregationMetricDefinition.

If the column “Property Name” matches the property name, the property either shall have the value denoted in the corresponding column “Additional Requirements”, or shall be implemented according to the requirements in the corresponding column “Additional Requirements”.

961

Table 46 – DCIM_MetricDefForME Properties

Properties	Type	Requirement	Additional Requirements
Antecedent	Reference	Mandatory	The property value is the Instance URI of DCIM_ComputerSystem class.
Dependent	Reference	Mandatory	The property value is the Instance URI of DCIM_BaseMetricDefinition or DCIM_AggregationMetricDefinition.
MetricCollectionEnabled	uint16	Mandatory	The property shall have value of 2 (Enabled).

962 **7.14 DCIM_MetricServiceCapabilities**

963 The following clauses define the requirements for the DCIM_MetricServiceCapabilities class.

964 DCIM_MetricServiceCapabilities is derived from CIM_MetricServiceCapabilities.

965 The DCIM_BMElementCapabilities association's Capabilities property shall reference

966 DCIM_MetricServiceCapabilities instances.

967 **7.14.1 Resource URIs for WinRM®**

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

970 The key properties shall be the InstanceID.

971 The instance Resource URI for this DCIM_MetricServiceCapabilities instance shall be:

972 [http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricServiceCapabilities?](http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricServiceCapabilities?__cimnamespace=root/dcim+InstanceID=<InstanceID>)
973 [?__cimnamespace=root/dcim+InstanceID=<InstanceID>](http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricServiceCapabilities?__cimnamespace=root/dcim+InstanceID=<InstanceID>)

974 **7.14.2 Operations**

975 The following table details the implemented operations on DCIM_MetricServiceCapabilities.

976 **Table 47 – DCIM_MetricServiceCapabilities Operations**

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

977 **7.14.3 Properties**

978 The following table details the requirements for implementing DCIM_MetricServiceCapabilities instance
979 representing an association between DCIM_ComputerSystem and both DCIM_BaseMetricValue and
980 DCIM_AggregationMetricValue.

981 If the column "Property Name" matches the property name, the property either shall have the value
982 denoted in the corresponding column "Additional Requirements", or shall be implemented according to
983 the requirements in the corresponding column "Additional Requirements".

984 **Table 48 – DCIM_MetricServiceCapabilities Properties**

Property Name	Type	Requirement	Additional Requirements
ControllableMetrics[]	String	Mandatory	The property array shall have the following elements:

			"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/root/dcim/DCIM_AggregationMetricDefinition?Id=AggrMetricDef:0" , "http://schemas.dell.com/wbem/wscim/1/cim-schema/2/root/dcim/DCIM_AggregationMetricDefinition?Id=AggrMetricDef:3" , "http://schemas.dell.com/wbem/wscim/1/cim-schema/2/root/dcim/DCIM_BaseMetricDefinition?Id=DCIM:BaseMetricDefinition:1"
MetricsControlTypes[]	uint16	Mandatory	The property array shall have the following elements:4(Both),4(Both),4(Both)
ControllableManagedElement[]	String	Mandatory	The property array shall be an empty array.
ManagedElementControlTypes[]	uint16	Mandatory	The property array shall be an empty array.
SupportedMethods[]	uint16	Mandatory	The property array shall have the following elements:2 (ControlMetrics)
InstanceID	String	Mandatory	The property shall have value "DCIM:MetricServiceCapabilities:1"
ElementName	String	Mandatory	The property shall have value "Metric Service Capabilities"

985

986 7.15 DCIM_MetricService

987 The following clauses define the requirements for the DCIM_MetricService class. DCIM_MetricService is
988 derived from CIM_MetricService.

989 The DCIM_BMElementCapabilities association's ManagedElement property shall reference the
990 DCIM_MetricService instance.

991 The DCIM_BMServiceAffectsElement association's AffectingElement property shall reference the
992 DCIM_MetricService instance.

993 The DCIM_BMServiceAffectsElement association's ElementEffects array property shall contain value 5
994 (Manages).

995 The DCIM_BMHostedService association's Dependent property shall reference the DCIM_MetricService
996 instance.

997 The DCIM_ElementConformsToProfile association's ManagedElement property shall reference the
998 DCIM_MetricService instance.

999 The DCIM_LCElementConformsToProfile association's ManagedElement property shall reference the
1000 DCIM_MetricService instance.

1001

1002 7.15.1 Resource URIs for WinRM®

1003 The class Resource URI shall be "http://schemas.dell.com/wbem/wscim/1/cim-
1004 schema/2/DCIM_MetricService?__cimnamespace=root/dcim"

1005 The key properties shall be the SystemCreationClassName, CreationClassName, SystemName, and
1006 Name.

1007 The instance Resource URI for this DCIM_MetricService instance shall be:
1008 [http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricService?](http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricService?_cimnamespace=root/dcim+SystemCreationClassName=<SystemCreationClassName>+CreationClassName=<CreationClassName>+SystemName=<SystemName>+Name=<Name>)
1009 [?_cimnamespace=root/dcim+SystemCreationClassName=<](http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricService?_cimnamespace=root/dcim+SystemCreationClassName=<SystemCreationClassName>+CreationClassName=<CreationClassName>+SystemName=<SystemName>+Name=<Name>)
1010 [SystemCreationClassName>+CreationClassName=<CreationClassName>+SystemName=<SystemName](http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricService?_cimnamespace=root/dcim+SystemCreationClassName=<SystemCreationClassName>+CreationClassName=<CreationClassName>+SystemName=<SystemName>+Name=<Name>)
1011 [e>+Name=<Name>](http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MetricService?_cimnamespace=root/dcim+SystemCreationClassName=<SystemCreationClassName>+CreationClassName=<CreationClassName>+SystemName=<SystemName>+Name=<Name>).

1012 7.15.2 Operations

1013 The following table details the implemented operations on DCIM_MetricService.

1014 **Table 49 – DCIM_MetricService Operations**

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI
Invoke	Mandatory	Instance URI
Associators	Mandatory	Instance URI
References	Mandatory	Instance URI

1015 7.15.3 Properties

1016 The following table details the requirements for implementing DCIM_MetricService. If the column
1017 “Property Name” matches the property name, the property either shall have the value denoted in the
1018 corresponding column “Additional Requirements”, or shall be implemented according to the requirements
1019 in the corresponding column “Additional Requirements”.

1020 **Table 50 – DCIM_MetricService Properties**

Property Name	Type	Requirement	Additional Requirements
SystemCreationClassName	string	Mandatory	The property shall have value “DCIM_SPCoComputerSystem”
CreationClassName	string	Mandatory	The property shall have value “DCIM_MetricService”
SystemName	string	Mandatory	The property shall have value “systemmc”
Name	string	Mandatory	The property shall have value “DCIM MetricService 1”
ElementName	string	Mandatory	The property shall have value “Metric Service”

1021 7.16 DMTF Base Metrics Profile Registration

1022 This section describes the implementation for the DCIM_RegisteredProfile class.

1023 This class is instantiated in the Interop Namespace.

1024 The DCIM_ElementConformsToProfile association(s) shall reference the DCIM_RegisteredProfile
1025 instance.

1026 7.16.1 Resource URIs for WinRM®

1027 The class Resource URI is:

1028 "http://schemas.dmtf.org/wbem/wscim/1/cim-
1029 schema/2/CIM_RegisteredProfile?__cimnamespace=root/interop"

1030 The key property shall be the InstanceID property.

1031 The instance Resource URI is:

1032 "http://schemas.dell.com/wbem/wscim/1/cim-
1033 schema/2/DCIM_RegisteredProfile?__cimnamespace=root/interop+InstanceID=DCIM:BaseMetricsR
1034 egisteredProfile:1"

1035 7.16.2 Operations

1036 The following table details the implemented operations on for DCIM_RegisteredProfile.

1037 **Table 51 – DCIM_RegisteredProfile - Operations**

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

1038

1039 7.16.3 Properties

1040 The following table details the implemented properties for DCIM_LCRegisteredProfile instance
1041 representing Base Metrics Profile implementation.

1042 **Table 52 – DCIM_RegisteredProfile - Properties**

Property Name	Requirement	Type	Additional Requirements
InstanceID	Mandatory	String	The property value shall be "DCIM:BaseMetricsRegisteredProfile:1"
RegisteredName	Mandatory	String	This property value shall be "Base Metrics"
RegisteredVersion	Mandatory	String	This property value shall be "1.0.0".
RegisteredOrganization	Mandatory	Uint16	This property value shall be 2 (DMTF).

1043 7.17 Dell Base Metrics Profile Registration

1044 This section describes the implementation for the DCIM_LCRegisteredProfile class.

1045 This class is instantiated in the Interop Namespace.

1046 The DCIM_LCElementConformsToProfile association(s) shall reference the DCIM_LCRegisteredProfile
1047 instance.

1048 7.17.1 Resource URIs for WinRM®

1049 The class Resource URI is:

1050 "http://schemas.dmtf.org/wbem/wscim/1/cim-
1051 schema/2/CIM_RegisteredProfile?__cimnamespace=root/interop"

1052 The key property shall be the InstanceID property.

1053 The instance Resource URI is:

"http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_LCRegisteredProfile?__cimnamespace=root/interop+InstanceID=DMTF:BaseMetrics:1.0.0"

7.17.2 Operations

The following table details the implemented operations on for DCIM_LCRegisteredProfile.

Table 53 – DCIM_LCRegisteredProfile - Operations

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

7.17.3 Properties

The following table details the implemented properties for DCIM_LCRegisteredProfile instance representing Base Metrics Profile implementation.

Table 54 – DCIM_LCRegisteredProfile - Properties

Property Name	Requirement	Type	Additional Requirements
InstanceID	Mandatory	String	This property value shall be "DMTF:BaseMetrics:1.0.0"
RegisteredName	Mandatory	String	This property value is "Base Metrics"
RegisteredVersion	Mandatory	String	This property value is "1.2.0".
RegisteredOrganization	Mandatory	Uint16	This property value is 1 (Other).
OtherRegisteredOrganization	Mandatory	String	The property value is "DCIM".

8 Methods

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

8.1 CIM_MetricService.ControlMetrics()

The ControlMetrics() method provides the ability to reset the metric collection for a particular metric or metrics.

The ControlMetrics() method's return code values shall be as specified in Table 55 where the method execution behavior matches the return code description. The ControlMetrics() method's parameters are in specified in Table 57. No standard messages are defined for this method.

Table 55 – CIM_MetricService.ControlMetrics() Method: Return Code Values

Value	Description
0	Operation completed successfully
2	Failed

1076

Table 56 – CIM_MetricService.ControlMetrics() Method: Standard Messages

MessageID (OUT parameter)	Message	MessageArguments[]
SYS001	The command was successful	
SYS003	Missing parameter(s) %s	MetricCollectionEnabled, Definition
SYS004	Invalid parameter value for %s	MetricCollectionEnabled, Definition
SYS022	Resource allocation failure	
SYS091	Unable to complete the operation because the method is not supported.	

1077

1078

Table 57 – CIM_MetricService.ControlMetrics() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN	Subject	CIM_ManagedElement REF	The parameter shall be NULL.
IN	Definition	CIM_BaseMetricDefinition REF	Reference to the DCIM_BaseMetricDefinition or DCIM_AggregationMetricDefinition for which collection is to be enabled or disabled
IN, REQ	MetricCollectionEnabled	uint16	The parameter value shall be 4 (Reset).
OUT	MessageID	String	Error MessageID
OUT	Message	String	Error Message
OUT	MessageArguments[]	String	Error MessageArguments

1079 **8.2 DCIM_MetricService.ExportThermalHistory()**

1080 The ExportThermalHistory() method is used to exports the system's thermal history in xml or csv from the
 1081 Lifecycle Controller to a remote share.

1082 **Table 58 – DCIM_MetricService.ExportThermalHistory() Method: Return Code Values**

Value	Description
2	Error occurred
4096	Job started: REF returned to started CIM_ConcreteJob

1083 **Table 59 – DCIM_MetricService.ExportThermalHistory() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	IPAddress	string	The IP address of the target export server.
IN, REQ	ShareName	string	The directory path to the mount point.
IN, REQ	FileName	string	The target output file name.
IN, REQ	ShareType	uint16	Type of share: NFS=0, CIFS=2
IN, REQ	FileType	uint16	Type of exported file: XML=0, CSV=1
IN	Username	String	User name for the target export server.
IN	Password	String	Password for the target export server.
IN	Workgroup	String	The applicable workgroup.
OUT	Job	CIM_ConcreteJob REF	Returned to keep track of config job status ¹
OUT	MessageID	String	Error Message ID may be used to look-up in the Dell Message registry files. For more information, see Error Message Registry.
OUT	Message	String	Error Message in English corresponding to MessageID is returned if the method fails to execute.
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages.

1084

1085

1086 **Table 60 – DCIM_MetricService.ExportThermalHistory() Method: Standard Messages**

MessageID (OUT parameter)	Message	MessageArguments[]
SYS002	Cannot perform the operation due to an unknown error in iDRAC.	NA
SYS003	Missing parameter(s) %s	<parameter name>
SYS004	Invalid parameter value for %s	<parameter name>
SYS022	Resource allocation failure	NA
SYS026	Missing parameters for network share: %s.	<share type>
SYS027	Cannot access network share.	NA
SYS028	Method is already running: %s.	ExportThermalHistory
JCP017	Maximum job limit reached, cannot create new jobs.	NA
JCP018	Backup job is running, cannot	NA

MessageID (OUT parameter)	Message	MessageArguments[]
	create new jobs until the existing Backup job is completed or is canceled.	
JCP019	Restore job is running, cannot create new jobs until the existing Restore job is completed or is canceled.	NA

8.3 DCIM_MetricService.PeakReset()

The PeakReset() method provides the ability to reset the Peak utilization for a particular sensor to 0.

The PeakReset() method's return code values shall be as specified in below Table where the method execution behavior matches the return code description. The PeakReset() method's parameters are in specified in Table 57. No standard messages are defined for this method.

Table 61 – CIM_MetricService.PeakReset() Method: Return Code Values

Value	Description
0	Operation completed successfully
2	Failed

Table 62 – CIM_MetricService.PeakReset() Method: Standard Messages

MessageID (OUT parameter)	Message	MessageArguments[]
SYS001	The command was successful	
SYS002	Cannot perform the operation due to an unknown error in iDRAC.	
SYS003	Missing parameter(s) %s	<Parameter Name>
SYS004	Invalid parameter value for %s	<Parameter Name>

Table 63 – CIM_MetricService.PeakReset() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN, REQ	UsageType	String	FQDD should be passed. iDRAC.Embedded.1#SystemBoardCPUUsageStat OR iDRAC.Embedded.1#SystemBoardIOUsageStat OR iDRAC.Embedded.1#SystemBoardMEMUsageStat OR iDRAC.Embedded.1#SystemBoardSYSUsageStat
OUT	MessageID	String	Error MessageID
OUT	Message	String	Error Message
OUT	MessageArguments[]	String	Error MessageArguments

1097

1098 9 Use Cases

1099 See *Lifecycle Controller (LC) Integration Best Practices Guide*.

1100 10 CIM Elements

1101 No additional requirements are specified.

1102 11 Privilege and License Requirement

1103 The following table describes the privilege and license requirements for the listed operations:

1104 **Table 64 – Privilege and License Requirements**

Class and Method	Operation	User Privilege Required	License Required
DCIM_AggregationMetricDefinition	ENUMERATE, GET	Login	None.
DCIM_AggregationMetricValue	ENUMERATE, GET	Login	LM_POWER_MONITORING
DCIM_BaseMetricDefinition	ENUMERATE, GET	Login	None.
DCIM_BaseMetricValue	ENUMERATE, GET	Login	LM_POWER_MONITORING
DCIM_AggrMetricInstance	ENUMERATE, GET	Login	LM_POWER_MONITORING
DCIM_BaseMetricInstance	ENUMERATE, GET	Login	LM_POWER_MONITORING
DCIM_BMElementCapabilities	ENUMERATE, GET	Login	None.
DCIM_MetricDefForME	ENUMERATE, GET	Login	None.
DCIM_MetricForME	ENUMERATE, GET	Login	None.
DCIM_BMServiceAffectsElement	ENUMERATE, GET	Login	None.
DCIM_MetricServiceCapabilities	ENUMERATE, GET	Login	None.
DCIM_MetricService	ENUMERATE, GET	Login	None.
DCIM_MetricService. ControlMetrics()	INVOKE	Login, System Control	LM_POWER_MONITORING
DCIM_MetricService. GetAvgPowerConsumptionByInterval ()	INVOKE	Login	LM_POWER_MONITORING
DCIM_MetricService.PeakReset()	INVOKE	Config	LM_OOB
DCIM_ElementConformsToProfile	ENUMERATE,	Login	None.

Class and Method	Operation	User Privilege Required	License Required
	GET		
DCIM_RegisteredProfile	ENUMERATE, GET	Login	None.
DCIM_LCRegisteredProfile	ENUMERATE, GET	Login	None.
DCIM_LCElementConformsToProfile	ENUMERATE, GET	Login	None.

1105

1106
1107
1108

ANNEX A

Change Log

Version	Date	Description
1.2.0		Added Inlet Temperature metrics.
1.3.0	7/15/2014	New Properties for OOB Statistics (Aggregate Metrics) and Peak Reset method to reset OOB Statistics were added in 13G.
1.3.1	3/10/2015	ControlMetrics Method was updated with New Error SYS091

1109