

Memory Info Profile

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Memory Info Profile

1 Scope

The DCIM Memory Info Profile describes the properties and interfaces for executing system management tasks related to the management of memories (DIMMs) within a system. The profile standardizes and aggregates the description for the memory properties into a memory view representation as well as provides static methodology for the clients to query the memory views without substantial traversal of the model.

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 DSP0226, *Web Services for Management (WS-Management) Specification 1.1.0*

DMTF DSP0227, *WS-Management CIM Binding Specification 1.0.0*

3 Terms and Definitions

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

3.1

conditional

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

3.2

mandatory

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

3.3

may

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

3.4

optional

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

3.5

referencing profile

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

36 **3.6**
37 **shall**
38 indicates requirements to be followed strictly in order to conform to the document and from which no
39 deviation is permitted

40 **3.7**
41 **FQDD**
42 Fully Qualified Device Descriptor is used to identify a particular component in a system.

43 **3.8**
44 **Interop Namespace**
45 Interop Namespace is where instrumentation instantiates classes to advertise its capabilities for client
46 discovery.

47 **3.9**
48 **Implementation Namespace**
49 Implementation Namespace is where instrumentation instantiates classes relevant to executing core
50 management tasks.

51 **3.10**
52 `ENUMERATE`
53 Refers to WS-MAN `ENUMERATE` operation as described in Section 8.2 of DSP0226_V1.1 and Section
54 9.1 of DSP0227_V1.0

55 **3.11**
56 `GET`
57 Refers to WS-MAN `GET` operation as defined in Section 7.3 of DSP00226_V1.1 and Section 7.1 of
58 DSP0227_V1.0

59

60 **4 Symbols and Abbreviated Terms**

61 **4.1**
62 **CIM**
63 Common Information Model

64 **4.2**
65 **iDRAC**
66 integrated Dell Remote Access Controller – management controller for blades and monolithic servers

67 **4.3**
68 **CMC**
69 Chassis Manager Controller – management controller for the modular chassis

70 **4.4**
71 **WBEM**
72 Web-Based Enterprise Management
73

74 **5 Synopsis**

75 **Profile Name:** Memory Info

76 **Version:** 1.0.0

77 **Organization:** Dell

78 **CIM Schema Version:** 2.21.0 Experimental

79 **Dell Schema Version:** 1.0.0

80 **Interop Namespace:** root/interop

81 **Implementation Namespace:** root/dcim

82 **Central Class:** DCIM_MemoryView

83 **Scoping Class:** DCIM_ComputerSystem

84 The Dell Memory Info Profile is a component profile that contains the Dell specific implementation
85 requirements for memory view.

86 DCIM_MemoryView shall be the Central Class.

87 Table 1 identifies profiles that are related to this profile.

88 **Table 1 – Related Profiles**

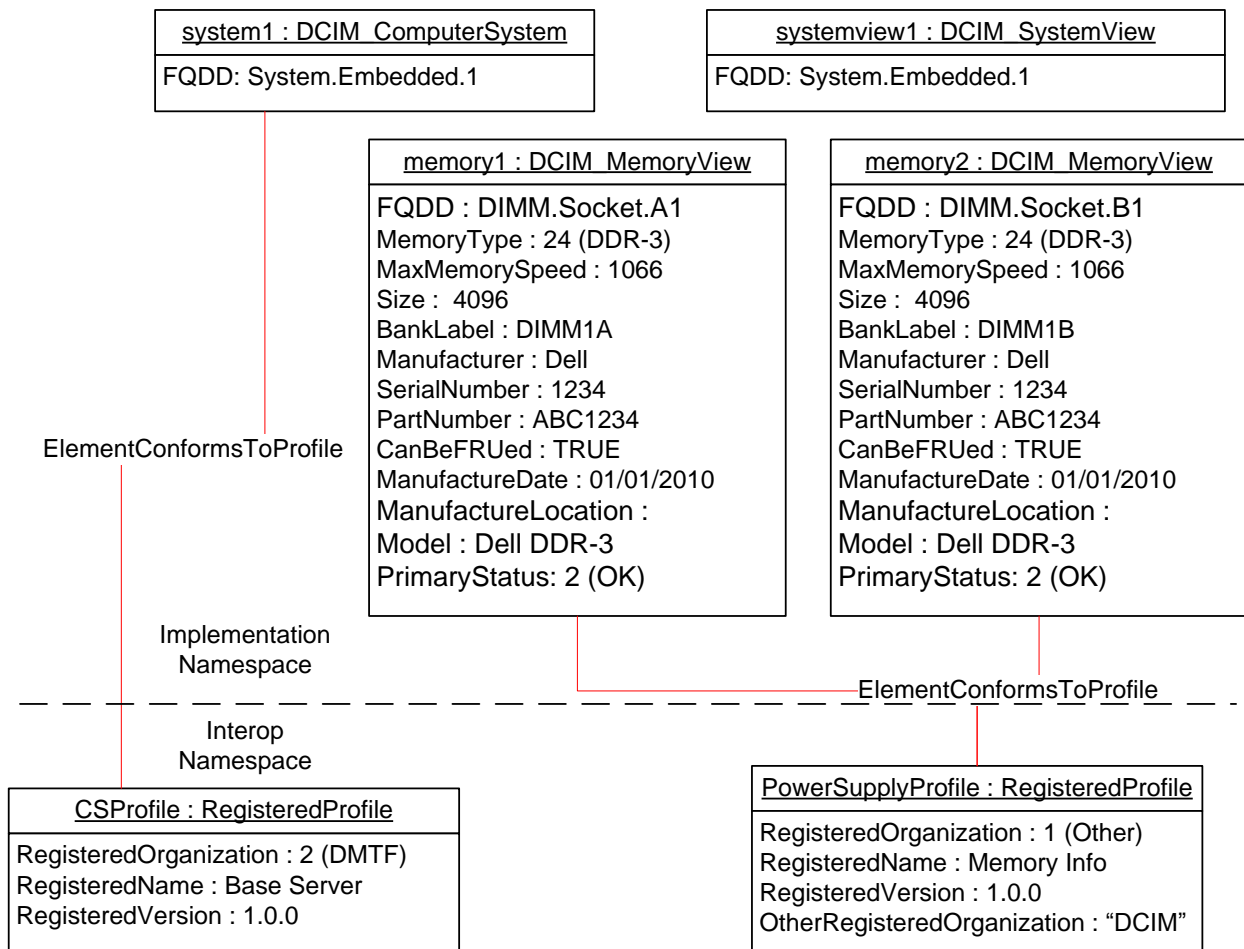
Profile Name	Organization	Version	Relationship
None			

89 **6 Description**

90 The Dell Memory Info Profile describes platform's physical memory. Each DIMM's information is
 91 represented by an instance of DCIM_MemoryView class.

92 Figure 1 details typical Dell Memory Info Profile implementation for a platform containing two DIMMs. In
 93 order for client to discover the instrumentation's support of this profile, MemoryProfile is instantiated in the
 94 Interop Namespace. MemoryProfile instance describes the information about the implemented profile:
 95 most importantly, the name and version of the profile and the organization name that produced the profile.

96 Memory1 and memory2 are the memory views representing the two memories in the Implementation
 97 Namespace. They are associated to the Interop namespace's MemoryProfile instance.



98

99

Figure 1 – Memory Profile Implementation

100 7 Implementation Description

101 This section describes the requirements and guidelines for implementing Dell Memory Info Profile.

102 **Table 2 – Class Requirements: Memory Profile**

Element Name	Requirement	Description
Classes		
DCIM_MemoryView	Mandatory	The class shall be implemented in the Implementation Namespace. See section 7.1.
DCIM_LCElementConformsToProfile	Mandatory	The class shall be implemented in the <i>Implementation Namespace</i> .
DCIM_LCElementConformsToProfile	Mandatory	The class shall be implemented in the <i>Interop Namespace</i> .
DCIM_LCRegisteredProfile	Mandatory	The class shall be implemented in the Interop Namespace. See section 7.2.
Indications		
None defined in this profile		

103

104 7.1 Memory View

105 This section describes the implementation for the DCIM_MemoryView class.

106 This class shall be instantiated in the Implementation Namespace.

107 The DCIM_LCElementConformsToProfile association(s) shall reference the DCIM_MemoryView
108 instance(s).

109 7.1.1 WBEM URIs for WinRM®

110 The class WBEM URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-
111 schema/2/DCIM_MemoryView ?__cimnamespace=<Implementation Namespace>”

112 The key property shall be the InstanceID.

113 The instance WBEM URI for DCIM_MemoryView instance shall be:
114 “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_MemoryView?
115 ?__cimnamespace=<Implementation Namespace>+InstanceID=<FQDD>”

116 7.1.2 Operations

117 The following table details the implemented operations on DCIM_MemoryView.

118 **Table 3 – DCIM_MemoryView - Operations**

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

119

120 **7.1.3 Properties**

121 The following table details the implemented properties for DCIM_MemoryView instance representing a
 122 memory in a system. The “Requirements” column shall denote the implementation requirement for the
 123 corresponding property. If the column “Property Name” matches the property name, the property either
 124 shall have the value denoted in the corresponding column “Additional Requirement”, or shall be
 125 implemented according to the requirements in the corresponding column “Additional Requirement”.

126 **Table 4 – DCIM_MemoryView - Properties**

Property Name	Requirements	Type	Requirement and description
InstanceID	Mandatory	string	The property value shall be the FQDD property value.
FQDD	Mandatory	string	A string containing the Fully Qualified Device Description a user-friendly name for the object.
MemoryType	Mandatory	uint16	The type of the physical memory.
Speed	Mandatory	real32	The property value shall be in MHz. The speed of the physical memory.
Size	Mandatory	uint32	The property value shall be in MB. The total size of the physical memory in MegaBytes.
BankLabel	Mandatory	string	A string identifying the physically labeled bank where the memory is located.
Manufacturer	Mandatory	string	The name of the organization responsible for producing the memory.
SerialNumber	Mandatory	string	A manufacturer-allocated number used to identify the physical memory.
PartNumber	Mandatory	string	The part number assigned by the organization that is responsible for producing or manufacturing the physical memory.
CanBeFRUed	Mandatory	boolean	Boolean that indicates whether this physical memory can be FRUed (TRUE) or not (FALSE).
Model	Mandatory	string	The model of the memory
ManufactureDate	Mandatory	string	Manufacture Date of the product
PrimaryStatus	Mandatory	uint32	PrimaryStatus provides a high level status value, intended to align with Red-Yellow-Green type representation of status for the physical memory,
LastSystemInventoryTime	Mandatory	string	This property provides the last time \"System \"Inventory Collection On Reboot(CSIOR)\" was performed. The value is represented as yyyyymmddHHMMSS.
LastUpdateTime	Mandatory	string	This property provides the last time the data was updated. The value is represented as yyyyymmddHHMMSS

127 **7.2 Memory Info Profile Profile Registration**

128 This section describes the implementation for the DCIM_LCRegisteredProfile class.

129 This class shall be instantiated in the Interop Namespace.

130 The DCIM_ElementConformsToProfile association(s) shall reference the DCIM_LCRegisteredProfile
131 instance.

132 7.2.1 WBEM URIs for WinRM®

133 The class WBEM URI shall be "http://schemas.dmtf.org/wbem/wscim/1/cim-
134 schema/2/CIM_RegisteredProfile?__cimnamespace=<Interop Namespace>"

135 The key property shall be the InstanceID property.

136 The instance WBEM URI shall be: ""http://schemas.dell.com/wbem/wscim/1/cim-
137 schema/2/DCIM_LCRegisteredProfile?__cimnamespace=<InteropNamespace>+InstanceID=
138 DCIM:Memory:1.0.0"

139 7.2.2 Operations

140 The following table details the implemented operations on DCIM_LCRegisteredProfile.

141 **Table 5 – DCIM_LCRegisteredProfile - Operations**

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

142

143 7.2.3 Properties

144 The following table details the implemented properties for DCIM_LCRegisteredProfile instance
145 representing Memory Info Profile implementation. The "Requirements" column shall denote the
146 implementation requirement for the corresponding property. If the column "Name" matches the property
147 name, the property either shall have the value denoted in the corresponding column "Additional
148 Requirements", or shall be implemented according to the requirements in the corresponding column
149 "Additional Requirements".

150 **Table 6 – DCIM_LCRegisteredProfile**

Property Name	Requirement	Additional Requirements
InstanceID	Mandatory	DCIM:Memory:1.0.0
RegisteredName	Mandatory	This property shall have a value of "Memory Info".
RegisteredVersion	Mandatory	This property shall have a value of "1.0.0".
RegisteredOrganization	Mandatory	This property shall have a value of 1 (Other).
OtherRegisteredOrganization	Mandatory	The property value shall match "DCIM".

151

152 8 Methods

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

155 No additional details specified.

156 **9 Use Cases**

157 This section contains use cases for the Dell Memory Profile. For the general instance and class URI
158 structure, see Section 7.1.1 and Section 7.2.1, respectively.

159 Note that URIs in this section are in form of WBEM URIs for WinRM®.

160 **9.1 Discovery of memory profile support**

161 Use one of the two procedures below to confirm the existence of memory profile support

162 A) GET the *DCIM_LCRegisteredProfile* instance using an *InstanceID* of DCIM:Memory:1.0.0.
163 See section 3.11 for a definition of GET .

164 Instance URI:

165 [http://schemas.dmtf.org/wbem/wscim/1/cim-
168 schema/2/DCIM_LCRegisteredProfile?_cimnamespace=root/interop+InstanceID=DCIM:Memor
167 y:1.0.0](http://schemas.dmtf.org/wbem/wscim/1/cim-
166 schema/2/DCIM_LCRegisteredProfile?_cimnamespace=root/interop+InstanceID=DCIM:Memor
167 y:1.0.0)

169 Results for the *InstanceID* of DCIM:Memory:1.0.0 shown below. If no instance is returned, the
170 profile is not supported.

171 *DCIM_LCRegisteredProfile*
172 *AdvertiseTypeDescriptions = WS-Identify, Interop Namespace*
173 *AdvertiseTypes = 1, 1*
174 *InstanceID = DCIM:Memory:1.0.0*
175 *OtherRegisteredOrganization = DCIM*
176 *RegisteredName = Memory*
177 *RegisteredOrganization = 1*
178 *RegisteredVersion = 1.0.0*
179

180 B) ENUMERATE the *CIM_RegisteredProfile* class. See section 3.10 for a definition of
181 ENUMERATE .

182 Class URI:

183 [http://schemas.dmtf.org/wbem/wscim/1/cim-
184 schema/2/CIM_RegisteredProfile?_cimnamespace=root/interop](http://schemas.dmtf.org/wbem/wscim/1/cim-
184 schema/2/CIM_RegisteredProfile?_cimnamespace=root/interop)

185 Then query the result for the following properties:

186 *RegisteredName = Memory, OtherRegisteredOrganization = DCIM, RegisteredVersion = 1.0.0*

187 **9.2 Inventory of memories in system**

188 Enumerate the *DCIM_MemoryView* class to view all available instances of the class

189 Class URI:

190 [http://schemas.dell.com/wbem/wscim/1/cim-
191 schema/2/DCIM_MemoryView?_cimnamespace=root/dcim](http://schemas.dell.com/wbem/wscim/1/cim-
191 schema/2/DCIM_MemoryView?_cimnamespace=root/dcim)

192 The instance information of all available memorys will be returned

193 **9.3 Get the first memory's information**

194 The URI for getting particular instance information is deterministic (i.e the *InstanceID* will be
195 unique for each instance)

196 For the first memory in the system, the instance URI will be:

197 [http://schemas.dell.com/wbem/wscim/1/cim-
schema/2/DCIM_MemoryView?_cimnamespace=root/dcim+InstanceID=DIMM.Socket.A1](http://schemas.dell.com/wbem/wscim/1/cim-
198 schema/2/DCIM_MemoryView?_cimnamespace=root/dcim+InstanceID=DIMM.Socket.A1)

199 The instance of *DCIM_MemoryView* that contains the information on the first memory will be
200 returned

201

202 **10 CIM Elements**

203 No additional details specified.

206
207
208
209

ANNEX A (informative)

Related MOF Files

210 Dell Tech Center MOF Library:
211 <http://www.delltechcenter.com/page/DCIM.Library.MOF>
212
213 Related Managed Object Format (MOF) files:
214 DCIM_MemoryView.mof
215 DCIM_LCEnumeration.mof
216 DCIM_LCRegisteredProfile.mof
217
218