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5 **CDM Implementation Requirements**

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Foreword

60 The *CDM Implementation Requirements* (DSP0255) was prepared by the Diagnostics Working Group of
61 the DMTF.

62 DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems
63 management and interoperability. For information about the DMTF, see <http://www.dmf.org>.

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74

Introduction

75 This specification describes the conformance requirements for implementing the Common Diagnostic
76 Model (CDM) version 2.0.0.

77 **Document conventions**

78 **Typographical conventions**

79 The following typographical conventions are used in this document:

- 80 • Document titles are marked in *italics*.
- 81 • Important terms that are used for the first time are marked in *italics*.

82 **ABNF usage conventions**

83 Format definitions in this document are specified using ABNF (see [RFC5234](#)), with the following
84 deviations:

- 85 • Literal strings are to be interpreted as case-sensitive Unicode characters, as opposed to the
86 definition in [RFC5234](#) that interprets literal strings as case-insensitive US-ASCII characters.

87

CDM Implementation Requirements

88 1 Scope

89 This document describes the requirements for implementing the [Diagnostics Profile](#) version 2.0.0. This
90 document does not define the implementation requirements directly.

91 2 Normative references

92 The following referenced documents are indispensable for the application of this document. For dated or
93 versioned references, only the edition cited (including any corrigenda or DMTF update versions) applies.
94 For references without a date or version, the latest published edition of the referenced document
95 (including any corrigenda or DMTF update versions) applies.

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

98 DMTF DSP0200, *CIM Operations over HTTP 1.2*,
99 <http://www.dmtf.org/sites/default/files/standards/documents/DSP200.html>

100 DMTF DSP0200, *CIM Operations over HTTP 1.3*,
101 http://dmtof.org/sites/default/files/standards/documents/DSP0200_1.3.1.pdf

102 DMTF DSP0201, *Representation of CIM using XML 2.2*,
103 <http://www.dmtf.org/sites/default/files/standards/documents/DSP201.html>

104 DMTF DSP0201, *Representation of CIM using XML 2.3*,
105 http://dmtof.org/sites/default/files/standards/documents/DSP0201_2.3.1.pdf

106 DMTF DSP0203, *CIM-XML DTD 2.2*,
107 <http://dmtof.org/sites/default/files/standards/documents/cim.dtd>

108 DMTF DSP0203, *CIM-XML DTD 2.3*,
109 <http://dmtof.org/documents/wbem/xml-document-type-definition-231>

110 DMTF DSP0205, *WBEM Discovery Using SLP 1.0*,
111 http://dmtof.org/sites/default/files/standards/documents/DSP0205_1.0.0.pdf

112 DMTF DSP0206, *WBEM SLP Template 1.0*,
113 <http://dmtof.org/sites/default/files/standards/documents/wbem.1.0.en>

114 DMTF DSP0226, *Web Services for Management (WS-Management) 1.1*,
115 http://dmtof.org/sites/default/files/standards/documents/DSP0226_1.1.pdf

116 DMTF DSP0227, *WS-Management CIM Binding Specification 1.2*,
117 http://dmtof.org/sites/default/files/standards/documents/DSP0227_1.2.0.pdf

118 DMTF DSP0230, *WS-CIM Mapping Specification 1.1*,
119 http://dmtof.org/sites/default/files/standards/documents/DSP0230_1.1.0.pdf

120 DMTF DSP1001, *Management Profile Specification Usage Guide 1.0*,
121 http://dmtof.org/sites/default/files/standards/documents/DSP1001_1.0.1.pdf

122 DMTF DSP1002, *Diagnostics Profile 2.0*,
123 http://dmtof.org/sites/default/files/standards/documents/DSP1002_2.0.0.pdf

- 124 DMTF DSP1033, *Profile Registration Profile 1.0*,
125 http://dmtf.org/sites/default/files/standards/documents/DSP1033_1.0.0.pdf
- 126 DMTF DSP1104, *FC HBA Profile 1.0*,
127 http://dmtf.org/sites/default/files/standards/documents/DSP1104_1.0.0.pdf
- 128 DMTF DSP1105, *CPU Diagnostics Profile 1.0*,
129 http://dmtf.org/sites/default/files/standards/documents/DSP1105_1.0.1.pdf
- 130 DMTF DSP1107, *Ethernet NIC Diagnostics Profile 1.0*,
131 http://dmtf.org/sites/default/files/standards/documents/DSP1107_1.0.0.pdf
- 132 DMTF DSP1110, *Optical Drive Diagnostics Profile 1.0*,
133 http://dmtf.org/sites/default/files/standards/documents/DSP1110_1.0.0.pdf
- 134 DMTF DSP1113, *Disk Drive Diagnostics Profile 1.0*,
135 http://dmtf.org/sites/default/files/standards/documents/DSP1113_1.0.0.pdf
- 136 DMTF DSP1114, *RAID Controller Diagnostics Profile 1.0*,
137 http://dmtf.org/sites/default/files/standards/documents/DSP1114_1.0.0.pdf
- 138 IETF RFC5234, *ABNF: Augmented BNF for Syntax Specifications, January 2008*,
139 <http://tools.ietf.org/html/rfc5234>
- 140 ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*,
141 <http://isotc.iso.org/livelink/livelink.exe?func=ll&objId=4230456&objAction=browse&sort=subtype>

142 **3 Terms and definitions**

143 In this document, some terms have a specific meaning beyond the normal English meaning. Those terms
144 are defined in this clause.

145 The terms "shall" ("required"), "shall not," "should" ("recommended"), "should not" ("not recommended"),
146 "may," "need not" ("not required"), "can" and "cannot" in this document are to be interpreted as described
147 in [ISO/IEC Directives, Part 2](#), Annex H. The terms in parenthesis are alternatives for the preceding term,
148 for use in exceptional cases when the preceding term cannot be used for linguistic reasons. Note that
149 [ISO/IEC Directives, Part 2](#), Annex H specifies additional alternatives. Occurrences of such additional
150 alternatives shall be interpreted in their normal English meaning.

151 The terms "clause," "subclause," "paragraph," and "annex" in this document are to be interpreted as
152 described in [ISO/IEC Directives, Part 2](#), Clause 5.

153 The terms "normative" and "informative" in this document are to be interpreted as described in [ISO/IEC](#)
154 [Directives, Part 2](#), Clause 3. In this document, clauses, subclauses, or annexes labeled "(informative)" do
155 not contain normative content. Notes and examples are always informative elements.

156 The terms defined in [DSP0004](#), [DSP0200](#), and [DSP1001](#) apply to this document.

157 **4 Symbols and abbreviated terms**

158 The following symbols and abbreviations are used in this document.

159 **3.1**

160 **CDM**

161 Common Diagnostic Profile

162 **3.2**

163	CIM
164	Common Information Model
165	4.1
166	CPU
167	Central Processor Unit
168	3.3
169	FC
170	Fibre Channel
171	3.4
172	HBA
173	Host Bus Adapter
174	3.5
175	HTTP
176	Hyper Text Transport Protocol
177	4.1
178	NIC
179	Network Interface Card
180	4.2
181	RAID
182	Redundant Array of Independent Disks
183	3.6
184	SLP
185	Service Location Protocol
186	3.7
187	URI
188	Uniform Resource Identifier
189	4.3
190	WBEM
191	Web-Based Enterprise Management
192	3.8
193	WS
194	Web Services

195 5 Mandatory profiles and specifications

196 A CDM-compliant implementation shall implement the profiles in Table 1. When a profile is implemented,
197 the requirements for that profile shall be met.

198 **Table 1 – Mandatory profiles and specifications**

Name	Number	Version	Description
Diagnostics	DSP1002	2.0	
Profile Registration	DSP1033	1.0	

199 6 Optional profiles

200 A CDM-conformant implementation shall implement at least one of the optional profiles in Table 2. When
201 a profile is implemented, the requirements for that profile shall be met.

202 **Table 2 – Optional profiles**

Name	Number	Version	Description
FC HBA Diagnostics	DSP1104	1.0	
CPU Diagnostics	DSP1105	1.0	
Ethernet NIC Diagnostics	DSP1107	1.0	
Optical Drive Diagnostics	DSP1110	1.0	
Disk Drive Diagnostics	DSP1113	1.0	
RAID Controller Diagnostics	DSP1114	1.0	

203 7 Protocol implementation requirements

204 A CDM-conformant implementation shall use a CIM-based data model for representing managed
205 resources and services. Additionally, the implementation shall support at least one of the following
206 protocols to expose the CIM-based data:

- 207 • CIM-XML
- 208 • WS-Management

209 The following sections describe the mandatory specifications and any additional requirements for each
210 protocol.

211 7.1 CIM-XML

212 A CDM-compliant implementation that supports CIM-XML shall support either the CIM-XML 1.2.0 or the
213 CIM-XML 1.3.0. The CIM-XML 1.3.0 is preferred.

214 **7.1.1 CIM-XML 1.3.0**215 **Table 3 – CIM-XML 1.3.0 specifications**

Name	Number	Version	Description
CIM Operations over HTTP	DSP0200	1.3	
Representation of CIM Using XML	DSP0201	2.3	
CIM-XML DTD	DSP0203	2.3	

216 **7.1.2 CIM-XML 1.2.0**217 **Table 4 – CIM-XML 1.2.0 specifications**

Name	Number	Version	Description
CIM Operations over HTTP	DSP0200	1.2	
Representation of CIM Using XML	DSP0201	2.2	
CIM-XML DTD	DSP0203	2.2	

218 **7.2 WS-Management**219 **Table 5 – WS-Management 1.0.0 specifications**

Name	Number	Version	Description
WS-Management Specification	DSP0226	1.0	
WS-Management — CIM Binding Specification	DSP0227	1.0	
WS-CIM Mapping Specification	DSP0230	1.0	

220 **7.3 Transport protocol**

221 A CDM-conformant implementation shall use HTTPS 1.1 for the transport protocol.

222 **8 Security implementation requirements**223 A CDM-conformant implementation has no additional security requirements beyond those specified by
224 the protocols.225 **9 Discovery requirements**226 Discovery is required for CDM version 2.0.0. A CDM-conformant implementation shall implement the
227 following discovery mechanisms:

- 228
- SLP

229 If WS-Management is implemented, a CDM conformant implementation shall implement the following:

- 230
- WS-ManagementIdentify

231 **9.1 SLP**

232 Table 6 defines the specifications for discovery using SLP.

233

Table 6 – WBEM discovery using SLP specifications

Name	Number	Version	Description
WBEM Discovery Using SLP	DSP0205	1.0.0	
WBEM SLP Template	DSP0206	1.0.0	

234

9.2 WS-Management Identify

235

A CDM-compliant implementation that supports the WS-Management protocol shall support the Identify method on each CDM access port that it supports. The WS-Management Identify method is defined in clause 11 of [DSP0226](#).

236

237

238

Table 7 defines the IdentifyResponse payload requirements for a CDM-conformant implementation.

239

Table 7 – WS-Management IdentifyResponse payload elements

Element	Requirement	Notes
wsmid:IdentifyResponse	Mandatory	The body of the response
wsmid:IdentifyResponse/wsmid:ProtocolVersion	Mandatory	The URI identifying DSP02261.0.0 http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd
wsmid:IdentifyResponse/wsmid:ProductVendor	Optional	The vendor
wsmid:IdentifyResponse/wsmid:ProductVersion	Optional	The version
wsmid:IdentifyResponse/wsmid:InitiativeSupport wsmid:IdentifyResponse/wsmid:InitiativeSupport/wsmid:InitiativeName wsmid:IdentifyResponse/wsmid:InitiativeSupport/wsmid:InitiativeVersion	Mandatory	At least one entry of InitiativeSupport shall exist with the following attribute values: InitiativeName = "CDM" InitiativeVersion = "2.0.0"
wsmid:IdentifyResponse/wsmid:SecurityProfiles/ wsmid:SecurityProfileName	Mandatory	The string identifying the security profile supported, which shall be one of the following: Class A: "HTTP_DIGEST": http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/http/digest Class B: "HTTP_TLS_1": http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/https/digest "HTTP_TLS_2": http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/https/basic "HTTP_IPSEC": http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/http/digest/ipsec

240 9.2.1 wsmid:Identify security implementation requirements

241 A CDM-conformant implementation may support wsmid:Identify without authentication. wsmid:Identify is
242 defined in Rule R11.4 of [DSP0226](#). If supported, the URI suffix should be "/wsman-anon/identify."

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ANNEX A (informative)

Change log

Version	Date	Description
2.0.0	2011-12-09	Initial draft
2.0.0	2012-01-11	Updated for Version 2.0 based on DIAG SIG Recommendations
2.0.0	2012-01-21	Updated to latest DMTF editorial style
2.0.0	2012-03-23	DMTF Draft Standard
2.0.0	2012-04-04	Created PDF and Clean Version for Draft Standard Status
2.0.0	2012-06-21	Released for DMTF Standard

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