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# **CDM Implementation Requirements**

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## Foreword

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

DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems management and interoperability.

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## Introduction

This specification describes the conformance requirements for implementing the Common Diagnostics Model (CDM) version 1.0.

1

# CDM Implementation Requirements

## 2 1 Scope

3 This document describes the requirements for implementing the Common Diagnostics Model (CDM)  
4 version 1.0.0. This document does not define the implementation requirements directly.

## 5 2 Normative References

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

### 9 2.1 Approved References

10 DMTF DSP0200, *CIM Operations over HTTP 1.3*,  
11 [http://www.dmtf.org/standards/published\\_documents/DSP0200\\_1.3.pdf](http://www.dmtf.org/standards/published_documents/DSP0200_1.3.pdf)

12 DMTF DSP0200, *CIM Operations over HTTP 1.2*,  
13 [http://www.dmtf.org/standards/published\\_documents/DSP0200\\_1.2.pdf](http://www.dmtf.org/standards/published_documents/DSP0200_1.2.pdf)

14 DMTF DSP0201, *Representation of CIM using XML 2.3*,  
15 [http://www.dmtf.org/standards/published\\_documents/DSP0201\\_2.3.pdf](http://www.dmtf.org/standards/published_documents/DSP0201_2.3.pdf)

16 DMTF DSP0201, *Representation of CIM using XML 2.2*,  
17 [http://www.dmtf.org/standards/published\\_documents/DSP0201\\_2.2.pdf](http://www.dmtf.org/standards/published_documents/DSP0201_2.2.pdf)

18 DMTF DSP0203, *CIM-XML DTD 2.3*,  
19 [http://www.dmtf.org/standards/published\\_documents/DSP0203\\_2.3.dtd](http://www.dmtf.org/standards/published_documents/DSP0203_2.3.dtd)

20 DMTF DSP0203, *CIM-XML DTD 2.2*,  
21 [http://www.dmtf.org/standards/published\\_documents/DSP0203\\_2.2.dtd](http://www.dmtf.org/standards/published_documents/DSP0203_2.2.dtd)

22 DMTF DSP0226, *Web Services for Management 1.0*,  
23 [http://www.dmtf.org/standards/published\\_documents/DSP0226\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP0226_1.0.pdf)

24 DMTF DSP0227, *WS-Management CIM Binding Specification 1.0*,  
25 [http://www.dmtf.org/standards/published\\_documents/DSP0227\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP0227_1.0.pdf)

26 DMTF DSP0230, *WS-CIM Mapping Specification 1.0*,  
27 [http://www.dmtf.org/standards/published\\_documents/DSP0230\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP0230_1.0.pdf)

28 DMTF DSP1002, *Diagnostics Profile 1.0*,  
29 [http://www.dmtf.org/standards/published\\_documents/DSP1002\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1002_1.0.pdf)

30 DMTF DSP1033, *Profile Registration Profile 1.0*,  
31 [http://www.dmtf.org/standards/published\\_documents/DSP1033\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1033_1.0.pdf)

### 32 2.2 References under Development

33 DMTF DSP0205, *WBEM Discovery Using SLP 1.0*,  
34 [http://www.dmtf.org/standards/published\\_documents/DSP0205.pdf](http://www.dmtf.org/standards/published_documents/DSP0205.pdf)

35 DMTF DSP0206, *WBEM SLP Template 1.0*, <http://www.dmtf.org/standards/wbem/wbem.1.0.en>

## 36 **2.3 Other References**

37 [ISO/IEC Directives, Part 2](#), *Rules for the structure and drafting of International Standards*

## 38 **3 Terms and Definitions**

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

### 40 **3.1**

#### 41 **can**

42 used for statements of possibility and capability, whether material, physical, or causal

### 43 **3.2**

#### 44 **cannot**

45 used for statements of possibility and capability, whether material, physical, or causal

### 46 **3.3**

#### 47 **conditional**

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

### 50 **3.4**

#### 51 **mandatory**

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

### 54 **3.5**

#### 55 **may**

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

### 57 **3.6**

#### 58 **need not**

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

### 60 **3.7**

#### 61 **optional**

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

### 63 **3.8**

#### 64 **shall**

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

### 67 **3.9**

#### 68 **shall not**

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

### 71 **3.10**

#### 72 **should**

73 indicates that among several possibilities, one is recommended as particularly suitable, without  
74 mentioning or excluding others, or that a certain course of action is preferred but not necessarily required



75 **3.11**  
76 **should not**  
77 indicates that a certain possibility or course of action is deprecated but not prohibited

## 78 **4 Abbreviated Terms and Document Conventions**

### 79 **4.1 Abbreviated Terms**

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

81 **4.1.1**  
82 **IANA**  
83 Internet Assigned Numbers Authority

84 **4.1.2**  
85 **IP**  
86 Internet Protocol

87 **4.1.3**  
88 **URI**  
89 Uniform Resource Identifier

90 **4.1.4**  
91 **WS**  
92 Web Services

### 93 **4.2 Document Conventions**

#### 94 **4.2.1 Typographical Conventions**

##### 95 **4.2.1.1 Experimental Material**

96 Some of the content considered for inclusion in this specification has yet to receive sufficient review to  
97 satisfy the adoption requirements set forth by the Technical Committee within the DMTF. This content is  
98 presented here as an aid to implementers who are interested in likely future developments within this  
99 specification. The content marked experimental may change as implementation experience is gained.  
100 There is a high likelihood that it will be included in an upcoming revision of the specification. Until that  
101 time, it is purely informational, and is clearly marked within the text.

102 A sample of the typographical convention for experimental content is included here:

---

103 **EXPERIMENTAL**

104 Experimental content appears here.

105 **EXPERIMENTAL**

---

## 106 5 Mandatory Profiles and Specifications

107 The mandatory profiles and specifications shown in Table 1 shall be implemented in accordance with this  
108 specification.

109 **Table 1 – Mandatory Profiles and Specifications**

Name	Number	Version	Description
<i>Diagnostics Profile</i>	<a href="#">DSP1002</a>	1.0	
<i>Profile Registration Profile</i>	<a href="#">DSP1033</a>	1.0	

## 110 6 Optional Profiles

111 There are no optional profiles for this version of the specification.

## 112 7 Protocol Implementation Requirements

113 A CDM-compliant implementation shall use a CIM-based data model for representing managed resources  
114 and services. This section describes the Protocol requirements for a CDM implementation.

115 A CDM implementation shall implement at least one of the following protocols:

- 116 • CIM-XML
- 117 • WS-Management

118 The following sections describe the mandatory specifications and any additional requirements for each  
119 protocol.

### 120 7.1 CIM-XML

121 A CDM Implementation may choose to implement either CIM-XML 1.2 or 1.3. CIM-XML 1.3 is preferred.

#### 122 7.1.1 CIM-XML 1.3

123 CIM-XML 1.3 is defined by the specifications listed in Table 2.

124

**Table 2 – CIM-XML 1.3 Specifications**

Name	Number	Version	Description
<i>CIM Operations over HTTP</i>	<a href="#">DSP0200</a>	1.3	
<i>Representation of CIM Using XML</i>	<a href="#">DSP0201</a>	2.3	
<i>CIM-XML DTD</i>	<a href="#">DSP0203</a>	2.3	

125 **7.1.2 CIM-XML 1.2**

126 CIM-XML 1.2 is defined by the specifications listed in Table 3.

127

**Table 3 – CIM-XML 1.2 Specifications**

Name	Number	Version	Description
<i>CIM Operations over HTTP</i>	<a href="#">DSP0200</a>	1.2	
<i>Representation of CIM Using XML</i>	<a href="#">DSP0201</a>	2.2	
<i>CIM-XML DTD</i>	<a href="#">DSP0203</a>	2.2	

128 **7.2 WS-Management**

129 It is mandatory for CDM implementations to use the protocol defined in *Web Services for Management*  
 130 *Specification* ([DSP0226](#)) as the management protocol for supporting operations. The implementation of  
 131 the Web Services Management protocol shall expose CIM schema.

132 WS-Management is defined in the specifications listed in Table 4.

133

**Table 4 – WS-Management 1.0 Specifications**

Name	Number	Version	Description
<i>WS-Management Specification</i>	<a href="#">DSP0226</a>	1.0	
<i>WS-Management — CIM Binding Specification</i>	<a href="#">DSP0227</a>	1.0	
<i>WS-CIM Mapping Specification</i>	<a href="#">DSP0230</a>	1.0	

134 **7.3 Transport Protocol**

135 CDM implementations shall use HTTP 1.1.

136 **8 Security Implementation Requirements**

137 There are no additional requirements beyond those specified by the protocols.

138 **9 Discovery Requirements**

139 Discovery is not required for CDM Version 1.0. If Discovery is implemented, one of the following is  
 140 recommended.

141 **9.1 SLP**142 **EXPERIMENTAL**

143 CDM Implementations that support CIM-XML should also support SLP for discovery.

144 Discovery using SLP is defined in the specifications listed in Table 5.

145 **Table 5 – WBEM Discovery Using SLP Specifications**

Name	Number	Version	Description
<i>WBEM Discovery Using SLP</i>	<a href="#">DSP0205</a>	1.0	
<i>WBEM SLP Template</i>	<a href="#">DSP0206</a>	1.0	

146 **EXPERIMENTAL**147 **9.2 WS-Management Identify**

148 WS-Management Identify is defined in clause 11 of [DSP0226](#). A CDM-compliant management service  
 149 that supports the WS-Management protocol should support the Identify method on each CDM access port  
 150 that it supports. wsmanidentity.xsd version 1.0.1 is required.

151 Table 6 defines the IdentifyResponse payload requirements for CDM 1.0.

152 **Table 6 – WS-Management IdentifyResponse Payload Elements**

Element	Requirement	Notes
wsmid:IdentifyResponse	Mandatory	The body of the response
wsmid:IdentifyResponse/wsmid:ProtocolVersion	Mandatory	URI identifying <a href="#">DSP0226</a> 1.0 http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd
wsmid:IdentifyResponse/wsmid:ProductVendor	Optional	
wsmid:IdentifyResponse/wsmid:ProductVersion	Optional	
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 values: InitiativeName = "CDM" InitiativeVersion = "1.0.0"

Element	Requirement	Notes
wsmid:IdentifyResponse/wsmid:SecurityProfiles/ wsmid:SecurityProfileName	Optional	String identifying the security profile supported  <b>Class A:</b> "HTTP_DIGEST": <a href="http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/http/digest">http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/http/digest</a>  <b>Class B:</b> "HTTP_TLS_1": <a href="http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/https/digest">http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/https/digest</a> "HTTP_TLS_2": <a href="http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/https/basic">http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/https/basic</a> "HTTP_IPSEC": <a href="http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/http/digest">http://schemas.dmtf.org/wbem/wsman/1/wsman/secprofile/http/digest</a>

153 **9.2.1 wsmid:Identify Security Implementation Requirements**

154 Implementations may support wsmid:Identify without authentication as described in Rule R11.4 of  
 155 [DSP0226](#).

156 If an implementation supports wsmid:Identify without authentication, it should support it through a URL  
 157 that contains the suffix "/wsman-anon/identify."

158  
159  
160  
161  
162

## **ANNEX A** (informative)

### **Change Log**

<b>Version</b>	<b>Date</b>	<b>Author</b>	<b>Description</b>
1.0.0	5/19/2009	Jim Davis	DMTF Standard Release

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