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SMASH Collections Profile

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103   Foreword

104   The *SMASH Collections Profile* (DSP1006) was prepared by the Physical Platform Profiles Working
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106   DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems
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121

122   Introduction

123   The information in this specification should be sufficient for a provider or consumer of this data to identify
124   unambiguously the classes, properties, methods, and values that shall be instantiated and manipulated to
125   represent collections of select managed elements for use when implementing the SM CLP or SM ME
126   Addressing specifications.

127   The target audience for this specification is implementers who are writing CIM-based providers or
128   consumers of management interfaces that represent the component described in this document.

129   **SMASH Collections Profile**

130   1   Scope

131   The *SMASH Collections Profile* extends the management capability of referencing profiles by adding the
132   ability to create collections of managed elements.

133   2   Normative References

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

137   2.1   Approved References

138   DMTF DSP0004, *CIM Infrastructure Specification 2.5*,
139   http://www.dmtf.org/standards/published_documents/DSP0004_2.5.pdf

140   DMTF DSP0200, *CIM Operations over HTTP 1.3*,
141   http://www.dmtf.org/standards/published_documents/DSP0200_1.3.pdf

142   DMTF DSP1001, *Management Profile Specification Usage Guide 1.0*,
143   http://www.dmtf.org/standards/published_documents/DSP1001_1.0.pdf

144   DMTF DSP1004, *Base Server Profile 1.0*,
145   http://www.dmtf.org/standards/published_documents/DSP1004_1.0.pdf

146   DMTF DSP1005, *CLP Service Profile 1.0*,
147   http://www.dmtf.org/standards/published_documents/DSP1005_1.0.pdf

148   DMTF DSP1009, *Sensors Profile 1.0*,
149   http://www.dmtf.org/standards/published_documents/DSP1009_1.0.pdf

150   DMTF DSP1010, *Record Log Profile 1.0*,
151   http://www.dmtf.org/standards/published_documents/DSP1010_1.0.pdf

152   DMTF DSP1011, *Physical Asset Profile 1.0*,
153   http://www.dmtf.org/standards/published_documents/DSP1011_1.0.pdf

154   DMTF DSP1012, *Boot Control Profile 1.0*,
155   http://www.dmtf.org/standards/published_documents/DSP1012_1.0.pdf

156   DMTF DSP1013, *Fan Profile 1.0,* http://www.dmtf.org/standards/published_documents/DSP1013_1.0.pdf

157   DMTF DSP1015, *Power Supply Profile 1.0,*
158   http://www.dmtf.org/standards/published_documents/DSP1015_1.0.pdf

159   DMTF DSP1016, *Telnet Service Profile 1.0*,
160   http://www.dmtf.org/standards/published_documents/DSP1016_1.0.pdf

161   DMTF DSP1017, *SSH Service Profile 1.0*,
162   http://www.dmtf.org/standards/published_documents/DSP1017_1.0.pdf

163   DMTF DSP1018, *Service Processor Profile 1.0,*
164   http://www.dmtf.org/standards/published_documents/DSP1018_1.0.pdf

165   DMTF DSP1019, *Device Tray Profile 1.0,*
166   http://www.dmtf.org/standards/published_documents/DSP1019_1.0.pdf

167   DMTF DSP1020, *Pass-Through Module Profile 1.0,*
168   http://www.dmtf.org/standards/published_documents/DSP1020_1.0.pdf

169   DMTF DSP1021, *Shared Device Management Profile 1.0*,
170   http://www.dmtf.org/standards/published_documents/DSP1021_1.0.pdf

171   DMTF DSP1022, *CPU Profile 1.0,*
172   http://www.dmtf.org/standards/published_documents/DSP1022_1.0.pdf

173   DMTF DSP1023, *Software Inventory Profile 1.0*,
174   http://www.dmtf.org/standards/published_documents/DSP1023_1.0.pdf

175   DMTF DSP1024, *Text Console Redirection Profile 1.0*,
176   http://www.dmtf.org/standards/published_documents/DSP1024_1.0.pdf

177   DMTF DSP1025, *Software Update Profile 1.0*,
178   http://www.dmtf.org/standards/published_documents/DSP1025_1.0.pdf

179   DMTF DSP1026, *System Memory Profile 1.0,*
180   http://www.dmtf.org/standards/published_documents/DSP1026_1.0.pdf

181   DMTF DSP1027, *Power State Management Profile 1.0*,
182   http://www.dmtf.org/standards/published_documents/DSP1027_1.0.pdf

183   DMTF DSP1033, *Profile Registration Profile 1.0*,
184   http://www.dmtf.org/standards/published_documents/DSP1033_1.0.pdf

185   DMTF DSP1036, *IP Interface Profile 1.0*,
186   http://www.dmtf.org/standards/published_documents/DSP1036_1.0.pdf

187   DMTF DSP1037, *DHCP Client Profile 1.0*,
188   http://www.dmtf.org/standards/published_documents/DSP1037_1.0.pdf

189   DMTF DSP1038, *DNS Client Profile 1.0*,
190   http://www.dmtf.org/standards/published_documents/DSP1038_1.0.pdf

191   DMTF DSP1039, *Role Based Authorization Profile 1.0*,
192   http://www.dmtf.org/standards/published_documents/DSP1039_1.0.pdf

2.2   Other References

194   ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*,
195   http://isotc.iso.org/livelink/livelink.exe?func=ll&objId=4230456&objAction=browse&sort=subtype

3   Terms and Definitions

197   For the purposes of this document, the terms and definitions given in DSP1033 and DSP1001 and the
198   following apply.

3.1
200   **can**
201   used for statements of possibility and capability, whether material, physical, or causal

3.2

cannot

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

3.3

conditional

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

3.4

mandatory

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

3.5

may

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

3.6

need not

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

3.7

optional

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

3.8

referencing profile

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

3.9

shall

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

3.10

shall not

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

3.11

should

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

3.12

should not

indicates that a certain possibility or course of action is deprecated but not prohibited

3.13

unspecified

indicates that this profile does not define any constraints for the referenced CIM element or operation

244 **3.14**
245 **Capabilities Collection**
246 CIM_ConcreteCollection instance for instances of the CIM_Capabilities class

247 **3.15**
248 **Capacities Collection**
249 CIM_ConcreteCollection instance for instances of the CIM_ConfigurationCapacity class

250 **3.16**
251 **Consoles Collection**
252 CIM_ConcreteCollection instance for instances of the CIM_TextRedirectionSAP class

253 **3.17**
254 **Logs Collection**
255 CIM_ConcreteCollection instance for instances of the CIM_RecordLog class

256 **3.18**
257 **Sensors Collection**
258 CIM_ConcreteCollection instance for instances of the CIM_Sensor and CIM_NumericSensor classes

259 **3.19**
260 **Settings Collection**
261 CIM_ConcreteCollection instance for instances of the CIM_SettingData class

262 # 4   Symbols and Abbreviated Terms

263 The following abbreviations are used in this document.

264 **4.1**
265 **SMASH**
266 Systems Management Architecture for Server Hardware

267 **4.2**
268 **SM CLP**
269 Server Management Command Line Protocol

270 **4.3**
271 **SM ME**
272 Server Management Managed Element

273 # 5   Synopsis

274 **Profile Name:** SMASH Collections

275 **Version:** 1.0.0

276 **Organization:** DMTF

277 **CIM Schema Version:** 2.20

278 **Central Class:** CIM_ConcreteCollection

279 **Scoping Class:** CIM_ComputerSystem

280 The *SMASH Collections Profile* extends the management capability of referencing profiles by adding the
281 capability to represent collections of managed elements for use when implementing the SM CLP or SM
282 ME Addressing specifications.

283 The Central Class for the *SMASH Collections Profile* shall be the CIM_ConcreteCollection class. Each
284 instance of CIM_ConcreteCollection shall be a Central Instance of the *SMASH Collections Profile.*

285 The Scoping Class for the *SMASH Collections Profile* shall be CIM_ComputerSystem. The Scoping
286 Instance of the *SMASH Collections Profile* shall be the instance of CIM_ComputerSystem to which the
287 Central Instances are associated through instances of CIM_OwningCollectionElement.

288 Table 1 identifies profiles on which this profile has a dependency.

289   **Table 1 – Referenced Profiles**

Profile Name	Organization	Version	Relationship	Behavior
Base Server	DMTF	1.0	Optional	See 7.2.
Boot Control	DMTF	1.0	Optional	See 7.3.
CLP Service	DMTF	1.0	Optional	See 7.5.
CPU	DMTF	1.0	Optional	See 7.6.
Device Tray	DMTF	1.0	Optional	See 7.7.
DHCP Client	DMTF	1.0	Optional	See 7.8.
DNS Client	DMTF	1.0	Optional	See 7.9.
Fan	DMTF	1.0	Optional	See 7.10.
IP Interface	DMTF	1.0	Optional	See 7.12.
Pass-Through Module	DMTF	1.0	Optional	See 7.13.
Physical Asset	DMTF	1.0	Optional	See 7.14.
Power Supply	DMTF	1.0	Optional	See 7.15.
Power State Management	DMTF	1.0	Optional	See 7.19.
Profile Registration	DMTF	1.0	Mandatory	None
Record Log	DMTF	1.0	Optional	See 7.16.
Role Based Authorization	DMTF	1.0	Optional	See 7.17.
Sensors	DMTF	1.0	Optional	See 7.18.
Service Processor	DMTF	1.0	Optional	See 7.4.
Shared Device Management	DMTF	1.0	Optional	See 7.20.
Software Update	DMTF	1.0	Optional	See 7.11.
SSH Service	DMTF	1.0	Optional	See 7.21.
System Memory	DMTF	1.0	Optional	See 7.22.
Telnet Service	DMTF	1.0	Optional	See 7.23.
Text Console Redirection	DMTF	1.0	Optional	See 7.24.

290 6   Description

291 The *SMASH Collections Profile* describes collections, the associations that scope the collections to a
292 system, and the associations that scope managed elements to the collections.

293 The *SMASH Collections Profile* defines the following collections:

294   • Capabilities – instances of CIM_Capabilities

295   • Capacities – instances of CIM_ConfigurationCapacity

296   • Consoles – instances of CIM_TextRedirectionSAP

297   • Logs – instances of CIM_RecordLog

298   • Sensors – instances of CIM_Sensor and CIM_NumericSensor

299   • Settings – instances of CIM_SettingData

300   Figure 1 represents the class schema for the *SMASH Collections Profile.* For simplicity, the prefix CIM_
301   has been removed from the class names.
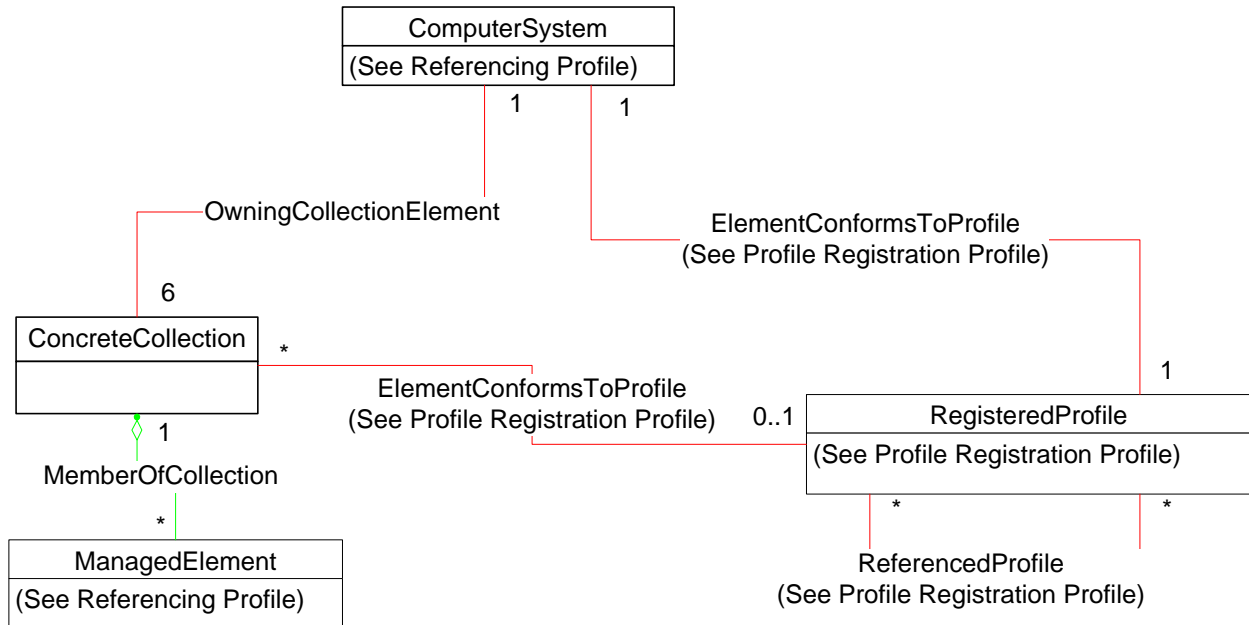
302

303   **Figure 1 – SMASH Collections Profile: Class Diagram**

304   7   Implementation Requirements

305   This section details the requirements related to the arrangement of instances and their properties for
306   implementations of this profile.

307   7.1   Collection Definitions

308   This section details the requirements for instances of CIM_ConcreteCollection that represent each of the
309   SMASH collections.

310   7.1.1   Capabilities Collection

311   An instance of CIM_ConcreteCollection shall aggregate instances of CIM_Capabilities. This collection is
312   the Capabilities Collection.

313   7.1.1.1   CIM_ConcreteCollection.ElementName

314   When an instance of CIM_ConcreteCollection is the Capabilities Collection, the value of the
315   ElementName property shall be "Capabilities".

316 **7.1.2   Capacities Collection**

317 An instance of CIM_ConcreteCollection shall aggregate instances of CIM_ConfigurationCapacity. This
318 collection is the Capacities Collection.

319 **7.1.2.1   CIM_ConcreteCollection.ElementName**

320 When an instance of CIM_ConcreteCollection is the Capacities Collection, the value of the ElementName
321 property shall be "Capacities".

322 **7.1.3   Consoles Collection**

323 An instance of CIM_ConcreteCollection shall aggregate instances of CIM_TextRedirectionSAP. This
324 collection is the Consoles Collection.

325 **7.1.3.1   CIM_ConcreteCollection.ElementName**

326 When an instance of CIM_ConcreteCollection is the Consoles Collection, the value of the ElementName
327 property shall be "Consoles".

328 **7.1.4   Logs Collection**

329 An instance of CIM_ConcreteCollection shall aggregate instances of CIM_RecordLog. This collection is
330 the Logs Collection.

331 **7.1.4.1   CIM_ConcreteCollection.ElementName**

332 When an instance of CIM_ConcreteCollection is the Logs Collection, the value of the ElementName
333 property shall be "Logs".

334 **7.1.5   Sensors Collection**

335 An instance of CIM_ConcreteCollection shall aggregate instances of CIM_RecordLog. This collection is
336 the Sensors Collection.

337 **7.1.5.1   CIM_ConcreteCollection.ElementName**

338 When an instance of CIM_ConcreteCollection is the Sensors Collection, the value of the ElementName
339 property shall be "Sensors".

340 **7.1.6   Settings Collection**

341 An instance of CIM_ConcreteCollection shall aggregate instances of CIM_SettingData. This collection is
342 the Settings Collection.

343 **7.1.6.1   CIM_ConcreteCollection.ElementName**

344 When an instance of CIM_ConcreteCollection is the Settings Collection, the value of the ElementName
345 property shall be "Settings".

346 **7.2   Base Server Profile**

347 When the Scoping Instance of this profile is conformant with the *Base Server Profile*, the requirements
348 defined in this section are applicable.

349 **7.2.1   Capabilities Collection**

350 Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the
351 instance of CIM_EnabledLogicalElementCapabilities for each instance of
352 CIM_EnabledLogicalElementCapabilities that is instrumented for the *Base Server Profile*.

353 **7.3   Boot Control Profile**

354 The *Boot Control Profile* may be implemented such that the Scoping Instance of the *Boot Control Profile*
355 is the Scoping Instance of this profile. The *Boot Control Profile* may be implemented such that an
356 instance of CIM_ServiceAffectsElement associates the Scoping Instance of this profile with the Central
357 Instance of the *Boot Control Profile*. When the Scoping Instance of this profile is associated with the
358 Central Instance of the *Boot Control Profile* through the CIM_ServiceAffectsElement association, the
359 requirements defined in this section are applicable.

360 **7.3.1   Settings Collection**

361 Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance
362 of CIM_BootConfigSetting for each instance of CIM_BootConfigSetting that is associated with the
363 Scoping Instance of this profile through an instance of CIM_ElementSettingData.

364 **7.4   Service Processor Profile**

365 When the Scoping Instance of this profile is conformant with the *Service Processor Profile*, the
366 requirements defined in this section are applicable.

367 **7.4.1   Capabilities Collection**

368 Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the
369 instance of CIM_EnabledLogicalElementCapabilities for each instance of
370 CIM_EnabledLogicalElementCapabilities that is instrumented for the *Service Processor Profile*.

371 **7.5   CLP Service Profile**

372 When the Scoping Instance of the *CLP Service Profile* is the Scoping Instance of this profile, the
373 requirements defined in this section are applicable.

374 **7.5.1   Settings Collection**

375 Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance
376 of CIM_CLPSettingData for each instance of CIM_CLPSettingData that is instrumented for the *CLP*
377 *Service Profile*.

378 **7.5.2   Capabilities Collection**

379 Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the
380 instance of CIM_CLPCapabilities for each instance of CIM_CLPCapabilities that is instrumented for the
381 *CLP Service Profile*.

382 **7.6   CPU Profile**

383 When the Scoping Instance of the *CPU Profile* is the Scoping Instance of this profile, the requirements
384 defined in this section are applicable.

7.6.1   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_EnabledLogicalElementCapabilities for each instance of CIM_EnabledLogicalElementCapabilities that is instrumented for the *CPU Profile*.

7.7   Device Tray Profile

When the Scoping Instance of the *Device Tray Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.7.1   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_EnabledLogicalElementCapabilities for each instance of CIM_EnabledLogicalElementCapabilities that is instrumented for the *Device Tray Profile*.

7.8   DHCP Client Profile

When the Scoping Instance of the *DHCP Client Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.8.1   Settings Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance of CIM_DHCPSettingData for each instance of CIM_DHCPSettingData that is associated with the Central Instance of the *DHCP Client Profile* and is not the PartComponent reference of an instance of CIM_OrderedComponent.

7.8.2   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_DHCPCapabilities for each instance of CIM_DHCPCapabilities that is instrumented for the *DHCP Client Profile*.

7.9   DNS Client Profile

When the Scoping Instance of the *DNS Client Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.9.1   Settings Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance of CIM_DNSSettingData for each instance of CIM_DNSSettingData that is associated with the Central Instance of the *DNS Client Profile* and is not the PartComponent reference of an instance of CIM_OrderedComponent.

Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance of CIM_DNSGeneralSettingData for each instance of CIM_DNSGeneralSettingData that is associated with the Central Instance of the *DNS Client Profile* and is not the PartComponent reference of an instance of CIM_OrderedComponent.

7.9.2   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_EnabledLogicalElementCapabilities for each instance of CIM_EnabledLogicalElementCapabilities that is instrumented for the *DNS Client Profile*.

7.10   Fan Profile

When the Scoping Instance of the *Fan Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.10.1   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_EnabledLogicalElementCapabilities for each instance of CIM_EnabledLogicalElementCapabilities instrumented for the *Fan Profile*.

7.11   Software Update Profile

When the Scoping Instance of the *Software Update Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.11.1   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_SoftwareInstallationServiceCapabilities for each instance of CIM_SoftwareInstallationServiceCapabilities that is instrumented for the *Software Update Profile*.

7.12   IP Interface Profile

When the Scoping Instance of the *IP Interface Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.12.1   Settings Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance of CIM_StaticIPAssignmentSettingData for each instance of CIM_StaticIPAssignmentSettingData that is associated with the Central Instance of the *IP Interface Profile* and is not the PartComponent reference of an instance of CIM_OrderedComponent.

Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance of CIM_IPAssignmentSettingData for each instance of CIM_IPAssignmentSettingData that is instrumented for the *IP Interface Profile*.

7.12.2   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_EnabledLogicalElementCapabilities for each instance of CIM_EnabledLogicalElementCapabilities that is instrumented for the *IP Interface Profile*.

7.13   Pass-Through Module Profile

When the Scoping Instance of the *Pass-Through Module Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.13.1   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_EnabledLogicalElementCapabilities for each instance of CIM_EnabledLogicalElementCapabilities that is instrumented for the *Pass-Through Module Profile*.

7.14   Physical Asset Profile

When the Scoping Instance of the *Physical Asset Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.14.1   Capacities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capacities Collection and the instance of CIM_ConfigurationCapacity for each instance of CIM_ConfigurationCapacity that is instrumented for the *Physical Asset Profile*.

7.14.2   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_PhysicalAssetCapabilities for each instance of CIM_PhysicalAssetCapabilities that is instrumented for the *Physical Asset Profile*.

7.15   Power Supply Profile

When the Scoping Instance of the *Power Supply Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.15.1   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_EnabledLogicalElementCapabilities for each instance of CIM_EnabledLogicalElementCapabilities that is instrumented for the *Power Supply Profile*.

7.16   Record Log Profile

The *Record Log Profile* may be implemented such that the Scoping Instance of this profile is associated with the Central Instance of the *Record Log Profile* through the CIM_UseOfLog association. When the Scoping Instance of this profile is associated with the Central Instance of the *Record Log Profile* through the CIM_UseOfLog association, the requirements defined in this section are applicable.

7.16.1   Logs Collection

For each instance of CIM_RecordLog that is associated with the Scoping Instance of this profile through the CIM_UseOfLog association, exactly one instance of CIM_MemberOfCollection shall reference the Logs Collection and the instance of CIM_RecordLog.

7.17   Role Based Authorization Profile

When the Scoping Instance of the *Role Based Authorization Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.17.1   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_PrivilegeManagementCapabilities for each instance of CIM_PrivilegeManagementCapabilities that is instrumented for the *Role Based Authorization Profile*.

7.18   Sensors Profile

When the Scoping Instance of the *Sensors Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

497 **7.18.1   Sensors Collection**

498 Exactly one instance of CIM_MemberOfCollection shall reference the Central Instance of the *Sensors*
499 *Profile* and the Sensors Collection.

500 **7.18.2   Capabilities Collection**

501 Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the
502 instance of CIM_EnabledLogicalElementCapabilities for each instance of
503 CIM_EnabledLogicalElementCapabilities that is instrumented for the *Sensors Profile*.

504 ## 7.19   Power State Management Profile

505 When the Scoping Instance of the *Power State Management Profile* is the Scoping Instance of this
506 profile, the requirements defined in this section are applicable.

507 **7.19.1   Capabilities Collection**

508 For each instance of CIM_PowerManagementCapabilities that is associated through an instance of
509 CIM_ElementCapabilities with an instance of CIM_PowerManagementService, and the instance of
510 CIM_PowerManagementService is associated with the Scoping Instance through an instance of
511 CIM_HostedService, exactly one instance of CIM_MemberOfCollection shall reference the Capabilities
512 Collection and the instance of CIM_PowerManagementCapabilities.

513 ## 7.20   Shared Device Management Profile

514 The *Shared Device Management Profile* may be implemented such that the Scoping Instance of this
515 profile is not the Scoping Instance of the *Shared Device Management Profile*. When an instance of
516 CIM_LogicalDevice is associated with the Scoping Instance of this profile and the CIM_LogicalDevice
517 instance is associated with the Central Instance of the *Shared Device Management Profile* through an
518 instance of CIM_ServiceAffectsElement, the requirements in this section are applicable.

519 **7.20.1   Capabilities Collection**

520 For each instance of CIM_DeviceSharingCapabilities that is associated with an instance of
521 CIM_LogicalDevice through an instance of CIM_ElementCapabilities, and the instance of
522 CIM_LogicalDevice instance is associated with the Scoping Instance of this profile, exactly one instance
523 of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of
524 CIM_DeviceSharingCapabilities.

525 ## 7.21   SSH Service Profile

526 When the Scoping Instance of the *SSH Service Profile* is the Scoping Instance of this profile, the
527 requirements defined in this section are applicable.

528 **7.21.1   Settings Collection**

529 Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance
530 of CIM_SSHSettingData for each instance of CIM_SSHSettingData that is instrumented for the *SSH*
531 *Service Profile*.

532 **7.21.2   Capabilities Collection**

533 Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities collection and the
534 instance of CIM_SSHCapabilities for each instance of CIM_SSHCapabilities that is instrumented for the
535 *SSH Service Profile*.

7.22   System Memory Profile

When the Scoping Instance of the *System Memory Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.22.1   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_EnabledLogicalElementCapabilities for each instance of CIM_EnabledLogicalElementCapabilities that is instrumented for the *System Memory Profile*.

7.23   Telnet Service Profile

When the Scoping Instance of the *Telnet Service Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.23.1   Settings Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Settings Collection and the instance of CIM_TelnetSettingData for each instance of CIM_TelnetSettingData that is instrumented for the *Telnet Service Profile*.

7.23.2   Capabilities Collection

Exactly one instance of CIM_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM_TelnetCapabilities for each instance of CIM_TelnetCapabilities that is instrumented for the *Telnet Service Profile*.

7.24   Text Console Redirection Profile

When the Scoping Instance of the *Text Console Redirection Profile* is the Scoping Instance of this profile, the requirements defined in this section are applicable.

7.24.1   Consoles Collection

For each instance of CIM_TextRedirectionSAP that is associated with the Scoping Instance through an instance of CIM_HostedAccessPoint, exactly one instance of CIM_MemberOfCollection shall associate the instance of CIM_TextRedirectionSAP with the Consoles Collection.

8   Methods

This section details the requirements for supporting intrinsic operations and extrinsic methods for the CIM elements defined by this profile. No extrinsic methods are defined in this profile.

8.1   Profile Conventions for Operations

For each profile class (including associations), the implementation requirements for operations, including those in the following default list, are specified in class-specific subclauses of this clause.

The default list of operations is as follows:

- GetInstance
- Associators
- AssociatorNames
- References

572   • ReferenceNames

573   • EnumerateInstances

574   • EnumerateInstanceNames

575 8.2   CIM_ConcreteCollection

576 All operations in the default list in 8.1 shall be implemented as defined in DSP0200.

577 NOTE: Related profiles may define additional requirements on operations for the profile class.

578 8.3   CIM_MemberOfCollection

579 Table 2 lists implementation requirements for operations. If implemented, these operations shall be
580 implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 2, all operations in
581 the default list in 8.1 shall be implemented as defined in DSP0200.

582 NOTE: Related profiles may define additional requirements on operations for the profile class.

583   **Table 2 – Operations: CIM_MemberOfCollection**

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

584 8.4   CIM_OwningCollectionElement

585 Table 3 lists implementation requirements for operations. If implemented, these operations shall be
586 implemented as defined in DSP0200. In addition, and unless otherwise stated in Table 3, all operations in
587 the default list in 8.1 shall be implemented as defined in DSP0200.

588 NOTE: Related profiles may define additional requirements on operations for the profile class.

589   **Table 3 – Operations: CIM_OwningCollectionElement**

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

590 9   Use Cases

591 This section contains object diagrams and use cases for the *SMASH Collections Profile*.
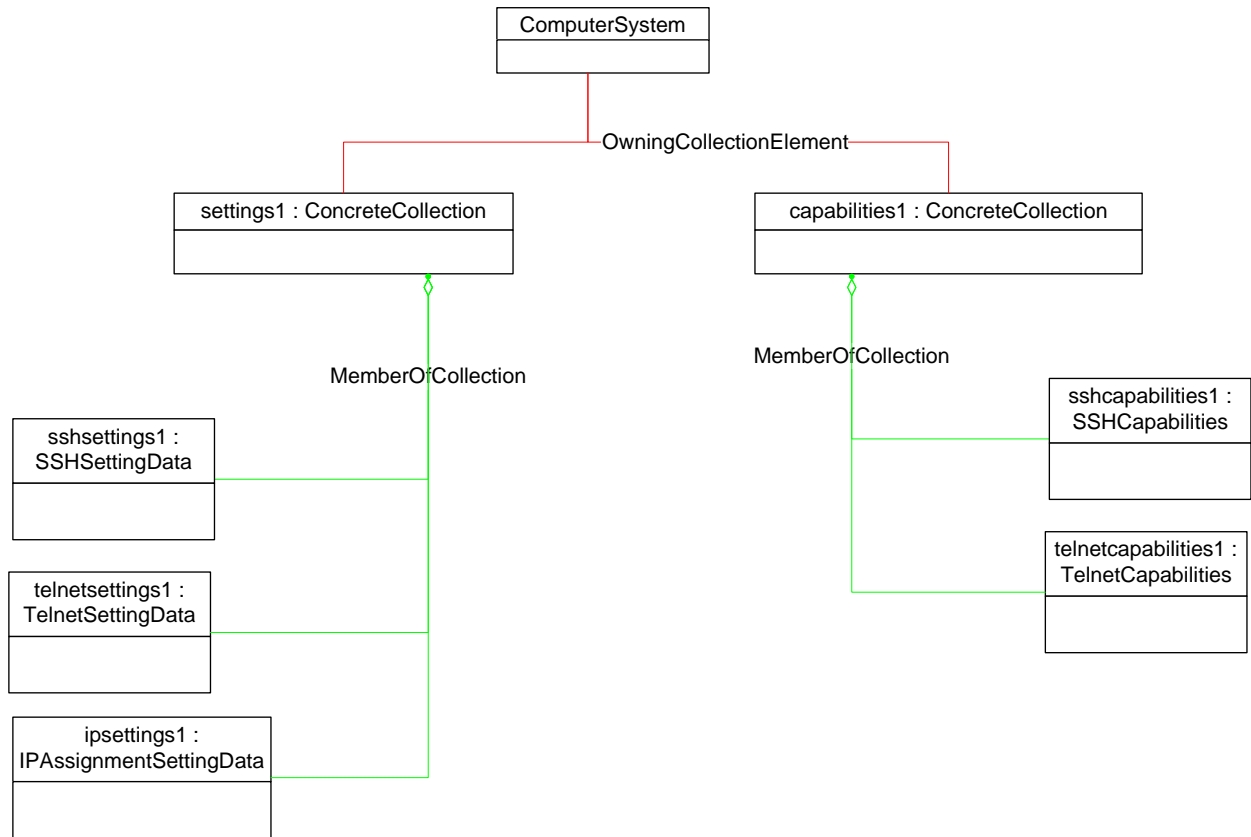
592 **9.1   Object Diagrams**

593   The object diagram in Figure 2 shows how instances of CIM_RegisteredProfile identify the version of the
594   *SMASH Collections Profile* with which the instances of CIM_ConcreteCollection and their associated
595   instances are conformant. An instance of CIM_RegisteredProfile exists for each profile instrumented in
596   the system. One instance of CIM_RegisteredProfile identifies "DMTF Base Server Profile version 1.0.0".
597   The other instance identifies "DMTF SMASH Collections Profile version 1.0.0". The
598   CIM_ConcreteCollection instances are scoped to an instance of CIM_ComputerSystem. This instance of
599   CIM_ComputerSystem is conformant with the DMTF Base Server Profile version 1.0.0 as indicated by the
600   CIM_ElementConformsToProfile association to the CIM_RegisteredProfile instance.
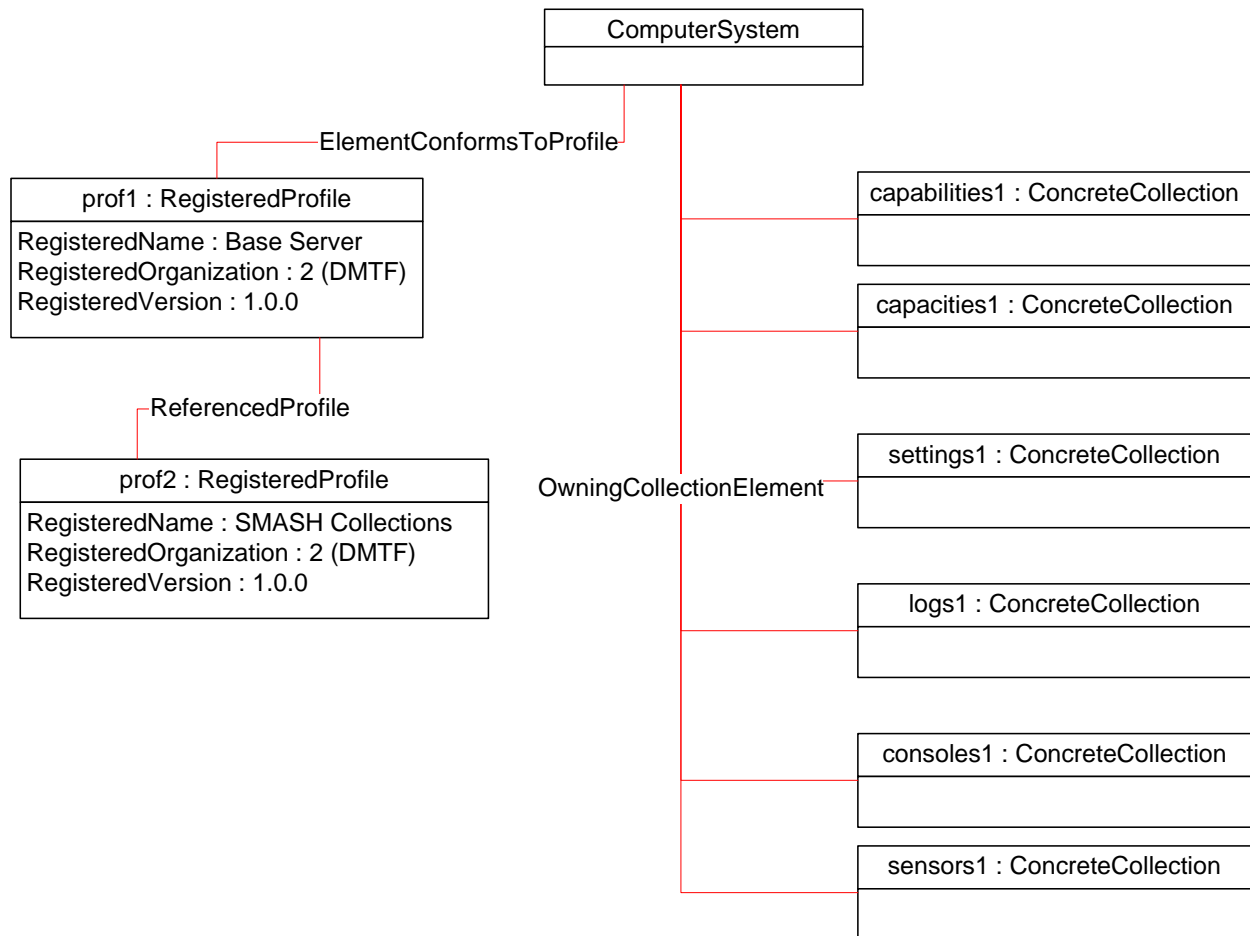
601

602   **Figure 2 – Registered Profile**

603   The object diagram in Figure 3 shows a system in which the profile is supported and therefore elements
604   are contained in the Settings and Capabilities Collections.

605

606   **Figure 3 – Settings and Capabilities Collections**

607   The object diagram in Figure 4 represents a system in which the *Record Log Profile* is supported and
608   therefore the Logs Collection contains an instance of CIM_RecordLog.
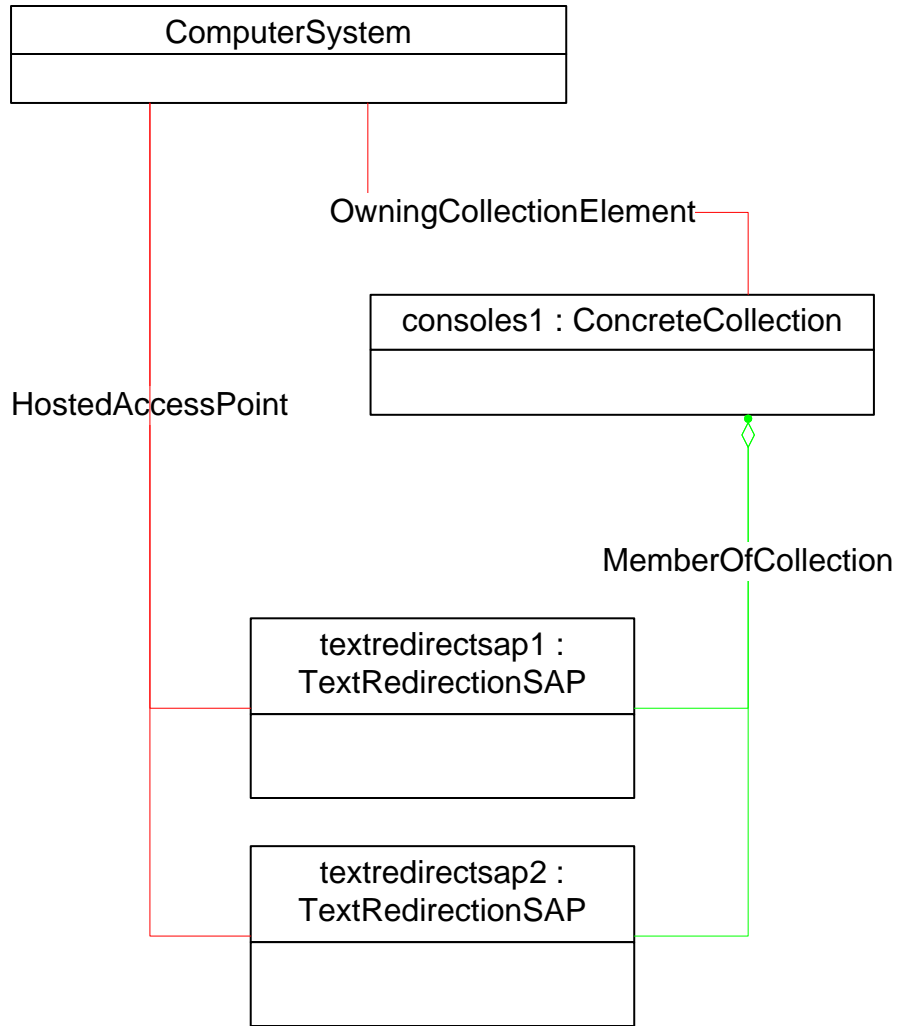
Figure 4 – Logs Collection

611   The object diagram in Figure 5 illustrates one possible arrangement of instances for an implementation
612   that supports the *Text Console Redirection Profile* and therefore has elements contained in the Consoles
613   Collection.

614

615   **Figure 5 – Consoles Collection**

616   **9.2   Find All of the Capabilities for a System**
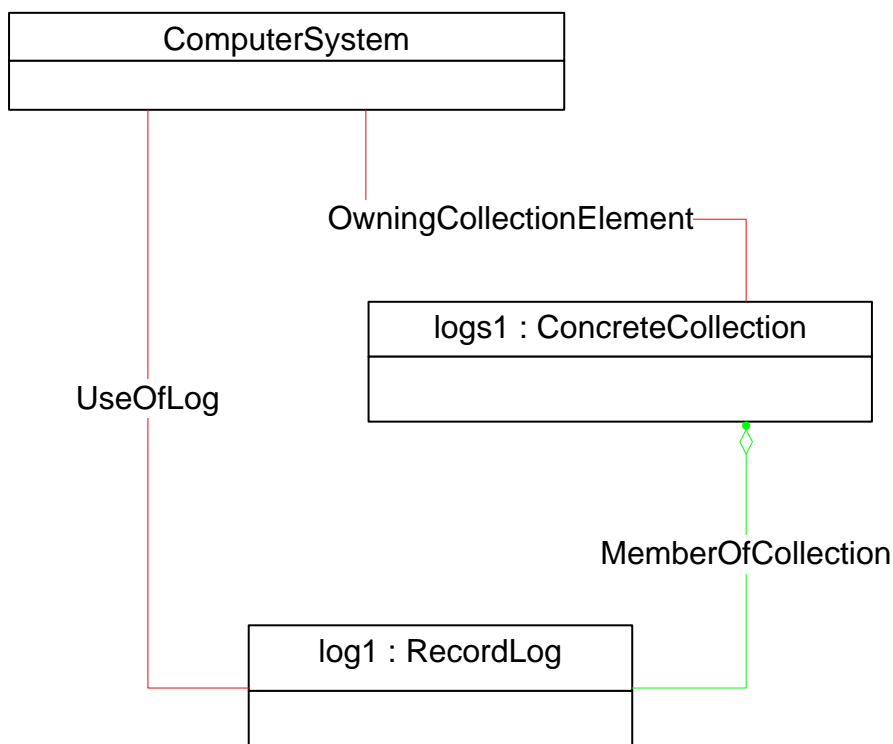
617   A client can find all of the settings (CIM_Capabilities instances) for the system as follows:

618   Find the instance of CIM_ConcreteCollection that is associated with the CIM_ComputerSystem instance
619   through an instance of CIM_OwningCollectionElement where the ElementName property of the
620   CIM_ConcreteCollection instance has a value of "Capabilities".

621   **9.3   Find All of the Consoles for a System**

622   A client can find all of the CIM_TextRedirectionSAP instances hosted on the system as follows:

623   Find the instance of CIM_ConcreteCollection that is associated with the CIM_ComputerSystem instance
624   through an instance of CIM_OwningCollectionElement where the ElementName property of the
625   CIM_ConcreteCollection instance has a value of "Consoles".

626   **9.4   Find All of the Logs for a System**

627   A client can find all of the CIM_RecordLog instances related to the system as follows:

628   Find the instance of CIM_ConcreteCollection that is associated with the CIM_ComputerSystem instance
629   through an instance of CIM_OwningCollectionElement where the ElementName property of the
630   CIM_ConcreteCollection instance has a value of "Logs".

631 **9.5   Find All of the Settings for a System**

632 A client can find all of the settings (CIM_SettingData instances) for the system as follows:

633 Find the instance of CIM_ConcreteCollection that is associated with the CIM_ComputerSystem instance
634 through an instance of CIM_OwningCollectionElement where the ElementName property of the
635 CIM_ConcreteCollection instance has a value of "Settings".

636 **9.6   Find All of the Configuration Capacities for a System**

637 A client can find all of the configuration capacities (CIM_ConfigurationCapacity instances) for the system
638 as follows:

639 Find the instance of CIM_ConcreteCollection that is associated with the CIM_ComputerSystem instance
640 through an instance of CIM_OwningCollectionElement where the ElementName property of the
641 CIM_ConcreteCollection instance has a value of "Capacities".

642 **9.7   Find All of the Sensors for a System**

643 A client can find all of the sensors (CIM_Sensor and CIM_NumericSensor instances) for the system as
644 follows:

645 Find the instance of CIM_ConcreteCollection that is associated with the CIM_ComputerSystem instance
646 through an instance of CIM_OwningCollectionElement where the ElementName property of the
647 CIM_ConcreteCollection instance has a value of "Sensors".

648 # 10   CIM Elements

649 Table 4 shows the instances of CIM Elements for this profile. Instances of the CIM Elements shall be
650 implemented as described in Table 4. Sections 7 ("Implementation") and 8 ("Methods") may impose
651 additional requirements on these elements.

652   **Table 4 – CIM Elements: SMASH Collections Profile**

Element Name	Requirement	Description
Classes		
CIM_ConcreteCollection	Mandatory	See 10.1.
CIM_MemberOfCollection	Conditional	See 10.2.
CIM_OwningCollectionElement	Mandatory	See 10.3.
Indications		
None defined in this profile		

653 **10.1   CIM_ConcreteCollection**

654 CIM_ConcreteCollection instances are used to aggregate instances of CIM_ManagedElement. Table 5
655 provides information about the properties of CIM_ConcreteCollection.

656   **Table 5 – Class: CIM_ConcreteCollection**

Properties	Requirement	Notes
InstanceID	Mandatory	None
ElementName	Mandatory	See 7.1.

657   **10.2   CIM_MemberOfCollection**

658   CIM_MemberOfCollection is used to associate CIM_ManagedElement (CIM_SettingData,
659   CIM_Capabilities, CIM_RecordLog) instances with the appropriate instance of CIM_ConcreteCollection.
660   Table 6 provides information about the properties of CIM_MemberOfCollection.

661   **Table 6 – Class: CIM_MemberOfCollection**

Properties	Requirement	Notes
GroupComponent	Mandatory	The value of this property shall be an instance of CIM_ConcreteCollection.
PartComponent	Mandatory	See sections 7.2 through 7.24.

662   **10.3   CIM_OwningCollectionElement**

663   CIM_OwningCollectionElement is used to associate a CIM_ConcreteCollection instance with its scoping
664   CIM_ComputerSystem instance. Table 7 provides information about the properties of
665   CIM_OwningCollectionElement.

666   **Table 7 – Class: CIM_OwningCollectionElement**

Properties	Requirement	Notes
OwningElement	Mandatory	The value of this property shall be the Scoping Instance of this profile.
OwnedElement	Mandatory	The value of this property shall be an instance of CIM_ConcreteCollection.

667

668 # ANNEX A
669 # (Informative)
670
671 # Change Log

Version	Date	Description
1.0.0	2009-07-06	DMTF Standard Release

672
673