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5 **Power State Management Profile**

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7 **Document Status: Preliminary Standard**

8 **Document Language: E**

Power State Management Profile

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Foreword

99 The *Power State Management Profile* (DSP1027) was prepared by the Server Management Working
100 Group of the DMTF.

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

Introduction

104 The information in this specification should be sufficient for a provider or consumer of this data to identify
105 unambiguously the classes, properties, methods, and values that must be instantiated and manipulated to
106 describe and control the power state and hardware management for a computer system using the DMTF
107 Common Information Model (CIM) core and extended model definitions. The target audience for this
108 specification is implementers who are writing CIM-based providers or consumers of management
109 interfaces that represent the component described in this document.

110

Power State Management Profile

111 1 Scope

112 The *Power State Management Profile* describes the classes, associations, properties, and methods used
113 to manage the power of a computer system.

114 2 Normative References

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

118 2.1 Approved References

119 DMTF [DSP0200](#), *CIM Operations over HTTP 1.2.0*

120 DMTF [DSP0004](#), *CIM Infrastructure Specification 2.3.0*

121 DMTF [DSP1000](#), *Management Profile Specification Template*

122 DMTF [DSP1001](#), *Management Profile Specification Usage Guide*

123 [ACPI specification, v3.0](#)

124 2.2 References under Development

125 DMTF DSP1033, *Profile Registration Profile*

126 2.3 Other References

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

128 [Unified Modeling Language \(UML\) from the Open Management Group \(OMG\)](#)

129 DMTF [DSP0215](#), *Server Management Managed Element Addressing Specification (SM ME Addressing)*

130 3 Terms and Definitions

131 For the purposes of this document, the terms and definitions in [DSP1033](#) and [DSP1001](#) and the following
132 terms and definitions apply.

133 3.1

134 can

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

136 3.2

137 cannot

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

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- 139 **3.3**
140 **conditional**
141 indicates requirements to be followed strictly in order to conform to the document when the specified
142 conditions are met
- 143 **3.4**
144 **mandatory**
145 indicates requirements to be followed strictly in order to conform to the document and from which no
146 deviation is permitted
- 147 **3.5**
148 **may**
149 indicates a course of action permissible within the limits of the document
- 150 **3.6**
151 **need not**
152 indicates a course of action permissible within the limits of the document
- 153 **3.7**
154 **optional**
155 indicates a course of action permissible within the limits of the document
- 156 **3.8**
157 **referencing profile**
158 indicates a profile that owns the definition of this class and can include a reference to this profile in its
159 "Referenced Profiles" table
- 160 **3.9**
161 **shall**
162 indicates requirements to be followed strictly in order to conform to the document and from which no
163 deviation is permitted
- 164 **3.10**
165 **shall not**
166 indicates requirements to be followed strictly in order to conform to the document and from which no
167 deviation is permitted
- 168 **3.11**
169 **should**
170 indicates that among several possibilities, one is recommended as particularly suitable, without
171 mentioning or excluding others, or that a certain course of action is preferred but not necessarily required
- 172 **3.12**
173 **should not**
174 indicates that a certain possibility or course of action is deprecated but not prohibited
- 175 **3.13**
176 **unspecified**
177 indicates that this profile does not define any constraints for the referenced CIM element or operation

178 **3.14**

179 **Immediate Power State Change**

180 indicates the power state transition that will be initiated immediately.

181 **3.15**

182 **Pending Power State Change**

183 indicates the power state transition that will be initiated sometime in the future

184 **4 Symbols and Abbreviated Terms**

185 The following abbreviations are used in this document.

186 **4.1**

187 **ACPI**

188 Advanced Configuration and Power Interface

189 **4.2**

190 **CIM**

191 Common Information Model

192 **5 Synopsis**

193 **Profile Name:** *Power State Management Profile*

194 **Version:** 1.0.0c

195 **Organization:** DMTF

196 **CIM Schema Version:** 2.15

197 **Central Class:** CIM_PowerManagementService

198 **Scoping Class:** CIM_ComputerSystem

199 The *Power State Management Profile* extends the management capability of the referencing profiles by
200 adding the capability to describe and manage the power state of computer systems.

201 CIM_PowerManagementService shall be the Central Class of this profile. The instance of
202 CIM_PowerManagementService shall be the Central Instance of this profile. CIM_ComputerSystem shall
203 be the Scoping Class of this profile. The instance of CIM_ComputerSystem with which the Central
204 Instance is associated through an instance of CIM_HostedService shall be the Scoping Instance of this
205 profile.

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

207

Table 1 – Referenced Profiles

Profile Name	Organization	Version	Description
<i>Profile Registration Profile</i>	DMTF	1.0	Mandatory

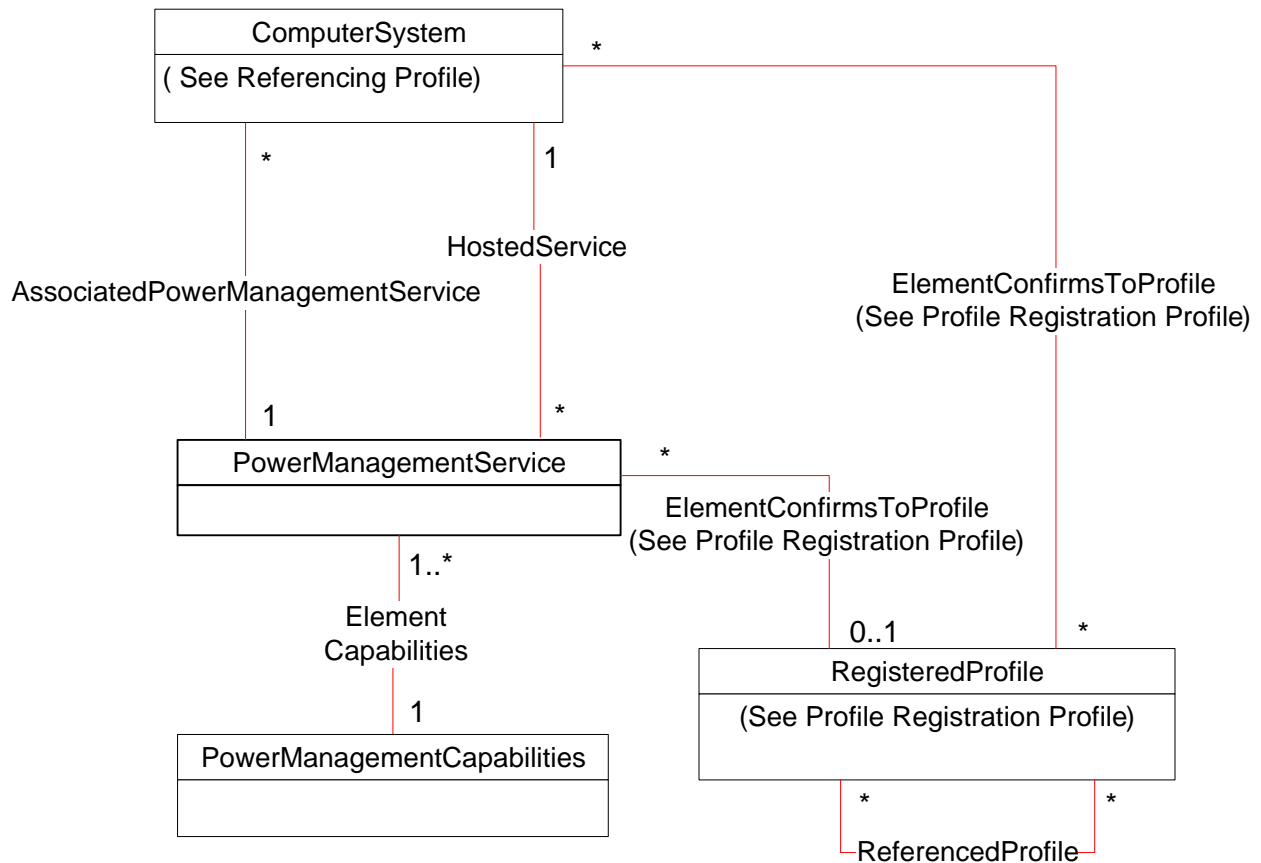
208 **6 Description**

209 The *Power State Management Profile* defines the behavior of the power management service and related
210 classes used to describe and control power state and hardware reset management for a computer
211 system. The profile describes the classes, property values, and methods that constitute a Pending Power
212 State Change and an Immediate Power State Change.

Power State Management Profile

213 The CIM_ComputerSystem class is not part of this profile but is shown for clarification in all the class and
 214 instance diagrams.

215 Figure 1 represents the class schema of the *Power State Management Profile* and shows the elements of
 216 the *Power State Management Profile*, as well as the dependent relationships between the elements of
 217 *Power State Management Profile* and the referencing profiles. For simplicity, the prefix CIM_ has been
 218 removed from the names of the classes.



219

220

Figure 1 – Power State Management Profile: Class Diagram

221 7 Implementation

222 This section details the requirements related to the arrangement of instances and their properties for
 223 implementations of this profile. Methods are listed in section 8 (“Methods”), and properties are listed in
 224 section 10 (“CIM Elements”).

225 7.1 CIM_PowerManagementService

226 At least one instance of CIM_PowerManagementService shall be associated with one or more instances
 227 of CIM_ComputerSystem through an instance of CIM_AssociatedPowerManagementService. The
 228 managed system that is hosting the power management service, represented by an instance of
 229 CIM_ComputerSystem, shall be associated with CIM_PowerManagementService through the
 230 CIM_HostedService association.

231 7.1.1 CIM_PowerManagementService.ElementName

232 The ElementName property shall be formatted as a free-form string of variable length (pattern “.*”).

233 7.2 CIM_PowerManagementCapabilities

234 One CIM_PowerManagementCapabilities instance shall be associated with one or more instances of
235 CIM_PowerManagementService through the CIM_ElementCapabilities association.

236 7.2.1 CIM_PowerManagementCapabilities.PowerChangeCapabilities

237 The PowerChangeCapabilities property array is used to represent the power state related capabilities of
238 the instances of CIM_ComputerSystem associated with the CIM_PowerManagementService instances
239 with which the CIM_PowerManagementCapabilities instance is associated. This property is also used to
240 indicate support for client management of the power state through the
241 CIM_PowerManagementService.RequestPowerStateChange() method. When the
242 RequestPowerStateChange() method is supported, the PowerChangeCapabilities property array shall
243 contain the value 3 (Power State Settable).

244 When the PowerStatesSupported property contains the value in the "PowerStatesSupported Value"
245 column, the PowerChangeCapabilities property shall contain the value specified in the
246 "PowerChangeCapabilities Value" column.

247 **Table 2 – PowerStatesSupported and PowerChangeCapabilities Values**

PowerStatesSupported Value	PowerChangeCapabilities Value
5 (Power Cycle (Off–Soft))	4 (Power Cycling Supported)
6 (Power Cycle (Off–Hard))	6 (Off Hard Power Cycling Supported)
10 (Master Bus Reset)	7 (HW Reset Supported)
11 (Diagnostic Interrupt (NMI))	7 (HW Reset Supported)

248

249 7.2.2 CIM_PowerManagementCapabilities.ElementName

250 The ElementName property shall be formatted as a free-form string of variable length (pattern “.*”).

251 7.2.3 CIM_PowerManagementCapabilities.PowerStatesSupported

252 The PowerStatesSupported property array is used to represent the power states that are supported by
253 the associated computer system.

254 7.3 CIM_AssociatedPowerManagementService.PowerState

255 The PowerState property indicates the current power state of the associated computer system
256 represented by an instance of CIM_ComputerSystem. The PowerState property shall have one of the
257 values specified in the PowerStatesSupported property of the instance of
258 CIM_PowerManagementCapabilities that is associated with the instance of
259 CIM_PowerManagementService that is referenced by the CIM_AssociatedPowerManagementService
260 association.

261 The RequestPowerStateChange() method of the CIM_PowerManagementService shall be used to
262 change the value of the PowerState property.

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263 7.3.1 Power States Values

264 The correspondence between the CIM_AssociatedPowerManagementService.PowerState property,
265 CIM_PowerManagementService.RequestPowerStateChange() method PowerState parameter values,
266 and standard ACPI power state descriptions are specified in Table 3. The value of the PowerState
267 property shall have the meaning specified in Table 3. Note that it is not necessary for the managed
268 system to actually support the ACPI specification.

269 **Table 3 – PowerState Values and ACPI States**

PowerState enum Value (interpreted as a verb in the RequestPowerStateChange() method)	Description	Corresponding ACPI State
2 (On)	Bring system to full On from any state (Sleep, Hibernate, Off)	G0 or S0 Working
3 (Sleep–Light)	Standby	S1 or S2
4 (Sleep–Deep)	Suspend	S3
5 (Power Cycle (Off–Soft))	Reset system without removing power	S0 with context fully lost: <ul style="list-style-type: none">• Requires master bus reset of entire system• Requires full boot from POST and BIOS
6 (Off–Hard)	Power Off performed through mechanical means like unplugging power cable or UPS On	G3
7 (Hibernate (Off–Soft))	System context and OS image written to non-volatile storage; system and devices powered off	S4
8 (Off–Soft)	System power off but auxiliary or flea power may be available	G2 or S5
9 (Power Cycle (Off–Hard))	Equivalent to Off–Hard followed by	Go to G3, then return to S0
10 (Master Bus Reset)	Hardware reset	S5
11 (Diagnostic Interrupt (NMI))	Hardware reset	S5

270 7.4 Representing Power State Changes

271 The CIM_AssociatedPowerManagementService.RequestedPowerState property indicates the requested
272 power state of the associated computer system.

273 The CIM_AssociatedPowerManagementService.PowerOnTime property indicates the date-time that the
274 power state change indicated by the RequestedPowerState property was or will be initiated. When the
275 PowerOnTime property is non-Null, the value shall be a date-time and shall not specify a time interval. A
276 value of Null for the PowerOnTime property shall indicate that the last power state change was initiated
277 immediately or shall indicate that the last requested time to initiate the power state change is unknown.

278 When the Pending Power State Change exists for the instance of CIM_ComputerSystem that is
279 referenced by the CIM_AssociatedPowerManagementService association, the RequestedPowerState
280 property shall have the value of 2 (On), 5 (Power Cycle (Off–Soft)), or 6 (Power Cycle (Off–Hard)), and
281 the value of the PowerOnTime property shall identify a date-time in the future.

282 The RequestedPowerState and PowerOnTime properties are affected by the invocation of the
283 CIM_PowerManagementService.RequestPowerStateChange() method; see section 8.1.

284 8 Methods

285 This section details the requirements for supporting intrinsic operations and extrinsic methods for the CIM
286 elements defined by this profile.

287 8.1 CIM_PowerManagementService.RequestPowerStateChange()

288 The RequestPowerStateChange() method is used to set the power state that the user wants for the
289 target computer system and when that system should be put into the new state. The
290 PowerChangeCapabilities property array of the associated instance of
291 CIM_PowerManagementCapabilities is used to represent the capabilities of the
292 RequestPowerStateChange() method. When this method is supported, the PowerChangeCapabilities
293 property shall contain the value 3 (Power State Settable).

294 RequestPowerStateChange() method return code values shall be as specified in Table 4.
295 RequestPowerStateChange() method parameters are specified in Table 5.

296 Invoking the RequestPowerStateChange() method multiple times could result in earlier requests being
297 overwritten or lost.

298 No standard messages are defined for this method.

299 **Table 4 – CIM_PowerManagementService.RequestPowerStateChange() Method: Return Code**
300 **Values**

Value	Description
0	The initiation of Pending/Immediate Power State Change was successful.
1	Method is not supported in the implementation.
2	Error occurred
4096	Job started: REF returned to started CIM_ConcreteJob

301 **Table 5 – CIM_PowerManagementService.RequestPowerStateChange() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN	PowerState	Uint64	See section 8.1.3.
IN	ManagedElement	CIM_ComputerSystem REF	See section 8.1.4.
IN	Time	Datetime	See section 8.1.5.
OUT	Job	CIM_ConcreteJob REF	See section 8.1.6.
IN	TimeoutPeriod	Datetime	See section 8.1.7.

302 8.1.1 Establishing a Pending Power State Change

303 The RequestPowerStateChange() method can be invoked with the Time parameter specified, which will
304 result in establishing the Pending Power State Change. The Pending Power State Change will be
305 reflected in the PowerOnTime and RequestedPowerState properties of the instance of
306 CIM_AssociatedPowerManagementService that references the CIM_PowerManagementService and the
307 instance of CIM_ComputerSystem that is represented by the ManagedElement parameter.

308 The TimeoutPeriod and Time parameters shall not be supported for the same invocation of the
309 RequestPowerStateChange() method. When the TimeoutPeriod and Time parameters are specified for
310 the same method invocation, the method shall return a value of 2.

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311 When the method invocation is to establish the Pending Power State Change, the method may return the
312 Job output parameter and return a value of 4096. When the method invocation returns the Job output
313 parameter, the status of the referenced CIM_Job instance shall reflect the status of the attempt to
314 establish the Pending Power State Change. When the method invocation does not return the Job output
315 parameter, the method completion shall be synchronous with the establishment of the Pending Power
316 State Change.

317 **8.1.2 Initiating an Immediate Power State Change**

318 The RequestPowerStateChange() method may be invoked without the Time parameter, which will result
319 in the immediate initiation of a power state change. This section describes requirements for when the
320 Time parameter is not specified.

321 When the method invocation is to initiate the Immediate Power State Change, the method may return the
322 Job output parameter and a return code value of 4096. When the method invocation returns the Job
323 output parameter, the status of the referenced CIM_Job instance shall reflect the status of the initiated
324 power state change request. When the method invocation does not return the Job output parameter, the
325 method completion shall be synchronous with the initiation of the Immediate Power State Change.

326 **8.1.3 PowerState**

327 The PowerState parameter indicates the desired power state of the computer system. When the value
328 used for the PowerState parameter is not equal to one of the values in the PowerStatesSupported
329 property array of the associated instance of CIM_PowerManagementCapabilities, the method shall return
330 2.

331 When the value 5 (Power Cycle (Off–Soft)) is supported for the PowerState parameter, the
332 PowerChangeCapabilities property array of the associated instance of
333 CIM_PowerManagementCapabilities shall contain the value 4 (Power Cycling Supported).

334 When the value 6 (Power Cycle (Off–Hard)) is supported for the PowerState parameter, the
335 PowerChangeCapabilities property array of the associated instance of
336 CIM_PowerManagementCapabilities shall contain the value 6 (Off Hard Power Cycling Supported).

337 When the values 10 (Master Bus Reset) and 11 (Diagnostic Interrupt) are supported for the PowerState
338 parameter, the PowerChangeCapabilities property array of the associated instance of
339 CIM_PowerManagementCapabilities shall contain the value 7 (HW Reset Supported).

340 When the CIM_PowerManagementService.RequestPowerStateChange() method returns a value of 0 or
341 4096, the RequestedPowerState property of the instance of CIM_AssociatedPowerManagementService
342 that references the CIM_PowerManagementService instance and the CIM_ComputerSystem instance
343 indicated by the ManagedElement parameter shall be set to the value of the PowerState parameter of the
344 method.

345 **8.1.4 ManagedElement**

346 The ManagedElement parameter indicates the reference to the instance of CIM_ComputerSystem that
347 represents the target computer system whose power state is to be set.

348 If the instance of CIM_ComputerSystem is not associated with the instance of
349 CIM_PowerManagementService through the CIM_AssociatedPowerManagementService association, the
350 RequestPowerStateChange() method shall return 2 (Error Occurred).

351 **8.1.5 Time**

352 The Time parameter is used to set the power state of the managed system at a certain time and can be
353 used only to set the power state to On or Power Cycle. The Time parameter shall be supported when the
354 PowerChangeCapabilities property array of the associated instance of
355 CIM_PowerManagementCapabilities contains the value 5 (Timed Power On Supported). The Time

356 parameter shall not be supported when the PowerState parameter has any value other than 2 (On), 5
357 (Power Cycle (Off–Soft)) or 6 (Power Cycle (Off–Hard)). When the Time parameter is specified and is not
358 supported, the method shall return a value of 2.

359 When the Time parameter is specified and the method returns a value of 0, the PowerOnTime property of
360 the CIM_AssociatedPowerManagementService association that references the CIM_ComputerSystem
361 instance identified by the ManagedElement parameter and references the
362 CIM_PowerManagementService instance shall have the date-time value that indicates when the
363 computer system will undergo the power state change indicated by the PowerState parameter. When the
364 Time parameter complies with the interval format of the Datetime data type, the interval value indicated
365 by the Time parameter shall be interpreted relative to the current date-time and the calculated absolute
366 date-time shall be the value of the PowerOnTime property. When the Time parameter complies with the
367 timestamp format of the Datetime data type, the PowerOnTime property shall have the value of the Time
368 parameter.

369 When the Time parameter is either Null or 0, an immediate initiation of the power state change shall
370 occur.

371 **8.1.6 Job**

372 The Job is an OUT parameter. It is a reference to the instance of CIM_Job that represents the job or task
373 that may be started by the invocation of the RequestPowerStateChange() method.

374 The method may return the Job output parameter and a return code value of 4096 when the parameters
375 for the method have been validated, regardless of whether the method will create a Pending Power State
376 Change or an Immediate Power State Change.

377 **8.1.7 TimeoutPeriod**

378 The TimeoutPeriod parameter specifies the maximum amount of time that the client allows the
379 RequestPowerStateChange() method to complete execution.

380 If the TimeoutPeriod parameter is specified and the value is not in the interval format of the Datetime data
381 type, the method shall return a value of 2. If the TimeoutPeriod parameter is specified and the
382 implementation is able to determine if the power state change will take more time than the TimeoutPeriod
383 parameter, the method shall return a value of 2. A value of 0 or Null for the TimeoutPeriod shall indicate
384 that no timeout requirements exist.

385 **8.2 Profile Conventions for Operations**

386 Support for operations for each profile class (including associations) is specified in the following
387 subclauses. Each of these subclauses includes either the statement “All operations in the default list in
388 section 8.2 are supported as described by [DSP0200 v1.2](#)” or a table listing all the operations that are not
389 supported by this profile or where the profile requires behavior other than that described by
390 [DSP0200 v1.2](#).

391 The default list of operations is as follows:

- 392 • GetInstance
- 393 • EnumerateInstances
- 394 • EnumerateInstanceNames
- 395 • Associators
- 396 • AssociatorNames
- 397 • References
- 398 • ReferenceNames

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399 A compliant implementation shall support all the operations in the default list for each class, unless the
400 “Requirement” column states something other than *Mandatory*.

401 8.3 CIM_PowerManagementService

402 All operations in the default list in section 8.2 are supported as described by [DSP0200 v1.2](#).

403 8.4 CIM_PowerManagementCapabilities

404 All operations in the default list in section 8.2 are supported as described by [DSP0200 v1.2](#).

405 8.5 CIM_AssociatedPowerManagementService

406 Table 6 lists operations that either have special requirements beyond those from [DSP0200 v1.2](#) or shall
407 not be supported.

408 **Table 6 – Operations: CIM_AssociatedPowerManagementService**

Operation	Requirement	Messages
ModifyInstance	Optional. See section 8.5.1.	None
EnumerateInstances	Unspecified	None
EnumerateInstanceNames	Unspecified	None
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

409 8.5.1 CIM_AssociatedPowerManagementService—ModifyInstance

410 When the ModifyInstance operation is supported for an instance of
411 CIM_AssociatedPowerManagementService, the ModifyInstance operation shall not modify the following
412 properties:

- 413 • PowerState
- 414 • OtherPowerState
- 415 • PowerOnTime
- 416 • RequestedPowerState

417 These properties can be affected by the invocation of the RequestPowerStateChange() method; see
418 section 8.1.

419 8.6 CIM_ElementCapabilities

420 Table 7 lists operations that either have special requirements beyond those from [DSP0200 v1.2](#) or shall
421 not be supported.

422 **Table 7 – Operations: CIM_ElementCapabilities**

Operation	Requirement	Messages
EnumerateInstances	Unspecified	None
EnumerateInstanceNames	Unspecified	None

Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

423 8.7 CIM_HostedService

424 Table 8 lists operations that either have special requirements beyond those from [DSP0200 v1.2](#) or shall
425 not be supported.

426 **Table 8 – Operations: CIM_HostedService**

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

427 9 Use Cases

428 This section contains object diagrams and use cases for the *Power State Management Profile*

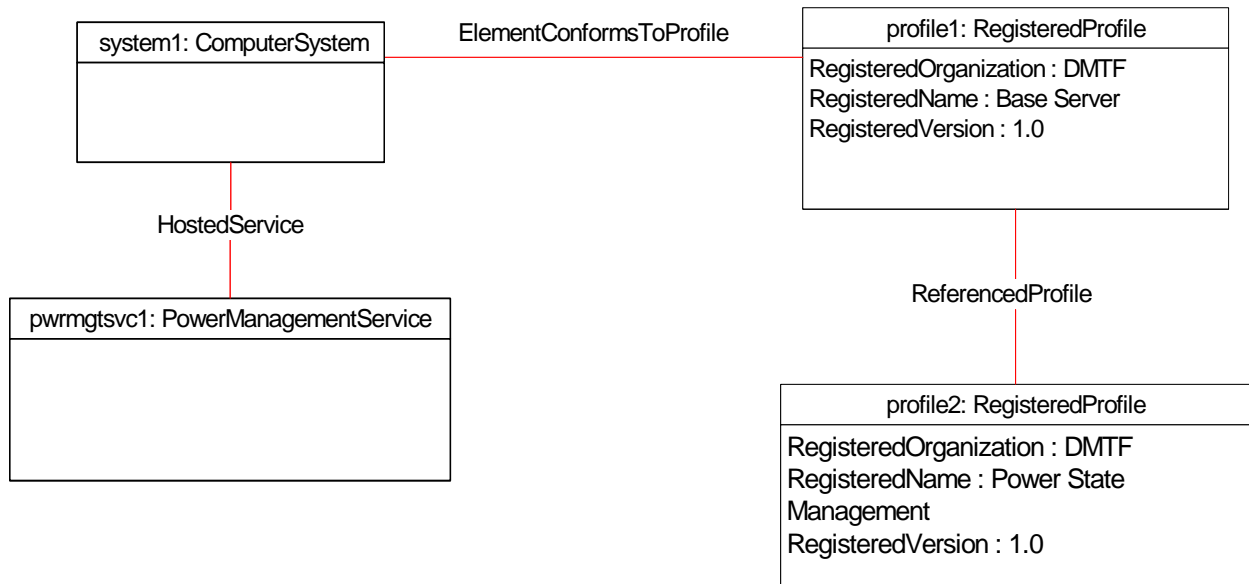
429 9.1 Object Diagrams

430 This section contains object diagrams for the *Power State Management Profile*. For simplicity, the prefix
431 CIM_ has been removed from the names of the classes in the diagrams.

432 9.1.1 Advertising the Profile Conformance

433 **Error! Reference source not found.** represents a possible instantiation of the *Power State Management*
434 *Profile*. In this instantiation, the managed system, system1, hosts a power management service,
435 pwrmgtsvc1. system1 is also the scoping instance for pwrmgtsvc1. Thus, following the
436 CIM_ElementConformsToProfile association to profile1 and then the referenced CIM_ReferencedProfile
437 association to profile2, the client can retrieve profile2. profile2 will show the version of the current *Power*
438 *State Management Profile* implementation.

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439

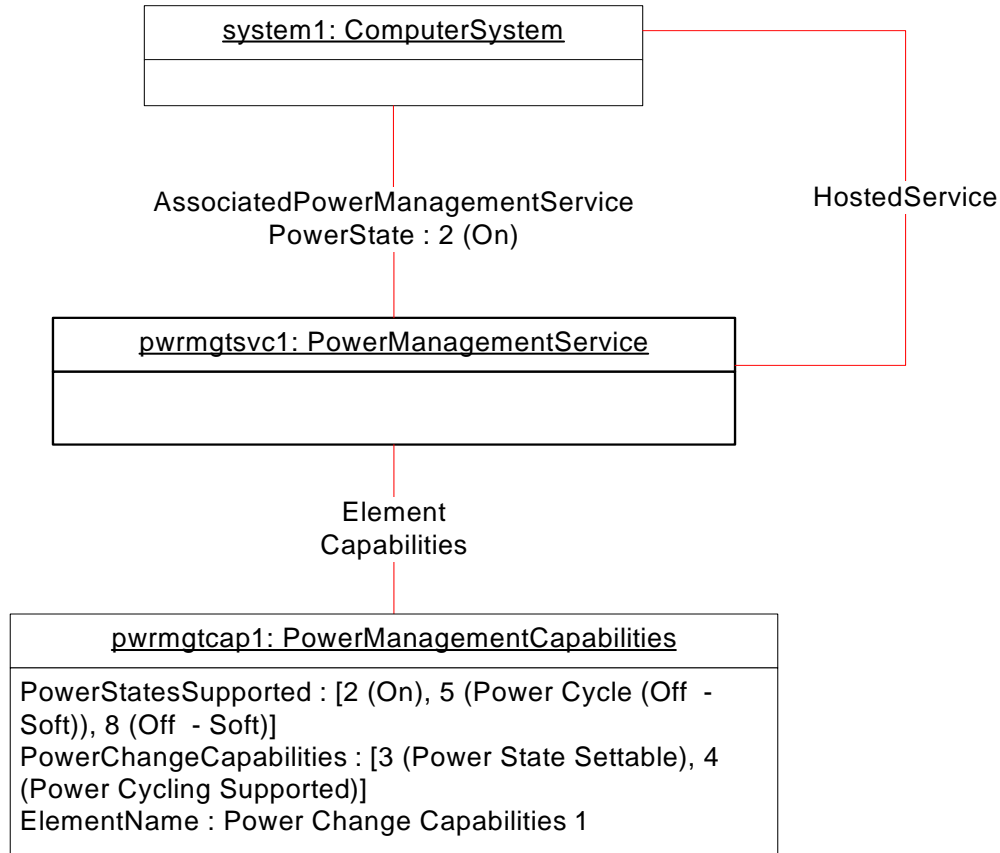
440

Figure 2 – Registered Profile

441 9.1.2 Monolithic System

442 Figure 3 shows the CIM instances required to control power for a single, monolithic system, system1.
443 system1 hosts the power management service, pwrmgtsvc1, which manages the power for system1.

Power State Management Profile



444

445

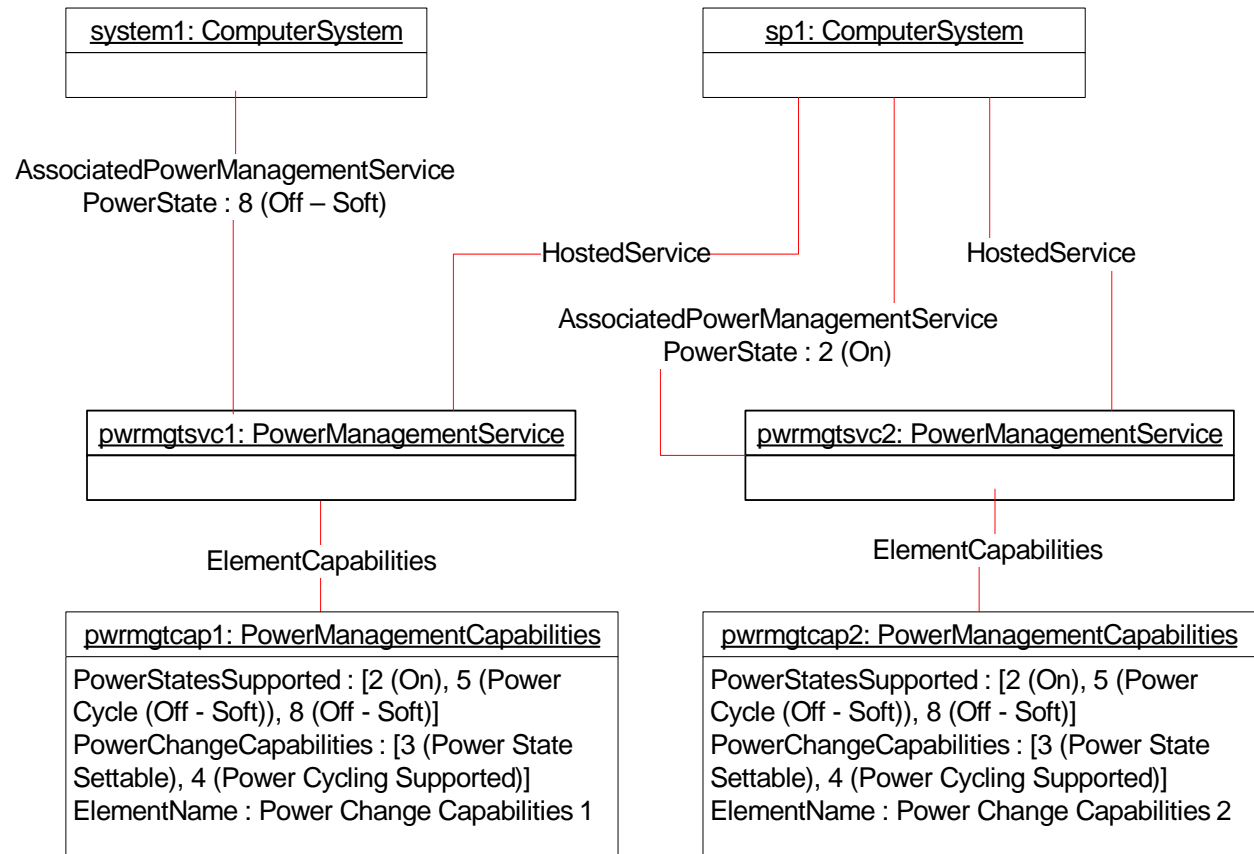
Figure 3 – Power Control Instance Diagram: Monolithic System

446 9.1.3 Monolithic System with Service Processor

447 Figure 4 shows the CIM instances required to control power for a monolithic system with an attached
448 service processor. The power management service, pwrmgtsvc1, hosted by the service processor, sp1, is
449 responsible for managing the power of the system, system1. Optionally, the service processor may host
450 another power management service, pwrmgtsvc2, to control its own power.

451 A service processor in this sense may be an add-in remote management component or an integrated
452 baseboard management controller.

Power State Management Profile

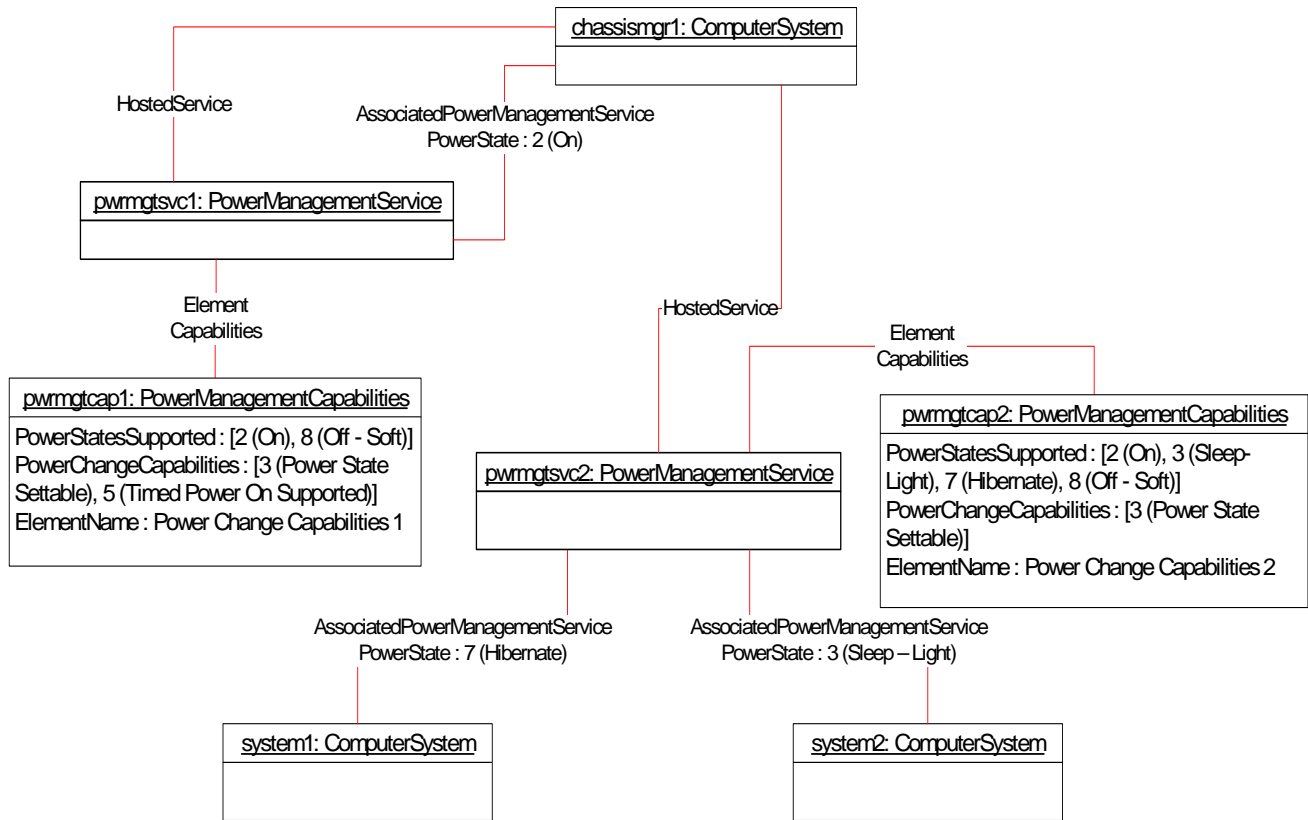


453

454 **Figure 4 – Power Control Instance Diagram: Monolithic System with Service Processor**

455 9.1.4 Modular System with Chassis Service Processor

456 Figure 5 shows the CIM instances required to represent a modular computer system. The chassis
 457 manager, chassismgr1, hosts one or more power management services (pwrmgtsvc2) to control the
 458 power of all the blade systems. Optionally, the chassis manager may host another power management
 459 service (pwrmgtsvc1) to control its own power.



460

461 **Figure 5 – Power Control Instance Diagram: Modular System with Chassis Service Processor**

462 **9.2 Determine the Power State of the Computer System**

463 A client can determine the power state of the computer system as follows:

464 For the instance of CIM_ComputerSystem that represents the given computer system, select the
465 referencing instance of CIM_AssociatedPowerManagementService.

466 The PowerState property of the referencing instance of CIM_AssociatedPowerManagementService
467 represents the power state of the computer system.

468 **9.3 Find the Power Management Service for a Computer System**

469 A client can find the power management service for a computer system as follows:

470 For the instance of CIM_ComputerSystem that represents the given computer system, select the instance
471 of CIM_PowerManagementService that represents the power management service for the computer
472 system through the CIM_AssociatedPowerManagementService association.

473 **9.4 Find All the Computer Systems for a Power Management Service**

474 A client can find all the computer systems for a power management service as follows:

475 For the instance of CIM_PowerManagementService that represents the given power management
476 service, select all of the instances of CIM_ComputerSystem that are associated with it through the
477 CIM_AssociatedPowerManagementService association.

Power State Management Profile

478 9.5 Change the Power State of the Computer System

479 A client can change the power state of the computer system as follows:

- 480 1) Navigate from the target instance of CIM_ComputerSystem to the instance of
481 CIM_PowerManagementService that represents the service that manages that system by using
482 the CIM_AssociatedPowerManagementService association.
- 483 2) Invoke the RequestPowerStateChange() method of the instance of
484 CIM_PowerManagementService with an argument that contains the PowerState action
485 appropriate to the operation.

486 9.6 Determine Whether the Power Cycle Is Supported for a Computer System

487 A client can determine whether Power Cycle is supported for a computer system as follows:

- 488 1) Navigate from the target instance of CIM_ComputerSystem to the instance of
489 CIM_PowerManagementService using the CIM_AssociatedPowerManagementService
490 association.
- 491 2) Using the instance of CIM_PowerManagementService, navigate to the instance of
492 CIM_PowerManagementCapabilities through the CIM_ElementCapabilities association.

493 If the PowerChangeCapabilities property array contains the value 4 (Power Cycling Supported), Power
494 Cycle shall be supported for the computer system.

495 9.7 Execute Power Cycle (Off–Soft) within a Given Time

496 A client can execute Power Cycle (Off–Soft) within a given time as follows:

- 497 1) Navigate from the target instance of CIM_ComputerSystem to the instance of
498 CIM_PowerManagementService using the CIM_AssociatedPowerManagementService
499 association.
- 500 2) Invoke the RequestPowerStateChange() method of the instance of
501 CIM_PowerManagementService with the Power State argument set to 5 (Power Cycle (Off–
502 Soft)) and the TimeoutPeriod argument set to “t”.

503 10 CIM Elements

504 Table 9 shows the instances of CIM Elements for this profile. Instances of the CIM Elements shall be
505 implemented as described in Table 9. Sections 7 (“Implementation”) and 8 (“Methods”) may impose
506 additional requirements on these elements.

507

Table 9 – CIM Elements: Power State Management Profile

Element Name	Requirement	Description
Classes		
PowerManagementCapabilities	Mandatory	See sections 7.2 and 10.1.
PowerManagementService	Mandatory	See sections 7.1 and 10.2.
AssociatedPowerManagementService	Mandatory	See section 10.3.
ElementCapabilities	Mandatory	See section 10.4.
HostedService	Mandatory	See section 10.5.
RegisteredProfile	Mandatory	See section 10.6.
Indications		
None defined in this profile		

508 **10.1 CIM_PowerManagementCapabilities**

509 CIM_PowerManagementCapabilities represents the power management capabilities of a computer
510 system. Table 10 contains the requirements for elements of this class.

511

Table 10 – Class: CIM_PowerManagementCapabilities

Elements	Requirement	Notes
InstanceID	Mandatory	Key
PowerChangeCapabilities	Mandatory	See section 7.2.1.
ElementName	Mandatory	See section 7.2.2.
PowerStatesSupported	Mandatory	See section 7.2.3.

512 **10.2 CIM_PowerManagementService**

513 CIM_PowerManagementService represents the power management service responsible for controlling
514 the power of a computer system. Table 11 contains the requirements for elements of this class.

515

Table 11 – Class: CIM_PowerManagementService

Elements	Requirement	Notes
CreationClassName	Mandatory	Key
Name	Mandatory	Key
ElementName	Mandatory	See section 7.1.1.
RequestPowerStateChange()	Conditional	See section 8.1.

Power State Management Profile

516 10.3 CIM_AssociatedPowerManagementService

517 CIM_AssociatedPowerManagementService associates the CIM_ComputerSystem instance that
518 represents the target computer system with the CIM_PowerManagementService instance that represents
519 the service responsible for controlling the power of a computer system. Table 12 contains the
520 requirements for elements of this class.

521 **Table 12 – Class: CIM_AssociatedPowerManagementService**

Elements	Requirement	Notes
ServiceProvided	Mandatory	Key Cardinality 1
UserOfService	Mandatory	Key Cardinality *
PowerState	Mandatory	See section 7.3.
RequestedPowerState	Conditional	See section 7.4.
PowerOnTime	Conditional	See section 7.4.

522 10.4 CIM_ElementCapabilities

523 CIM_ElementCapabilities associates the CIM_PowerManagementService instance that represents the
524 service responsible for controlling the power of a computer system with the
525 CIM_PowerManagementCapabilities instance that represents the power management capabilities of a
526 computer system. Table 13 contains the requirements for elements of this class.

527 **Table 13 – Class: CIM_ElementCapabilities**

Elements	Requirement	Notes
ManagedElement	Mandatory	This property shall be a reference to the instance of CIM_PowerManagementService. Cardinality 1..*
Capabilities	Mandatory	This property shall be a reference to the instance of CIM_PowerManagementCapabilities. Cardinality 1

528 10.5 CIM_HostedService

529 CIM_HostedService associates the CIM_ComputerSystem instance with the
530 CIM_PowerManagementService instance that it hosts. Table 14 contains the requirements for elements
531 of this class.

532 **Table 14 – Class: CIM_HostedService**

Elements	Requirement	Notes
Antecedent	Mandatory	This property shall be a reference to the instance of CIM_ComputerSystem. Cardinality 1..*
Dependent	Mandatory	This property shall be a reference to the instance of CIM_PowerManagementService. Cardinality *

533 **10.6 CIM_RegisteredProfile**

534 CIM_RegisteredProfile is defined by the *Profile Registration Profile*. The requirements denoted in Table
535 15 are in addition to those mandated by the *Profile Registration Profile*.

536 **Table 15 – Class: CIM_RegisteredProfile**

Elements	Requirement	Notes
RegisteredName	Mandatory	This property shall have a value of "Power State Management Profile".
RegisteredVersion	Mandatory	This property shall have a value of "1.0.0".
RegisteredOrganization	Mandatory	This property shall have a value of 2 (DMTF).

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ANNEX A (informative)

Change Log

Version	Date	Description
1.0.0b	2006/07/11	Preliminary Standard version.
1.0.0c	2007/01/30	Preliminary Standard refresh. Updated CIM schema version from 2.11 to 2.15 to reflect the correct schema that contains all the properties that the profile references.

541

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ANNEX B (informative)

Acknowledgments

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