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89

## Foreword

90 The *Base Server Profile* (DSP1004) was prepared by the Server Management Working Group and the  
91 Physical Platform Profiles Working Group of the DMTF.

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

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108

109

## Introduction

110 The information in this specification should be sufficient for a provider or consumer of this data to  
111 unambiguously identify the classes, properties, methods, and values that shall be instantiated and  
112 manipulated to represent and manage a basic server and subsystems that are modeled using the DMTF  
113 Common Information Model (CIM) core and extended model definitions.

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

116

# Base Server Profile

## 117 1 Scope

118 The *Base Server Profile* is the autonomous profile that defines the classes used to describe basic server  
119 hardware and its related software. The scope of this profile is limited to simple servers that are directly  
120 realized in physical components. The profiles referenced by the *Base Server Profile* extend the  
121 management capabilities by adding the capability to represent server configuration, boot control,  
122 provisioning, and hardware.

## 123 2 Normative References

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

128 *Advanced Configuration and Power Interface Specification* (ACPI Specification), revision 3.0,  
129 [www.acpi.info/Downloads/ACPIspec30.pdf](http://www.acpi.info/Downloads/ACPIspec30.pdf)

130 DMTF DSP0004, *CIM Infrastructure Specification 2.5*,  
131 [http://www.dmtf.org/standards/published\\_documents/DSP0004\\_2.5.pdf](http://www.dmtf.org/standards/published_documents/DSP0004_2.5.pdf)

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

134 DMTF DSP1001, *Management Profile Specification Usage Guide 1.0*,  
135 [http://www.dmtf.org/standards/published\\_documents/DSP1001\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1001_1.0.pdf)

136 DMTF DSP1005, *CLP Service Profile 1.0*,  
137 [http://www.dmtf.org/standards/published\\_documents/DSP1005\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1005_1.0.pdf)

138 DMTF DSP1006, *SMASH Collections Profile 1.0*,  
139 [http://www.dmtf.org/standards/published\\_documents/DSP1006\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1006_1.0.pdf)

140 DMTF DSP1009, *Sensors Profile 1.0*,  
141 [http://www.dmtf.org/standards/published\\_documents/DSP1009\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1009_1.0.pdf)

142 DMTF DSP1010, *Record Log Profile 1.0*,  
143 [http://www.dmtf.org/standards/published\\_documents/DSP1010\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1010_1.0.pdf)

144 DMTF DSP1011, *Physical Asset Profile 1.0*,  
145 [http://www.dmtf.org/standards/published\\_documents/DSP1011\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1011_1.0.pdf)

146 DMTF DSP1012, *Boot Control Profile 1.0*,  
147 [http://www.dmtf.org/standards/published\\_documents/DSP1012\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1012_1.0.pdf)

148 DMTF DSP1013, *Fan Profile 1.0*, [http://www.dmtf.org/standards/published\\_documents/DSP1013\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1013_1.0.pdf)

149 DMTF DSP1014, *Ethernet Port Profile 1.0*,  
150 [http://www.dmtf.org/standards/published\\_documents/DSP1014\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1014_1.0.pdf)

151 DMTF DSP1015, *Power Supply Profile 1.0*,  
152 [http://www.dmtf.org/standards/published\\_documents/DSP1015\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1015_1.0.pdf)

- 153 DMTF DSP1016, *Telnet Service Profile 1.0*,  
154 [http://www.dmtf.org/standards/published\\_documents/DSP1016\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1016_1.0.pdf)
- 155 DMTF DSP1017, *SSH Service Profile 1.0*,  
156 [http://www.dmtf.org/standards/published\\_documents/DSP1017\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1017_1.0.pdf)
- 157 DMTF DSP1022, *CPU Profile 1.0*,  
158 [http://www.dmtf.org/standards/published\\_documents/DSP1022\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1022_1.0.pdf)
- 159 DMTF DSP1023, *Firmware Inventory Profile 1.0*,  
160 [http://www.dmtf.org/standards/published\\_documents/DSP1023\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1023_1.0.pdf)
- 161 DMTF DSP1024, *Text Console Redirection Profile 1.0*,  
162 [http://www.dmtf.org/standards/published\\_documents/DSP1024\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1024_1.0.pdf)
- 163 DMTF DSP1025, *Firmware Update Profile 1.0*,  
164 [http://www.dmtf.org/standards/published\\_documents/DSP1025\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1025_1.0.pdf)
- 165 DMTF DSP1026, *System Memory Profile 1.0*,  
166 [http://www.dmtf.org/standards/published\\_documents/DSP1026\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1026_1.0.pdf)
- 167 DMTF DSP1027, *Power State Management Profile 1.0*,  
168 [http://www.dmtf.org/standards/published\\_documents/DSP1027\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1027_1.0.pdf)
- 169 DMTF DSP1033, *Profile Registration Profile 1.0*,  
170 [http://www.dmtf.org/standards/published\\_documents/DSP1033\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1033_1.0.pdf)
- 171 DMTF DSP1036, *IP Interface Profile 1.0*,  
172 [http://www.dmtf.org/standards/published\\_documents/DSP1036\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1036_1.0.pdf)
- 173 DMTF DSP1037, *DHCP Client Profile 1.0*,  
174 [http://www.dmtf.org/standards/published\\_documents/DSP1037\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1037_1.0.pdf)
- 175 DMTF DSP1038, *DNS Client Profile 1.0*,  
176 [http://www.dmtf.org/standards/published\\_documents/DSP1038\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1038_1.0.pdf)
- 177 DMTF DSP1052, *Computer System Profile 1.0*,  
178 [http://www.dmtf.org/standards/published\\_documents/DSP1052\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1052_1.0.pdf)
- 179 ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*,  
180 <http://isotc.iso.org/livelink/livelink?func=ll&objId=4230456&objAction=browse&sort=subtype>

### 181 3 Terms and Definitions

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

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

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

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



195

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

197 **4 Symbols and Abbreviated Terms**

198 The following abbreviations are used in this document.

199 **4.1**

200 **ACPI**

201 Advanced Configuration and Power Interface

202 **5 Synopsis**

203 **Profile Name:** Base Server

204 **Version:** 1.0.1

205 **Organization:** DMTF

206 **CIM Schema Version:** 2.13

207 **Specializes:** DMTF *Computer System Profile 1.0*

208 **Central Class:** CIM\_ComputerSystem

209 **Scoping Class:** CIM\_ComputerSystem

210 The *Base Server Profile* is an autonomous profile that provides the capability to manage simple server  
211 hardware and related software.

212 The Central Class of the *Base Server Profile* shall be CIM\_ComputerSystem. The Central Instance shall  
213 be an instance of CIM\_ComputerSystem. The Scoping Class shall be CIM\_ComputerSystem. The  
214 Scoping Instance shall be the Central Instance. Table 1 lists profiles upon which this profile has a  
215 dependency.

216

**Table 1 – Referenced Profiles**

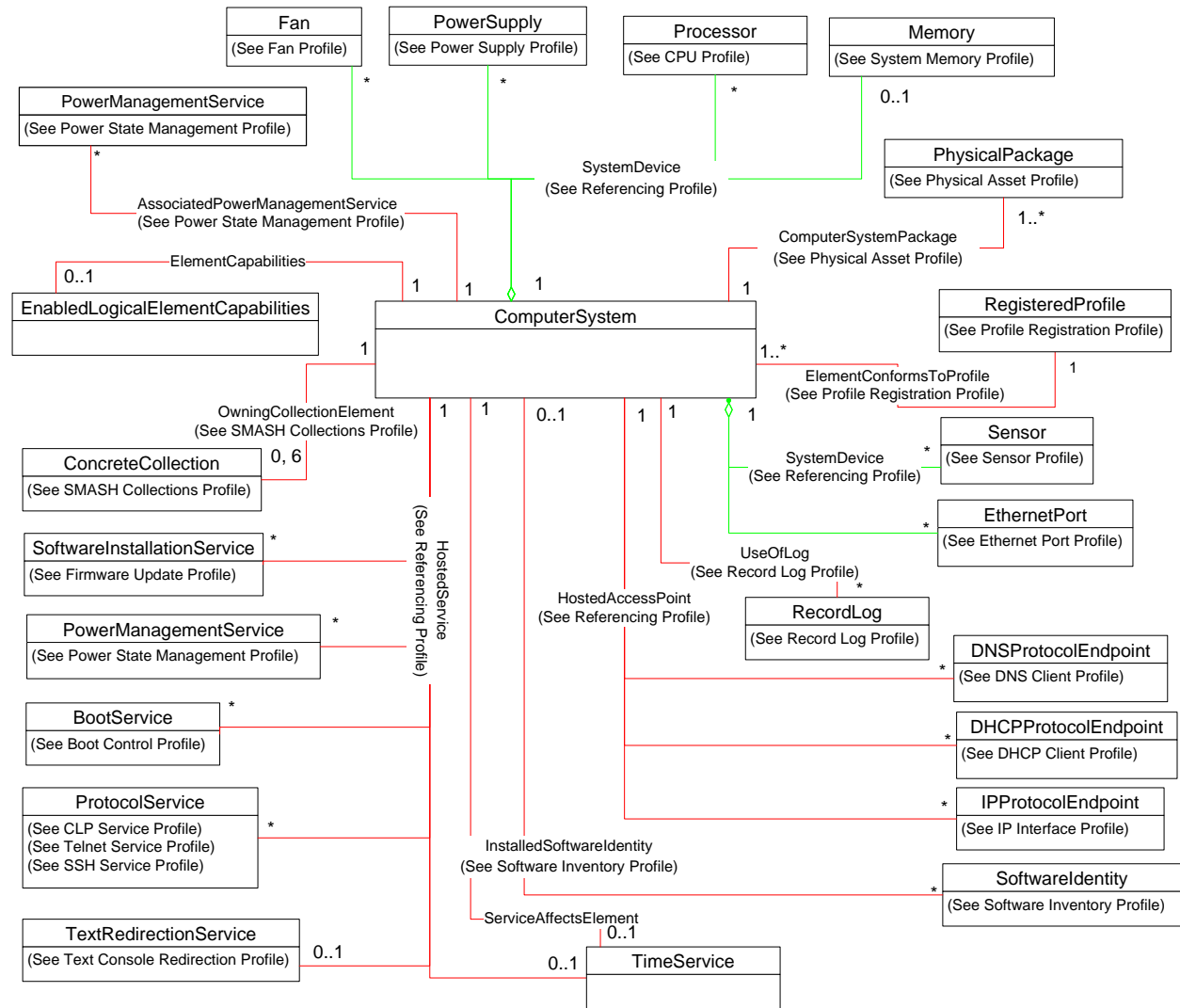
Profile Name	Organization	Version	Relationship	Behavior
<a href="#">Computer System</a>	DMTF	1.0	Specializes	None
<a href="#">Fan Profile</a>	DMTF	1.0	Optional	See 7.2.1.
<a href="#">Physical Asset</a>	DMTF	1.0	Mandatory	See 7.1.2.
<a href="#">Power State Management</a>	DMTF	1.0	Optional	See 7.3.2.
<a href="#">Power Supply</a>	DMTF	1.0	Optional	See 7.2.2.
<a href="#">Profile Registration</a>	DMTF	1.0	Mandatory	None
<a href="#">Text Console Redirection</a>	DMTF	1.0	Optional	See 7.4.

217 **6 Description**

218 The *Base Server Profile* is an autonomous profile that defines the minimum top-level object model  
219 needed to model simple server hardware and related software. Other profiles add additional management  
220 objects to this basic server model to provide system configuration, boot control, and other provisioning  
221 capabilities. CIM\_ComputerSystem represents the server system. CIM\_TimeService provides the ability  
222 to manage the system time.

223 Figure 1 presents the class schema for the *Base Server Profile*. For simplicity, the prefix CIM\_ has been  
 224 removed from the names of the classes.

225 The behavioral constraints for many of the profiles identified in Figure 1 are inherited from the specialized  
 226 [Computer System Profile](#). Therefore, although they are shown in Figure 1, they are not referenced in this  
 227 specification. Examples are the [IP Interface Profile](#), [Ethernet Port Profile](#), and [Record Log Profile](#).



228

229 **Figure 1 – Base Server Profile: Class Diagram**

230 **6.1 Representation of System Power State**

231 Normative requirements for the representation of system power state are expressed in 7.3. The following  
 232 informative text provides background on the approach taken to modeling system power state.

233 The *Base Server Profile* identifies two complementary approaches to representing the power state of a  
 234 base server: simple on/off management through the RequestedState and EnabledState properties, and  
 235 the RequestStateChange() method. Definitions are given for the 2 (Enabled) and 3 (Disabled) values for  
 236 the EnabledState property in terms of industry-standard ACPI definitions. Alternately, if an implementation  
 237 wants to support more granular or complex power-management behavior, the [Power State Management](#)  
 238 [Profile](#) can be implemented.

239 The power-management behavior and system power states specified in the [Power State Management](#)  
240 [Profile](#) are a superset of the function and states that are represented using the EnabledState and  
241 RequestedState properties of CIM\_ComputerSystem. That is, the EnabledState and RequestedState  
242 properties are sufficient to represent ACPI states S0 and S5. Implementing the [Power State Management](#)  
243 [Profile](#) provides the ability to represent additional ACPI states. For example, the equivalency between the  
244 EnabledState and PowerState values results from their mapping to identical ACPI states rather than that  
245 they are defined in terms of each other. For the subset of values for the EnabledState and  
246 RequestedState properties for which ACPI states are defined, there is a one-to-one correspondence with  
247 a legal value for the PowerState and RequestedPowerState properties.

248 Defining the states expressible through the [Power State Management Profile](#) as a superset of those  
249 states possible with the EnabledState and RequestedState properties is contrasted with the discarded  
250 alternative of using the implementation of the [Power State Management Profile](#) to provide a refinement of  
251 the interpretation of the EnabledState and RequestedState values. If this latter, discarded approach were  
252 taken, multiple values of PowerState and RequestedPowerState would be mapped to the less granular  
253 values for the EnabledState and RequestedState properties.

## 254 **7 Implementation**

255 The *Base Server Profile* consists of definitions for the CIM\_ComputerSystem, CIM\_PhysicalPackage, and  
256 CIM\_TimeService classes, and their related EnabledLogicalElementCapabilities classes. Other related  
257 subsystem classes such as CIM\_LogicalDevice, CIM\_Collection, and CIM\_RecordLog are defined in their  
258 respective profiles.

259 Requirements for propagating and formulating certain properties of the *Base Server Profile* classes are  
260 discussed in this clause. The *Base Server Profile* is divided into two areas of functionality: the logical  
261 aspects of the server system and its physical aspects. This profile defines how to model the system's  
262 logical aspects, and the *Physical Asset Profile* defines how to model its physical aspects.

263 Methods are described in clause 8 ("Methods"), and properties are described in clause 10 ("CIM  
264 Elements").

### 265 **7.1 Base Server System**

266 The instrumentation shall create an instance of CIM\_ComputerSystem to represent the system being  
267 modeled.

#### 268 **7.1.1 Identifying a Base Server**

269 This clause details the constraints beyond those specified in the [Computer System Profile](#) for using the  
270 IdentifyingDescriptions and OtherIdentifyingInfo properties to identify a computer system.

##### 271 **7.1.1.1 CIM:GUID**

272 The value of the OtherIdentifyingInfo property shall match the value of the  
273 CIM\_ComputerSystemPackage.PlatformGUID property for an instance of CIM\_ComputerSystemPackage  
274 that references the Central Instance.

##### 275 **7.1.1.2 CIM:Model:SerialNumber**

276 The value of the OtherIdentifyingInfo property shall match the value of the Model property of an instance  
277 of CIM\_PhysicalPackage, concatenated with a single colon (:), concatenated with the value of the  
278 SerialNumber property of the same instance of CIM\_PhysicalPackage.

### 279 7.1.1.3 CIM:Tag

280 The value of the OtherIdentifyingInfo property shall match the value of the Tag property of an instance of  
281 CIM\_PhysicalPackage.

## 282 7.1.2 Representing the Physical Packaging

283 The physical packaging for a system shall be modeled according to the requirements specified in the  
284 [Physical Asset Profile](#). At least one instance of CIM\_PhysicalPackage shall be associated with the  
285 Central Instance through the CIM\_ComputerSystemPackage association.

## 286 7.2 Management of Base Server Components

287 The following subclauses detail the requirements for management of components of the system in  
288 addition to those specified in the [Computer System Profile](#).

### 289 7.2.1 Instrumentation of Fans (Optional)

290 A system can contain one or more fans that provide cooling for the system. When the fans of the system  
291 are instrumented, the instrumentation shall be conformant with the [Fan Profile](#), and the Central Instance  
292 of the *Base Server Profile* shall be associated with the Central Instance of the [Fan Profile](#) through the  
293 CIM\_SystemDevice association.

### 294 7.2.2 Instrumentation of Power Supplies (Optional)

295 A system can contain one or more power supplies that provide power to the system. When the power  
296 supplies of the system are instrumented, the instrumentation shall be conformant with the [Power Supply  
297 Profile](#), and the Central Instance of the *Base Server Profile* shall be associated with the Central Instance  
298 of the [Power Supply Profile](#) through the CIM\_SystemDevice association.

## 299 7.3 State Management

300 This clause details further constraints related to state management beyond those specified in the  
301 [Computer System Profile](#).

### 302 7.3.1 Correspondence of System States and ACPI States

303 The EnabledState property of CIM\_ComputerSystem is defined in terms of ACPI values to provide  
304 meaningful context for the interpretation of values for a computer system realized in hardware. The  
305 mappings specified in Table 2 shall be used. It is not necessary for the underlying modeled system to  
306 support the [ACPI specification](#).

307 **Table 2 – EnabledState and ACPI State Equivalence**

CIM_ComputerSystem.EnabledState Value	Corresponding ACPI State
2 (Enabled)	G0 or S0 Working
3 (Disabled)	G2 or S5
9 (Quiesce)	G1, S1, S2, S3, or S4

### 308 7.3.2 Power State Management

309 The [Power State Management Profile](#) may be supported because the Central Instance either hosts an  
310 instance of CIM\_PowerManagementService or has the functionality of one available to it.

### 311 7.3.2.1 Power Management Available to System

312 Management of the power state of the system may be supported for the system. When the management  
313 of the power state is supported, the [Power State Management Profile](#) shall be implemented and the  
314 Central Instance of the *Base Server Profile* shall be associated with the Central Instance of the [Power  
315 State Management Profile](#) through the CIM\_AssociatedPowerManagementService association.

### 316 7.3.2.2 Power Management Hosted on System

317 The system may provide the ability to manage the power state of itself or other systems. When the  
318 system provides this ability, the [Power State Management Profile](#) shall be implemented and the Central  
319 Instance of the *Base Server Profile* shall be associated with the Central Instance of the [Power State  
320 Management Profile](#) through the CIM\_HostedService association.

## 321 7.3.3 Relationship between State Management and Power State Management

322 The behavior in this clause is conditional on the implementation of the behavior in 7.3.2.1. When the  
323 optional behavior specified in 7.3.2.1 is supported, the state management behavior specified in clause  
324 "State Management Is Supported (Conditional)" of the [Computer System Profile](#) shall be supported.

325 Management of the power state may be supported for a system. One reason for supporting power state  
326 management is the need to provide more granular management beyond that available through state  
327 management. To ensure consistent semantics for state management regardless of whether power state  
328 management is supported, it is necessary to establish constraints on the interaction of power state  
329 management and state management when power state management is supported. This clause details  
330 these constraints.

331 The CIM\_ComputerSystem.RequestStateChange() method defined in the [Computer System Profile](#)  
332 causes the values for the CIM\_ComputerSystem.EnabledState and  
333 CIM\_ComputerSystem.RequestedState properties to change. Due to the equivalence requirements  
334 stated in 7.3.3.1, 7.3.3.2, and 7.3.3.3, the possible invocation of the method will result in changes to the  
335 values of the CIM\_AssociatedPowerManagementService.RequestedPowerState and  
336 CIM\_AssociatedPowerManagementService.PowerState properties. Likewise, the  
337 CIM\_PowerManagementService.RequestPowerStateChange() method defined in the [Power State  
338 Management Profile](#) will cause the CIM\_AssociatedPowerManagementService.RequestedPowerState  
339 and CIM\_AssociatedPowerManagementService.PowerState properties to change. Due to the  
340 equivalence requirements stated in 7.3.3.1, 7.3.3.2, and 7.3.3.3, it is possible that this will result in  
341 changes to the values of the CIM\_ComputerSystem.EnabledState and  
342 CIM\_ComputerSystem.RequestedState properties.

### 343 7.3.3.1 Relationship between EnabledState and PowerState

344 Table 3 and Table 4 detail the equivalency requirements for values of the  
345 CIM\_ComputerSystem.EnabledState property and the  
346 CIM\_AssociatedPowerManagementService.PowerState property for the instance of  
347 CIM\_AssociatedPowerManagementService that references the CIM\_ComputerSystem instance. When  
348 the CIM\_AssociatedPowerManagementService.PowerState property has the value listed in the first  
349 column, the CIM\_ComputerSystem.EnabledState property shall have the value listed in the second  
350 column. When the CIM\_AssociatedPowerManagementService.PowerState property has the value listed  
351 in the first column of Table 4, the CIM\_ComputerSystem.EnabledState property should have the value  
352 listed in the second column. The set of power states that can be represented by the PowerState property  
353 is a superset of those power states that are expressible through the EnabledState property. Power states  
354 expressible through the PowerState property that are not expressible through the EnabledState property  
355 are mapped to 5 (Not Applicable).

356

**Table 3 – PowerState and EnabledState Values (Required Equivalence)**

PowerState Value	Corresponding EnabledState Value
2 (On)	2 (Enabled)
8 (Off – Soft)	3 (Disabled)
12 (Off – Soft Graceful)	3 (Disabled)

357

**Table 4 – EnabledState and PowerState Values (Recommended Equivalence)**

PowerState Value	Corresponding EnabledState Value
3 (Sleep-Light)	9 (Quiesce)
4 (Sleep-Deep)	9 (Quiesce)
5 (Power Cycle (Off-Soft))	5 (Not Applicable)
6 (Off – Hard)	3 (Disabled)
7 (Hibernate (Off-Soft))	9 (Quiesce)
9 (Power Cycle (Off – Hard))	5 (Not Applicable)
10 (Master Bus Reset)	5 (Not Applicable)
11 (Diagnostic Interrupt (NMI))	5 (Not Applicable)
13 (Off – Hard Graceful)	3 (Disabled)
14 (Master Bus Reset Graceful)	5 (Not Applicable)
15 (Power Cycle (Off – Soft) Graceful)	5 (Not Applicable)
16 (Power Cycle (Off – Hard) Graceful)	5 (Not Applicable)

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**7.3.3.2 Relationship between RequestedState and RequestedPowerState**

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Table 5 details equivalency requirements for the values of the CIM\_ComputerSystem.RequestedState property and the CIM\_AssociatedPowerManagementService.RequestedPowerState property for the instance of CIM\_AssociatedPowerManagementService that references the CIM\_ComputerSystem instance. When the CIM\_AssociatedPowerManagementService.RequestedPowerState property has the value listed in the first column, the CIM\_ComputerSystem.RequestedState property shall have the value listed in the second column. The set of power states that can be represented by the RequestedPowerState property is a superset of those power states that are expressible through the RequestedState property. Power states expressible through the RequestedPowerState property that are not expressible through the RequestedState property are mapped to 12 (Not Applicable).

368

**Table 5 – RequestedState and RequestedPowerState Values**

RequestedPowerState Value	Corresponding RequestedState Value
2 (On)	2 (Enabled)
3 (Sleep-Light)	12 (Not Applicable)
4 (Sleep-Deep)	12 (Not Applicable)
5 (Power Cycle (Off-Soft))	11 (Reset)
6 (Power Cycle (Off-Hard))	12 (Not Applicable)
7 (Hibernate (Off-Soft))	12 (Not Applicable)
8 (Off – Hard)	12 (Not Applicable)
9 (Off – Soft)	3 (Disabled)
10 (Master Bus Reset)	12 (Not Applicable)
11 (Diagnostic Interrupt (NMI))	12 (Not Applicable)

369 **7.3.3.3 Relationship between RequestedStatesSupported and PowerStatesSupported**

370 Table 6 details equivalency requirements for values of the following properties:

- 371 • the CIM\_EnabledLogicalElementCapabilities.RequestedStatesSupported property for the  
372 instance of CIM\_EnabledLogicalElementCapabilities that is associated with the  
373 CIM\_ComputerSystem instance
- 374 • the CIM\_PowerManagementCapabilities.PowerStatesSupported property for the instance of  
375 CIM\_PowerManagementCapabilities that is associated through CIM\_ElementCapabilities with  
376 the instance of CIM\_PowerManagementService that is associated with the  
377 CIM\_ComputerSystem instance through the CIM\_AssociatedPowerManagementService  
378 association

379 When the CIM\_PowerManagementCapabilities.PowerStatesSupported property contains the value listed  
380 in the first column, the CIM\_EnabledLogicalElementCapabilities.RequestedStatesSupported property  
381 shall contain the value listed in the second column. The RequestedStatesSupported property may contain  
382 additional values that correspond to supported states. The PowerStatesSupported property may contain  
383 other values; however, corresponding values for the RequestedStatesSupported property are not defined.

384 The purpose of the PowerStatesSupported and RequestedStatesSupported properties is to indicate the  
385 power state changes that can be initiated through the RequestPowerStateChange() method and the  
386 RequestStateChange() method, respectively. The absence of a value from the array indicates the  
387 absence of support for that power state change. For those power state changes that can be initiated  
388 through the RequestPowerStateChange() method and not through the RequestStateChange() method,  
389 no mapping is defined because the absence of a value in the RequestedStatesSupported property  
390 implicitly indicates a lack of support for initiating the corresponding power state change.

391 **Table 6 – RequestedStatesSupported and PowerStatesSupported Values**

PowerStatesSupported Value	RequestedStatesSupported Value
0 (On)	2 (Enabled)
4 (Power Cycle (Off-Soft))	11 (Reset)
3 (Off – Soft)	3 (Disabled)

392 **7.4 Text Console Redirection (Optional)**

393 This clause details requirements for the implementation of the [Text Console Redirection Profile](#).

394 **7.4.1 Text Console Redirection Available to the System**

395 Redirection of a text console may be supported for the system. When the redirection of a text console is  
396 supported, the requirements specified in this clause shall be met.

397 The [Text Console Redirection Profile](#) shall be implemented. The Central Instance of the *Base Server*  
398 *Profile* shall be associated with the CIM\_TextRedirectionSAP instance of the [Text Console Redirection](#)  
399 [Profile](#) through the CIM\_SAPAvailableForElement association. The Central Instance of the *Base Server*  
400 *Profile* shall be associated with the Central Instance of the [Text Console Redirection Profile](#) through the  
401 CIM\_ServiceAffectsElement association.

402 **7.4.2 Text Console Redirection Provided by the System**

403 The system may provide support for the redirection of a text console for itself or other systems. When the  
404 system provides this support, the requirements specified in this clause shall be met.

405 The [Text Console Redirection Profile](#) shall be implemented. The Central Instance of the *Base Server Profile*  
 406 shall be associated with the Central Instance of the [Text Console Redirection Profile](#) through the  
 407 CIM\_HostedService association. The Central Instance of the *Base Server Profile* shall be associated with  
 408 one or more instances of CIM\_TextRedirectionSAP implemented conformant with the [Text Console](#)  
 409 [Redirection Profile](#) through the CIM\_HostedAccessPoint association.

410 **8 Methods**

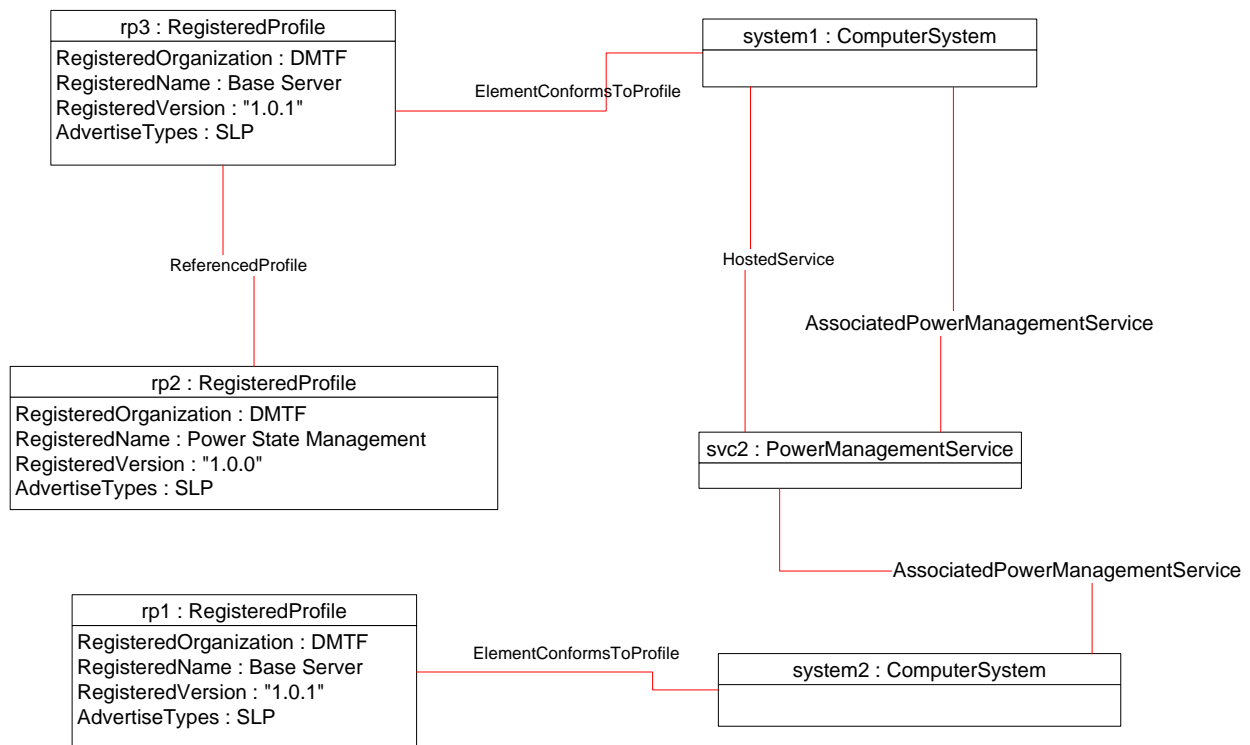
411 All intrinsic and extrinsic methods are supported as defined in the [Computer System Profile](#).

412 **9 Use Cases**

413 The following use cases are based on the implementation conforming to the DMTF *Base Server Profile*.

414 **9.1 Object Diagrams**

415 Figure 2 shows two systems conformant with the *Base Server Profile*. rp3 and rp1 both advertise the  
 416 instrumentation of the *Base Server Profile*. rp2 advertises the existence of the [Power State Management](#)  
 417 [Profile](#) and is associated with rp3, which is an instance of CIM\_RegisteredProfile that advertises the *Base*  
 418 *Server Profile*. system1 provides power control over itself and system2. The ability to provide power  
 419 control is modeled by svc2. The [Power State Management Profile](#) is advertised as supported on system1  
 420 because that is where the functionality is hosted.



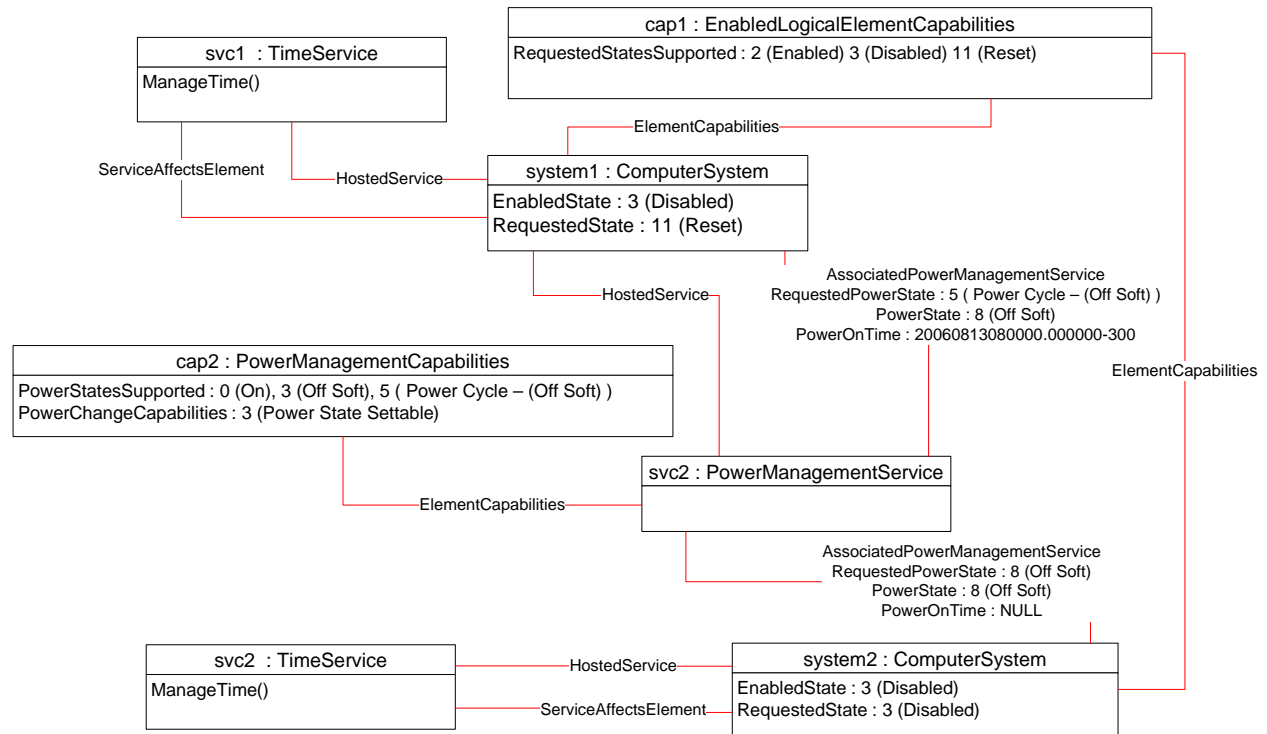
421

422 **Figure 2 – Profile Registration**

423 Figure 3 shows the power management functionality available for system1 and system2. Each system  
 424 hosts an instance of CIM\_TimeService for managing the system's time. system1 has been configured to



425 power on at 8 A.M. EST on August 13, 2006, as indicated by the value of the PowerOnTime property of  
 426 the instance of CIM\_AssociatedPowerManagementService that references system1. This value is relative  
 427 to the system time as returned by a call to the ManageTime() method of svc1. State management is  
 428 supported with functional equivalence to the supported power state management.

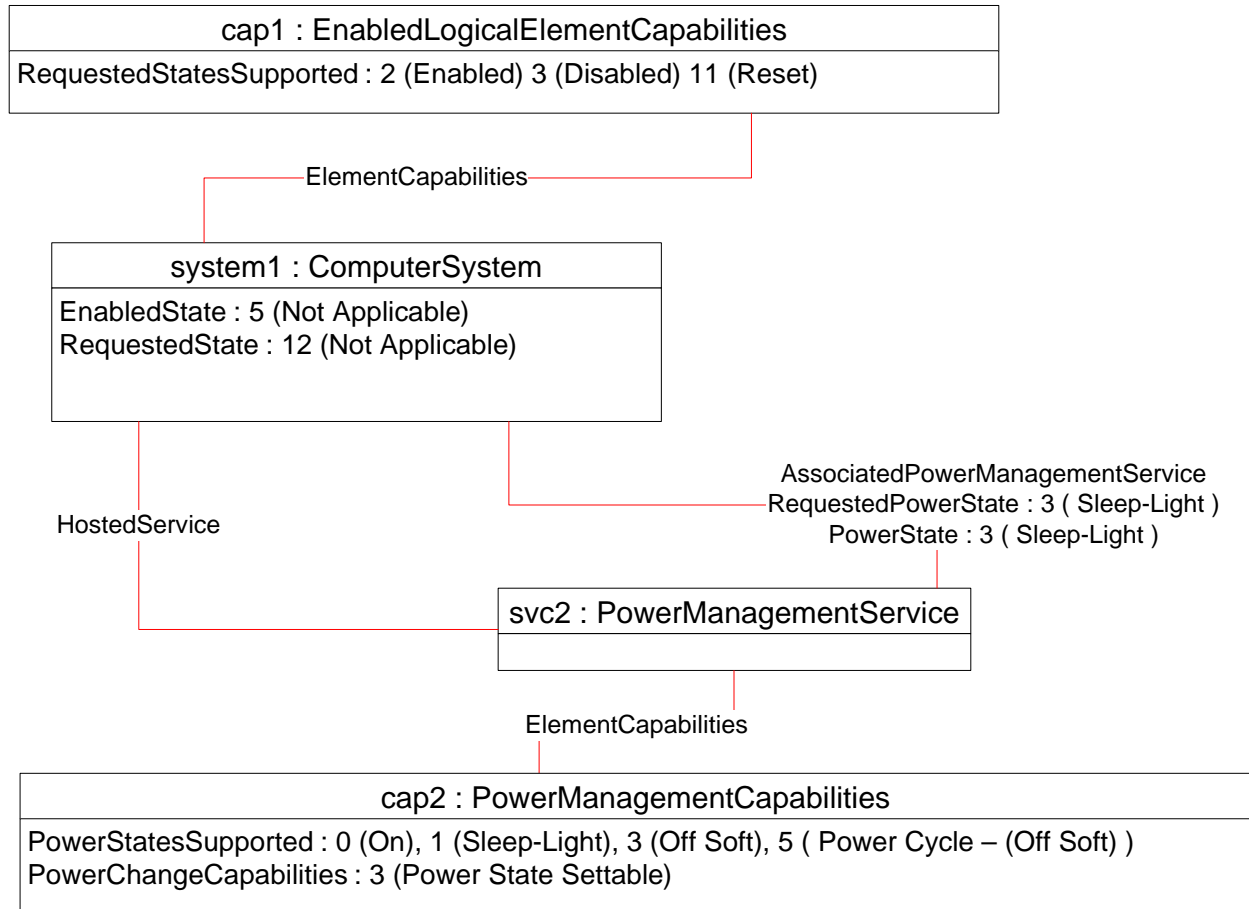


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**Figure 3 – Power Management and Time Service**

431 Figure 4 shows a system where the ability to put the system into a sleep-light power state is supported.  
 432 The sleep-light state is an extended power state that is not expressible through the  
 433 CIM\_ComputerSystem.EnabledState property. Thus the CIM\_ComputerSystem.EnabledState property  
 434 has the value 5 (Not Applicable). The actual power state of the system is expressed through the  
 435 CIM\_AssociatedPowerManagementService.PowerState property.

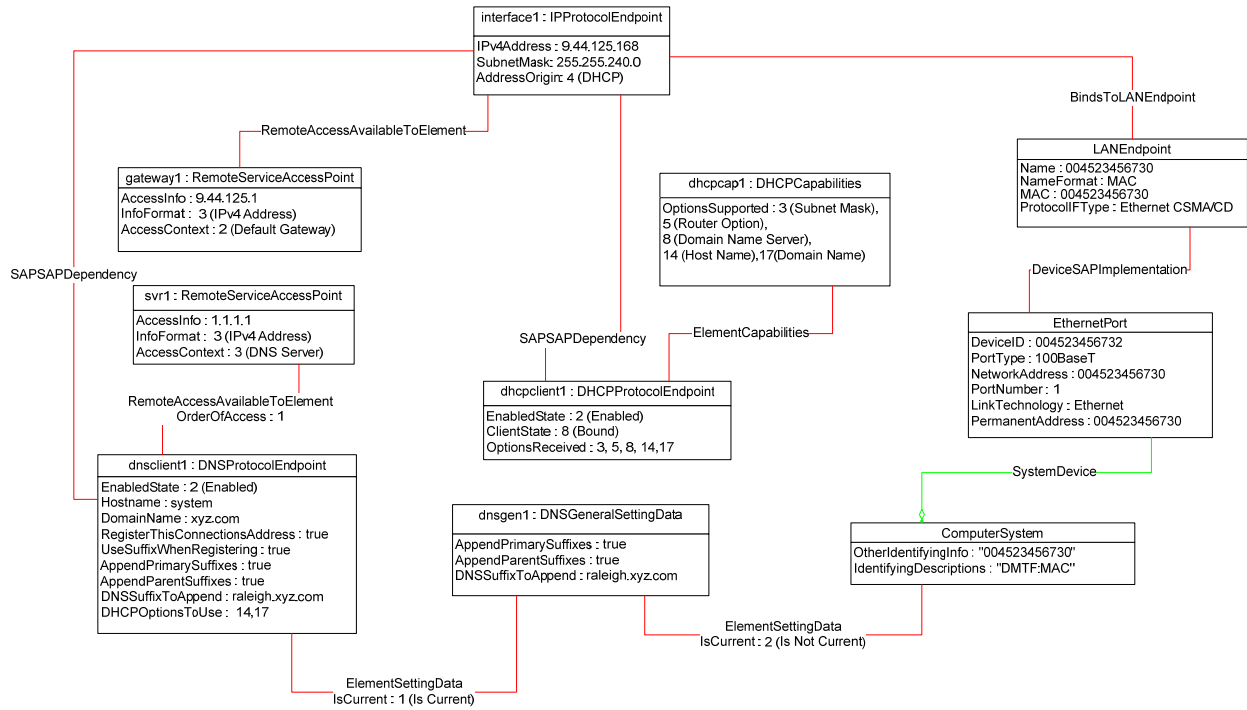


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**Figure 4 – Advanced Power Management**

438 Figure 5 illustrates the network interfaces of the system. The [Ethernet Port Profile](#), [IP Interface Profile](#),  
 439 [DHCP Client Profile](#), and [DNS Client Profile](#) are implemented. The system has a single network interface.



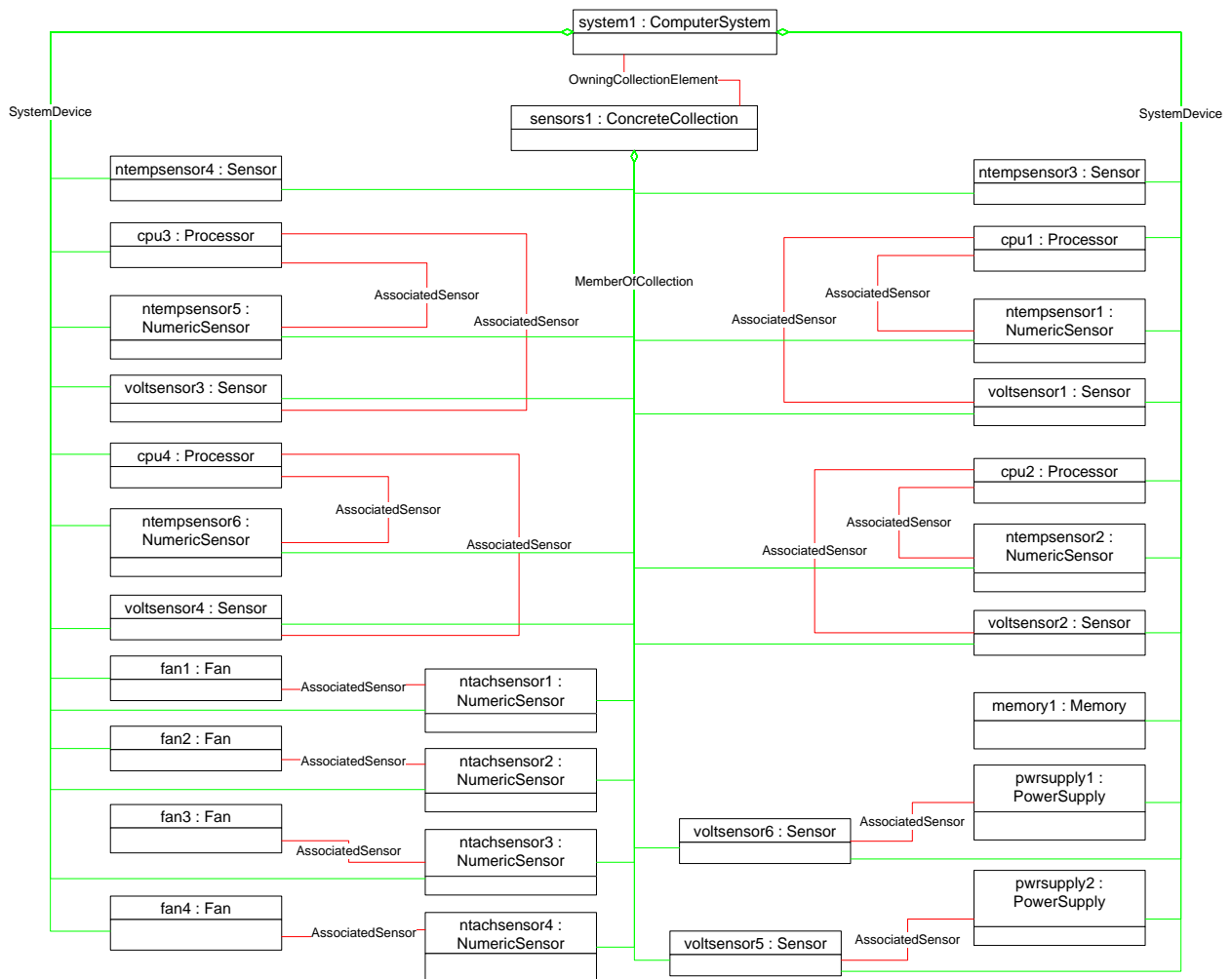
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Figure 5 – Network Interfaces

442 Figure 6, Figure 7, and Figure 8 illustrate the logical and physical containment hierarchy of a single  
 443 system.

444 Figure 6 illustrates the logical hierarchy of components contained in the system. The optional [CPU Profile](#),  
 445 [Fan Profile](#), [Power Supply Profile](#), [Sensors Profile](#), [System Memory Profile](#), and [SMASH Collections](#)  
 446 [Profile](#) have been implemented. The system has four processors; each processor has a dedicated  
 447 voltage sensor and a dedicated temperature sensor. The total system memory available is modeled. The  
 448 system has two power supplies installed; each power supply has a dedicated voltage sensor. Four fans  
 449 are installed in the system; each fan has a dedicated tachometer associated with it.

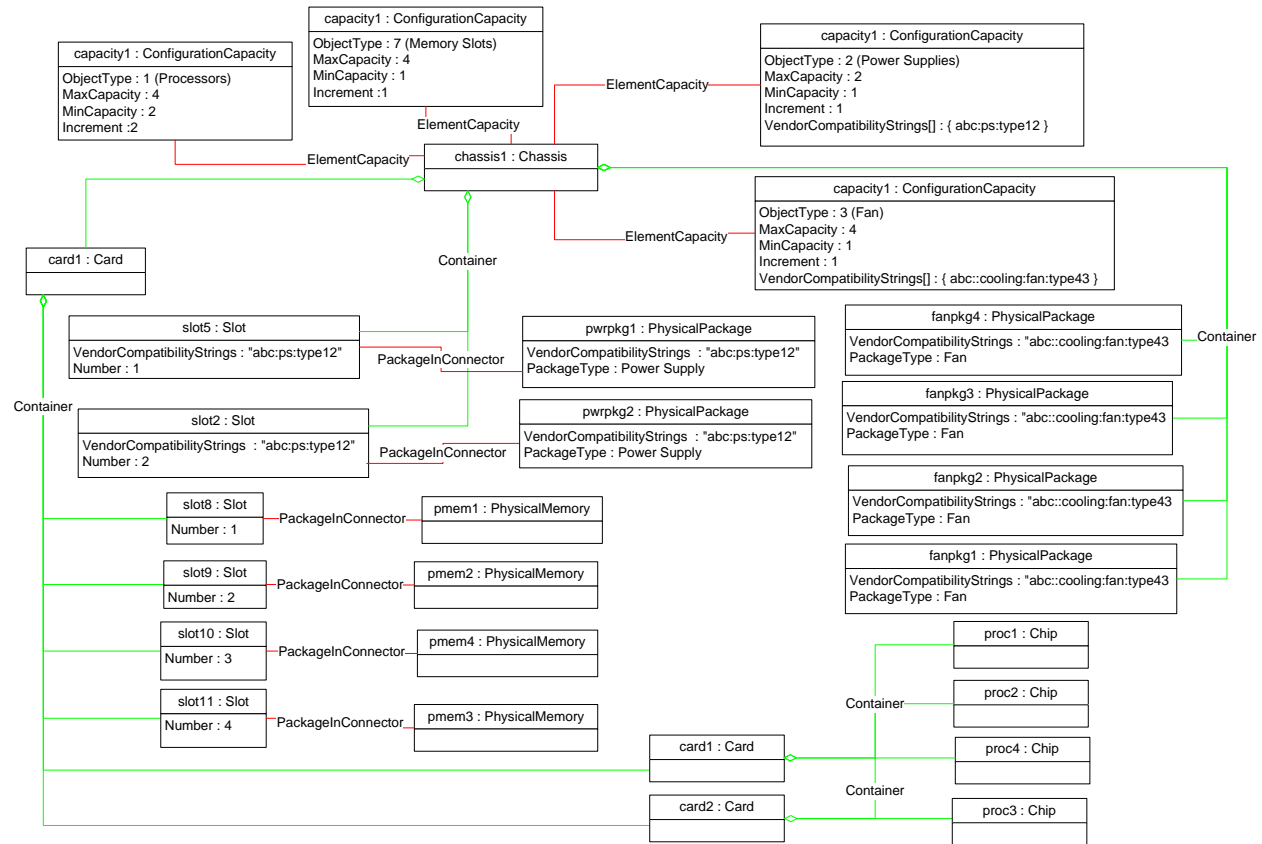


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**Figure 6 – Logical Topology**

452 Figure 7 shows the physical containment hierarchy for the managed system. The [Physical Asset Profile](#)  
 453 has been implemented. The location of the fans within the system is not modeled; instead the fans are  
 454 modeled as being directly contained in the main system chassis. The slots or bays in the main chassis  
 455 that can contain a power supply are separately modeled (slot5 and slot2). The optional slot and package  
 456 compatibility behavior of the [Physical Asset Profile](#) has been implemented for the power supply slots. The  
 457 system memory is installed in four slots on the main system board (card1). The processors (proc1–proc4)  
 458 are installed in pairs on separate cards on the main system card. The capacity of the system for  
 459 processors, fans, power supplies, and memory is indicated through instances of  
 460 CIM\_ConfigurationCapacity.

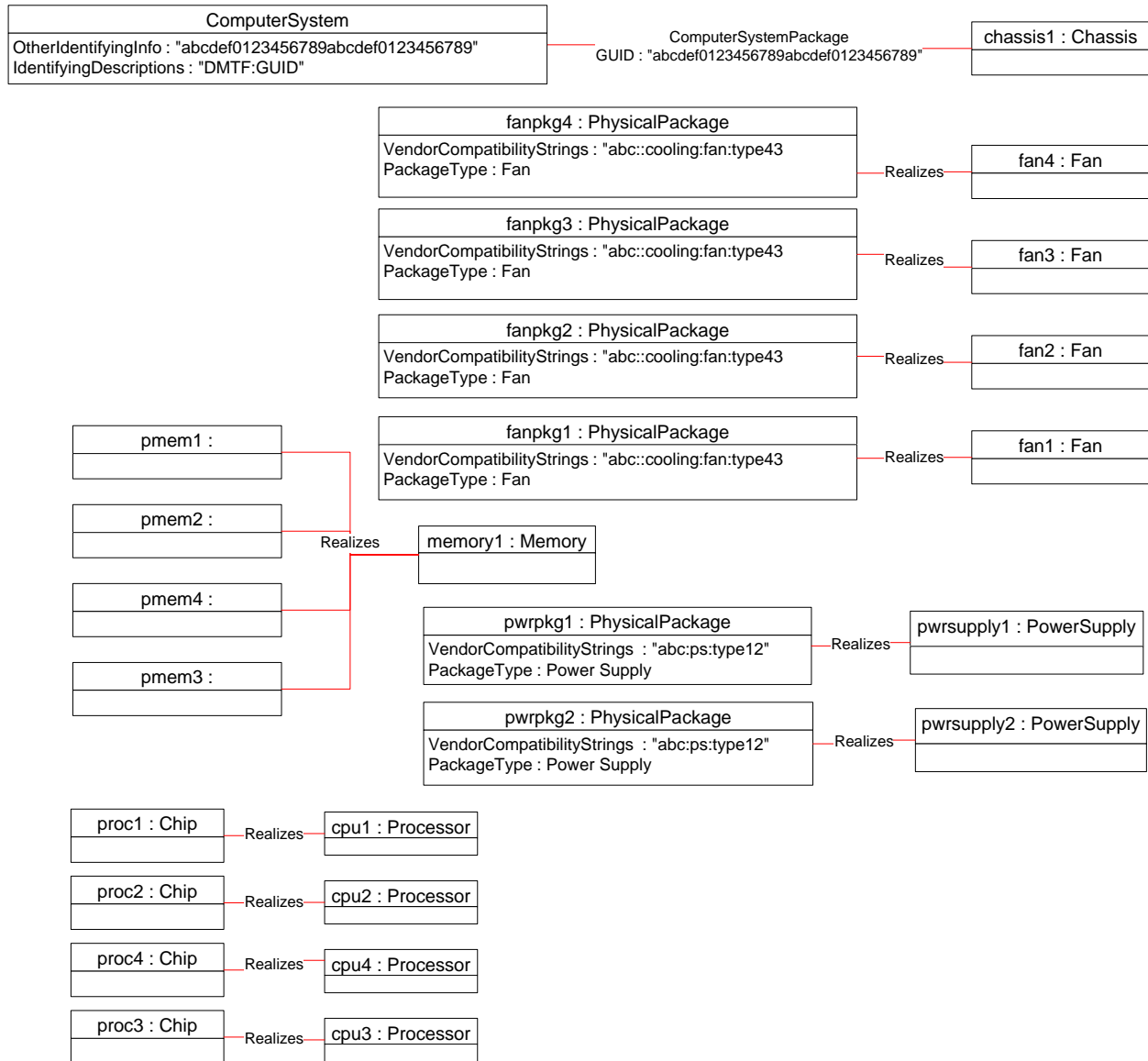


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**Figure 7 – Physical Topology**

463 Figure 8 shows the relationship between the logical components and their underlying physical packaging.  
 464 Each fan, power supply, and processor has a dedicated package. The system memory is realized with  
 465 four physical components. The system itself is packaged in a single chassis. To keep the diagram  
 466 uncluttered, the CIM\_SystemDevice associations have been elided.



467

468 **Figure 8 – Logical to Physical Mapping**

469 **9.2 Determine the System Model and Serial Number**

470 When the optional asset management of the *Physical Asset Profile* has been implemented for the system,  
 471 a client can determine the system model and serial number as follows:

- 472 1) Find an instance of CIM\_PhysicalPackage that is associated with the Central Instance through
- 473 the CIM\_ComputerSystemPackage association.
- 474 2) Query the Model and SerialNumber properties of the instance.

### 475 **9.3 Power on a System**

476 A client can power on a system as follows:

- 477 1) Look for an instance of CIM\_EnabledLogicalElementCapabilities that is associated with the  
478 Central Instance through the CIM\_ElementCapabilities association.
- 479 2) Verify that the CIM\_EnabledLogicalElementCapabilities.RequestedStatesSupported property  
480 contains the value 2 (Enabled).
- 481 3) Invoke the RequestStateChange() method on the target instance, specifying 2 (Enabled) for the  
482 RequestedState parameter.

### 483 **9.4 Power off a System**

484 A client can power off a system as follows:

- 485 1) Look for an instance of CIM\_EnabledLogicalElementCapabilities that is associated with the  
486 Central Instance through the CIM\_ElementCapabilities association.
- 487 2) Verify that the CIM\_EnabledLogicalElementCapabilities.RequestedStatesSupported property  
488 contains the value 3 (Disabled).
- 489 3) Invoke the RequestStateChange() method on the target instance, specifying 3 (Disabled) for  
490 the RequestedState parameter.

### 491 **9.5 Shutdown and Restart a System**

492 A client can shut down and restart a system as follows:

- 493 1) Look for an instance of CIM\_EnabledLogicalElementCapabilities that is associated with the  
494 Central Instance through the CIM\_ElementCapabilities association.
- 495 2) Verify that the CIM\_EnabledLogicalElementCapabilities.RequestedStatesSupported property  
496 contains the value 11 (Reset).
- 497 3) Invoke the RequestStateChange() parameter on the target instance, specifying 11 (Reset) for  
498 the RequestedState parameter.

### 499 **9.6 Perform System Power Control**

500 A client might need to perform power control that is more granular than the functionality available through  
501 state management. This is done through power state management. A client can determine whether power  
502 state management is available for the system by searching for an instance of  
503 CIM\_PowerManagementService that is associated with the Central Instance through the  
504 CIM\_AssociatedPowerManagementService association. The specific use cases for performing power  
505 state management are documented in the [Power State Management Profile](#).

### 506 **9.7 Determining the System Power State**

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

- 508 1) Query the CIM\_ComputerSystem.EnabledState property.  
  
509 If the property has the value 2 (Enabled), the system is currently in ACPI state S0 (or equivalent  
510 if non-ACPI system). If the property has the value 3 (Disabled), the system is currently in ACPI  
511 state S0 (or equivalent if non-ACPI system).
- 512 2) If the CIM\_ComputerSystem.EnabledState property has the value 5 (Not Applicable), find the  
513 instance of CIM\_AssociatedPowerManagementService that references the  
514 CIM\_ComputerSystem instance.

- 515           3) Query the value of the CIM\_AssociatedPowerManagementService.PowerState property. The  
516           [Power State Management Profile](#) details the equivalent ACPI states for each value.

## 517 **9.8 Determine the Number of Processors in the System**

518 When the optional [CPU Profile](#) is implemented, the client can determine the number of processors in the  
519 system by querying for instances of CIM\_Processor that are associated with the Central Instance through  
520 the CIM\_SystemDevice association.

521 The client can also use these same steps to find the fans and power supplies installed in the system,  
522 substituting the [Fan Profile](#) and CIM\_Fan, and the [Power Supply Profile](#) and CIM\_PowerSupply  
523 appropriately.

## 524 **9.9 Determine the Number of Processors that the System Can Hold**

525 When the optional configuration capacity behavior from the [Physical Asset Profile](#) is implemented for  
526 processors for the system, a client can determine the number of processors that the system can hold as  
527 follows:

- 528           1) Find the instances of CIM\_PhysicalPackage that are associated with the Central Instance  
529           through the CIM\_ComputerSystemPackage association.
- 530           2) For each instance of CIM\_PhysicalPackage, find the instances of CIM\_ConfigurationCapacity  
531           that are associated with the CIM\_PhysicalPackage instance through the CIM\_ElementCapacity  
532           association.
- 533           3) For each instance of CIM\_ConfigurationCapacity, if the ObjectType property has the value 1  
534           (Processors), query the MaximumCapacity property and add the value to the total number of  
535           processors that the system can hold.

536 The client can also apply these steps to find the total amount of physical memory and the total number of  
537 fans and power supplies that the system can hold when the configuration capacity has been instrumented  
538 for objects of that type by substituting the appropriate value for 1 (Processors) in step 3.

## 539 **10 CIM Elements**

540 Table 7 shows the instances of CIM Elements for this profile. Instances of the CIM Elements shall be  
541 implemented as described in Table 7. Clauses 7 (“Implementation”) and 8 (“Methods”) may impose  
542 additional requirements on these elements.

543 **Table 7 – CIM Elements: Base Server Profile**

Element Name	Requirement	Description
<b>Classes</b>		
CIM_ComputerSystem	Mandatory	See 10.1.
CIM_ComputerSystemPackage	Mandatory	See 10.2.
CIM_EnabledLogicalElementCapabilities	Optional	See 10.3.
CIM_PhysicalPackage	Mandatory	See 10.4.
CIM_RegisteredProfile	Mandatory	See 10.5.
<b>Indications</b>		
None defined in this profile		



544 **10.1 CIM\_ComputerSystem**

545 An instance of CIM\_ComputerSystem is used to represent the system. Table 8 contains the requirements  
 546 for elements of this class.

547 **Table 8 – Class: CIM\_ComputerSystem**

Elements	Requirement	Notes
EnabledState	Mandatory	See 7.3.3.1 and 7.3.1.
RequestedState	Mandatory	See 7.3.3.2.
Dedicated	Mandatory	

548 **10.2 CIM\_ComputerSystemPackage**

549 One or more instances of CIM\_ComputerSystemPackage associate the CIM\_ComputerSystem instance  
 550 with the CIM\_PhysicalPackage instances in which it resides. The constraints specified in Table 9 are in  
 551 addition to those specified in the [Physical Asset Profile](#).

552 **Table 9 – Class: CIM\_ComputerSystemPackage**

Elements	Requirement	Notes
Dependent	Mandatory	This property shall be a reference to the Central Instance. Cardinality 1
Antecedent	Mandatory	This property shall be a reference to CIM_PhysicalPackage. Cardinality 1..*

553 **10.3 CIM\_EnabledLogicalElementCapabilities**

554 CIM\_EnabledLogicalElementCapabilities indicates support for managing the state of the system.  
 555 Table 10 contains the requirements for elements of this class.

556 **Table 10 – Class: CIM\_EnabledLogicalElementCapabilities**

Elements	Requirement	Notes
RequestedStatesSupported	Mandatory	See 7.3.3.3.

557 **10.4 CIM\_PhysicalPackage**

558 One or more instances of CIM\_PhysicalPackage represent the physical packaging of the computer  
 559 system. Other than the existence of at least one instance of CIM\_PhysicalPackage, this profile does not  
 560 specify any constraints for CIM\_PhysicalPackage beyond those specified in the [Physical Asset Profile](#).

561 **10.5 CIM\_RegisteredProfile**

562 CIM\_RegisteredProfile identifies the *Base Server Profile* in order for a client to determine whether an  
 563 instance of CIM\_ComputerSystem is conformant with this profile. The CIM\_RegisteredProfile class is  
 564 defined by the [Profile Registration Profile](#). With the exception of the mandatory values specified for the  
 565 properties in Table 11, the behavior of the CIM\_RegisteredProfile instance is in accordance with the  
 566 [Profile Registration Profile](#).

567 **Table 11 – Class: CIM\_RegisteredProfile**

Elements	Requirement	Notes
RegisteredName	Mandatory	This property shall have a value of "Base Server".
RegisteredVersion	Mandatory	This property shall have a value of "1.0.1".
RegisteredOrganization	Mandatory	This property shall have a value of 2 (DMTF).

568 NOTE: Previous versions of this document included the suffix "Profile" for the RegisteredName value. If  
 569 implementations querying for the RegisteredName value find the suffix "Profile", they should ignore the suffix, with  
 570 any surrounding white spaces, before any comparison is done with the value as specified in this document.

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## **ANNEX A** (informative)

### **Change Log**

<b>Version</b>	<b>Date</b>	<b>Description</b>
1.0.0	2009-06-16	DMTF Standard Release
1.0.1	2010-04-22	DMTF Standard Release – Corrected Figure 5

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