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OS Status Profile SM CLP Command Mapping Specification

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Foreword

60 The *OS Status Profile SM CLP Command Mapping Specification* (DSP0842) was prepared by the Server
61 Management Working Group.

62 **Conventions**

63 The pseudo-code conventions utilized in this document are the Recipe Conventions as defined in SNIA
64 [SMI-S 1.1.0](#), section 7.6.

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71

72

Introduction

73 This document defines the SM CLP mapping for CIM elements described in the [OS Status Profile](#). The
74 information in this specification, combined with the *SM CLP-to-CIM Common Mapping Specification 1.0*
75 ([DSP0216](#)), is intended to be sufficient to implement SM CLP commands relevant to the classes,
76 properties, and methods described in the [OS Status Profile](#) using CIM operations.

77 The target audience for this specification is implementers of the SM CLP support for the [OS Status](#)
78 [Profile](#).

79 OS Status Profile SM CLP Command Mapping Specification

80 1 Scope

81 This specification contains the requirements for an implementation of the SM CLP to provide access to,
82 and implement the behaviors of, the [OS Status Profile](#).

83 2 Normative References

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

87 2.1 Approved References

88 DMTF DSP1029, *OS Status Profile 1.0*,
89 http://www.dmtf.org/standards/published_documents/DSP1029_1.0.pdf

90 DMTF DSP0216, *SM CLP-to-CIM Common Mapping Specification 1.0*,
91 http://www.dmtf.org/standards/published_documents/DSP0216_1.0.pdf

92 SNIA, *Storage Management Initiative Specification (SMI-S) 1.1.0*,
93 http://www.snia.org/tech_activities/standards/curr_standards/smi

94 2.2 Other References

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

97 3 Terms and Definitions

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

99 3.1

100 **can**

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

102 3.2

103 **cannot**

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

105 3.3

106 **conditional**

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

- 109 **3.4**
110 **mandatory**
111 indicates requirements to be followed strictly in order to conform to the document and from which no
112 deviation is permitted
- 113 **3.5**
114 **may**
115 indicates a course of action permissible within the limits of the document
- 116 **3.6**
117 **need not**
118 indicates a course of action permissible within the limits of the document
- 119 **3.7**
120 **optional**
121 indicates a course of action permissible within the limits of the document
- 122 **3.8**
123 **shall**
124 indicates requirements to be followed strictly in order to conform to the document and from which no
125 deviation is permitted
- 126 **3.9**
127 **shall not**
128 indicates requirements to be followed strictly in order to conform to the document and from which no
129 deviation is permitted
- 130 **3.10**
131 **should**
132 indicates that among several possibilities, one is recommended as particularly suitable, without
133 mentioning or excluding others, or that a certain course of action is preferred but not necessarily required
- 134 **3.11**
135 **should not**
136 indicates that a certain possibility or course of action is deprecated but not prohibited

137 **4 Symbols and Abbreviated Terms**

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

- 139 **4.1**
140 **CIM**
141 Common Information Model
- 142 **4.2**
143 **CLP**
144 Command Line Protocol
- 145 **4.3**
146 **DMTF**
147 Distributed Management Task Force

148 **4.4**
 149 **SM**
 150 Server Management

151 **4.5**
 152 **SMI-S**
 153 Storage Management Initiative Specification

154 **4.6**
 155 **SNIA**
 156 Storage Networking Industry Association

157 **5 Recipes**

158 The following is a list of the common recipes used by the mappings in this specification. For a definition of
 159 each recipe, see the *SM CLP-to-CIM Common Mapping Specification 1.0* ([DSP0216](#)).

- 160 • smShowInstance()
- 161 • smShowInstances()
- 162 • smSetInstance()
- 163 • smShowAssociationInstances()
- 164 • smShowAssociationInstance()

165 **6 Mappings**

166 The following sections detail the mapping of CLP verbs to CIM Operations for each CIM class defined in
 167 the [OS Status Profile](#). Requirements specified here related to support for a CLP verb for a particular class
 168 are solely within the context of this profile.

169 **6.1 CIM_OperatingSystem**

170 The `cd` and `help` verbs shall be supported as described in [DSP0216](#).

171 Table 1 lists each SM CLP verb, the required level of support for the verb in conjunction with instances of
 172 the target class, and, when appropriate, a cross-reference to the section detailing the mapping for the
 173 verb and target. Table 1 is for informational purposes only; in case of a conflict between Table 1 and
 174 requirements detailed in the following sections, the text detailed in the following sections supersedes the
 175 information in Table 1.

176 **Table 1 – Command Verb Requirements for CIM_OperatingSystem**

Command Verb	Requirement	Comments
create	Not supported	
delete	Not supported	
dump	Not supported	
load	Not supported	
reset	May	See 6.1.2.
set	May	See 6.1.3.

Command Verb	Requirement	Comments
show	Shall	See 6.1.4.
start	Not supported	
stop	May	See 6.1.5.

177 No mapping is defined for the following verbs for the specified target: create, delete, dump, and load.

178 6.1.1 Ordering of Results

179 When results are returned for multiple instances of CIM_OperatingSystem, implementations shall utilize
180 the following algorithm to produce the natural (that is, default) ordering:

- 181 • Results for CIM_OperatingSystem are unordered; therefore, no algorithm is defined.

182 6.1.2 Reset

183 This section describes how to implement the `reset` verb when applied to an instance of
184 CIM_OperatingSystem. Implementations may support the use of the `reset` verb with
185 CIM_OperatingSystem.

186 6.1.2.1 General Usage of Reset for a Single Property

187 6.1.2.1.1 Command Form

```
188 reset <CIM_OperatingSystem single instance>
```

189 6.1.2.1.2 CIM Requirements

```
190 uint16 EnabledState;  
191 uint16 RequestedState;  
192 uint32 CIM_OperatingSystem.RequestStateChange (  
193     [IN] uint16 RequestedState,  
194     [OUT] REF CIM_ConcreteJob Job,  
195     [IN] datetime TimeoutPeriod );
```

196 6.1.2.1.3 Behavior Requirements

197 6.1.2.1.3.1 Preconditions

198 `$instance` represents the targeted instance of CIM_OperatingSystem.

```
199 $instance=<CIM_OperatingSystem single instance>
```

200 6.1.2.1.3.2 Pseudo Code

```
201 &smResetRSC ( $instance.getObjectPath() );  
202 &smEnd;
```

203 6.1.3 Set

204 This section describes how to implement the `set` verb when it is applied to an instance of
205 CIM_OperatingSystem. Implementations may support the use of the `set` verb with
206 CIM_OperatingSystem.

207 6.1.3.1 Set requestedstate

208 This command form is for the `set` verb applied to a single instance of `CIM_OperatingSystem`.

209 6.1.3.1.1 Command Form

```
210 set <CIM_OperatingSystem single instance> RequestedState=<requestedstate>
```

211 6.1.3.1.2 CIM Requirements

```
212 uint16 EnabledState;
213 uint16 RequestedState;
214 uint32 EnabledLogicalElement.RequestStateChange (
215     [IN] uint16 RequestedState,
216     [OUT] REF CIM_ConcreteJob Job,
217     [IN] datetime TimeoutPeriod );
```

218 6.1.3.1.3 Behavior Requirements

219 6.1.3.1.3.1 Preconditions

```
220 $instance=<CIM_OperatingSystem single instance>
```

221 6.1.3.1.3.2 Pseudo Code

```
222 &smRequestStateChange ( $instance.getObjectPath(), <requestedstate> );
223 &smEnd;
```

224 6.1.3.2 General Usage of Set for a Single Property

225 This command form corresponds to the general usage of the `set` verb to modify a single property of a
226 target instance. This is the most common case.

227 The requirement for supporting modification of a property using this command form shall be equivalent to
228 the requirement for supporting modification of the property using the `ModifyInstance` operation as defined
229 in the [OS Status Profile](#).

230 6.1.3.2.1 Command Form

```
231 set <CIM_OperatingSystem single instance> <propertyname>=<propertyvalue>
```

232 6.1.3.2.2 CIM Requirements

233 See `CIM_OperatingSystem` in the “CIM Elements” section of the [OS Status Profile](#) for the list of
234 modifiable properties.

235 6.1.3.2.3 Behavior Requirements

236 6.1.3.2.3.1 Preconditions

```
237 $instance=<CIM_OperatingSystem single instance>
```

238 6.1.3.2.3.2 Pseudo Code

```
239 #propertyName[] = {<propertyname>};
240 #propertyValues[] = {<propertyvalue>};
241 &smSetInstance ( $instance, #propertyName[], #propertyValues[] );
242 &smEnd;
```

243 6.1.3.3 General Usage of Set for Multiple Properties

244 This command form corresponds to the general usage of the `set` verb to modify multiple properties of a
245 target instance where there is not an explicit relationship between the properties. This is the most
246 common case.

247 The requirement for supporting modification of a property using this command form shall be equivalent to
248 the requirement for supporting modification of the property using the `ModifyInstance` operation as defined
249 in the [OS Status Profile](#).

250 6.1.3.3.1 Command Form

```
251 set <CIM_OperatingSystem single instance> <propertyname1>=<propertyvalue1>  
252 <propertynamen>=<propertyvaluen>
```

253 6.1.3.3.2 CIM Requirements

254 See `CIM_OperatingSystem` in the “CIM Elements” section of the [OS Status Profile](#) for the list of supported
255 properties.

256 6.1.3.3.3 Behavior Requirements

257 6.1.3.3.3.1 Preconditions

```
258 $instance=<CIM_OperatingSystem single instance>
```

259 6.1.3.3.3.2 Pseudo Code

```
260 #propertyName[] = {<propertyname>};  
261 for #i < n  
262 {  
263     #propertyName[#i] = <propertyname#i>  
264     #propertyValues[#i] = <propertyvalue#i>  
265 }  
266 &smSetInstance ( $instance, #propertyName[], #propertyValues[] );  
267 &smEnd;
```

268 6.1.4 Show

269 This section describes how to implement the `show` verb when applied to an instance of
270 `CIM_OperatingSystem`. Implementations shall support the use of the `show` verb with
271 `CIM_OperatingSystem`.

272 The `show` verb is used to display information about the account.

273 6.1.4.1 Show a Single Instance

274 This command form is for the `show` verb applied to a single instance of `CIM_OperatingSystem`.

275 6.1.4.1.1 Command Form

```
276 show <CIM_OperatingSystem single instance>
```

277 6.1.4.1.2 CIM Requirements

278 See `CIM_OperatingSystem` in the “CIM Elements” section of the [OS Status Profile](#) for the list of
279 mandatory properties.

280 6.1.4.1.3 Behavior Requirements

281 6.1.4.1.3.1 Preconditions

282 #all is true if the “-all” option was specified with the command; otherwise, #all is false.

283 6.1.4.1.3.2 Pseudo Code

```
284 $instance=<CIM_OperatingSystem single instance>
285 #propertylist[] = NULL;
286 if (false == #all)
287     {
288         #propertylist[] = { //all mandatory non-key properties };
289     }
290 &smShowInstance ( $instance.getObjectPath(), #propertylist[] );
291 &smEnd;
```

292 6.1.4.2 Show Multiple Instances

293 This command form is for the show verb applied to multiple instances of CIM_OperatingSystem. This
294 command form corresponds to UfsT-based selection within a scoping system.

295 6.1.4.2.1 Command Form

```
296 show <CIM_OperatingSystem multiple instances>
```

297 6.1.4.2.2 CIM Requirements

298 See CIM_OperatingSystem in the “CIM Elements” section of the [OS Status Profile](#) for the list of
299 mandatory properties.

300 6.1.4.2.3 Behavior Requirements

301 6.1.4.2.3.1 Preconditions

302 \$containerInstance contains the instance of CIM_ComputerSystem for which we are displaying scoped
303 accounts (CIM_OperatingSystem instances). The [OS Status Profile](#) requires that the
304 CIM_OperatingSystem instance be associated with its scoping system via an instance of the
305 CIM_OperatingSystemOnSystem association.

306 #all is true if the “-all” option was specified with the command; otherwise, #all is false.

307 6.1.4.2.3.2 Pseudo Code

```
308 #propertylist[] = NULL;
309 if (false == #all)
310     {
311         #propertylist[] = { //all mandatory non-key properties };
312     }
313 &smShowInstances ( "CIM_OperatingSystem", "CIM_OperatingSystemOnSystem",
314     $containerInstance.getObjectPath(), #propertylist[] );
315 &smEnd;
```

316 **6.1.5 Stop**

317 This section describes how to implement the `stop` verb when applied to an instance of
 318 `CIM_OperatingSystem`. Implementations may support the use of the `stop` verb with
 319 `CIM_OperatingSystem`.

320 The `stop` verb is used to disable an account.

321 **6.1.5.1 Stop a Single Instance**

322 This command form is for the `stop` verb applied to a single instance of `CIM_OperatingSystem`.

323 **6.1.5.1.1 Command Form**

```
324 stop <CIM_OperatingSystem single instance>
```

325 **6.1.5.1.2 CIM Requirements**

```
326 uint16 EnabledState;
327 uint16 RequestedState;
328 //3 (Disabled)
329 uint32 EnabledLogicalElement.RequestStateChange (
330     [IN] uint16 RequestedState = 3,
331     [OUT] REF CIM_ConcreteJob Job,
332     [IN] datetime TimeoutPeriod );
```

333 **6.1.5.1.3 Behavior Requirements**334 **6.1.5.1.3.1 Preconditions**

```
335 $instance=<CIM_OperatingSystem single instance>
```

336 **6.1.5.1.3.2 Pseudo Code**

```
337 smStopRSC ( $instance.getObjectPath() );
338 &smEnd;
```

339 **6.2 CIM_RunningOS**

340 The `cd` and `help` verbs shall be supported as described in [DSP0216](#).

341 Table 2 lists each SM CLP verb, the required level of support for the verb in conjunction with instances of
 342 the target class, and, when appropriate, a cross-reference to the section detailing the mapping for the
 343 verb and target. Table 2 is for informational purposes only; in case of a conflict between Table 2 and
 344 requirements detailed in the following sections, the text detailed in the following sections supersedes the
 345 information in Table 2.

346 **Table 2 – Command Verb Requirements for CIM_RunningOS**

Command Verb	Requirement	Comments
create	Not supported	
delete	Not supported	
dump	Not supported	
load	Not supported	
reset	Not supported	

Command Verb	Requirement	Comments
set	Not supported	
show	Shall	See 6.2.2.
start	Not supported	
stop	Not supported	

347 No mappings are defined for the following verbs for the specified target: `create`, `delete`, `dump`, `load`,
 348 `reset`, `set`, `start`, and `stop`.

349 6.2.1 Ordering of Results

350 When results are returned for multiple instances of `CIM_RunningOS` implementations shall utilize the
 351 following algorithm to produce the natural (that is, default) ordering:

- 352 • Results for `CIM_RunningOS` are unordered; therefore, no algorithm is defined.

353 6.2.2 Show

354 This section describes how to implement the `show` verb when applied to an instance of `CIM_RunningOS`.
 355 Implementations shall support the use of the `show` verb with `CIM_RunningOS`.

356 The `show` command is used to display information about the `CIM_RunningOS` instance or instances.

357 6.2.2.1 Show Multiple Instances

358 This command form is for the `show` verb applied to multiple instances. This command form corresponds
 359 to a `show` command issued against `CIM_RunningOS` where only one reference is specified and the
 360 reference is to an instance of `CIM_ComputerSystem`.

361 6.2.2.1.1 Command Form

```
362 show <CIM_RunningOS multiple instances>
```

363 6.2.2.1.2 CIM Requirements

364 See `CIM_RunningOS` in the “CIM Elements” section of the [OS Status Profile](#) for the list of mandatory
 365 properties.

366 6.2.2.1.3 Behavior Requirements

367 6.2.2.1.3.1 Preconditions

368 `$instance` contains the instance of `CIM_ComputerSystem` which is referenced by `CIM_RunningOS`.

369 6.2.2.1.3.2 Pseudo Code

```
370 &smShowAssociationInstances ( "CIM_RunningOS", $instance.getObjectPath() );  
371 &smEnd;
```

372 6.2.2.2 Show a Single Instance – CIM_OperatingSystem Reference

373 This command form is for the `show` verb applied to a single instance. This command form corresponds to
 374 a `show` command issued against `CIM_RunningOS` where the reference specified is to an instance of
 375 `CIM_OperatingSystem`. An instance is referenced by exactly one instance of `CIM_RunningOS`. Therefore,
 376 a single instance will be returned.

377 6.2.2.2.1 Command Form

```
378 show <CIM_RunningOS single instance>
```

379 6.2.2.2.2 CIM Requirements

380 See CIM_RunningOS in the “CIM Elements” section of the [OS Status Profile](#) for the list of mandatory
381 properties.

382 6.2.2.2.3 Behavior Requirements

383 6.2.2.2.3.1 Preconditions

384 \$instance contains the instance of CIM_OperatingSystem which is referenced by CIM_RunningOS.

385 6.2.2.2.3.2 Pseudo Code

```
386 &smShowAssociationInstances ( "CIM_RunningOS", $instance.getObjectPath() );  
387 &smEnd;
```

388 6.2.2.3 Show a Single Instance – Both References

389 This command form is for the `show` verb applied to a single instance. This command form corresponds to
390 a `show` command issued against CIM_RunningOS where both references are specified and therefore the
391 desired instance is unambiguously identified.

392 6.2.2.3.1 Command Form

```
393 show <CIM_RunningOS single instance>
```

394 6.2.2.3.2 CIM Requirements

395 See CIM_RunningOS in the “CIM Elements” section of the [OS Status Profile](#) for the list of mandatory
396 properties.

397 6.2.2.3.3 Behavior Requirements

398 6.2.2.3.3.1 Preconditions

399 \$instanceA contains the instance of CIM_ComputerSystem which is referenced by CIM_RunningOS.

400 \$instanceB contains the instance of CIM_OperatingSystem which is referenced by CIM_RunningOS.

401 6.2.2.3.3.2 Pseudo Code

```
402 &smShowAssociationInstance ( "CIM_RunningOS", $instanceA.getObjectPath(),  
403     $instanceB.getObjectPath() );  
404 &smEnd;
```

405 6.3 CIM_InstalledOS

406 The `cd` and `help` verbs shall be supported as described in [DSP0216](#).

407 Table 3 lists each SM CLP verb, the required level of support for the verb in conjunction with instances of
408 the target class, and, when appropriate, a cross-reference to the section detailing the mapping for the
409 verb and target. Table 3 is for informational purposes only; in case of a conflict between Table 3 and
410 requirements detailed in the following sections, the text detailed in the following sections supersedes the
411 information in Table 3.

412

Table 3 – Command Verb Requirements for CIM_InstalledOS

Command Verb	Requirement	Comments
create	Not supported	
delete	Not supported	
dump	Not supported	
load	Not supported	
reset	Not supported	
set	Not supported	
show	Shall	See 6.2.2.
start	Not supported	
stop	Not supported	

413 No mappings are defined for the following verbs for the specified target: *create*, *delete*, *dump*, *load*,
 414 *reset*, *set*, *start*, and *stop*.

415 6.3.1 Ordering of Results

416 When results are returned for multiple instances of CIM_InstalledOS implementations shall utilize the
 417 following algorithm to produce the natural (that is, default) ordering:

- 418 • Results for CIM_InstalledOS are unordered; therefore, no algorithm is defined.

419 6.3.2 Show

420 This section describes how to implement the *show* verb when applied to an instance of CIM_InstalledOS.
 421 Implementations shall support the use of the *show* verb with CIM_InstalledOS.

422 The *show* command is used to display information about the CIM_InstalledOS instance or instances.

423 6.3.2.1 Show Multiple Instances

424 This command form is for the *show* verb applied to multiple instances. This command form corresponds
 425 to a *show* command issued against CIM_InstalledOS where only one reference is specified and the
 426 reference is to an instance of CIM_ComputerSystem.

427 6.3.2.1.1 Command Form

```
428 show <CIM_InstalledOS multiple instances>
```

429 6.3.2.1.2 CIM Requirements

430 See CIM_InstalledOS in the “CIM Elements” section of the [OS Status Profile](#) for the list of mandatory
 431 properties.

432 6.3.2.1.3 Behavior Requirements

433 6.3.2.1.3.1 Preconditions

434 \$instance contains the instance of CIM_ComputerSystem which is referenced by CIM_InstalledOS.

435 **6.3.2.1.3.2 Pseudo Code**

```
436 &smShowAssociationInstances ( "CIM_InstalledOS", $instance.GetObjectPath() );  
437 &smEnd;
```

438 **6.3.2.2 Show a Single Instance – CIM_OperatingSystem Reference**

439 This command form is for the `show` verb applied to a single instance. This command form corresponds to
440 a `show` command issued against `CIM_InstalledOS` where the reference specified is to an instance of
441 `CIM_OperatingSystem`. An instance is referenced by exactly one instance of `CIM_InstalledOS`. Therefore,
442 a single instance will be returned.

443 **6.3.2.2.1 Command Form**

```
444 show <CIM_InstalledOS single instance>
```

445 **6.3.2.2.2 CIM Requirements**

446 See `CIM_InstalledOS` in the “CIM Elements” section of the [OS Status Profile](#) for the list of mandatory
447 properties.

448 **6.3.2.2.3 Behavior Requirements**449 **6.3.2.2.3.1 Preconditions**

450 `$instance` contains the instance of `CIM_OperatingSystem` which is referenced by `CIM_InstalledOS`.

451 **6.3.2.2.3.2 Pseudo Code**

```
452 &smShowAssociationInstances ( "CIM_InstalledOS", $instance.GetObjectPath() );  
453 &smEnd;
```

454 **6.3.2.3 Show a Single Instance – Both References**

455 This command form is for the `show` verb applied to a single instance. This command form corresponds to
456 a `show` command issued against `CIM_InstalledOS` where both references are specified and therefore the
457 desired instance is unambiguously identified.

458 **6.3.2.3.1 Command Form**

```
459 show <CIM_InstalledOS single instance>
```

460 **6.3.2.3.2 CIM Requirements**

461 See `CIM_InstalledOS` in the “CIM Elements” section of the [OS Status Profile](#) for the list of mandatory
462 properties.

463 **6.3.2.3.3 Behavior Requirements**464 **6.3.2.3.3.1 Preconditions**

465 `$instanceA` contains the instance of `CIM_ComputerSystem` which is referenced by `CIM_InstalledOS`.

466 `$instanceB` contains the instance of `CIM_OperatingSystem` which is referenced by `CIM_InstalledOS`.

467 **6.3.2.3.3.2 Pseudo Code**

```
468 &smShowAssociationInstance ( "CIM_InstalledOS", $instanceA.GetObjectPath(),  
469     $instanceB.GetObjectPath() );  
470 &smEnd;
```

471 6.4 CIM_ElementCapabilities

472 The `cd` and `help` verbs shall be supported as described in [DSP0216](#).

473 Table 4 lists each SM CLP verb, the required level of support for the verb in conjunction with instances of
 474 the target class, and, when appropriate, a cross-reference to the section detailing the mapping for the
 475 verb and target. Table 4 is for informational purposes only; in case of a conflict between Table 4 and
 476 requirements detailed in the following sections, the text detailed in the following sections supersedes the
 477 information in Table 4.

478 **Table 4 – Command Verb Requirements for CIM_ElementCapabilities**

Command Verb	Requirement	Comments
create	Not supported	
delete	Not supported	
dump	Not supported	
load	Not supported	
reset	Not supported	
set	Not supported	
show	Shall	See 6.4.2.
start	Not supported	
stop	Not supported	

479 No mapping is defined for the following verbs for the specified target: `create`, `delete`, `dump`, `load`,
 480 `reset`, `set`, `start`, and `stop`.

481 6.4.1 Ordering of Results

482 When results are returned for multiple instances of `CIM_ElementCapabilities`, implementations shall
 483 utilize the following algorithm to produce the natural (that is, default) ordering:

- 484 • Results for `CIM_ElementCapabilities` are unordered; therefore, no algorithm is defined.

485 6.4.2 Show

486 This section describes how to implement the `show` verb when applied to an instance of
 487 `CIM_ElementCapabilities`. Implementations shall support the use of the `show` verb with
 488 `CIM_ElementCapabilities`.

489 The `show` command is used to display information about the `CIM_ElementCapabilities` instance or
 490 instances.

491 6.4.2.1 Show Multiple Instances – CIM_OperatingSystemCapabilities Reference

492 This command form is for the `show` verb applied to multiple instances. This command form corresponds
 493 to a `show` command issued against `CIM_ElementCapabilities` where only one reference is specified and
 494 the reference is to an instance of `CIM_OperatingSystemCapabilities`.

495 6.4.2.1.1 Command Form

496 `show <CIM_ElementCapabilities multiple instances>`

497 6.4.2.1.2 CIM Requirements

498 See CIM_ElementCapabilities in the “CIM Elements” section of the [OS Status Profile](#) for the list of
499 mandatory properties.

500 6.4.2.1.3 Behavior Requirements

501 6.4.2.1.3.1 Preconditions

502 \$instance contains the instance of CIM_OperatingSystemCapabilities which is referenced by
503 CIM_ElementCapabilities.

504 6.4.2.1.3.2 Pseudo Code

```
505 &smShowAssociationInstances ( "CIM_ElementCapabilities", $instance.GetObjectPath() );  
506 &smEnd;
```

507 6.4.2.2 Show a Single Instance – CIM_OperatingSystem Reference

508 This command form is for the `show` verb applied to a single instance. This command form corresponds to
509 a `show` command issued against CIM_ElementCapabilities where the reference specified is to an
510 instance of CIM_OperatingSystem.

511 6.4.2.2.1 Command Form

```
512 show <CIM_ElementCapabilities single instance>
```

513 6.4.2.2.2 CIM Requirements

514 See CIM_ElementCapabilities in the “CIM Elements” section of the [OS Status Profile](#) for the list of
515 mandatory properties.

516 6.4.2.2.3 Behavior Requirements

517 6.4.2.2.3.1 Preconditions

518 \$instance contains the instance of CIM_OperatingSystem, which is referenced by
519 CIM_ElementCapabilities.

520 6.4.2.2.3.2 Pseudo Code

```
521 &smShowAssociationInstances ( "CIM_ElementCapabilities", $instance.GetObjectPath() );  
522 &smEnd;
```

523 6.4.2.3 Show a Single Instance – CIM_OperatingSystemCapabilities and CIM_OperatingSystem 524 References

525 This command form is for the `show` verb applied to a single instance. This command form corresponds to
526 a `show` command issued against CIM_ElementCapabilities where both references are specified and
527 therefore the desired instance is unambiguously identified.

528 6.4.2.3.1 Command Form

```
529 show <CIM_ElementCapabilities single instance>
```

530 6.4.2.3.2 CIM Requirements

531 See CIM_ElementCapabilities in the “CIM Elements” section of the [OS Status Profile](#) for the list of
532 mandatory properties.

533 6.4.2.3.3 Behavior Requirements

534 6.4.2.3.3.1 Preconditions

535 \$instanceA contains the instance of CIM_OperatingSystemCapabilities which is referenced by
536 CIM_ElementCapabilities.

537 \$instanceB contains the instance of CIM_OperatingSystem which is referenced by
538 CIM_ElementCapabilities.

539 6.4.2.3.3.2 Pseudo Code

```
540 &smShowAssociationInstance ( "CIM_ElementCapabilities", $instanceA.getObjectPath(),
541     $instanceB.getObjectPath() );
542 &smEnd;
```

543 6.5 CIM_OperatingSystemCapabilities

544 The `cd` and `help` verbs shall be supported as described in [DSP0216](#).

545 Table 5 lists each SM CLP verb, the required level of support for the verb in conjunction with instances of
546 the target class, and, when appropriate, a cross-reference to the section detailing the mapping for the
547 verb and target. Table 5 is for informational purposes only; in case of a conflict between Table 5 and
548 requirements detailed in the following sections, the text detailed in the following sections supersedes the
549 information in Table 5.

550 **Table 5 – Command Verb Requirements for CIM_OperatingSystemCapabilities**

Command Verb	Requirement	Comments
create	Not supported	
delete	Not supported	
dump	Not supported	
load	Not supported	
reset	Not supported	
set	Not supported	
show	Shall	See 6.5.2.
start	Not supported	
stop	Not supported	

551 No mapping is defined for the following verbs for the specified target: `create`, `delete`, `dump`, `load`,
552 `reset`, `set`, `start`, and `stop`.

553 6.5.1 Ordering of Results

554 When results are returned for multiple instances of CIM_OperatingSystemCapabilities, implementations
555 shall utilize the following algorithm to produce the natural (that is, default) ordering:

- 556 • Results for CIM_OperatingSystemCapabilities are unordered; therefore, no algorithm is defined.

557 6.5.2 Show

558 This section describes how to implement the `show` verb when applied to an instance of
559 `CIM_OperatingSystemCapabilities`. Implementations shall support the use of the `show` verb with
560 `CIM_OperatingSystemCapabilities`.

561 The `show` verb is used to display information about an instance or instances of the
562 `CIM_OperatingSystemCapabilities` class.

563 6.5.2.1 Show a Single Instance

564 This command form is for the `show` verb applied to a single instance of
565 `CIM_OperatingSystemCapabilities`.

566 6.5.2.1.1 Command Form

```
567 show <CIM_OperatingSystemCapabilities single instance>
```

568 6.5.2.1.2 CIM Requirements

569 See `CIM_OperatingSystemCapabilities` in the “CIM Elements” section of the [OS Status Profile](#) for the list
570 of mandatory properties.

571 6.5.2.1.3 Behavior Requirements

572 6.5.2.1.3.1 Preconditions

573 `#all` is true, if the “-all” option was specified with the command; otherwise, `#all` is false.

574 6.5.2.1.3.2 Pseudo Code

```
575 $instance=<CIM_OperatingSystemCapabilities single instance>  
576 #propertylist[] = NULL;  
577 if (false == #all)  
578     {  
579         #propertylist[] = {/all mandatory non-key properties}  
580     }  
581 &smShowInstance ( $instance.getObjectPath(), #propertylist[] );  
582 &smEnd;
```

583 6.5.2.2 Show Multiple Instances

584 This command form is for the `show` verb applied to multiple instances of
585 `CIM_OperatingSystemCapabilities`. This command form corresponds to UfsT-based selection within a
586 `capabilities` collection.

587 6.5.2.2.1 Command Form

```
588 show <CIM_OperatingSystemCapabilities multiple instances>
```

589 6.5.2.2.2 CIM Requirements

590 See `CIM_OperatingSystemCapabilities` in the “CIM Elements” section of the [OS Status Profile](#) for the list
591 of mandatory properties.

592 6.5.2.2.3 Behavior Requirements**593 6.5.2.2.3.1 Preconditions**

594 \$containerInstance contains the instance of CIM_Group for which the contained CIM_Capabilities
595 instances are displayed. CIM_Capabilities instances are addressed via an aggregating instance of
596 CIM_Group.

597 #all is true, if the "-all" option was specified with the command; otherwise, #all is false.

598 6.5.2.2.3.2 Pseudo Code

```
599 #propertylist[] = NULL;  
600 if (false == #all)  
601     {  
602         #propertylist[] = { //all mandatory non-key properties }  
603     }  
604 &smShowInstances ( "CIM_OperatingSystemCapabilities", "CIM_MemberOfCollection",  
605     $containerInstance.getObjectPath(), #propertylist[] );  
606 &smEnd;
```

607

608
609
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611
612

ANNEX A

(informative)

Change Log

Version	Date	Author	Description
1.0.0	2009-06-04		DMTF Standard Release

613