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5 **SSH Service Profile**

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136

Foreword

137 The *SSH Service Profile* (DSP1017) was prepared by the Physical Platform Profiles Working Group and
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139 DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems
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154

Introduction

155 The information in this specification should be sufficient for a provider or consumer of this data to identify
156 unambiguously the classes, properties, methods, and values that shall be instantiated and manipulated to
157 represent and manage an SSH service, its associated configuration information, and any active
158 connections.

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

161

SSH Service Profile

162 1 Scope

163 The *SSH Service Profile* extends the management capability of referencing profiles by adding the
164 capability to represent an SSH service and its associated sessions.

165 2 Normative References

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

169 2.1 Approved References

170 DMTF DSP0004, *CIM Infrastructure Specification 2.3*,
171 http://www.dmtf.org/standards/published_documents/DSP0004V2.3_final.pdf

172 DMTF DSP0200, *CIM Operations over HTTP 1.2*,
173 http://www.dmtf.org/standards/published_documents/DSP200.pdf

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

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

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

180 2.2 Other References

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

183 3 Terms and Definitions

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

185 3.1

186 **can**

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

188 3.2

189 **cannot**

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

191 3.3

192 **conditional**

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

- 195 **3.4**
196 **mandatory**
197 indicates requirements to be followed strictly in order to conform to the document and from which no
198 deviation is permitted
- 199 **3.5**
200 **may**
201 indicates a course of action permissible within the limits of the document
- 202 **3.6**
203 **need not**
204 indicates a course of action permissible within the limits of the document
- 205 **3.7**
206 **optional**
207 indicates a course of action permissible within the limits of the document
- 208 **3.8**
209 **referencing profile**
210 indicates a profile that owns the definition of this class and can include a reference to this profile in its
211 "Referenced Profiles" table
- 212 **3.9**
213 **shall**
214 indicates requirements to be followed strictly in order to conform to the document and from which no
215 deviation is permitted
- 216 **3.10**
217 **shall not**
218 indicates requirements to be followed strictly in order to conform to the document and from which no
219 deviation is permitted
- 220 **3.11**
221 **should**
222 indicates that among several possibilities, one is recommended as particularly suitable, without
223 mentioning or excluding others, or that a certain course of action is preferred but not necessarily required
- 224 **3.12**
225 **should not**
226 indicates that a certain possibility or course of action is deprecated but not prohibited

227 **4 Symbols and Abbreviated Terms**

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

- 229 **4.1**
230 **CIM**
231 Common Information Model
- 232 **4.2**
233 **IP**
234 Internet Protocol

- 235 **4.3**
- 236 **SSH**
- 237 Secure Shell
- 238 **4.4**
- 239 **TCP**
- 240 Transmission Control Protocol

241 **5 Synopsis**

- 242 **Profile Name:** SSH Service
- 243 **Version:** 1.0.0
- 244 **Organization:** DMTF
- 245 **CIM Schema Version:** 2.22
- 246 **Central Class:** CIM_ProtocolService
- 247 **Scoping Class:** CIM_ComputerSystem

248 The *SSH Service Profile* extends the management capability of referencing profiles by adding the
 249 capability to represent an SSH service in a managed system. This profile includes a specification of the
 250 SSH service, its associated configuration, and any active sessions.

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

252 **Table 1 – Referenced Profiles**

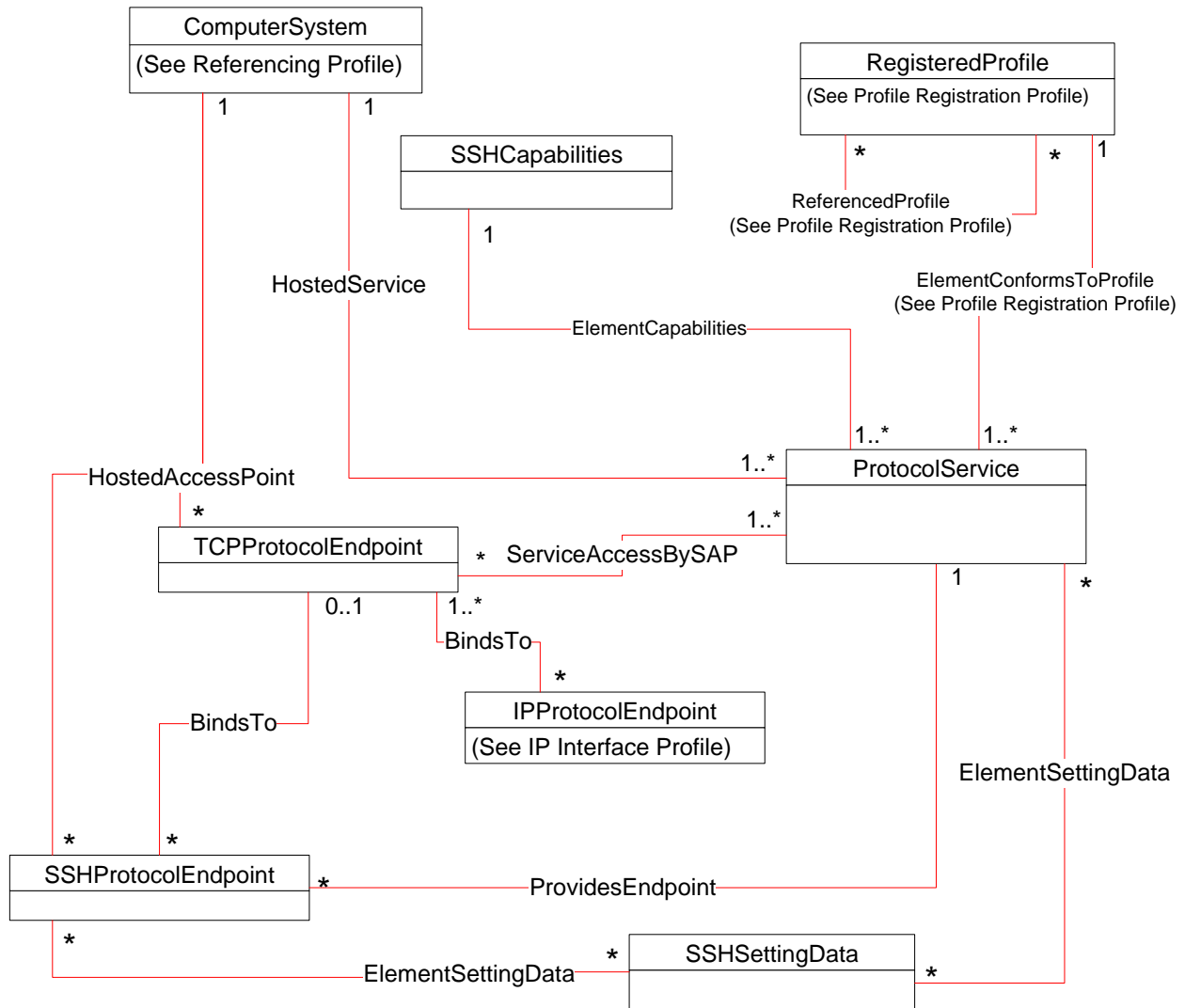
Profile Name	Organization	Version	Relationship	Behavior
Profile Registration	DMTF	1.0	Mandatory	
IP Interface	DMTF	1.0	Optional	See section 7.3.

253 The central class for the *SSH Service Profile* shall be the CIM_ProtocolService class. The central
 254 instance of the *SSH Service Profile* shall be an instance of CIM_ProtocolService. The scoping class for
 255 the *SSH Service Profile* shall be CIM_ComputerSystem. The scoping instance of the *SSH Service Profile*
 256 shall be the instance of CIM_ComputerSystem to which the central instance is associated through an
 257 instance of the CIM_HostedService association.

258 6 Description

259 The *SSH Service Profile* describes an SSH service, its associated configuration, and active sessions.

260 Figure 1 represents the class schema for the *SSH Service Profile*.



262

Figure 1 – SSH Service Profile: Class Diagram

263 The *SSH Service Profile* extends the management capability of referencing profiles by adding the
 264 capability to represent an SSH service hosted on a managed system. Functionality within the scope of
 265 this profile includes:

- 266
- representation of the SSH service
 - 267 • representation of active SSH sessions at the SSH server
 - 268 • configuration of the SSH service
 - 269 • configuration of the SSH sessions from the SSH server

270 Functionality explicitly excluded from the scope of this profile includes modeling of the SSH session at the
271 SSH client.

272 This profile represents the capabilities of the SSH service, the current configuration of the SSH service,
273 active sessions, and the default settings when new sessions are activated. The SSH service is
274 represented by an instance of CIM_ProtocolService. The capabilities of the SSH service are represented
275 by an instance of CIM_SSHCapabilities. The current configuration of the SSH service is modeled with the
276 properties from the instance of CIM_ProtocolService. Each active session with the SSH service is
277 represented by an instance of CIM_SSHProtocolEndpoint. The current configuration of an active session
278 is reflected in the values of the properties from the CIM_SSHProtocolEndpoint. CIM_SSHSettingData
279 represents a complete configuration that an SSH session could have. For example, an instance of
280 CIM_SSHSettingData contains the configuration that will be in effect for an SSH session when it is first
281 established. CIM_TCPProtocolEndpoint is an optional endpoint used to model the TCP port(s) over which
282 an SSH service listens or an SSH session is active.

283 **6.1 SSH Session Lifecycle**

284 When an SSH session is established with the SSH service, an instance of CIM_SSHProtocolEndpoint is
285 created. The CIM_SSHProtocolEndpoint instance exists for the duration of the SSH session that it
286 represents. When the SSH session is ended, the CIM_SSHProtocolEndpoint will be removed. When the
287 CIM_SSHProtocolEndpoint is explicitly deleted through an intrinsic DeleteInstance operation, the SSH
288 session is ended.

289 **7 Implementation Requirements**

290 This section details the requirements related to the arrangement of instances and properties of instances
291 for implementations of this profile.

292 **7.1 Representing an SSH Service**

293 An instance of CIM_ProtocolService shall represent the SSH service being modeled.

294 **7.1.1 CIM_ProtocolService.Protocol**

295 The Protocol property of the CIM_ProtocolService instance shall have a value of 2 (SSH).

296 **7.1.2 SSH Service Capabilities**

297 An instance of CIM_SSHCapabilities shall be associated with the CIM_ProtocolService instance through
298 an instance of CIM_ElementCapabilities. This instance of CIM_SSHCapabilities shall represent the
299 capabilities of the SSH service.

300 **7.1.3 Managing the SSH Service's State**

301 This section describes the usage of the RequestedState and EnabledState properties to represent the
302 state of an instance of CIM_ProtocolService.

303 **7.1.3.1 State Management Supported**

304 Exactly one instance of CIM_SSHCapabilities shall be associated with an instance of
305 CIM_ProtocolService, which indicates support for managing the state of the SSH service.

306 Support for managing the state of the SSH service is conditional behavior. This section describes the CIM
307 elements and behaviors that shall be implemented when this behavior is supported.

308 **7.1.3.2 CIM_ProtocolService.RequestStateChange() Supported**

309 When the CIM_SSHCapabilities.RequestedStatesSupported property contains at least one value, the
310 CIM_ProtocolService.RequestStateChange() method shall be implemented and supported. The
311 CIM_ProtocolService.RequestStateChange() method shall not return a value of 1 (Unspecified).

312 **7.1.3.3 CIM_ProtocolService.RequestedState**

313 When state management is supported, the RequestedState property shall be supported. When state
314 management is Unspecified, the RequestedState property may be supported.

315 Upon successful invocation of the CIM_ProtocolService.RequestStateChange() method, the value of the
316 RequestedState property shall be the value of the RequestedState parameter. If the method is not
317 successfully invoked, the value of the RequestedState property is indeterminate. When the
318 RequestedStatesSupported property of the associated instance of CIM_SSHCapabilities contains one or
319 more values, the RequestedState property shall have one of the values specified or 5 (No Change).
320 When the RequestedStatesProperty of the associated instance of
321 CIM_EnabledLogicalElementCapabilities does not contain any values, the RequestedState property shall
322 have the value of 12 (Not Applicable).

323 **7.1.3.4 EnabledState**

324 When the RequestedState parameter has a value of 2 (Enabled) or 3 (Disabled), upon successful
325 completion of the CIM_ProtocolService.RequestStateChange() method, the value of the EnabledState
326 property shall equal the value of the RequestedState property. If the method does not complete
327 successfully, the value of the EnabledState property is indeterminate. The EnabledState property shall
328 have the value 2 (Enabled), 3 (Disabled), or 5 (Not Applicable).

329 **7.1.3.5 Indicating State Management Support with CIM_SSHCapabilities**

330 When state management is supported, the RequestedStatesSupported property of the
331 CIM_SSHCapabilities instance associated with the CIM_ProtocolService instance via an instance of
332 CIM_ElementCapabilities shall contain at least one value. The RequestedStatesSupported property may
333 have zero or more of the following values: 2 (Enabled), 3 (Disabled), or 11 (Reset).

334 **7.1.4 CIM_ProtocolService ElementName Constraints**

335 The ElementName property of CIM_ProtocolService may be modifiable by a client or it may have a fixed
336 value.

337 **7.1.4.1 ElementName Is Not Modifiable**

338 When an implementation does not support modification of the ElementName property by a client, the
339 ElementName property shall be formatted as a free-form string of variable length (pattern ".*").

340 **7.1.4.2 ElementName Is Modifiable**

341 The CIM_ProtocolService.ElementName property may be modified by a client. This is conditional
342 behavior. This section describes the CIM elements and behavioral requirements when an implementation
343 supports client modification of the CIM_ProtocolService.ElementName property.

344 **7.1.4.2.1 CIM_SSHCapabilities.ElementNameEditSupported**

345 This property shall have a value of TRUE when the implementation supports client modification of the
346 CIM_ProtocolService.ElementName property.

347 **7.1.4.2.2 CIM_EnabledLogicalElementCapabilities.MaxElementNameLen**

348 The MaxElementNameLen property shall be implemented when the ElementNameEditSupported
349 property has a value of TRUE. The MaxElementNameLen property shall indicate the maximum length of
350 a string that the implementation will accept as a value for the ElementName property of the associated
351 CIM_ProtocolService instance.

352 **7.1.5 Default Configuration of the Service**

353 The default configuration is the configuration of the service when it was first installed on the managed
354 system. When an implementation exposes the default configuration, the default configuration shall be
355 represented by an instance of CIM_SSHSettingData associated with the CIM_ProtocolService through an
356 instance of CIM_ElementSettingData where the IsDefault property of the CIM_ElementSettingData
357 instance has a value of 1 (Is Default).

358 **7.1.5.1 Listening Port**

359 An SSH service can listen on one or more TCP ports for incoming connection requests. An
360 implementation may model the TCP port(s) to which the SSH service is bound. When the implementation
361 models the TCP ports, the following requirements apply.

362 **7.1.5.1.1 CIM_TCPProtocolEndpoint**

363 For each IP port to which the SSH service is bound there shall be modeled an instance of
364 CIM_TCPProtocolEndpoint in which the PortNumber property of the instance indicates the port number to
365 which the SSH service is listening.

366 **7.1.5.1.2 Relationship to SSH Service**

367 For each CIM_TCPProtocolEndpoint instance, there shall be an instance of CIM_ServiceAccessBySAP
368 that associates the CIM_ProtocolService instance with the CIM_TCPProtocolEndpoint.

369 **7.1.5.2 Managing Listening Ports**

370 The implementation may support managing the ports on which the SSH Service listens. This is an
371 optional behavior. The ListenOnPort() method (see section 8.1) of the CIM_ProtocolService can be used
372 to add ports on which the SSH service will listen. Using the DeleteInstance intrinsic operation to delete an
373 instance of CIM_TCPProtocolEndpoint will stop the SSH service from listening on the represented port
374 (see section 8.15.2).

375 **7.2 Representing an SSH Session**

376 Each active session with the SSH service shall be represented with an instance of
377 CIM_SSHProtocolEndpoint.

378 **7.2.1 Relationship with Service**

379 An instance of CIM_ProvidesEndpoint shall associate the CIM_ProtocolService with the
380 CIM_SSHProtocolEndpoint.

381 **7.2.2 Port for Session**

382 An implementation may model the TCP port to which the SSH session is bound. This is optional behavior.
383 When the implementation models the TCP port the following requirements apply.

384 7.2.2.1 CIM_TCPProtocolEndpoint

385 When the TCP port to which the SSH session is bound is modeled, the TCP port shall be modeled using
386 an instance of CIM_TCPProtocolEndpoint.

387 7.2.2.2 Relationship to Session

388 An instance of CIM_BindsTo shall associate the CIM_SSHProtocolEndpoint instance with the
389 CIM_TCPProtocolEndpoint.

390 7.2.3 Session Default Configuration

391 When an SSH session is created, it will have an initial configuration. Implementations can indicate to
392 clients the configuration that will be assigned to a session. An implementation can also indicate to clients
393 the configuration that an active session had when the session was first established.

394 7.2.3.1 Configuration that Will Be Assigned

395 An implementation may assign the same initial configuration for all SSH sessions spawned. When the
396 implementation assigns the same initial configuration for all SSH sessions, the configuration that a
397 session will have when it is established shall be represented by an instance of CIM_SSHSettingData
398 associated with the CIM_ProtocolService through an instance of CIM_ElementSettingData where the
399 IsNext property of the CIM_ElementSettingData instance has a value of 1 (Is Next).

400 7.2.3.2 Initial Configuration of a Session

401 The initial configuration of a session may be modeled. This is optional behavior. When the configuration
402 that a session had when it was established is modeled, it shall be represented by an instance of
403 CIM_SSHSettingData associated with the CIM_SSHProtocolEndpoint through an instance of
404 CIM_ElementSettingData where the IsCurrent property of the CIM_ElementSettingData instance has a
405 value of 1 (Is Current).

406 It is not necessary that there be a discrete copy of CIM_SSHSettingData for each active session. It is only
407 necessary that the CIM_SSHSettingData associated with the CIM_SSHProtocolEndpoint accurately
408 reflect the initial configuration of the session.

409 7.3 Relationship with IP Interfaces (Optional)

410 When the specific port for an SSH session or service is modeled, the specific IP interface over which the
411 session is active may be modeled. This is optional behavior. When the implementation models the
412 specific interface over which an SSH session is active, there shall be an instance of the CIM_BindsTo
413 association where the value of the Antecedent property shall be a reference to the
414 CIM_IPProtocolEndpoint and the value of the Dependent property shall be a reference to the
415 CIM_TCPProtocolEndpoint.

416 8 Methods

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

419 8.1 CIM_ProtocolService.ListenOnPort() (Optional)

420 The CIM_ProtocolService.ListenOnPort() method shall be supported when the
421 ListeningPortManagementProperty of the associated instance of CIM_SSHCapabilities has a value of
422 TRUE. When the value of ListeningPortManagementProperty of the associated instance of
423 CIM_SSHCapabilities has a value of FALSE, the CIM_ProtocolService.ListenOnPort() method shall not
424 be supported.

425 The CIM_ProtocolService.ListenOnPort() method is used to configure additional ports on which the
 426 ProtocolService will listen. ListenOnPort() method's detailed requirements are specified in Table 2 and
 427 Table 3.

428 No standard messages are defined.

429 **Table 2 – CIM_ProtocolService.ListenOnPort() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
2	Error occurred
0x1000	Job started: REF returned to started CIM_ConcreteJob

430 **Table 3 – CIM_ProtocolService.ListenOnPort() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN	IPEndpoint	CIM_IPProtocolEndpoint REF	Optional reference to specific IPProtocolEndpoint to which the created TCPProtocolEndpoint will be bound
OUT	Job	CIM_TCPProtocolEndpoint REF	TCPProtocolEndpoint created if method is successful
IN, REQ	PortNumber	uint16	Desired port number for the service to listen on

431 When the method completes successfully, the implementation shall create an instance of
 432 CIM_TCPProtocolEndpoint. The value of the PortNumber property of the instance of
 433 CIM_TCPProtocolEndpoint shall be the value of the PortNumber parameter of the method invocation.
 434 The implementation shall create an instance of CIM_ServiceAccessBySAP that references the instance
 435 of CIM_TCPProtocolEndpoint and references the instance of CIM_ProtocolService on which the method
 436 was invoked.

437 The IPEndpoint parameter for the method is optional. The implementation shall perform the following
 438 actions when the IPEndpoint parameter is not specified:

- 439 • The implementation shall create an instance of CIM_HostedAccessPoint that references the
 440 newly created CIM_TCPProtocolEndpoint instance and the instance of CIM_ComputerSystem
 441 with which the CIM_ProtocolService instance is associated through an instance of
 442 CIM_HostedService (the scoping system).
- 443 • For each instance of CIM_IPProtocolEndpoint that is associated through the
 444 CIM_HostedAccessPoint association with the CIM_ComputerSystem instance with which the
 445 instance of CIM_ProtocolService on which this method was invoked is associated through an
 446 instance of CIM_HostedService, the implementation shall create an instance of the
 447 CIM_BindsTo association where the value of the Antecedent property shall be a reference to
 448 the CIM_IPProtocolEndpoint and the value of the Dependent property shall be a reference to
 449 the CIM_TCPProtocolEndpoint.

450 The implementation shall perform the following actions when the IPEndpoint parameter is specified:

- 451 • The implementation shall create an instance of CIM_HostedAccessPoint that references the
 452 newly created CIM_TCPProtocolEndpoint instance and the instance of CIM_ComputerSystem
 453 with which the CIM_IPProtocolEndpoint instance is associated through an instance of
 454 CIM_HostedAccessPoint.
- 455 • The implementation shall create an instance of the CIM_BindsTo association where the value of
 456 the Antecedent property shall be a reference to the CIM_IPProtocolEndpoint and the value of
 457 the Dependent property shall be a reference to the CIM_TCPProtocolEndpoint.

458 8.2 CIM_ProtocolService.RequestStateChange()

459 CIM_ProtocolService.RequestStateChange() method invocation will change the element's state to the
 460 value specified in the RequestedState parameter. The Enabled and Disabled values of the
 461 RequestedState parameter correspond to enabling or disabling the functionality represented by the
 462 instance of CIM_ProtocolService. A value of 2 (Enabled) shall correspond to a request to enable the
 463 functionality. A value of 3 (Disabled) shall correspond to a request to disable the functionality. A value of
 464 11 (Reset) shall initiate a reset of the SSH service.

465 See section 7.1.3 for information about the effect of this method on the RequestedState property.

466 The method shall be considered successful if the availability of the functionality upon completion of the
 467 method corresponds to the desired availability indicated by the RequestedState parameter. It is not
 468 necessary that an actual change in state occur for the method to be considered successful. It is sufficient
 469 that the resultant state be equal to the requested state. Upon successful completion of the method, the
 470 Return Value shall be zero.

471 See section 7.1.3.4 for information about the effect of this method on the EnabledState property.

472 Detailed requirements of the RequestStateChange() method are specified in Table 4 and Table 5.

473 No standard messages are defined.

474 Invoking the CIM_ProtocolService.RequestStateChange() method multiple times could result in earlier
 475 requests being overwritten or lost.

476 **Table 4 – CIM_ProtocolService.RequestStateChange() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
1	Method is unsupported in the implementation.
2	Error occurred
0x1000	Job started: REF returned to started CIM_ConcreteJob

477 **Table 5 – CIM_ProtocolService.RequestStateChange() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	RequestedState	uint16	Valid state values : 2 (Enabled) 3 (Disabled) 11 (Reset)
OUT	Job	CIM_ConcreteJob REF	Returned if job started
IN, REQ	TimeoutPeriod	datetime	Client specified maximum amount of time the transition to a new state is supposed to take: 0 or NULL – No time requirements <interval> – Maximum time allowed

478 8.2.1 CIM_ProtocolService.RequestStateChange() ConditionalSupport

479 When the CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property contains at least
 480 one value, the CIM_ProtocolService.RequestStateChange() method shall be implemented and
 481 supported. The CIM_ProtocolService.RequestStateChange() method shall not return a value of 1
 482 (Unspecified).

483 **8.3 Profile Conventions for Operations**

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

486 The default list of operations is as follows:

- 487 • GetInstance
- 488 • Associators
- 489 • AssociatorNames
- 490 • References
- 491 • ReferenceNames
- 492 • EnumerateInstances
- 493 • EnumerateInstanceNames

494 **8.4 CIM_BindsTo**

495 Table 6 lists implementation requirements for operations. If implemented, these operations shall be
 496 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 6, all operations in
 497 the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

499 **Table 6 – Operations: CIM_BindsTo**

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

500 **8.5 CIM_ElementCapabilities**

501 Table 7 lists implementation requirements for operations. If implemented, these operations shall be
 502 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 7, all operations in
 503 the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

505 **Table 7 – Operations: CIM_ElementCapabilities**

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

506 8.6 CIM_ElementSettingData

507 Table 8 lists implementation requirements for operations. If implemented, these operations shall be
 508 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 8, all operations in
 509 the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

511 **Table 8 – Operations: CIM_ElementSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	See 8.6.1.
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

512 8.6.1 CIM_ElementSettingData — ModifyInstance

513 When an instance of CIM_ElementSettingData associates an instance of CIM_SSHSettingData with an
 514 instance of CIM_SSHProtocolEndpoint, the following rules shall govern the behavior of the
 515 ModifyInstance operation:

- 516 • The ModifyInstance operation shall not allow the IsDefault property to be modified.
- 517 • The ModifyInstance operation shall not allow the IsCurrent property to be modified.
- 518 • When the ModifyInstance operation is used to modify the IsNext property to have a value of 1
 519 (Is Next), the ModifyInstance operation shall implement the following behavior:
 - 520 – The ModifyInstance operation shall find all other instances of CIM_ElementSettingData
 521 that associate an CIM_SSHSettingData instance with the CIM_SSHProtocolEndpoint
 522 instance referenced by the target instance of CIM_ElementSettingData.
 - 523 – For each instance of CIM_ElementSettingData found, the ModifyInstance operation shall
 524 modify the value of its IsNext property to have a value of 2 (Is Not Next).

525 8.7 CIM_HostedAccessPoint

526 Table 9 lists implementation requirements for operations. If implemented, these operations shall be
 527 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 9, all operations in
 528 the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

530 **Table 9 – Operations: CIM_HostedAccessPoint**

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

531 8.8 CIM_HostedService

532 Table 10 lists implementation requirements for operations. If implemented, these operations shall be
 533 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 10, all operations
 534 in the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

536 **Table 10 – Operations: CIM_HostedService**

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

537 8.9 CIM_ProtocolService

538 Table 11 lists implementation requirements for operations. If implemented, these operations shall be
 539 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 11, all operations
 540 in the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

542 **Table 11 – Operations: CIM_ProtocolService**

Operation	Requirement	Messages
ModifyInstance	Optional. See 8.9.1.	None

543 8.9.1 CIM_ProtocolService — ModifyInstance

544 When the ElementNameEditSupported property of the CIM_SSHCapabilities has a value of TRUE, the
 545 ModifyInstance operation shall allow the value of the ElementName property of the CIM_ProtocolService
 546 instance to be modified. The ModifyInstance operation shall enforce the length restriction specified in the
 547 MaxElementNameLen property of the CIM_SSHCapabilities.

548 When the ElementNameEditSupported property of the CIM_SSHCapabilities has a value of FALSE, the
 549 ModifyInstance operation shall not change the value of the ElementName property of the
 550 CIM_ProtocolService instance.

551 8.10 CIM_ProvidesEndpoint

552 Table 12 lists implementation requirements for operations. If implemented, these operations shall be
 553 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 12, all operations
 554 in the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

556

Table 12 – Operations: CIM_ProvidesEndpoint

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

557 8.11 CIM_ServiceAccessBySAP

558 Table 13 lists implementation requirements for operations. If implemented, these operations shall be
 559 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 13, all operations
 560 in the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

562

Table 13 – Operations: CIM_ServiceAccessBySAP

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

563 8.12 CIM_SSHTCapabilities

564 All operations in the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

566 8.13 CIM_SSHSettingData

567 Table 14 lists implementation requirements for operations. If implemented, these operations shall be
 568 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 14, all operations
 569 in the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

571

Table 14 – Operations: CIM_SSHSettingData

Operation	Requirement	Messages
ModifyInstance	Optional. See section 8.13.1.	None

572 8.13.1 CIM_SSHSettingData — ModifyInstance

573 When the CIM_SSHSettingData instance is associated with the CIM_ProtocolService instance through an
 574 instance of CIM_ElementSettingData and the value of the IsDefault property of the
 575 CIM_ElementSettingData instance that associates the CIM_SSHSettingData with the
 576 CIM_ProtocolService has a value of 1 (Is Default), the ModifyInstance operation shall not be supported.

577 When the CIM_SSHSettingData instance is not associated with an instance of CIM_ProtocolService
 578 through an instance of CIM_ElementSettingData where the IsDefault property has a value of 1 (Is
 579 Default), the ModifyInstance operation may be supported for the CIM_SSHSettingData instance.

580 8.14 CIM_SSHProtocolEndpoint

581 Table 15 lists implementation requirements for operations. If implemented, these operations shall be
 582 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 15, all operations
 583 in the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

585 **Table 15 – Operations: CIM_SSHProtocolEndpoint**

Operation	Requirement	Messages
ModifyInstance	Optional. See 8.14.1.	None
DeleteInstance	Optional. See 8.14.2.	None

586 8.14.1 ModifyInstance

587 The ModifyInstance operation may be supported for an instance of CIM_SSHProtocolEndpoint. When the
 588 ModifyInstance operation is supported for a CIM_SSHProtocolEndpoint instance, the ModifyInstance
 589 operation shall not modify the following properties:

- 590 • NameFormat
- 591 • ProtocolIFType
- 592 • OtherTypeDescription

593 8.14.2 DeleteInstance

594 The DeleteInstance operation may be supported for instances of CIM_SSHProtocolEndpoint. When the
 595 DeleteInstance operation is invoked against an instance, the corresponding SSH session shall be
 596 terminated prior to deleting the CIM_SSHProtocolEndpoint instance. The implementation shall also
 597 remove any association instances that reference the CIM_SSHProtocolEndpoint.

598 8.15 CIM_TCPProtocolEndpoint

599 Table 16 lists implementation requirements for operations. If implemented, these operations shall be
 600 implemented as defined in [DSP0200](#). In addition, and unless otherwise stated in Table 16, all operations
 601 in the default list in 8.3 shall be implemented as defined in [DSP0200](#).

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

603 **Table 16 – Operations: CIM_TCPProtocolEndpoint**

Operation	Requirement	Messages
ModifyInstance	Optional	None
DeleteInstance	Optional	See 8.15.1.

604 8.15.1 ModifyInstance

605 The ModifyInstance operation may be supported for an instance of CIM_TCPProtocolEndpoint. When the
 606 ModifyInstance operation is supported for an CIM_TCPProtocolEndpoint instance, the ModifyInstance
 607 operation shall not modify the following properties:

- 608 • NameFormat
- 609 • ProtocolIFType
- 610 • PortNumber

611 8.15.2 DeleteInstance

612 When the CIM_ProtocolService.ListenOnPort() method is supported for the instance of
613 CIM_ProtocolService with which the CIM_TCPProtocolEndpoint is associated through an instance of
614 CIM_ServiceAccessBySAP, the DeleteInstance operation shall be supported for the instance of
615 CIM_TCPProtocolEndpoint. When the CIM_ProtocolService.ListenOnPort() method is not supported, the
616 DeleteInstance operation shall not be supported.

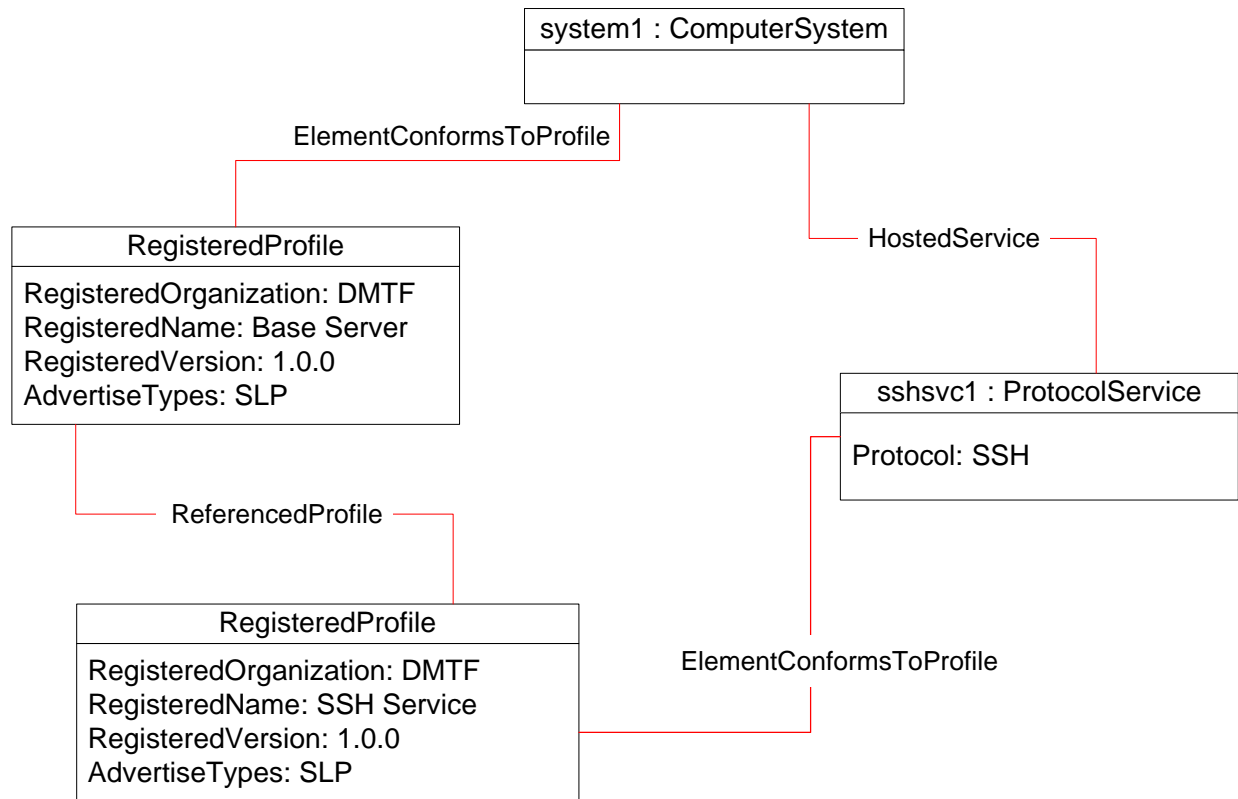
617 When the DeleteInstance operation is successful for an instance of CIM_TCPProtocolEndpoint, the SSH
618 service shall stop listening on the TCP port indicated by the PortNumber property of the
619 CIM_TCPProtocolEndpoint. The implementation shall also remove any association instances that
620 reference the CIM_TCPProtocolEndpoint.

621 9 Use Cases

622 The following sections outline common use cases for client interaction with the *SSH Service Profile*.

623 9.1 Object Diagrams

624 The object diagram in Figure 2 shows how instances of CIM_RegisteredProfile are used to identify the
625 version of the *SSH Service Profile* with which an instance of CIM_ProtocolService and its associated
626 instances are conformant. An instance of CIM_RegisteredProfile exists for each profile that is
627 instrumented in the system. One instance of CIM_RegisteredProfile identifies the “DMTF *Base Server*
628 *Profile* version 1.0.0”. The other instance identifies the “DMTF *SSH Service Profile* version 1.0.0”. The
629 CIM_ProtocolService instance is scoped to an instance of CIM_ComputerSystem. This instance of
630 CIM_ComputerSystem is conformant with the DMTF *Base Server Profile* version 1.0.0, as indicated by
631 the CIM_ElementConformsToProfile association to the CIM_RegisteredProfile instance. The
632 CIM_ProtocolService instance is conformant with this profile as indicated by the
633 CIM_ElementConformsToProfile association between the instance and the instance of
634 CIM_RegisteredProfile that identifies this profile.



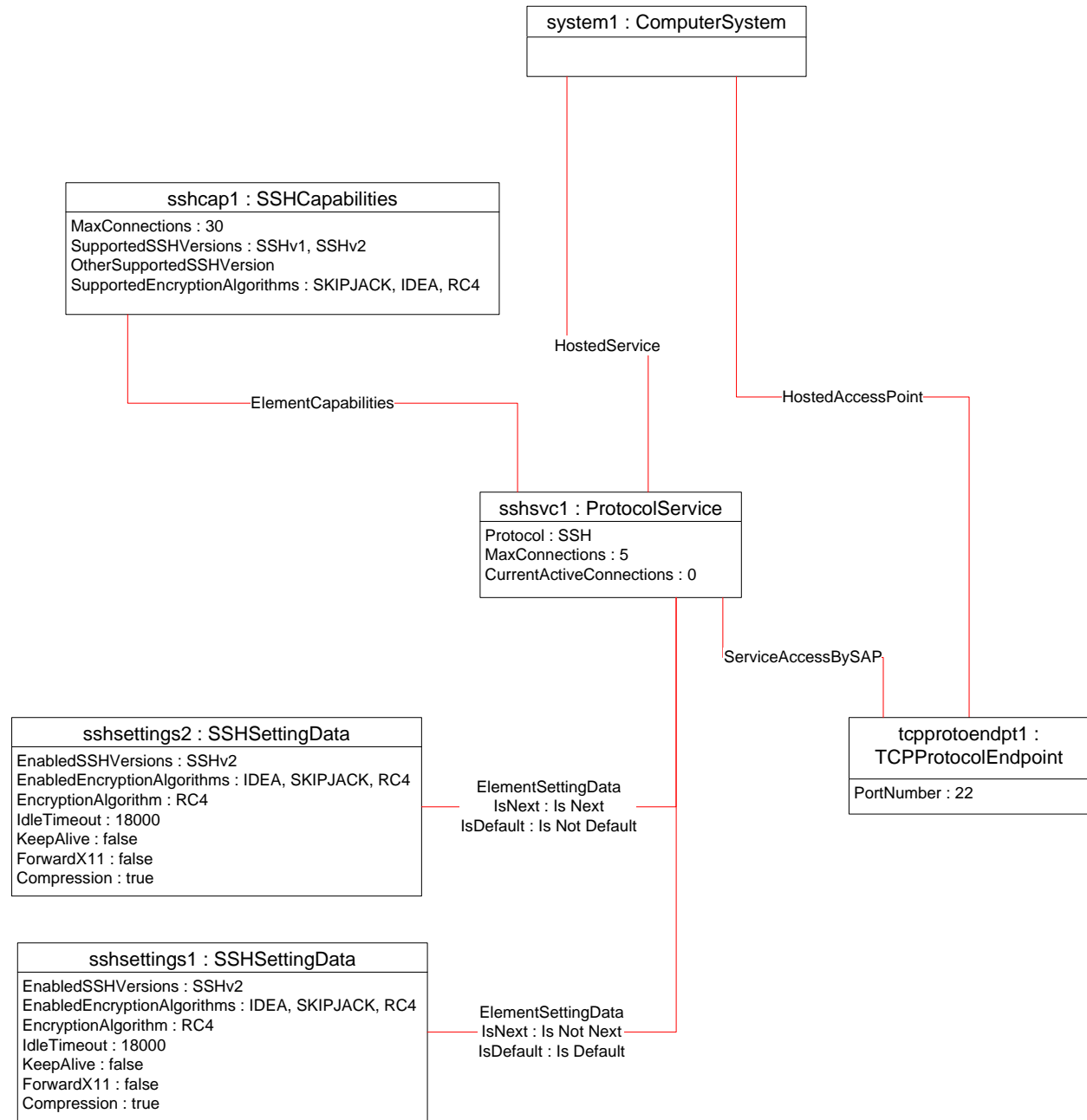
635

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Figure 2 – Registered Profile

637 Figure 3 through Figure 5 illustrate the sequence of the SSH service listening for connections, an SSH
 638 session being established, and the configuration of the SSH session changed from the initial values.

639 Figure 3 is an object diagram that shows the SSH service enabled and listening for incoming connections.
 640 The instance of CIM_SSHSettingData labeled sshsettings2 indicates the settings that will be applied to an
 641 SSH session when it is established. The CIM_SSHSettingData labeled sshsettings1 represents the
 642 default configuration for a session. The CIM_SSHCapabilities instance indicates the capabilities of the
 643 SSH service and its associated sessions. In this example, the SSH service supports SSHv1 and SSHv2,
 644 as indicated by the value of the SupportedEncryptionAlgorithms property. However, the administrator has
 645 configured the service to enable sessions using only SSHv2. This configuration is indicated by the value
 646 of the EnabledSSHVersions property on the associated CIM_SSHSettingData instances.

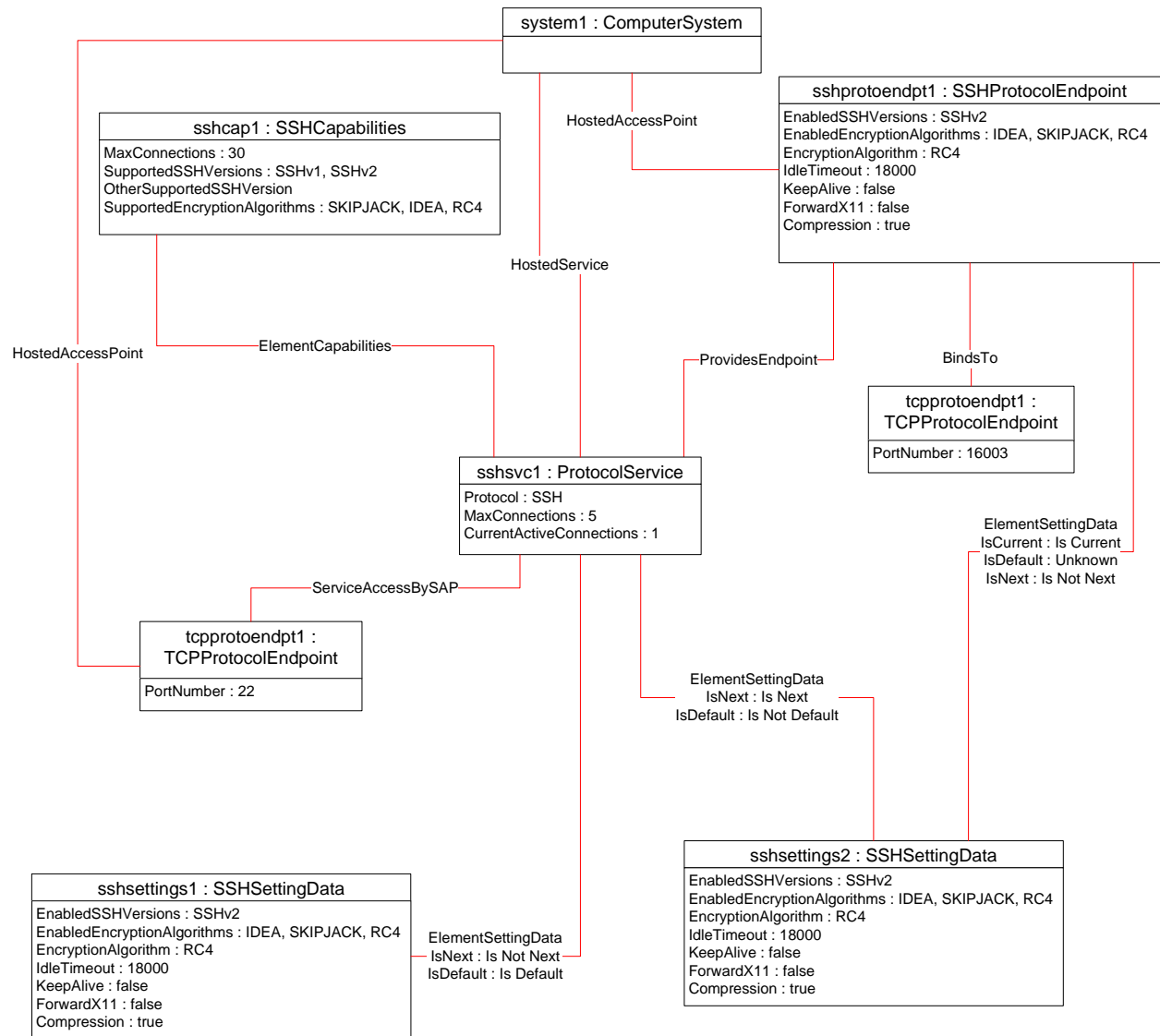


647

648

Figure 3 – SSH Service Listening for Connections

649 The object diagram in Figure 4 represents the same configuration as Figure 3 with the addition of an
 650 instance of CIM_SSHProtocolEndpoint representing a newly established session. Notice that the value of
 651 the CurrentActiveConnections property of the CIM_ProtocolService instance (sshsvc1) has been
 652 incremented to reflect that a session is active. The values of the properties for the established session
 653 (sshprotoendpt1) correspond to the values on the CIM_SSHSettingData where the value of the IsNext
 654 property on the CIM_ElementSettingData instance that associated the settings with the service had a
 655 value of 1 (Is Next).

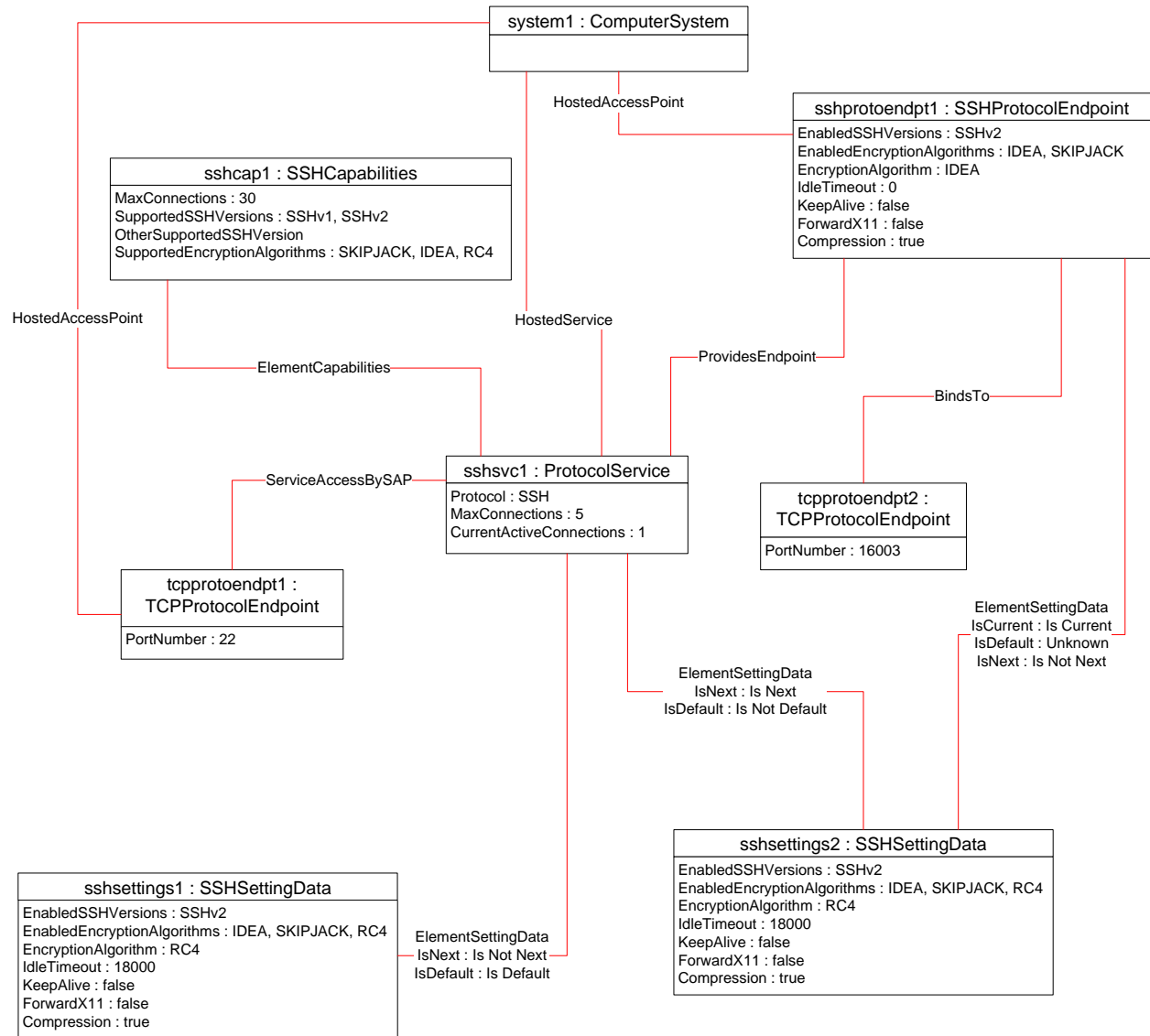


656

657

Figure 4 – One Active Session

658 The object diagram in Figure 5 represents the same configuration as in Figure 4 with the exception that
 659 the user has changed session parameters from the values in effect when the session was initially
 660 established. In the example above, the user has changed the encryption algorithm from RC4 to IDEA.
 661 This change is reflected in the value of the EncryptionAlgorithm property of sshprotoendpt1 because the
 662 CIM_SSHProtocolEndpoint contains the actual values for the session. Notice that the value of the
 663 EncryptionAlgorithm property of sshsettings2 remains unchanged.



664

665

Figure 5 – Session Changed

666 9.2 Configuring Session Default Settings

667 When an SSH session is established, session settings have default values. A user can change the default
668 values for subsequent sessions' settings as follows:

- 669 1) Find the instance of CIM_ElementSettingData that associates an instance of
670 CIM_SSHSettingData with the CIM_ProtocolService where the value of its IsNext property is 1
671 (Is Next) and the value of the IsDefault property is not 1 (Is Default).
- 672 2) Modify the properties of the referenced CIM_SSHSettingData instance.

673 9.3 Modifying Active Session Settings

674 A user can find the active sessions for an SSH service and modify their configuration as follows:

- 675 1) Find an instance of CIM_SSHProtocolEndpoint associated with the CIM_ProtocolService
676 through an instance of CIM_ProvidesEndpoint.
- 677 2) Modify the properties of the CIM_SSHProtocolEndpoint as desired.

678 9.4 Disabling the SSH Service

679 If an implementation supports disabling the SSH service, a user can disable the SSH service by invoking
680 the RequestStateChange() method on CIM_ProtocolService instance with a value of Disabled for the
681 RequestedState parameter.

682 9.5 Determining the SSH Service Capabilities

683 A user can determine the capabilities of the SSH service as follows:

- 684 1) Find the instance of CIM_SSHCapabilities associated with the CIM_ProtocolService through an
685 instance of CIM_ElementCapabilities.
- 686 2) View the properties of the CIM_SSHCapabilities instance to see the supported function.

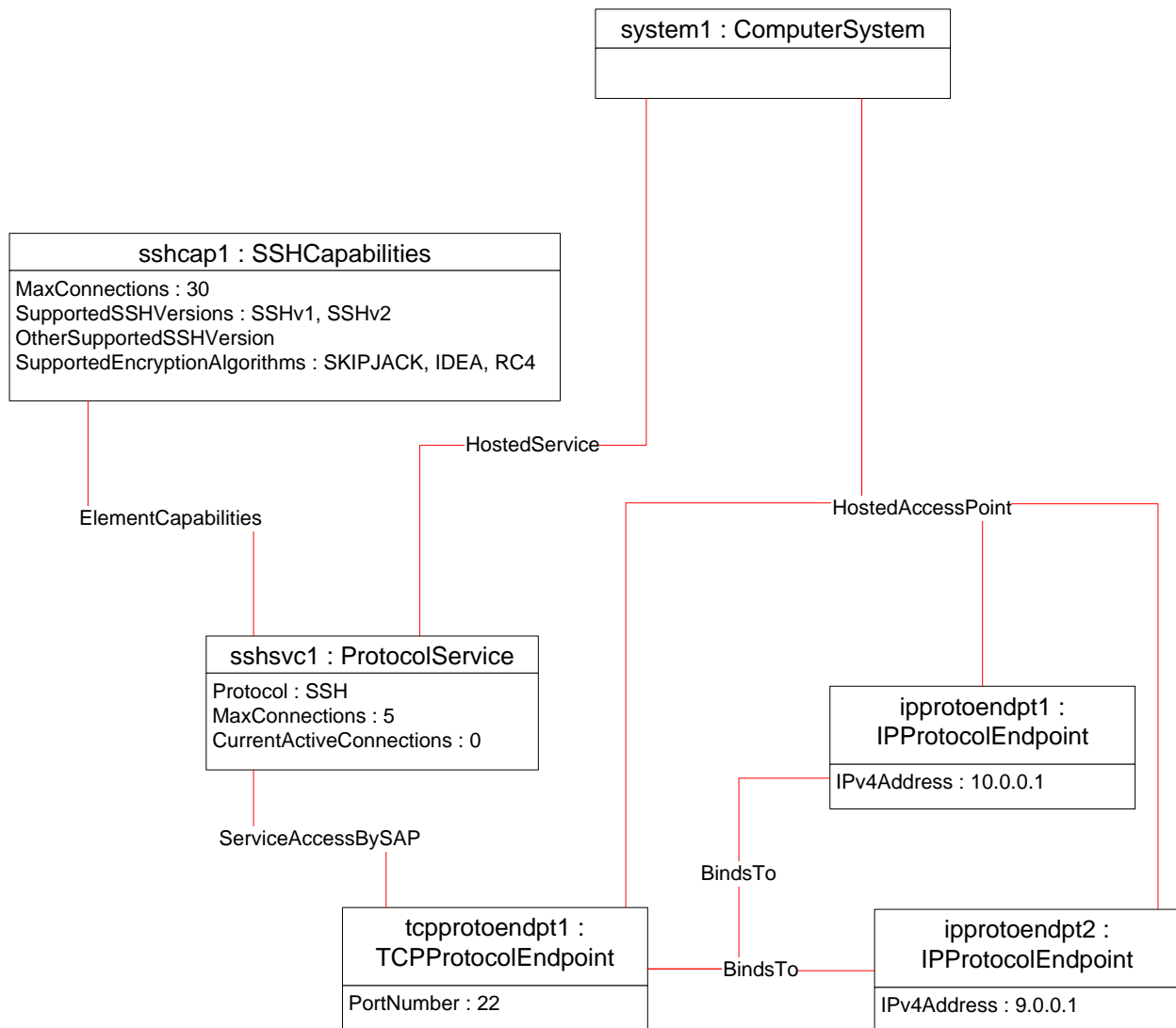
687 9.6 Determining the Listening Port(s) of the SSH Service

688 An implementation can model the TCP port upon which the SSH service listens for incoming connection
689 requests. When the implementation models the port, a client can determine the ports to which the SSH
690 service is bound as follows:

- 691 1) Find all instances of CIM_TCPProtocolEndpoint associated with the CIM_ProtocolService
692 through an instance of CIM_ServiceAccessBySAP.
- 693 2) For each instance of CIM_TCPProtocolEndpoint, query the PortNumber property.

694 Applying this query to Figure 6, the client would find a single instance of CIM_TCPProtocolEndpoint and
695 the value of the PortNumber property would be 22.

696 Figure 6 is an object diagram for the SSH service listening on TCP port 22 for incoming connection
697 requests across all of the IP interfaces of the host system. This is illustrated by the CIM_BindsTo
698 association instances from the CIM_TCPProtocolEndpoint to the instances of CIM_IPProtocolEndpoint.



699

700

Figure 6 – Listening on a Single Port on All Interfaces

701 **9.7 Adding a Listening Port for the SSH Service**

702 An implementation can support adding and removing bindings between the SSH service and TCP ports.
 703 When an implementation supports adding bindings, a client can configure the Hosted service to listen on all
 704 interfaces or a specific interface.

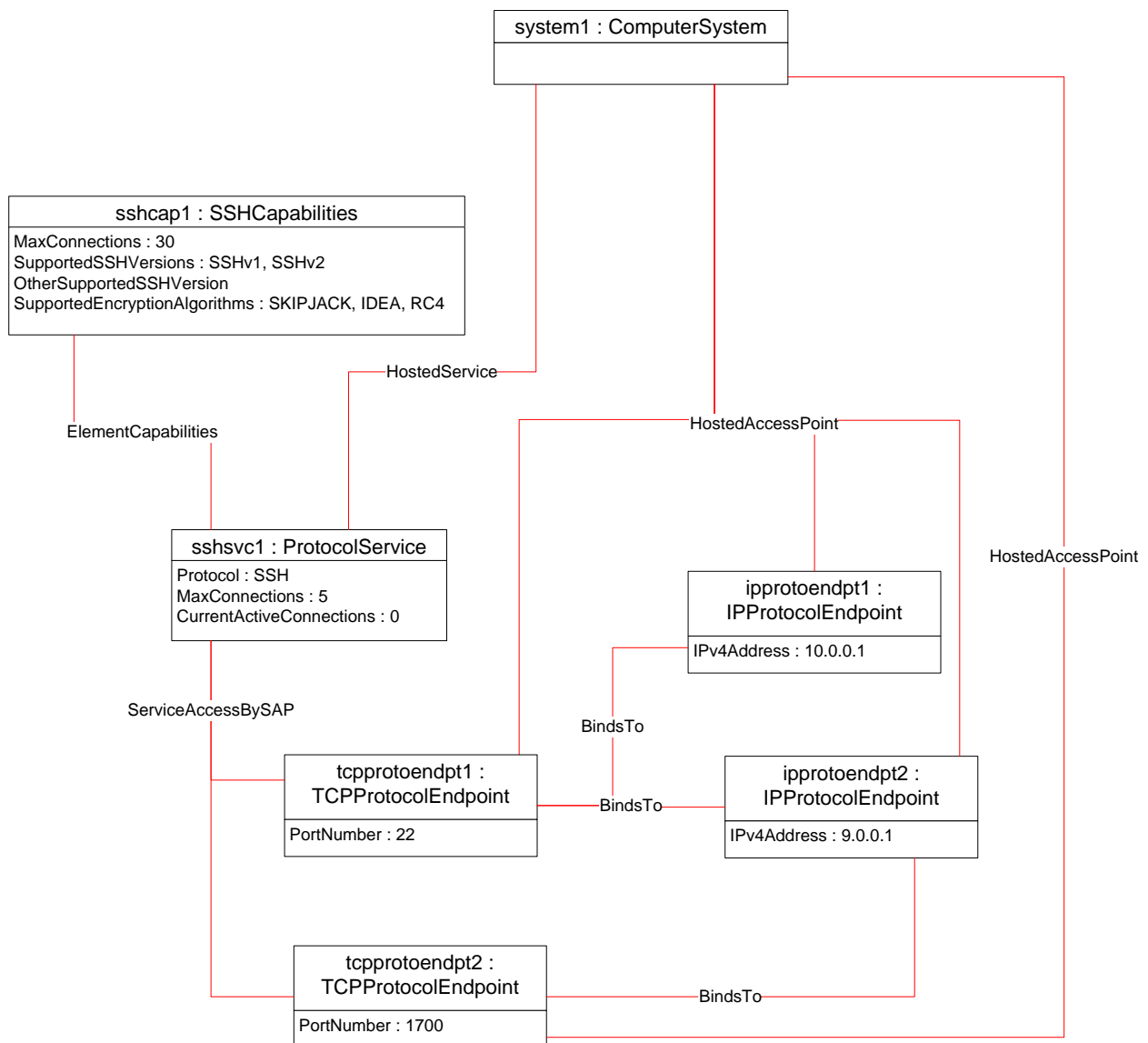
705 To have the SSH service listen on a port across all IP interfaces of the system, the client can invoke the
 706 ListenOnPort method of the CIM_ProtocolService instance, specifying the desired PortNumber. To have
 707 the SSH service listen on a port for a specific interface, the client can invoke the ListenOnPort() method
 708 of the CIM_ProtocolService instance, specifying a reference to the CIM_IPProtocolEndpoint instance that
 709 represents the specific IP interface.

710 Figure 7 reflects the algorithm above applied to the configuration represented in Figure 6 where the
 711 ListenOnPort() method was invoked with the IPEndpoint parameter containing a reference to
 712 ipprotoendpt2 and a PortNumber parameter of 1700. The instance tcpprotoendpt2 is created and
 713 associated with ipprotoendpt2.

714 **9.8 Stopping the SSH Service from Listening on a Specific Port**

715 A client can stop the SSH service from listening on a specific port by invoking the intrinsic DeleteInstance
 716 operation against the instance of CIM_TCPProtocolEndpoint that represents the port.

717 Using the configuration shown in Figure 7 as an example, invoking the DeleteInstance operation against
 718 the instance tcpprotoendpt2 would cause the SSH service to no longer listen on port 1700.



719

720

Figure 7 – Port Added Bound to Specific Interface

721 9.9 Determining If ElementName Can Be Modified

722 For a given instance of CIM_ProtocolService, a client can determine whether it can modify the
723 ElementName as follows:

- 724 1) Find the CIM_SSHCapabilities instance that is associated with the target instance.
- 725 a) Query the value of the ElementNameEditSupported property of the CIM_SSHCapabilities
726 instance. If the value is TRUE, the client can modify the ElementName property of the
727 target instance.

728 9.10 Determining If State Management Is Supported

729 For a given instance of CIM_ProtocolService, a client can determine whether state management is
730 supported as follows:

- 731 1) Find the CIM_EnabledLogicalElementCapabilities instance that is associated with the
732 CIM_LANEndpoint instance.
- 733 a) Query the value of the RequestedStatesSupported property. If at least one value is
734 specified, state management is supported.

735 10 CIM Elements

736 Table 17 shows the instances of CIM Elements for this profile. Instances of these CIM Elements shall be
737 implemented as described in Table 17. Section 7 may impose additional requirements on these elements.

738 **Table 17 – CIM Elements: SSH Service Profile**

Element Name	Requirement	Notes
Classes		
CIM_BindsTo	Optional	See 10.1.
CIM_ElementCapabilities	Mandatory	See 10.2.
CIM_ElementSettingData	Optional	See 10.4 and 10.5.
CIM_HostedAccessPoint	Mandatory	See 10.5.
CIM_HostedService	Mandatory	See 10.7.
CIM_ProtocolService	Mandatory	See 10.8.
CIM_ProvidesEndpoint	Mandatory	See 10.9.
CIM_RegisteredProfile	Mandatory	See 10.10
CIM_ServiceAccessBySAP	Conditional	See 10.11
CIM_SSHCapabilities	Mandatory	See 10.12.
CIM_SSHProtocolEndpoint	Mandatory	See 10.13.
CIM_SSHSettingData	Optional	See 10.14.
CIM_TCPProtocolEndpoint	Optional	See 10.15.
Indications		
None defined in this profile		

739 **10.1 CIM_BindsTo — TCPProtocolEndpoint**

740 When an instance of CIM_TCPProtocolEndpoint is instrumented, CIM_BindsTo is used to relate the
 741 CIM_SSHProtocolEndpoint instance with the CIM_TCPProtocolEndpoint instance on which it is
 742 dependent.

743 **Table 18 – Class: CIM_BindsTo**

Properties	Requirement	Notes
Antecedent	Mandatory	The value of this property shall be a reference to an instance of CIM_TCPProtocolEndpoint. Cardinality 0..1
Dependent	Mandatory	The value of this property shall be a reference to an instance of CIM_SSHProtocolEndpoint. Cardinality *

744 **10.2 CIM_BindsTo — IPProtocolEndpoint**

745 When the relationship with an underlying IP interface is modeled according to section 7.3, CIM_BindsTo
 746 is used to relate the CIM_TCPProtocolEndpoint instance with the CIM_IPProtocolEndpoint instance on
 747 which it is dependent.

748 **Table 19 – Class: CIM_BindsTo**

Properties	Requirement	Notes
Antecedent	Mandatory	The value of this property shall be a reference to an instance of CIM_IPProtocolEndpoint. Cardinality *
Dependent	Mandatory	The value of this property shall be a reference to an instance of CIM_TCPProtocolEndpoint. Cardinality 1..*

749 **10.3 CIM_ElementCapabilities**

750 CIM_ElementCapabilities is used to associate an instance of CIM_SSHCapabilities with the
 751 CIM_ProtocolService.

752 **Table 20 – Class: CIM_ElementCapabilities**

Properties	Requirement	Notes
ManagedElement	Mandatory	This property shall be a reference to the Central Instance. Cardinality 1..*
Capabilities	Mandatory	This property shall be a reference to the CIM_SSHCapabilities instance. Cardinality 1

753 **10.4 CIM_ElementSettingData — SSH Service**

754 CIM_ElementSettingData is used to associate instances of CIM_SSHSettingData with instances of
 755 CIM_ProtocolService.

756 **Table 21 – Class: CIM_ElementSettingData (SSH Service)**

Properties	Requirement	Notes
ManagedElement	Mandatory	This property shall be a reference to the Central Instance. Cardinality *
Setting	Mandatory	This property shall be a reference to an instance of CIM_SSHSettingData. Cardinality *
IsDefault	Mandatory	Matches 1 (Is Default) or 2 (Is Not Default)
IsNext	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)

757 **10.5 CIM_ElementSettingData — SSH Session**

758 CIM_ElementSettingData is used to associate instances of CIM_SSHSettingData with instances of
 759 CIM_SSHProtocolEndpoint.

760 **Table 22 – Class: CIM_ElementSettingData (SSH Session)**

Properties	Requirement	Notes
ManagedElement	Mandatory	This property shall be a reference to an instance of CIM_SSHProtocolEndpoint. Cardinality *
Setting	Mandatory	This property shall be a reference to an instance of CIM_SSHSettingData. Cardinality *
IsCurrent	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)

761 **10.6 CIM_HostedAccessPoint**

762 CIM_HostedAccessPoint is used to relate the CIM_SSHProtocolEndpoint and CIM_TCPProtocolEndpoint
 763 instances to their scoping CIM_ComputerSystem instance.

764 **Table 23 – Class: CIM_HostedAccessPoint**

Properties	Requirement	Notes
Antecedent	Mandatory	This property shall be a reference to an instance of CIM_ComputerSystem. Cardinality 1
Dependent	Mandatory	This property shall be a reference to an instance of CIM_SSHProtocolEndpoint or CIM_TCPProtocolEndpoint. Cardinality *

765 **10.7 CIM_HostedService**

766 CIM_HostedService is used to relate the CIM_ProtocolService to its scoping CIM_ComputerSystem
767 instance.

768 **Table 24 – Class: CIM_HostedService**

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

769 **10.8 CIM_ProtocolService**

770 CIM_ProtocolService represents the SSH service.

771 **Table 25 – Class: CIM_ProtocolService**

Properties	Requirement	Notes
SystemCreationClassName	Mandatory	None
CreationClassName	Mandatory	None
SystemName	Mandatory	None
Name	Mandatory	None
Protocol	Mandatory	See 7.1.1.
MaxConnections	Mandatory	A value of 0 (zero) shall indicate unknown.
RequestedState	Mandatory	See 7.1.3.
EnabledState	Mandatory	See 7.1.3.
ElementName	Mandatory	See 7.1.4.
OperationalStatus	Mandatory	None
HealthState	Mandatory	None
RequestStateChange()	Mandatory	See 8.2.
ListenOnPort()	Mandatory	See 8.1.

772 **10.9 CIM_ProvidesEndpoint**

773 CIM_ProvidesEndpoint is used to associate the instance of CIM_ProtocolService with an instance of
774 CIM_SSHProtocolEndpoint representing a session with the service.

775 **Table 26 – Class: CIM_ProvidesEndpoint**

Properties	Requirement	Notes
Antecedent	Mandatory	This property shall be a reference to the instance of CIM_ProtocolService. Cardinality 1
Dependent	Mandatory	This property shall be a reference to an instance of CIM_SSHProtocolEndpoint. Cardinality *

776 **10.10 CIM_RegisteredProfile**

777 CIM_RegisteredProfile identifies the *SSH Service Profile*. The CIM_RegisteredProfile class is defined by
 778 the [Profile Registration Profile](#). With the exception of the mandatory values specified for the properties in
 779 Table 27, the behavior of the CIM_RegisteredProfile instance is in accordance with the constraints
 780 specified in the [Profile Registration Profile](#).

781 **Table 27 – Class: CIM_RegisteredProfile**

Properties	Requirement	Notes
RegisteredName	Mandatory	This property shall have a value of "SSH Service".
RegisteredVersion	Mandatory	This property shall have a value of "1.0.0".
RegisteredOrganization	Mandatory	This property shall have a value of "DMTF".

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

785 **10.11 CIM_ServiceAccessBySAP**

786 CIM_ServiceAccessBySAP is used to associate the instance of CIM_ProtocolService with an instance of
 787 CIM_TCPEndpoint over which a session with the service can be established.

788 **Table 28 – Class: CIM_ServiceAccessBySAP**

Properties	Requirement	Notes
Antecedent	Mandatory	This property shall be a reference to the instance of CIM_ProtocolService. Cardinality 1..*
Dependent	Mandatory	This property shall be a reference to an instance of CIM_TCPEndpoint. Cardinality *

789 **10.12 CIM_SSHPCapabilities**

790 CIM_SSHPCapabilities represents the capabilities of an SSH service.

791 **Table 29 – Class: CIM_SSHPCapabilities**

Properties	Requirement	Notes
InstanceID	Mandatory	None
ElementName	Mandatory	pattern ".*"
RequestedStatesSupported	Mandatory	See 7.1.2.
ElementNameEditSupported	Mandatory	See 7.1.2.
MaxElementNameLen	Conditional	See 7.1.2.
MaxConnections	Mandatory	None
SupportedSSHVersions	Mandatory	None
OtherSupportedSSHVersion	Conditional	This property shall have a value when the SupportedSSHVersions property has a value of "Other".
SupportedEncryptionAlgorithms	Mandatory	None

Properties	Requirement	Notes
OtherSupportedEncryptionAlgorithm	Conditional	This property shall have a value when the SupportedEncryptionAlgorithms property has a value of "Other"..
ListeningPortManagementSupported	Mandatory	See 8.1.
MaxListeningPorts	Mandatory	A value of 0 (zero) shall indicate unknown.

792 **10.13 CIM_SSHProtocolEndpoint**

793 CIM_SSHProtocolEndpoint represents a session established with the SSH service.

794 **Table 30 – Class: CIM_SSHProtocolEndpoint**

Properties	Requirement	Notes
SystemCreationClassName	Mandatory	None
CreationClassName	Mandatory	None
SystemName	Mandatory	None
Name	Mandatory	None
NameFormat	Mandatory	pattern ".*"
ProtocolIFType	Mandatory	Matches 1 (Other)
OtherTypeDescription	Mandatory	Matches "SSH"
ElementName	Mandatory	pattern ".*"
EnabledSSHVersions	Mandatory	None
OtherEnabledSSHVersion	Conditional	This property shall have a value when the EnabledEncryptionAlgorithms property has a value of "Other".
SSHVersion	Mandatory	None
OtherSSHVersion	Conditional	This property shall have a value when the SSHVersion property has a value of "Other".
EnabledEncryptionAlgorithms	Mandatory	None
OtherEnabledEncryptionAlgorithm	Conditional	This property shall have a value when the EnabledEncryptionAlgorithms property has a value of "Other".
EncryptionAlgorithm	Mandatory	None
OtherEncryptionAlgorithm	Conditional	This property shall have a value when the EncryptionAlgorithm property has a value of "Other".
IdleTimeout	Mandatory	None
KeepAlive	Mandatory	None
ForwardX11	Mandatory	None
Compression	Mandatory	None

795 **10.14 CIM_SSHSettingData**

796 CIM_SSHSettingData represents settings that can be applied to an SSH session.

797

Table 31 – Class: CIM_SSHSettingData

Properties	Requirement	Notes
InstanceID	Mandatory	None
ElementName	Mandatory	pattern ".*"
EnabledSSHVersions	Mandatory	None
OtherEnabledSSHVersion	Conditional	This property shall have a value when the EnabledEncryptionAlgorithms property has a value of "Other".
SSHVersion	Mandatory	None
OtherSSHVersion	Conditional	This property shall have a value when the SSHVersion property has a value of "Other".
EnabledEncryptionAlgorithms	Mandatory	None
OtherEnabledEncryptionAlgorithm	Conditional	This property shall have a value when the EnabledEncryptionAlgorithms property has a value of "Other".
EncryptionAlgorithm	Mandatory	None
OtherEncryptionAlgorithm	Conditional	This property shall have a value when the EncryptionAlgorithm property has a value of "Other".
IdleTimeout	Mandatory	None
KeepAlive	Mandatory	None
ForwardX11	Mandatory	None
Compression	Mandatory	None

798 **10.15 CIM_TCPProtocolEndpoint**799 CIM_TCPProtocolEndpoint represents an IP port to which either an SSH session or service can be
800 bound.

801

Table 32 – Class: CIM_TCPProtocolEndpoint

Properties	Requirement	Notes
SystemCreationClassName	Mandatory	None
CreationClassName	Mandatory	None
SystemName	Mandatory	None
Name	Mandatory	None
NameFormat	Mandatory	pattern ".*"
ProtocolIFType	Mandatory	Matches 4111 ("TCP")
ElementName	Mandatory	pattern ".*"
PortNumber	Mandatory	None

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ANNEX A
(informative)
Change Log

Version	Date	Description
1.0.0	6/16/2009	DMTF Standard Release

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