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Text Console Redirection Profile

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146

Foreword

147 The *Text Console Redirection Profile* (DSP1024) was prepared by the Server Management Working
148 Group of the DMTF.

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

151

Introduction

152 The information in this specification and referenced specifications is intended to be sufficient for a
153 provider or consumer of this data to identify unambiguously the classes, properties, methods, and values
154 that shall be instantiated and manipulated using the DMTF Common Information Model (CIM) core and
155 common model definitions.

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

158

Text Console Redirection Profile

159 1 Scope

160 The *Text Console Redirection Profile* extends the management capabilities of referencing profiles and
161 provides the capability to manage text console redirections provided by the system.

162 2 Normative References

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

166 2.1 Approved References

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

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

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

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

171 DMTF [DSP1033](#), *Profile Registration Profile*

172 2.2 Other References

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

175 *Common Information Model (CIM) Specification*, version 2.2, June 14, 1999,
176 <http://www.dmtf.org/spec/cims.html>

177 Unified Modeling Language (UML) from the Open Management Group (OMG), <http://www.uml.org>

178 IETF RFC2234, *Augmented BNF for Syntax Specifications: ABNF*, <http://www.ietf.org/rfc/rfc2234.txt>

179 3 Terms and Definitions

180 For the purposes of this document, the following terms and definitions apply. For the purposes of this
181 document, the terms and definitions given in [DSP1033](#) and [DSP1001](#) also apply.

182 3.1

183 can

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

185 3.2

186 cannot

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

188 **3.3**
189 **conditional**
190 indicates requirements to be followed strictly to conform to the document when the specified conditions
191 are met

192 **3.4**
193 **mandatory**
194 indicates requirements to be followed strictly to conform to the document and from which no deviation is
195 permitted

196 **3.5**
197 **may**
198 indicates a course of action permissible within the limits of the document

199 **3.6**
200 **need not**
201 indicates a course of action permissible within the limits of the document

202 **3.7**
203 **optional**
204 indicates a course of action permissible within the limits of the document

205 **3.8**
206 **referencing profile**
207 indicates a profile that owns the definition of this class and can include a reference to this profile in its
208 "Referenced Profiles" table

209 **3.9**
210 **shall**
211 indicates requirements to be followed strictly to conform to the document and from which no deviation is
212 permitted

213 **3.10**
214 **shall not**
215 indicates requirements to be followed strictly to conform to the document and from which no deviation is
216 permitted

217 **3.11**
218 **should**
219 indicates that among several possibilities, one is recommended as particularly suitable, without
220 mentioning or excluding others, or that a certain course of action is preferred but not necessarily required

221 **3.12**
222 **should not**
223 indicates that a certain possibility or course of action is deprecated but not prohibited

224 **3.13**
225 **unspecified**
226 indicates that this profile does not define any constraints for the referenced CIM element or operation

- 227 **3.14**
228 **Original Destination**
229 the destination of a Text Console Flow before being redirected, modeled as an instance of
230 CIM_LogicalDevice, such as a serial port
- 231 **3.15**
232 **Session**
233 a Text Console Redirection Session
- 234 **3.16**
235 **Service**
236 a Text Console Redirection Service
- 237 **3.17**
238 **Singular Text Console Redirection**
239 a Text Console Redirection in which the MaxCurrentEnabledSAPs property of the
240 CIM_TextRedirectionService instance has a value of 1
- 241 **3.18**
242 **Text Console Flow**
243 the bidirectional text console stream that originally flows to the Original Destination, and may be
244 redirected to a new Text Console Flow destination, which is modeled as an instance of
245 CIM_ProtocolEndpoint
- 246 **3.19**
247 **Text Console Redirection**
248 refers to a text console redirection service session; this is composed of an instance of
249 CIM_TextRedirectionService, an instance of CIM_TextRedirectionSAP, and the instance of the
250 CIM_ServiceAccessBySAP between the two
- 251 **3.20**
252 **Text Console Redirection Session**
253 the instance of CIM_TextRedirectionSAP that is part of a Text Console Redirection Session
- 254 **3.21**
255 **Text Console Redirection Service**
256 the instance of CIM_TextRedirectionService that is part of a Text Console Redirection Session

257 **4 Symbols and Abbreviated Terms**

258 The following abbreviation is used in this document.

- 259 **4.1**
260 **SAP**
261 Service Access Point

- 262 **4.2**
263 **SOL**
264 Serial-over-LAN

265 5 Synopsis

266 **Profile Name:** Text Console Redirection

267 **Version:** 1.0.0

268 **Organization:** DMTF

269 **CIM Schema version:** 2.14.0

270 **Central Class:** CIM_TextRedirectionService

271 **Scoping Class:** CIM_ComputerSystem

272 The *Text Console Redirection Profile* extends the management capability of the referencing profiles by
273 adding the capability to describe information about text console redirections.

274 CIM_TextRedirectionService shall be the Central Class of this profile. The instance of
275 CIM_TextRedirectionService shall be the Central Instance of this profile.

276 CIM_ComputerSystem shall be the Scoping Class of this profile. The instance of CIM_ComputerSystem
277 with which the Central Instance is associated through an instance of CIM_HostedService shall be the
278 Scoping Instance of this profile.

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

280

Table 1 – Referenced Profiles

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

281 6 Description

282 The *Text Console Redirection Profile* describes the necessary elements needed to provide the capability
283 to manage the redirection of a Text Console Flow. The profile could manage the following text redirection
284 capabilities of typical computer systems:

- 285 • Systems can have multiple sources of bidirectional Text Console Flows that can be redirected.
- 286 • Before being redirected, the Text Console Flow has an Original Destination, which is typically a
287 local serial port to which a terminal is connected in order to access the Text Console Flow.
- 288 • A Text Console Flow can be redirected to one or more destinations. A destination can be
289 another serial port or a network port. The network port facilitates remote access to the text
290 console and is known as serial-over-LAN (SOL).
- 291 • The redirection of a Text Console Flow can be accomplished while still delivering the Text
292 Console Flow to its Original Destination.
- 293 • A redirected Text Console Flow can be terminated by embedding a special character sequence
294 into the Text Console Flow.

295 A Text Console Redirection comprises a Text Console Redirection Service, a Text Console Redirection
296 Session, and the relationship between them.

- 297 • The Text Console Redirection Service, also referred to as *Service* in this profile, is represented
298 by an instance of CIM_TextRedirectionService.
- 299 • The Text Console Redirection Session, also referred to as *Session* in this profile, is represented
300 by an instance of CIM_TextRedirectionSAP.

- The relationship between the Service and Session is represented by an instance of CIM_ServiceAccessBySAP.

A Text Console Redirection can be in an active, inactive, or available state. When the Text Console Redirection is active, the Text Console Flow is being actively redirected to a remote console.

The state management of a Text Console Redirection can be performed using two mechanisms. The first mechanism is through state management of the Session only. The second mechanism is through state management of both the Service and the Session.

When state management of the Service is possible, the Service can be in an enabled or disabled state. When state management of the Session is possible, the Session can be in an enabled, disabled, or enabled-but-offline state.

An instance of CIM_TextRedirectionService can be associated with an instance of a concrete subclass of CIM_LogicalDevice that represents the Original Destination of the redirected Text Console Flow. Examples of Original Destinations are serial ports or pseudo-ttys.

An instance of CIM_TextRedirectionSAP can be associated with an instance of CIM_ProtocolEndpoint that represents the endpoint where the redirected Text Console Flow can be accessed.

Figure 1 presents the class diagram for the *Text Console Redirection Profile*. For simplicity, the prefix *CIM_* has been removed from the names of the classes.

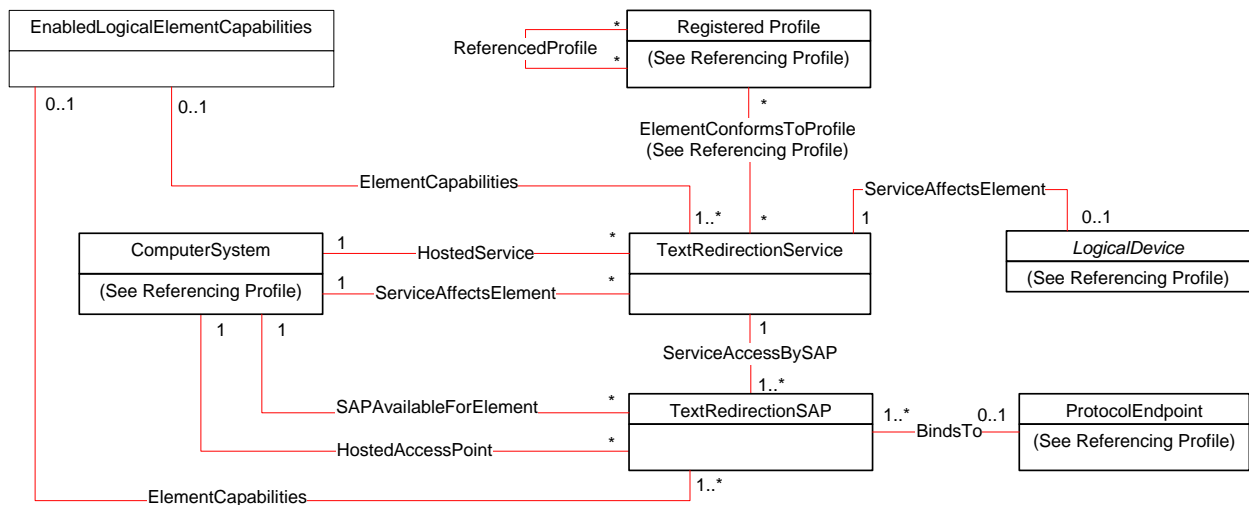


Figure 1 – Text Console Redirection Profile: Class Diagram

7 Implementation

This section details the requirements related to the arrangement of instances and their properties for implementations of this profile. Section 8 describes the class methods required by the profile.

7.1 Representing a Text Console Redirection

A Text Console Redirection comprises an instance of CIM_TextRedirectionService, an instance of CIM_TextRedirectionSAP, and an instance of the CIM_ServiceAccessBySAP association.

An instance of CIM_ServiceAccessBySAP shall be used to associate the instance of CIM_TextRedirectionService with the instance of CIM_TextRedirectionSAP.

328 The CIM_ServiceAccessBySAP association's Antecedent property shall reference the
329 CIM_TextRedirectionService instance, and its Dependent property shall reference the
330 CIM_TextRedirectionSAP instance.

331 **7.2 Representing the Text Console Redirection Service**

332 An instance of CIM_TextRedirectionService shall be used to represent the Text Console Redirection
333 Service, or Service.

334 An instance of the CIM_HostedService association shall associate each instance of
335 CIM_TextRedirectionService with a hosting CIM_ComputerSystem instance.

336 The CIM_HostedService association's Antecedent property shall reference the CIM_ComputerSystem
337 instance, and its Dependent property shall reference the CIM_TextRedirectionService instance.

338 **7.2.1 Representing the Original Destination**

339 The instance of CIM_TextRedirectionService may be associated through an instance of
340 CIM_ServiceAffectsElement to at most one instance of a concrete subclass of CIM_LogicalDevice that
341 represents the Original Destination.

342 The CIM_ServiceAffectsElement association's Antecedent property shall reference the instance of a
343 concrete subclass of CIM_LogicalDevice, and its Dependent property shall reference the instance of
344 CIM_TextRedirectionService.

345 **7.2.2 Representing the System in Which the Original Destination Resides**

346 The instance of CIM_TextRedirectionService shall be associated through an instance of
347 CIM_ServiceAffectsElement with an instance of CIM_ComputerSystem that represents the system in
348 which the Original Destination resides.

349 The CIM_ServiceAffectsElement association's Antecedent property shall reference the
350 CIM_ComputerSystem instance, and its Dependent property shall reference the
351 CIM_TextRedirectionService instance.

352 **7.2.3 Text Console Sharing Mode**

353 When a Text Console Flow is redirected, the redirection may be exclusive or shared. Shared redirection
354 means the Original Destination of the text console is still receiving the Text Console Flow. Exclusive
355 redirection means that the Original Destination is no longer receiving the Text Console Flow.

356 The CIM_TextRedirectionService.SharingMode property shall designate whether a text console
357 redirection is exclusive or shared. A value of 2 (Exclusive) for the SharingMode property shall indicate
358 exclusive redirection. A value of 3 (Shared) for the SharingMode property shall indicate shared
359 redirection.

360 **7.2.4 Maximum Number of Concurrent Redirections**

361 A Text Console Flow may be redirected to multiple access points; however, the number of concurrent
362 redirections may be limited. The limitation could be the result of hardware or software resource limitations.

363 The CIM_TextRedirectionService.MaxCurrentEnabledSAPs property shall contain the maximum number
364 of instances of CIM_TextRedirectionSAP whose EnabledState property is set to 2 (Enabled), which may
365 be associated with the instance of CIM_TextRedirectionService. The Original Destination shall not be
366 counted as one of the redirected text consoles.

367 A Singular Text Console Redirection is a redirection whose instance of CIM_TextRedirectionService has
368 a MaxCurrentEnabledSAPs property with a value of 1.

369 **7.2.5 CIM_TextRedirectionService.ElementName**

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

371 The ElementName property may support being modified by the ModifyInstance operation. See section
372 8.12.1.1. This behavior is conditional. The following sections describe the CIM elements and behavior
373 required to determine whether an implementation supports client modification of the ElementName
374 property.

375 **7.2.5.1 Modifying ElementName Is Supported—Conditional**

376 This section describes the CIM elements and behavior requirements when an implementation supports
377 client modification of the CIM_TextRedirectionService.ElementName property.

378 An instance of CIM_EnabledLogicalElementCapabilities shall be associated with the
379 CIM_TextRedirectionService instance through an instance of CIM_ElementCapabilities.

380 The CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported property shall have a value of
381 TRUE.

382 The CIM_EnabledLogicalElementCapabilities.MaxElementNameLen property shall be implemented.

383 **7.2.5.2 Modifying ElementName Is Not Supported**

384 This section describes the CIM elements and behaviors that shall be implemented when the
385 CIM_TextRedirectionService.ElementName does not support being modified by the ModifyInstance
386 operation.

387 An instance of CIM_EnabledLogicalElementCapabilities may be associated with the
388 CIM_TextRedirectionService instance through an instance of CIM_ElementCapabilities.

389 When an instance of CIM_EnabledLogicalElementCapabilities exists, its ElementNameEditSupported
390 property shall have a value of FALSE.

391 When an instance of CIM_EnabledLogicalElementCapabilities exists, its MaxElementNameLen property
392 may be implemented. The MaxElementNameLen property is irrelevant in this context.

393 **7.2.6 CIM_RedirectionService.RedirectionServiceType**

394 The CIM.TextRedirectionService.RedirectionServiceType property shall be set to 2 (Text).

395 **7.3 Representing the Text Console Redirection Session**

396 An instance of CIM_TextRedirectionSAP shall be used to represent the Text Console Redirection
397 Session, or Session.

398 The Session is associated with computer systems through two associations. One is the computer system
399 whose Text Console Flow is being redirected. The other is the computer system that contains the
400 endpoint where the redirected Text Console Flow can be accessed.

401 The instance of CIM_TextRedirectionSAP shall be associated through an instance of
402 CIM_SAPAvailableForElement with an instance of CIM_ComputerSystem that represents the computer
403 system whose Text Console Flow is being redirected.

404 The CIM_SAPAvailableForElement association's ManagedElement property shall reference the
405 CIM_ComputerSystem instance, and its AvailableSAP property shall reference the
406 CIM_TextRedirectionSAP instance.

407 The instance of CIM_TextRedirectionSAP shall be associated through an instance of
408 CIM_HostedAccessPoint with an instance of CIM_ComputerSystem that represents the computer system
409 that contains the endpoint where the redirect Text Console Flow can be accessed.

410 The CIM_HostedAccessPoint association's Antecedent property shall reference the
411 CIM_ComputerSystem instance, and its Dependent property shall reference the
412 CIM_TextRedirectionSAP instance.

413 **7.3.1 Representing the Destination of the Redirected Text Console Flow**

414 The instance of CIM_TextRedirectionSAP may be associated through an instance of CIM_BindsTo to one
415 instance of CIM_ProtocolEndpoint that represents the endpoint where the redirected Text Console Flow
416 is accessed.

417 The CIM_BindsTo association's Antecedent property shall reference the CIM_ProtocolEndpoint instance,
418 and its Dependent property shall reference the CIM_TextRedirectionSAP instance.

419 **7.3.2 Text Console Flow Format**

420 The redirected Text Console Flow can be formatted. Examples of the Text Console Flow formats are raw
421 character stream and terminal mode. In raw-character-stream format, the characters have no special
422 meaning. In terminal-mode format, the characters have special meaning (for example, backspace).

423 The format of the redirection Text Console Flow shall be designated by the
424 CIM_TextRedirectionSAP.TextFlowType property.

425 When the redirected Text Console Flow format is a raw character stream, the
426 CIM_TextRedirectionSAP.TextFlowType property shall be set to a value of 2 (Character Stream).

427 When the redirected Text Console Flow format is in terminal mode, the
428 CIM_TextRedirectionSAP.TextFlowType property shall be set to a value of 3 (Terminal Mode).

429 When the redirected Text Console Flow format is other than a raw character stream or a terminal mode,
430 the CIM_TextRedirectionSAP.TextFlowType property shall be set to a value of 1 (Other) and the value of
431 CIM_TextRedirectionSAP.OtherTextFlowType shall contain a string that describes the format.

432 **7.3.3 Terminate a Redirected Text Console**

433 A redirected text console session may be terminated through state management of the Text Console
434 Redirection Session (see section 7.4).

435 A redirected text console session can also be terminated from within the Text Console Flow by issuing a
436 specific sequence of characters.

437 When a redirected text console supports being terminated by a specific sequence of characters within the
438 redirected Text Console Flow, the CIM_TextRedirectionSAP.SessionTerminateSequence shall contain
439 the string that terminates the redirected Text Console Flow.

440 **7.3.4 CIM_TextRedirectionSAP.ElementName**

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

442 The ElementName property may support being modified by the ModifyInstance operation. See section
443 8.13.1.1. This behavior is conditional. The following sections describe the CIM elements and behavior
444 required to determine whether an implementation supports client modification of the ElementName
445 property.

446 7.3.4.1 Modifying ElementName Is Supported—Conditional

447 This section describes the CIM elements and behavior requirements when an implementation supports
448 client modification of the CIM_TextRedirectionSAP.ElementName property.

449 An instance of CIM_EnabledLogicalElementCapabilities shall be associated with the
450 CIM_TextRedirectionSAP instance through an instance of CIM_ElementCapabilities.

451 The CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported property shall have a value of
452 TRUE.

453 The CIM_EnabledLogicalElementCapabilities.MaxElementNameLen property shall be implemented.

454 7.3.4.2 Modifying ElementName Is Not Supported

455 This section describes the CIM elements and behaviors that shall be implemented when the
456 CIM_TextRedirectionSAP.ElementName does not support being modified by the ModifyInstance
457 operation.

458 An instance of CIM_EnabledLogicalElementCapabilities may be associated with the
459 CIM_TextRedirectionSAP instance through an instance of CIM_ElementCapabilities.

460 When an instance of CIM_EnabledLogicalElementCapabilities exists, its ElementNameEditSupported
461 property shall have a value of FALSE.

462 When an instance of CIM_EnabledLogicalElementCapabilities exists, its MaxElementNameLen property
463 may be implemented. The MaxElementNameLen property is irrelevant in this context.

464 7.4 State Management of a Text Console Redirection

465 A Text Console Redirection shall have the state *inactive*, *available*, or *active*.

- 466 • The Text Console Redirection is *inactive* when the Text Console Flow is not being redirected to the
467 Session.
- 468 • The Text Console Redirection is *available* when the Text Console Flow is being redirected to the
469 Session, but the session is not actively being used.
- 470 • The Text Console Redirection is *active* when the Text Console Flow is being actively redirected to
471 the Session and the session is actively being used.

472 The state of a Text Console Redirection shall be determined by the state of the instance of
473 CIM_TextRedirectionService and the state of the instance of CIM_TextRedirectionSAP (Session) that are
474 associated through an instance of CIM_ServiceAccessBySAP.

475 The Text Console Redirection shall be in an active state when the state of CIM_TextRedirectionService is
476 2 (Enabled) and the state of the CIM_TextRedirectionSAP is 2 (Enabled).

477 The Text Console Redirection shall be in an available state when the state of
478 CIM_TextRedirectionService is 2 (Enabled) and the state of the CIM_TextRedirectionSAP is 6 (Enabled
479 but Offline).

480 Otherwise, the Text Console Redirection shall be inactive.

481 The state management of the Text Console Redirection may be performed using state management of
482 the Session only, or state management of both the Service and the Session.

483 The state management of the Service is discussed in section 7.5. The state management of the Session
484 is discussed in section 7.6.

485 **7.5 State Management of a Text Console Redirection Service (Optional)**

486 Support for managing the state of a Text Console Redirection Service is optional behavior. The following
487 sections describe the CIM elements and behaviors that allow the client to determine whether state
488 management of the Service is supported.

489 **7.5.1 Text Console Redirection Service State Management Is Supported—Conditional**

490 This section describes the CIM elements and behaviors that shall be implemented when state
491 management of the Service is supported.

492 **7.5.1.1 CIM_EnabledLogicalElementCapabilities**

493 When state management of the Service is supported, exactly one instance of
494 CIM_EnabledLogicalElementCapabilities shall be associated with the instance of
495 CIM_TextRedirectionService through an instance of CIM_ElementCapabilities.

496 The CIM_ElementCapabilities association's ManagedElement property shall reference the
497 CIM_TextRedirectionService instance, and its Capabilities property shall reference the
498 CIM_EnabledLogicalElementCapabilities instance.

499 **7.5.1.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported**

500 The RequestedStatesSupported property shall contain one or more of the following values: 2 (Enabled) or
501 3 (Disabled).

502 **7.5.1.2 CIM_TextRedirectionService.RequestedState**

503 When the CIM_TextRedirectionService.RequestStateChange() method is successfully invoked, the value
504 of the RequestedState property shall be the value of the RequestedState parameter. If the method is not
505 successfully invoked, the value of the RequestedState property is indeterminate.

506 The CIM_TextRedirectionService.RequestedState property shall have one of the values specified in the
507 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property or a value of 0 (Unknown).

508 **7.5.1.3 CIM_TextRedirectionService.EnabledState**

509 The EnabledState property shall have one of the following values: 2 (Enabled) or 3 (Disabled).

510 When the RequestedState parameter has a value of 2 (Enabled) or 3 (Disabled) and the
511 CIM_TextRedirectionService.RequestStateChange() method completes successfully, the value of the
512 EnabledState property shall equal the value of the CIM_TextRedirectionService.RequestedState
513 property.

514 If the method does not complete successfully, the value of the EnabledState property is indeterminate.

515 **7.5.2 Text Console Redirection Service State Management Is Not Supported**

516 This section describes the CIM elements and behaviors that shall be implemented when management of
517 the Service state is not supported.

518 **7.5.2.1 CIM_EnabledLogicalElementCapabilities**

519 When state management is not supported, an instance of CIM_EnabledLogicalElementCapabilities may
520 be associated with the CIM_TextRedirectionService instance through an instance of
521 CIM_ElementCapabilities. The existence of the CIM_ElementCapabilities instance is conditional on the
522 existence of the CIM_EnabledLogicalElementCapabilities instance.

523 The CIM_ElementCapabilities association's ManagedElement property shall reference the
524 CIM_TextRedirectionService instance, and its Dependent property shall reference the
525 CIM_EnabledLogicalElementCapabilities instance.

526 **7.5.2.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported**

527 The CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property shall not contain any
528 values.

529 **7.5.2.2 CIM_TextRedirectionService.RequestedState**

530 The RequestedState property shall have the value of 12 (Not Applicable).

531 **7.5.2.3 CIM_TextRedirectionService.EnabledState**

532 The EnabledState property shall have one of the following values: 2 (Enabled), 3 (Disabled), or 0
533 (Unknown). The value 0 (Unknown) may be set when non-CIM instrumentation has manipulated the
534 instance of CIM_TextRedirectionService.

535 **7.6 State Management of a Text Console Redirection Session (Optional)**

536 Support for managing the state of a Text Console Redirection Session is optional behavior. The following
537 sections describe the CIM elements and behaviors that allow the client to determine whether state
538 management of the Session is supported.

539 **7.6.1 Session State Management Is Supported—Conditional**

540 This section describes the CIM elements and behaviors that shall be implemented when state
541 management of the Session is supported.

542 **7.6.1.1 CIM_EnabledLogicalElementCapabilities**

543 When state management of the Session is supported, exactly one instance of
544 CIM_EnabledLogicalElementCapabilities shall be associated with each instance of
545 CIM_TextRedirectionSAP through an instance of CIM_ElementCapabilities.

546 The CIM_ElementCapabilities association's ManagedElement property shall reference the
547 CIM_TextRedirectionSAP instance, and its Dependent property shall reference the
548 CIM_EnabledLogicalElementCapabilities instance.

549 **7.6.1.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported**

550 The RequestedStatesSupported property shall contain one or more of the following values: 2 (Enabled), 3
551 (Disabled), or 6 (Offline).

552 **7.6.1.2 CIM_TextRedirectionSAP.RequestedState**

553 When the CIM_TextRedirectionSAP.RequestStateChange() method is successfully invoked, the value of
554 the RequestedState property shall be the value of the RequestedState parameter. If the method is not
555 successfully invoked, the value of the RequestedState property is indeterminate.

556 The CIM_TextRedirectionSAP.RequestedState property shall have one of the values specified in the
557 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property or a value of 0 (Unknown).

558 **7.6.1.3 CIM_TextRedirectionSAP.EnabledState**

559 The EnabledState property shall have one of the following values: 2 (Enabled), 3 (Disabled), or 6
560 (Enabled but Offline).

561 When the RequestedState parameter has a value of 2 (Enabled), 3 (Disabled), or 6 (Offline) and the
562 CIM_TextRedirectionSAP.RequestStateChange() method completes successfully, the value of the
563 EnabledState property shall equal the value of the CIM_TextRedirectionSAP.RequestedState property.

564 If the method does not complete successfully, the value of the EnabledState property is indeterminate.

565 **7.6.2 Text Console Redirection Session State Management Is Not Supported**

566 This section describes the CIM elements and behaviors that shall be implemented when management of
567 the Session state is not supported.

568 **7.6.2.1 CIM_EnabledLogicalElementCapabilities**

569 When state management is not supported, an instance of CIM_EnabledLogicalElementCapabilities may
570 be associated with the CIM_TextRedirectionSAP instance through an instance of
571 CIM_ElementCapabilities. The existence of the CIM_ElementCapabilities instance is conditional on the
572 existence of the CIM_EnabledLogicalElementCapabilities instance.

573 The CIM_ElementCapabilities association's ManagedElement property shall reference the
574 CIM_TextRedirectionSAP instance, and its Dependent property shall reference the
575 CIM_EnabledLogicalElementCapabilities instance.

576 **7.6.2.1.1 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported**

577 The CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property shall not contain any
578 values.

579 **7.6.2.2 CIM_TextRedirectionSAP.RequestedState**

580 The RequestedState property shall have the value of 12 (Not Applicable).

581 **7.6.2.3 CIM_TextRedirectionSAP.EnabledState**

582 The EnabledState property shall have one of the following values: 2 (Enabled), 3 (Disabled), 5 (Not
583 Applicable), or 6 (Enabled but Offline). The value 5 (Not Applicable) may be set when non-CIM
584 instrumentation has manipulated the instance of CIM_TextRedirectionSAP.

585 **8 Methods**

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

588 **8.1 CIM_TextRedirectionService.RequestStateChange()**

589 Invocation of the RequestStateChange() method changes the element's state to the value specified in the
590 RequestedState parameter. The 2 (Enabled) and 3 (Disabled) values of the RequestedState parameter
591 shall correspond to the enabled and disabled states of the Text Console Redirection Service,
592 respectively.

593 Whether the method completes successfully if there are active sessions is specific to the implementation.

594 Detailed requirements of the RequestStateChange() method are specified in Table 2 and Table 3.

595 No standard messages are defined.

596 Invoking the RequestStateChange() method multiple times could result in earlier requests being
597 overwritten or lost.

598 **Table 2 – CIM_TextRedirectionService.RequestStateChange() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
1	Method is unsupported.
2	Error occurred.
4096	Job started: REF returned to started CIM_ConcreteJob.

599 **Table 3 – CIM_TextRedirectionService.RequestStateChange() Method: Parameters**

Qualifiers	Name	Type	Description/Values
IN	RequestedState	uint16	Valid state values: 2 (Enabled) 3 (Disabled)
OUT	Job	CIM_ConcreteJob REF	Returned if job started
IN	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

600 **8.1.1 CIM_TextRedirectionService.RequestStateChange()—Conditional Support**

601 When an instance of CIM_EnabledLogicalElementCapabilities is associated with the
602 CIM_TextRedirectionService instance and the
603 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property contains at least one
604 value, the CIM_TextRedirectionService.RequestStateChange() method shall be implemented and
605 supported. The CIM_TextRedirectionService.RequestStateChange() method shall not return a value of 1
606 (Not Supported).

607 **8.2 CIM_TextRedirectionSAP.RequestStateChange()**

608 Invocation of the RequestStateChange() method changes the element's state to the value specified in the
609 RequestedState parameter. The 2 (Enabled), 3 (Disabled), and 6 (Enabled but Offline) values of the
610 RequestedState parameter shall correspond to enabled, disabled, and enabled-but-offline states for the
611 Session, respectively.

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

613 No standard messages are defined.

614 Invoking the RequestStateChange() method multiple times could result in earlier requests being
615 overwritten or lost.

616 **Table 4 – CIM_TextRedirectionSAP.RequestStateChange() Method: Return Code Values**

Value	Description
0	Request was successfully executed.
1	Method is unsupported.
2	Error occurred.
4096	Job started: REF returned to started CIM_ConcreteJob.

Table 5 – CIM_TextRedirectionSAP.RequestStateChange() Method: Parameters

Qualifiers	Name	Type	Description/Values
IN	RequestedState	uint16	Valid state values: 2 (Enabled) 3 (Disabled) 6 (Offline)
OUT	Job	CIM_ConcreteJob REF	Returned if job started
IN	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

618 **8.2.1 CIM_TextRedirectionSAP.RequestStateChange()—Conditional Support**

619 When an instance of CIM_EnabledLogicalElementCapabilities is associated with the
620 CIM_TextRedirectionSAP instance and the
621 CIM_EnabledLogicalElementCapabilities.RequestedStatesSupported property contains at least one
622 value, the CIM_TextRedirectionSAP.RequestStateChange() method shall be implemented and
623 supported. The CIM_TextRedirectionSAP.RequestStateChange() method shall not return a value of
624 1 (Not Supported).

625 **8.2.2 Enabling a Singular Text Console Redirection**

626 When the instance of CIM_TextRedirectionSAP is associated with an instance of
627 CIM_TextRedirectionService whose MaxCurrentEnabledSAPs property has a value of 1, the method shall
628 exhibit the following additional behavior.

629 When the CIM_TextRedirectionSAP.RequestedState parameter has a value of 2 (Enabled) and the
630 CIM_TextRedirectionSAP.RequestStateChange() method completes successfully, the value of the
631 EnabledState property of all other instances of CIM_TextRedirectionSAP associated with the instance of
632 CIM_TextRedirectionService shall be set to 6 (Enabled but Offline).

633 **8.3 Profile Conventions for Operations**

634 Support for operations for each profile class (including associations) is specified in the following
635 subclauses. Each subclause includes either the statement “All operations in the default list in section 8.3
636 are supported as described by [DSP0200 version 1.2](#)” or a table listing all of the operations that are not
637 supported by this profile or where the profile requires behavior other than that described by
638 [DSP0200 version 1.2](#).

639 The default list of operations is as follows:

- 640 • GetInstance
- 641 • Associators
- 642 • AssociatorNames
- 643 • References
- 644 • ReferenceNames
- 645 • EnumerateInstances
- 646 • EnumerateInstanceNames

647 A compliant implementation shall support all of the operations in the default list for each class, unless the
648 "Requirement" column states something other than *Mandatory*.

649 **8.4 CIM_BindsTo**

650 Table 6 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#) or
651 shall not be supported.

652 **Table 6 – Operations: CIM_BindsTo**

Operation	Requirement	Messages
GetInstance	Mandatory	None

653 **8.5 CIM_DeviceSAPImplementation**

654 Table 7 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#) or
655 shall not be supported.

656 **Table 7 – Operations: CIM_DeviceSAPImplementation**

Operation	Requirement	Messages
GetInstance	Mandatory	None

657 **8.6 CIM_ElementCapabilities**

658 Table 8 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#) or
659 shall not be supported.

660 **Table 8 – Operations: CIM_ElementCapabilities**

Operation	Requirement	Messages
GetInstance	Mandatory	None

661 **8.7 CIM_EnabledLogicalElementCapabilities**

662 Table 9 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#) or
663 shall not be supported.

664 **Table 9 – Operations: CIM_EnabledLogicalElementCapabilities**

Operation	Requirement	Messages
GetInstance	Mandatory	None
Associators	Mandatory	None
AssociatorNames	Mandatory	None
References	Mandatory	None
ReferenceNames	Mandatory	None
EnumerateInstances	Mandatory	None
EnumerateInstanceNames	Mandatory	None

665 **8.8 CIM_HostedService**

666 Table 10 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#)
667 or shall not be supported.

668 **Table 10 – Operations: CIM_HostedService**

Operation	Requirement	Messages
GetInstance	Mandatory	None

669 **8.9 CIM_HostedAccessPoint**

670 Table 11 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#)
671 or shall not be supported.

672 **Table 11 – Operations: CIM_HostedAccessPoint**

Operation	Requirement	Messages
GetInstance	Mandatory	None

673 **8.10 CIM_ServiceAffectsElement**

674 Table 12 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#)
675 or shall not be supported.

676 **Table 12 – Operations: CIM_ServiceAffectsElement**

Operation	Requirement	Messages
GetInstance	Mandatory	None

677 **8.11 CIM_ServiceAccessBySAP**

678 Table 13 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#)
679 or shall not be supported.

680 **Table 13 – Operations: CIM_ServiceAccessBySAP**

Operation	Requirement	Messages
GetInstance	Mandatory	None

681 **8.12 CIM_TextRedirectionService**

682 Table 14 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#)
 683 or shall not be supported.

684 **Table 14 – Operations: CIM_TextRedirectionService**

Operation	Requirement	Messages
GetInstance	Mandatory	None
ModifyInstance	Optional	See section 8.12.1.
Associators	Mandatory	None
AssociatorNames	Mandatory	None
References	Mandatory	None
ReferenceNames	Mandatory	None
EnumerateInstances	Mandatory	None
EnumerateInstanceNames	Mandatory	None

685 **8.12.1 CIM_TextRedirectionService—ModifyInstance**

686 This section details the specific requirements for the ModifyInstance operation applied to an instance of
 687 CIM_TextRedirectionService.

688 **8.12.1.1 CIM_TextRedirectionService.ElementName Property**

689 When an instance of CIM_EnabledLogicalElementCapabilities is associated with the
 690 CIM_TextRedirectionService instance and the
 691 CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported property has a value of TRUE, the
 692 implementation shall allow the ModifyInstance operation to change the value of the ElementName
 693 property of the CIM_TextRedirectionService instance. The ModifyInstance operation shall enforce the
 694 length restriction specified in the MaxElementNameLen property of the
 695 CIM_EnabledLogicalElementCapabilities instance.

696 When no instance of CIM_EnabledLogicalElementCapabilities is associated with the
 697 CIM_TextRedirectionService instance, or the ElementNameEditSupported property of the
 698 CIM_EnabledLogicalElementCapabilities instance has a value of FALSE, the implementation shall not
 699 allow the ModifyInstance operation to change the value of the ElementName property of the
 700 CIM_TextRedirectionService instance.

701 **8.13 CIM_TextRedirectionSAP**

702 Table 15 lists operations that either have special requirements beyond those from [DSP0200 version 1.2](#)
703 or shall not be supported.

704 **Table 15 – Operations: CIM_TextRedirectionSAP**

Operation	Requirement	Messages
GetInstance	Mandatory	None
ModifyInstance	Optional	See section 8.13.1.
Associators	Mandatory	None
AssociatorNames	Mandatory	None
References	Mandatory	None
ReferenceNames	Mandatory	None
EnumerateInstances	Mandatory	None
EnumerateInstanceNames	Mandatory	None

705 **8.13.1 CIM_TextRedirectionSAP—ModifyInstance**

706 This section details the specific requirements for the ModifyInstance operation applied to an instance of
707 CIM_TextRedirectionSAP.

708 **8.13.1.1 CIM_TextRedirectionSAP.ElementName Property**

709 When an instance of CIM_EnabledLogicalElementCapabilities is associated with the
710 CIM_TextRedirectionSAP instance and the
711 CIM_EnabledLogicalElementCapabilities.ElementNameEditSupported property has a value of TRUE, the
712 implementation shall allow the ModifyInstance operation to change the value of the ElementName
713 property of the CIM_TextRedirectionSAP instance. The ModifyInstance operation shall enforce the length
714 restriction specified in the MaxElementNameLen property of the CIM_EnabledLogicalElementCapabilities
715 instance.

716 When no instance of CIM_EnabledLogicalElementCapabilities is associated with the
717 CIM_TextRedirectionSAP instance, or the ElementNameEditSupported property of the
718 CIM_EnabledLogicalElementCapabilities instance has a value of FALSE, the implementation shall not
719 allow the ModifyInstance operation to change the value of the ElementName property of the
720 CIM_TextRedirectionSAP instance.

721 **9 Use Cases**

722 This section contains object diagrams and use cases specific to the *Text Console Redirection Profile*. The
723 use cases are informative and are not intended to define the requirements for conformance.

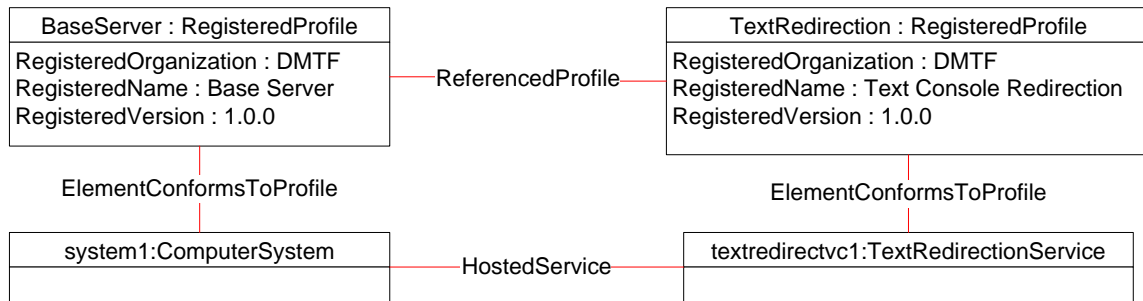
724 **9.1 Advertising the Profile Conformance**

725 Figure 2 shows how instances of CIM_RegisteredProfile are used to identify the version of the *Text*
726 *Console Redirection Profile* with which an instance of CIM_TextRedirectionService and its associated
727 instances conform.

728 An instance of CIM_RegisteredProfile exists for each profile that is instrumented in the system. One
729 instance of CIM_RegisteredProfile identifies the DMTF *Base Server Profile*, version 1.0.0. The other
730 instance identifies the *Text Console Redirection Profile*, version 1.0.0. The Central Instance is the
731 CIM_TextRedirectionService. The Scoping Instance is the CIM_ComputerSystem instance.

732 This instance of CIM_ComputerSystem conforms with the *Base Server Profile* version 1.0.0 as indicated
 733 by the CIM_ElementConformsToProfile association with the CIM_RegisteredProfile instance.

734 This instance of CIM_TextRedirectionService conforms with the *Text Console Redirection Profile* version
 735 1.0.0 as indicated by the CIM_ElementConformsToProfile association with the CIM_RegisteredProfile
 736 instance.



737

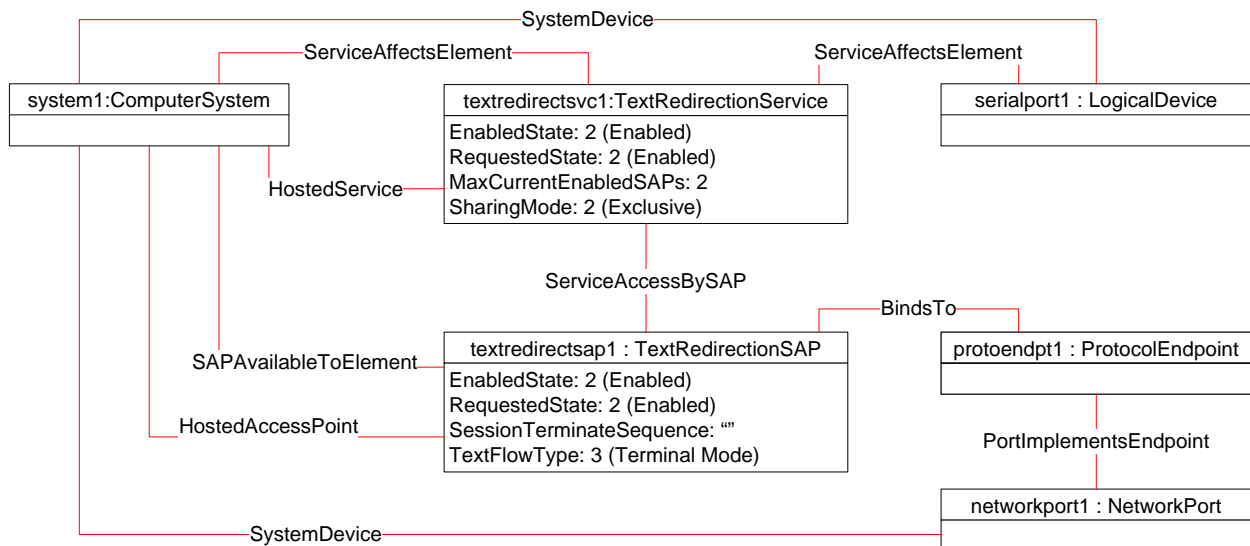
738

Figure 2 – Registered Profile

739 **9.2 Object Diagrams for a Monolithic Server**

740 Figure 3 shows a monolithic server, system1, which has a text console redirection service that can
 741 redirect the text console from the serial port to the network port. Both the serial port and the network port
 742 are part of system1 and are modeled by the instances of CIM_SystemDevice.

743 The text console session is represented with a source (textredirectsvc1), a destination (textredirectsap1),
 744 and the instance of the CIM_ServiceAccessBySAP association between them. The Text Console
 745 Redirection Service (textredirectsvc1) is hosted on system1 as represented by the CIM_HostedService
 746 association between system1 and textredirectsvc1. The service (textredirectsvc1) affects system1 as
 747 represented by the CIM_ServiceAffectsElement association between system1 and textredirectsvc1. This
 748 association signifies that system1 is the source of the text console that can be redirected.



749

750

Figure 3 – Monolithic System

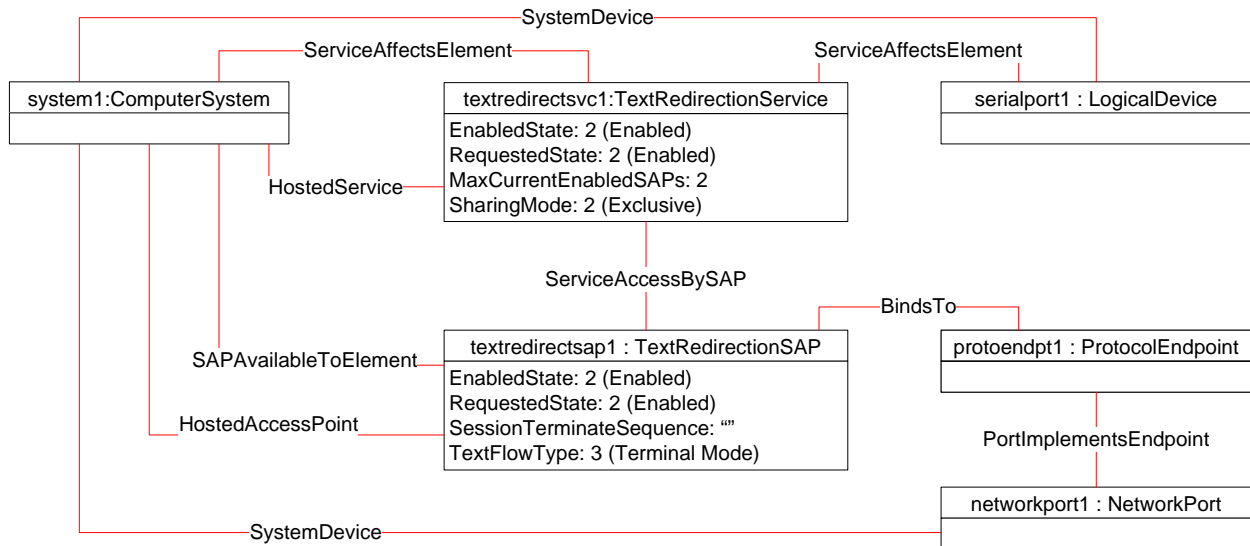
751 The service also affects serialport1 as represented by the CIM_ServiceAffectsElement association
 752 between serialport1 and textredirectsvc1. serialport1 is an instance of CIM_LogicalDevice. This
 753 association signifies that serialport1 is the Original Destination of a text console that can be redirected.

754 The Text Console Redirection Session (textredirectsap1) is hosted on system1 as represented by the
 755 CIM_HostedAccessPoint association between system1 and textredirectsap1. The Session
 756 (textredirectsap1) provides a SAP for system1 as represented by the CIM_SAPAvailableForElement
 757 association between system1 and textredirectsap1.

758 From textredirectsap1, the CIM_BindsTo association can be traversed to the CIM_ProtocolEndpoint
 759 (protoendpt1). Note that the CIM_ProtocolEndpoint can represent any protocol endpoint, such as SSH,
 760 Telnet or TCP. From protoendpt1, the CIM_PortImplementsEndpoint association can be traversed to the
 761 network port (networkport1), a device on system1.

762 The Text Console Redirection specified by textredirectsvc1 and textredirectsap1 is active because the
 763 state of the textredirectsvc1 is 2 (Enabled) and the state of the textredirectsap1 is 2 (Enabled).

764 Figure 4 shows a monolithic server, system1, which has a text console redirection service that can
 765 redirect the text console from the serial port (serialport1) to another serial port (serialport2) on the system.
 766 Both the serial ports are part of system1 and are modeled by the instances of CIM_SystemDevice.



767

768 **Figure 4 – Monolithic System—Serial to Serial**

769 **9.3 Object Diagram for Monolithic Server with Service Processor**

770 Figure 5 shows a monolithic server with a service processor.

771 The diagram is similar to Figure 3, but Figure 5 contains an instance of CIM_ComputerSystem, sp1, that
 772 represents the service processor, which has a network port.

773 The Text Console Redirection Service (textredirectsvc1) is hosted on sp1 as represented by the
 774 CIM_HostedService association between sp1 and textredirectsvc1.

775 The service affects system1 as represented by the CIM_ServiceAffectsElement association between
 776 system1 and textredirectsvc1. This association signifies that system1 is the source of the text console that
 777 can be redirected.

778 The service also affects serialport1 as represented by the CIM_ServiceAffectsElement association
 779 between serialport1 and textredirectsvc1. This association signifies that serialport1 is the Original
 780 Destination of a text console that can be redirected.

781 The Text Console Redirection Session (textredirectsap1) is hosted on sp1 as represented by the
 782 CIM_HostedAccessPoint association between sp1 and textredirectsap1. The Session (textredirectsap1)
 783 provides a SAP for system1 as represented by the CIM_SAPAvailableForElement association between
 784 system1 and textredirectsap1.

785 From textredirectsap1, the CIM_BindsTo association can be traversed to the CIM_ProtocolEndpoint
 786 (protoendpt1). From protoendpt1, the CIM_PortImplementsEndpoint association can be traversed to the
 787 network port (networkport1), a device on sp1.

788 The Text Console Redirection specified by textredirectsvc1 and textredirectsap1 is active because the
 789 state of the textredirectsvc1 is 2 (Enabled) and the state of the textredirectsap1 is 2 (Enabled).

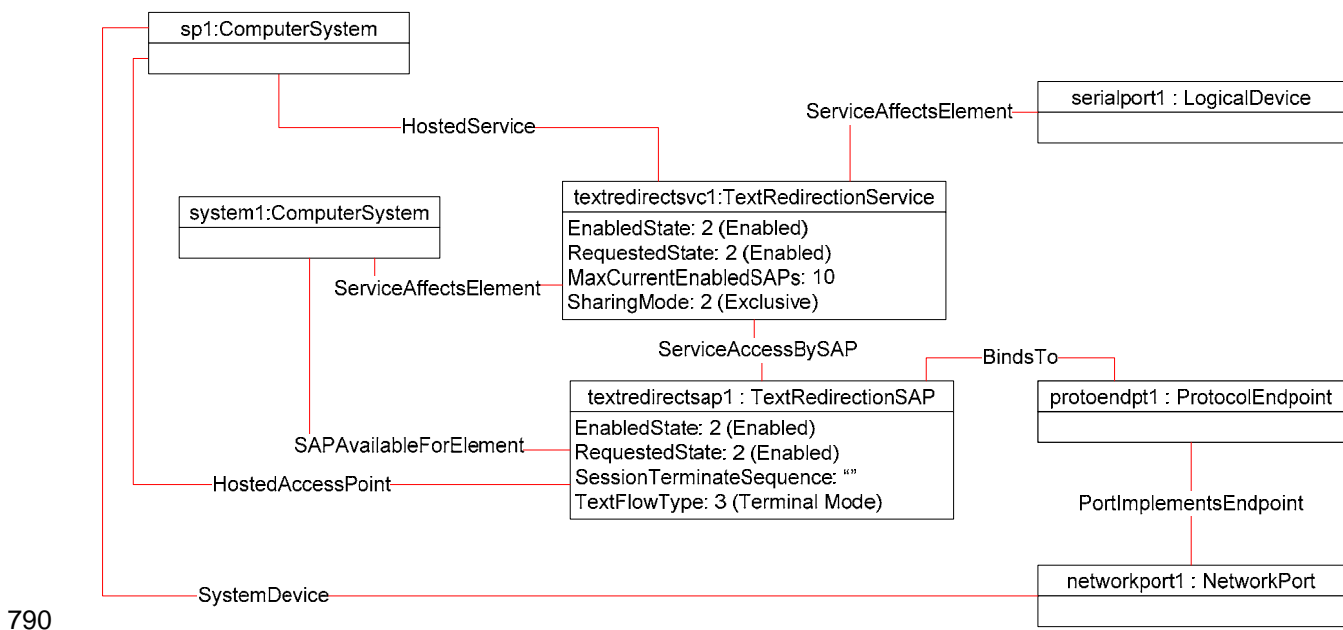


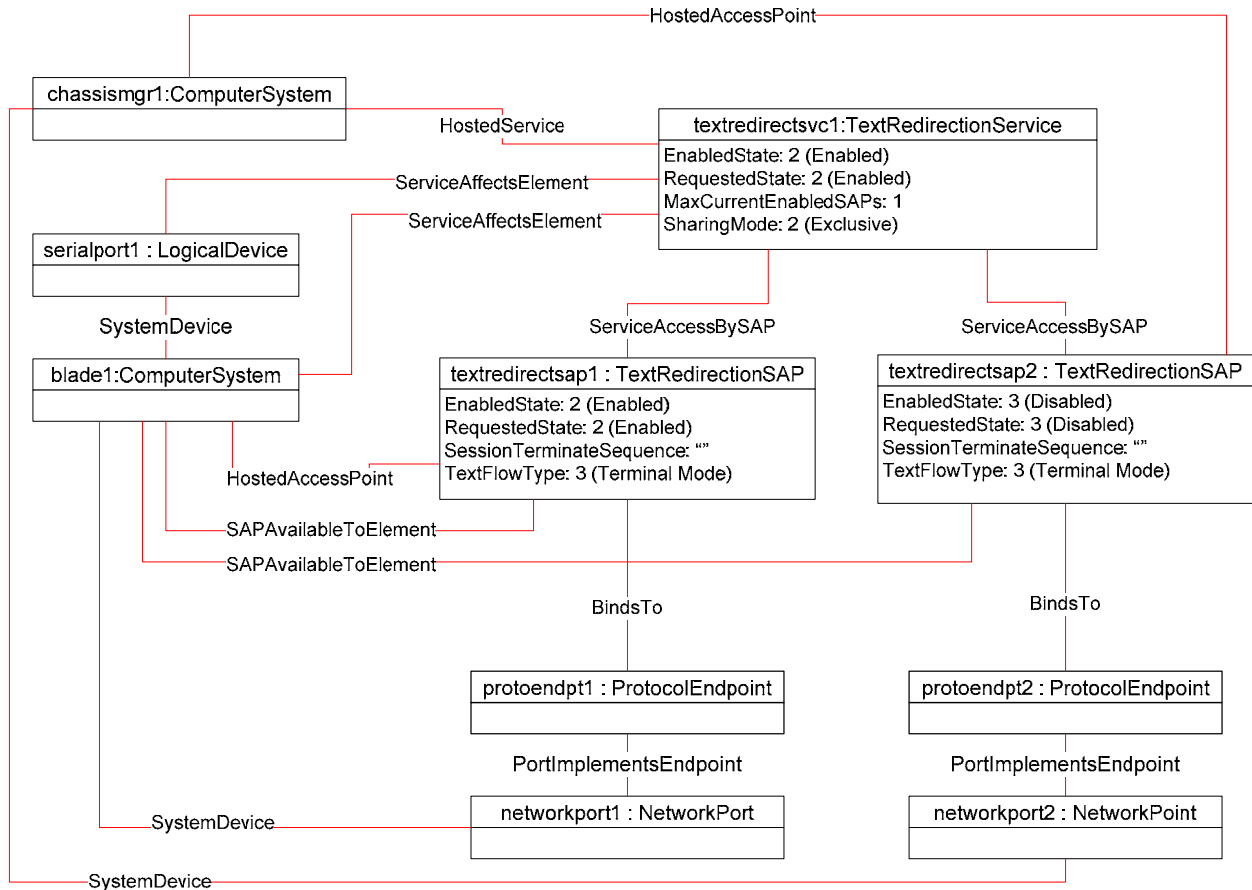
Figure 5 – Monolithic System with Service Processor

792 9.4 Object Diagram for a Modular System

793 The Figure 6 shows a modular system that can redirect the serial port on a blade to the network port of
 794 the chassis management module (CMM) or the network port of the blade. The CMM is represented by an
 795 instance of CIM_ComputerSystem, chassismgr1. The blade is represented by an instance of
 796 CIM_ComputerSystem, blade1.

797 The Text Console Redirection Service (textredirectsvc1) is hosted on chassismgr1 as represented by the
 798 CIM_HostedService association between chassismgr1 and textredirectsvc1. The service affects blade1
 799 as represented by the CIM_ServiceAffectsElement association between blade1 and textredirectsvc1. This
 800 association signifies that blade1 is the source of the text console that can be redirected.

801 The service also affects serialport1 as represented by the CIM_ServiceAffectsElement association
 802 between serialport1 and textredirectsvc1. This association signifies that serialport1 is the Original
 803 Destination of a text console that can be redirected. The instance serialport1 is associated to blade1
 804 through an instance of CIM_SystemDevice.



805
806

807

Figure 6 – Modular System

808 Two Text Console Redirection Sessions exist: textredirectsap1 and textredirectsap2. Each is associated
809 with the Service through an instance of CIM_ServiceAccessBySAP.

810 One Text Console Redirection Session (textredirectsap1) is hosted on blade1, as represented by the
811 CIM_HostedAccessPoint association between blade1 and textredirectsap1. The Session
812 (textredirectsap1) provides a SAP for blade1, as represented by the CIM_SAPAvailableForElement
813 association between blade1 and textredirectsap1.

814 From textredirectsap1, the CIM_BindsTo association can be traversed to the CIM_ProtocolEndpoint
815 (protoendpt1). From protoendpt1, the CIM_PortImplementsEndpoint association can be traversed to the
816 network port (networkport1), a device on blade1.

817 The other Text Console Redirection Session (textredirectsap2) is hosted on chassismgr1 as represented
818 by the CIM_HostedAccessPoint association between chassismgr1 and textredirectsap2. The Session
819 (textredirectsap2) also provides a SAP for blade1, as represented by the CIM_SAPAvailableForElement
820 association between blade1 and textredirectsap2.

821 From textredirectsap2, the CIM_BindsTo association can be traversed to the CIM_ProtocolEndpoint
822 (protoendpt2). From protoendpt2, the CIM_PortImplementsEndpoint association can be traversed to the
823 network port (networkport2), a device on chassismgr1.

824 Note that both textredirectsap1 and textredirectsap2 are associated with blade1 through the
 825 CIM_SAPAvailableForElement association, because blade1 is the source of the text console redirection
 826 regardless of whether the SAP is hosted on the blade1 or chassismgr1.

827 In the figure, the Text Console Redirection specified by textredirectsvc1 and textredirectsap1 is active
 828 because the state of textredirectsvc1 is 2 (Enabled) and the state of textredirectsap1 is 2 (Enabled). The
 829 state of textredirectsap2 is 3 (Disabled), which means that the session specified by textredirectsvc1 and
 830 textredirectsap2 is not permitted to be made active.

831 **9.5 Determine Whether a System Has Text Consoles That Can Be Redirected**

832 A client can determine whether a computer system of interest has text consoles that can be redirected as
 833 follows:

834 1) Start at the instance of CIM_ComputerSystem that represents the computer system whose text
 835 consoles are of interest.

836 2) Enumerate the instances of the CIM_TextRedirectionService that are associated with the
 837 CIM_ComputerSystem instance through an instance of CIM_ServiceAffectsElement.

838 If the enumeration is zero, the computer system has no text console that can be redirected.

839 Otherwise, the computer system has at least one text console that can be redirected. Each
 840 instance of CIM_TextRedirectionService represents a Service on the computer system.

841 **9.6 Determine Whether a Serial Port Can Be Redirected**

842 A client can determine whether a serial port of interest can be redirected as follows:

843 1) Start at the instance of CIM_LogicalDevice that represents the serial port of interest.

844 2) Enumerate the instances of the CIM_TextRedirectionService that are associated with the
 845 CIM_LogicalDevice through an instance of CIM_ServiceAffectsElement.

846 If the enumeration is zero, the serial port cannot be redirected.

847 Otherwise, the serial port of interest is the Original Destination for at least one Text Console
 848 Redirection. Each Text Console Redirection can be found by using the
 849 CIM_TextRedirectionService instance as the Service.

850 **9.7 Find the Text Console Redirection Services for a Computer System**

851 A client can determine the Text Console Redirection Service on a computer system of interest as follows:

852 1) Start at the instance of CIM_ComputerSystem that represents the computer system of interest.

853 2) Enumerate the instances of the CIM_TextRedirectionService that are associated with the
 854 CIM_ComputerSystem through an instance of CIM_ServiceAffectsElement.

855 Each instance of CIM_TextRedirectionService is a Text Console Redirection Service for the
 856 computer system of interest.

857 **9.8 Find the Original Destinations on a Computer System**

858 A client can determine the sources of Text Console Flows (or Original Destinations) on a computer
 859 system of interest as follows:

860 1) Start at the instance of CIM_ComputerSystem that represents the computer system of interest.

861 2) Determine the Text Console Redirection Services for the computer system by using the use
 862 case in section 9.7.

863 3) From each instance of CIM_TextRedirectionService found, determine if an instance of
864 CIM_LogicalDevice is associated with the instance of CIM_TextRedirectionService through an
865 instance of CIM_ServiceAffectsElement.

866 If an instance of CIM_LogicalDevice does not exist, there may be no further information to
867 determine the Original Destination of the Text Console Redirection Service.

868 Each instance of CIM_LogicalDevice found is an Original Destination for the computer system
869 of interest.

870 **9.9 Find the Text Console Redirection Sessions for a Service**

871 A client can determine the Text Console Redirection Sessions for a Service of interest as follows:

- 872 1) Start at the instance of CIM_TextRedirectionService of interest. (The instance can be found
873 using the use case in section 9.6.)
- 874 2) Enumerate the instances of CIM_TextRedirectionSAP that are associated through an instance
875 of CIM_ServiceAccessBySAP.
- 876 3) Each instance of CIM_TextRedirectionSAP is a Text Console Redirection Session for the
877 computer system of interest.

878 **9.10 Find the Destinations for the Redirected Text Console Flow for a Service**

879 A client can determine the text console redirection destinations redirected from a Service of interest as
880 follows:

- 881 1) Start at the instance of CIM_TextRedirectionService of interest. (The instance can be found
882 using the use case in section 9.6.)
- 883 2) Determine the Text Console Redirection Sessions using the use case in section 9.9.
- 884 3) From each instance of CIM_TextRedirectionSAP, determine an instance of a subclass of
885 CIM_ProtocolEndpoint is associated with the instance of CIM_TextRedirectionSAP through an
886 instance of CIM_BindsTo.

887 If an instance of CIM_ProtocolEndpoint does not exist, there may be no further information to
888 determine the Destination of the Text Console Redirection Session.

- 889 4) Otherwise, for each instance of CIM_ProtocolEndpoint found, traverse the
890 CIM_PortImplementsEndpoint association to the instance of CIM_NetworkPort or
891 CIM_LogicalDevice.

892 Each instance of CIM_NetworkPort or CIM_LogicalDevice is a destination of the redirected Text
893 Console Flow for the Service.

894 **9.11 Find a Text Console Redirection**

895 Finding a Text Console Redirection involves finding the Text Console Redirection Service and the Text
896 Console Redirection Session.

897 A client can find a Text Console Redirection as follows:

- 898 1) Use the steps described in section 9.7 to find the CIM_TextRedirectionService instance of
899 interest.
- 900 2) Use the steps described in section 9.9 to find the CIM_TextRedirectionSAP instance of interest.

901 The instance of CIM_TextRedirectionService and instance of CIM_TextRedirectionSAP are
902 components the Text Console Redirection of interest.

9.12 Determine Whether the CLP Session Is Being Used as the Redirected Text Console Destination

A client can determine whether the CLP session is being used as a destination for redirected Text Console Flow as follows:

- 1) Start at the instance of CIM_CLPProtocolEndpoint that represents the protocol endpoint used for the CLP session.
- 2) Enumerate the CIM_BindsTo associations that reference an instance of CIM_TextRedirectionSAP.

If the enumeration returns zero, the redirected text console does not use the CLP session.

Otherwise, each Text Console Redirection Session found uses the CLP session as the destination for a redirection Text Console Flow when activated.

9.13 Determine the Type of Text Console Redirection State Management Supported

A client can determine whether a Text Console Redirection is managed through the state of Session only or through the states of both the Service and Session, as follows:

- 1) Start at the instance of CIM_TextRedirectionService that is a part of the Text Console Redirection of interest.
- 2) Determine whether an instance of CIM_ElementCapabilities exists that associates the instance of CIM_TextRedirectionService with an instance of CIM_EnabledLogicalElementCapabilities.

If the instance does not exist, the Text Console Redirection Session is managed through the state of the Session only.

- 3) Otherwise, on the instance of CIM_EnabledLogicalElementCapabilities found, query the value of the RequestedStateSupported property array.

If the RequestedStatesSupported property array contains no values, the Text Console Redirection is managed through the state of the Session only.

Otherwise, the Text Console Redirection can be managed through the state of both the Service and the Session.

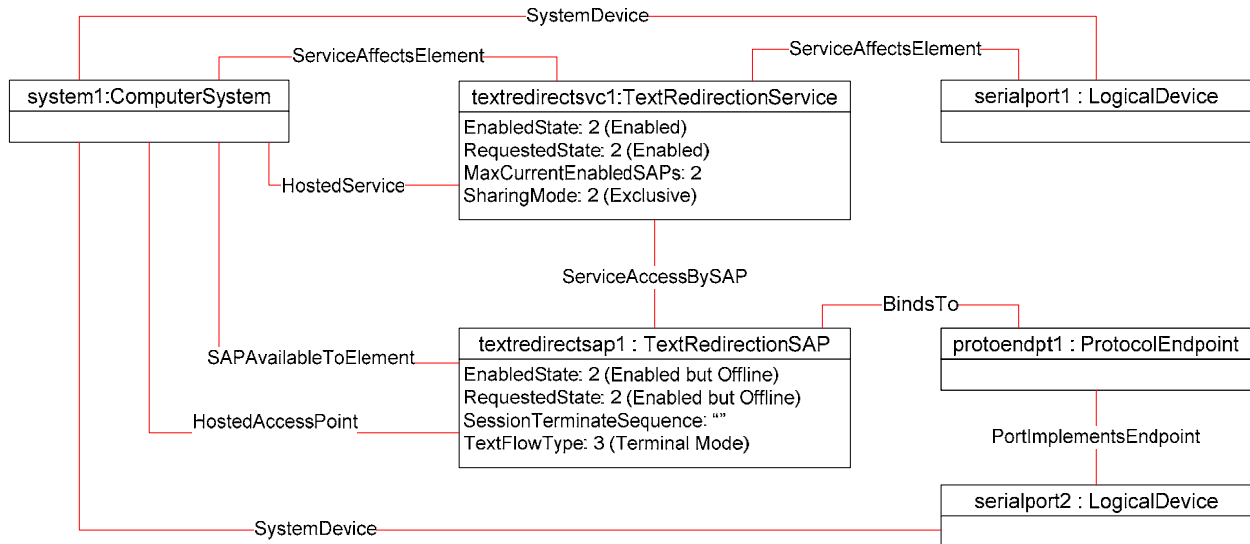
9.14 Activate a Text Console Redirection Session—Session Only

When the Text Console Redirection is managed through the state of the Session only, a client can start a text console redirection as follows:

- 1) Start at the instance of the CIM_TextRedirectionSAP that is a component of the Text Console Redirection of interest.
- 2) Invoke the RequestStateChange() method with the RequestedState parameter set to 2 (Enabled).
- 3) Verify that the CIM_TextRedirectionSAP.EnabledState property is set to a value of 2 (Enabled).

The Text Console Redirection is now active.

Figure 7 shows an initial state of the Text Console Redirection as inactive because the state of textredirectsvc1 is 2 (Enabled), but the state of textredirectsap1 is 6 (Enabled but Offline). The preceding steps change the state of textredirectsap1 to 2 (Enabled), thereby activating the Text Console Redirection specified by textredirectsvc1 and textredirectsap1. The diagram of the active Text Console Redirection will look like Figure 3.



944

945

Figure 7 – Initial State of a Redirection Managed Through the Session State Only

946

9.15 Activate a Singular Text Console Redirection

947

When the Text Console Redirection is a Singular Text Console Redirection, a client can atomically activate a Text Console Redirection and deactivate a previously activated Text Console Redirection (see section 8.2.2).

948

949

This behavior is accomplished as follows:

950

- 1) Start at the instance of the CIM_TextRedirectionSAP that is a component of the Text Console Redirection of interest.
- 2) Invoke the RequestStateChange() method with the RequestedState parameter set to 2 (Enabled).
- 3) Verify that the CIM_TextRedirectionSAP.EnabledState property is set to a value of 2 (Enabled).

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The Text Console Redirection is now active and any previously active session is now inactive.

956

957

Figure 8 shows the object diagram of the initial state of a Singular Text Console Redirection. Note that the MaxCurrentEnabledSAPs property of textredirectsvc1 is 1, by definition. The state of the Singular Text Console Redirection, specified by textredirectsvc1 and textredirectsap1, is active because the state of textredirectsvc1 is 2 (Enabled), but the state of textredirectsap1 is 2 (Enabled).

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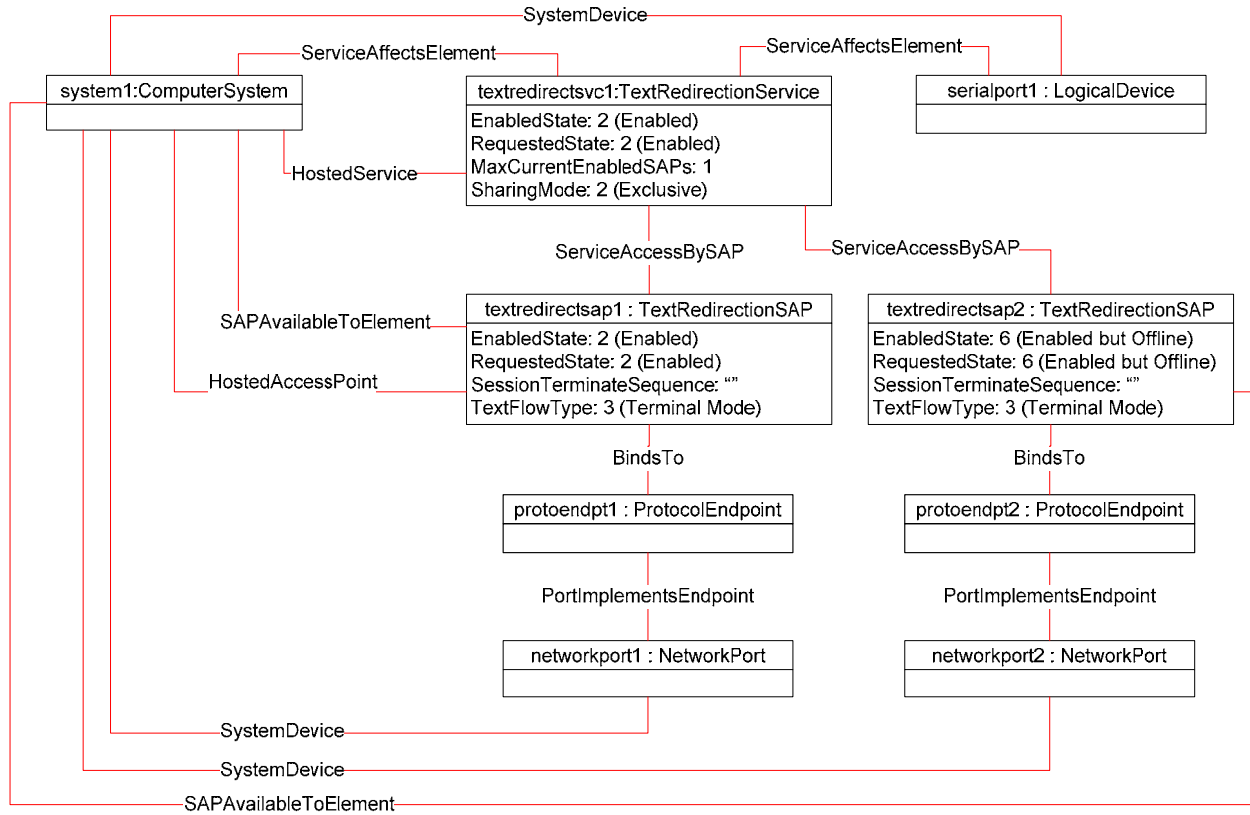
The preceding steps change the state of the textredirectsap1 to 6 (Enabled but Offline) and the state of the textredirectsap2 to 2 (Enabled). The result is that the Text Console Redirection specified by textredirectsvc1 and textredirectsap2 is active, while the Text Console Redirection specified by textredirectsvc1 and textredirectsap1 is inactive.

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Text Console Redirection Profile



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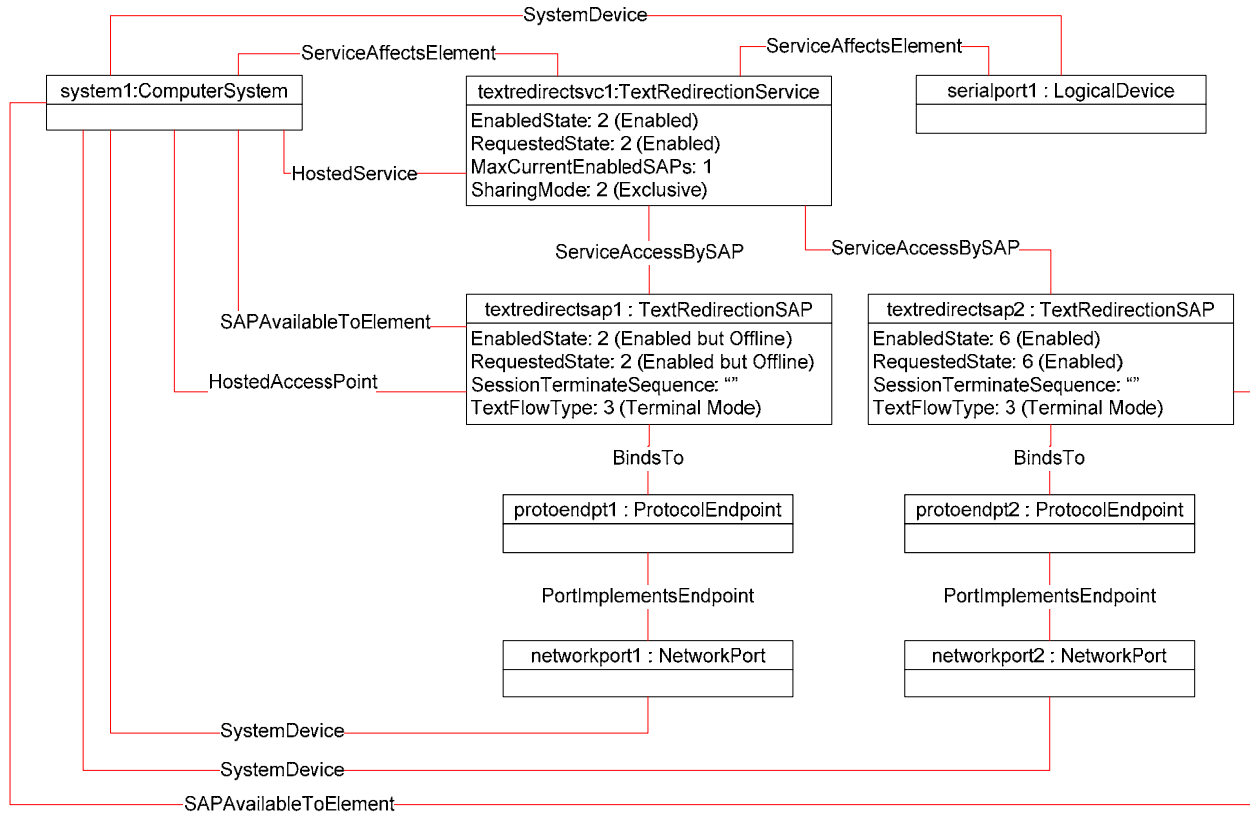
966

Figure 8 – Initial State of a Singular Text Console Redirection

967

Figure 9 shows the final state of the Singular Text Console Redirection when the call to the RequestStateChange() method completes successfully.

968



969

970

Figure 9 – Final State of a Singular Text Console Redirection

971 **9.16 Stop All Text Console Redirections Associated with the Source—Session**
 972 **Only**

973 In the following use case, it is assumed that the client knows the instance of CIM_TextRedirectionService
 974 that specifies the Text Console Redirection Service of interest.

975 When the Text Console Redirection is managed through the state of the Session only, a client can stop
 976 all Text Console Redirection as follows:

- 977 1) Start at the instance of the CIM_TextRedirectionService that represents the Text Console
 978 Redirection of interest.
- 979 2) Enumerate the instances of CIM_TextRedirectionSAP that are associated with the instance of
 980 CIM_TextRedirectionService through an instance of CIM_ServiceAccessBySAP.
- 981 3) For each instance of CIM_TextRedirectionSAP found, query the value of the EnabledState
 982 property.
- 983 4) If the state of the CIM_TextRedirectionSAP is 2 (Enabled), invoke the RequestStateChange()
 984 method with the RequestedState parameter set to 6 (Offline).
- 985 5) Verify that the CIM_TextRedirectionSAP.EnabledState property is set to a value of 6 (Enabled
 986 but Offline).

987 Each Text Console Redirection redirected from the Service is now inactive.

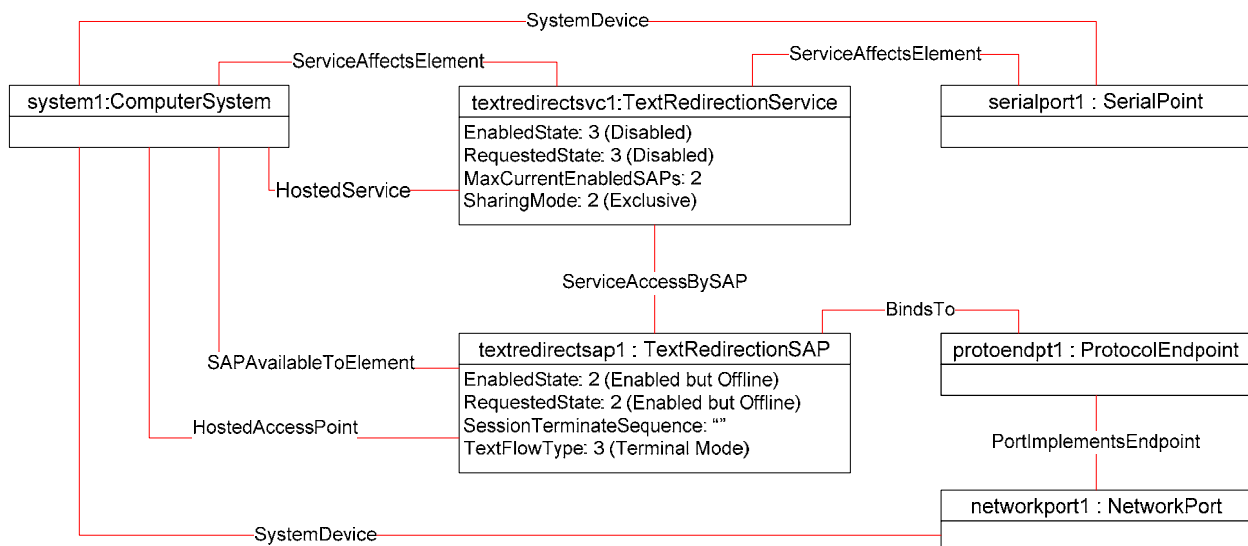
988 9.17 Activate a Text Console Redirection —Service and Session State 989 Management

990 When the Text Console Redirection is managed through the states of both the Service and Session, a
991 client can start a text console redirection as follows:

- 992 1) Start at the CIM_TextRedirectionService instance of interest.
- 993 2) Invoke the RequestStateChange() method with the RequestedState parameter set to 2
994 (Enabled).
- 995 3) Verify that the CIM_TextRedirectionService.EnabledState property is set to a value of 2
996 (Enabled).
- 997 4) Invoke the CIM_TextRedirectionSAP.RequestStateChange() method with the RequestedState
998 parameter set to 2 (Enabled).
- 999 5) Verify that the CIM_TestRedirectionSAP.EnabledState property is set to a value of 2 (Enabled).

1000 The Text Console Redirection is now active.

1001 Figure 10 shows the initial state of the Text Console Redirection as inactive because the state of
1002 textredirectsvc1 is 3 (Disabled) and the state of textredirectsap1 is 6 (Enabled but Offline). The preceding
1003 steps change the state of textredirectsap1 to 2 (Enabled) and the state of textredirectsvc1 to 2 (Enabled),
1004 thereby activating the Text Console Redirection specified by textredirectsvc1 and textredirectsap1. The
1005 diagram of the active Text Console Redirection would look like Figure 3.



1006

1007 **Figure 10 – Initial State of a Redirection Managed Through the Service State and Session State**

1008 9.18 Stop All Text Console Redirections Associated with the Service —Service 1009 and Session State Management

1010 When the Text Console Redirection is managed through the states of both the Service and Session, a
1011 client can stop all Text Console Redirections associated with the Service as follows:

- 1012 1) Start at the instance of the CIM_TextRedirectionService that represents the Text Console
1013 Redirection of interest.

1014 2) Change the state of the CIM_TextRedirectionService instance by invoking the
1015 RequestStateChange() method with the RequestedState parameter set to 3 (Disabled).

1016 All Text Console Redirections with the CIM_TextRedirectionService as the Service are now
1017 inactive.

1018 **9.19 Find the Number of Active Text Redirection Access Points**

1019 A client can find the number of active text redirection sessions for a Service of interest as follows:

1020 1) Start at the CIM_TextRedirectionService instance of interest.

1021 2) Query the value of the EnabledState property.

1022 If the EnabledState property is 3 (Disabled), the number of active text redirection sessions is
1023 zero.

1024 3) If the EnabledState property is 2 (Enabled), find all instances of CIM_TextRedirectionSAP
1025 associated through an instance of CIM_ServiceAccessBySAP.

1026 4) For each found CIM_TextRedirectionSAP instance, query the value of the EnabledState
1027 property.

1028 5) Count all the CIM_TextRedirectionSAP.EnabledState properties whose value is 2 (Enabled).

1029 **9.20 Determine Whether CIM_TextRedirectionService.ElementName Can Be** 1030 **Modified**

1031 A client can determine whether the ElementName property can be modified as follows:

1032 1) Start at the instance of CIM_TextRedirectionService.

1033 2) Find the CIM_EnabledLogicalElementCapabilities instance with which it is associated by
1034 traversing the CIM_ElementCapabilities association.

1035 3) Query the value of the ElementNameEditSupported property of the
1036 CIM_EnabledLogicalElementCapabilities instance.

1037 If the value is TRUE, the CIM_TextRedirectionService.ElementName property can be modified
1038 by a client. If no instance of CIM_EnabledLogicalElementCapabilities is associated with the
1039 CIM_TextRedirectionService instance, modifying the
1040 CIM_TextRedirectionService.ElementName property is not supported.

1041 **10 CIM Elements**

1042 Table 16 shows the instances of CIM Elements for this profile. Instances of the CIM Elements shall be
1043 implemented as described in Table 16. Sections 7 ("Implementation") and 8 ("Methods") may impose
1044 additional requirements on these elements.

1045

Table 16 – CIM Elements: Text Console Redirection Profile

Element Name	Requirement	Description
CIM_RegisteredProfile	Mandatory	See section 10.1.
CIM_BindsTo	Optional	See section 10.2.
CIM_ElementCapabilities	Conditional	Referencing CIM_TextRedirectionService. See section 10.3.
CIM_ElementCapabilities	Conditional	Referencing CIM_TextRedirectionSAP. See section 10.4.
CIM_EnabledLogicalElementCapabilities	Optional	Associated to CIM_TextRedirectionService. See section 10.5.
CIM_EnabledLogicalElementCapabilities	Optional	Associated to CIM_TextRedirectionSAP. See section 10.6.
CIM_HostedAccessPoint	Mandatory	See section 10.7.
CIM_HostedService	Mandatory	See section 10.8.
CIM_ServiceAffectsElement	Mandatory	See section 10.9.
CIM_ServiceAccessBySAP	Mandatory	See section 10.10.
CIM_ServiceAffectsElement	Mandatory	Referencing CIM_ComputerSystem. See section 10.11.
CIM_ServiceAffectsElement	Optional	Referencing CIM_LogicalDevice. See section 10.12.
CIM_TextRedirectionService	Mandatory	See section 10.13.
CIM_TextRedirectionSAP	Mandatory	See section 10.14.

1046 10.1 CIM_RegisteredProfile

1047 CIM_RegisteredProfile identifies the *Text Console Redirection Profile* in order for a client to determine
 1048 whether an instance of CIM_ComputerSystem conforms with this profile. The CIM_RegisteredProfile
 1049 class is defined by the *Profile Registration Profile*. With the exception of the mandatory values specified
 1050 for the properties in Table 17, the behavior of the CIM_RegisteredProfile instance is in accordance with
 1051 the *Profile Registration Profile*.

1052

Table 17 – Class: CIM_RegisteredProfile

Elements	Requirement	Notes
RegisteredName	Mandatory	This property shall have a value of "Text Console Redirection".
RegisteredVersion	Mandatory	This property shall have a value of "1.0.0".
RegisteredOrganization	Mandatory	This property shall have a value of 2 (DMTF).

1053 **10.2 CIM_BindsTo**

1054 The CIM_BindsTo association is used to relate the CIM_TextRedirectionSAP instance to the
 1055 CIM_ProtocolEndpoint instance that is the destination of the redirected text console. Table 18 contains
 1056 the requirements for elements of this class.

1057 **Table 18 – Class: CIM_BindsTo**

Elements	Requirement	Notes
Antecedent	Mandatory	This property shall be a reference to an instance of the CIM_ProtocolEndpoint class. See section 7.3.1. Cardinality is "0..1".
Dependent	Mandatory	This property shall be a reference to an instance of the CIM_TextRedirectionSAP. See section 7.3.1. Cardinality is "1..*"

1058 **10.3 CIM_ElementCapabilities Relating CIM_TextRedirectionService to**
 1059 **CIM_EnabledLogicalElementCapabilities**

1060 The CIM_ElementCapabilities association is used to relate an instance of
 1061 CIM_EnabledLogicalElementCapabilities with an instance of CIM_TextRedirectionService. Table 19
 1062 contains the requirements for elements of this class.

1063 **Table 19 – Class: CIM_ElementCapabilities Referencing CIM_TextRedirectionService**

Elements	Requirement	Notes
ManagedElement	Mandatory	This property shall be a reference to an instance of CIM_TextRedirectionService. See sections 7.5.1.1 and 7.5.2.1. Cardinality is "1..*"
Capabilities	Mandatory	This property shall be a reference to an instance of CIM_EnabledLogicalElementCapabilities. See sections 7.5.1.1 and 7.5.2.1. Cardinality is "0..1".

1064 **10.4 CIM_ElementCapabilities Relating CIM_TextRedirectionSAP to**
 1065 **CIM_EnabledLogicalElementCapabilities**

1066 The CIM_ElementCapabilities association is used to relate an instance of
 1067 CIM_EnabledLogicalElementCapabilities with an instance of CIM_TextRedirectionSAP. Table 20 contains
 1068 the requirements for elements of this class.

1069 **Table 20 – Class: CIM_ElementCapabilities Referencing CIM_TextRedirectionSAP**

Elements	Requirement	Notes
ManagedElement	Mandatory	This property shall be a reference to an instance of CIM_TextRedirectionSAP. See sections 7.6.1.1 and 7.6.2.1. Cardinality is "1..*"
Capabilities	Mandatory	This property shall be a reference to an instance of CIM_EnabledLogicalElementCapabilities. See sections 7.6.1.1 and 7.6.2.1. Cardinality is "0..1".

1070 **10.5 CIM_EnabledLogicalElementCapabilities Associated with**
 1071 **CIM_TextRedirectionService**

1072 CIM_EnabledLogicalElementCapabilities indicates support for managing the Text Console Redirection
 1073 Service. Table 21 contains the requirements for elements of this class.

1074 **Table 21 – Class: CIM_EnabledLogicalElementCapabilities Associated with**
 1075 **CIM_TextRedirectionService**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ElementName	Mandatory	Key
RequestedStatesSupported	Mandatory	See sections 7.5.1.1 and 7.5.2.1.
ElementNameEditSupported	Mandatory	See sections 7.2.5.1 and 7.2.5.2.
MaxElementNameLen	Conditional	See sections 7.2.5.1 and 7.2.5.2.

1076 **10.6 CIM_EnabledLogicalElementCapabilities Associated with**
 1077 **CIM_TextRedirectionSAP**

1078 CIM_EnabledLogicalElementCapabilities indicates support for managing the Text Console Redirection
 1079 Session. Table 22 contains the requirements for elements of this class.

1080 **Table 22 – Class: CIM_EnabledLogicalElementCapabilities Associated with**
 1081 **CIM_TextRedirectionSAP**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ElementName	Mandatory	Key
RequestedStatesSupported	Mandatory	See sections 7.6.1.1 and 7.6.2.1.
ElementNameEditSupported	Mandatory	See sections 7.3.4.1 and 7.3.4.2.
MaxElementNameLen	Conditional	See sections 7.3.4.1 and 7.3.4.2.

1082 **10.7 CIM_HostedAccessPoint**

1083 The CIM_HostedAccessPoint association is used to relate the CIM_TextRedirectionSAP instance to the
 1084 CIM_ComputerSystem instance to which the text console is redirected. Table 23 contains the
 1085 requirements for elements of this class.

1086 **Table 23 – Class: CIM_HostedAccessPoint**

Elements	Requirement	Notes
Antecedent	Mandatory	This property shall be a reference to an instance of the CIM_ComputerSystem class. See section 7.3. Cardinality is "1".
Dependent	Mandatory	This property shall be a reference to an instance of the CIM_TextRedirectionSAP. See section 7.3. Cardinality is "*".

1087 **10.8 CIM_HostedService**

1088 The CIM_HostedService association is used to relate the CIM_TextRedirectionService instance to the
 1089 CIM_ComputerSystem instance on which it is hosted. Table 24 contains the requirements for elements of
 1090 this class.

1091 **Table 24 – Class: CIM_HostedService**

Elements	Requirement	Notes
Antecedent	Mandatory	This property shall be a reference to an instance of the CIM_ComputerSystem class. See section 7.2. Cardinality is "1".
Dependent	Mandatory	This property shall be a reference to an instance of the CIM_TextRedirectionService. See section 7.2. Cardinality is "*".

1092 **10.9 CIM_SAPAvailableForElement**

1093 The CIM_ServiceAccessBySAP association is used to relate the instance of CIM_ComputerSystem to the
 1094 instances of CIM_TextRedirectionSAP that are available as access points for the redirected text console.
 1095 Table 25 contains the requirements for elements of this class.

1096 **Table 25 – Class: CIM_SAPAvailableForElement**

Elements	Requirement	Notes
AvailableSAP	Mandatory	This property shall be a reference to an instance of the CIM_TextRedirectionSAP class. See section 7.3. Cardinality is "*".
ManagedElement	Mandatory	This property shall be a reference to an instance of the CIM_ComputerSystem. See section 7.3. Cardinality is "1".

1097 **10.10 CIM_ServiceAccessBySAP**

1098 The CIM_ServiceAccessBySAP association is used to relate the instance of CIM_TextRedirectionService
 1099 with the instances of CIM_TextRedirectionSAP that are enabled by the service. Table 26 contains the
 1100 requirements for elements of this class.

1101 **Table 26 – Class: CIM_ServiceAccessBySAP**

Elements	Requirement	Notes
Antecedent	Mandatory	This property shall be a reference to an instance of the CIM_TextRedirectionService class. See section 7.17.1. Cardinality is "1".
Dependent	Mandatory	This property shall be a reference to an instance of the CIM_TextRedirectionSAP. See section 7.17.1. Cardinality is "1..*".

1102 **10.11 CIM_ServiceAffectsElement Relating CIM_TextRedirectionService to**
 1103 **CIM_ComputerSystem**

1104 The CIM_ServiceAffectsElement association is used to relate the instance of
 1105 CIM_TextRedirectionService to the instance of CIM_ComputerSystem that represents the source of the
 1106 Text Console Flow. Table 27 contains the requirements for elements of this class.

1107 **Table 27 – Class: CIM_ServiceAffectsElement Referencing CIM_ComputerSystem**

Elements	Requirement	Notes
AffectingElement	Mandatory	This property shall be a reference to an instance of the CIM_TextRedirectionService class. See section 7.1. Cardinality is "**".
AffectedElement	Mandatory	This property shall be a reference to an instance of the CIM_ComputerSystem. See section 7.1. Cardinality is "1".

1108 **10.12 CIM_ServiceAffectsElement Relating CIM_TextRedirectionService to a**
 1109 **Concrete Subclass of CIM_LogicalDevice**

1110 The CIM_ServiceAffectsElement association is used to relate the instance of
 1111 CIM_TextRedirectionService to the instance of a concrete class of CIM_LogicalDevice that represents the
 1112 source of the Text Console Flow. Table 28 contains the requirements for elements of this class.

1113 **Table 28 – Class: CIM_ServiceAffectsElement Referencing CIM_LogicalDevice**

Elements	Requirement	Notes
AffectingElement	Mandatory	This property shall be a reference to an instance of the CIM_TextRedirectionService class. See section 7.2.2. Cardinality is "1".
AffectedElement	Mandatory	This property shall be a reference to an instance of CIM_LogicalDevice. See section 7.2.2. Cardinality is "0..1".

1114 **10.13 CIM_TextRedirectionService**

1115 The CIM_TextRedirectionService class represents the ability to manage the text console redirection
 1116 capabilities of a computer system. Table 29 contains the requirements for elements of this class.

1117 **Table 29 – Class: CIM_TextRedirectionService**

Elements	Requirement	Notes
SystemCreationClassName	Mandatory	Key
SystemName	Mandatory	Key
CreationClassName	Mandatory	Key
Name	Mandatory	Key
ElementName	Mandatory	See section 7.2.5.
MaxCurrentEnabledSAPs	Mandatory	See section 7.2.4.
EnabledState	Mandatory	See section 7.5.
RequestedState	Mandatory	See section 7.5.
SharingMode	Mandatory	See section 7.2.3.
RedirectionServiceType	Mandatory	See section 7.2.6.

1118 **10.14 CIM_TextRedirectionSAP**

1119 The CIM_TextRedirectionSAP class represents a text console redirection capability that is possible on a
 1120 computer system. Table 30 contains the requirements for elements of this class.

1121 **Table 30 – Class: CIM_TextRedirectionSAP**

Elements	Requirement	Notes
SystemCreationClassName	Mandatory	Key
SystemName	Mandatory	Key
Name	Mandatory	Key
CreationClassName	Mandatory	Key
ElementName	Mandatory	See section 7.3.4.
EnabledState	Mandatory	See section 7.6.1.3.
RequestedState	Mandatory	See section 7.6.1.2.
SessionTerminateSequence	Mandatory	See section 7.3.3.
TextFlowType	Mandatory	See section 7.3.2.
OtherTextFlowType	Conditional	See section 7.3.2.

**ANNEX A
(informative)**

Change Log

Version	Date	Description
1.0.0a	2006/10/19	Initial Preliminary Release
1.0.0	2007/10/19	Initial Final Release

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ANNEX B (informative)

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