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5 **Ethernet Port Resource Virtualization Profile**

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146

Foreword

147 The *Ethernet Port Resource Virtualization Profile* (DSP1050) was prepared by the System Virtualization,
148 Partitioning and Clustering Working 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. For information about the DMTF, see <http://www.dmtf.org>.

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185

Introduction

186 The information in this specification should be sufficient for a provider or consumer of this data to identify
187 the classes, properties, methods, and values that shall be instantiated to subscribe, advertise, produce, or
188 consume an indication using the DMTF Common Information Model (CIM) Schema.

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

191 Document conventions

192 Typographical conventions

193 The following typographical conventions are used in this document:

- 194 • Document titles are marked in *italics*.
- 195 • Important terms that are used for the first time are marked in *italics*.

196

197

Ethernet Port Resource Virtualization Profile

198 1 Scope

199 This profile is a component DMTF management profile that extends the management capabilities of the
200 referencing profile by adding the support to represent and manage the allocation of Ethernet ports to
201 virtual systems.

202 2 Normative references

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

207 DMTF DSP0004, *CIM Infrastructure Specification 2.5*,
208 http://www.dmtf.org/standards/published_documents/DSP0004_2.5.pdf

209 DMTF DSP0200, *CIM Operations over HTTP 1.3*,
210 http://www.dmtf.org/standards/published_documents/DSP0200_1.3.pdf

211 DMTF DSP0207, *WBEM URI Mapping 1.0*,
212 http://www.dmtf.org/standards/published_documents/DSP0207_1.0.pdf

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

215 DMTF DSP1014, *Ethernet Port Profile 1.0*,
216 http://www.dmtf.org/standards/published_documents/DSP1014_1.0.pdf

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

219 DMTF DSP1041, *Resource Allocation Profile 1.1*,
220 http://www.dmtf.org/standards/published_documents/DSP1041_1.1.pdf

221 DMTF DSP1042, *System Virtualization Profile 1.0*,
222 http://www.dmtf.org/standards/published_documents/DSP1042_1.0.pdf

223 DMTF DSP1043, *Allocation Capabilities Profile 1.0*,
224 http://www.dmtf.org/standards/published_documents/DSP1043_1.0.pdf

225 DMTF DSP1057, *Virtual System Profile 1.0*,
226 http://www.dmtf.org/standards/published_documents/DSP1057_1.0.pdf

227 DMTF DSP1097, *Virtual Ethernet Switch Profile 1.1*,
228 http://dmtf.org/sites/default/files/standards/documents/DSP1097_1.1.0_0.pdf

229 DMTF DSP2025, *Virtual Networking Management White Paper 1.0*,
230 http://www.dmtf.org/sites/default/files/standards/documents/DSP2025_1.0.0b.pdf

231 DMTF DSP8049, *Network Port Profile Schema*,
232 http://schemas.dmtf.org/ovf/networkportprofile/1/dsp8049_1.0.0.xsd

233 IEEE 802.1Qaz - Enhanced Transmission Selection for Bandwidth Sharing Between Classes.
234 <http://www.ieee802.org/>

235 IEEE 802.1Qbg - Virtual Bridged Local Area Networks - Amendment XX: Edge Virtual Bridging
236 <http://www.ieee802.org/>

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

239 3 Terms and definitions

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

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

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

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

253 The terms defined in [DSP0004](#), [DSP0200](#), and [DSP1001](#) apply to this document. The following additional
254 terms are used in this document.

255 3.1

256 **client**

257 an application that exploits facilities specified by this profile.

258 3.2

259 **dynamic Ethernet connection allocation**

260 an Ethernet connection in which a Ethernet switch port is dynamically allocated to connect a defined
261 Ethernet adapter as part of an Ethernet connection allocation.

262 3.3

263 **embedded switch (eSwitch)**

264 an eSwitch is a virtual Ethernet switch that is embedded in a hardware Ethernet adapter that implements
265 either the VEB or VEPA function.

266 3.4

267 **Ethernet adapter**

268 an EthernetPort, its associated LAN Endpoint(s) and, optionally, a VLAN Endpoint that models the
269 Ethernet device on a virtual or host system.

270 3.5

271 **Ethernet adapter allocation request**

272 a request for an Ethernet adapter resource allocation to a virtual machine; represented as instance of
273 CIM_EthernetPortAllocationSettingData.

274 3.6

275 **Ethernet adapter resource allocation**

276 the allocation of an Ethernet port to a virtual system.

- 277 **3.7**
278 **Ethernet adapter resource pool**
279 a resource pool that represents Ethernet adapters available as resources for a virtual computer system
280 resource allocation.
- 281 **3.8**
282 **Ethernet connection**
283 the connection of two LAN endpoints where one LAN endpoint is implemented by an Ethernet adapter,
284 and the other LAN endpoint is implemented by an Ethernet switch port, resulting in the connection of a
285 virtual or host system Ethernet adapter to an Ethernet switch port.
- 286 **3.9**
287 **Ethernet connection allocation request**
288 an allocation request for a connection between a LAN Endpoint on an Ethernet adapter and a LAN
289 Endpoint on an Ethernet switch port. An Ethernet connection allocation request may cause the implicit
290 allocation of the entities that it connects, such as virtual Ethernet adapters and virtual switch ports.
291 Ethernet connection allocation request is represented as instance of
292 CIM_EthernetPortAllocationSettingData.
- 293 **3.10**
294 **Ethernet connection allocation**
295 the allocation of an Ethernet connection between the LAN Endpoints of an Ethernet adapter and an
296 Ethernet switch port.
- 297 **3.11**
298 **Ethernet connection resource pool**
299 a resource pool that represents available Ethernet connections on a virtual Ethernet switch for a virtual
300 computer system.
- 301 **3.12**
302 **Ethernet switch port**
303 an Ethernet Port, its associated LAN Endpoint(s) and, optionally, a VLAN Endpoint that models the
304 Ethernet port on an Ethernet switch.
- 305 **3.13**
306 **Ethernet switch port allocation request**
307 a request for an Ethernet switch port resource allocation; represented as instance of
308 CIM_EthernetPortAllocationSettingData.
- 309 **3.14**
310 **Ethernet switch port resource allocation**
311 the allocation of an Ethernet port to a virtual Ethernet switch.
- 312 **3.15**
313 **Ethernet switch port resource pool**
314 a resource pool that represents Ethernet switch ports available as resources for a virtual Ethernet switch
315 port resource allocation.
- 316 **3.16**
317 **host system**
318 the scoping system that contains Ethernet resources that may be allocated, virtualized, or both.
- 319 **3.17**
320 **implementation**
321 a set of CIM providers that realize the classes specified by this profile.

322 3.18**323 network interface controller (NIC)**

324 a NIC is a component that connects a computer system or virtual computer system to a network. It is also
325 referred to as a network adapter or adapter or Ethernet adapter in this specification.

326 3.19**327 network port profile**

328 a network port profile is a DSP8049 compliant document that describes a set of networking attributes that
329 can be applied to Ethernet ports and virtual Ethernet switches.

330 3.20**331 simple Ethernet connection**

332 an Ethernet connection in which a dynamically allocated Ethernet switch port and an Ethernet adapter are
333 instantiated as part of an Ethernet connection allocation.

334 3.21**335 static Ethernet connection allocation**

336 an Ethernet connection allocation where a specific pre-existing Ethernet switch port is requested as part
337 of the allocation request.

338 3.22**339 virtual computer system**

340 the concept of a virtual system as applied to a computer system

341 Other common industry terms are *virtual machine*, *hosted computer*, *child partition*, *logical partition*,
342 *domain*, *guest*, or *container*.

343 3.23**344 virtual Ethernet bridge (VEB)**

345 a VEB is a frame relay service that supports local bridging between multiple VSIs and (optionally) the
346 adjacent bridging environment. A VEB may be implemented in software as a vSwitch or as an eSwitch
347 within a NIC. VEBs have access to vNIC configuration information that normally is not available to an
348 802.1Q bridge.

349 3.24**350 virtual Ethernet port aggregator (VEPA)**

351 a virtual Ethernet port aggregator is a capability within a computer system that collaborates with an
352 adjacent, external bridge to provide bridging support between multiple virtual computer systems and
353 external networks. The VEPA collaborates by forwarding all computer system-originated frames to the
354 adjacent bridge for frame processing and frame relay (including reflective relay forwarding) and by
355 steering and replicating frames received from the VEPA uplink to the appropriate destinations. A VEPA
356 may be implemented in software as a vSwitch or an eSwitch within a NIC. As in the case of VEBs, VEPAs
357 have access to vNIC configuration information that normally is not available to an 802.1Q bridge.

358 3.25**359 virtual Ethernet switch**

360 the concept of a virtual system as applied to a virtual Ethernet switch.

361 A virtual Ethernet switch provides internal and external network connectivity to the virtual computer
362 systems attached to it. A virtual Ethernet switch implements either the VEB or VEPA function.

363 3.26**364 virtual network interface controller (vNIC)**

365 an entity that performs the Media Access Control (MAC), Link Level Control (LLC), management and
366 control functions needed to attach a VM to a network.

367 **3.27**368 **virtual station interface (VSI)**

369 an entity comprised of a vNIC (modeled as an Ethernet port), its internal point-to-point Ethernet
370 connection to a virtual Ethernet switch, and the Ethernet port of the virtual Ethernet switch that is
371 connected to the vNIC. Each VSI carries a single MAC service instance.

372 **3.28**373 **virtualization platform**

374 the virtualizing infrastructure provided by a host system that enables the deployment of virtual systems.

375 **4 Symbols and abbreviated terms**

376 The abbreviations defined in [DSP0004](#), [DSP0200](#) and [DSP1001](#) apply to this document. The following
377 additional abbreviations are used in this document.

378 **4.1**379 **CIM**

380 Common Information Model

381 **4.2**382 **CIMOM**

383 CIM object manager

384 **4.3**385 **EASD**

386 CIM_EthernetPortAllocationSettingData

387 **4.4**388 **ESD**

389 CIM_ElementSettingData

390 **4.5**391 **LLC**

392 link level control

393 **4.6**394 **MAC**

395 media access control

396 **4.7**397 **EVB**

398 edge virtual bridging

399 **4.8**400 **RASD**

401 CIM_ResourceAllocationSettingData

402 **4.9**403 **SDS**

404 CIM_SettingsDefineState

405 **4.10**406 **SDC**

407 CIM_SettingsDefineCapabilities

- 408 **4.11**
 409 **VEB**
 410 virtual Ethernet bridge
- 411 **4.12**
 412 **VEPA**
 413 virtual Ethernet port aggregator
- 414 **4.13**
 415 **VESSD**
 416 CIM_VirtualEthernetSwitchSettingData
- 417 **4.14**
 418 **VSSD**
 419 CIM_VirtualSystemSettingData

420 5 Synopsis

421 **Profile Name:** Ethernet Port Resource Virtualization

422 **Profile Version:** 1.1.0

423 **Organization:** DMTF

424 **CIM Schema Version:** 2.29

425 **Central Class:** CIM_ResourcePool

426 **Scoping Class:** CIM_System

427 This profile is a component profile that defines the minimum object model needed to provide for the CIM
 428 representation and management of the virtualization of Ethernet ports and connections.

429 Table 1 lists DMTF management profiles on which this profile depends.

430

Table 1 –Related profiles

Profile Name	Organization	Version	Requirement	Description
Resource Allocation	DMTF	1.1	Specializes	The abstract profile that describes the virtualization of resources See DSP1041 .
Allocation Capabilities	DMTF	1.0	Specializes	The abstract profile that describes capabilities for resource allocation See DSP1043 .
Profile Registration	DMTF	1.0	Mandatory	The profile that specifies registered profiles
Ethernet Port	DMTF	1.0	Optional	The profile that specifies the management of Ethernet Ports See DSP1014 .

431 6 Description

432 This clause contains informative text only It introduces the management domain addressed by this profile
433 and outlines the central modeling elements established for representation and control of the management
434 domain.

435 6.1 General

436 In computer virtualization systems, virtual computer systems are composed of component virtual
437 resources. This profile specializes the resource virtualization pattern as defined in [DSP1041](#) (*Resource*
438 *Allocation Profile*) and the allocation capabilities pattern as defined in [DSP1043](#) (*Allocation Capabilities*
439 *Profile*) for the representation and management of the following types of resources:

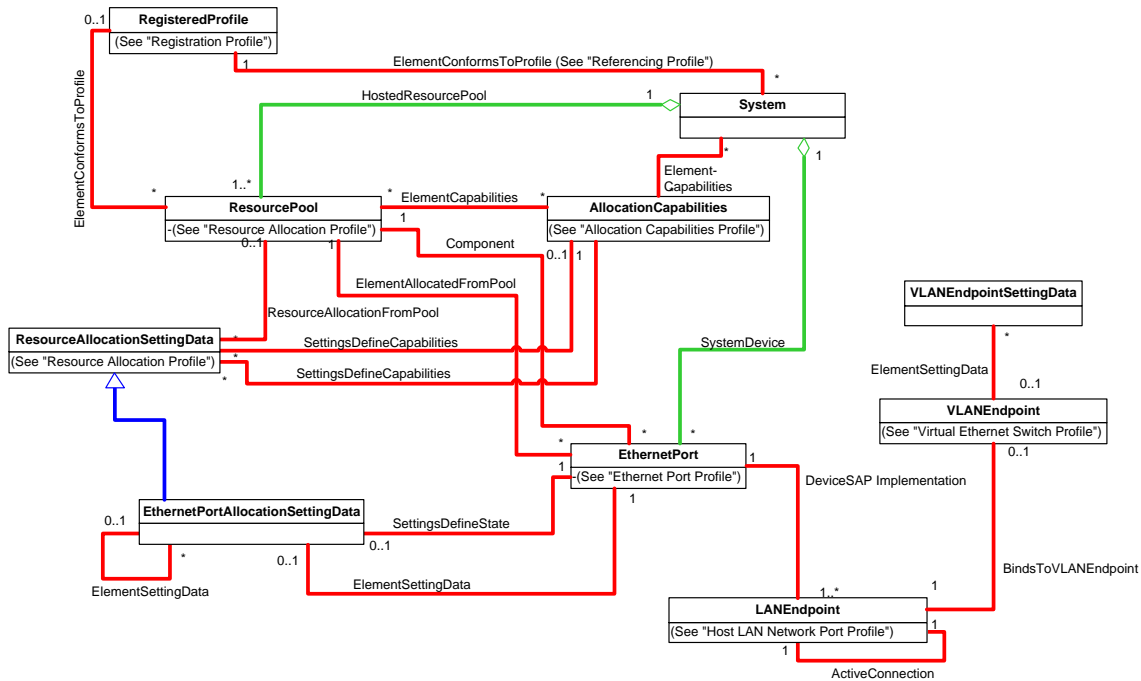
- 440 • Ethernet adapters, designated by resource type value 10 (Ethernet Adapter). Ethernet adapters
441 are allocated to a virtual computer system.
- 442 • Ethernet switch ports, designated by resource type value 30 (Ethernet Switch Port). Ethernet
443 switch ports are allocated to virtual Ethernet switches.
- 444 • Ethernet connections, designated by resource type value 33 (Ethernet Connection). Ethernet
445 connections represent the connection (association CIM_ActiveConnection) between two
446 CIM_LANEndpoint instances that are associated to the instances of CIM_EthernetPort
447 representing either an Ethernet adapter or an Ethernet switch port.

448 This profile references additional or specialized CIM elements and extends constraints beyond those
449 defined in the abstract profiles.

450 This version of the profile also includes the properties of the CIM_EthernetportAllocationSettingData, that
451 are used in [DSP8049](#). Refer to [DSP2025](#) for a description of the use of [DSP8049](#) and its relationship to
452 this CIM profile.

453 6.2 Ethernet port resource virtualization class schema

454 Figure 1 shows the class schema of this profile. It outlines the elements that are referenced and in some
455 cases further constrained by this profile, as well as the dependency relationships between elements of
456 this profile and other profiles. For simplicity in diagrams, the *CIM_* prefix has been removed from class and
457 association names. Inheritance relationships are shown only to the extent required in the context of this
458 profile.



459

460

Figure 1 – Ethernet Port Resource Virtualization: Profile class diagram

461 This profile specializes [DSP1041](#) and [DSP1043](#) by defining more specific adaptations for the following
 462 classes and associations:

- 463 • The CIM_ResourcePool class models the resource pools for Ethernet resources. The resource
 464 pool is used to allocate the resources required to instantiate virtual Ethernet adapters and
 465 Ethernet switch ports that are modeled by the CIM_EthernetPort class.
- 466 • The CIM_ResourcePool class also models the resources required to describe a connection
 467 between the LAN endpoints of an Ethernet adapter and an Ethernet switch port.
- 468 • The CIM_Component association models the relationship between resource pools (with a type
 469 of either Ethernet adapters or Ethernet switch port) and host Ethernet ports as components of
 470 the resource pools.
- 471 • The CIM_ElementAllocatedFromPool association models the relationship between resource
 472 pools and the virtual Ethernet ports allocated from those pools.
- 473 • The CIM_ResourceAllocatedFromPool association models the relationship between a resource
 474 pool and the resource allocations provided by the resource pool.
- 475 • The CIM_HostedResourcePool association models the hosting dependency between a
 476 resource pool and its host system.
- 477 • The CIM_EthernetPort class models the following aspects of both an Ethernet adapter and an
 478 Ethernet switch port:
 - 479 – CIM_EthernetPort as a device in the scope of a system (computer system or virtual
 480 Ethernet switch), as modeled by the CIM_SystemDevice association

- 481 – CIM_EthernetPort as a result of an Ethernet adapter or Ethernet switch port resource
482 allocation from a resource pool, as modeled by the CIM_ElementAllocatedFromPool
483 association
- 484 – CIM_EthernetPort as a component within Ethernet adapter or Ethernet switch port
485 resource pools, as modeled by the CIM_Component association
- 486 • The CIM_EthernetPortAllocationSettingData class is a subclass of the
487 CIM_ResourceAllocationSettingData class and models
- 488 – Ethernet adapter resource allocations or allocation requests
- 489 – Ethernet switch port resource allocations or allocation requests
- 490 – Ethernet connection allocations or allocation requests. Ethernet connection resource
491 allocations or allocation requests represent an allocation request for the connection
492 between a pair of CIM_LANEndpoint instances or a current allocation of the described
493 connection.
- 494 • The CIM_ElementSettingData association between the classes CIM_EthernetPort and
495 CIM_EthernetPortAllocationSettingData models the relationship between an Ethernet adapter
496 represented by the class CIM_EthernetPort and an Ethernet connection allocation represented
497 by the class CIM_EthernetPortAllocationSettingData. This use of the association is in
498 compliance with a simple allocation as described in [DSP1041](#).
- 499 • The CIM_AllocationCapabilities class and the CIM_ElementCapabilities association model:
- 500 – the resource allocation capabilities of the host system and/or a resource pool for resource
501 types 10 (Ethernet Adapter) or 30 (Ethernet Switch Port)
- 502 – the mutability of existing allocations for resource types 10 (Ethernet Adapter) or 30
503 (Ethernet Switch Port)
- 504 – the allocation capabilities of the host systems and/or resource pools for resource type 33
505 (Ethernet Connection)
- 506 – the mutability of existing allocations for resource type 33 (Ethernet Connection)

507 In general, any mention of a class in this document means the class itself or its subclasses. For example,
508 a statement such as “an instance of the CIM_LogicalDevice class” implies an instance of the
509 CIM_LogicalDevice class or a subclass of the CIM_LogicalDevice class.

510 6.3 Resource pools

511 This profile applies the concept of resource pools defined in [DSP1041](#) to resource types 10 (Ethernet
512 Adapter), 30 (Ethernet Switch Port), and 33 (Ethernet Connection).

513 This profile uses the Ethernet port resource pool as the focal point for Ethernet adapter and Ethernet
514 switch port allocations. These are respectively allocated to virtual computer systems as defined in
515 [DSP1057](#) and Ethernet switches as defined in [DSP1097](#).

516 This profile uses Ethernet connection resource pools as the focal point for the allocation of Ethernet
517 connections. These are allocated to establish the connection between the LAN Endpoints associated to
518 an Ethernet adapter and that implemented by an Ethernet switch port.

519 6.3.1 General

520 This profile applies the concept of resource pools defined in clause 6.1.2 of [DSP1041](#) to the following
521 resource types:

- 522 • Resource type 10 (Ethernet Adapter) designates Ethernet adapter resource pools that represent
523 resources for the allocation of Ethernet adapters for the use by virtual systems; allocated
524 Ethernet adapters are represented by CIM_EthernetPort instances.

- 525 • Resource type 30 (Ethernet Switch Port) designates Ethernet switch port resource pools that
526 represent resources for the allocation of Ethernet switch ports for use by virtual Ethernet
527 switches; allocated Ethernet switch ports are represented by CIM_EthernetPort instances.
- 528 • Resource type 33 (Ethernet Connection) designates Ethernet connection resource pools that
529 represent resources for the allocation of connections between an Ethernet adapter that is a
530 resource of a virtual system and an Ethernet switch port that is a resource of a virtual Ethernet
531 switch.

532 The resource type of a resource pool governs the resource types that are allocated from the resource
533 pool. The type of host resources that are aggregated by a resource pool may differ from the resource type
534 of the pool. For example, a resource pool with a resource type of 10 (Ethernet Adapter) supports the
535 allocation of virtual Ethernet adapters. However, the resources that are aggregated by that resource pool
536 may be of a different type; for example, the resource pool might simply represent connectivity to an
537 external network.

538 6.3.2 Representation of host resources

539 Resource pools for Ethernet adapters or Ethernet switch ports represent host resources that enable the
540 allocation of respective virtual devices, namely virtual Ethernet adapters or virtual Ethernet switch ports;
541 resource pools for Ethernet connections represent host resources that enable the allocation of virtual
542 Ethernet connections. However, the explicit representation of the host resources aggregated by a
543 resource pool is optional. In some cases, implementations may explicitly represent the host resources,
544 such as host Ethernet adapters or host Ethernet switch ports. In other cases, implementations may
545 choose not to explicitly represent the host resources aggregated by a resource pool. For example, an
546 implementation for the representation and management of virtual Ethernet connections is not required to
547 explicitly model the host resources that support the virtual Ethernet connections; instead, in this case, the
548 resource pool is the sole model element that represents the Ethernet connection capacity assigned for
549 the support of (allocated) virtual Ethernet connections and the capacity that is still available for the
550 allocation of new Ethernet connections.

551 6.4 Resource allocation

552 This subclause describes how this profile models resource allocations and resource allocation requests
553 for Ethernet resources.

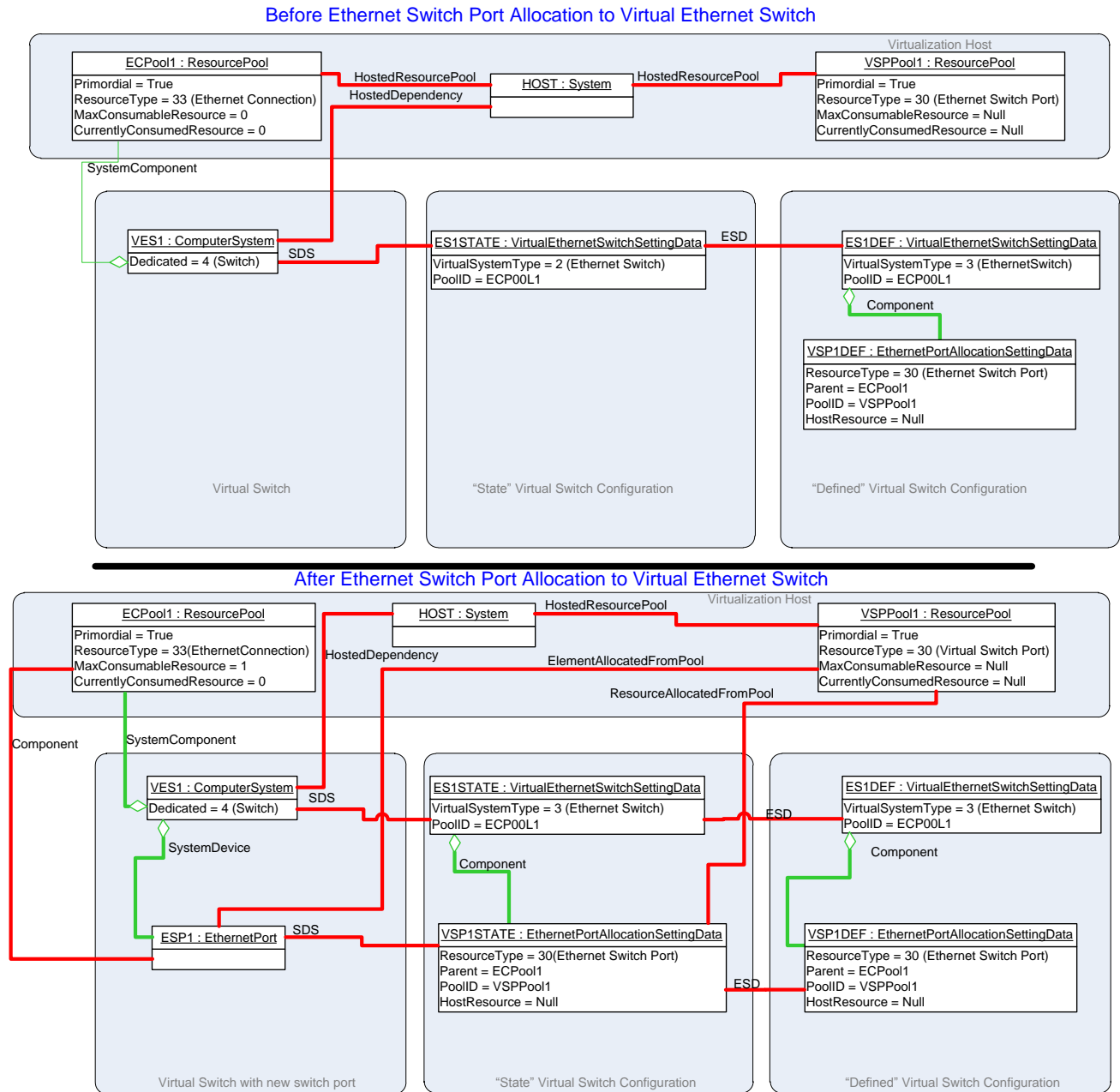
554 6.4.1 General

555 This profile specializes the concept of *virtual resource allocation* defined in clause 6.3 of [DSP1041](#) to
556 resource types 10 (Ethernet Adapter) and 30 (Ethernet Switch Port), both modeled by the
557 CIM_EthernetPort class.

558 This profile specializes the concept of *simple resource allocation* defined in clause 6.2 of [DSP1041](#) to
559 resource type 33 (Ethernet Connection). Simple resource allocation implies that the result of the
560 allocation is not represented by a CIM_LogicalDevice instance.

561 6.4.2 Ethernet resource allocation for virtual Ethernet switches

562 Figure 2 shows an example of the allocation of an Ethernet switch port to a virtual switch. The upper part
563 of Figure 2 shows a static allocation request of a virtual Ethernet switch port to a virtual Ethernet switch,
564 applying the concept of virtual resource allocation as specified in clause 7.2 of [DSP1041](#). The lower part
565 of Figure 2 shows the virtual switch with the allocated Ethernet switch port.



566
567

568 **Figure 2 – Virtual Ethernet switch port allocation**

569 In the example shown in Figure 2, the virtual Ethernet switch is represented by the CIM_ComputerSystem
570 instance VES1, as specified in [DSP1097](#). Once allocated, the Ethernet switch port is represented by the
571 CIM_EthernetPort instance ESP1.

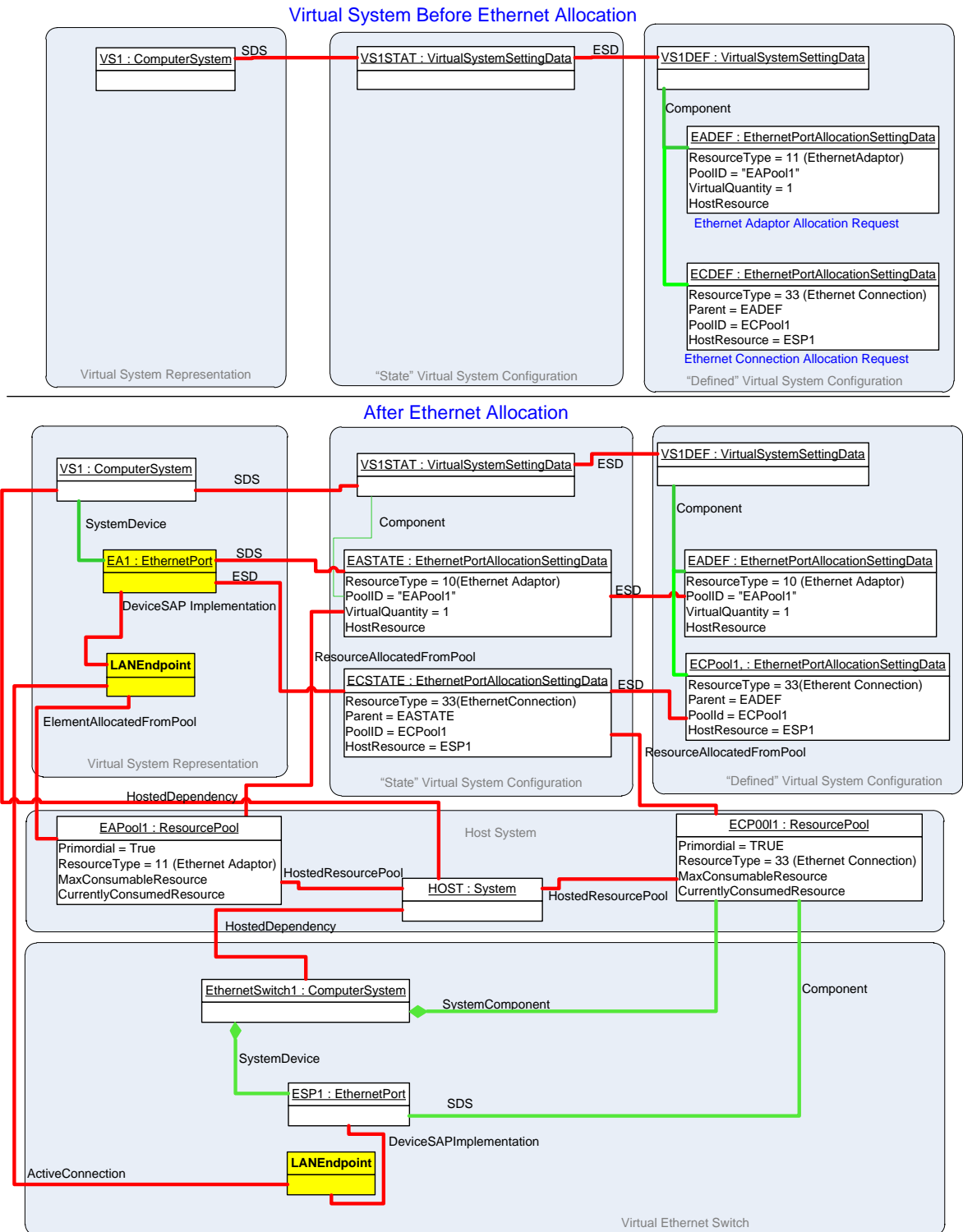
572 In the example shown in Figure 2, the CIM_EthernetPortAllocationSettingData instance VSP1DEF
573 represents an allocation request of an Ethernet switch port (resource type 30 [Ethernet Switch Port])
574 from the resource pool represented by VSPPOOL1. The value of the Parent property in VSP1DEF identifies
575 the Ethernet connection resource pool represented by ECPool1 to provide the connection at allocation
576 time.

577 The result of the allocation is shown in the lower half of Figure 2. An Ethernet switch port represented by
578 the CIM_EthernetPort instance ESP1 has been allocated from the resource pool represented by
579 VSPPOOL1, as shown through the instance of the CIM_ElementAllocatedFromPool association. ESP1 is
580 associated with the CIM_ResourcePool instance ECPOOL1 through an instance of the
581 CIM_ConcreteComponent association. This association represents the availability of the switch port for
582 the allocation of Ethernet connections from the pool. Notice also that the addition of an Ethernet switch
583 port is reflected by incrementing the value of the MaxConsumableResource property.

584 **6.4.3 Ethernet resource allocation for virtual systems**

585 Figure 3 shows an example of the allocation of Ethernet resources to a virtual system. The upper part of
586 of Figure 3 shows allocation requests for an Ethernet adapter and a related static Ethernet connection for
587 a virtual system. The lower part of Figure 3 shows the virtual system with the allocated Ethernet adapter
588 and the allocated Ethernet connection. Note that the EthernetPortAllocationSettingData instance normally
589 associated with an Ethernet switch port, ESP1 in this diagram, is not shown. Refer to Figure 2 for an
590 example of an allocation of an Ethernet switch port.

591 NOTE This is a typical example; however, it is possible to request only an Ethernet Connection and receive an
592 implicitly allocated default Ethernet adapter as part of the Ethernet connection allocation. (See the use case for the
593 simple connection of a virtual machine described in 9.1.5 and Figure 10.)



594
595

596 **Figure 3 – Instance Diagram: Ethernet adaptor and Ethernet connection resource allocations**

597 **6.4.4 Resource allocation request**

598 The Ethernet connection and Ethernet adapter requirements of a virtual system are defined as part of its
599 "defined" virtual system configuration; see [DSP1057](#) for the specification of the "defined" virtual system
600 configuration.

601 The "defined" virtual system configuration of a virtual system contains one or both of the following:

- 602 • Ethernet adapter resource allocation requests represented as EASD instances with the value of
603 the ResourceType property set to 10 (Ethernet Adapter)
- 604 • Ethernet connection resource allocation requests represented as EASD instances with the
605 value of the ResourceType property set to 33 (Ethernet Connection)

606 An example of the CIM representation of an Ethernet Adapter resource allocation request and a related
607 Ethernet Connection resource allocation request is shown in the upper right part of Figure 3.

608 The Ethernet switch port requirements of a virtual system switch are defined as part of its "defined" virtual
609 system configuration; see [DSP1097](#) for the specification of the "defined" virtual system configuration of
610 virtual Ethernet switches.

611 The "defined" virtual system configuration of a virtual Ethernet switch contains Ethernet switch port
612 resource allocation requests represented as EASD instances with the value of the ResourceType
613 property set to 30 (Ethernet Switch Port).

614 An example of the CIM representation of an Ethernet switch port resource allocation request is shown in
615 the upper right part of Figure 2.

616 **6.4.5 Resource allocation**

617 As a virtual system is activated (or instantiated), Ethernet adapters and Ethernet connections need to be
618 allocated as requested by Ethernet adapter and Ethernet connection resource allocation requests in the
619 virtual system definition. These resource allocations are represented as EASD instances in the "state"
620 virtual system configuration; see [DSP1057](#) for the specification of the "state" virtual system configuration.

621 An example of the CIM representation of an Ethernet Adapter and Ethernet Connection resource
622 allocation is shown in the center part of Figure 3.

623 As a virtual Ethernet switch is activated (or instantiated), Ethernet switch ports need to be allocated as
624 requested by Ethernet port resource allocation requests in the virtual system definition. These resource
625 allocations are represented as EASD instances in the "state" virtual system configuration; see [DSP1097](#)
626 for the specification of the "state" virtual system configuration of virtual Ethernet switches.

627 An example of the CIM representation of an Ethernet switch port resource allocation is shown in the
628 center part of Figure 2.

629 **6.4.6 Virtual Ethernet adapter**

630 A virtual Ethernet adapter is either the instantiation of the resources allocated from an Ethernet adapter
631 resource pool or instantiated as a side effect of an Ethernet connection allocation. The Ethernet adapter
632 is represented with an instance of CIM_EthernetPort associated to the virtual system with
633 CIM_SystemDevice.

634 In the example shown in Figure 3, the virtual Ethernet adapter was allocated from EA_Pool1 and is
635 represented by the CIM_EthernetPort instance EA1 as part of the virtual system (VS1) representation.

636 **6.4.7 Ethernet connection**

637 A virtual Ethernet connection is the instantiation of resources allocated from an Ethernet connection
638 resource pool. The allocation represents an allocation to connect an Ethernet adapter to an Ethernet

639 switch port. A virtual Ethernet connection is not exposed to a virtual system through a logical device;
640 however, a virtual Ethernet connection is represented by an instance of the CIM_ActiveConnection
641 association between the CIM_LANEndpoint instance implemented by an Ethernet adapter and the
642 CIM_LANEndpoint instance implemented by an Ethernet switch port. An Ethernet connection allocation
643 can represent the connection between specific Ethernet adapter and Ethernet switch port instances, or
644 the allocation could include the instantiation of an Ethernet adapter and/or an instantiation of an Ethernet
645 switch port as part of the Ethernet connection allocation.

646 An example of the CIM representation of an Ethernet connection allocation is shown by the
647 CIM_ActiveConnection association between the two CIM_LANEndpoint instances in Figure 3.

648 **6.4.8 Virtual Ethernet switch port**

649 A virtual Ethernet switch port is the instantiation of resources allocated from an Ethernet switch port
650 resource pool or instantiated as part of an Ethernet connection allocation. The Ethernet switch port is
651 represented with an instance of CIM_EthernetPort and associated to the CIM_ComputerSystem instance
652 representing the virtual Ethernet switch with CIM_SystemDevice.

653 In the example shown in Figure 2, an allocated Ethernet switch port is represented by the
654 CIM_EthernetPort instance ESP1 as part of the virtual Ethernet switch representation.

655 **6.4.9 Network Port Profile**

656 The 2.29 version of the DMTF CIM Schema includes an updated version of the
657 CIM_EthernetPortAllocationSettingData class that includes a set of properties for the identification and
658 configurations elements necessary to support [DSP8049](#). These properties are described in the schema
659 element and in clause 7 of this profile. The use of the Network Port Profile is described in detail in
660 [DSP2025](#). These properties represent Ethernet switch port properties and, as such, do not affect the
661 above-described lifecycle operations in this subclause and in an effort to keep the diagrams simple are
662 not shown in the above figures.

663 **7 Implementation**

664 This clause provides normative requirements related to the arrangement of instances and properties of
665 instances for implementations of this profile.

666 **7.1 Common requirements**

667 The CIM Schema descriptions for any referenced element and its sub-elements apply.

668 In references to properties of CIM classes that enumerate values, the numeric value is normative and the
669 descriptive text following it in parentheses is informative. For example, in the statement "The value of the
670 ConsumerVisibility property shall be 3 (Virtualized)", the value "3" is normative text and "(Virtualized)" is
671 informative text.

672 **7.2 Resource types**

673 This subclause specifies the resource types that are addressed by this profile.

674 This profile may be implemented for the allocation of two principal resource types: *Ethernet ports* and
675 *Ethernet connections*. An Ethernet port is an Ethernet connection endpoint. Ethernet ports are further
676 distinguished as *Ethernet adapters* and *Ethernet switch ports*. Ethernet adapters are Ethernet ports within
677 virtual systems, and Ethernet switch ports are Ethernet ports within virtual switches.

678 **7.3 Host resources**

679 This subclause specifies requirements for the representation of host resources.

680 **7.3.1 Host Ethernet adapters**

681 The implementation of the representation of host Ethernet adapters is optional.

682 If implemented, the provisions in this subclause apply.

683 Each host Ethernet adapter shall be represented by exactly one CIM_EthernetPort instance. The
684 CIM_EthernetPort instance shall be associated with the CIM_System instance that represents the host
685 system through an instance of the CIM_SystemDevice association.

686 **7.3.2 Host Ethernet switch ports**

687 The implementation of the representation of host Ethernet switch ports is optional.

688 If implemented, the provisions in this subclause apply.

689 Each host Ethernet switch port shall be represented by exactly one CIM_EthernetPort instance. The
690 CIM_EthernetPort shall be associated with either the CIM_System instance that represents the host
691 system or the CIM_ComputerSystem instance that represents a virtual Ethernet switch hosted by the host
692 system through an instance of the CIM_SystemDevice association.

693 **7.4 Resource pool management feature**

694 The implementation of the resource pool management feature is optional.

695 If implemented, the specifications of [DSP1041](#) apply; this profile does not specify specializations or
696 extensions of resource pool management beyond those defined by [DSP1041](#).

697 **7.5 Resource pools**

698 This subclause adapts the CIM_ResourcePool class for the representation of Ethernet adapter resource
699 pools, Ethernet switch port resource pools, and Ethernet connection resource pools.

700 **7.5.1 ResourceType property**

701 The value of the ResourceType property shall denote the type of resources that are provided by the
702 resource pool, as follows:

- 703 • For resource pools supporting only the allocation of Ethernet adapters, the value of the
704 ResourceType property shall be 10(Ethernet Adapter).
- 705 • For resource pools supporting only the allocation of Ethernet switch ports, the value of the
706 ResourceType property shall be 30 (Ethernet Switch Port).
- 707 • For resource pools supporting only the allocation of Ethernet connections, the value of the
708 ResourceType property shall be 33 (Ethernet Connection).

709 **7.5.2 ResourceSubtype property**

710 The implementation of the ResourceSubtype property is optional.

711 If the ResourceSubtype property is implemented, the provisions in this subclause apply.

712 The value of the ResourceSubtype property shall designate a resource subtype. The format of the value
713 shall be as follows: "<org-id>:<org-specific>". The <org-id> part shall identify the organization that defined
714 the resource subtype value; the <org-specific> part shall uniquely identify a resource subtype within the
715 set of subtypes defined by the respective organization.

716 **7.5.3 AllocationUnits property**

717 If the allocation of Ethernet ports or Ethernet connections is based on bandwidth, the value of the
718 AllocationUnits property shall be set to "bits per second" or a multiple thereof. The AllocationUnits
719 property is a programmatic unit as specified in ANNEX C of [DSP0004](#).

720 If the allocation of Ethernet ports is implemented based on the number of passed-through Ethernet ports,
721 the value of the AllocationUnits property shall be set to "count" (the count of passed-through host
722 Ethernet ports).

723 If the allocation of Ethernet connections is implemented based on the number of Ethernet connections,
724 the value of the AllocationUnits property shall be set to "count" (the count of Ethernet connections).

725 **7.5.4 Reserved property**

726 The implementation of the Reserved property is optional.

727 If the Reserved property is implemented, the following provisions apply:

- 728 • If the value of the AllocationUnits property is (a multiple of) "bits per second" the value of the
729 Reserved property shall reflect the amount of Ethernet bandwidth that is actually reserved from
730 the resource pool.
- 731 • If the value of the AllocationUnits property is "count", the value of the Reserved property shall
732 denote the number of host Ethernet ports or the number of Ethernet connections that are
733 actually reserved from the resource pool.

734 **7.5.5 Capacity property**

735 The implementation of the Capacity property is conditional.

736 **Condition:** The aggregation of host Ethernet ports into Ethernet port resource pools is implemented;
737 see 7.4.

738 If the Capacity property is implemented, the following provisions apply:

- 739 • If the value of the AllocationUnits property is (a multiple of) "bits per second" (see [DSP0004](#)),
740 the value of the Capacity property shall reflect the maximum aggregate amount of Ethernet
741 bandwidth represented by the resource pool. If the resource pool has unlimited capacity, the
742 value of the Capacity property shall be set to the largest value supported by the uint64 datatype.
- 743 • If the value of the AllocationUnits property is "count", the value of the Capacity property shall
744 reflect the maximum number of host Ethernet ports or the maximum number of Ethernet
745 connections represented by the resource pool.

746 **7.5.6 MaxConsumableResource property**

747 The implementation of the MaxConsumableResource property is conditional.

748 **Condition:** The resource pool supports the direct or exclusive allocation of a finite number of host
749 resources.

750 If implemented, the value of the MaxConsumableResource property shall reflect the total number of
751 virtual Ethernet adapters, virtual Ethernet switch ports, or virtual Ethernet connections that can be
752 allocated in total from a resource pool.

753 **7.5.7 ConsumedResourceUnits property**

754 The implementation of the ConsumedResourceUnits property is conditional.

755 **Condition:** The MaxConsumableResource property or the CurrentlyConsumedResource property is
756 implemented.

757 If implemented, the value of the ConsumedResourceUnits property shall be set to "count".

758 **7.5.8 CurrentlyConsumedResource property**

759 The implementation of the CurrentlyConsumedResource property is conditional.

760 **Condition:** The MaxConsumableResource property is implemented.

761 If implemented, the value of the CurrentlyConsumableResource shall reflect the total number of virtual
762 Ethernet adapters, virtual Ethernet switch ports or virtual Ethernet connections that are currently allocated
763 from the resource pool.

764 **7.5.9 Instance requirements**

765 Each Ethernet port resource pool shall be represented by exactly one CIM_ResourcePool instance. The
766 CIM_ResourcePool instance shall be associated with the CIM_System instance representing the system
767 hosting the resource pool through an instance of the CIM_HostedPool association.

768 **7.5.10 Resource aggregation feature**

769 The implementation of the resource aggregation feature is conditional.

770 **Condition:** The resource pool management feature is implemented; see 7.4.

771 **Granularity:** If implemented, the resource aggregation feature may be separately supported for each
772 resource pool.

773 The preferred feature discovery mechanism is to resolve the CIM_Component association from the
774 CIM_ResourcePool instance to CIM_ManagedElement instances representing aggregated resources of
775 the storage resource pool. If the resulting set of CIM_ManagedElement instances is not empty, the
776 feature is supported.

777 NOTE If the result set is empty, the feature may still be supported, but no resources are aggregated at that point in
778 time; however, if aggregated resources for a particular resource pool were ever exposed, the feature is still supported
779 even if at a later point in time no resources are aggregated.

780 **7.6 Resource allocation**

781 This subclause details requirements for the representation of resource allocation information.

782 **7.6.1 General**

783 NOTE [DSP1041](#) specifies two alternatives for modeling resource allocation: simple resource allocation and virtual
784 resource allocation.

785 Implementations of this profile shall implement the virtual resource allocation pattern as defined in
786 subclause 7.2 of [DSP1041](#) for resource types 10 (Ethernet Adapter) and 30 (Ethernet Switch Port).

787 Implementations of this profile shall implement the simple resource allocation pattern as defined in
788 subclause 7.3 of [DSP1041](#) for resource types 33 (Ethernet Connection).

789 **7.6.2 Adaptations of allocation settings data**

790 Details about the various adaptations of allocation settings data are provided as follows:

- 791 • Resource allocation requests are described in 6.4.4.
- 792 • Resource allocations are described in 6.4.5.

- 793 • Settings that define the capabilities or mutability of managed resources are described in
794 [DSP1043](#), which specifies a capabilities model that conveys information about the capabilities
795 and the mutability of managed resources in terms of RASD instances (or instances of
796 subclasses of RASD such as EASD).
- 797 • Parameters in operations that define or modify any of the previous representations in this list
798 are described in [DSP1042](#), which specifies methods for the definition and modification of virtual
799 resources. These methods use RASD instances (or instances of subclasses of RASD, such as
800 EASD) for the parameterization of resource-allocation-specific properties.

801 Table 2 lists acronyms that are used in subclasses of 7.6 in order to designate EASD instances that
802 represent various flavors of allocation settings data.

803 **Table 2 – Acronyms for EASD adapted for the representation of various flavors of allocation data**

Acronym	Flavor
Q_EASD	EASD adapted for the representation of Ethernet adapter resource allocation requests, Ethernet switch port resource allocation requests, or Ethernet connection resource allocation requests
R_EASD	EASD adapted for the representation of Ethernet adapter resource allocations, Ethernet switch port resource allocations, or Ethernet connection resource allocations
C_EASD	<ul style="list-style-type: none"> • EASD adapted for the representation of settings that define capabilities of systems or resource pools for Ethernet adapter resources, or that define the mutability of Ethernet adapter resource allocations or Ethernet adapter resource allocation requests • EASD adapted for the representation of settings that define capabilities of systems or resource pools for Ethernet switch port resources, or that define the mutability of Ethernet switch port allocations or of Ethernet switch port allocation requests • EASD adapted for the representation of settings that define capabilities of systems or resource pools, or that define the mutability of Ethernet connection resource allocations or Ethernet connection resource allocation requests
D_EASD	EASD adapted for the representation of new Ethernet adapter resource allocation requests in method parameter values, new Ethernet switch port resource allocation requests in method parameter values, or new Ethernet connection resource allocation requests in method parameter values as defined in DSP1042
M_EASD	EASD adapted for the representation of modified Ethernet adapter resource allocations or Ethernet adapter resource allocation requests, EASD adapted for the representation of modified Ethernet switch port resource allocations or Ethernet switch port resource allocation requests, or EASD adapted for the representation of modified Ethernet connection resource allocations or Ethernet connection resource allocation requests in method parameter values as defined in DSP1042

804 Subclauses of 7.6 detail implementation requirements for property values in EASD instances. In some
805 cases requirements apply to only a subset of the flavors listed in Table 2; this is marked in the text
806 through the use of respective acronyms.

807 **7.6.2.1 CIM_EthernetPortAllocationSettingData properties**

808 This subclause defines rules for values of properties in instances of the
809 CIM_EthernetPortAllocationSettingData (EASD) class representing Ethernet port and Ethernet
810 connection allocation information.

811 **7.6.2.1.1 ResourceType property**

812 The value of the ResourceType property shall denote the type of resources that are provided by the
813 resource pool, as follows:

- 814 • For resource pools supporting the allocation of Ethernet adapters, the value of the
815 ResourceType property shall be 10 (Ethernet Adapter).
- 816 • For resource pools supporting the allocation of Ethernet switch ports, the value of the
817 ResourceType property shall be 30 (Ethernet Switch Port).
- 818 • For resource pools supporting the allocation of Ethernet connections, the value of the
819 ResourceType property shall be 33 (Ethernet Connection).

820 **7.6.2.1.2 ResourceSubType property**

821 The implementation of the ResourceSubType property is optional.

822 If the ResourceSubType property is implemented, the provisions in this subclause apply.

823 The value of the ResourceSubType property shall designate a resource subtype. The format of the value
824 shall be as follows: "<org-id>:<org-specific>". The <org-id> part shall identify the organization that defined
825 the resource subtype value; the <org-specific> part shall uniquely identify a resource subtype within the
826 set of subtypes defined by the respective organization.

827 **7.6.2.1.3 PoolID property**

828 The value of the PoolID property shall identify the current or desired resource pool. The special value
829 NULL shall indicate the use of the host system's default resource pool for the selected resource type.

830 **7.6.2.1.4 ConsumerVisibility property**

831 The value of the ConsumerVisibility property shall denote either if a host resource is directly passed
832 through to the virtual system as a virtual resource, or if the resource is virtualized. Values shall be set as
833 follows:

- 834 • A value of 2 (Passed-Through) shall denote that the host resource is passed-through.
- 835 • A value of 3 (Virtualized) shall denote that the virtual resource is virtualized.
- 836 • Only in instances of { Q_RASD | D_RASD | M_RASD }, the special value NULL shall be used if
837 the represented resource allocation request does not predefine which kind of consumer visibility
838 (passed-through or virtualized) is requested.

839 Other values shall not be used.

840 **7.6.2.1.5 AllocationUnits property**

841 The value of the AllocationUnits property shall be set according to the rules defined in 7.5.3.

842 NOTE The units defined by the value of the AllocationUnits property apply to the values of the Reserved and Limit
843 properties; the AllocationUnits property does not apply to the value of the VirtualQuantity property.

844 **7.6.2.1.6 HostResource[] array property**

845 The implementation of the HostResource[] array property is conditional.

846 **Condition:** One of the following:

- 847 • The implementation of the ResourceType property supports the value 33 (Ethernet Connection).
- 848 • The implementation of the ResourceType property supports the values 10 (Ethernet Adapter) or
849 30 (Ethernet Switch Port), together with values 3 (Dedicated), 4 (Soft Affinity), or 5 (Hard
850 Affinity) for the MappingBehavior property.

851 If the HostResource[] array property is implemented, the provisions in this subclause apply.

852 If the value of the ResourceType property is 33 (Ethernet Connection), the value of the HostResource[]
853 array property shall refer to one of the following:

- 854 • Exactly one CIM_EthernetPort instance that represents a specific target Ethernet switch port.
- 855 • Exactly one CIM_ComputerSystem instance that represents a specific target Ethernet switch.

856 If the value of the ResourceType property is 10 (Ethernet Adapter) or 30 (Ethernet switch port), in the
857 cases of Q_EASD, C_EASD or M_EASD the following provisions apply:

- 858 • If the value of the MappingBehavior property is 3 (Dedicated), the value of the HostResource[]
859 array property shall refer to one or more CIM_EthernetPort instances that represent host
860 Ethernet adapter(s) or Ethernet switch port(s) that are exclusively dedicated to the virtual
861 system or the virtual switch, respectively.
- 862 • If the value of the MappingBehavior property is 4 (Soft Affinity), the value of the HostResource[]
863 array property shall refer to one or more CIM_EthernetPort instances that represent Ethernet
864 adapter(s) or Ethernet switch port(s) preferably to be used for the allocation of the virtual
865 Ethernet adapter or virtual Ethernet switch port.
- 866 • If the value of the MappingBehavior property is 5 (Hard Affinity), the value of the
867 HostResource[] array property shall refer to one or more CIM_EthernetPort instances that
868 represent Ethernet adapter(s) or Ethernet switch port(s) exclusively to be used for the allocation
869 of the virtual Ethernet adapter or virtual Ethernet switch port.

870 If the value of the ResourceType property is 10 (Ethernet Adapter) or 30 (Ethernet switch port), in the
871 cases of R_EASD the following provisions apply:

- 872 • If the value of the MappingBehavior property is 3 (Dedicated), 4 (Soft Affinity), or 5 (Hard
873 Affinity), the value of the HostResource[] array property shall refer to one or more
874 CIM_EthernetPort instances that represent the host Ethernet adapter or the host Ethernet
875 switch port that support the allocated virtual Ethernet adapter or virtual Ethernet switch port.

876 **7.6.2.1.7 VirtualQuantity property**

877 If the value of the ResourceProperty is 10 (Ethernet Adapter) or 30 (Ethernet Switch Port), the value of
878 the VirtualQuantity property shall be the "count" of virtual Ethernet adapters or virtual Ethernet switch
879 ports that are requested (in the cases of Q_EASD, D_EASD or M_EASD), allocated (in the case of
880 R_EASD), or allowed (in the case of C_EASD).

881 If the value of the ResourceProperty is 33 (Ethernet Connection), the value of the VirtualQuantity property
882 shall be the "count" of virtual Ethernet connections that are requested (in the cases of Q_EASD, D_EASD
883 or M_EASD), allocated (in the case of R_EASD), or allowed (in the case of C_EASD).

884 **7.6.2.1.8 VirtualQuantityUnits property**

885 The VirtualQuantityUnits property shall be set to "count".

886 **7.6.2.1.9 Reservation property**

887 The implementation of the Reservation property is optional.

888 If the Reservation property is implemented, the value of the Reservation property shall denote the
889 reserved amount; a requested reserve or a supported reserve amount of Ethernet transmit bandwidth; or
890 the count of Ethernet switch ports, Ethernet adapters, or Ethernet connections requested or supported in
891 units of AllocationUnits.

892 If the Reservation property is not supported, it shall have a value of NULL. This value indicates that an
893 amount of host Ethernet bandwidth reserved for the use of the virtual system is not defined.

894 **7.6.2.1.10 Limit property**

895 The implementation of the Limit property is optional.

896 If the Limit property is implemented, the value of the Limit property shall denote either the maximum
897 amount of Ethernet transmit bandwidth available or the count of Ethernet switch ports, Ethernet adapters,
898 or Ethernet connections requested or supported with regard to a virtual system in units of AllocationUnits.

899 The special value NULL shall indicate that a limit is not imposed.

900 **7.6.2.1.11 Weight property**

901 The implementation of the Weight property is optional.

902 If the Weight property is implemented, its value shall denote the relative priority of a resource allocation in
903 relation to other resource allocations from the same pool.

904 The special value NULL shall indicate that a relative priority does not apply.

905 **7.6.2.1.12 Parent property**

906 The implementation of the Parent property is optional.

907 If the Parent property is implemented, the provisions in this subclause apply.

908 If the value of the ResourceType property value is 10 (Ethernet Adapter), the value of the Parent property
909 shall refer to the parent entity of there source allocation, or shall be NULL. The special value NULL shall
910 indicate that a parent entity of the resource allocation is not defined.

911 If the value of the ResourceType property is 30 (Ethernet Switch Port), the following provisions apply:

- 912 • The Parent property may reference the desired, requested, allocated or allowed Ethernet
913 connection resource pool that the allocated Ethernet switch port should be associated to with
914 the CIM_ConcreteComponent association. The non-Null value of the Parent property shall
915 conform to the production WBEM_URI_UntypedInstancePath as defined in [DSP0207](#).

916 If the ResourceType property is 33 (Ethernet Connection), the following rules apply:

- 917 • Q_EASD: If the Parent property is Null, on allocation the provider shall instantiate an instance of
918 CIM_EthernetPort and any associated LAN and VLAN endpoints representing an Ethernet
919 adapter to the associated virtual machine and an R_EASD instance with the ResourceType
920 property value set 33 (Ethernet Connection). This R_EASD instance and the instantiated
921 instance of CIM_EthernetPort shall be associated through an instance of
922 CIM_ElementSettingData.

923 Q_EASD: If the Parent property is not set to Null, it shall specify an existing instance of an
924 Ethernet adapter Q_EASD. On allocation the provider shall instantiate an R_EASD instance
925 with the ResourceType property set 33 (Ethernet Connection) with its Parent property denoting
926 the corresponding allocated Ethernet Adapter R_EASD instance. Each non-Null value of the
927 Parent property shall conform to the production WBEM_URI_UntypedInstancePath as defined
928 in [DSP0207](#).

- 929 • D_EASD: The parent property may contain a temporary ID string that is correlated to a
930 temporary ID string in the InstanceID property of a separate instance of D_EASD, where the
931 ResourceType property is 10 (EthernetAdapter), instantiated as embedded instances in the
932 same ResourceSettings method parameter of a CIM_VirtualizationManagementService
933 AddResourceSettings or DefineSystem method call. In this case the provider, as a result of the
934 successful execution of the described method call, shall set the Parent property of the resultant
935 Ethernet connection Q_EASD instance Parent property to reference the resultant Ethernet
936 adapter Q_EASD instance. In this case, the Parent property shall conform to the production
937 WBEM_URI_UntypedInstancePath as defined in [DSP0207](#).

- 938 • R_EASD: If the Parent property is not Null, the value of the Parent property shall reference the
939 R_EASD instance that represents the target virtual Ethernet Adapter. The non-Null value of the

940 Parent property shall conform to the production WBEM_URI_UntypedInstancePath as defined
941 in [DSP0207](#).

942 **7.6.2.1.13 Address property**

943 The implementation of the Address property shall be mandatory for R_EASD adaptations of
944 CIM_EthernetPortAllocationSettingData. In all other adaptations of
945 CIM_EthernetPortAllocationSettingData the Address property is optional.

946 If the address property is implemented, the provision in this subclause applies. The value of the Address
947 property shall expose an address of the allocated resource that can be seen by the software running in
948 the virtual system (usually the guest operating system). That address shall be unique at least within each
949 resource type of a virtual system. That address may change over the lifetime of the allocated resource. A
950 non-null value in the address property shall represent an Ethernet port identifier, most often the
951 MAC_Address of the port.

952 If the ResourceType property is 10 (Ethernet Adapter), a non-null value of the Address property shall
953 contain an Ethernet port identifier (usually the MAC_Address) for a requested, defined, or allocated
954 Ethernet Adapter.

955 If the ResourceType property is 30 (Ethernet Switch Port), a non-null value of the Address property shall
956 contain an Ethernet port identifier (usually the MAC_Address) for a requested, defined, or allocated
957 Ethernet switch port.

958 If the ResourceType property is 33 (Ethernet Connection), a non-null value of the Address property shall
959 contain a network port identifier (usually the MAC_Address) for the target switch port.

960 The following rules apply:

- 961 • Q_EASD: If the Address property is Null, on allocation the provider shall provide a unique port
962 identifier in the Address property of the R_EASD instance that is instantiated as a result of the
963 allocation. If the parent property is not null, the provider shall use the value in the Address
964 property to set the Address property in the R_EASD instance that is instantiated as a result of
965 the allocation.
- 966 • R_EASD: The value of the Address property shall reference the network port identifier of the
967 target Ethernet port representing a virtual Ethernet adapter or virtual Ethernet switch.
- 968 • D_EASD, M_EASD: A non-null value of the Address property shall contain a string that is the
969 requested network port identifier for an Ethernet adapter, Ethernet switch port, or connection to
970 an Ethernet switch port.

971 **7.6.2.1.14 InstanceID property**

972 If CIM_EthernetPortAllocationSettingData property matches 10 (Ethernet Adapter), the following rule
973 applies:

974 D_EASD: The InstanceID property may contain a temporary ID string that is correlated to a
975 temporary ID string in the Parent property of a separate instance of D_EASD, where the
976 ResourceType property is 33 (EthernetConnection), instantiated as embedded instances in the same
977 ResourceSettings parameter of a CIM_VirtualizationManagementService AddResourceSettings or
978 DefineSystem method call.

979 NOTE The D_EASD only exists as an embedded instance in a CIM_VirtualizationManagementService
980 AddResourceSettings or DefineSystem method call.

981 **7.6.2.1.15 Connection [] array property**

982 The implementation of the Connection[] array property is optional.

983 If the Connection[] array property is implemented and the ResourceType property is set to 30 (Ethernet
984 Switch Port) or 33 (Ethernet Connection), its value shall identify one or mode VLANs through their

985 VLANIDs. The Connection[] array property shall contain exactly one VLANID if the value of the
986 DesiredVLANEndPointMode property is 2(Access). The Connection[] array property shall contain zero or
987 more VLANIDs if the value of the DesiredVLANEndPointMode property is 5 (Trunk).

988 **7.6.2.1.16 MappingBehavior property**

989 The implementation of the MappingBehavior property is optional.

990 If the MappingBehavior property is implemented, its value shall denote how host resources referenced by
991 elements in the value of HostResource[] array property relate to the Ethernet port resource allocation.
992 The following rules apply:

- 993 • R_EASD only:

- 994 – A value of 3 (Dedicated) shall indicate that the represented resource allocation is provided
995 by host resources, as referenced by the value of the HostResource[] array property, that
996 are exclusively dedicated to the virtual system.

- 997 – A value of 4 (Soft Affinity) or 5 (Hard Affinity) shall indicate that the represented resource
998 allocation is provided using the host EthernetPort resource as referenced by the value of
999 the HostResource[] array property.

- 1000 – Other values shall not be used.

- 1001 • Q_EASD, D_EASD, M_EASD only:

- 1002 – A value of 0 (Unknown) shall indicate that the resource allocation request or modification
1003 does not require specific host resources.

- 1004 – A value of 3 (Dedicated) shall indicate that the resource allocation request or modification
1005 shall be provided by exclusively dedicated host resources as specified through the value of
1006 the HostResource[] array property.

- 1007 – A value of 4 (Soft Affinity) shall indicate that the resource allocation request or modification
1008 shall preferably be provided by host resources as specified through the value of the
1009 HostResource[] array property, but that other resources may be used if the requested
1010 resources are not available.

- 1011 – A value of 5 (Hard Affinity) shall indicate that the resource allocation request or
1012 modification shall preferably be provided by host resources as specified through the value
1013 of the HostResource[] array property and that other resources shall not be used if the
1014 requested resources are not available.

- 1015 – Other values shall not be used.

1016 The special value NULL shall indicate that a further qualification of the value of the HostResource[] array
1017 property through the value of the MappingBehavior property is not defined.

1018 **7.6.2.1.17 DesiredVLANEndPointMode property**

1019 The implementation of the DesiredVLANEndPointMode property is optional.

1020 If the DesiredVLANEndPointMode property is not supported, it shall have a value of NULL.

1021 **7.6.2.1.18 AllowedPriorities[]property**

1022 The implementation of the AllowedPriorities array property is optional.

1023 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1024 Connection) and AllowedPriorities array property is non-NULL, the array should contain the set of
1025 IEEE802.1Q defined PCP values that this port is allowed to transmit.

1026 If AllowedPriorities[] property is not supported, it shall have a value of NULL.

1027 **7.6.2.1.19 Promiscuous property**

1028 The Promiscuous property is optional.

1029 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1030 Connection) and if Promiscuous property is set to True, AllowedToReceiveMACAddress and
1031 AllowedToReceiveVLANs shall be ignored.

1032 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1033 Connection) and Promiscuous property is set to False, receive destination MAC filtering shall be
1034 performed as described in 7.6.2.1.20.

1035 If the Promiscuous property is not supported, it shall have a value of NULL.

1036 **7.6.2.1.20 AllowedToReceiveMACAddresses and AllowedToReceiveVLANs indexed array** 1037 **properties**

1038 The implementation of the AllowedToReceiveMACAddresses and AllowedToReceiveVLANs indexed
1039 array properties are optional.

1040 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1041 Connection) and the Promiscuous property is set to False, destination MAC filtering shall be performed
1042 based on the associated port's CIM_LANEndpoint.MACAddress, AllowedToReceiveMacAddresses array
1043 and the AllowedToReceiveVLANs arrays. The filtering shall be performed against a received packet's
1044 source MAC address and the packet's outermost VLAN tag respectively. All traffic that does not pass one
1045 of the four conditions below shall be dropped.

- 1046 • If both the AllowedToReceiveMACAddresses and AllowedToReceiveVLANs are NULL the
1047 implementation shall allow all receive traffic that matches the port's destination MAC address.
- 1048 • If the AllowedToReceiveMACAddresses is non-NULL and AllowedToReceiveVLANs is NULL,
1049 the implementation shall allow all receive traffic that matches the associated port's
1050 CIM_LANEndpoint.MACAddress and the packet's source MAC address to one of the MAC
1051 addresses from AllowedToReceiveMACAddresses.
- 1052 • If the AllowedToReceiveMACAddresses is NULL and AllowedToReceiveVLANs is non-NULL,
1053 the implementation shall allow all receive traffic that matches the port's destination MAC
1054 address and the packet's VLAN ID in the outermost VLAN tag to one of the VLAN IDs from the
1055 AllowedToReceiveVLANs array.
- 1056 • If the AllowedToReceiveMACAddresses is non-NULL and AllowedToReceiveVLANs is non-
1057 NULL, the implementation shall allow all receive traffic that matches the port's destination MAC
1058 address and the packet's (source MAC address, outermost VLAN ID) to one of the (MAC
1059 address, VLAN ID) pairs from the arrays AllowedToReceiveMACAddresses and
1060 AllowedToReceiveVLANs.

1061 **7.6.2.1.21 SourceMACFilteringEnabled property**

1062 The implementation of the SourceMacFilteringEnabled property is optional.

1063 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1064 Connection) and the SourceMacAddressFilteringEnabled property is set to True, outgoing network traffic
1065 shall be filtered:

- 1066 • If both the AllowedToTransmitMACAddresses and the AllowedToTransmitVLANs are NULL no
1067 outgoing network traffic shall be transmitted.
- 1068 • If AllowedToTransmitMACAddresses is non-NULL and AllowedToTransmitVLANs is NULL, only
1069 network traffic with a source MAC address that matches a valid MAC address in the
1070 AllowedToTransmitMACAddresses array shall be transmitted.

- 1071 • If AllowedToTransmitMACAddresses is NULL and AllowedToTransmitVLANs is non-NULL, only
1072 network traffic with an outermost VLAN ID that matches a valid VLAN ID in the
1073 AllowedToTransmitVLANs array shall be transmitted.
- 1074 • If AllowedToTransmitMACAddresses is non-NULL and AllowedToTransmitVLANs is non-NULL,
1075 only network traffic with a source MAC address and an outermost VLAN ID that matches to one
1076 of the (MAC address, VLAN) pairs from the AllowedToTransmitMACAddresses and the
1077 AllowedToTransmitVLANs arrays shall be transmitted.
- 1078 If SourceMACFilteringEnabled is False or is NULL, the AllowedToTransmitMACAddresses and
1079 AllowedToTransmitVLANs properties shall be ignored.
- 1080 If SourceMACFilteringEnabled is property is not supported, it shall have a value of NULL.
- 1081 **7.6.2.1.22 AllowedToTransmitMACAddresses and AllowedToTransmitVLANs indexed array**
1082 **properties**
- 1083 The implementation of the AllowedToTransmitMACAddresses and AllowedToTransmitVLANs indexed
1084 array properties are optional.
- 1085 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1086 Connection) and if the SourceMACFilteringEnabled property is set to True, network transmit traffic shall
1087 be filtered on the values contained in the AllowedToTransmitMACAddresses and
1088 AllowedToTransmitVLANs indexed array properties as described in 7.6.2.1.21.
- 1089 If either property is not supported, the unsupported property shall have a value of NULL.
- 1090 **7.6.2.1.23 DefaultPortVID property**
- 1091 The implementation of the DefaultPortVID property is optional.
- 1092 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1093 Connection) and if implemented, DefaultPortVID should represent the default VLAN ID (VID) for the
1094 CIM_EthernetPort associated with this instance of CIM_EthernetPortAllocationSettingData. This value
1095 should be set to 1 to represent the typical default VID.
- 1096 **7.6.2.1.24 DefaultPriority property**
- 1097 The implementation of the DefaultPriority array property is optional.
- 1098 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1099 Connection) and if implemented, the DefaultPriority property should represent the IEEE802.1Q PCP bits
1100 assigned to transmit packets.
- 1101 **7.6.2.1.25 GroupID property**
- 1102 The implementation of the GroupID array property is optional.
- 1103 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1104 Connection) and if implemented, the GroupID should have the value of the ports VDP TLV VSI GroupID
1105 as specified in [IEEE 802.1Qbg](#).
- 1106 If the property is not supported, it shall have a value of NULL.
- 1107 **7.6.2.1.26 ManagerID property**
- 1108 The implementation of the ManagerID array property is optional.
- 1109 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1110 Connection) and if implemented, the ManagerID should have the value of the ports VDP TLV VSI
1111 ManagerID as specified in [IEEE 802.1Qbg](#).

1112 If the property is not supported, it shall have a value of NULL.

1113 **7.6.2.1.27 NetworkPortProfileID property**

1114 The implementation of the NetworkPortProfileID array property is optional.

1115 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1116 Connection) and if supported, the Network port profile ID identifies the [DSP8049](#) conformant network port
1117 profile that applies to the associated CIM_EthernetPort.

1118 **7.6.2.1.28 NetworkPortProfileIDType property**

1119 The implementation of the NetworkPortProfileIDType property is conditional.

1120 **Condition:** NetworkPortProfileID property is non-NULL; see 7.6.2.1.27.

1121 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1122 Connection) and if supported, the NetworkPortPropertyIDType shall define the format of the value of the
1123 NetworkPortProfileID.

1124 **7.6.2.1.29 PortCorrelationID property**

1125 The implementation of the PortCorrelationID array property is optional.

1126 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1127 Connection) and if the PortCorrelationID property is implemented, the property should contain the ports
1128 VSI instance Identifier as specified in [IEEE 802.1Qbg](#).

1129 If the property is not supported, it shall have a value of NULL.

1130 **7.6.2.1.30 PortVID property**

1131 The implementation of the PortVID array property is optional.

1132 If the ResourceType property is 30 (Ethernet Switch Port) or if the ResourceType property is 33 (Ethernet
1133 Connection) and if implemented, the PortVID property should be set to the VLAN ID that is used to tag
1134 untagged traffic on this port.

1135 If the property is not supported, it shall have a value of NULL.

1136 **7.6.2.1.31 ReceiveBandwidthReservation property**

1137 The implementation of the ReceiveBandwidthReservation property is optional.

1138 If the ReceiveBandwidthReservation property is implemented, the value of the
1139 ReceiveBandwidthReservation property shall denote the reserved amount; a requested reserve; or a
1140 supported reserve amount of Ethernet receive bandwidth supported in units of AllocationUnits.

1141 If the property is not supported, it shall have a value of NULL.

1142 **7.6.2.1.32 ReceiveBandwidthLimit property**

1143 The implementation of the ReceiveBandWidthLimit property is optional.

1144 If the ReceiveBandwidthLimit property is implemented, the value of the ReceiveBandwidthLimit property
1145 shall denote the maximum amount of Ethernet receive bandwidth available in units of AllocationUnits.

1146 The special value NULL shall indicate that a limit is not imposed.

1147 **7.6.2.2 Instance requirements**

1148 This subclause details resource allocation-related instance requirements.

1149 7.6.2.2.1 Representation of resource allocation requests

1150 Each Ethernet adapter resource allocation request shall be represented by a Q_EASD instance; the
1151 provisions of 10.9 apply.

1152 Each Ethernet switch port resource allocation request shall be represented by a Q_EASD instance; the
1153 provisions of 10.19 apply.

1154 Each Ethernet connection resource allocation request shall be represented by a Q_EASD instance; the
1155 provisions of 10.14 apply.

1156 7.6.2.2.2 Representation of resource allocations

1157 Each Ethernet adapter resource allocation shall be represented by an R_EASD instance; the provisions
1158 of 10.10 apply.

1159 Each Ethernet switch port resource allocation shall be represented by an R_EASD instance; the
1160 provisions of 10.20 apply.

1161 Each Ethernet connection resource allocation shall be represented by an R_EASD instance; the
1162 provisions of 10.15 apply.

1163 The R_EASD instance shall be associated to the Q_EASD instance representing the corresponding
1164 resource allocation request (see 6.4.4) through an instance of the CIM_ElementSettingData association;
1165 the provisions of 10.5 apply.

1166 The R_EASD instance shall be associated to the CIM_ResourcePool instance providing resources for the
1167 allocation (see 7.5) through an instance of the CIM_ResourceAllocationFromPool association; see
1168 [DSP1041](#).

1169 Implementations may represent a resource allocation request and the corresponding resource allocation
1170 by one EASD instance; in this case, the association requirements of this subclause apply
1171 correspondingly. Association instances that refer to the R_EASD instance only exist while the resource is
1172 allocated.

1173 7.6.2.2.3 Representation of an Ethernet switch port [Network Port Profile](#).

1174 Each instantiated Ethernet switch port CIM_EthernetPort instance shall have an associated instance of
1175 CIM_EthernetPortAllocationSettingData using the CIM_SettingDefinesState association. For a statically
1176 allocated Ethernet switch, this instance shall be the R_EASD instance from the allocation of the Ethernet
1177 switch port. For a dynamic or simple Ethernet switch port allocation, this instance should be the R_EASD
1178 instance of the associated Ethernet connection allocation.

1179 7.6.2.2.4 Representation of resource allocation capabilities

1180 The allocation capabilities of a system or a resource pool shall be represented by a
1181 CIM_AllocationCapabilities instance that is associated to the CIM_System instance representing the
1182 system or to the CIM_ResourcePool instance representing the resource pool through an instance of the
1183 CIM_ElementCapabilities association; see [DSP1043](#).

1184 The settings that define the Ethernet adapter allocation capabilities of an Ethernet adapter resource pool
1185 or of a system shall be represented by C_EASD instances; the provisions of 10.11 apply.

1186 The settings that define the Ethernet switch port allocation capabilities of an Ethernet switch port resource
1187 pool or of a system shall be represented by C_EASD instances; the provisions of 10.21 apply.

1188 The settings that define the Ethernet connection allocation capabilities of an Ethernet connection
1189 resource pool or of a system shall be represented by C_EASD instances; the provisions of 10.16 apply.

1190 7.6.2.2.5 Representation of resource allocation mutability

1191 The mutability of a resource allocation or resource allocation request shall be represented by a
1192 CIM_AllocationCapabilities instance that is associated to the EASD instance representing the resource
1193 allocation or resource allocation request through an instance of the CIM_ElementCapabilities association;
1194 see [DSP1043](#).

1195 The settings that define the allocation mutability of an Ethernet adapter resource allocation or an Ethernet
1196 adapter resource allocation request shall be represented by C_EASD instances; the provisions of 10.11
1197 apply.

1198 The settings that define the allocation mutability of an Ethernet switch port resource allocation or an
1199 Ethernet switch port resource allocation request shall be represented by C_EASD instances; the
1200 provisions of 10.21 apply.

1201 The settings that define the allocation mutability of an Ethernet connection resource allocation or an
1202 Ethernet connection resource allocation request shall be represented by C_EASD instances; the
1203 provisions of 10.16 apply.

1204 7.7 Virtual resources

1205 7.7.1 Virtual Ethernet adapter

1206 Each allocated virtual Ethernet adapter shall be represented by one CIM_EthernetPort instance that is
1207 associated with the CIM_ComputerSystem instance that represents the virtual system through an
1208 instance of the CIM_SystemDevice association; the provisions of 10.29 apply.

1209 The CIM_EthernetPort instance shall be associated with the CIM_ResourcePool instance from which it
1210 was allocated through the CIM_ElementAllocatedFromPool association; the provisions of 10.3 apply.

1211 Each connection endpoint implemented by the Ethernet adapter shall be represented by a
1212 CIM_LANEndpoint instance that is associated to the CIM_EthernetPort instance through an instance of
1213 the CIM_DeviceSAPIImplementation association as specified in [DSP1014](#).

1214 NOTE This profile does not attempt to specify the mapping of the characteristics or the implementation of the
1215 physical characteristics mandated by the dependency on [DSP1014](#). For example, there are no physical
1216 characteristics or bandwidth requirements mandated by this specification to allow a provider to set the PortType
1217 property of CIM_EthernetPort to "1000BaseT".

1218 7.7.2 Virtual Ethernet switch port

1219 Each allocated virtual Ethernet switch port shall be represented by one CIM_EthernetPort instance that is
1220 associated with the CIM_ComputerSystem instance that represents the virtual Ethernet switch through an
1221 instance of the CIM_SystemDevice association; the provisions of 10.29 apply.

1222 The CIM_EthernetPort instance shall be associated with the CIM_ResourcePool instance from which it
1223 was allocated through the CIM_ElementAllocatedFromPool association; the provisions of 10.3 apply.

1224 Each connection endpoint implemented by the Ethernet switch port shall be represented by a
1225 CIM_LANEndpoint instance that is associated to the CIM_EthernetPort instance through an instance of
1226 the CIM_DeviceSAPIImplementation association as specified in [DSP1014](#).

1227 7.7.3 Virtual Ethernet connection

1228 Each virtual Ethernet connection resource allocation shall be represented by one instance of the
1229 CIM_ActiveConnection association that associates the CIM_LANEndpoint instances representing the
1230 connection endpoints that are associated to the targeted virtual Ethernet adapter (see 7.7.1) and virtual
1231 Ethernet switch port (see 7.7.2). The provisions of 10.1 apply.

1232 The CIM_LANEndpoint instance associated to the CIM_EthernetPort instance representing the Ethernet
1233 adapter shall be associated with CIM_ElementSettingData to the R_EASD instance representing the
1234 allocated connection resources. The provisions of 10.4 apply.

1235 **8 Methods**

1236 This clause details the requirements for supporting operations and methods for the CIM elements defined
1237 by this profile.

1238 **8.1 Profile conventions for operations**

1239 The implementation requirements on operations for each profile class (including associations) are
1240 specified in class-specific subclauses of this clause.

1241 The default list of operations for all classes is:

- 1242 • GetInstance()
- 1243 • EnumerateInstances()
- 1244 • EnumerateInstanceNames()

1245 For classes that are referenced by an association, the default list also includes:

- 1246 • Associators()
- 1247 • AssociatorNames()
- 1248 • References()
- 1249 • ReferenceNames()

1250 Implementation requirements on operations defined in the default list are provided in the class-specific
1251 subclauses of this clause.

1252 The implementation requirements for methods of classes listed in clause 10, but not addressed by a
1253 separate subclause of this clause, are specified by the "Methods" clauses of respective base profiles,
1254 namely [DSP1041](#) and [DSP1043](#). These profiles are specialized by this profile, and in these cases, this
1255 profile does not add method specifications beyond those defined in its base profiles.

1256 **8.2 CIM_EthernetPort for host systems**

1257 All operations in the default list in 8.1 shall be implemented as specified by [DSP0200](#). In addition, the
1258 requirements of the CIM Schema and other prerequisite specifications (including profiles) apply.

1259 **8.3 CIM_EthernetPort for virtual systems**

1260 All operations in the default list in 8.1 shall be implemented as specified by [DSP0200](#). In addition, the
1261 requirements of the CIM Schema and other prerequisite specifications (including profiles) apply.

1262 **8.4 CIM_EthernetPortAllocationSettingData**

1263 All operations in the default list in 8.1 shall be implemented as specified by [DSP0200](#). In addition, the
1264 requirements of the CIM Schema and other prerequisite specifications (including profiles) apply.

1265 **8.5 CIM_ResourcePool**

1266 All operations in the default list in 8.1 shall be implemented as specified by [DSP0200](#). In addition, the
1267 requirements of the CIM Schema and other prerequisite specifications (including profiles) apply.

1268 8.6 CIM_SystemDevice for host resources

1269 All operations in the default list in 8.1 shall be implemented as specified by [DSP0200](#). In addition, the
1270 requirements of the CIM Schema and other prerequisite specifications (including profiles) apply.

1271 8.7 CIM_SystemDevice for virtual resources

1272 All operations in the default list in 8.1 shall be implemented as specified by [DSP0200](#). In addition, the
1273 requirements of the CIM Schema and other prerequisite specifications (including profiles) apply.

1274 8.8 CIM_VLANEndpointSettingData

1275 All operations in the default list in 8.1 shall be implemented as specified by [DSP0200](#). In addition, the
1276 requirements of the CIM Schema and other prerequisite specifications (including profiles) apply.

1277 9 Use cases

1278 The use cases and object diagrams in this clause illustrate use of this profile. They are for informative
1279 purposes only and do not introduce behavioral requirements for implementations of the profile.

1280 9.1 Instance diagrams

1281 The following use cases represent three separate example implementation options of varying complexity:

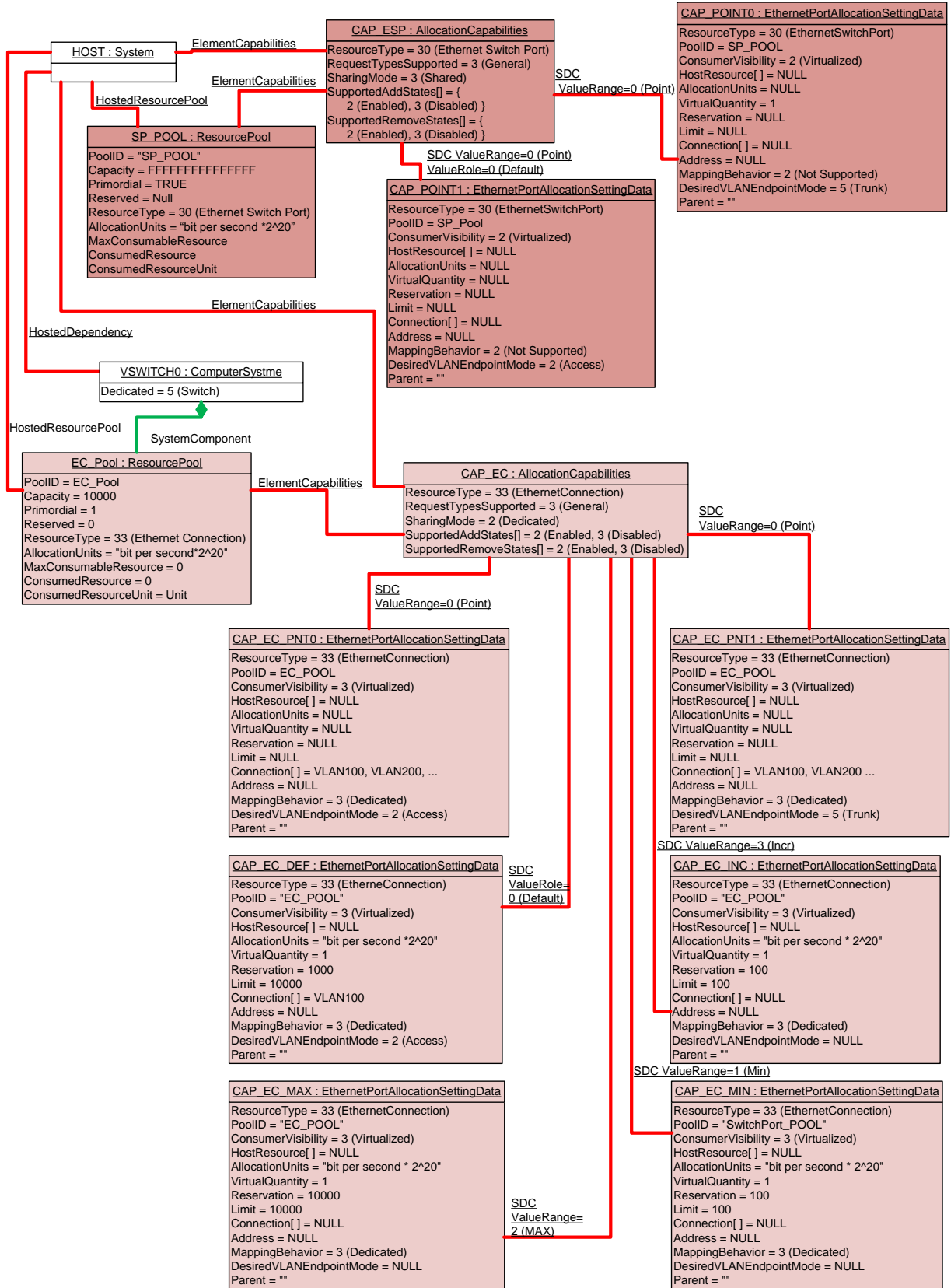
- 1282 • Static (3.21) represents the fully featured allocation model. It defines Ethernet connection
1283 allocations to existing Ethernet switch port instances that are aggregated host resources into an
1284 Ethernet connection resource pool. This implementation option allows for the separate
1285 management of the Ethernet switch ports as part of the virtual Ethernet switch. In this option,
1286 there are resource pools for all three EthernetPortAllocationSettingData resource types:
1287 Ethernet Connection, Ethernet Adapter and Ethernet Switch Port. Ethernet connection
1288 allocations are used to connect to an existing Ethernet switch port and a defined Ethernet
1289 adapter. If allowed by the implementation, the relevant properties in the Ethernet Connection
1290 request are used to override the values set in the Ethernet switch port allocation.
- 1291 • Dynamic (3.2) simplifies the model by dynamically generating an Ethernet switch port instance
1292 on a virtual Ethernet switch at the time that the Ethernet connection allocation targeting a switch
1293 is made. Ethernet connection allocations are used to connect a defined Ethernet adapter to a
1294 dynamically allocated Ethernet switch port. If allowed by the implementation, the relevant
1295 properties in the Ethernet Connection request are used to override the default values for the
1296 corresponding settings in the Ethernet switch port.
- 1297 • Simple (3.20) further simplifies the model using only an Ethernet connection allocation to create
1298 a complete network connection. On the allocation of an Ethernet Connection to a virtual
1299 machine targeting a virtual Ethernet switch, both an Ethernet adapter and an Ethernet switch
1300 port are dynamically allocated. If allowed by the implementation, the relevant properties in the
1301 Ethernet Connection request are used to override the default values for the corresponding
1302 settings in the Ethernet switch port.

1303 The preceding three example implementations are not presented as any limitation of possible
1304 implementations; rather they illustrate the target models that lead the development of this profile.

1305 9.1.1 Static Ethernet switch port and Ethernet connection resource pools with 1306 capabilities

1307 Figure 4 is a CIM representation of a virtualization system (HOST) with a hosted virtual Ethernet switch
1308 (VSWITCH0) and resource pools for Ethernet switch ports (SP_POOL) and Ethernet connections
1309 (EC_POOL). Figure 4 also has a set of capabilities for the two resource pools. The system as represented
1310 supports static switch port allocations to an Ethernet switch.

- 1311 SP_POOL represents a resource pool of unlimited capabilities for allocating virtualized Ethernet switch
1312 ports with a desired mode of either Trunk or Access. These capabilities are shown through the
1313 CIM_AllocationCapabilities instance (CAP_ESP) and two instances of the
1314 CIM_EthernetPortAllocationSettingData class (CAP_POINT0 and CAP_POINT1), associated through two
1315 instances of the CIM_SettingDefinesCapabilities association class.
- 1316 CAP_POINT1 is a default capabilities instance. The value of the CAP_POINT1
1317 DesiredVLANEndpointMode property is set to 2 (Access). Only virtual instances of Ethernet switch ports
1318 are supported from this pool as represented by the value 2 (Virtualized) of the ConsumerVisibility
1319 property.
- 1320 The value of the CAP_POINT0 DesiredVLANEndpointMode property is set to 5 (Trunk), indicating that a
1321 Trunking Ethernet switch port can also be allocated from the resource pool SP_POOL. Again, only virtual
1322 instances of Ethernet switch port allocations are supported from this pool, as represented by the value 2
1323 (Virtualized) for the ConsumerVisibility property.
- 1324 The virtual Ethernet switch represented by an instance, VSWITCH0, of the CIM_ComputerSystem class
1325 as shown in Figure 4 has one associated Ethernet connection resource pool represented by the
1326 EC_POOL instance of the CIM_ResourcePool class. EC_POOL represents a pool with 10 gigabits of
1327 bandwidth as shown by the value of the Capacity property (equal to 10,000 combined with the
1328 AllocationUnits property of "bits per second*2^20"). EC_POOL currently has no assigned Ethernet switch
1329 ports that are available for connection because the value of the MaxConsumableResource property is 0.
- 1330 EC_POOL has an associated instance CAP_EC of the CIM_AllocationCapabilities class with a set of
1331 CIM_EthernetPortAllocationSettingData instances to describe the supported allocations from the pool
1332 when there are Ethernet switch ports available for connection. An examination of these instances of the
1333 CIM_EthernetPortAllocationSettingData class (CAP_EC_MIN, CAP_EC_MAX, CAP_EC_INC,
1334 CAP_EC_POINT0, and EC_POINT1) describe the capabilities of the EC_POOL resource pool:
- 1335 • Only Dedicated allocations are allowed (MappingBehavior = 3 [Dedicated]) in all instances.
 - 1336 • The default allocation request is 1,000 megabytes of reserved bandwidth (Reserved = 1000)
1337 with 10,000 megabyte top limit of allowable bandwidth (Limit = 10000). The default allocation
1338 has VLAN support with the value of the DesiredVLANEndpointMode property set to "Access".
1339 These values are shown in the CAP_EC_DEF instance of the
1340 CIM_EthernetPortAllocationSettingData class.
 - 1341 • The empty string value in the Parent property shows that the system supports the setting of the
1342 value of the Parent property, which is limited by this profile to be a reference URI to the Ethernet
1343 adapter request instance of the CIM_EthernetPortAllocationSettingData class.
 - 1344 • Allocation request reservation and limit values can be made in the range of 100 to 10,000
1345 megabits per second of bandwidth, with an increment of 100 megabits per second. This range
1346 is shown in the CAP_EC_MAX, CAP_EC_MIN, and CAP_EC_INC instances of the
1347 CIM_EthernetPortAllocationSettingData class Reservation and Limit property values.
 - 1348 • VLAN is supported, and either Access or Trunk mode is supported. (See the
1349 DesiredVLANEndPointMode property values for the CAP_EC_POINT0 and CAP_EC_POINT1
1350 instances.)
 - 1351 • The array of supported VLANID is represented in the value of the Connection array properties in
1352 the CAP_EC_POINT0 and CAP_EC_POINT1 instances.



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Figure 4 – Ethernet switch port and Ethernet connection resource pools

1355 **9.1.2 Static Ethernet switch port allocation to a virtual Ethernet switch**

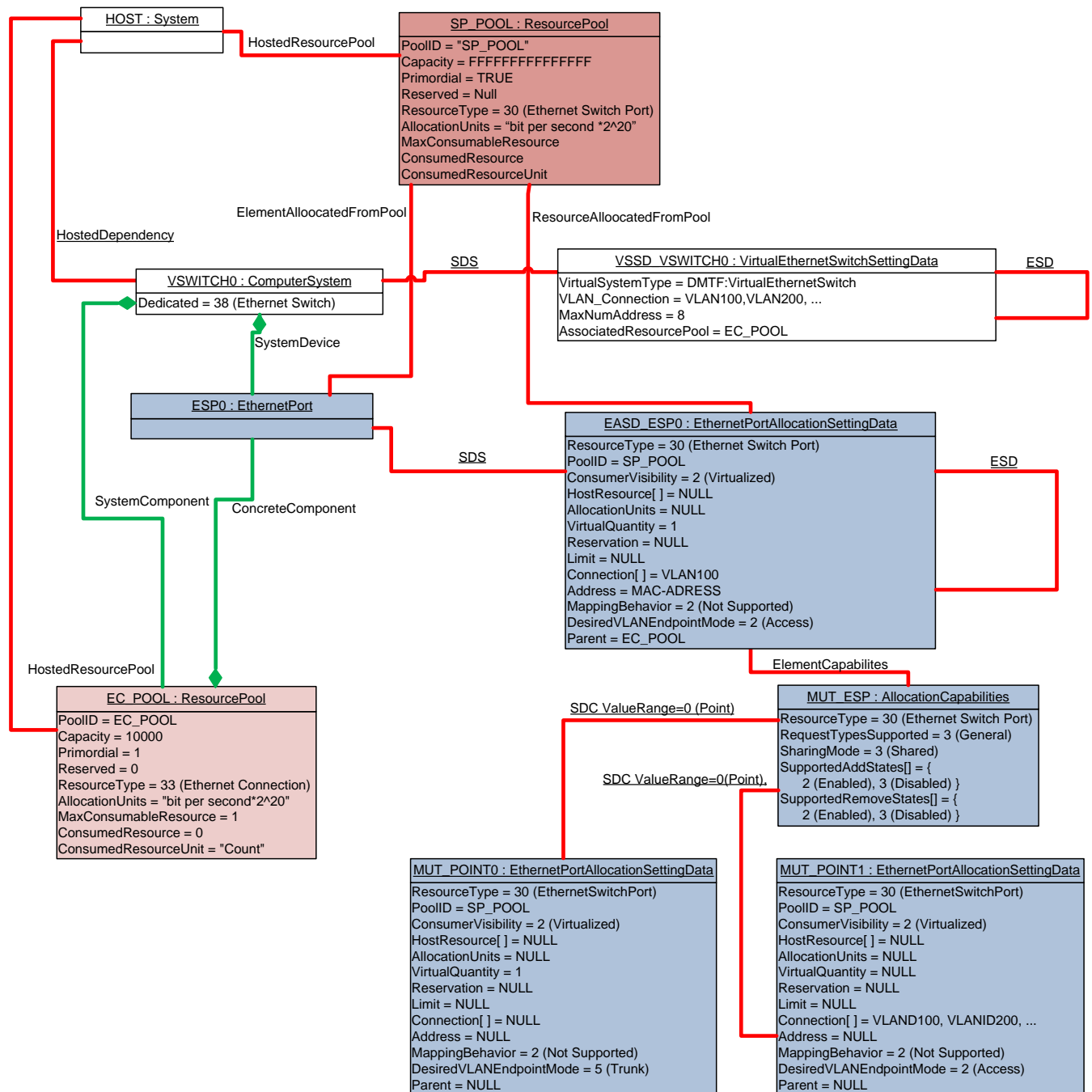
1356 Figure 5 shows the same host system (HOST) and virtual Ethernet switch (VSWITCH0) as shown in
1357 Figure 4 with the resource pool allocation capabilities removed to simplify the drawing. Figure 5 is the CIM
1358 representation of the system after a static Ethernet switch port, represented as the instance ESP0 of the
1359 CIM_EthernetPort class, has been allocated to the virtual Ethernet switch VSWITCH0 from the instance
1360 of the host resource pool SP_POOL representing the CIM_ResourcePool class.

1361 The allocation of ESP0 is a virtual resource allocation as described in [DSP1041](#). Thus, it has an
1362 associated state instance of the CIM_EthernetPortAllocationSettingData class (EASD_ESP0.)
1363 ESAD_ESP0 contains the [DSP8049](#) properties as described in 7.6.2.2.3. In this use case, this same
1364 instance is also used as the request instance, as shown with the self-reference of the
1365 CIM_ElementSettingData association to EASD_ESP0.

1366 An examination of values in the properties of EASD_ESP0 shows that a default allocation was used in the
1367 allocation request because the DesiredVLANEndpointMode is set to Access. The provider in this use
1368 case provided a MAC address (MAC_ADDRESS) and inserted the default VLANID for the associated
1369 virtual Ethernet switch port into the Connection property.

1370 Associated to EASD_ESP0 is a CIM_AllocationCapabilities instance (MUT_ESP). Associated to
1371 MUT_ESP are two mutability instances of CIM_EthernetPortAllocationSettingData (MUT_POINT0 and
1372 MUT_POINT1), which shows that the DesiredVLANEndPointMode and Connection properties are
1373 mutable. The DesiredVLANEndPointMode property value can be changed to either 2 (Access) or 5
1374 (Trunk). The VLANID Access property can be set to any of the values listed in the Connection property of
1375 instance MUT_POINT1.

1376 Because the Parent property value of instance EASD_ESP0 was set to reference the resource pool
1377 instance EC_POOL, the allocated CIM_EthernetPort instance ESP0 is included in the CIM_Component
1378 aggregation to the EC_POOL resource pool. Also, note that the MaxConsumableResource property value
1379 has been incremented to 1 from the value shown in Figure 4 to show that a switch port is available for
1380 connection.



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1383 **Figure 5 – Static Ethernet switch port allocation to a virtual Ethernet switch**

1384 **9.1.3 Allocation and connection of an Ethernet adapter to a static switch port**

1385 Figure 6 shows the same virtualization system and virtual Ethernet switch shown in Figure 5 and Figure 4.
 1386 This figure includes an instance of a virtual system (VM1) represented with the CIM_ComputerSystem
 1387 class with allocation requests and a current device allocation for an Ethernet Adapter instance(EA)
 1388 represented by the CIM_EthernetPort class and a simple allocation of an Ethernet connection to the
 1389 Ethernet switch port ESP0. No allocation capabilities are shown in this figure, but the Allocation
 1390 Capabilities for the Ethernet connection resource pool EC_POOL are as shown in Figure 4.

1391 The Ethernet adapter request for VM1, the EA_REQ instance of the
1392 CIM_EthernetPortAllocationSettingData class, shows that this provider allows the allocation of synthetic
1393 Ethernet adapters with no host resource allocation. This capability is shown with the unlimited capacity of
1394 EA_POOL and the NULL values in the EA_REQ instance for the Reserve and Limit properties. This
1395 allocation is a basic virtual resource allocation with the purpose of allocating a logical device instance of
1396 the CIM_EthernetPort class. The provider populated the value in the Address property in the state
1397 instance (EA_STATE) of the CIM_EthernetPortAllocationSettingData class with a MAC address
1398 represented in Figure 6 as EA_MAC. The allocation is a virtual resource allocation as shown by the
1399 CIM_ElementAllocatedFromPool association between the resource pool EA_POOL and the EA instance
1400 of CIM_EthernetPort as well as the CIM_ResourceAllocatedFromPool association instance between
1401 EA_POOL and EA_State.

1402 The Ethernet connection request for VM1, the EC_REQ instance of the
1403 CIM_EthernetPortAllocationSettingData class, specifies a request for a specific Ethernet switch port
1404 (ESP0), a reservation and limit of Bandwidth through the switch (VSWITCH0), and a set of VLAN property
1405 overrides of the default properties of the requested Ethernet switch port. The property values of EC_REQ
1406 define the request EASD as follows:

- 1407 • PoolID=EC_POOL: This property selects the resources pool EC_POOL.
- 1408 • Parent=EA_REQ: This property associates this Ethernet connection request with the Ethernet
1409 adapter request EA_REQ.
- 1410 • HostResource[] = ESP0: This property requests that specific Ethernet switch port.
- 1411 • MappingBehavior = 3 (Dedicated): This property identifies that this is an exclusive request for
1412 this resource.
- 1413 • AllocationUnits=bits per second*2^20: This property specifies a bandwidth unit of 1 megabyte
1414 per second.
- 1415 • Reservation=1000: This property requests to reserve 1 gigabit per second of Ethernet
1416 bandwidth.
- 1417 • Limit=10000: This property sets a limit of 10 gigabits per second. In effect, there is no limit to
1418 the VM's use of available bandwidth because this value matches the maximum capacity of the
1419 request resource pool.
- 1420 • Address=NULL: There is no request to override the MAC address of the switch port.
- 1421 • DesiredVLANEndpointMode=Access: The request sets and maintains the desired
1422 VLANEndpointMode of the requested Ethernet switch port.
- 1423 • Connection=VLAN200: This property is an override of the access VLANID for the switch port.
- 1424 • VirtualQuantity=1: This property is a request for one connection.

1425 The Ethernet connection state instance EC_STATE represents the current allocation of the Ethernet
1426 connection described above. The only property value difference between the EC_STATE and EC_REQ is
1427 the value of the Parent property. The value of the Parent property is a reference to the Ethernet adapter's
1428 allocation instance EA_STATE represented with the CIM_EthernetPortAllocationSettingData class.

1429 When VM1 was turned on, the Ethernet adapter (EA) and its associated CIM_LANEndpoint instance
1430 (EA_LEP) were instantiated based on the value of the request instance EA_REQ. Based on the Ethernet
1431 connection request instance (EC_REQ), the provider instantiated the Ethernet switch port's associated
1432 instance of CIM_LANEndpoint (ESP_LEP), the instance of CIM_VLANEndpoint(VLEP), and the instance
1433 of VLANEndpointSettingData(VEPSD). The property values shown in these instances are the
1434 corresponding properties described in the above description of EC_REQ.

1435 The connection between the two CIM_LANEndpoint instances, EA_LEP and ESP_LEP, is shown with the
1436 association CIM_ActiveConnection.

1444 **9.1.4 Connection of an Ethernet adapter to an Ethernet switch (dynamic switch port** 1445 **allocation)**

1446 Figure 7 and Figure 8 are CIM instance diagrams that represent a virtualization system that supports
 1447 dynamic or implied switch port allocation during the connection of an Ethernet adapter to a virtual
 1448 Ethernet switch.

1449 Figure 7 is a CIM representation of the allocation capabilities (CAP_EC) of an Ethernet connection
 1450 resource pool (EC_POOL) associated with a virtual Ethernet switch (VSWITCH1).

1451 The resource pool EC_POOL has a resource type of 33 (Ethernet Connection). The pool has a capacity
 1452 of 10 gigabits of Ethernet bandwidth. This pool has no defined limits on the number of connections that
 1453 can be made, as shown with NULL values for the MaxConsumableResource and ConsumedResource
 1454 properties in EC_POOL.

1455 The CIM_AllocationCapabilities instance CAP_EC has six associated instances of
 1456 CIM_EthernetPortAllocationSettingData that are associated through the CIM_SettingDefinesCapabilities
 1457 association:

- 1458 • Instance CAP_EC_DEF shows that a connection to VSWITCH1 is made by requesting
 1459 VSWITCH1 as a reference value in the HostResource property and EC_POOL in the PoolID
 1460 property. This default request is a request for 1 gigabit of bandwidth as shown with a reserved
 1461 property value of 1000 and the AllocationUnit property value of bits per second * 2^20. The
 1462 default value for the DesiredVLANEndpointMode is Access with a VLANID of VLAN100. The
 1463 empty string value in the Parent property shows that the system supports the modification of the
 1464 Parent property. The use of the Parent property in this use is limited by this profile to be a
 1465 reference to the Ethernet adapter request instance of the
 1466 CIM_EthernetPortAllocationSettingData class.
- 1467 • Instances CAP_EC_INC, CAP_EC_MAX, and CAP_EC_MIN define the valid range of values
 1468 for the Reserve and Limit properties and the Increment value for those properties.
- 1469 • The values in the DesiredVLANEndpointMode property of the CAP_EC_PNT1 and
 1470 CAP_EC_PNT0 capabilities instances show that either 2 (Access) or 5 (Trunk) can be
 1471 requested. The values listed in the Connection property for both instances list the valid
 1472 VLANIDs that can be requested in an allocation request.

1473 Figure 8 shows the same virtualization system with a dynamic Ethernet connection allocation and an
 1474 active Ethernet adapter allocation to VM1. The Ethernet adapter allocation is identical to the allocation
 1475 shown in Figure 6 and described in 9.1.3.

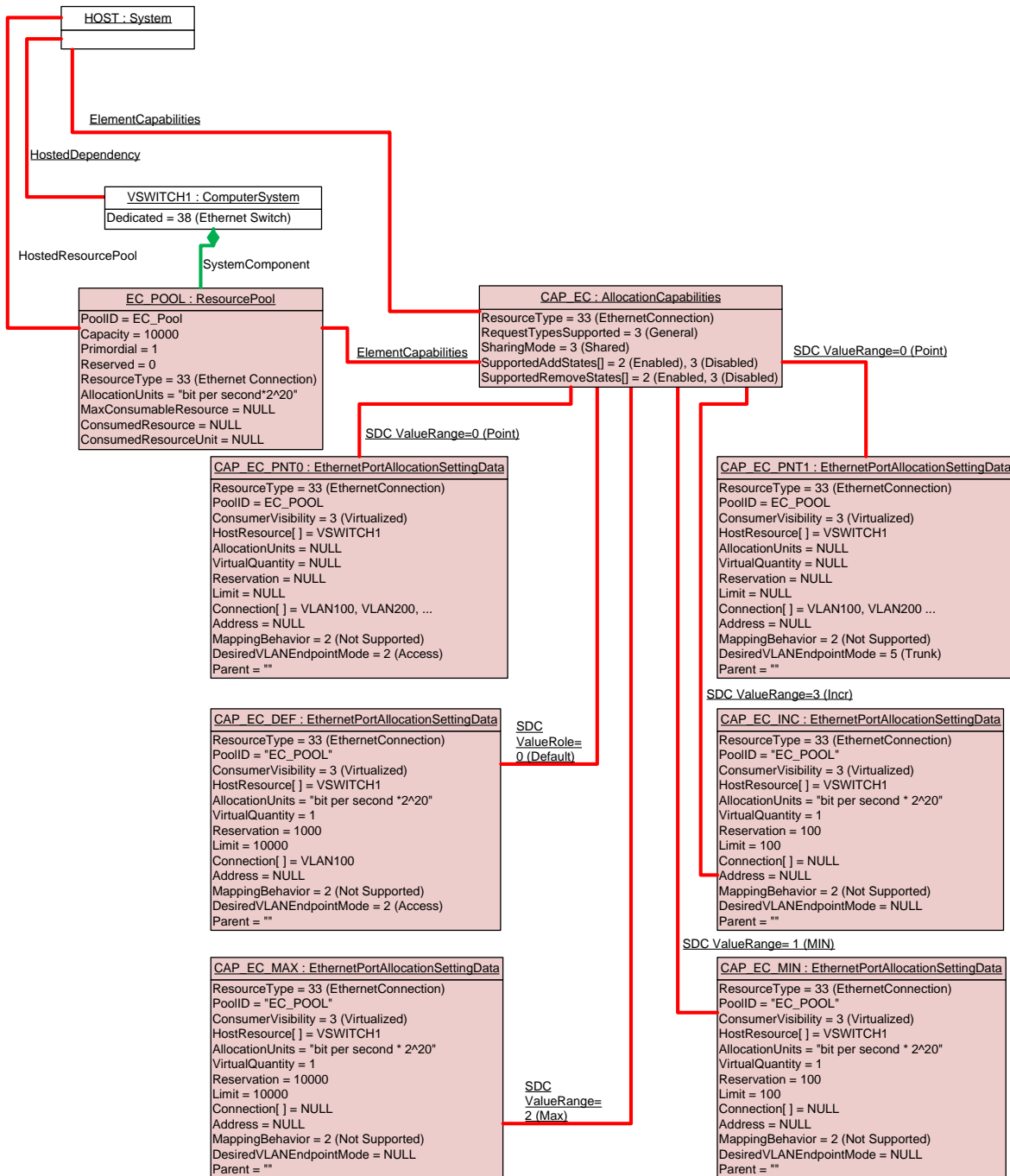
1476 The Ethernet connection request and allocation instances of CIM_EthernetPortAllocationSettingData
 1477 (EC_REQ and EC_STATE) are for a dynamic Ethernet port allocation. As a side effect of the Ethernet
 1478 connection allocation, an Ethernet switch port instance (ESP0), its associated LAN and VLAN endpoints
 1479 (ESP_LEP and VLEP), and an instance of CIM_VLANEndpointSettingData (VEPSD) are instantiated.

1480 The Ethernet connection request for VM1, the EC_REQ instance of the
 1481 CIM_EthernetPortAllocationSettingData class, specifies a default Ethernet switch port from the virtual
 1482 Ethernet switch VSWITCH0, a reservation and limit of bandwidth through the switch VSWITCH0, and a
 1483 set of VLAN property values for the Ethernet switch port. The property values of EC_REQ define the
 1484 request instance of EASD as follows:

- 1485 • PoolID=EC_POOL: This property selects the resource pool EC_POOL.
- 1486 • Parent=EA_REQ: This property associates this Ethernet connection request with the Ethernet
 1487 adapter request EA_REQ.
- 1488 • HostResource[] = VSWITCH1: This property requests that an Ethernet switch port as defined by
 1489 the allocation capabilities associated with the Ethernet connection resource pool EC_POOL be
 1490 instantiated.

- 1491 • MappingBehavior = 2 (Not Supported)
- 1492 • AllocationUnits=bit per second*2^20: This property specifies a bandwidth unit of 1 megabyte per
1493 second.
- 1494 • Reservation=1000: This property is a request to reserve 1 gigabit per second of Ethernet
1495 bandwidth.
- 1496 • Limit=10000: This property sets a limit of 10 gigabits per second; in effect, there is no limit to the
1497 VM's use of available bandwidth because this value matches the maximum capacity of the
1498 request resource pool.
- 1499 • Address=NULL: There is no request to override the provider-generated MAC address of the
1500 switch port.
- 1501 • DesiredVLANEndpointMode=Access: This property requests the desired VLANEndpointMode
1502 of the requested Ethernet switch port.
- 1503 • Connection=VLAN200: This property requests the access VLANID for the switch port.
- 1504 • VirtualQuantity=1: This property is a request for one connection.

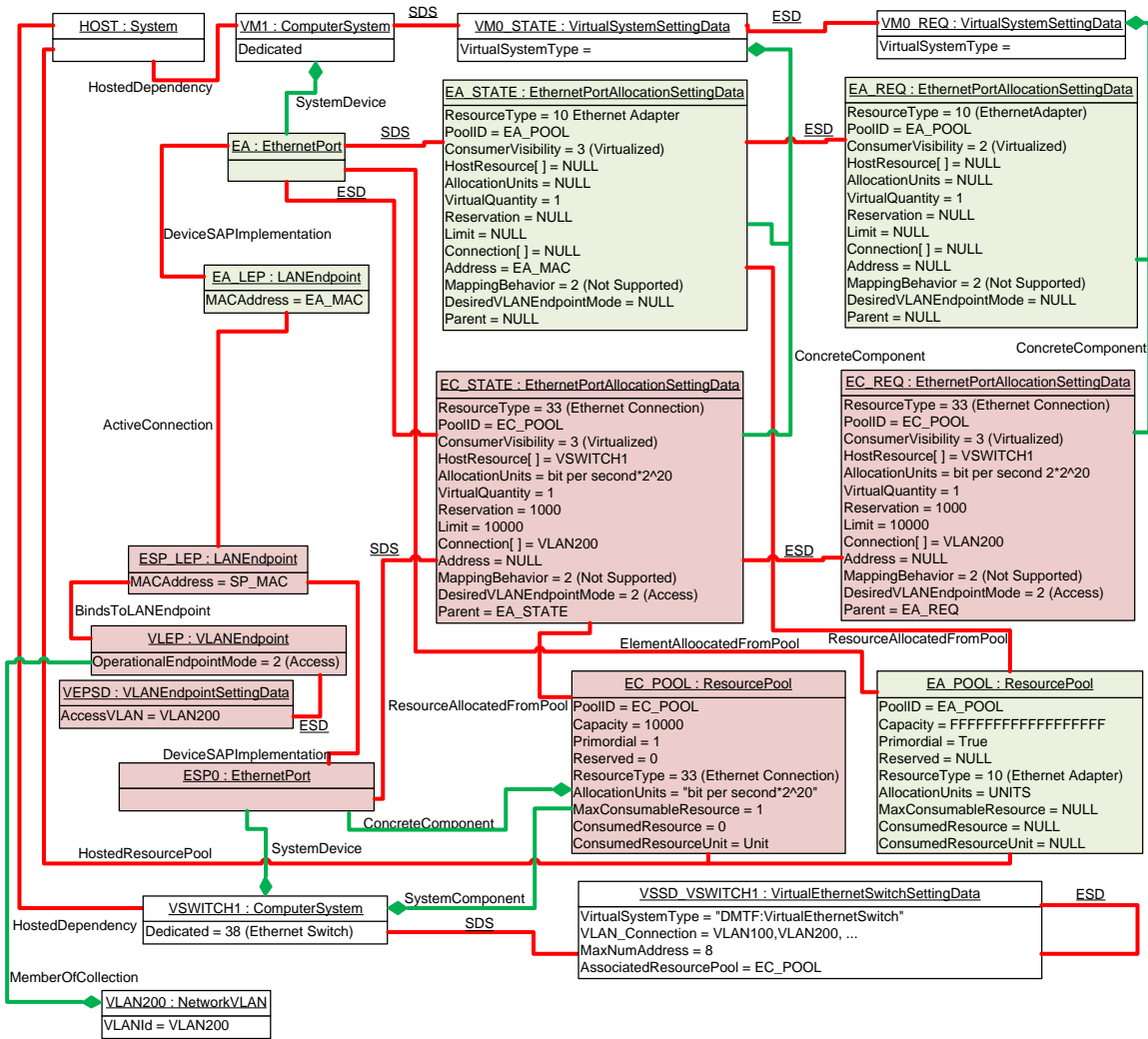
1505 The Ethernet connection state EASD (EC_STATE) represents the current allocation of the Ethernet
1506 connection described above. The only different property value from the instance EC_REQ in this use
1507 case is for the Parent property, which reflects the Ethernet adapter allocation EA_STATE instead of
1508 EA_REQ. EC_STATE also represents the [DSP8049](#) instance as described in 7.6.2.2.3.



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Figure 7 – Dynamic Ethernet switch port connection capabilities



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Figure 8 – Dynamic Ethernet switch port allocation

1513 **9.1.5 Ethernet connection of a virtual system to a virtual switch (simple switch port**
 1514 **allocation)**

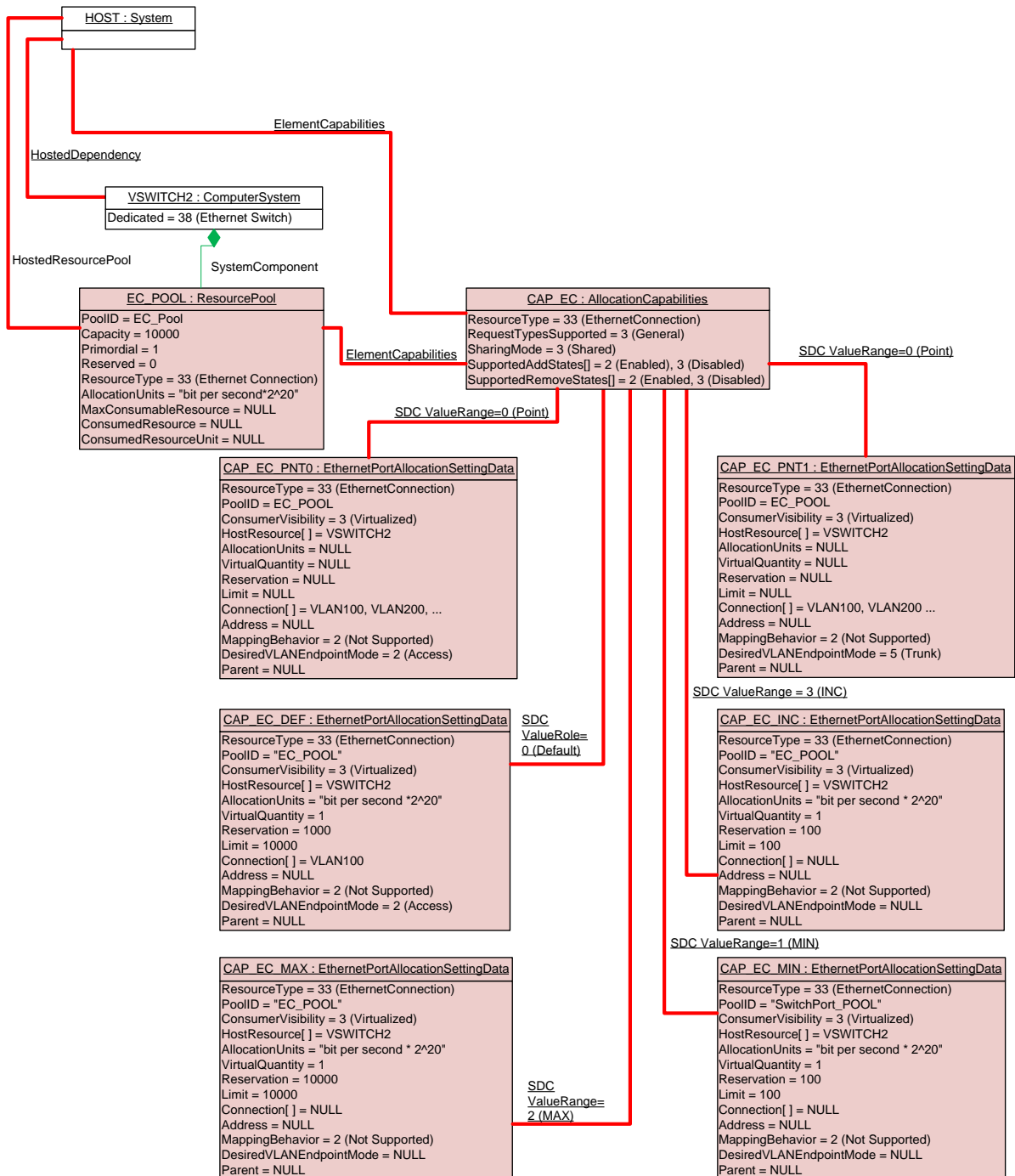
1515 Figure 9 and Figure 10 are CIM instance diagrams that represent a virtualization system that supports a
 1516 simple connection of a VM to an Ethernet network. Both an implied Ethernet adapter and an Ethernet
 1517 switch port CIM_EthernetPort instance are instantiated as a result of an Ethernet connection allocation.

1518 Figure 9 is an instance diagram of the allocation capabilities (CAP_EC) of an Ethernet connection
 1519 resource pool (EC_POOL) associated with a virtual Ethernet switch (VSWITCH2).

1520 The resource pool EC_POOL is identical to the pool shown in Figure 7 and described in 9.1.4. The set of
 1521 capabilities also closely matches the capabilities shown in Figure 7 and described in 9.1.4, but the one
 1522 defining difference is that no valid value (NULL) for the Parent property is shown. Thus, a valid Ethernet
 1523 connection request can be made without requiring the value of an existing Ethernet adapter request
 1524 reference to be set in the Parent property.

1525 As a side effect of an Ethernet connection allocation in response to the Ethernet connection request
 1526 instance EC_REQ, an Ethernet adapter (EA) and an Ethernet switch port (ESP0) are instantiated. EA is
 1527 associated to VM1 using the CIM_SystemDevice association. ESP0 is associated to the VSWITCH2 using
 1528 the CIM_SystemDevice association. An instance of CIM_LANEndpoint is instantiated for each of the

1529 CIM_EthernetPort instances and associated through the CIM_ActiveConnection association. Also, an
 1530 Instance of CIM_VLANEndpoint and CIM_VLANEndpointSettingData are instantiated with their properties
 1531 populated as described in 9.1.4.



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Figure 9 – Allocation capabilities for simple Ethernet connection

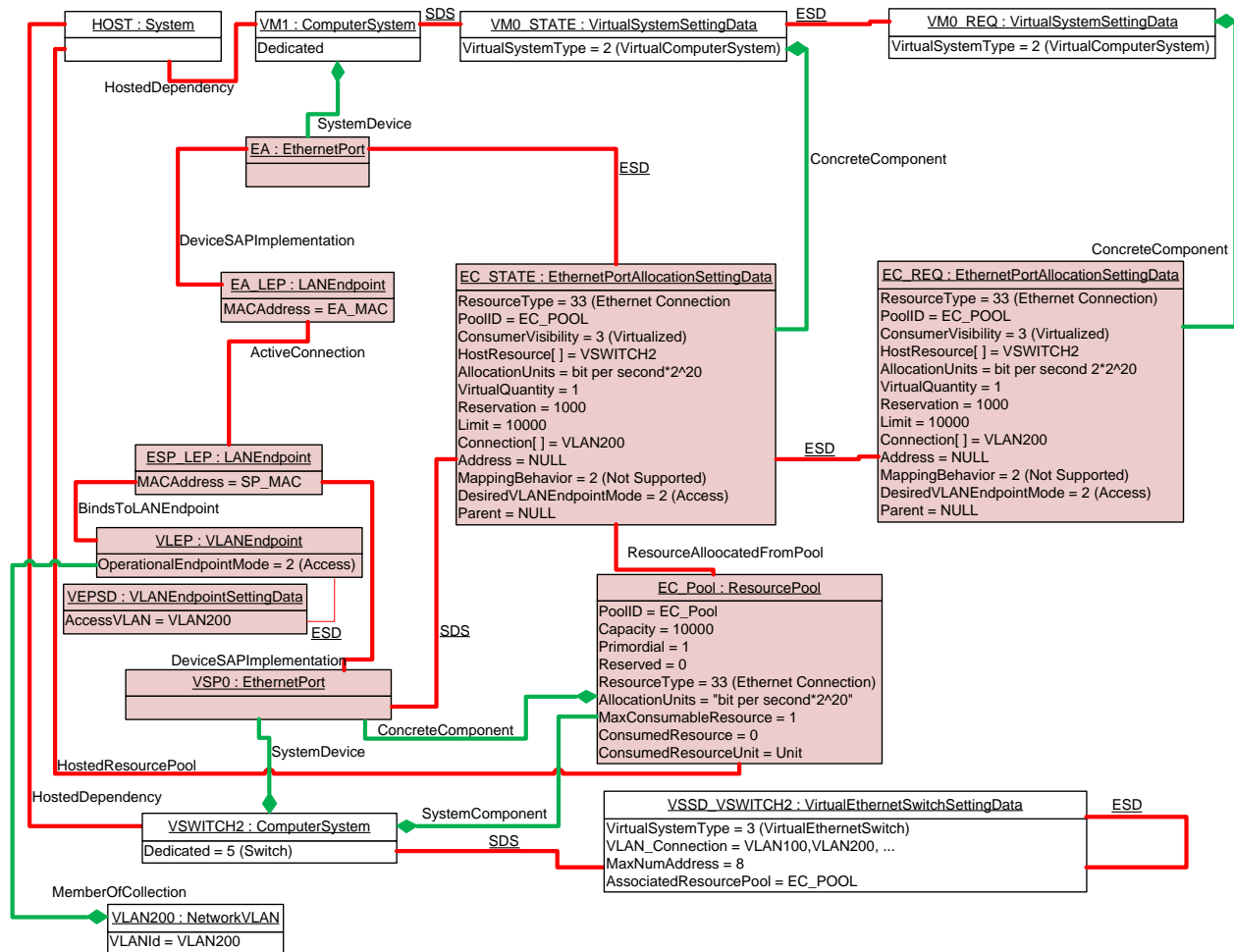


Figure 10 – Simple connection of virtual machine to Ethernet switch

9.1.6 Network Port Profile

An instance of EthernetAllocationSettingData where the ResourceType property matches 30 (Ethernet Switch Port) or 33 (Ethernet Connection) that is associated through an instance CIM_SettingDefinesState to an instance of CIM_EthernetPort representing an Ethernet switch port may contain the current value of the properties associated with this port's [Network Port Profile Schema](#).

Figure 11 shows a switch port ESP0:EthernetPort that has been configured through the use of a Network Port Profile. The value in the NetworkPortProfileID property contains the identification of the port profile. In this use case, the value of the NetworkPortProfileID type shows the port profile was identified using the VSI Instance ID of switch port. The VSI instance ID is also being used for the PortCorrelationID.

The PortVID value 400 is the VLANID for this port while the VLANEndPointMode is Access.

The default traffic priority for this port is DefaultPriority = 0. Although the port would allow traffic on any of the traffic classes as the AllowedPriorities[] enumerates all of the traffic classes.

The port is not in Promiscuous mode, Promiscuous = False, thus the port will filter based on the port's MAC_Address (Address = "65432123456"), and contents of the AllowedToReceiveMACAddress

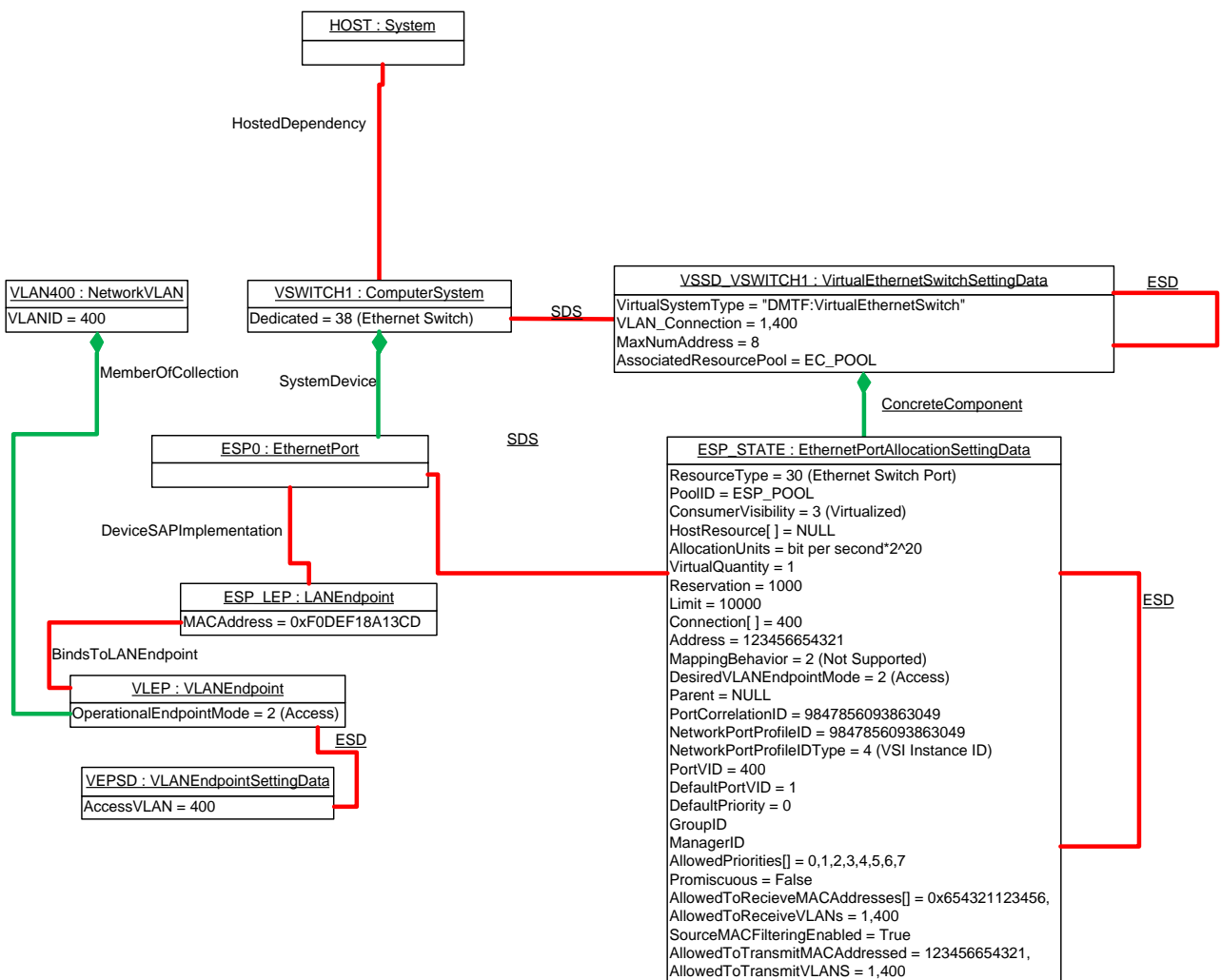
1552 (“654321123456”, NULL) and the AllowedToReceiveVLANs indexed arrays (1, 400). This port will
 1553 accept traffic if the packet’s destination MAC_Address matches the ports MAC address (“12345654321”)
 1554 and there is a match of the packet’s source MAC_Address and outermost VLAN Tag with one of the
 1555 following two cases from this example

- 1556 • The source MAC address is “654321123456” and the outermost VLAN tag is 1 or
- 1557 • Any MAC address if the outermost VLAN tag is 400.

1558 SoureMACFilteringEnable match is true so transmit filtering is performed using the contents of the
 1559 AllowedToTransmitMACAddress array (“123456654321”, NULL) and the contents of the
 1560 AllowedToTransmitVLAN array, (1,400). The indexed values show that only the port’s MAC address,
 1561 Address= “123456654321” , can be used on VLAN 1 and any MAC address can be used on VLAN 400.

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1566 **Figure 11– Network Port Profile properties.**

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1569 9.2 Management

1570 This set of use cases describes how to connect a virtual system to a virtual Ethernet switch. These
 1571 management tasks are described in terms of a virtual system management service, as represented by a
 1572 CIM_VirtualSystemManagementService instance.

1573 9.2.1 Connection of an Ethernet adapter to a static Ethernet switch port

1574 Preconditions

1575 All of the following:

- 1576 • The client knows a reference to the CIM_ComputerSystem instance that represents the virtual
 1577 system.
- 1578 • The client knows a reference to the CIM_VirtualSystemManagementService instance that
 1579 represents the virtual system management service responsible for the virtual system.
- 1580 • The client has performed the use case and knows the default allocation capabilities of the
 1581 system.
- 1582 • The client knows a reference to an available Ethernet switch port on the target virtual Ethernet
 1583 switch.
- 1584 • The client knows a reference to an Ethernet adapter request on the target virtual system.

1585 Flow of activities

- 1586 1) The client locally prepares an EASD instance with properties set as follows:
- 1587 – ResourceType: 33 (Ethernet Connection) // Device type as seen by
 1588 // consumer
 - 1589 – ResourceSubtype: NULL // Implementation dependent
 - 1590 – PoolID: NULL // Implies default pool
 - 1591 – AllocationUnits: "bits per second 2*2^20" /// Units are in megabit per second
 1592 // bandwidth
 - 1593 – Reservation: 1000 // 1 gigabit per second bandwidth
 - 1594 – VirtualQuantityUnits: "count" // Count of blocks; if value is
 1595 // NULL, the effective value
 1596 // is implied by pool capabilities
 - 1597 – VirtualQuantity: 1 //One connection
 - 1598 – Limit: NULL // Defaults to maximumlimit
 - 1599 – Address: NULL // Optional; if not specified, the
 1600 // implementation uses the current
 1601 // MACaddress of the targeted
 1602 // switch port
 - 1603 – MappingBehavior: 3 (Dedicated) // Selecting a specific switch port
 1604 // for exclusive use
 - 1605 – Parent: REF to the EASD instance that represents the “defined” targeted
 1606 Ethernet adapter configuration
 - 1607 – HostResource[]: REF to the EASD instance that represents the “defined” targeted
 1608 Ethernet switch port configuration

1644 **10 CIM elements**

1645 Table 3 lists CIM elements that are defined or specialized for this profile. Each CIM element shall be
 1646 implemented as described in Table 3. The CIM Schema descriptions for any referenced element and its
 1647 subelements apply.

1648 Clauses 7 (“Implementation”) and 8 (“Methods”) may impose additional requirements on these elements.

1649 **Table 3 – CIM Elements: EthernetPort Resource VirtualizationProfile**

Element	Requirement	Description
Classes		
CIM_ActiveConnection	Mandatory	See 10.1.
CIM_AllocationCapabilities for capabilities	Mandatory	See DSP1043 .
CIM_AllocationCapabilities for mutability	Optional	See DSP1043 .
CIM_Component for resource pool	Optional	See 10.2.
CIM_ElementAllocatedFromPool	Mandatory	See 10.3.
CIM_ElementSettingData for Ethernet port resource	Mandatory	See 10.4.
CIM_ElementSettingData Ethernet port resource allocation request	Mandatory	See 10.5.
CIM_ElementCapabilities for capabilities	Mandatory	See DSP1043 .
CIM_ElementCapabilities for mutability	Conditional	See DSP1043 .
CIM_ElementCapabilities for resource pool	Mandatory	See DSP1041 .
CIM_ElementSettingData for connection resources	Mandatory	See 10.4.
CIM_ElementSettingData for CIM_EthernetPort resource allocation	Conditional	See 10.5.
CIM_ElémentSettingData for CIM_VLANEndpointSetttingData	Conditional	See 10.6
CIM_EthernetPort for host systems	Conditional	See 10.7.
CIM_EthernetPort for virtual systems	Mandatory	See 10.8.
CIM_EthernetPortAllocationSettingData for Ethernet Adapter (Q_EASD)	Optional	See 10.9.
CIM_EthernetPortAllocationSettingData for Ethernet Adapter (R_EASD)	Optional	See 10.10.
CIM_EthernetPortAllocationSettingData for Ethernet Adapter (C_EASD)	Optional	See 10.11.
CIM_EthernetPortAllocationSettingData for Ethernet Adapter (D_EASD)	Optional	See 10.12.
CIM_EthernetPortAllocationSettingData for Ethernet Adapter (M_EASD)	Optional	See 10.13.
CIM_EthernetPortAllocationSettingData for Ethernet Connection (Q_EASD)	Mandatory	See 10.14.
CIM_EthernetPortAllocationSettingData for Ethernet Connection (R_EASD)	Mandatory	See 10.15.
CIM_EthernetPortAllocationSettingData for Ethernet Connection (C_EASD)	Mandatory	See 10.16.
CIM_EthernetPortAllocationSettingData for Ethernet Connection (D_EASD)	Mandatory	See 10.17.
CIM_EthernetPortAllocationSettingData for Ethernet Connection (M_EASD)	Mandatory	See 10.18.
CIM_EthernetPortAllocationSettingData for Ethernet Switch Port (Q_EASD)	Optional	See 10.19.
CIM_EthernetPortAllocationSettingData for Ethernet Switch Port(R_EASD)	Optional	See 10.20.
CIM_EthernetPortAllocationSettingData for Ethernet Switch Port(C_EASD)	Optional	See 10.21.
CIM_EthernetPortAllocationSettingData for Ethernet Switch Port(D_EASD)	Optional	See 10.22.
CIM_EthernetPortAllocationSettingData for Ethernet Switch Port(M_EASD)	Optional	See 10.23.

Element	Requirement	Description
CIM_ReferencedProfile	Mandatory	See 10.20.
CIM_RegisteredProfile	Mandatory	See 10.24.
CIM_ResourceAllocatedFromPool	Mandatory	See DSP1041 .
CIM_ResourcePool Ethernet Adapter	Optional	See 10.25.
CIM_ResourcePool Ethernet Connection	Mandatory	See 10.26.
CIM_ResourcePool Ethernet Switch Port	Optional	See 10.27.
CIM_SettingsDefineState	Mandatory	See 10.28.
CIM_SystemDevice (Virtual EthernetPort)	Mandatory	See 10.29.
CIM_SystemDevice (Host EthernetPort)	Optional	See 10.30.
CIM_VLANEndpointSettingData	Optional	See 10.31.

1650 10.1 CIM_ActiveConnection

1651 An instance of the CIM_Connection association that associates two instances of the
 1652 CIM_LANEndPointclass that represents an Ethernet connection between the two CIM_LANEndpoint
 1653 instances.

1654 Table 4 lists the requirements for elements of this association. These requirements are in addition to
 1655 those specified in the CIM Schema.

1656 **Table 4 – Association: CIM_ActiveConnection**

Elements	Requirement	Notes
Antecedent	Mandatory	Key: Value shall reference an instance of the CIM_LANEndpoint of an EthernetPort. Cardinality: 0..1
Dependent	Mandatory	Key: Value shall reference an instance of the CIM_LANEndpoint of an EthernetPort. Cardinality: 0..1
IsUnidirectional	Mandatory	False

1657 10.2 CIM_Component for resource pool

1658 The implementation of the CIM_Component association for the representation of the aggregation of host
 1659 resources into resource pools is conditional.

1660 **Condition:** The resource aggregation feature (see 7.5.10) is implemented.

1661 The CIM_Component association is abstract; therefore, it cannot be directly implemented. For this
 1662 reason, the provisions in this subclause shall be applied to implementations of subclasses of the
 1663 CIM_Component association. However, note that clients may directly resolve abstract associations
 1664 without knowledge of the concrete subclass that is implemented.

1665 Table 5 lists the requirements for elements of this association. These requirements are in addition to
 1666 those specified in the CIM Schema and in [DSP1041](#).

1667

Table 5 – Association: CIM_Component for resource pool

Elements	Requirement	Notes
GroupComponent	Mandatory	Key: Value shall reference the instance of the CIM_ResourcePool class that represents an EthernetPort resource pool. Cardinality: 0..1
PartComponent	Mandatory	Key: Value shall reference an instance of the CIM_EthernetPort class that represents an Ethernet adapter or Ethernet switch port aggregated into the pool. Cardinality: *

1668 **10.3 CIM_ElementAllocatedFromPool**

1669 Table 6 lists the requirements for elements of this association. These requirements are in addition to
1670 those specified in the CIM Schema and in [DSP1041](#).

1671

Table 6 – Association: CIM_ElementAllocatedFromPool

Elements	Requirement	Notes
Antecedent	Mandatory	Key: Value shall reference the instance of the CIM_ResourcePool class that represents an Ethernet adapter or Ethernet switch port resource pool. Cardinality: 1
Dependent	Mandatory	Key: Value shall reference the instance of the CIM_EthernetPort class that represents a virtual EthernetPort resulting from an Ethernet adapter or Ethernet switch port allocation from the pool. Cardinality: *

1672 **10.4 CIM_ElementSettingData for connection resources**

1673 The CIM_ElementSettingData association associates an instance of the
1674 CIM_EthernetPortAllocationSettingData class that represents an Ethernet connection resource allocation
1675 and the instance of the CIM_LANEndPoint class associated to the CIM_EthernetPort that represents the
1676 targeted Ethernet adapter.

1677 Table 7 lists the requirements for elements of this class. These requirements are in addition to those
1678 specified in the CIM Schema and in [DSP1041](#).

1679

Table 7 – Association: CIM_ElementSettingData for connection resources

Elements	Requirement	Notes
ManagedElement	Mandatory	Key: Value shall reference the instance of the CIM_LANEndpoint class that represents an associated CIMLANEndpoint of the target Ethernet adapter for a connection resource allocation. Cardinality: 1

Elements	Requirement	Notes
SettingData	Mandatory	Key: Value shall reference the instance of the CIM_EthernetPortAllocationSettingData class that represents a corresponding resource allocation request. Cardinality: 0..1

1680 10.5 CIM_ElementSettingData for CIM_EthernetPort resource allocation

1681 The use of the CIM_ElementSettingData association that is used to associate an instance of
1682 CIM_EthernetPortAllocationSettingData representing the allocation of an EthernetPort with a
1683 corresponding instance of CIM_EthernetPortAllocationSettingData that describes the same allocation for
1684 use as an allocation definition (see [DSP1041](#)) is conditional.

1685 **Condition:** The support of the allocation of virtual Ethernet adapters or of virtual Ethernet switch ports.

1686 Table 8 lists the requirements for elements of this class. These requirements are in addition to those
1687 specified in the CIM Schema and in the [DSP1041](#).

1688 **Table 8 – Association: CIM_ElementSettingData for CIM_EthernetPort resource allocation**

Elements	Requirement	Notes
ManagedElement	Mandatory	Key: Value shall reference the instance of the CIM_EthernetPortAllocationSettingData class that represents an Ethernet Adapter or Ethernet switch port resource allocation. Cardinality: 1
SettingData	Mandatory	Key: Value shall reference the instance of the CIM_EthernetPortAllocationSettingData class that represents a corresponding resource allocation request. Cardinality: 0..1

1689 10.6 CIM_ElementSettingData for CIM_VLANEndpointSettingData

1690 This use of CIM_ElementSettingData is used to associate a VLAN endpoint's configuration data with an
1691 instance of CIM_VLANEndpoint.

1692 **Condition:** The support for this use of the CIM_ElementSettingData is required if VLAN is supported for
1693 an Ethernet port's protocol endpoint.

1694 Table 9 lists the requirements for elements of this class. These requirements are in addition to those
1695 specified in the CIM Schema.

1696 **Table 9 – Association: CIM_ElementSettingData for CIM_VLANEndpointSettingData resource allocation**

Elements	Requirement	Notes
ManagedElement	Mandatory	Key: Value shall reference the instance of the CIM_VLANEndpoint class that represents a VLAN protocol endpoint. Cardinality: 1

Elements	Requirement	Notes
SettingData	Mandatory	Key: Value shall reference the instance of the CIM_VLANEndpointSettingData that represents the configuration data for the VLAN endpoint. Cardinality: 0..1

1697 **10.7 CIM_EthernetPort (host system)**

1698 The implementation of the CIM_EthernetPort class for the representation of host Ethernet adapter is
1699 conditional.

1700 **Condition:** The support is required if the CIM_SystemDevice association is supported for the
1701 representation of a host Ethernet adapter or a host switch port; see 7.3. Table 10 lists the requirements for
1702 elements of this class. These requirements are in addition to those specified in the CIM Schema.

1703 **Table 10 – Class: CIM_EthernetPort (host system)**

Elements	Requirement	Notes
SystemCreationClassName	Mandatory	Key
CreationClassName	Mandatory	Key
SystemName	Mandatory	Key
Name	Mandatory	Key

1704 **10.8 CIM_EthernetPort (virtual system)**

1705 See 7.7.1 for detailed implementation requirements for this class if it is used for the representation of a
1706 virtual Ethernet adapter or an Ethernet switch port.

1707 Table 11 lists the requirements for elements of this class. These requirements are in addition to those
1708 specified in the CIM Schema.

1709 **Table 11 – Class: CIM_EthernetPort (virtual system)**

Elements	Requirement	Notes
SystemCreationClassName	Mandatory	Key
CreationClassName	Mandatory	Key
SystemName	Mandatory	Key
Name	Mandatory	Key

1710 **10.9 CIM_EthernetPortAllocationSettingData for Ethernet adapter (Q_EASD)**

1711 See 7.6 for detailed implementation requirements for this class.

1712 Table 12 lists the requirements for elements of this class. These requirements are in addition to those
1713 specified in the CIM Schema and in [DSP1041](#).

1714

Table 12 – Class: CIM_EthernetPortAllocationSettingData for Ethernet adapter (Q_EASD)

Elements	Requirement	Notes
InstanceID	Mandatory	Key ; see 7.6.2.1.13.
ResourceType	Mandatory	Value shall be 10 (Ethernet Adapter). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Parent	Optional	See 7.6.2.1.12.
Address	Optional	See 7.6.2.1.13.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .

1715 **10.10 CIM_EthernetPortAllocationSettingData for Ethernet adapter (R_EASD)**

1716 See 7.6 for detailed implementation requirements for this class.

1717 Table 13 lists the requirements for elements of this class. These requirements are in addition to those
1718 specified in the CIM Schema and in [DSP1041](#).1719 **Table 13 – Class: CIM_EthernetPortAllocationSettingData for Ethernet adapter (R_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key ; see 7.6.2.1.13.
ResourceType	Mandatory	Value shall be 10 (Ethernet Adapter). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.

Elements	Requirement	Notes
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Mandatory	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .

1720 **10.11 CIM_EthernetPortAllocationSettingData for Ethernet adapter (C_EASD)**

1721 See 7.6 for detailed implementation requirements for this class.

1722 Table 14 lists the requirements for elements of this class. These requirements are in addition to those
 1723 specified in the CIM Schema and in [DSP1041](#).

1724 **Table 14 – Class: CIM_EthernetPortAllocationSettingData for Ethernet adapter (C_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key ; see 7.6.2.1.13.
ResourceType	Mandatory	Value shall be 10 (Ethernet Adapter). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .

1725 **10.12 CIM_EthernetPortAllocationSettingData for Ethernet adapter (D_EASD)**

1726 See 7.6 for detailed implementation requirements for this class.

1727 Table 15 lists the requirements for elements of this class. These requirements are in addition to those
1728 specified in the CIM Schema and in [DSP1041](#).

1729 **Table 15 – Class: CIM_EthernetPortAllocationSettingData for Ethernet adapter (D_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key; see 7.6.2.1.13.
ResourceType	Mandatory	Value shall be 10 (Ethernet Adapter). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .

1730 **10.13 CIM_EthernetPortAllocationSettingData for Ethernet adapter (M_EASD)**

1731 See 7.6 for detailed implementation requirements for this class.

1732 Table 16 lists the requirements for elements of this class. These requirements are in addition to those
1733 specified in the CIM Schema and in [DSP1041](#).

1734 **Table 16 – Class: CIM_EthernetPortAllocationSettingData for Ethernet adapter (M_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key ; see 7.6.2.1.13.
ResourceType	Mandatory	Value shall be 10 (Ethernet Adapter). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.

Elements	Requirement	Notes
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .

1735 **10.14 CIM_EthernetPortAllocationSettingData for Ethernet connection**
 1736 **(Q_EASD)**

1737 See 7.6 for detailed implementation requirements for this class.

1738 Table 17 lists the requirements for elements of this class. These requirements are in addition to those
 1739 specified in the CIM Schema and in [DSP1041](#).

1740 **Table 17 – Class: CIM_EthernetPortAllocationSettingData for Ethernet connection (Q_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 33 (Ethernet Connection). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.

Elements	Requirement	Notes
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorites	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.25.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1741 **10.15 CIM_EthernetPortAllocationSettingData for Ethernet connection (R_EASD)**

1742 See 7.6 for detailed implementation requirements for this class.

1743 Table 18 lists the requirements for elements of this class. These requirements are in addition to those
 1744 specified in the CIM Schema and in [DSP1041](#).

1745 **Table 18 – Class: CIM_EthernetPortAllocationSettingData for Ethernet connection (R_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 33 (Ethernet Connection). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.

Elements	Requirement	Notes
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Mandatory	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorites	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.26.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1746 **10.16 CIM_EthernetPortAllocationSettingData for Ethernet connection (C_EASD)**

1747 See 7.6 for detailed implementation requirements for this class.

1748 Table 19 lists the requirements for elements of this class. These requirements are in addition to those
 1749 specified in the CIM Schema and in [DSP1041](#).

1750 **Table 19 – Class: CIM_EthernetPortAllocationSettingData for Ethernet connection (C_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 33 (Ethernet Connection). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriority	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriorities	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.26.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.

Elements	Requirement	Notes
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1751 **10.17 CIM_EthernetPortAllocationSettingData for Ethernet connection (D_EASD)**

1752 See 7.6 for detailed implementation requirements for this class.

1753 Table 20 lists the requirements for elements of this class. These requirements are in addition to those
 1754 specified in the CIM Schema.

1755 **Table 20 – Class: CIM_EthernetPortAllocationSettingData for Ethernet connection (D_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 33 (Ethernet Connection). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorites	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.

Elements	Requirement	Notes
ManagerID	Optional	See 7.6.2.1.26.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1756 **10.18 CIM_EthernetPortAllocationSettingData for Ethernet connection**
 1757 **(M_EASD)**

1758 See 7.6 for detailed implementation requirements for this class.

1759 Table 21 lists the requirements for elements of this class. These requirements are in addition to those
 1760 specified in the CIM Schema and in [DSP1041](#).

1761 **Table 21 – Class: CIM_EthernetPortAllocationSettingData for Ethernet connection (M_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 33 (Ethernet Connection). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .

Elements	Requirement	Notes
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorities	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.26.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1762 **10.19 CIM_EthernetPortAllocationSettingDatafor Ethernet switch port (Q_EASD)**

1763 See 7.6 for detailed implementation requirements for this class.

1764 Table 22 lists the requirements for elements of this class. These requirements are in addition to those
 1765 specified in the CIM Schema and in [DSP1041](#).

1766 **Table 22 – Class: CIM_EthernetPortAllocationSettingDatafor Ethernet switch port (Q_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 30 (Ethernet Switch Port). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.

Elements	Requirement	Notes
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorites	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.26.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1767 **10.20 CIM_EthernetPortAllocationSettingData for Ethernet switch port (R_EASD)**

1768 See 7.6 for detailed implementation requirements for this class.

1769 Table 23 lists the requirements for elements of this class. These requirements are in addition to those
1770 specified in the CIM Schema and in [DSP1041](#).

1771 **Table 23 – Class: CIM_EthernetPortAllocationSettingData for Ethernet switch port (R_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 30 (Ethernet Switch Port). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.

Elements	Requirement	Notes
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Mandatory	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorities	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.26.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1772 **10.21 CIM_EthernetPortAllocationSettingData for Ethernet switch port (C_EASD)**

1773 See 7.6 for detailed implementation requirements for this class.

1774 Table 24 lists the requirements for elements of this class. These requirements are in addition to those
 1775 specified in the CIM Schema and in [DSP1041](#).

1776 **Table 24 – Class: CIM_EthernetPortAllocationSettingData for Ethernet switch port (C_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 30 (Ethernet Switch Port). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorities	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.26.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.

Elements	Requirement	Notes
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1777 **10.22 CIM_EthernetPortAllocationSettingData for Ethernet switch port (D_EASD)**

1778 See 7.6 for detailed implementation requirements for this class.

1779 Table 25 lists the requirements for elements of this class. These requirements are in addition to those
 1780 specified in the CIM Schema and in [DSP1041](#).

1781 **Table 25 – Class: CIM_EthernetPortAllocationSettingData for Ethernet switch port (D_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 30 (Ethernet Switch Port). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorities	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.

Elements	Requirement	Notes
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.26.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1782 **10.23 CIM_EthernetPortAllocationSettingData for Ethernet switch port**
 1783 **(M_EASD)**

1784 See 7.6 for detailed implementation requirements for this class.

1785 Table 26 lists the requirements for elements of this class. These requirements are in addition to those
 1786 specified in the CIM Schema and in [DSP1041](#).

1787 **Table 26 – Class: CIM_EthernetPortAllocationSettingData for Ethernet switch port (M_EASD)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ResourceType	Mandatory	Value shall be 30 (Ethernet Switch Port). See 7.6.2.1.1.
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
PoolID	Mandatory	See 7.6.2.1.3.
ConsumerVisibility	Optional	See 7.6.2.1.4.
HostResource[]	Optional	See 7.6.2.1.6.
AllocationUnits	Mandatory	See 7.6.2.1.5.
VirtualQuantity	Mandatory	See 7.6.2.1.7.
Reservation	Optional	See 7.6.2.1.9.
VirtualQuantityUnits	Mandatory	See 7.6.2.1.8.
Limit	Optional	See 7.6.2.1.10.
Weight	Optional	See 7.6.2.1.11.
Address	Optional	See 7.6.2.1.13.
Parent	Optional	See 7.6.2.1.12.
Connection[]	Optional	See 7.6.2.1.15.
MappingBehavior	Optional	See 7.6.2.1.16.

Elements	Requirement	Notes
AutomaticAllocation	Optional	See DSP1041 .
AutomaticDeallocation	Optional	See DSP1041 .
DesiredVLANEndpointMode	Optional	See 7.6.2.1.17.
AllowedPriorities	Optional	See 7.6.2.1.18.
AllowedToReceiveMACAddresses	Optional	See 7.6.2.1.20.
AllowedToReceiveVLANs	Optional	See 7.6.2.1.20.
AllowedToTransmitMACAddresses	Optional	See 7.6.2.1.22.
AllowedToTransmitVLANs	Optional	See 7.6.2.1.22.
DefaultPortVID	Optional	See 7.6.2.1.23.
DefaultPriority	Optional	See 7.6.2.1.24.
GroupID	Optional	See 7.6.2.1.25.
ManagerID	Optional	See 7.6.2.1.25.
NetworkPortProfileID	Optional	See 7.6.2.1.27.
NetworkPortProfileIDType	Conditional	See 7.6.2.1.28.
PortCorrelationID	Optional	See 7.6.2.1.29.
PortVID	Optional	See 7.6.2.1.30.
Promiscuous	Optional	See 7.6.2.1.19.
ReceiveBandwidthLimit	Optional	See 7.6.2.1.32.
ReceiveBandwidthReservation	Optional	See 7.6.2.1.31.
SourceMacFilteringEnabled	Conditional	See 7.6.2.1.21.

1788 **10.24 CIM_RegisteredProfile**

1789 Table 27 lists the requirements for elements of this class. These requirements are in addition to those
 1790 specified in the CIM schema and in [DSP1033](#) (*Profile Registration Profile*).

1791 **Table 27 – Class: CIM_RegisteredProfile**

Elements	Requirement	Notes
RegisteredOrganization	Mandatory	Value shall be 2 (DMTF).
RegisteredName	Mandatory	Value shall be "Ethernet Port Resource Virtualization".
RegisteredVersion	Mandatory	Value shall be "1.1.0".

1792 **10.25 CIM_ResourcePool (Ethernet adapter)**

1793 Instances of the CIM_ResourcePool class shall represent Ethernet adapter resource pools.

1794 Table 28 lists the requirements for elements of this class. These requirements are in addition to those
 1795 specified in the CIM Schema and in [DSP1041](#).

1796

Table 28 – Class: CIM_ResourcePool (Ethernet adapter)

Elements	Requirement	Notes
InstanceID	Mandatory	Key
PoolID	Mandatory	See DSP1041 .
Primordial	Mandatory	See DSP1041 .
Capacity	Conditional	See 7.5.5.
Reserved	Optional	See 7.5.4.
ResourceType	Mandatory	Value shall be 10 (Ethernet Adapter).
ResourceSubType	Optional	See 7.6.2.1.2.
OtherResourceType	Mandatory	Value shall be NULL.
AllocationUnits	Mandatory	See 7.5.3.
MaxConsumableResource	Optional	See 7.5.6.
CurrentlyConsumedResource	Conditional	See 7.5.8.
ConsumedResourceUnits	Conditional	See 7.5.7.

1797 **10.26 CIM_ResourcePool (Ethernet connection)**

1798 Instances of the CIM_ResourcePool class shall represent Ethernet connection resource pools.

1799 Table 29 lists the requirements for elements of this class. These requirements are in addition to those
1800 specified in the CIM Schema and in [DSP1041](#).

1801

Table 29 – Class: CIM_ResourcePool

Elements	Requirement	Notes
InstanceID	Mandatory	Key
PoolID	Mandatory	See DSP1041 .
Primordial	Mandatory	See DSP1041 .
Capacity	Conditional	See 7.5.5.
Reserved	Optional	See 7.5.4.
ResourceType	Mandatory	Value shall be 33 (Ethernet Connection).
OtherResourceType	Mandatory	Value shall be NULL.
AllocationUnits	Mandatory	See 7.5.3.
MaxConsumableResource	Optional	See 7.5.6.
CurrentlyConsumedResource	Conditional	See 7.5.8.
ConsumedResourceUnits	Conditional	See 7.5.7.

1802 **10.27 CIM_ResourcePool (Ethernet switch port)**

1803 Instances of the CIM_ResourcePool class shall represent Ethernet switch port resource pools.

1804 Table 30 lists the requirements for elements of this class. These requirements are in addition to those
 1805 specified in the CIM Schema and in [DSP1041](#).

1806 **Table 30 – Class: CIM_ResourcePool (Ethernet switch port)**

Elements	Requirement	Notes
InstanceID	Mandatory	Key
ElementName	Optional	None
PoolID	Mandatory	See DSP1041
Primordial	Mandatory	See 7.5.2.
Capacity	Conditional	See 7.5.5.
Reserved	Optional	See 7.5.4.
ResourceType	Mandatory	Value shall be 30 (Ethernet Switch Port).
OtherResourceType	Mandatory	Value shall be NULL.
AllocationUnits	Mandatory	See 7.5.3
MaxConsumableResource	Optional	See 7.5.6.
CurrentlyConsumedResource	Conditional	See 7.5.8.
ConsumedResourceUnits	Conditional	See 7.5.7.

1807 **10.28 CIM_SettingsDefineState**

1808 An instance of the CIM_SettingsDefineState association shall associate an instance of the
 1809 CIM_EthernetPort class that represents a virtual Ethernet adapter or Ethernet switch port and the
 1810 instance of the CIM_EthernetPortAllocationSettingData class that represents the resource allocation that
 1811 yields the virtual CIM_EthernetPort instance.

1812 Table 31 lists the requirements for elements of this association. These requirements are in addition to
 1813 those specified in the CIM Schema and in [DSP1041](#).

1814 **Table 31 – Association: CIM_SettingsDefineState**

Elements	Requirement	Notes
ManagedElement	Mandatory	Key: Value shall reference an instance of the CIM_EthernetPort class. Cardinality: 0..1
SettingData	Mandatory	Key: Value shall reference the instance of the CIM_EthernetPortAllocationSettingData class. Cardinality: 0..1

1815 **10.29 CIM_SystemDevice (virtual EthernetPort)**

1816 Table 32 lists the requirements for elements of this association.

1817

Table 32 – Association: CIM_SystemDevice (Virtual EthernetPort)

Elements	Requirement	Notes
GroupComponent	Mandatory	Key: Value shall reference an instance of the CIM_System class. Cardinality: 1
PartComponent	Mandatory	Key: Value shall reference the instance of the CIM_EthernetPort class. Cardinality: *

1818 10.30 CIM_SystemDevice (host EthernetPort)

1819 Support of the CIM_SystemDevice association for the representation of a host Ethernet adapter or host
1820 Ethernet switch is optional;

1821 NOTE Support is mandatory if [DSP1014 \(EthernetPort Profile\)](#) is implemented for the host system.

1822 If the CIM_SystemDevice association is supported for the representation of a host Ethernet adapter or a
1823 host Ethernet switch port, an instance of the CIM_SystemDevice association shall associate the instance
1824 of the CIM_System class that represents the scoping host system and each instance of the
1825 CIM_EthernetPort class that represents the host Ethernet adapter or switch port in the scope of the
1826 scoping host system.

1827 Table 33 lists the requirements for elements of this association. These requirements are in addition to
1828 those specified in the CIM Schema, in the [DSP1041](#), and in [DSP1033](#) if that is implemented.

1829

Table 33 – Association: CIM_SystemDevice (host Ethernet adapter)

Elements	Requirement	Notes
GroupComponent	Mandatory	Key: Value shall reference an instance of the CIM_System class. Cardinality: 1
PartComponent	Mandatory	Key: Value shall reference the instance of the CIM_EthernetPort class. Cardinality: *

1830 10.31 CIM_VLANEndPointSettingData

1831 The CIM_VLANEndPointSettingData class is optional and represents the configuration data for
1832 CIM_VLANEndPoint instances.

**ANNEX A
(informative)****Change log**1833
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Version	Date	Description
1.0.0	2010-07-30	
1.1.0	2012-06-21	Released as DMTF Standard

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