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## 5 **IP Configuration Profile**

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256

## Foreword

257 The *IP Configuration Profile* (DSP1116) was prepared by the Server Desktop Mobile Platform Working  
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259 DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems  
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283

## Introduction

284 The information in this specification should be sufficient for a provider or consumer of this data to identify  
285 unambiguously the classes, properties, methods, and values that shall be instantiated and manipulated to  
286 represent and manage an IP interface and its associated configuration information. The target audience  
287 for this specification is implementers who are writing CIM-based providers or consumers of management  
288 interfaces that represent the component described in this document.

## 289 Document conventions

### 290 Typographical conventions

291 The following typographical conventions are used in this document:

- 292 • Document titles are marked in *italics*.
- 293 • ABNF rules are in `monospaced font`.

294

295

# IP Configuration Profile

## 296 1 Scope

297 The *IP Configuration Profile* extends the management capability of referencing profiles by adding the  
298 capability to represent an IP configuration of a managed system. This profile includes a specification of  
299 the IP network connection, its associated configuration, support for managing configurations, and  
300 dynamics of related end points.

## 301 2 Normative references

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

306 DMTF DSP0004, *CIM Infrastructure Specification 2.6*,  
307 [https://www.dmtf.org/sites/default/files/standards/documents/DSP0004\\_2.6.pdf](https://www.dmtf.org/sites/default/files/standards/documents/DSP0004_2.6.pdf)

308 DMTF DSP0200, *CIM Operations over HTTP 1.3*,  
309 [https://www.dmtf.org/sites/default/files/standards/documents/DSP0200\\_1.3.pdf](https://www.dmtf.org/sites/default/files/standards/documents/DSP0200_1.3.pdf)

310 DMTF DSP0223, *Generic Operations 1.0*,  
311 [http://www.dmtf.org/standards/published\\_documents/DSP0223\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP0223_1.0.pdf)

312 DMTF DSP1001, *Management Profile Specification Usage Guide 1.0*,  
313 [https://www.dmtf.org/sites/default/files/standards/documents/DSP1001\\_1.0.pdf](https://www.dmtf.org/sites/default/files/standards/documents/DSP1001_1.0.pdf)

314 DMTF DSP1033, *Profile Registration Profile 1.0*,  
315 [https://www.dmtf.org/sites/default/files/standards/documents/DSP1033\\_1.0.pdf](https://www.dmtf.org/sites/default/files/standards/documents/DSP1033_1.0.pdf)

316 DMTF DSP1035, *Host LAN Network Port Profile 1.0*,  
317 [http://www.dmtf.org/standards/published\\_documents/DSP1035\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1035_1.0.pdf)

318 DMTF DSP1080, *Enabled Logical Element Profile 1.0*,  
319 [https://www.dmtf.org/sites/default/files/standards/documents/DSP1080\\_1.0.pdf](https://www.dmtf.org/sites/default/files/standards/documents/DSP1080_1.0.pdf)

320 IETF, RFC1208, *A Glossary of Networking Terms*, March 1991, <http://www.ietf.org/rfc/rfc1208.txt>

321 IETF, RFC4291, *IP Version 6 Addressing Architecture*, February 2006, <http://www.ietf.org/rfc/rfc4291.txt>

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

## 324 3 Terms and definitions

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

327 The terms "shall" ("required"), "shall not", "should" ("recommended"), "should not" ("not recommended"),  
328 "may", "need not" ("not required"), "can" and "cannot" in this document are to be interpreted as described  
329 in [ISO/IEC Directives, Part 2](#), Clause 7. The terms in parentheses are alternatives for the preceding term,  
330 for use in exceptional cases when the preceding term cannot be used for linguistic reasons. Note that  
331 [ISO/IEC Directives, Part 2](#), Clause 7 specifies additional alternatives. Occurrences of such additional  
332 alternatives shall be interpreted in their normal English meaning.

333 The terms "clause", "subclause", "paragraph", and "annex" in this document are to be interpreted as  
334 described in [ISO/IEC Directives, Part 2](#), Clause 6.

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

338 The terms defined in [DSP0004](#), [DSP0223](#), and [DSP1001](#) apply to this document. The following additional  
339 terms are used in this document.

#### 340 **3.1**

##### 341 **conditional**

342 indicates requirements to be followed strictly to conform to the document when the specified conditions  
343 are met

#### 344 **3.2**

##### 345 **mandatory**

346 indicates requirements to be followed strictly to conform to the document and from which no deviation is  
347 permitted

#### 348 **3.3**

##### 349 **optional**

350 indicates a course of action permissible within the limits of the document

#### 351 **3.4**

##### 352 **pending configuration**

353 indicates the configuration that will be applied to an IP network connection the next time the IP network  
354 connection accepts a configuration

#### 355 **3.5**

##### 356 **referencing profile**

357 indicates a profile that owns the definition of this class and can include a reference to this profile in its  
358 "Referenced Profiles" table

#### 359 **3.6**

##### 360 **unspecified**

361 indicates that this profile does not define any constraints for the referenced CIM element or operation  
362

## 363 **4 Symbols and abbreviated terms**

364 The abbreviations defined in [DSP0004](#), [DSP0223](#), and [DSP1001](#) apply to this document. The following  
365 additional abbreviations are used in this document.

#### 366 **4.1**

##### 367 **DHCP**

368 Dynamic Host Configuration Protocol

#### 369 **4.2**

##### 370 **DNS**

371 Domain Name System

372 **4.3**  
 373 **IP**  
 374 Internet Protocol

## 375 **5 Synopsis**

376 **Profile name:** IP Configuration  
 377 **Version:** 1.0.0  
 378 **Organization:** DMTF  
 379 **CIM Schema version:** 2.34  
 380 **Central class:** CIM\_IPNetworkConnection  
 381 **Scoping class:** CIM\_ComputerSystem

382 The *IP Configuration Profile* extends the management capability of referencing profiles by adding the  
 383 capability to describe the IP configuration of a managed system. This profile includes a specification of  
 384 the IP network connection, its associated configuration, support for managing configurations, and  
 385 dynamics of related end points.

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

387 **Table 1 – Referenced profiles**

Profile Name	Organization	Version	Requirement	Description
Profile Registration	DMTF	1.0	Mandatory	None
Enabled Logical Element	DMTF	1.0	Specializes	See clause 7.1

## 388 **6 Description**

389 The *IP Configuration Profile* describes an IP network connection and associated IP configuration  
 390 information in a managed system.

391 The *IP Configuration Profile* extends the management capability of referencing profiles by adding the  
 392 capability to represent the IP configuration in a managed system. Functionality within the scope of this  
 393 profile includes:

- 394 • settings for IP network connection
- 395 • settings for IP versions
- 396 • protocol endpoints for IP, DNS client, DHCP client

397 This profile represents the current configuration of an IP network connection, associated configurations  
 398 that could be applied, the DNS client, and the DHCP client.

399 A computer system can have multiple IP network connections. An IP network connection is an  
 400 aggregation point of IP layer settings. The application of the settings for the IP network connection results  
 401 in the IP interface, consisting of the IP addresses, gateways, along with the DNS client configuration.  
 402 Following represents the main methods for assignment of values for IP interface and DNS client  
 403 configuration,

- 404 • static – configured values in the settings
- 405 • DHCP – from a DHCP server



425 represented by instances of CIM\_DHCPSettingData. The stateless settings for IPv6 are represented by  
426 instances of CIM\_IPAssignmentSettingData. The DNS setting for the network connection is represented  
427 by instances of CIM\_DNSSettingData.

428 The system-wide settings for the DNS client are represented in the instance of  
429 CIM\_DNSGeneralSettingData, which is associated to the instance of scoping CIM\_ComputerSystem,  
430 through instance of CIM\_ElementSettingData.

431 An instance of CIM\_IPConfigurationService represents a service that provides methods for IP  
432 configuration.

433 An instance of CIM\_IPProtocolEndpoint represents an IP address on the system. An instance of  
434 CIM\_DHCPProtocolEndpoint represents the DHCP client for an IP version for a network connection. The  
435 DNS client on the system is represented by an instance of CIM\_DNSProtocolEndpoint.

436 Functionality provided by other systems (Gateway, DHCP server, and DNS server) is modeled from the  
437 client view and is therefore represented by instances of CIM\_RemoteServiceAccessPoint.

## 438 **6.2 Concurrent settings**

439 When there are multiple instances of settings that can be configured to take effect on the IP network  
440 connection simultaneously, the settings are considered “concurrent” settings. A settings instance  
441 associated with an IP network connection is recognized as concurrent whenever it has no configuration  
442 name (ConfigurationName is null) or it has a unique ConfigurationName value among all of the  
443 associated settings instances.

## 444 **6.3 Alternate settings**

445 When only one among a set of settings can be configured to take effect on the IP network connection at  
446 any given point of time, they are considered as “alternate” settings. A settings instance associated with an  
447 IP network connection is recognized as part of a set of alternate settings when its ConfigurationName  
448 matches that of other instances with the same ConfigurationName value.

## 449 **6.4 Accumulation of settings (cumulative configuration)**

450 An instance of CIM\_IPAssignmentSettingData with one or more instances of  
451 CIM\_IPAssignmentSettingData and its subclasses associated to it via CIM\_OrderedComponent,  
452 represents an accumulation of settings. This cumulative configuration is used to describe one or more  
453 settings that can be applied to an IP network connection. A settings instance that represents an  
454 accumulation of settings is indicated by the AddressOrigin value “11” (cumulative configuration).

455 A concurrent settings instance may represent an accumulation of settings and is referred to as a  
456 “concurrent accumulation of settings”.

457 An alternate settings instance may represent an accumulation of settings and is referred to as an  
458 “alternate accumulation of settings”.

## 459 **7 Implementation**

460 This clause details the requirements related to the arrangement of instances and properties of instances  
461 for implementations of this profile.

## 462 7.1 Representing the network connection

### 463 7.1.1 CIM\_IPNetworkConnection

464 Zero or more instances of CIM\_IPNetworkConnection shall be instantiated. The instances of the  
465 CIM\_IPNetworkConnection shall be associated with instance of the scoping CIM\_ComputerSystem  
466 through instance of CIM\_HostedAccessPoint.

### 467 7.1.2 Managing the CIM\_IPNetworkConnection state

468 An implementation may support management of CIM\_IPNetworkConnection state. The abstract Enabled  
469 Logical Element Profile specifies requirements for supporting state management in subclasses of  
470 CIM\_EnabledLogicalElement. The implementation of CIM\_IPNetworkConnection shall meet the  
471 requirements of the Enabled Logical Element Profile, with CIM\_IPNetworkConnection in place of  
472 CIM\_EnabledLogicalElement.

## 473 7.2 Representing the IP version

### 474 7.2.1 CIM\_IPVersionSettingData

475 At least one instance of CIM\_IPVersionSettingData shall exist in the system. The instances of the  
476 CIM\_IPVersionSettingData shall be associated to the scoping instance through CIM\_ElementSettingData  
477 association. The instances of the CIM\_IPVersionSettingData shall be associated through  
478 CIM\_ElementSettingData association to the CIM\_IPNetworkConnection instances on which the  
479 corresponding IP versions are supported.

#### 480 7.2.1.1 CIM\_IPVersionSettingData.ProtocolIFType

481 The ProtocolIFType shall have a value of 4096 (IPv4), if the instance represents the IPv4. The  
482 ProtocolIFType shall have a value of 4097 (IPv6), if the instance represents the IPv6.

## 483 7.3 IP setting

### 484 7.3.1 CIM\_IPAssignmentSettingData requirements for accumulation of settings, 485 stateless IP assignment settings

486 Zero or more instance of CIM\_IPAssignmentSettingData may exist.

#### 487 7.3.1.1 CIM\_IPAssignmentSettingData.AddressOrigin

488 The value of the AddressOrigin property shall be 11 (cumulative configuration), when representing an  
489 accumulation of settings (refer to 6.4).

490 The value of the AddressOrigin property shall be 9 (Stateless), when representing an IPv6 stateless  
491 setting.

#### 492 7.3.1.2 CIM\_IPAssignmentSettingData.ProtocolIFType

493 If the value of AddressOrigin property is 9 (Stateless), the value of the ProtocolIFType property shall be  
494 4097 (IPv6).

#### 495 7.3.1.3 CIM\_IPAssignmentSettingData.ConfigurationName

496 When the value of the AddressOrigin property is 11 (cumulative configuration), this property shall be  
497 implemented and shall contain non-null value.

498 For an instance of CIM\_IPNetworkConnection, the instances of the CIM\_IPAssignmentSettingData  
499 associated with the instance of CIM\_IPNetworkConnection, representing the accumulation of settings that  
500 are alternate to each other shall have identical non-null value for the ConfigurationName property. For an  
501 instance of CIM\_IPNetworkConnection, the instances of CIM\_IPAssignmentSettingData associated with  
502 the instance of CIM\_IPNetworkConnection, representing the accumulation of settings that are not  
503 alternate for each other, shall not have identical non-null value for the ConfigurationName property.

### 504 **7.3.2 CIM\_ExtendedStaticIPAssignmentSettingData requirements for static IP** 505 **assignment settings**

506 Zero or more instances of CIM\_ExtendedStaticIPAssignmentSettingData may exist.

#### 507 **7.3.2.1 CIM\_ExtendedStaticIPAssignmentSettingData.AddressOrigin**

508 The value of the AddressOrigin property shall be 3 (static).

#### 509 **7.3.2.2 CIM\_ExtendedStaticIPAssignmentSettingData.ProtocolIFType**

510 The value of the ProtocolIFType property shall be 4096 (IPv4) or 4097 (IPv6).

#### 511 **7.3.2.3 CIM\_ExtendedStaticIPAssignmentSettingData.IPAddresses**

512 The value of the IPAddresses property shall be an array of 0 or more IPv4 addresses if the  
513 CIM\_ExtendedStaticIPAssignmentSettingData.ProtocolIFType property has a value of 4096 (IPv4). The  
514 value of the IPAddresses property shall be an array of 0 or more IPv6 addresses if the ProtocolIFType  
515 property has a value of 4097 (IPv6).

#### 516 **7.3.2.4 CIM\_ExtendedStaticIPAssignmentSettingData.IPv6SubnetPrefixLengths**

517 The value of the IPv6SubnetPrefixLengths property shall be an array of 0 or more IPv6 subnet prefix  
518 lengths if the CIM\_ExtendedStaticIPAssignmentSettingData.ProtocolIFType property has a value of 4097  
519 (IPv6). Each element in this array shall have a one-to-one correspondence with the IPAddresses  
520 property.

521 If the value of CIM\_ExtendedStaticIPAssignmentSettingData.ProtocolIFType is not 4097 (IPv6), the  
522 IPv6SubnetPrefixLengths property shall not be specified.

#### 523 **7.3.2.5 CIM\_ExtendedStaticIPAssignmentSettingData.SubnetMasks**

524 The value of the SubnetMasks property shall be an array of 0 or more IPv4 subnet masks if the  
525 ProtocolIFType property has a value of 4096 (IPv4). Each element in this array shall have a one-to-one  
526 correspondence with IPAddresses property.

527 If the value of CIM\_ExtendedStaticIPAssignmentSettingData.ProtocolIFType is not 4096 (IPv4), the  
528 SubnetMasks property shall not be specified.

#### 529 **7.3.2.6 CIM\_ExtendedStaticIPAssignmentSettingData.GatewayAddresses**

530 The value of the GatewayAddresses property shall be an array of 0 or more IPv4 addresses representing  
531 the default gateways, if the ProtocolIFType property has a value of 4096 (IPv4). The value of the  
532 GatewayAddresses property shall be an array of 0 or more IPv6 addresses representing the default  
533 gateways if the ProtocolIFType property has a value of 4097 (IPv6).

### 534 **7.3.3 CIM\_DHCPSettingData requirements for dynamic IP assignment settings**

535 Zero or more instances of CIM\_DHCPSettingData may exist.



### 536 7.3.3.1 CIM\_DHCPSettingData.AddressOrigin

537 The value of the AddressOrigin property shall be 4 (DHCP) or 7 (DHCPv6).

### 538 7.3.3.2 CIM\_DHCPSettingData.ProtocolIFType

539 If the value of AddressOrigin property is 4 (DHCP), the value of the ProtocolIFType property shall be  
540 4096 (IPv4). If the value of AddressOrigin property is 7 (DHCPv6), the value of the ProtocolIFType  
541 property shall be 4097 (IPv6).

## 542 7.4 Representation of current and pending settings

### 543 7.4.1 CIM\_ElementSettingData

#### 544 7.4.1.1 CIM\_ElementSettingData.IsCurrent

545 For current settings (or accumulation of settings), the CIM\_ElementSettingData.IsCurrent property shall  
546 have a value of 1 (Is Current). For settings (or accumulation of settings) that are not current,  
547 CIM\_ElementSettingData.IsCurrent property shall have a value of 2 (Is Not Current).

#### 548 7.4.1.2 CIM\_ElementSettingData.IsNext

549 For pending settings (or accumulation of settings), the CIM\_ElementSettingData.IsNext property shall be  
550 1 (Is Next) or 3 (Is Next For Single Use). For settings (or accumulation of settings) that are not pending,  
551 CIM\_ElementSettingData.IsNext property shall have a value of 2 (Is Not Next).

### 552 7.4.2 Modification of CIM\_SettingData

553 Properties of the setting instances may be modified by modify instance operation. The modify instance  
554 operation shall fail, if changing properties of specific instance is not supported.

555 Modification of properties of current settings, takes effect immediately on the Managed Element. The  
556 modify instance operation shall fail, if changing of the current settings for the Managed Element is not  
557 supported.

## 558 7.5 Representation settings of a network connection

### 559 7.5.1 Concurrent settings

560 When concurrent settings exists, the instances of CIM\_IPAssignmentSettingData and its subclasses  
561 representing concurrent settings for a network connection shall be associated via  
562 CIM\_ElementSettingData to the corresponding instances of CIM\_IPNetworkConnection.

### 563 7.5.2 Accumulation of settings

564 When accumulation of settings (refer to 6.4) exists, the instances of CIM\_IPAssignmentSettingData with  
565 AddressOrigin as 11 (cumulative configuration) representing the accumulation of settings shall be  
566 associated via CIM\_ElementSettingData to the corresponding instance of CIM\_IPNetworkConnection.

567 Following requirements applies to instances of CIM\_IPAssignmentSettingData with value of  
568 AddressOrigin property as 11 (cumulative configuration) having identical non-null value for  
569 ConfigurationName property (refer to 6.4 and 7.3.1.3):

- 570 • Exactly one of the above instances of CIM\_IPAssignmentSettingData shall be associated to the  
571 central class instance through an instance of CIM\_ElementSettingData whose IsCurrent property  
572 has the value 1 (Is Current).

- 573       • Exactly one of the above instances of CIM\_IPAssignmentSettingData shall be associated to the  
574       central class instance through an instance of CIM\_ElementSettingData whose IsNext property  
575       has the value 1 (Is Next).
- 576       • Exactly one of the above instances of CIM\_IPAssignmentSettingData may be associated to the  
577       central class instance through an instance of CIM\_ElementSettingData whose IsNext property  
578       has the value 3 (Is Next For Single Use).
- 579       • If an instance of CIM\_IPAssignmentSettingData is associated with the central class instance  
580       through an instance of CIM\_ElementSettingData whose IsNext property has the value 3 (Is Next  
581       For Single Use), this instance of CIM\_IPAssignmentSettingData shall represent the pending  
582       configuration. If no instance of CIM\_IPAssignmentSettingData is associated with the central class  
583       instance through an instance of CIM\_ElementSettingData whose IsNext property has the value 3  
584       (Is Next For Single Use), the instance of CIM\_IPAssignmentSettingData that is associated with  
585       the Central Instance through an instance of CIM\_ElementSettingData whose IsNext property has  
586       the value 1 (Is Next) shall represent the pending configuration.

#### 587   **7.5.2.1   Associating settings using CIM\_OrderedComponent**

588   The instances of the CIM\_IPAssignmentSettingData and its subclasses that are part of a cumulative  
589   configuration shall be associated with one or more of the above instances of  
590   CIM\_IPAssignmentSettingData via CIM\_OrderedComponent.

##### 591   **7.5.2.1.1   CIM\_OrderedComponent.GroupComponent**

592   An instance of CIM\_IPAssignmentSettingData or its subclasses, whose AddressOrigin property has the  
593   value 11 (cumulative configuration) shall be the value of the GroupComponent property of an instance of  
594   CIM\_OrderedComponent.

##### 595   **7.5.2.1.2   CIM\_OrderedComponent.PartComponent**

596   An instance of CIM\_IPAssignmentSettingData or its subclasses whose AddressOrigin property is not  
597   having the value 11 (cumulative configuration), shall be the value of the PartComponent property of an  
598   instance of CIM\_OrderedComponent.

##### 599   **7.5.2.1.3   CIM\_OrderedComponent.AssignedSequence**

600   The relative value of the CIM\_OrderedComponent.AssignedSequence property shall indicate the order in  
601   which the settings are applied to their associated CIM\_IPNetworkConnection instances.

## 602   **7.6   Representing the IP interface**

### 603   **7.6.1   CIM\_IPProtocolEndpoint**

604   Zero or more instances of CIM\_IPProtocolEndpoint may exist.

605   The following behavior is conditional on the existence of instances of CIM\_IPProtocolEndpoint. Instances  
606   of CIM\_IPProtocolEndpoint may be associated with CIM\_ComputerSystem via CIM\_HostedAccessPoint.  
607   Instances of CIM\_IPProtocolEndpoint shall be associated with CIM\_IPNetworkConnection via  
608   CIM\_SAPSAPDependency, where the CIM\_IPProtocolEndpoint is the Dependent.

#### 609   **7.6.1.1   CIM\_IPProtocolEndpoint.AddressOrigin**

##### 610   **7.6.1.1.1   AddressOrigin — Static**

611   A value of 3 (Static) shall indicate that this instance of CIM\_IPProtocolEndpoint was assigned statically.

**612 7.6.1.1.2 AddressOrigin — DHCPv4**

613 A value of 4 (DHCP) shall indicate that this instance of CIM\_IPProtocolEndpoint was obtained through an  
614 associated DHCP client. The AddressOrigin property shall have a value of 4 (DHCP) when the  
615 configuration is the result of an instance of CIM\_DHCPSettingData representing the DHCP client settings  
616 for IPv4 being successfully applied.

**617 7.6.1.1.3 AddressOrigin — DHCPv6**

618 A value of 7 (DHCPv6) shall indicate that this instance of CIM\_IPProtocolEndpoint was obtained through  
619 an associated DHCP client for IPv6. The AddressOrigin property shall have a value of 7 (DHCPv6) when  
620 the configuration is the result of an instance of CIM\_DHCPSettingData representing the DHCP client  
621 settings for IPv6 being successfully applied.

**622 7.6.1.1.4 AddressOrigin — Stateless**

623 A value of 9 (Stateless) shall indicate that this instance of CIM\_IPProtocolEndpoint was generated  
624 automatically through the router advertisement messages.

**625 7.6.1.1.5 AddressOrigin — Link Local**

626 A value of 10 (Link Local) shall indicate that this instance of CIM\_IPProtocolEndpoint was configured with  
627 a Link Local address automatically by the local host.

**628 7.6.1.2 CIM\_IPProtocolEndpoint.ProtocolIFType**

629 The ProtocolIFType property shall indicate the current IP address type. The value of  
630 CIM\_IPProtocolEndpoint.ProtocolIFType shall be 4096 (IPv4) or 4097 (IPv6).

631 If the value is 4096 (IPv4), the IPv4Address and SubnetMask properties shall be implemented.

632 If the value is 4097 (IPv6), the IPv6Address and IPv6SubnetPrefixLength properties shall be  
633 implemented.

**634 7.6.1.3 CIM\_IPProtocolEndpoint.IPv4Address**

635 If the value of CIM\_IPProtocolEndpoint.ProtocolIFType is 4096 (IPv4), the IPv4Address property shall  
636 indicate the current IPv4 address assigned to this IP endpoint. The value of the property shall be  
637 specified in dotted decimal notation as defined in IETF [RFC1208](#). A value of 0.0.0.0 shall indicate that a  
638 valid IP address is not assigned to this IP endpoint.

639 If the value of CIM\_IPProtocolEndpoint.ProtocolIFType is not 4096 (IPv4), the IPv4Address property shall  
640 not be specified.

**641 7.6.1.4 CIM\_IPProtocolEndpoint.SubnetMask**

642 If the value of CIM\_IPProtocolEndpoint.ProtocolIFType is 4096 (IPv4), the SubnetMask property shall be  
643 specified by using dotted decimal notation as defined in IETF [RFC1208](#). A value of 0.0.0.0 shall indicate  
644 that a valid subnet mask is not assigned to this IP endpoint.

645 If the value of CIM\_IPProtocolEndpoint.ProtocolIFType is not 4096 (IPv4), the SubnetMask property shall  
646 not be specified.

**647 7.6.1.5 CIM\_IPProtocolEndpoint.IPv6Address**

648 If the value of CIM\_IPProtocolEndpoint.ProtocolIFType is 4097 (IPv6), the IPv6Address property shall  
649 indicate the current IPv6 address assigned to this IP endpoint. The value of the property shall be  
650 specified in the notation specified in IETF [RFC4291](#), section 2.2.

651 If the value of CIM\_IPProtocolEndpoint.ProtocolIFType is not 4097 (IPv6), the IPv6Address property shall  
652 not be specified.

#### 653 **7.6.1.6 CIM\_IPProtocolEndpoint. IPv6SubnetPrefixLength**

654 If the value of CIM\_IPProtocolEndpoint.ProtocolIFType is 4097 (IPv6), the IPv6SubnetPrefixLength  
655 property shall indicate the prefix length used to specify the subnet.

656 If the value of CIM\_IPProtocolEndpoint.ProtocolIFType is not 4097 (IPv6), the IPv6SubnetPrefixLength  
657 property shall not be specified.

### 658 **7.7 IP configuration management**

#### 659 **7.7.1 Configuration management is supported (optional)**

660 When an implementation supports management of IP configuration, there shall be one or more instances  
661 of CIM\_IPConfigurationService, which has methods to perform configuration management on the  
662 CIM\_ComputerSystem and CIM\_IPNetworkConnection. These instances shall be associated with the  
663 scoping instance through CIM\_HostedService association.

664 If the configuration management is supported on the CIM\_ComputerSystem, it shall be associated via  
665 CIM\_ServiceAffectsElement to the instances of the CIM\_IPConfigurationService that can configure it. The  
666 CIM\_IPConfigurationService.ApplySettingToComputerSystem method shall be used to enable or disable  
667 the CIM\_IPVersionSettingData on the CIM\_ComputerSystem.

668 If the configuration management is supported on an instance of CIM\_IPNetworkConnection, it shall be  
669 associated via CIM\_ServiceAffectsElement to the instances of the CIM\_IPConfigurationService that can  
670 configure it. The CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection method shall be used  
671 to enable or disable the CIM\_IPVersionSettingData or CIM\_IPAssignmentSettingData or its subclasses  
672 on the CIM\_IPNetworkConnection.

673 The above methods change IsNext and/or IsCurrent property of the CIM\_ElementSettingData instance  
674 associating the Managed Element with the setting. These methods are needed only when the IsCurrent  
675 or IsNext property of CIM\_ElementSettingData instance needs to be modified.

### 676 **7.8 DHCP client**

677 The representation of DHCP client is optional.

#### 678 **7.8.1 CIM\_DHCPProtocolEndpoint**

679 Zero or more instances of CIM\_DHCPProtocolEndpoint may exist. Instances of  
680 CIM\_DHCPProtocolEndpoint shall be associated with CIM\_IPNetworkConnection via  
681 CIM\_SAPSAPDependency, where the CIM\_DHCPProtocolEndpoint is the Dependent. Each instance of  
682 CIM\_IPProtocolEndpoint whose IP address is assigned by DHCP may be associated with a  
683 corresponding instance of CIM\_DHCPProtocolEndpoint, via CIM\_SAPSAPDependency, where the  
684 CIM\_IPProtocolEndpoint is the Dependent. The instances of CIM\_DHCPProtocolEndpoint may be  
685 associated to CIM\_ComputerSystem via CIM\_HostedAccessPoint. Each CIM\_DHCPProtocolEndpoint  
686 may be associated to zero or more instances of CIM\_DHCPSettingData, which is a current setting (either  
687 concurrent or alternate) for the CIM\_IPNetworkConnection associated to the above  
688 CIM\_DHCPProtocolEndpoint via CIM\_ElementSettingData association.

### 689 **7.9 DNS client and configuration**

690 The representation of DNS client and its configuration is optional.

### 691 7.9.1 CIM\_DNSProtocolEndpoint

692 Zero or more instances of CIM\_DNSProtocolEndpoint may exist. The instances of  
693 CIM\_DNSProtocolEndpoint shall be associated to CIM\_ComputerSystem via CIM\_HostedAccessPoint.

### 694 7.9.2 CIM\_DNSSettingData

695 Zero or more instances of CIM\_DNSSettingData may exist. The instances of CIM\_DNSSettingData shall  
696 be modeled either as concurrent setting or as alternate settings for CIM\_IPNetworkConnection or as a  
697 setting for CIM\_DNSProtocolEndpoint. The instances of CIM\_DNSSettingData that are modeled as  
698 settings for CIM\_IPNetworkConnection may be associated to CIM\_DNSProtocolEndpoint, via  
699 CIM\_ElementSettingData.

#### 700 7.9.2.1 CIM\_DNSSettingData.AddressOrigin

701 The value of the AddressOrigin property shall be 2 (Not Applicable).

#### 702 7.9.2.2 CIM\_DNSSettingData.ProtocolIFType

703 The value of the ProtocolIFType property shall be 4096 (IPv4) or 4097 (IPv6).

#### 704 7.9.2.3 CIM\_DNSSettingData.DNSServerAddresses

705 The DNSServerAddresses property indicates the DNS servers statically configured. The value of the  
706 DNSServerAddresses property shall be an array of 0 or more IPv4 addresses if the  
707 CIM\_DNSSettingData.ProtocolIFType property has a value of 4096 (IPv4). The value of the  
708 DNSServerAddresses property shall be an array of 0 or more IPv6 addresses if the  
709 CIM\_DNSSettingData.ProtocolIFType property has a value of 4097 (IPv6).

### 710 7.9.3 CIM\_DNSGeneralSettingData

711 Zero or more instances of CIM\_DNSGeneralSettingData may exist. Only one of them may be associated  
712 to the instance of CIM\_ComputerSystem through an instance of CIM\_ElementSettingData whose  
713 IsCurrent property has the value 1(Is Current). Only one of them may be associated to the instance of  
714 CIM\_ComputerSystem through an instance of CIM\_ElementSettingData whose IsNext property has the  
715 value 1(Is Next).

## 716 7.10 Relationship with a network interface

717 An IP interface is generally bound to an underlying layer 2 network interface. The underlying layer 2  
718 network interface might participate in a LAN and be modeled using a specialization of *Host LAN Network*  
719 *Port Profile* ([DSP1035](#)). When the underlying network interface is modeled with instrumentation compliant  
720 with a specialization of [DSP1035](#), following requirements applies.

721 The instance of CIM\_IPNetworkConnection shall be associated with instances of CIM\_LANEndpoint  
722 and/or with instances of CIM\_VLANEndpoint via CIM\_EndpointForIPNetworkConnection, where the  
723 CIM\_IPNetworkConnection is the Dependent. The instances of CIM\_IPProtocolEndpoint may be  
724 associated with instances of CIM\_LANEndpoint via CIM\_BindsToLANEndpoint, and/or with instances of  
725 CIM\_VLANEndpoint via CIM\_BindsTo, where CIM\_IPProtocolEndpoint is the Dependent.

## 726 7.11 Remote services

### 727 7.11.1 Default gateway

728 A network connection can be configured with the addresses of network gateways. Modeling of default  
729 gateways is optional.

**730 7.11.1.1 CIM\_RemoteServiceAccessPoint****731 7.11.1.1.1 CIM\_RemoteServiceAccessPoint.AccessContext**

732 For the instances of CIM\_RemoteServiceAccessPoint representing default gateways, the value for  
733 AccessContext property shall be 2 (Default Gateway).

**734 7.11.1.1.2 CIM\_RemoteServiceAccessPoint.AccessInfo**

735 For IPv4 gateways, the value of the AccessInfo property shall be the IPv4 address of the default gateway.  
736 The value shall be specified in dotted decimal notation as defined in IETF [RFC1208](#).

737 For IPv6 gateways, the value of the AccessInfo property shall be the IPv6 address of the default gateway.  
738 The value shall be specified in the IPv6 notation as defined in IETF [RFC4291](#).

**739 7.11.1.2 CIM\_RemoteAccessAvailableToElement**

740 If modeled, the instances of CIM\_RemoteServiceAccessPoint representing default gateways for a  
741 network connection shall be associated via CIM\_RemoteAccessAvailableToElement to the corresponding  
742 instance of CIM\_IPNetworkConnection. The instances of CIM\_RemoteServiceAccessPoint representing  
743 the gateways may be associated to Scoping instance using CIM\_RemoteAccessAvailableToElement.

**744 7.11.1.2.1 CIM\_RemoteAccessAvailableToElement.Antecedent**

745 The value of the Antecedent reference shall be the instance of CIM\_RemoteServiceAccessPoint.

**746 7.11.1.2.2 CIM\_RemoteAccessAvailableToElement.Dependent**

747 The value of the Dependent reference shall be the instance of CIM\_IPNetworkConnection or  
748 CIM\_System or its subclasses.

**749 7.11.1.2.3 CIM\_RemoteAccessAvailableToElement.OrderOfAccess**

750 CIM\_RemoteAccessAvailableToElement.OrderOfAccess can be used to represent the list of default  
751 gateways in priority order.

**752 7.11.2 DHCP servers**

753 Modeling of the DHCP servers is optional.

**754 7.11.2.1 CIM\_RemoteServiceAccessPoint****755 7.11.2.1.1 CIM\_RemoteServiceAccessPoint.AccessContext**

756 For the instances of CIM\_RemoteServiceAccessPoint representing DHCP Servers, the value for  
757 AccessContext property shall be 6 (DHCP Server).

**758 7.11.2.1.2 CIM\_RemoteServiceAccessPoint.AccessInfo**

759 For IPv4 DHCP Servers, the value of the AccessInfo property shall be the IPv4 address of the DHCP  
760 Server. The value shall be specified in dotted decimal notation as defined in IETF [RFC1208](#).

761 For IPv6 DHCP Servers, the value of the AccessInfo property shall be the IPv6 address of the DHCP  
762 Server. The value shall be specified in the IPv6 notation as defined in IETF [RFC4291](#).

**763 7.11.2.2 CIM\_RemoteAccessAvailableToElement**

764 CIM\_DHCPProtocolEndpoint and CIM\_RemoteServiceAccessPoint representing the DHCP servers shall  
765 be associated by using CIM\_RemoteAccessAvailableToElement, if both are modeled and their

766 corresponding instances exist. The instances of CIM\_RemoteServiceAccessPoint representing the DHCP  
767 servers may be associated to Scoping instance by using CIM\_RemoteAccessAvailableToElement.

#### 768 **7.11.2.2.1 CIM\_RemoteAccessAvailableToElement.Antecedent**

769 The value of the Antecedent reference shall be the instance of CIM\_RemoteServiceAccessPoint.

#### 770 **7.11.2.2.2 CIM\_RemoteAccessAvailableToElement.Dependent**

771 The value of the Dependent reference shall be the instance of CIM\_DHCPProtocolEndpoint or  
772 CIM\_System or its subclasses.

### 773 **7.11.3 DNS servers**

774 Modeling of the DNS servers is optional.

#### 775 **7.11.3.1 CIM\_RemoteServiceAccessPoint**

##### 776 **7.11.3.1.1 CIM\_RemoteServiceAccessPoint.AccessContext**

777 For the instances of CIM\_RemoteServiceAccessPoint representing DNS servers, the value for  
778 AccessContext property shall be 3 (DNS Server).

##### 779 **7.11.3.1.2 CIM\_RemoteServiceAccessPoint.AccessInfo**

780 For IPv4 DNS servers, the value of the AccessInfo property shall be the IPv4 address of the DNS server.  
781 The value shall be specified in dotted decimal notation as defined in IETF [RFC1208](#).

782 For IPv6 DNS servers, the value of the AccessInfo property shall be the IPv6 address of the DNS server.  
783 The value shall be specified in the IPv6 notation as defined in IETF [RFC4291](#).

#### 784 **7.11.3.2 CIM\_RemoteAccessAvailableToElement**

785 CIM\_DNSProtocolEndpoint and CIM\_RemoteServiceAccessPoint representing the DNS servers shall be  
786 associated by using CIM\_RemoteAccessAvailableToElement, if both are modeled and their  
787 corresponding instances exist. The instances of CIM\_RemoteServiceAccessPoint representing the DNS  
788 servers may be associated to Scoping instance by using CIM\_RemoteAccessAvailableToElement.

##### 789 **7.11.3.2.1 CIM\_RemoteAccessAvailableToElement.Antecedent**

790 The value of the Antecedent reference shall be the instance of CIM\_RemoteServiceAccessPoint.

##### 791 **7.11.3.2.2 CIM\_RemoteAccessAvailableToElement.Dependent**

792 The value of the Dependent reference shall be the instance of CIM\_DNSProtocolEndpoint or  
793 CIM\_System or its subclasses.

##### 794 **7.11.3.2.3 CIM\_RemoteAccessAvailableToElement.OrderOfAccess**

795 CIM\_RemoteAccessAvailableToElement.OrderOfAccess can be used to represent the list of DNS servers  
796 in priority order.

#### 797 **7.11.3.3 CIM\_SAPSAPDependency**

798 The CIM\_RemoteServiceAccessPoint instances representing the DNS servers may be associated via  
799 CIM\_SAPSAPDependency to the corresponding instances of CIM\_IPNetworkConnection representing  
800 the network connection that added the DNS server in the configuration, with CIM\_IPNetworkConnection  
801 as the Antecedent and CIM\_RemoteServiceAccessPoint as Dependent.

802 For the DNS servers added by DHCP, the CIM\_RemoteServiceAccessPoint instances representing the  
 803 DNS servers may be associated via CIM\_SAPSAPDependency to the corresponding instances  
 804 CIM\_DHCPProtocolEndpoint, with CIM\_DHCPProtocolEndpoint as the Antecedent and  
 805 CIM\_RemoteServiceAccessPoint as Dependent.

806 **8 Methods**

807 This clause details the requirements for supporting intrinsic operations and extrinsic methods for the CIM  
 808 elements defined by this profile.

809 **8.1 CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection()**

810 The CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection() method is used to enable or  
 811 disable a SettingData, as represented by an instance of CIM\_IPAssignmentSettingData and/or the  
 812 IPVersionSettingData represented by an instance of CIM\_IPVersionSettingData, to the specified  
 813 IPNetworkConnection, represented by an instance of CIM\_IPNetworkConnection. Implementation of this  
 814 method is optional.

815 Detailed requirements of the ApplySettingToIPNetworkConnection() method are specified in Table 2,  
 816 Table 3, Table 4, and Table 5. From the optional IN parameters, SettingData and IPVersionSettingData, at  
 817 least one shall be specified.

818 **Table 2 – CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection() method: Return**  
 819 **code values**

Value	Description
0	Request was successfully executed.
1	Unsupported.
2	Failed.
4096	Input parameters have been validated and a job started to apply the setting (or accumulation of settings).

820 **Table 3 – CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection() method: Standard**  
 821 **messages**

(return) Message ID	Message
WIPG0213	CIM instance not found
WIPG0219	CIM method not supported by CIM class implementation

822 **Table 4 – CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection() method:**  
 823 **Parameters**

Qualifiers	Name	Type	Description/Values
IN	SettingData	CIM_IPAssignmentSettingData REF	The settings to apply
IN	IPVersionSettingData	CIM_IPVersionSettingData REF	The IPVersionSettingData to apply
IN, REQ	IPNetworkConnection	CIM_IPNetworkConnection REF	The IPNetworkConnection to which the setting will be applied



Qualifiers	Name	Type	Description/Values
IN, REQ	Mode	uint16	The mode in which the setting (or accumulation of settings) needs to be applied to the IPNetworkConnection
OUT	Job	CIM_ConcreteJob REF	Returned if job started

824 The CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection() method shall be implemented  
825 as follows:

- 826 • The implementation shall validate that an instance of CIM\_ServiceAffectsElement references  
827 the CIM\_IPConfigurationService instance and the CIM\_IPNetworkConnection instance that is  
828 identified by the IPNetworkConnection parameter to the method. If the association does not  
829 exist, the return code of the method shall be 2 (Failed).
- 830 • The implementation shall validate that an instance of CIM\_ElementSettingData associates the  
831 instance of CIM\_IPNetworkConnection that is identified by the IPNetworkConnection parameter  
832 with the instance of CIM\_IPAssignmentSettingData that is identified by the SettingData  
833 parameter and/or with the instance of CIM\_IPVersionSettingData, that is identified by the  
834 IPVersionSettingData parameter. If the association does not exist, the return code of the  
835 method shall be 2 (Failed).

836 When the parameters have been validated and the method is applying the settings, the method shall  
837 apply the settings as specified in the Mode parameter. The state transitions specified in Table 5 –  
838 CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection() method: Mode shall complete when  
839 the return value is 0 (Completed with No Error). When the return value is 4096 (Job Started), state  
840 transitions specified in Table 5 – CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection()  
841 method: Mode shall be complete when the Job is completed successfully.

842 **Table 5 – CIM\_IPConfigurationService.ApplySettingToIPNetworkConnection() method: Mode**

Mode	Request	End-State	Interpretation
0	Apply, if possible; mark 'Next to Apply' if not	See Modes 1 and 2	Depending on capability of CIM_IPNetworkConnection, apply settings immediately, or mark settings to be applied later
1	Apply Settings	IsCurrent==1, IsNext==1	Settings were applied by the CIM_IPNetworkConnection. Settings will be (re)applied at next state change
2	Mark Settings as Next to Apply	IsNext==1	Settings are not immediately applied but will be (re)applied at the next appropriate CIM_IPNetworkConnection state change
3	Remove these settings, if possible; or mark 'Not Next to Apply' if not	See Modes 4 and 5	Depending on capability of CIM_IPNetworkConnection, remove settings immediately, or mark settings to be removed later
4	Remove Settings	IsCurrent==2, IsNext==2	Settings are removed immediately by the CIM_IPNetworkConnection and are no longer current. Settings are not (re)applied at next state change
5	Mark Settings as Not Next to Apply	IsNext==2	Current settings are unaffected. Settings are removed and not (re)applied at next state change
6	Mark Settings as Next to Apply – Single Use	IsNext==3	Settings are applied at next state change to be used once and not reapplied on future state changes

843 **8.2 CIM\_IPConfigurationService.ApplySettingToComputerSystem()**

844 The CIM\_IPConfigurationService.ApplySettingToComputerSystem() method is used to enable or disable  
845 the IPVersionSettingData represented by an instance CIM\_IPVersionSettingData, to the specified

846 Computer System, represented by an instance of CIM\_ComputerSystem. Implementation of this method  
847 is optional.

848 Detailed requirements of the ApplySettingToComputerSystem( ) method are specified in Table 6, Table 7,  
849 Table 8, and Table 9.

850 **Table 6 – CIM\_IPConfigurationService.ApplySettingToComputerSystem() method: Return code**  
851 **values**

Value	Description
0	Request was successfully executed.
1	Unsupported.
2	Failed.
4096	Input parameters have been validated and a job started to apply the setting.

852 **Table 7– CIM\_IPConfigurationService.ApplySettingToComputerSystem() method: Standard**  
853 **messages**

(return) Message ID	Message
WIPG0213	CIM instance not found
WIPG0219	CIM method not supported by CIM class implementation

854 **Table 8 – CIM\_IPConfigurationService.ApplySettingToComputerSystem() method: Parameters**

Qualifiers	Name	Type	Description/Values
IN, REQ	IPVersionSettingData	CIM_IPVersionSettingData REF	The IPVersionSettingData to apply
IN, REQ	ComputerSystem	CIM_ComputerSystem REF	The Computer System to which the setting will be applied
IN, REQ	Mode	uint16	The mode in which the setting needs to be applied to the ComputerSystem
OUT	Job	CIM_ConcreteJob REF	Returned if job started

855 The CIM\_IPConfigurationService.ApplySettingToComputerSystem( ) method shall be implemented as  
856 follows:

- 857 • The implementation shall validate that an instance of CIM\_ServiceAffectsElement references  
858 the CIM\_IPConfigurationService instance and the CIM\_ComputerSystem instance that is  
859 identified by the ComputerSystem parameter to the method. If the association does not exist,  
860 the return code of the method shall be 2 (Failed).
- 861 • The implementation shall validate that an instance of CIM\_ElementSettingData associates the  
862 instance of CIM\_ComputerSystem that is identified by the ComputerSystem parameter with the  
863 instance of CIM\_IPVersionSettingData that is identified by the IPVersionSettingData parameter.  
864 If the association does not exist, the return code of the method shall be 2 (Failed).

865 When the parameters have been validated and the method is applying the settings, the method shall  
866 apply the settings as specified in the Mode parameter. The state transitions specified in Table 9 –  
867 CIM\_IPConfigurationService.ApplySettingToComputerSystem( ) method: Mode shall be complete when  
868 the return value is 0 (Completed with No Error). When the return value is 4096 (Job Started), state

869 transitions specified in Table 9 – CIM\_IPConfigurationService.ApplySettingToComputerSystem() method:  
 870 Mode shall be complete when the Job is completed successfully.

871 **Table 9 – CIM\_IPConfigurationService.ApplySettingToComputerSystem() method: Mode**

Mode	Request	End-State	Interpretation
0	Apply, if possible; mark 'Next to Apply' if not	See Modes 1 and 2	Depending on capability of CIM_ComputerSystem, apply settings immediately, or mark settings to be applied later
1	Apply Settings	IsCurrent==1, IsNext==1	Settings were applied by the CIM_ComputerSystem. Settings will be (re)applied at next state change
2	Mark Settings as Next to Apply	IsNext==1	Settings are not immediately applied but will be (re)applied at the next appropriate CIM_ComputerSystem state change
3	Remove these settings, if possible; or mark 'Not Next to Apply' if not	See Modes 4 and 5	Depending on capability of CIM_ComputerSystem, remove settings immediately, or mark settings to be removed later
4	Remove Settings	IsCurrent==2, IsNext==2	Settings are removed immediately by the CIM_ComputerSystem and are no longer current. Settings are not (re)applied at next state change
5	Mark Settings as Not Next to Apply	IsNext==2	Current settings are unaffected. Settings are removed and not (re)applied at next state change
6	Mark Settings as Next to Apply – Single Use	IsNext==3	Settings are applied at next state change to be used once and not reapplied on future state changes

872 **8.3 Profile conventions for operations**

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

875 The default list of operations is as follows:

- 876 • GetInstance
- 877 • EnumerateInstances
- 878 • EnumerateInstanceNames
- 879 • Associators
- 880 • AssociatorNames
- 881 • References
- 882 • ReferenceNames

883 **8.4 CIM\_BindsTo**

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

886 **Table 10 – Operations: CIM\_BindsTo**

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

887 **8.5 CIM\_BindsToLANEndpoint**

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

890 **Table 11 – Operations: CIM\_BindsToLANEndpoint**

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

891 **8.6 CIM\_DHCPProtocolEndpoint**

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

893 **8.7 CIM\_DHCPSettingData**

894 Table 12 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
895 be supported

896 **Table 12 – Operations: CIM\_DHCPSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	None

897 **8.8 CIM\_DNSGeneralSettingData**

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

900 **Table 13 – Operations: CIM\_DNSGeneralSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	None

901 **8.9 CIM\_DNSProtocolEndpoint**

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

903 **8.10 CIM\_DNSSettingData**

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

906 **Table 14 – Operations: CIM\_DNSSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	None

907 **8.11 CIM\_ElementSettingData**

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

910 **Table 15 – Operations: CIM\_ElementSettingData**

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

911 **8.12 CIM\_EndpointForIPNetworkConnection**

912 Table 16 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
913 be supported.

914 **Table 16 – Operations: CIM\_EndpointForIPNetworkConnection**

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

915 **8.13 CIM\_ExtendedStaticIPAssignmentSettingData**

916 Table 17 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
917 be supported.

918 **Table 17 – Operations: CIM\_ExtendedStaticIPAssignmentSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	None

919 **8.14 CIM\_HostedAccessPoint**

920 Table 18 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
921 be supported.

922 **Table 18 – Operations: CIM\_HostedAccessPoint**

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

923 **8.15 CIM\_HostedService**

924 Table 19 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
925 be supported.

926 **Table 19 – Operations: CIM\_HostedService**

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

927 **8.16 CIM\_IPAssignmentSettingData**

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

929 **8.17 CIM\_IPConfigurationService**

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

931 **8.18 CIM\_IPNetworkConnection**

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

933 **8.19 CIM\_IPProtocolEndpoint**

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

935 **8.20 CIM\_IPVersionSettingData**

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

937 **8.21 CIM\_OrderedComponent**

938 Table 20 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
939 be supported.

940 **Table 20 – Operations: CIM\_OrderedComponent**

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

941 **8.22 CIM\_RemoteAccessAvailableToElement**

942 Table 21 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
943 be supported.

944

**Table 21 – Operations: CIM\_RemoteAccessAvailableToElement**

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

945 **8.23 CIM\_RemoteServiceAccessPoint**

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

947 **8.24 CIM\_SAPSAPDependency**

948 Table 22 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
949 be supported.

950

**Table 22 – Operations: CIM\_SAPSAPDependency**

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

951 **8.25 CIM\_ServiceAffectsElement**

952 Table 23 lists operations that either have special requirements beyond those from [DSP0200](#) or shall not  
953 be supported.

954

**Table 23 – Operations: CIM\_ServiceAffectsElement**

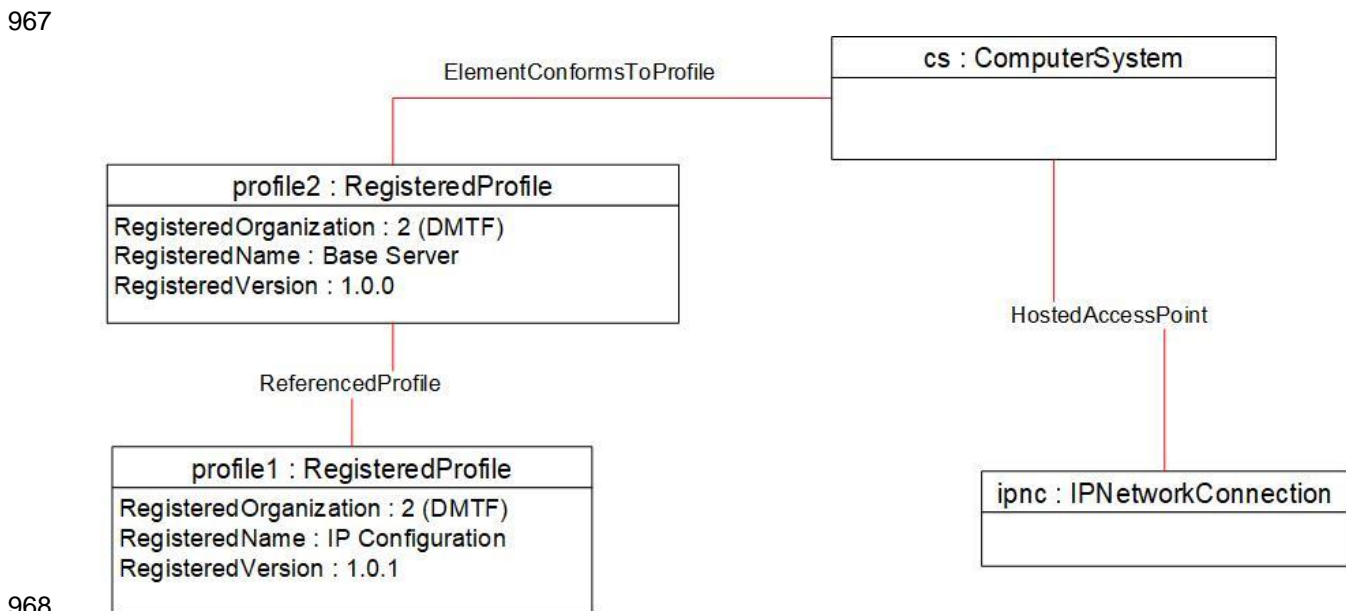
Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

## 955 9 Use cases

956 This clause contains object diagrams and use cases for the *IP Configuration Profile*.

### 957 9.1 Miscellaneous object diagrams

958 The object diagram in Figure 2 shows one possible method for advertising profile conformance. The  
 959 instances of CIM\_RegisteredProfile are used to identify the version of the *IP Configuration Profile* with  
 960 which an instance of CIM\_IPNetworkConnection and its associated instances are conformant. An  
 961 instance of CIM\_RegisteredProfile exists for each profile that is instrumented in the system. One instance  
 962 of CIM\_RegisteredProfile identifies the DMTF *Base Server Profile*, version 1.0.0. The other instance  
 963 identifies the DMTF *IP Configuration Profile*, version 1.0.0. The CIM\_IPNetworkConnection instance is  
 964 scoped to an instance of CIM\_ComputerSystem. This instance of CIM\_ComputerSystem is conformant  
 965 with the DMTF *Base Server Profile*, version 1.0.0 as indicated by the CIM\_ElementConformsToProfile  
 966 association to the CIM\_RegisteredProfile instance.



969 **Figure 2 – Registered profile**

### 970 9.2 Configuration

971 The object diagram shown in Figure 3 contains the basic elements used to model an IP configuration on a  
 972 system, while the system is coming up and network devices are not yet detected. The system has two  
 973 network cards. On this system:

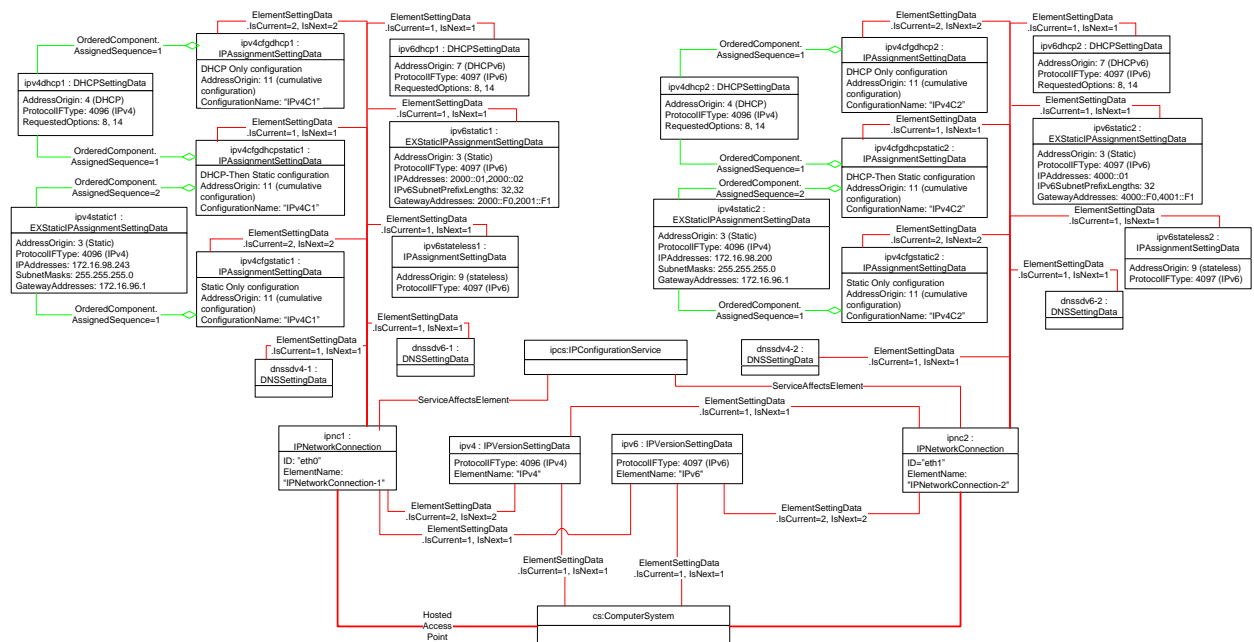
- 974 • IPv4 is having alternate accumulation of settings. IPv4 settings are associated to instances of  
 975 CIM\_IPAssignmentSettingData representing the accumulation of settings. The instances  
 976 representing alternate accumulation of settings for IPNetworkConnection-1 and  
 977 IPNetworkConnection-2 contain the values “IPv4C1” and “IPv4C2” for ConfigurationName,  
 978 respectively.



- 979 • IPv6 has concurrent settings. IPv6 settings are directly associated to CIM\_IPNetworkConnection  
980 instance.
- 981 • IPv4 settings are considered Pending. They take effect only on the restart of the system or  
982 device.
- 983 • IPv6 settings are considered immediate. It takes effect immediately.
- 984 • IPv4 and IPv6 are currently enabled on the system. CIM\_ElementSettingData associating the  
985 CIM\_IPVersionSettingData for IPv4 and IPv6 with CIM\_ComputerSystem has IsCurrent=1
- 986 • For IPNetworkConnection-1, IPv4 is currently disabled. IPv6 is currently enabled. This is shown  
987 by values of IsCurrent of CIM\_ElementSettingData associating the CIM\_IPNetworkConnection  
988 with IPVersionSettingData instances.
- 989 • For IPNetworkConnection-2, IPv4 is currently enabled. IPv6 is currently disabled. This is shown  
990 by values of IsCurrent of CIM\_ElementSettingData associating the CIM\_IPNetworkConnection  
991 with IPVersionSettingData instances.

992 To better show the objects, the diagram in Figure 4 shows the configuration for the IPNetworkConnection-1  
993 and Figure 5 shows the configuration for IPNetworkConnection-2.

994

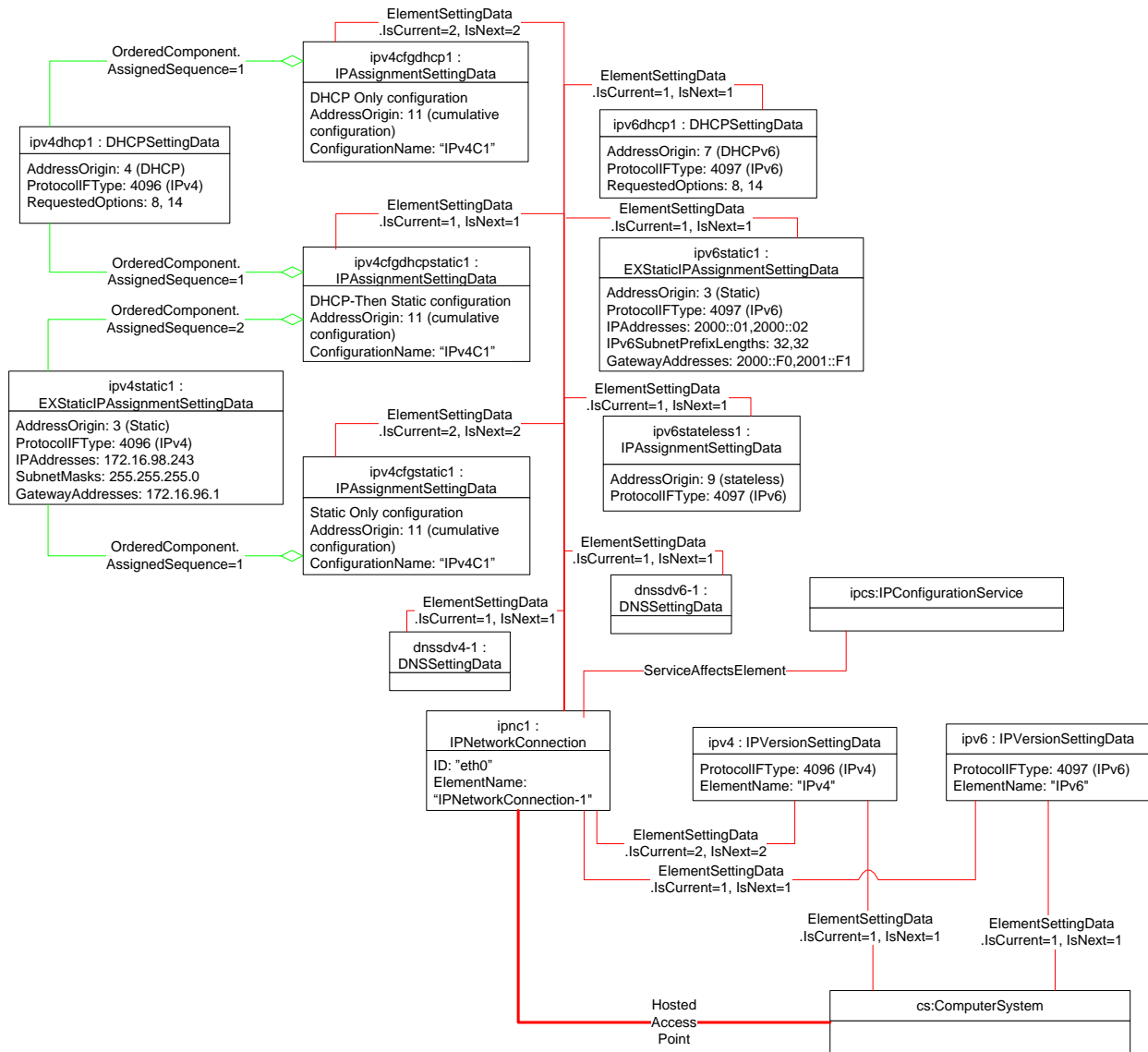


995

996

Figure 3 – Configuration

997

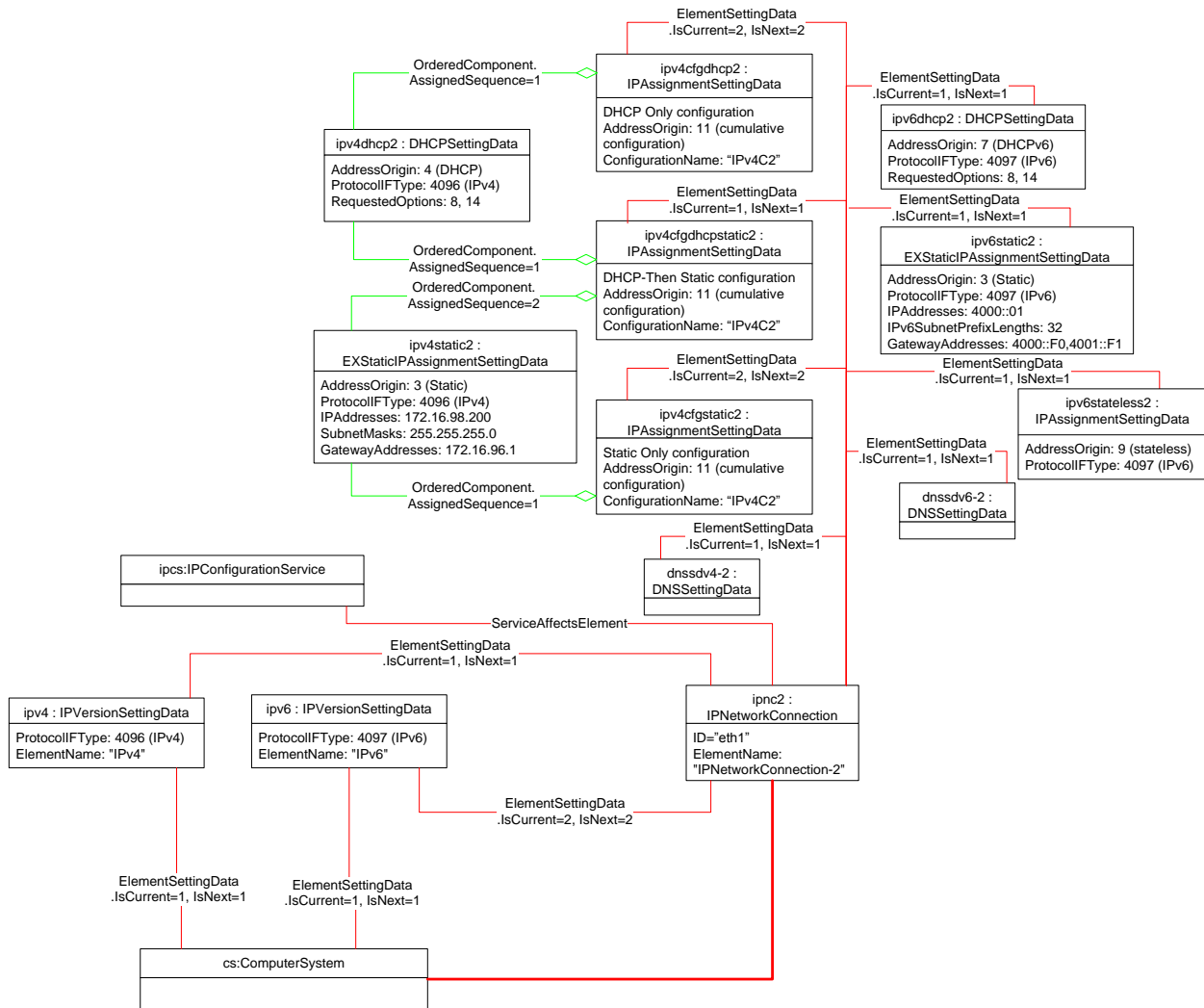


998

999

Figure 4 – Configuration with IPNetworkConnection-1

1000



1001  
1002

1003

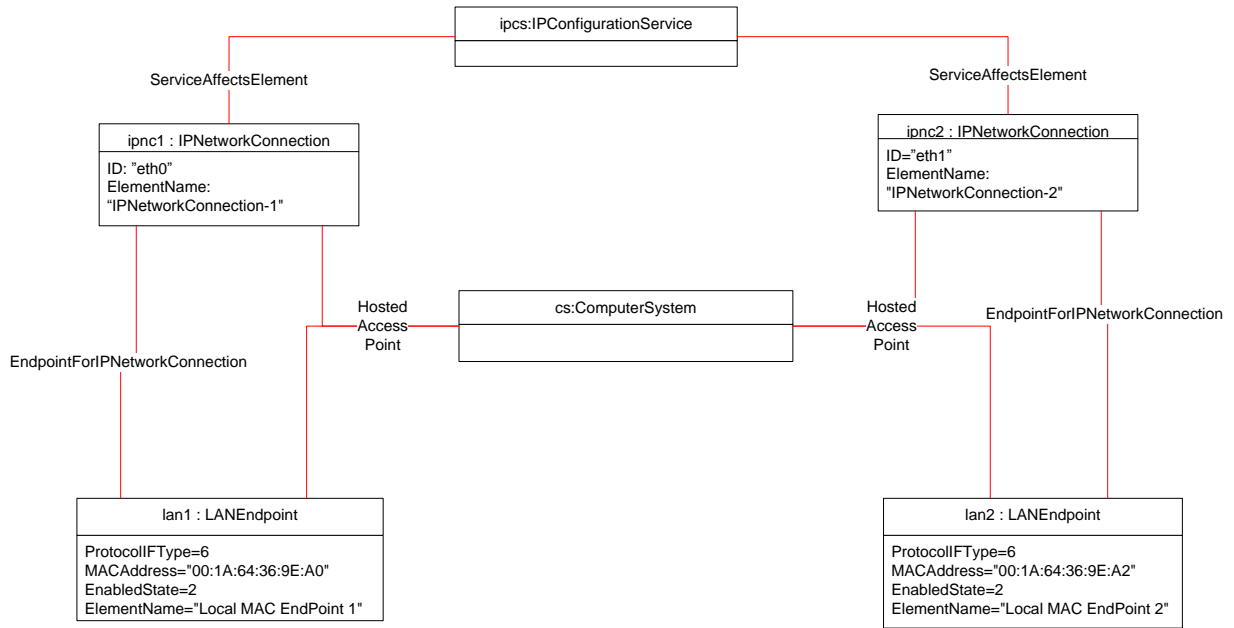
Figure 5 – Configuration with IPNetworkConnection-2

1004 **9.3 Dynamics – Booting of the system**

1005 The object diagram shown in Figure 6 is a continuation of use case in Figure 3 as the network devices  
 1006 were detected. This representation is optional. It shows the instances of CIM\_LANEndpoint for the  
 1007 network devices that were detected. The CIM\_LANEndpoint instances are associated to  
 1008 CIM\_ComputerSystem via CIM\_HostedAccessPoint. The CIM\_LANEndpoint instances are associated to  
 1009 CIM\_IPNetworkConnection via CIM\_EndpointForIPNetworkConnection.

1010 The following objects are not shown in Figure 6 for clarity:

- 1011 • Instances of CIM\_IPAssignmentSettingData for IPNetworkConnection-1 and
- 1012 IPNetworkConnection-2



1013

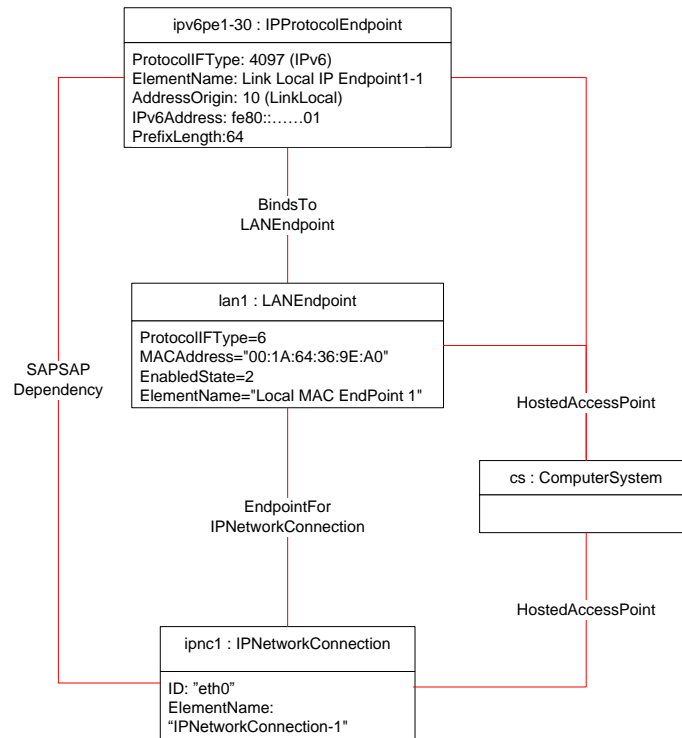
1014

**Figure 6 – Network devices detected (optional)**

1015 The object diagram shown in Figure 7 is a continuation of use case in Figure 6 as the IPv6 link local  
 1016 address got assigned for the IPNetworkConnection-1. It shows the instance of CIM\_IPProtocolEndpoint,  
 1017 representing the link local address.

1018 The following objects are not shown in Figure 7 for clarity.

- 1019 • Instances of CIM\_IPAssignmentSettingData for IPNetworkConnection-1
- 1020 • IPNetworkConnection-2 and instances associated with it
- 1021 • Instances of CIM\_IPVersionSettingData
- 1022 • Instance of CIM\_IPConfigurationService



1023

1024

**Figure 7 – IPv6 Link Local IPv6 address assigned**

1025

The object diagram in Figure 8 is a continuation of use case in Figure 7, with the following updates for IPNetworkConnection-1:

1026

1027

- Static IPv6 Address assigned – An instance of CIM\_IPProtocolEndpoint added.

1028

- DNS Ready – An instance of CIM\_DNSProtocolEndpoint added. Instances of CIM\_RemoteServiceAccessPoint added to represent the DNS Servers.

1029

1030

- Gateway available – Instances of CIM\_RemoteServiceAccessPoint added to represent the Gateways. They are associated to CIM\_IPNetworkConnection via CIM\_RemoteServiceAvailableToElement.

1031

1032

1033

- DHCP v6 client started – An instance of CIM\_DHCPProtocolEndpoint added. This is associated to CIM\_IPNetworkConnection via CIM\_SAPSAPDependency and CIM\_ComputerSystem via CIM\_HostedAccessPoint.

1034

1035

The following objects are not shown in Figure 8 for clarity:

1036

1037

- Instances of CIM\_IPAssignmentSettingData for IPNetworkConnection-1

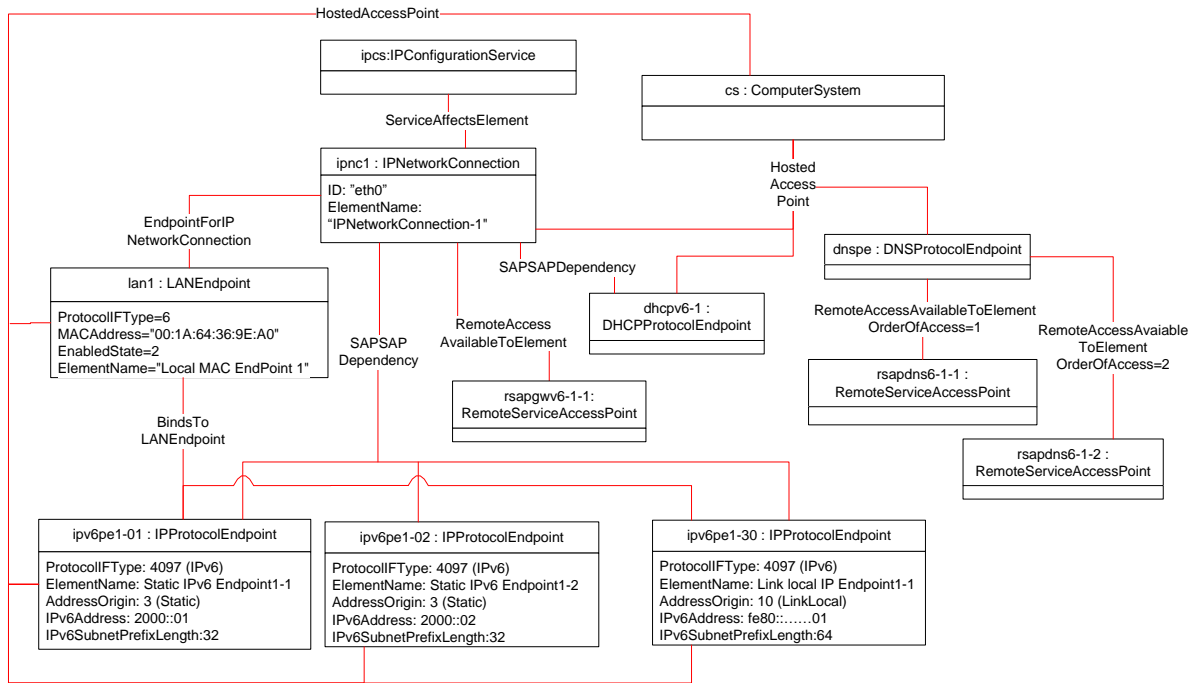
1038

- IPNetworkConnection-2 and instances associated with it

1039

- Instances of CIM\_IPVersionSettingData

1040



1041

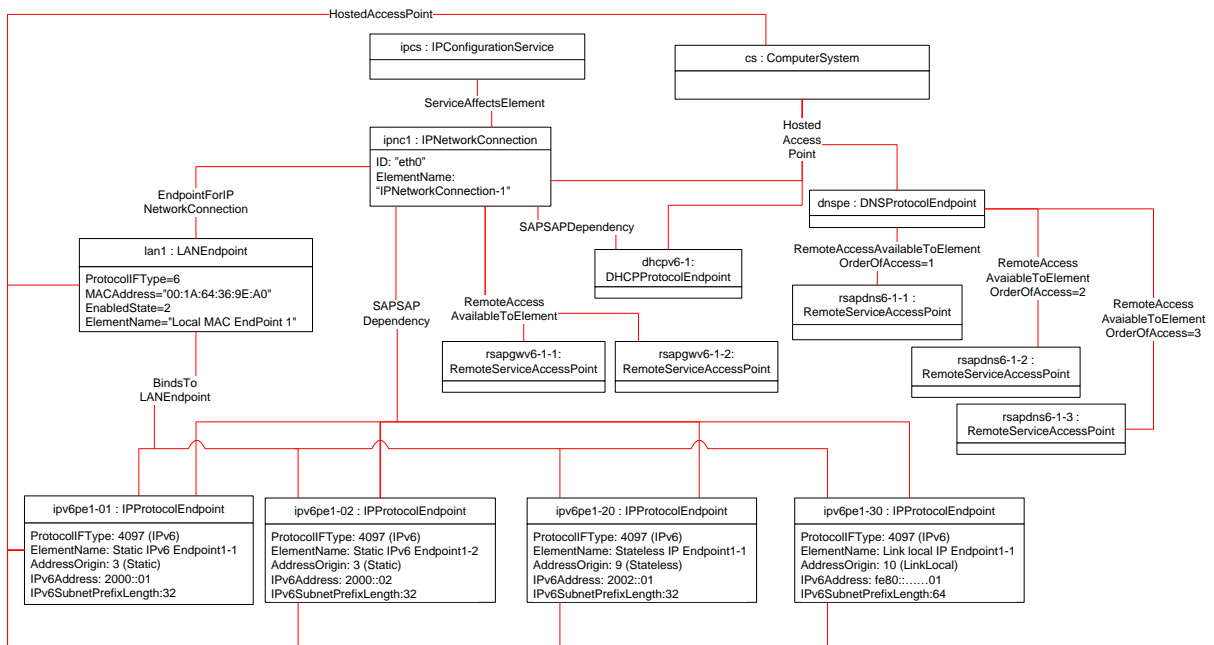
1042 **Figure 8 – Static IPv6 address assigned, DHCP clients started, DNS and Gateway available**

1043 The object diagram in Figure 9 is a continuation of use case in Figure 8. Stateless IPv6 address is  
 1044 assigned for the IPNetworkConnection-1, which is represented by the addition of instance of  
 1045 CIM\_IPProtocolEndpoint. Gateway and DNS were added from Router Advertisements, which are  
 1046 represented by the addition of instances of CIM\_RemoteServiceAccessPoint.

1047 The following objects are not shown in Figure 9 for clarity.

- 1048 • Instances of CIM\_IPAssignmentSettingData for IPNetworkConnection-1.
- 1049 • IPNetworkConnection-2 and instances associated with it.
- 1050 • Instances of CIM\_IPVersionSettingData.

1051



1052

1053

**Figure 9 – Stateless IPv6 assignment for IPNetworkConnection-1**

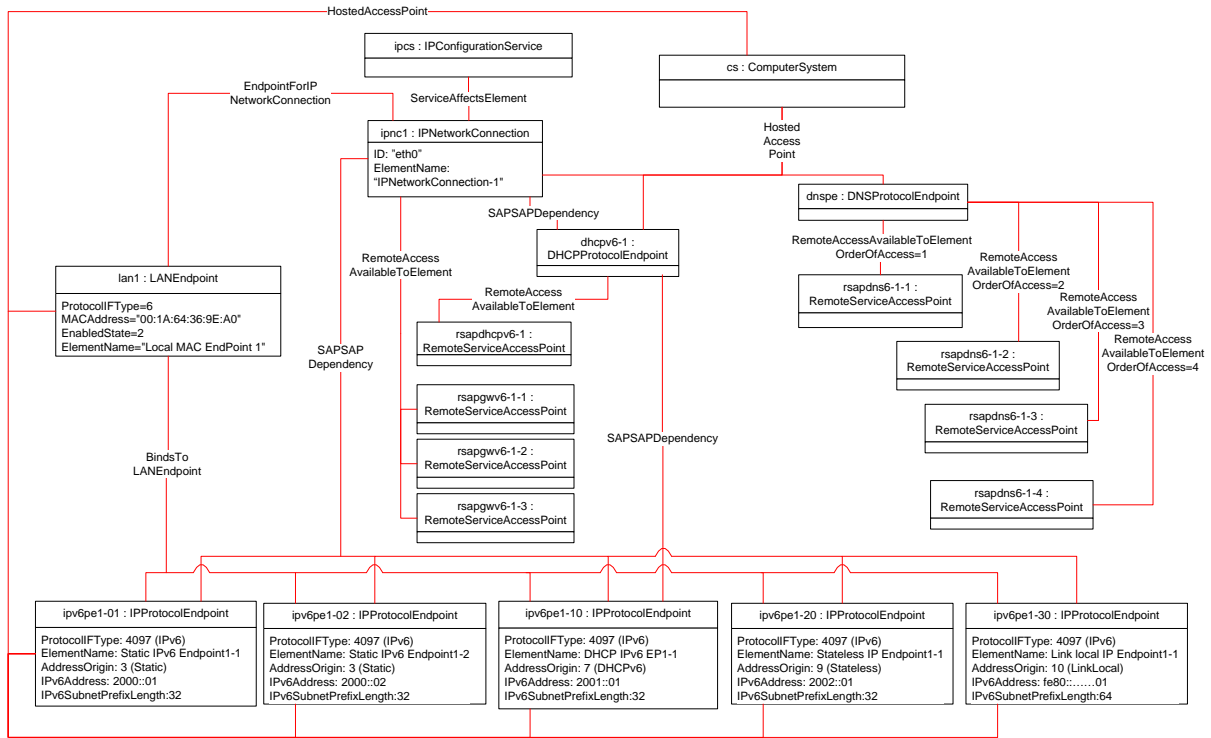
1054 The object diagram in Figure 10 is a continuation of use case in Figure 9, with following updates for  
 1055 IPNetworkConnection-1.

- 1056 • DHCP v6 address assigned – An instance of CIM\_IPProtocolEndpoint added, associated to  
 1057 CIM\_DHCPProtocolEndpoint, CIM\_IPNetworkConnection, CIM\_ComputerSystem (and optionally  
 1058 to CIM\_LANEndpoint).
- 1059 • DHCP Server - An instance of CIM\_RemoteServiceAccessPoint for DHCP Server added,  
 1060 associated to CIM\_DHCPProtocolEndpoint.
- 1061 • DNS added from DHCP – Another instance of CIM\_RemoteServiceAccessPoint added,  
 1062 associated to CIM\_DNSProtocolEndpoint.
- 1063 • Gateway added from DHCP - Another instance of CIM\_RemoteServiceAccessPoint added,  
 1064 associated to CIM\_IPNetworkConnection.

1065 The following objects are not shown in Figure 10 for clarity.

- 1066 • Instances of CIM\_IPAssignmentSettingData for IPNetworkConnection-1.
- 1067 • IPNetworkConnection-2 and instances associated with it.
- 1068 • Instances of CIM\_IPVersionSettingData.

1069



1070

1071

**Figure 10 – DHCP v6 assignment for IPNetworkConnection-1**

1072 The object diagram in Figure 11 is a continuation of use case in Figure 10, with following updates for  
 1073 IPNetworkConnection-2.

- 1074 • DHCP v4 address assigned – An instance of CIM\_IPProtocolEndpoint added, associated to  
 1075 CIM\_DHCPProtocolEndpoint, CIM\_IPNetworkConnection, CIM\_ComputerSystem (and optionally  
 1076 to CIM\_LANEndpoint).
- 1077 • DHCP Server - An instance of CIM\_RemoteServiceAccessPoint for DHCP Server added,  
 1078 associated to CIM\_DHCPProtocolEndpoint.
- 1079 • DNS added from DHCP – Another instance of CIM\_RemoteServiceAccessPoint added,  
 1080 associated to CIM\_DNSProtocolEndpoint.
- 1081 • Gateway added from DHCP - Another instance of CIM\_RemoteServiceAccessPoint added,  
 1082 associated to CIM\_IPNetworkConnection.

1083 The following objects are not shown in Figure 11 for clarity.

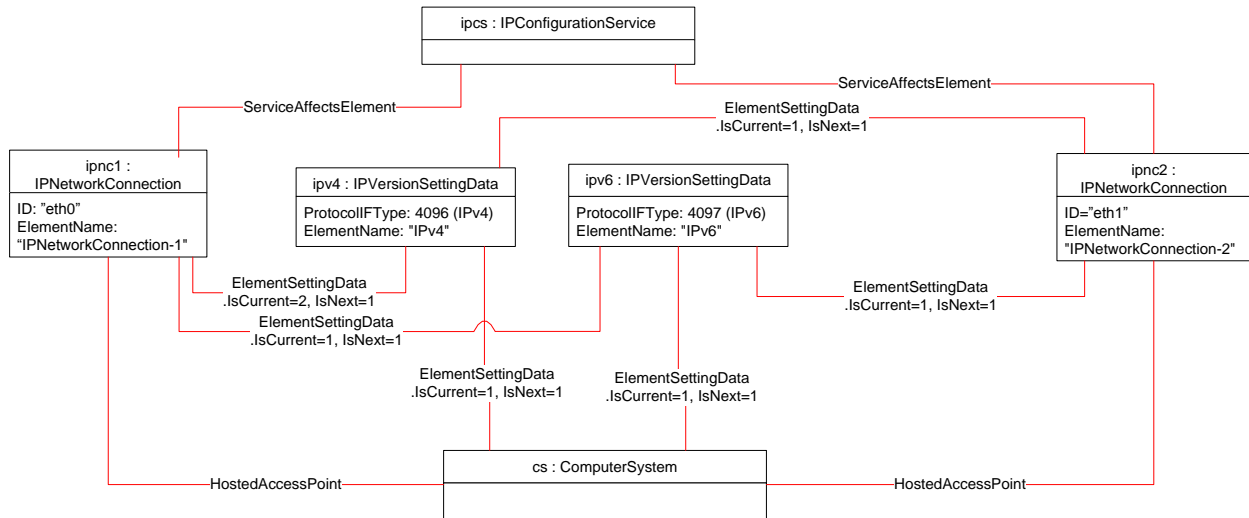
- 1084 • Instances of CIM\_IPAssignmentSettingData for IPNetworkConnection-1
- 1085 • Instances of CIM\_IPProtocolEndpoint for IPNetworkConnection-1
- 1086 • Instances of CIM\_IPAssignmentSettingData for IPNetworkConnection-2.
- 1087 • Instances of CIM\_IPVersionSettingData.

1088





1100



1101

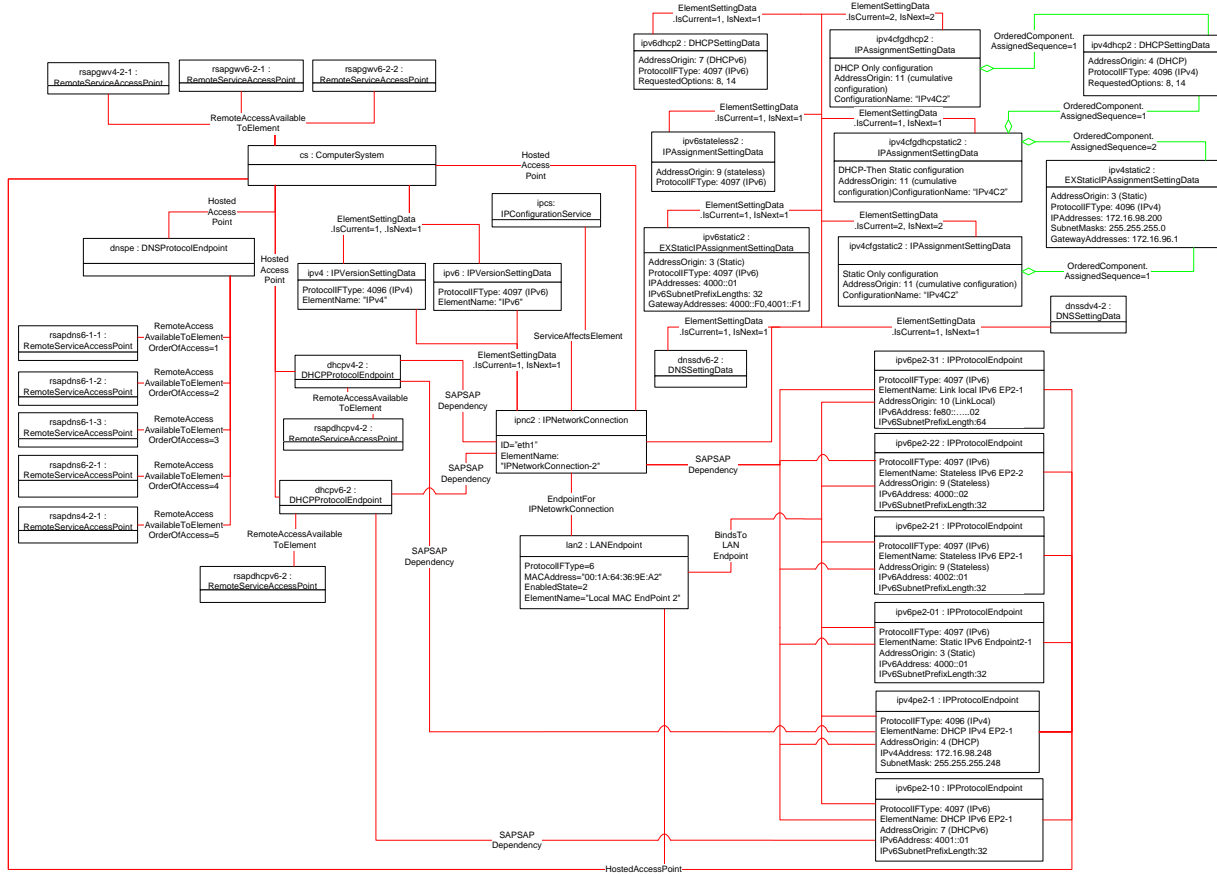
1102 **Figure 12 – Configuration change — IPv4 is enabled on IPNetworkConnection-1, IPv6 is enabled**  
 1103 **on IPNetworkConnection-2**

1104 For this system, IPv4 changes take effect only on next boot; IPv6 changes take effect immediately. Hence  
 1105 the IPv6 addresses, DNS, and gateways get assigned immediately on IPNetworkConnection-2. This  
 1106 configuration is shown in Figure 13.  
 1107

1108 The following objects are not shown in Figure 13 for clarity.

- 1109 • Instance of IPNetworkConnection-1 and instances associated with it

1110



1111

1112

Figure 13 – Configuration change — IPv6 change is taking effect.

### 1113 9.5 Determine supported settings

1114 A client can determine which settings are supported for a given network connection as follows:

- 1115 1) Find all instances of CIM\_IPAssignmentSettingData and its subclasses that are associated with  
1116 the CIM\_IPNetworkConnection instance.
- 1117 2) For each instance, query the value of the AddressOrigin property to determine the supported  
1118 settings.
- 1119 3) If the instance has a value 11 (cumulative configuration), it represents an accumulation of  
1120 settings. Find all instances of CIM\_IPAssignmentSettingData and its subclasses that are  
1121 associated with this CIM\_IPAssignmentSettingData instance through an instance of  
1122 CIM\_OrderedComponent. Query the value of the AddressOrigin property to determine the  
1123 supported settings.

## 1124 9.6 Determine gateway address

1125 A client can find the default gateway in use for an IP interface as follows:

- 1126 1) Find all instances of CIM\_RemoteServiceAccessPoint that are associated with the  
1127 CIM\_IPNetworkConnection instance through an instance of  
1128 CIM\_RemoteAccessAvailableToElement.
- 1129 2) For each instance of CIM\_RemoteServiceAccessPoint, determine whether the value of the  
1130 AccessContext property is "Default Gateway". If so, query the value of the AccessInfo property.

## 1131 9.7 Determine method used for current IP assignment

1132 A client can determine the method by which the IP was assigned by querying the AddressOrigin property  
1133 of the CIM\_IPProtocolEndpoint instance.

## 1134 9.8 Determine whether DHCP then static is supported in alternate configuration

1135 This use case is applicable only for Alternate accumulation of settings.

1136 An implementation may support attempting to acquire its IP through a DHCP client and defaulting to static  
1137 IP if the client fails to acquire IP from a DHCP server. A client can determine whether this functionality is  
1138 supported as follows:

- 1139 1) Find all instances of CIM\_IPAssignmentSettingData with AddressOrigin 11 (cumulative  
1140 configuration) that are associated with the CIM\_IPNetworkConnection instance.
- 1141 2) For each instance of CIM\_IPAssignmentSettingData:
  - 1142 a) Find the instance of CIM\_DHCPSettingData that is associated through an instance of  
1143 CIM\_OrderedComponent.
  - 1144 b) Find the instance of CIM\_ExtendedStaticIPAssignmentSettingData that is associated  
1145 through an instance of CIM\_OrderedComponent.
  - 1146 c) If the value of the AssignedSequence property of the CIM\_OrderedComponent that  
1147 associates the instance of CIM\_DHCPSettingData with the instance of  
1148 CIM\_IPAssignmentSettingData is less than the value of the AssignedSequence property of  
1149 an instance of CIM\_OrderedComponent that associates the  
1150 CIM\_ExtendedStaticIPAssignmentSettingData with the instance of  
1151 CIM\_IPAssignmentSettingData. If so, DHCP then static is supported.

## 1152 9.9 View default configuration

1153 A client can view the default configuration for an IP network connection as follows:

- 1154 1) Find all instances of CIM\_ElementSettingData that associate an instance of  
1155 CIM\_IPAssignmentSettingData with the CIM\_IPNetworkConnection instance.
- 1156 2) For each instance of CIM\_ElementSettingData, see if the value of the IsDefault property is 1 (Is  
1157 Default).

## 1158 9.10 Configure the network connection to use DHCP (Alternate accumulation of 1159 settings)

1160 This use case applicable only for Alternate accumulation of settings.

1161 An implementation may support attempting to acquire its IP through a DHCP client. A client can  
1162 determine whether this functionality is supported and configure the interface to use it as follows:

- 1163 1) Find all instances of CIM\_IPAssignmentSettingData with AddressOrigin 11 (cumulative  
1164 configuration) that are associated with the CIM\_IPNetworkConnection instance.
- 1165 2) For each instance of CIM\_IPAssignmentSettingData:
- 1166 a) Find an instance of CIM\_DHCPSettingData that is associated through an instance of  
1167 CIM\_OrderedComponent.
- 1168 b) Verify that no instances of CIM\_ExtendedStaticIPAssignmentSettingData are associated  
1169 with the instance of CIM\_IPAssignmentSettingData.
- 1170 This instance of CIM\_IPAssignmentSettingData represents a DHCP settings.
- 1171 3) Find an instance of CIM\_IPConfigurationService that is associated with the  
1172 CIM\_IPNetworkConnection instance through an instance of CIM\_ServiceAffectsElement.
- 1173 4) Invoke the ApplySettingToIPNetworkConnection() method of the CIM\_IPConfigurationService  
1174 instance, specifying the instances of CIM\_IPNetworkConnection and  
1175 CIM\_IPAssignmentSettingData.

## 1176 9.11 Establish a static IP for an IP network connection (Alternate accumulation of 1177 settings)

1178 A client can manually assign an IP to an IP network connection as follows:

- 1179 1) Find all instances of CIM\_IPAssignmentSettingData with AddressOrigin 11 (cumulative  
1180 configuration) that are associated with the CIM\_IPNetworkConnection instance.
- 1181 2) For each instance of CIM\_IPAssignmentSettingData:
- 1182 a) Find an instance of CIM\_ExtendedStaticIPAssignmentSettingData that is associated  
1183 through an instance of CIM\_OrderedComponent.
- 1184 b) Verify that no other instances of CIM\_ExtendedStaticIPAssignmentSettingData or  
1185 instances of CIM\_DHCPSettingData are associated with the instance of  
1186 CIM\_IPAssignmentSettingData through an instance of CIM\_OrderedComponent.
- 1187 This instance of CIM\_IPAssignmentSettingData represents a modifiable, static configuration for  
1188 the IP network connection.
- 1189 3) Modify the properties of the CIM\_ExtendedStaticIPAssignmentSettingData instance to contain  
1190 the appropriate settings for the IP network connection.
- 1191 4) Find an instance of CIM\_IPConfigurationService that is associated with the  
1192 CIM\_IPNetworkConnection instance through an instance of CIM\_ServiceAffectsElement.
- 1193 5) Invoke the ApplySettingToIPNetworkConnection() method of the CIM\_IPConfigurationService  
1194 instance, specifying the instances of CIM\_IPNetworkConnection and  
1195 CIM\_IPAssignmentSettingData.

## 1196 9.12 Apply an accumulation of settings — Synchronously

1197 Some implementations may support making an accumulation of setting, which is previously not current,  
1198 as the current accumulation of settings of an IP network connection without requiring a restart of the  
1199 underlying network interface. If this behavior is supported by the implementation, then given an instance  
1200 of CIM\_IPNetworkConnection for which the configuration should be modified and an instance of  
1201 CIM\_IPAssignmentSettingData that represents the new configuration, a client can:

- 1202 1) Find an instance of CIM\_IPConfigurationService that is associated with the  
1203 CIM\_IPNetworkConnection instance through an instance of CIM\_ServiceAffectsElement.
- 1204 2) Invoke the ApplySettingToIPNetworkConnection() method of the CIM\_IPConfigurationService,  
1205 specifying the instances of CIM\_IPNetworkConnection and CIM\_IPAssignmentSettingData, with  
1206 the value for Mode as 1.

### 1207 9.13 Apply an accumulation of settings — Upon restart

1208 Some implementations may require that the underlying network interface be restarted in order for a new  
1209 accumulation of settings that is bound to the IP network connection to take effect. The steps are same as  
1210 above, with a change in value for Mode. The value for Mode shall be 2 in this case.

### 1211 9.14 Apply a setting — Synchronously (concurrent settings)

1212 Some implementations may support making a setting, which is previously not current, as the current  
1213 setting of the IP network connection, without requiring a restart of the underlying network interface. If this  
1214 behavior is supported by the implementation, then given an instance of CIM\_IPNetworkConnection and  
1215 an instance of CIM\_IPAssignmentSettingData or its subclass that represents the new setting, a client can:

- 1216 1) Find an instance of CIM\_IPConfigurationService that is associated with the  
1217 CIM\_IPNetworkConnection instance through an instance of CIM\_ServiceAffectsElement.
- 1218 2) Invoke the ApplySettingToIPNetworkConnection( ) method of the CIM\_IPConfigurationService,  
1219 specifying the instances of CIM\_IPNetworkConnection and CIM\_IPAssignmentSettingData (or  
1220 its subclass), with the value for Mode as 1.

### 1221 9.15 Apply a setting — Upon restart (concurrent settings)

1222 Some implementations may require that the underlying network interface be restarted in order for a new  
1223 setting that is bound to the IP network connection to take effect. The steps are the same as above, with a  
1224 change in value for Mode. The value for Mode shall be 2 in this case.

### 1225 9.16 Add a static IPv4 address — Synchronously (concurrent settings)

1226 Some implementations may support adding a static IP address without requiring a restart of the  
1227 underlying network interface. If this behavior is supported by the implementation, then given an instance  
1228 of CIM\_IPNetworkConnection for which the static IP should be added, a client can:

- 1229 1) Find the instance of CIM\_ExtendedStaticIPAssignmentSettingData that represents the current  
1230 static IPv4 settings for the network connection. Modifying IPAddresses and SubnetMasks  
1231 properties, the new static IPv4 address can be added.
- 1232 2) If there is no instance of CIM\_ExtendedStaticIPAssignmentSettingData that represents the  
1233 current static IPv4 settings for the network connection, identify the instance of  
1234 CIM\_ExtendedStaticIPAssignmentSettingData that is not current. Modify IPAddresses and  
1235 SubnetMasks properties. Apply this setting as the current setting as in use case 9.14 above.

## 1236 10 CIM Elements

1237 Table 24 shows the instances of CIM Elements for this profile. Instances of the CIM Elements shall be  
1238 implemented as described in Table 24. Clauses 0 (“Implementation”) and 8 (“Methods”) may impose  
1239 additional requirements on these elements.

1240 **Table 24 – CIM Elements: IP configuration profile**

Element Name	Requirement	Description
<b>Classes</b>		
CIM_BindsTo	Optional	See clauses 7.10 and 10.1
CIM_BindsToLANEndpoint	Optional	See clauses 7.10 and 10.2
CIM_DHCPProtocolEndpoint	Optional	See clauses 7.8.1 and 10.3
CIM_DHCPSettingData	Optional	See clauses 7.3.3 and 10.4

Element Name	Requirement	Description
CIM_DNSGeneralSettingData	Optional	See clauses 7.9.3 and 10.5
CIM_DNSProtocolEndpoint	Optional	See clauses 7.9.1 and 10.6
CIM_DNSSettingData	Optional	See clauses 7.9.2 and 10.7
CIM_ElementSettingData – CIM_IPAssignmentSettingData	Conditional	See clauses 7.5 and 10.8
CIM_ElementSettingData – CIM_IPAssignmentSettingData subclasses	Conditional	See clauses 7.5 and 10.9
CIM_ElementSettingData – CIM_IPVersionSettingData	Mandatory	See clauses 7.2.1, 10.10, 10.11
CIM_ElementSettingData – CIM_DNSGeneralSettingData	Conditional	See clauses 7.9.3 and 10.12
CIM_ElementSettingData – CIM_DHCPProtocolEndpoint	Optional	See clauses 7.8 and 10.13
CIM_ElementSettingData – CIM_DNSProtocolEndpoint	Optional	See clauses 7.9 and 10.14
CIM_EndpointForIPNetworkConnection	Conditional	See clauses 7.10 and 10.15
CIM_ExtendedStaticIPAssignmentSettingD ata	Optional	See clauses 7.3.2 and 10.16
CIM_HostedAccessPoint – CIM_IPNetworkConnection	Mandatory	See clauses 7.1.1 and 10.17
CIM_HostedAccessPoint – CIM_DNSProtocolEndpoint	Conditional	See clauses 7.9.1 and 10.18
CIM_HostedAccessPoint – CIM_IPProtocolEndpoint or CIM_DHCPProtocolEndpoint	Optional	See clauses 7.6.1, 7.8.1 and 10.19
CIM_HostedService	Conditional	See clauses 7.7 and 10.20
CIM_IPAssignmentSettingData	Optional	See clauses 7.3.1 and 10.21
CIM_IPConfigurationService	Optional	See clauses 7.7 and 10.22
CIM_IPNetworkConnection	Mandatory	See clauses 7.1 and 10.23
CIM_IPProtocolEndpoint	Optional	See clauses 7.6 and 10.24
CIM_IPVersionSettingData	Mandatory	See clauses 7.2 and 10.25
CIM_OrderedComponent	Conditional	See clauses 7.5.2.1 and 10.26
CIM_RegisteredProfile	Mandatory	See clause 10.27.
CIM_RemoteAccessAvailableToElement – Primary	Conditional	See clauses 7.11 10.28, 10.29 and 10.30
CIM_RemoteAccessAvailableToElement – Optional	Optional	See clauses 7.11 and 10.31
CIM_RemoteServiceAccessPoint	Optional	See clauses 7.11 and 10.32
CIM_SAPSAPDependency – CIM_IPNetworkConnection	Conditional	See clauses 7.6.1, 7.8.1, 10.33
CIM_SAPSAPDependency – DNS, DNS and IP from DHCP	Optional	See clauses 7.8.1, 7.11.3.3, 10.34, 10.35 and 10.36
CIM_ServiceAffectsElement	Conditional	See clauses 7.7, 10.37

Element Name	Requirement	Description
CIM_ElementConformsToProfile	Mandatory	See clauses 10.38
<b>Indications</b>		
None defined in this profile		

## 1241 10.1 CIM\_BindsTo

1242 CIM\_BindsTo relates the CIM\_IPProtocolEndpoint instance with the CIM\_VLANEndpoint instance on  
 1243 which it depends. Table 25 provides information about the properties of CIM\_BindsTo.

1244 **Table 25 – Class: CIM\_BindsTo**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_VLANEndpoint. Cardinality 0..1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPProtocolEndpoint. Cardinality *

## 1245 10.2 CIM\_BindsToLANEndpoint

1246 CIM\_BindsToLANEndpoint relates the CIM\_IPProtocolEndpoint instance with the CIM\_LANEndpoint  
 1247 instance on which it depends. Table 26 provides information about the properties of  
 1248 CIM\_BindsToLANEndpoint.

1249 **Table 26 – Class: CIM\_BindsToLANEndpoint**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_LANEndpoint. Cardinality 0..1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPProtocolEndpoint. Cardinality *

## 1250 10.3 CIM\_DHCPProtocolEndpoint

1251 CIM\_DHCPProtocolEndpoint represents the DHCP client that is associated with a network connection.  
 1252 Table 27 provides information about the properties of CIM\_DHCPProtocolEndpoint.

1253 **Table 27 – Class: CIM\_DHCPProtocolEndpoint**

Elements	Requirement	Description
SystemCreationClassName	Mandatory	Key
CreationClassName	Mandatory	Key
SystemName	Mandatory	Key



Elements	Requirement	Description
Name	Mandatory	Key
ProtocollFType	Mandatory	This property shall have a value of 4096 (IPv4) or 4097 (IPv6).

1254 **10.4 CIM\_DHCPSettingData**

1255 CIM\_DHCPSettingData represents the settings for the DHCP client. Table 28 provides information about  
 1256 the properties of CIM\_DHCPSettingData.

1257 **Table 28 – Class: CIM\_DHCPSettingData**

Elements	Requirement	Description
InstanceID	Mandatory	Key
AddressOrigin	Mandatory	This property shall have a value of 4 (“DHCP”) or 7 (“DHCPv6”).
ElementName	Mandatory	Pattern ".*"
ProtocollFType	Mandatory	This property shall have a value of 4096 (IPv4) or 4097 (IPv6).

1258 **10.5 CIM\_DNSGeneralSettingData**

1259 CIM\_DNSGeneralSettingData represents the system-wide DNS settings. Table 29 provides information  
 1260 about the properties of CIM\_DNSGeneralSettingData.

1261 **Table 29 – Class: CIM\_DNSGeneralSettingData**

Elements	Requirement	Description
InstanceID	Mandatory	Key
AddressOrigin	Mandatory	Matches 2 (Not Applicable)
AppendPrimarySuffixes	Optional	None
AppendParentSuffixes	Optional	None
DNSSuffixesToAppend	Optional	None
ElementName	Mandatory	Pattern ".+"

1262 **10.6 CIM\_DNSProtocolEndpoint**

1263 CIM\_DNSProtocolEndpoint represents the DNS client on the system. Table 30 provides information  
 1264 about the properties of CIM\_DNSProtocolEndpoint.

1265 **Table 30 – Class: CIM\_DNSProtocolEndpoint**

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

Elements	Requirement	Description
ProtocollFType	Mandatory	This property shall have a value of 1 ("Other").
OtherTypeDescription	Mandatory	This property shall have a value of "DNS".

## 1266 10.7 CIM\_DNSSettingData

1267 CIM\_DNSSettingData represents the settings for the DNS client. Table 31 provides information about the  
1268 properties of CIM\_DNSSettingData.

1269 **Table 31 – Class: CIM\_DNSSettingData**

Elements	Requirement	Description
InstanceID	Mandatory	Key
AddressOrigin	Mandatory	Matches 2 (Not Applicable).
ElementName	Mandatory	Pattern ".*"
ProtocollFType	Mandatory	This property shall have a value of 4096 (IPv4) or 4097 (IPv6).
DNSServerAddresses	Mandatory	See clause 7.9.2.3

## 1270 10.8 CIM\_ElementSettingData — CIM\_IPNetworkConnection and 1271 CIM\_IPAssignmentSettingData

1272 CIM\_ElementSettingData associates instances of CIM\_IPAssignmentSettingData with the  
1273 CIM\_IPNetworkConnection instance. Table 32 provides information about the properties of  
1274 CIM\_ElementSettingData.

1275 **Table 32 – Class: CIM\_ElementSettingData — CIM\_IPAssignmentSettingData**

Elements	Requirement	Description
ManagedElement	Mandatory	<b>Key:</b> This shall be a reference to the Central Instance. Cardinality 1
SettingData	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPAssignmentSettingData. Cardinality *
IsDefault	Mandatory	Matches 1 (Is Default) or 2 (Is Not Default)
IsCurrent	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)
IsNext	Mandatory	Matches 1 (Is Next), 2 (Is Not Next), or 3 (Is Next For Single Use)

1276 **10.9 CIM\_ElementSettingData — CIM\_IPNetworkConnection and**  
 1277 **CIM\_IPAssignmentSettingData subclasses**

1278 CIM\_ElementSettingData associates instances of subclasses of CIM\_IPAssignmentSettingData with the  
 1279 CIM\_IPNetworkConnection instance. Table 33 provides information about the properties of  
 1280 CIM\_ElementSettingData.

1281 **Table 33 – Class: CIM\_ElementSettingData — CIM\_IPAssignmentSettingData subclasses**

Elements	Requirement	Description
ManagedElement	Mandatory	<b>Key:</b> This shall be a reference to the Central Instance. Cardinality 0..1
SettingData	Mandatory	<b>Key:</b> This shall be a reference to an instance of subclasses of CIM_IPAssignmentSettingData. Cardinality *
IsDefault	Mandatory	Matches 1 (Is Default) or 2 (Is Not Default)
IsCurrent	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)
IsNext	Mandatory	Matches 1 (Is Next), 2 (Is Not Next), or 3 (Is Next For Single Use)

1282 **10.10 CIM\_ElementSettingData — CIM\_IPNetworkConnection and**  
 1283 **CIM\_IPVersionSettingData**

1284 CIM\_ElementSettingData associates instances of CIM\_IPVersionSettingData with the  
 1285 CIM\_IPNetworkConnection instance. Table 34 provides information about the properties of  
 1286 CIM\_ElementSettingData.

1287 **Table 34 – Class: CIM\_ElementSettingData — CIM\_IPVersionSettingData**

Elements	Requirement	Description
ManagedElement	Mandatory	<b>Key:</b> This shall be a reference to the Central Instance. Cardinality *
SettingData	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPVersionSettingData. Cardinality 1..*
IsDefault	Mandatory	Matches 1 (Is Default) or 2 (Is Not Default)
IsCurrent	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)
IsNext	Mandatory	Matches 1 (Is Next), 2 (Is Not Next), or 3 (Is Next For Single Use)

1288 **10.11 CIM\_ElementSettingData — CIM\_ComputerSystem and**  
 1289 **CIM\_IPVersionSettingData**

1290 CIM\_ElementSettingData associates instances of CIM\_IPVersionSettingData with the  
 1291 CIM\_ComputerSystem instance. Table 35 provides information about the properties of  
 1292 CIM\_ElementSettingData.

1293 **Table 35 – Class: CIM\_ElementSettingData — CIM\_IPVersionSettingData**

Elements	Requirement	Description
ManagedElement	Mandatory	<b>Key:</b> This shall be a reference to the scoping Instance. Cardinality 1
SettingData	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPVersionSettingData. Cardinality 1..*
IsDefault	Mandatory	Matches 1 (Is Default) or 2 (Is Not Default)
IsCurrent	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)
IsNext	Mandatory	Matches 1 (Is Next), 2 (Is Not Next), or 3 (Is Next For Single Use)

1294 **10.12 CIM\_ElementSettingData — CIM\_ComputerSystem and**  
 1295 **CIM\_DNSGeneralSettingData**

1296 CIM\_ElementSettingData associates instances of CIM\_DNSGeneralSettingData with the  
 1297 CIM\_ComputerSystem instance. Table 36 provides information about the properties of  
 1298 CIM\_ElementSettingData.

1299 **Table 36 – Class: CIM\_ElementSettingData — CIM\_DNSGeneralSettingData**

Elements	Requirement	Description
ManagedElement	Mandatory	<b>Key:</b> This shall be a reference to the scoping Instance. Cardinality 1
SettingData	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_DNSGeneralSettingData. Cardinality *
IsDefault	Mandatory	Matches 1 (Is Default) or 2 (Is Not Default)
IsCurrent	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)
IsNext	Mandatory	Matches 1 (Is Next), 2 (Is Not Next), or 3 (Is Next For Single Use)

1300 **10.13 CIM\_ElementSettingData — CIM\_DHCPProtocolEndpoint and**  
 1301 **CIM\_DHCPSettingData**

1302 CIM\_ElementSettingData associates instances of CIM\_DHCPSettingData with the  
 1303 CIM\_DHCPProtocolEndpoint instance. Table 37 provides information about the properties of  
 1304 CIM\_ElementSettingData.

1305 **Table 37 – Class: CIM\_ElementSettingData — CIM\_DHCPProtocolEndpoint and**  
 1306 **CIM\_DHCPSettingData**

Elements	Requirement	Description
ManagedElement	Mandatory	<b>Key:</b> This shall be a reference to the CIM_DHCPProtocolEndpoint. Cardinality *
SettingData	Mandatory	<b>Key:</b> This shall be a reference to the instance of CIM_DHCPSettingData. Cardinality *
IsDefault	Mandatory	Matches 1 (Is Default) or 2 (Is Not Default)
IsCurrent	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)
IsNext	Mandatory	Matches 1 (Is Next), 2 (Is Not Next), or 3 (Is Next For Single Use)

1307 **10.14 CIM\_ElementSettingData — CIM\_DNSProtocolEndpoint and**  
 1308 **CIM\_DNSSettingData**

1309 CIM\_ElementSettingData associates instances of CIM\_DNSSettingData with the  
 1310 CIM\_DNSProtocolEndpoint instance. Table 38 provides information about the properties of  
 1311 CIM\_ElementSettingData.

1312 **Table 38 – Class: CIM\_ElementSettingData — CIM\_DNSProtocolEndpoint and**  
 1313 **CIM\_DNSSettingData**

Elements	Requirement	Description
ManagedElement	Mandatory	<b>Key:</b> This shall be a reference to the CIM_DNSProtocolEndpoint. Cardinality 0..1
SettingData	Mandatory	<b>Key:</b> This shall be a reference to the instance of CIM_DNSSettingData. Cardinality *
IsDefault	Mandatory	Matches 1 (Is Default) or 2 (Is Not Default)
IsCurrent	Mandatory	Matches 1 (Is Current) or 2 (Is Not Current)
IsNext	Mandatory	Matches 1 (Is Next), 2 (Is Not Next), or 3 (Is Next For Single Use)

1314 **10.15 CIM\_EndpointForIPNetworkConnection**

1315 CIM\_EndpointForIPNetworkConnection associates an instance of CIM\_IPNetworkConnection with the  
 1316 CIM\_ProtocolEndpoint (e.g., CIM\_LANEndpoint, CIM\_VLANEndpoint) for the network connection. Table  
 1317 39 provides information about the properties of CIM\_EndpointForIPNetworkConnection.

1318 **Table 39 – Class: CIM\_EndpointForIPNetworkConnection**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_ProtocolEndpoint (e.g., CIM_LANEndpoint, CIM_VLANEndpoint) Cardinality 1..*
Dependent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPNetworkConnection Cardinality *

1319 **10.16 CIM\_ExtendedStaticIPAssignmentSettingData**

1320 CIM\_ExtendedStaticIPAssignmentSettingData represents the static IP settings for an IP network  
 1321 connection. Table 40 provides information about the properties of  
 1322 CIM\_ExtendedStaticIPAssignmentSettingData.

1323 **Table 40 – Class: CIM\_ExtendedStaticIPAssignmentSettingData**

Elements	Requirement	Description
InstanceID	Mandatory	<b>Key</b>
AddressOrigin	Mandatory	See clause 7.3.2.1
ProtocolIFTType	Mandatory	See clause 7.3.2.2
ElementName	Mandatory	Pattern ".*"
IPAddresses	Mandatory	See clause 7.3.2.3
IPv6SubnetPrefixLengths	Conditional	See clause 7.3.2.4
SubnetMasks	Conditional	See clause 7.3.2.5
GatewayAddresses	Mandatory	See clause 7.3.2.6

1324 **10.17 CIM\_HostedAccessPoint — CIM\_IPNetworkConnection**

1325 CIM\_HostedAccessPoint associates an instance of CIM\_IPNetworkConnection with scoping  
 1326 CIM\_ComputerSystem. Table 41 provides information about the properties of CIM\_HostedAccessPoint.

1327 **Table 41 – Class: CIM\_HostedAccessPoint — CIM\_IPNetworkConnection**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPNetworkConnection. Cardinality *

1328 **10.18 CIM\_HostedAccessPoint — CIM\_DNSProtocolEndpoint**

1329 CIM\_HostedAccessPoint associates an instance of CIM\_DNSProtocolEndpoint with scoping  
 1330 CIM\_ComputerSystem. Table 42 provides information about the properties of CIM\_HostedAccessPoint.

1331 **Table 42 – Class: CIM\_HostedAccessPoint — CIM\_DNSProtocolEndpoint**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_DNSProtocolEndpoint. Cardinality *

1332 **10.19 CIM\_HostedAccessPoint — CIM\_IPProtocolEndpoint or**  
 1333 **CIM\_DHCPProtocolEndpoint**

1334 CIM\_HostedAccessPoint associates an instance of CIM\_IPProtocolEndpoint or  
 1335 CIM\_DHCPProtocolEndpoint with scoping CIM\_ComputerSystem. Table 43 provides information about  
 1336 the properties of CIM\_HostedAccessPoint.

1337 **Table 43 – Class: CIM\_HostedAccessPoint — CIM\_IPProtocolEndpoint or**  
 1338 **CIM\_DHCPProtocolEndpoint**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPProtocolEndpoint or CIM_DHCPProtocolEndpoint. Cardinality *

1339 **10.20 CIM\_HostedService**

1340 CIM\_HostedService relates the CIM\_IPConfigurationService instance to its scoping  
 1341 CIM\_ComputerSystem instance. Table 44 provides information about the properties of  
 1342 CIM\_HostedService.

1343 **Table 44 – Class: CIM\_HostedService**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to an instance of CIM_IPConfigurationService. Cardinality *

1344 **10.21 CIM\_IPAssignmentSettingData**

1345 CIM\_IPAssignmentSettingData represents the settings for an IP network connection. Table 45 provides  
 1346 information about the properties of CIM\_IPAssignmentSettingData.

1347 **Table 45 – Class: CIM\_IPAssignmentSettingData**

Elements	Requirement	Description
InstanceID	Mandatory	<b>Key</b>
AddressOrigin	Mandatory	See clause 7.3.1.1
ProtocolIFType	Mandatory	4096 (IPv4) or 4097 (IPv6). See clause 7.3.1.2
ElementName	Mandatory	Pattern ".*"
ConfigurationName	Optional	See clause 7.3.1.3
ChangeableType	Optional	None

1348 **10.22 CIM\_IPConfigurationService**

1349 CIM\_IPConfigurationService represents the ability to configure an IP interface. Table 46 provides  
 1350 information about the properties of CIM\_IPConfigurationService.

1351 **Table 46 – Class: CIM\_IPConfigurationService**

Elements	Requirement	Description
SystemCreationClassName	Mandatory	<b>Key</b>
CreationClassName	Mandatory	<b>Key</b>
SystemName	Mandatory	<b>Key</b>
Name	Mandatory	<b>Key</b>
ElementName	Mandatory	Pattern ".*"
ApplySettingToIPNetworkConnection( )	Optional	See clause 8.1
ApplySettingToComputerSystem( )	Optional	See clause 8.2

1352 **10.23 CIM\_IPNetworkConnection**

1353 CIM\_IPNetworkConnection represents an IP network connection in system.

1354 Table 47 provides information about the properties of CIM\_IPNetworkConnection.

1355 **Table 47 – Class: CIM\_IPNetworkConnection**

Elements	Requirement	Description
SystemCreationClassName	Mandatory	<b>Key</b>
CreationClassName	Mandatory	<b>Key</b>
SystemName	Mandatory	<b>Key</b>
Name	Mandatory	<b>Key</b>
ID	Mandatory	Pattern ".*"



1356 **10.24 CIM\_IPProtocolEndpoint**

1357 CIM\_IPProtocolEndpoint represents an IP interface that is associated with an Ethernet interface. Table 48  
 1358 provides information about the properties of CIM\_IPProtocolEndpoint.

1359 **Table 48 – Class: CIM\_IPProtocolEndpoint**

Elements	Requirement	Description
SystemCreationClassName	Mandatory	<b>Key</b>
CreationClassName	Mandatory	<b>Key</b>
SystemName	Mandatory	<b>Key</b>
Name	Mandatory	<b>Key</b>
NameFormat	Mandatory	Pattern ".*"
ProtocollFType	Mandatory	See 7.6.1.2.
ElementName	Mandatory	Pattern ".*"
IPv4Address	Conditional	See clause 7.6.1.3
SubnetMask	Conditional	See clauses 7.6.1.2 and 7.6.1.4.
AddressOrigin	Mandatory	See clause 7.6.1.1.
IPv6Address	Conditional	See clauses 7.6.1.2 and 7.6.1.5.
IPv6SubnetPrefixLength	Conditional	See clause 7.6.1.6

1360 **10.25 CIM\_IPVersionSettingData**

1361 CIM\_IPVersionSettingData represents an IP version. Table 49 provides information about the properties  
 1362 of CIM\_IPVersionSettingData.

1363 **Table 49 – Class: CIM\_IPVersionSettingData**

Elements	Requirement	Description
InstanceID	Mandatory	<b>Key</b>
ProtocollFType	Mandatory	See clause 7.2

1364 **10.26 CIM\_OrderedComponent**

1365 CIM\_OrderedComponent associates an instance of CIM\_IPAssignmentSettingData that compose a  
 1366 configuration with instances that are part of the configuration. Table 50 provides information about the  
 1367 properties of CIM\_OrderedComponent.

1368 **Table 50 – Class: CIM\_OrderedComponent**

Elements	Requirement	Description
GroupComponent	Mandatory	<b>Key:</b> See clause 7.5.2.1.1 Cardinality *
PartComponent	Mandatory	<b>Key:</b> See clause 7.5.2.1.2 Cardinality 1..*
AssignedSequence	Mandatory	See clause 7.5.2.1.3

1369 **10.27 CIM\_RegisteredProfile**

1370 CIM\_RegisteredProfile identifies the *IP Configuration Profile* in order for a client to determine whether an  
 1371 instance of CIM\_IPProtocolEndpoint is conformant with this profile. The CIM\_RegisteredProfile class is  
 1372 defined by the *Profile Registration Profile* ([DSP1033](#)). With the exception of the mandatory values  
 1373 specified for the properties in Table 51, the behavior of the CIM\_RegisteredProfile instance is in  
 1374 accordance with [DSP1033](#).

1375 **Table 51 – Class: CIM\_RegisteredProfile**

Elements	Requirement	Description
RegisteredName	Mandatory	This property shall have a value of "IP Configuration".
RegisteredVersion	Mandatory	This property shall have a value of "1.0.1".
RegisteredOrganization	Mandatory	This property shall have a value of 2(DMTF).

1376 **10.28 CIM\_RemoteAccessAvailableToElement — Gateway**

1377 CIM\_RemoteAccessAvailableToElement associates the CIM\_IPNetworkConnection instance with the  
 1378 CIM\_RemoteServiceAccessPoint instance that represents the network gateway. Table 52 provides  
 1379 information about the properties of CIM\_RemoteAccessAvailableToElement.

1380 **Table 52 – Class: CIM\_RemoteAccessAvailableToElement — Gateway**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality *
Dependent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_IPNetworkConnection Cardinality 1..*
OrderOfAccess	Mandatory	See clause 7.11.1.2.3

1381 **10.29 CIM\_RemoteAccessAvailableToElement — DHCP server**

1382 CIM\_RemoteAccessAvailableToElement associates the CIM\_DHCPProtocolEndpoint instance with the  
 1383 CIM\_RemoteServiceAccessPoint instance that represents the DHCP Server. Table 53 provides  
 1384 information about the properties of CIM\_RemoteAccessAvailableToElement.

1385 **Table 53 – Class: CIM\_RemoteAccessAvailableToElement — DHCP server**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality 0..1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_DHCPProtocolEndpoint Cardinality 1..*

1386 **10.30 CIM\_RemoteAccessAvailableToElement — DNS server**

1387 DNS Server - CIM\_RemoteAccessAvailableToElement associates the CIM\_DNSProtocolEndpoint  
 1388 instance with the CIM\_RemoteServiceAccessPoint instance that represents the DNS Server. Table 54  
 1389 provides information about the properties of CIM\_RemoteAccessAvailableToElement.

1390 **Table 54 – Class: CIM\_RemoteAccessAvailableToElement — DNS Server**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality *
Dependent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_DNSProtocolEndpoint Cardinality 1..*
OrderOfAccess	Mandatory	See clause 7.11.3.2.3

1391 **10.31 CIM\_RemoteAccessAvailableToElement — System ServiceAccessPoints**

1392 CIM\_RemoteAccessAvailableToElement associates the CIM\_ComputerSystem instance with the  
 1393 CIM\_RemoteServiceAccessPoint instance that represents the Gateway, DHCP server and DNS servers.  
 1394 Table 55 provides information about the properties of CIM\_RemoteAccessAvailableToElement.

1395 **Table 55 – Class: CIM\_RemoteAccessAvailableToElement — System ServiceAccessPoints**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality *
Dependent	Mandatory	<b>Key:</b> This shall be a reference to the scoping instance Cardinality 1
OrderOfAccess	Mandatory	See clause 7.11.1.2.3 and 7.11.3.2.3

1396 **10.32 CIM\_RemoteServiceAccessPoint**

1397 CIM\_RemoteServiceAccessPoint represents the managed system’s view of the default gateway, DHCP  
 1398 Server or DNS Server. Table 56 provides information about the properties of  
 1399 CIM\_RemoteServiceAccessPoint.

1400 **Table 56 – Class: CIM\_RemoteServiceAccessPoint**

Elements	Requirement	Description
SystemCreationClassName	Mandatory	<b>Key</b>
CreationClassName	Mandatory	<b>Key</b>
SystemName	Mandatory	<b>Key</b>
Name	Mandatory	<b>Key</b>

Elements	Requirement	Description
AccessContext	Mandatory	See clause 7.11.1.1.1, 7.11.2.1.1 and 7.11.3.1.1
AccessInfo	Mandatory	See clause 7.11.1.1.2, 7.11.2.1.2 and 7.11.3.1.2
InfoFormat	Mandatory	3 (IPv4 Address) or 4 (IPv6 Address)
ElementName	Mandatory	Pattern ".*"

1401 **10.33 CIM\_SAPSAPDependency — CIM\_IPNetworkConnection**

1402 CIM\_SAPSAPDependency associates the CIM\_IPProtocolEndpoint or CIM\_DHCPProtocolEndpoint with  
 1403 the CIM\_IPNetworkConnection.

1404 Table 57 provides information about the properties of CIM\_SAPSAPDependency.

1405 **Table 57 – Class: CIM\_SAPSAPDependency — CIM\_IPNetworkConnection and**  
 1406 **CIM\_IPProtocolEndpoint or CIM\_DHCPProtocolEndpoint**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the central instance. Cardinality 1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_IPProtocolEndpoint or CIM_DHCPProtocolEndpoint Cardinality *

1407 **10.34 CIM\_SAPSAPDependency — DNS server**

1408 DNS Server - CIM\_SAPSAPDependency associates the CIM\_IPNetworkConnection instance with the  
 1409 CIM\_RemoteServiceAccessPoint instance that represents the DNS server. Table 58 provides information  
 1410 about the properties of CIM\_SAPSAPDependency.

1411 **Table 58 – Class: CIM\_SAPSAPDependency — DNS server**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_IPNetworkConnection Cardinality 1..*
Dependent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality *

1412 **10.35 CIM\_SAPSAPDependency — DNS server from DHCP**

1413 DNS Server from DHCP - CIM\_SAPSAPDependency associates the CIM\_DHCPProtocolEndpoint  
 1414 instance with the CIM\_RemoteServiceAccessPoint instance that represents the DNS server obtained  
 1415 from DHCP.

1416 Table 59 provides information about the properties of CIM\_SAPSAPDependency.

1417 **Table 59 – Class: CIM\_SAPSAPDependency — CIM\_DHCPProtocolEndpoint and**  
 1418 **CIM\_RemoteServiceAccessPoint**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_DHCPProtocolEndpoint. Cardinality 1..*
Dependent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality *

1419 **10.36 CIM\_SAPSAPDependency — IP from DHCP**

1420 CIM\_SAPSAPDependency associates the CIM\_IPProtocolEndpoint representing the IP obtained from the  
 1421 DHCP client with the corresponding CIM\_DHCPProtocolEndpoint.

1422 Table 60 provides information about the properties of CIM\_SAPSAPDependency.

1423 **Table 60 – Class: CIM\_SAPSAPDependency — CIM\_DHCPProtocolEndpoint and**  
 1424 **CIM\_IPProtocolEndpoint**

Elements	Requirement	Description
Antecedent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_DHCPProtocolEndpoint instance. Cardinality 0..1
Dependent	Mandatory	<b>Key:</b> This shall be a reference to the CIM_IPProtocolEndpoint Cardinality 0..1

1425 **10.37 CIM\_ServiceAffectsElement**

1426 CIM\_ServiceAffectsElement associates an instance of CIM\_IPConfigurationService with an instance of  
 1427 CIM\_IPNetworkConnection or CIM\_ComputerSystem that the service is able to configure. Table 61  
 1428 provides information about the properties of CIM\_ServiceAffectsElement.

1429 **Table 61 – Class: CIM\_ServiceAffectsElement**

Elements	Requirement	Description
AffectingElement	Mandatory	<b>Key:</b> This shall be a reference to the instance of CIM_IPConfigurationService. Cardinality *

Elements	Requirement	Description
AffectedElement	Mandatory	<b>Key:</b> This shall be a reference to a CIM_IPNetworkConnection or CIM_ComputerSystem. Cardinality *
ElementEffects	Mandatory	Matches 5 (Manages)

1430 **10.38 CIM\_ElementConformsToProfile**

1431 CIM\_ElementConformsToProfile associates an instance of CIM\_IPNetworkConnection with its  
 1432 corresponding CIM\_RegisteredProfile that represents the version of profile implemented. Table 62  
 1433 provides information about the properties of CIM\_ElementConformsToProfile.

1434 **Table 62 – Class: CIM\_ElementConformsToProfile**

Elements	Requirement	Description
ManagedElement	Mandatory	<b>Key:</b> This shall be a reference to the instance of CIM_IPNetworkConnection. Cardinality *
ConformantStandard	Mandatory	<b>Key:</b> This shall be a reference to a CIM_RegisteredProfile. Cardinality *

1435

**ANNEX A  
(informative)**

**Change log**

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Version	Date	Description
1.0.0	2013-01-07	DMTF Standard Release
1.0.1	2019-03-14	This errata addresses these issues: <ul style="list-style-type: none"> <li>• Updated RegisteredVersion to reflect errata version number in clause 10.27, and</li> <li>• Updated RegisteredOrganization description to reflect correct value of 2 for “DMTF” in clause 10.27 and figure in clause 9.1.</li> </ul>

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## Bibliography

- 1442 DMTF DSP1036, *IP Interface Profile 1.0*,  
1443 [http://www.dmtf.org/standards/published\\_documents/DSP1036\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1036_1.0.pdf)
- 1444 DMTF DSP1037, *DHCP Client Profile 1.0*,  
1445 [http://www.dmtf.org/standards/published\\_documents/DSP1037\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1037_1.0.pdf)
- 1446 DMTF DSP1038, *DNS Client Profile 1.0*,  
1447 [http://www.dmtf.org/standards/published\\_documents/DSP1038\\_1.0.pdf](http://www.dmtf.org/standards/published_documents/DSP1038_1.0.pdf)