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256

Foreword

257 The *IP Configuration Profile* (DSP1116) was prepared by the Server Desktop Mobile Platform Working
258 Group of the DMTF.

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

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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

308 DMTF DSP0200, *CIM Operations over HTTP 1.3*,
309 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

312 DMTF DSP1001, *Management Profile Specification Usage Guide 1.0*,
313 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

316 DMTF DSP1035, *Host LAN Network Port Profile 1.0*,
317 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

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

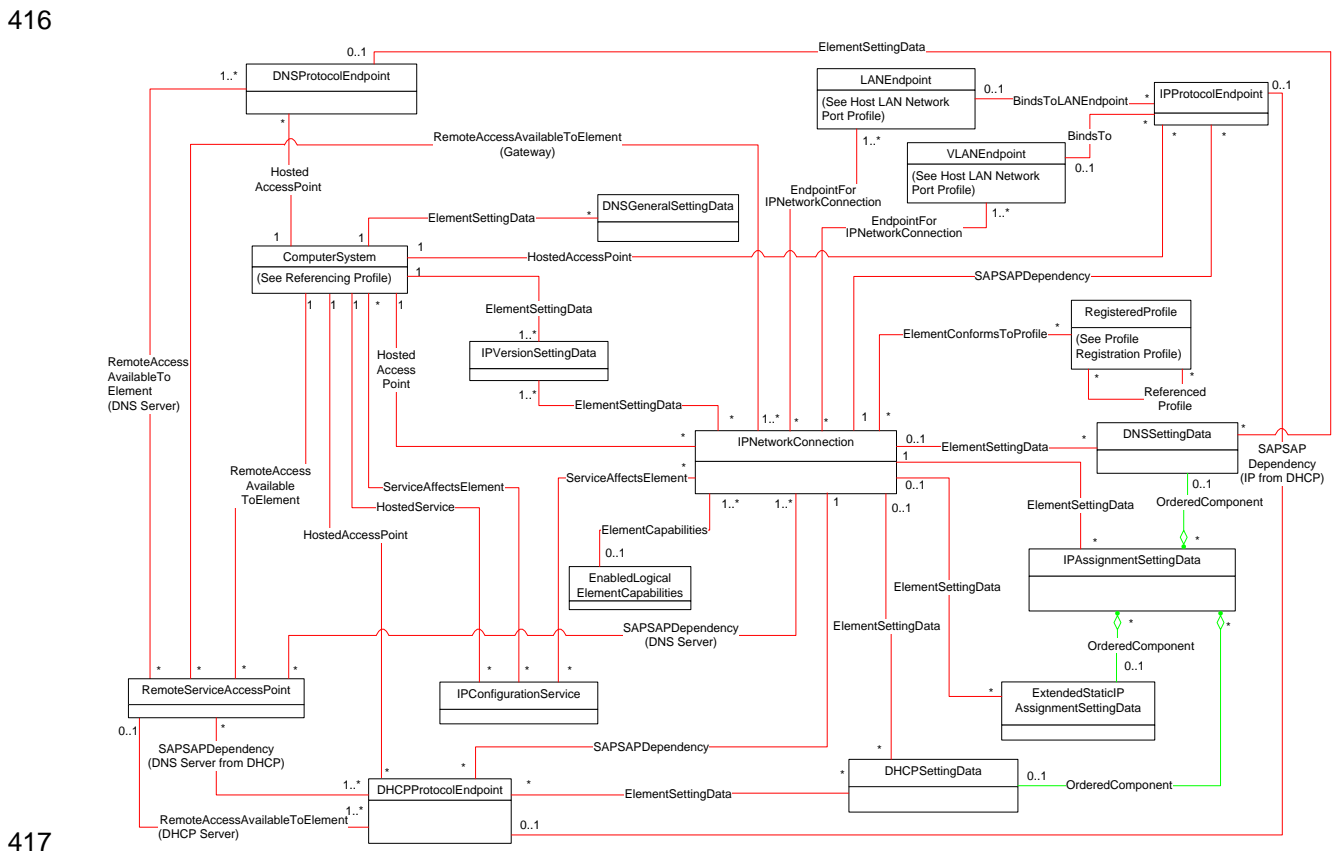
- 406 • stateless – based on router advertisements
- 407 • link local – automatic IPv6 address assignment if IPv6 is enabled

408 A computer system and its networks support IPv4 and/or IPv6. The system can have multiple IP
409 addresses, gateways and DNS servers configured.

410 DSP1116 provides an enhanced architecture model for IP configuration on a network interface (especially
411 for IPv6). For IP configuration, DSP1116 is the architecture successor to *IP Interface Profile* ([DSP1036](#)),
412 *DHCP Client Profile* ([DSP1037](#)), and *DNS Client Profile* ([DSP1038](#)).

413 6.1 Class diagram

414 Figure 1 represents the class schema for the *IP Configuration Profile*. For simplicity, the CIM_ prefix has
415 been removed from the names of the classes.



417
418 **Figure 1 – IP Configuration Profile: Class diagram**

419 Each network layer connection to an IP network is modeled by an instance of CIM_IPNetworkConnection.
420 In general CIM_IPAssignmentSettingData and its subclasses represent the settings for a network
421 connection. The instance of CIM_EnabledLogicalElementCapabilities is used to advertise the state
422 management supported for the network connection.

423 An instance of CIM_IPVersionSettingData represents an IP version setting. The static IP settings are
424 represented by instances of CIM_ExtendedStaticIPAssignmentSettingData. The DHCP settings are

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.

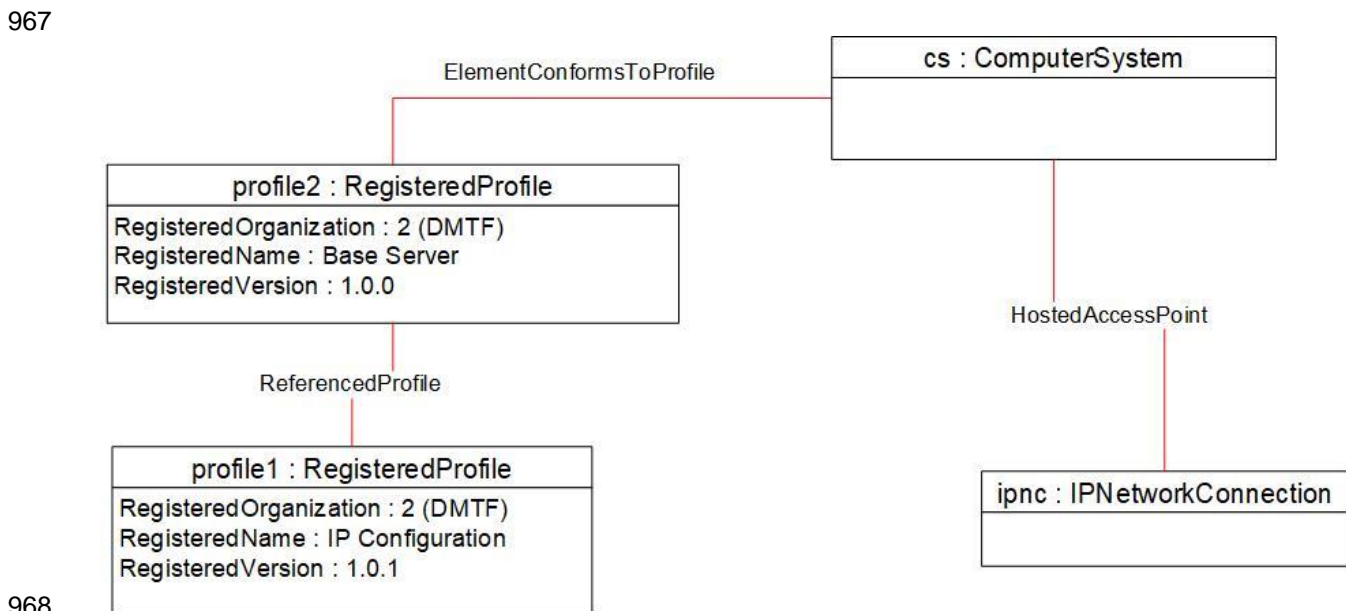


Figure 2 – Registered profile

970 9.2 Configuration

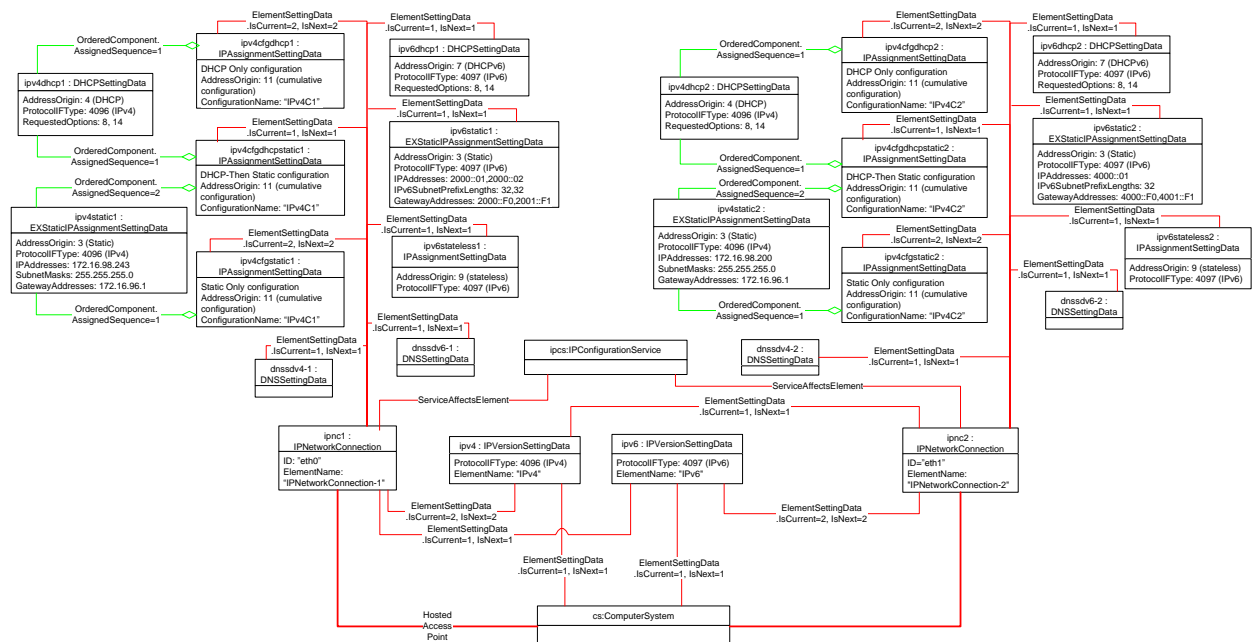
971 The object diagram shown in Figure 3 contains the basic elements used to model an IP configuration on a
 972 system, while the system is coming up and network devices are not yet detected. The system has two
 973 network cards. On this system:

- 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

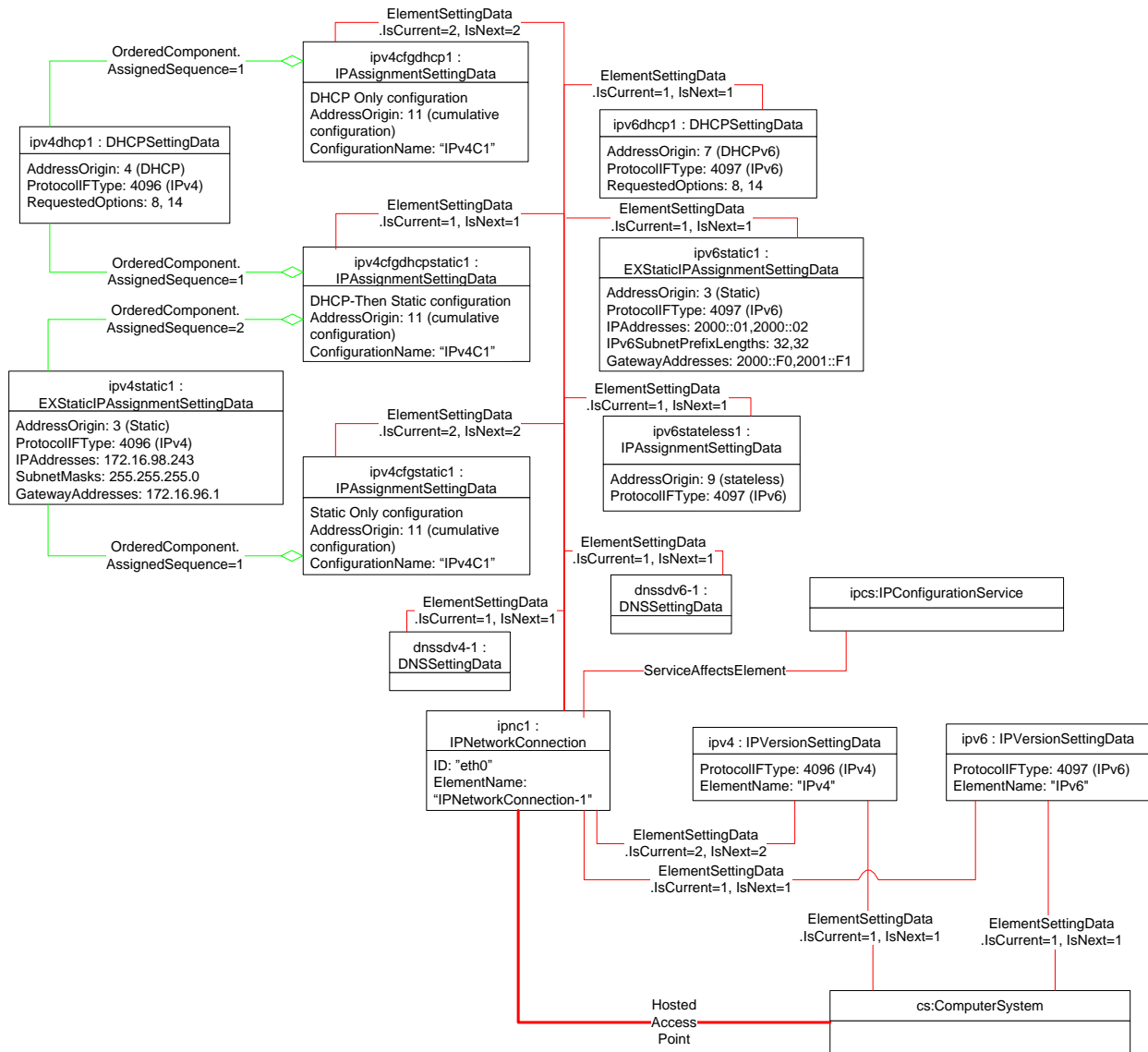


995

996

Figure 3 – Configuration

997

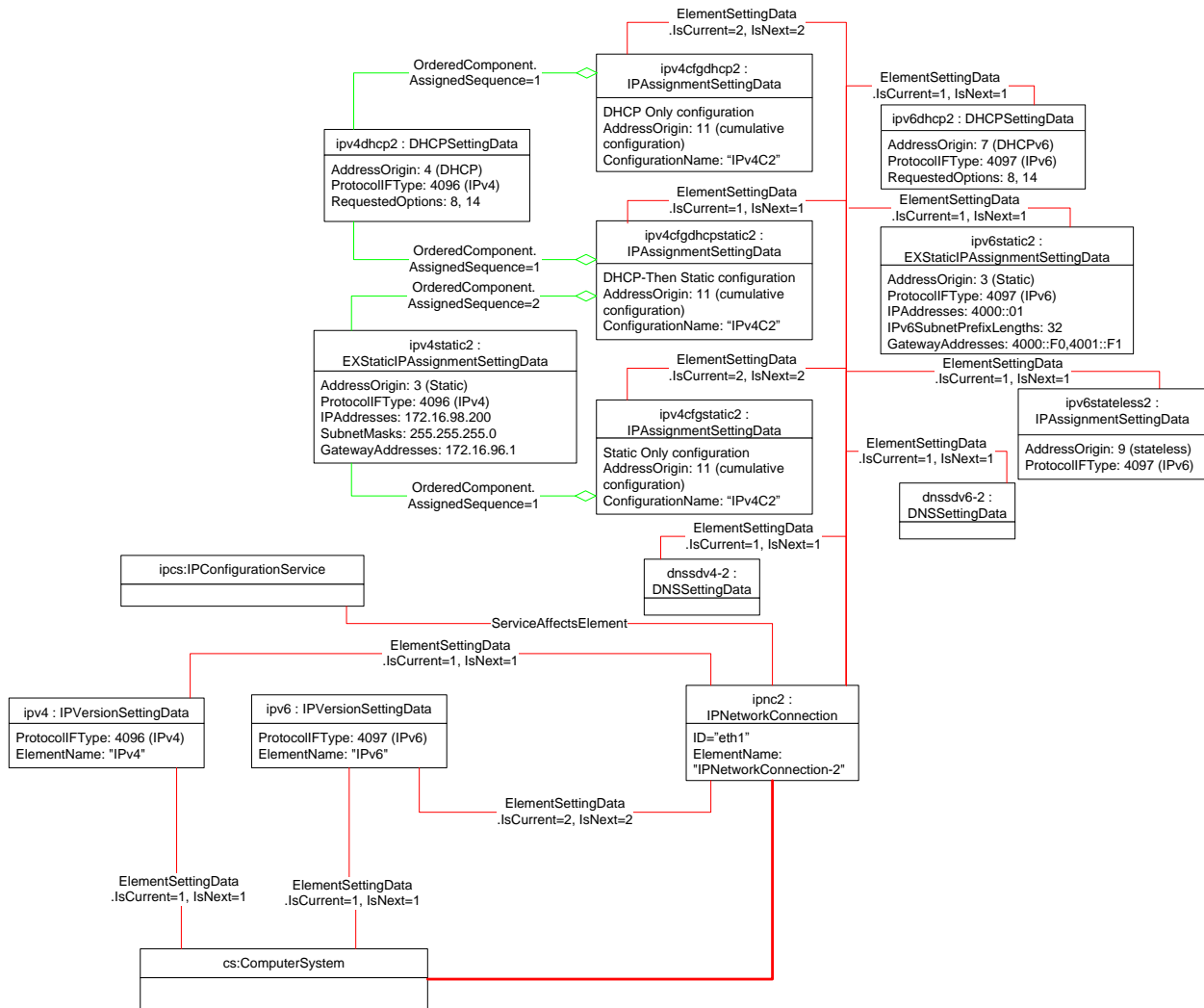


998

999

Figure 4 – Configuration with IPNetworkConnection-1

1000



1001
1002

1003

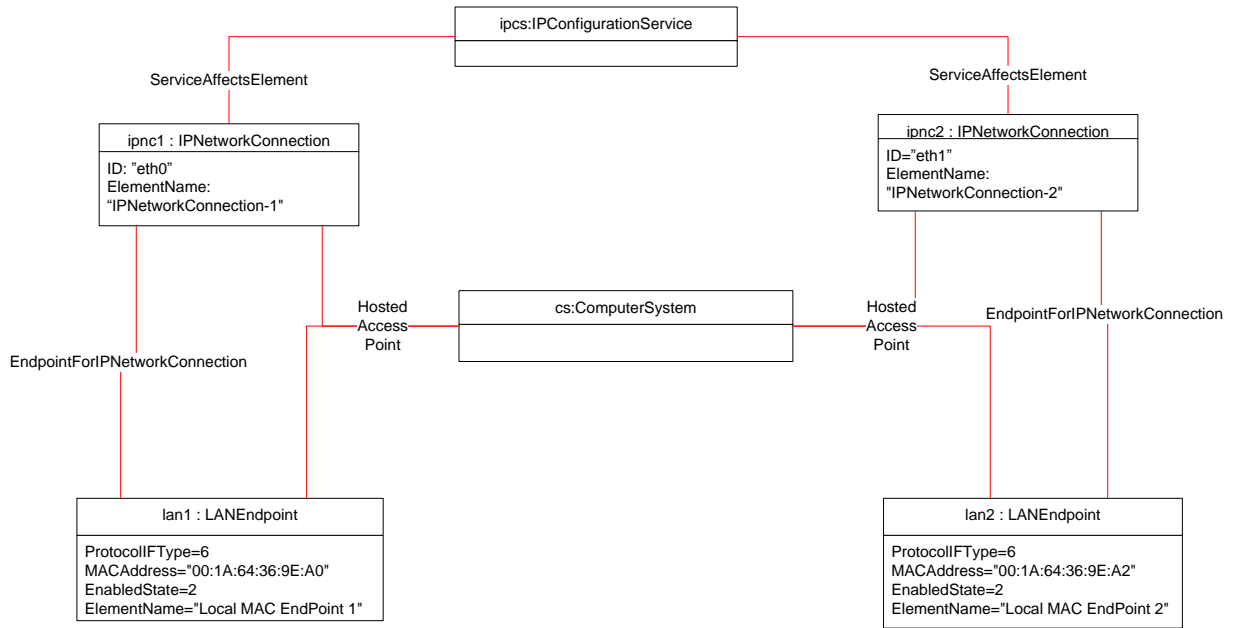
Figure 5 – Configuration with IPNetworkConnection-2

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

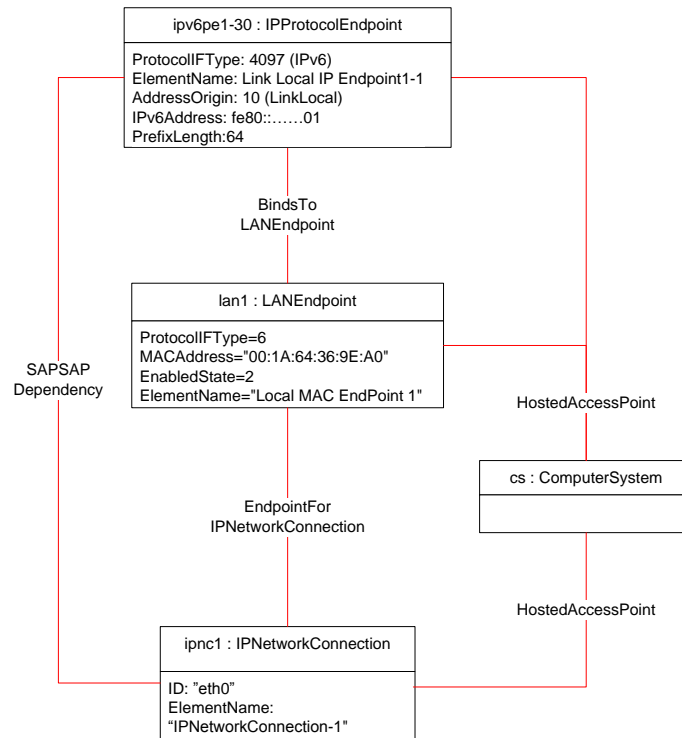
1014

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

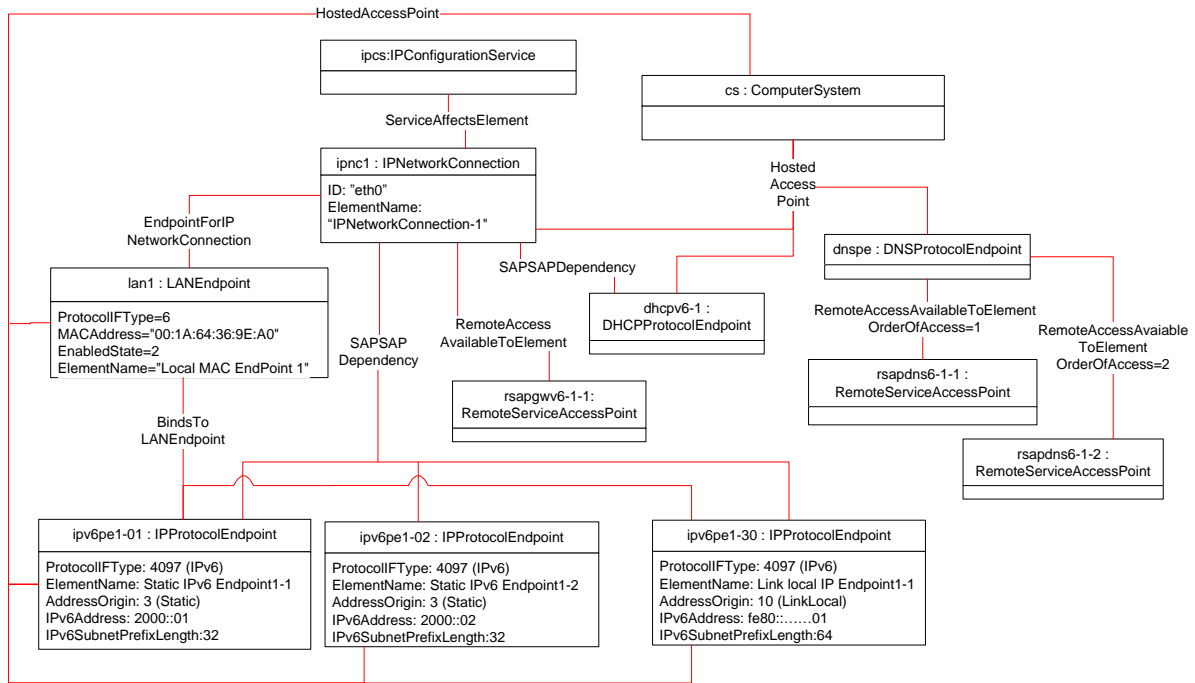
1038

- IPNetworkConnection-2 and instances associated with it

1039

- Instances of CIM_IPVersionSettingData

1040



1041

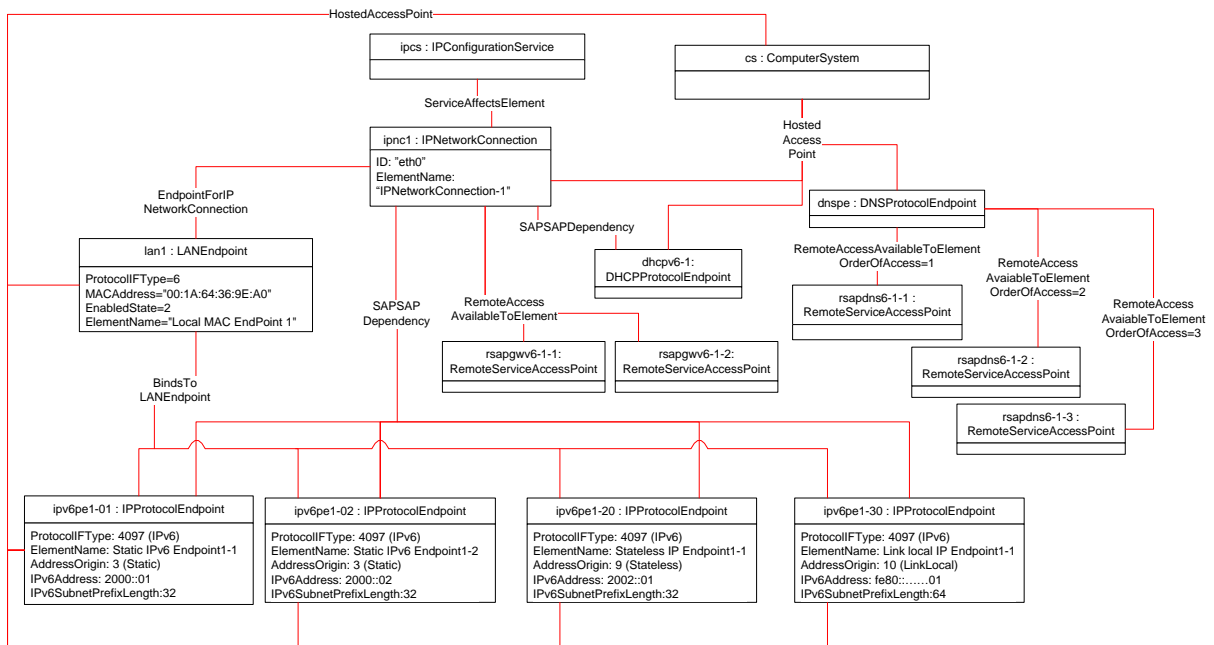
1042 **Figure 8 – Static IPv6 address assigned, DHCP clients started, DNS and Gateway available**

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

Figure 9 – Stateless IPv6 assignment for IPNetworkConnection-1

1053

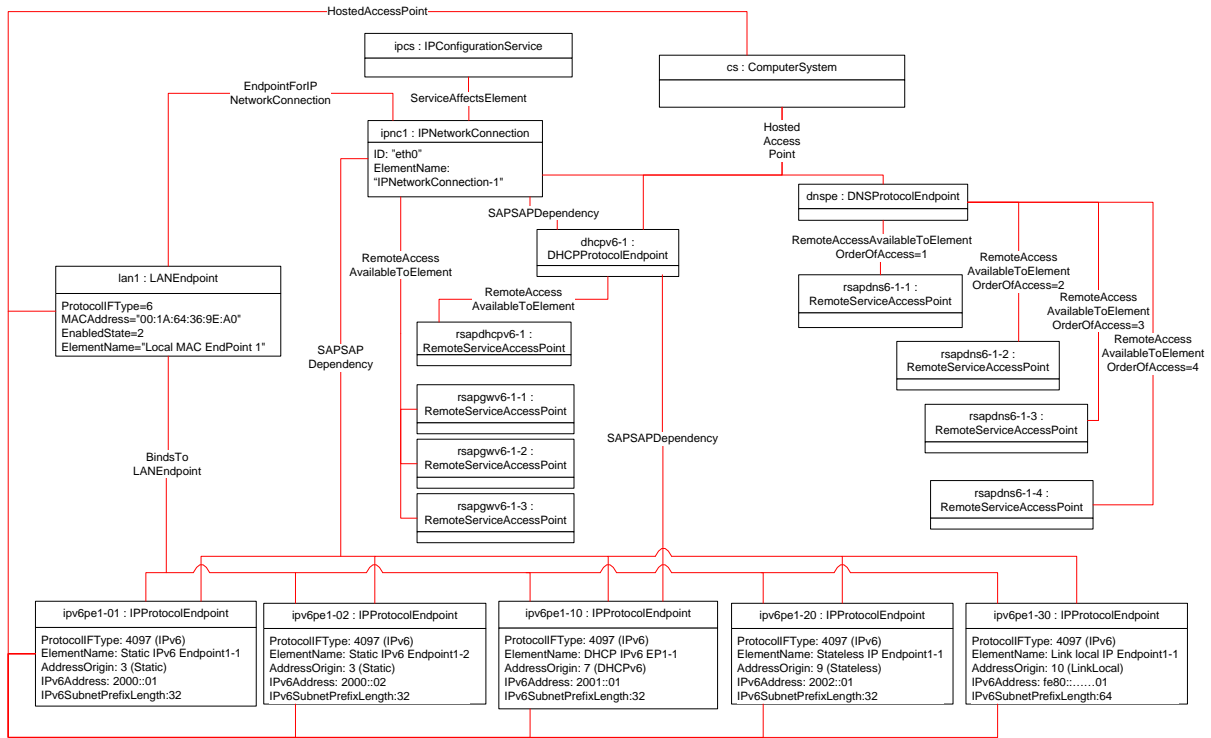
1054 The object diagram in Figure 10 is a continuation of use case in Figure 9, with following updates for
 1055 IPNetworkConnection-1.

- 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.

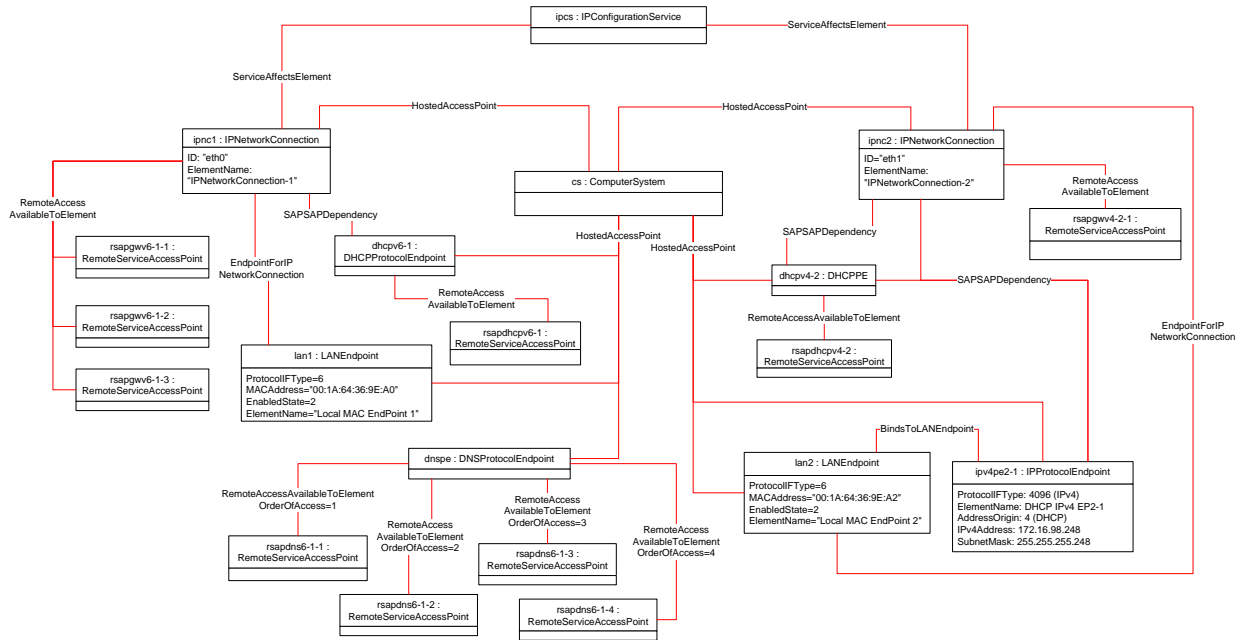
- 1074 • DHCP v4 address assigned – An instance of CIM_IPProtocolEndpoint added, associated to
 1075 CIM_DHCPProtocolEndpoint, CIM_IPNetworkConnection, CIM_ComputerSystem (and optionally
 1076 to CIM_LANEndpoint).
- 1077 • DHCP Server - An instance of CIM_RemoteServiceAccessPoint for DHCP Server added,
 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

1089



1090

Figure 11 – DHCP v4 assignment for IPNetworkConnection-2

1091

1092

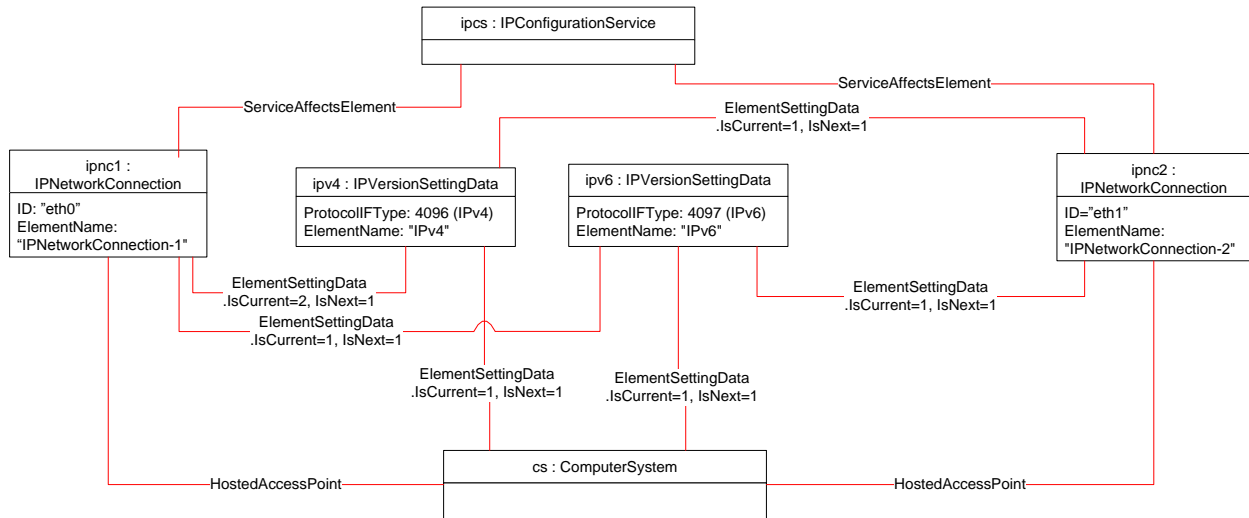
1093 9.4 Dynamics – Configuration change

1094 A client enables IPv4 on IPNetworkConnection-1 and IPv6 on IPNetworkConnection-2. This is shown in
 1095 Figure 12.

1096 The following objects are not shown in Figure 12 for clarity.

- 1097 • Instances of CIM_IPAssignmentSettingToData
- 1098 • Instances of CIM_ProtocolEndpoint (e.g., CIM_IPProtocolEndpoint)
- 1099 • Instances of CIM_RemoteServiceAccessPoint

1100



1101

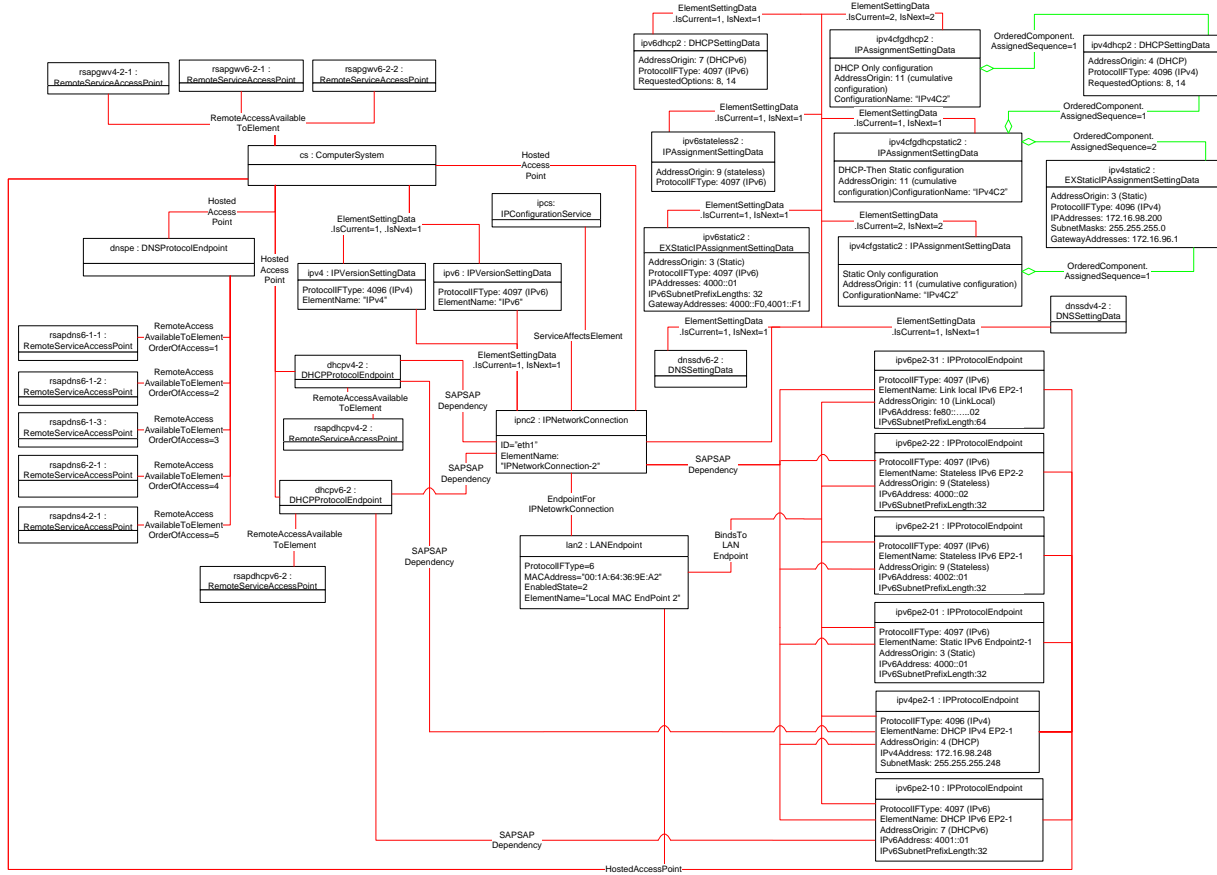
1102 **Figure 12 – Configuration change — IPv4 is enabled on IPNetworkConnection-1, IPv6 is enabled**
 1103 **on IPNetworkConnection-2**

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
Classes		
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
Indications		
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	Key: This shall be a reference to an instance of CIM_VLANEndpoint. Cardinality 0..1
Dependent	Mandatory	Key: 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	Key: This shall be a reference to an instance of CIM_LANEndpoint. Cardinality 0..1
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the Central Instance. Cardinality 1
SettingData	Mandatory	Key: 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	Key: This shall be a reference to the Central Instance. Cardinality 0..1
SettingData	Mandatory	Key: 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	Key: This shall be a reference to the Central Instance. Cardinality *
SettingData	Mandatory	Key: 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	Key: This shall be a reference to the scoping Instance. Cardinality 1
SettingData	Mandatory	Key: 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	Key: This shall be a reference to the scoping Instance. Cardinality 1
SettingData	Mandatory	Key: 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	Key: This shall be a reference to the CIM_DHCPProtocolEndpoint. Cardinality *
SettingData	Mandatory	Key: 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	Key: This shall be a reference to the CIM_DNSProtocolEndpoint. Cardinality 0..1
SettingData	Mandatory	Key: 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	Key: This shall be a reference to the CIM_ProtocolEndpoint (e.g., CIM_LANEndpoint, CIM_VLANEndpoint) Cardinality 1..*
Dependent	Mandatory	Key: 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	Key
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	Key: This shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the Scoping Instance. Cardinality 1
Dependent	Mandatory	Key: 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	Key
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	Key
CreationClassName	Mandatory	Key
SystemName	Mandatory	Key
Name	Mandatory	Key
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	Key
CreationClassName	Mandatory	Key
SystemName	Mandatory	Key
Name	Mandatory	Key
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	Key
CreationClassName	Mandatory	Key
SystemName	Mandatory	Key
Name	Mandatory	Key
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	Key
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	Key: See clause 7.5.2.1.1 Cardinality *
PartComponent	Mandatory	Key: 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	Key: This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality *
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality 0..1
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality *
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the CIM_RemoteServiceAccessPoint Cardinality *
Dependent	Mandatory	Key: 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	Key
CreationClassName	Mandatory	Key
SystemName	Mandatory	Key
Name	Mandatory	Key

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	Key: This shall be a reference to the central instance. Cardinality 1
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the CIM_IPNetworkConnection Cardinality 1..*
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the CIM_DHCPProtocolEndpoint. Cardinality 1..*
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the CIM_DHCPProtocolEndpoint instance. Cardinality 0..1
Dependent	Mandatory	Key: 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	Key: This shall be a reference to the instance of CIM_IPConfigurationService. Cardinality *

Elements	Requirement	Description
AffectedElement	Mandatory	Key: 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	Key: This shall be a reference to the instance of CIM_IPNetworkConnection. Cardinality *
ConformantStandard	Mandatory	Key: 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"> • Updated RegisteredVersion to reflect errata version number in clause 10.27, and • Updated RegisteredOrganization description to reflect correct value of 2 for “DMTF” in clause 10.27 and figure in clause 9.1.

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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
- 1444 DMTF DSP1037, *DHCP Client Profile 1.0*,
1445 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