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IP Configuration Profile

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255 # Foreword

256 The *IP Configuration Profile* (DSP1116) was prepared by the Server Desktop Mobile Platform Working
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281   Introduction

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

287   **Document conventions**

288   **Typographical conventions**

289   The following typographical conventions are used in this document:

290   •   Document titles are marked in *italics*.
291   •   ABNF rules are in `monospaced font`.

292

293   # IP Configuration Profile

294   ## 1 Scope

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

299   ## 2 Normative references

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

304   DMTF DSP0004, *CIM Infrastructure Specification 2.6*,
305   http://www.dmtf.org/standards/published_documents/DSP0004_2.6.pdf

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

308   DMTF DSP0223, *Generic Operations 1.0*,
309   http://www.dmtf.org/standards/published_documents/DSP0223_1.0.pdf

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

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

314   DMTF DSP1035, *Host LAN Network Port Profile 1.0,*
315   http://www.dmtf.org/standards/published_documents/DSP1035_1.0.pdf

316   DMTF DSP1080, *Enabled Logical Element Profile 1.0*,
317   http://www.dmtf.org/standards/published_documents/DSP1080_1.0.pdf

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

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

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

322   ## 3 Terms and definitions

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

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

331   The terms "clause", "subclause", "paragraph", and "annex" in this document are to be interpreted as
332   described in ISO/IEC Directives, Part 2, Clause 5.

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

336   The terms defined in DSP0004, DSP0223, and DSP1001 apply to this document. The following additional
337   terms are used in this document.

338   **3.1**
339   **conditional**
340   indicates requirements to be followed strictly to conform to the document when the specified conditions
341   are met

342   **3.2**
343   **mandatory**
344   indicates requirements to be followed strictly to conform to the document and from which no deviation is
345   permitted

346   **3.3**
347   **optional**
348   indicates a course of action permissible within the limits of the document

349   **3.4**
350   **pending configuration**
351   indicates the configuration that will be applied to an IP network connection the next time the IP network
352   connection accepts a configuration

353   **3.5**
354   **referencing profile**
355   indicates a profile that owns the definition of this class and can include a reference to this profile in its
356   "Referenced Profiles" table

357   **3.6**
358   **unspecified**
359   indicates that this profile does not define any constraints for the referenced CIM element or operation
360

4   Symbols and abbreviated terms

362   The abbreviations defined in DSP0004, DSP0223, and DSP1001 apply to this document. The following
363   additional abbreviations are used in this document.

364   **4.1**
365   **DHCP**
366   Dynamic Host Configuration Protocol

367   **4.2**
368   **DNS**
369   Domain Name System

370   **4.3**
371   **IP**
372   Internet Protocol

373   5   Synopsis

374   **Profile name:** IP Configuration

375   **Version:** 1.0.0

376   **Organization:** DMTF

377   **CIM Schema version:** 2.34

378   **Central class:** CIM_IPNetworkConnection

379   **Scoping class:** CIM_ComputerSystem

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

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

385   **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

386   6   Description

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

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

392   • settings for IP network connection

393   • settings for IP versions

394   • protocol endpoints for IP, DNS client, DHCP client

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

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

402   • static – configured values in the settings

403   • DHCP – from a DHCP server

404   • stateless – based on router advertisements

405   • link local – automatic IPv6 address assignment if IPv6 is enabled

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

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

411 6.1 Class diagram

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

414
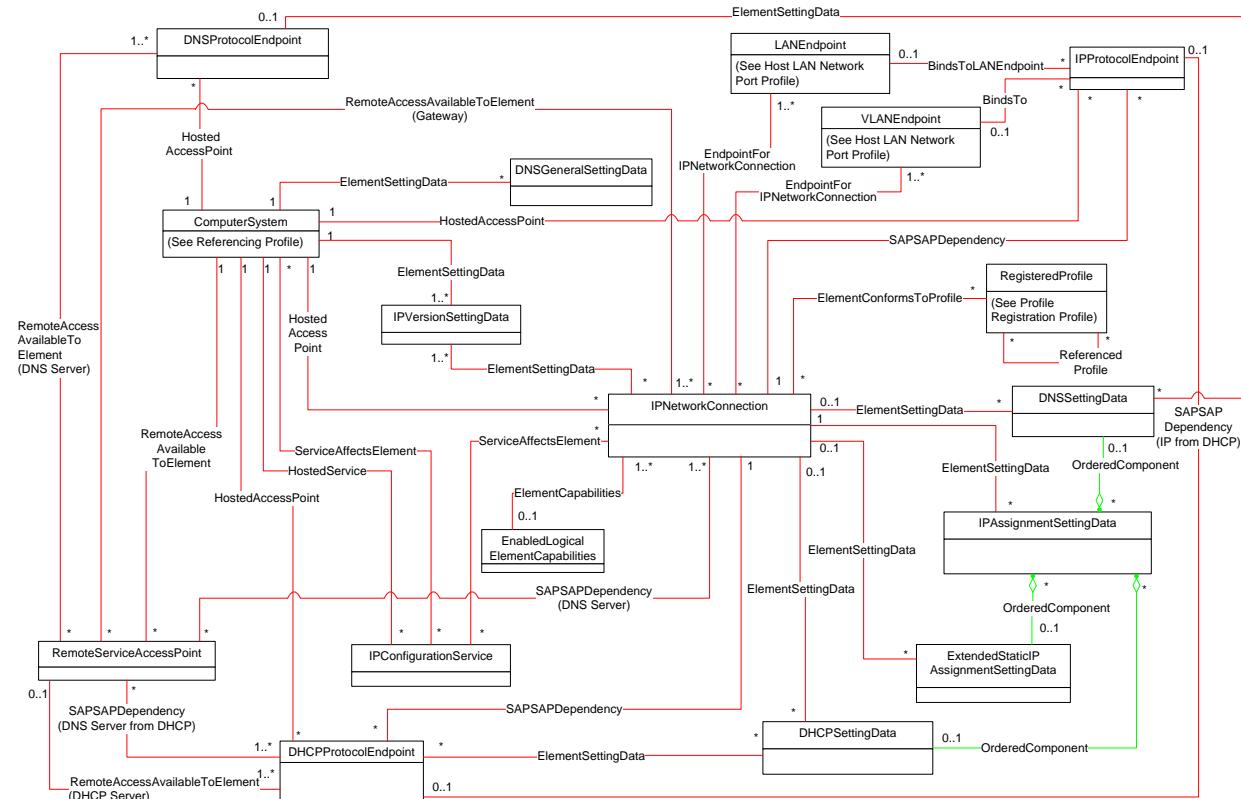
416 **Figure 1 – IP Configuration Profile: Class diagram**

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

421 An instance of CIM_IPVersionSettingData represents an IP version setting. The static IP settings are
422 represented by instances of CIM_ExtendedStaticIPAssignmentSettingData. The DHCP settings are
423 represented by instances of CIM_DHCPSettingData. The stateless settings for IPv6 are represented by
424 instances of CIM_IPAssignmentSettingData. The DNS setting for the network connection is represented
425 by instances of CIM_DNSSettingData.

426 The system-wide settings for the DNS client are represented in the instance of
427 CIM_DNSGeneralSettingData, which is associated to the instance of scoping CIM_ComputerSystem,
428 through instance of CIM_ElementSettingData.

429   An instance of CIM_IPConfigurationService represents a service that provides methods for IP
430   configuration.

431   An instance of CIM_IPProtocolEndpoint represents an IP address on the system. An instance of
432   CIM_DHCPProtocolEndpoint represents the DHCP client for an IP version for a network connection. The
433   DNS client on the system is represented by an instance of CIM_DNSProtocolEndpoint.

434   Functionality provided by other systems (Gateway, DHCP server, and DNS server) is modeled from the
435   client view and is therefore represented by instances of CIM_RemoteServiceAccessPoint.

6.2   Concurrent settings

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

6.3   Alternate settings

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

6.4   Accumulation of settings (cumulative configuration)

448   An instance of CIM_IPAssignmentSettingData with one or more instances of
449   CIM_IPAssignmentSettingData and its subclasses associated to it via CIM_OrderedComponent,
450   represents an accumulation of settings. This cumulative configuration is used to describe one or more
451   settings that can be applied to an IP network connection. A settings instance that represents an
452   accumulation of settings is indicated by the AddressOrigin value "11" (cumulative configuration).

453   A concurrent settings instance may represent an accumulation of settings and is referred to as a
454   "concurrent accumulation of settings".

455   An alternate settings instance may represent an accumulation of settings and is referred to as an
456   "alternate accumulation of settings".

7   Implementation

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

7.1   Representing the network connection

7.1.1   CIM_IPNetworkConnection

462   Zero or more instances of CIM_IPNetworkConnection shall be instantiated. The instances of the
463   CIM_IPNetworkConnection shall be associated with instance of the scoping CIM_ComputerSystem
464   through instance of CIM_HostedAccessPoint.

7.1.2   Managing the CIM_IPNetworkConnection state

466   An implementation may support management of CIM_IPNetworkConnection state. The abstract Enabled
467   Logical Element Profile specifies requirements for supporting state management in subclasses of

468 CIM_EnabledLogicalElement. The implementation of CIM_IPNetworkConnection shall meet the
469 requirements of the Enabled Logical Element Profile, with CIM_IPNetworkConnection in place of
470 CIM_EnabledLogicalElement.

7.2   Representing the IP version

7.2.1   CIM_IPVersionSettingData

473 At least one instance of CIM_IPVersionSettingData shall exist in the system. The instances of the
474 CIM_IPVersionSettingData shall be associated to the scoping instance through CIM_ElementSettingData
475 association. The instances of the CIM_IPVersionSettingData shall be associated through
476 CIM_ElementSettingData association to the CIM_IPNetworkConnection instances on which the
477 corresponding IP versions are supported.

7.2.1.1   CIM_IPVersionSettingData.ProtocolIFType

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

7.3   IP setting

7.3.1   CIM_IPAssignmentSettingData requirements for accumulation of settings, stateless IP assignment settings

484 Zero or more instance of CIM_IPAssignmentSettingData may exist.

7.3.1.1   CIM_IPAssignmentSettingData.AddressOrigin

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

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

7.3.1.2   CIM_IPAssignmentSettingData.ProtocolIFType

491 If the value of AddressOrigin property is 9 (Stateless), the value of the ProtocolIFType property shall be
492 4097 (IPv6).

7.3.1.3   CIM_IPAssignmentSettingData.ConfigurationName

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

496 For an instance of CIM_IPNetworkConnection, the instances of the CIM_IPAssignmentSettingData
497 associated with the instance of CIM_IPNetworkConnection, representing the accumulation of settings that
498 are alternate to each other shall have identical non-null value for the ConfigurationName property. For an
499 instance of CIM_IPNetworkConnection, the instances of CIM_IPAssignmentSettingData associated with
500 the instance of CIM_IPNetworkConnection, representing the accumulation of settings that are not
501 alternate for each other, shall not have identical non-null value for the ConfigurationName property.

7.3.2   CIM_ExtendedStaticIPAssignmentSettingData requirements for static IP assignment settings

504 Zero or more instances of CIM_ExtendedStaticIPAssignmentSettingData may exist.

505 **7.3.2.1   CIM_ExtendedStaticIPAssignmentSettingData.AddressOrigin**

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

507 **7.3.2.2   CIM_ExtendedStaticIPAssignmentSettingData.ProtocolIFType**

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

509 **7.3.2.3   CIM_ExtendedStaticIPAssignmentSettingData.IPAddresses**

510 The value of the IPAddresses property shall be an array of 0 or more IPv4 addresses if the
511 CIM_ExtendedStaticIPAssignmentSettingData.ProtocolIFType property has a value of 4096 (IPv4). The
512 value of the IPAddresses property shall be an array of 0 or more IPv6 addresses if the ProtocolIFType
513 property has a value of 4097 (IPv6).

514 **7.3.2.4   CIM_ExtendedStaticIPAssignmentSettingData.IPv6SubnetPrefixLengths**

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

519 If the value of CIM_ExtendedStaticIPAssignmentSettingData.ProtocolIFType is not 4097 (IPv6), the
520 IPv6SubnetPrefixLengths property shall not be specified.

521 **7.3.2.5   CIM_ExtendedStaticIPAssignmentSettingData.SubnetMasks**

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

525 If the value of CIM_ExtendedStaticIPAssignmentSettingData.ProtocolIFType is not 4096 (IPv4), the
526 SubnetMasks property shall not be specified.

527 **7.3.2.6   CIM_ExtendedStaticIPAssignmentSettingData.GatewayAddresses**

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

532 **7.3.3   CIM_DHCPSettingData requirements for dynamic IP assignment settings**

533 Zero or more instances of CIM_DHCPSettingData may exist.

534 **7.3.3.1   CIM_DHCPSettingData.AddressOrigin**

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

536 **7.3.3.2   CIM_DHCPSettingData.ProtocolIFType**

537 If the value of AddressOrigin property is 4 (DHCP), the value of the ProtocolIFType property shall be
538 4096 (IPv4). If the value of AddressOrigin property is 7 (DHCPv6), the value of the ProtocolIFType
539 property shall be 4097 (IPv6).

540   ## 7.4   Representation of current and pending settings

541   ### 7.4.1   CIM_ElementSettingData

542   #### 7.4.1.1   CIM_ElementSettingData.IsCurrent

543   For current settings (or accumulation of settings), the CIM_ElementSettingData.IsCurrent property shall
544   have a value of 1 (Is Current). For settings (or accumulation of settings) that are not current,
545   CIM_ElementSettingData.IsCurrent property shall have a value of 2 (Is Not Current).

546   #### 7.4.1.2   CIM_ElementSettingData.IsNext

547   For pending settings (or accumulation of settings), the CIM_ElementSettingData.IsNext property shall be
548   1 (Is Next) or 3 (Is Next For Single Use). For settings (or accumulation of settings) that are not pending,
549   CIM_ElementSettingData.IsNext property shall have a value of 2 (Is Not Next).

550   ### 7.4.2   Modification of CIM_SettingData

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

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

556   ## 7.5   Representation settings of a network connection

557   ### 7.5.1   Concurrent settings

558   When concurrent settings exists, the instances of CIM_IPAssignmentSettingData and its subclasses
559   representing concurrent settings for a network connection shall be associated via
560   CIM_ElementSettingData to the corresponding instances of CIM_IPNetworkConnection.

561   ### 7.5.2   Accumulation of settings

562   When accumulation of settings (refer to 6.4) exists, the instances of CIM_IPAssignmentSettingData with
563   AddressOrigin as 11 (cumulative configuration) representing the accumulation of settings shall be
564   associated via CIM_ElementSettingData to the corresponding instance of CIM_IPNetworkConnection.

565   Following requirements applies to instances of CIM_IPAssignmentSettingData with value of
566   AddressOrigin property as 11 (cumulative configuration) having identical non-null value for
567   ConfigurationName property (refer to 6.4 and 7.3.1.3):

568   - Exactly one of the above instances of CIM_IPAssignmentSettingData shall be associated to the
569   central class instance through an instance of CIM_ElementSettingData whose IsCurrent property
570   has the value 1 (Is Current).

571   - Exactly one of the above instances of CIM_IPAssignmentSettingData shall be associated to the
572   central class instance through an instance of CIM_ElementSettingData whose IsNext property
573   has the value 1 (Is Next).

574   - Exactly one of the above instances of CIM_IPAssignmentSettingData may be associated to the
575   central class instance through an instance of CIM_ElementSettingData whose IsNext property
576   has the value 3 (Is Next For Single Use).

577   - If an instance of CIM_IPAssignmentSettingData is associated with the central class instance
578   through an instance of CIM_ElementSettingData whose IsNext property has the value 3 (Is Next
579   For Single Use), this instance of CIM_IPAssignmentSettingData shall represent the pending

580   configuration. If no instance of CIM_IPAssignmentSettingData is associated with the central class
581   instance through an instance of CIM_ElementSettingData whose IsNext property has the value 3
582   (Is Next For Single Use), the instance of CIM_IPAssignmentSettingData that is associated with
583   the Central Instance through an instance of CIM_ElementSettingData whose IsNext property has
584   the value 1 (Is Next) shall represent the pending configuration.

585 **7.5.2.1   Associating settings using CIM_OrderedComponent**

586   The instances of the CIM_IPAssignmentSettingData and its subclasses that are part of a cumulative
587   configuration shall be associated with one or more of the above instances of
588   CIM_IPAssignmentSettingData via CIM_OrderedComponent.

589 **7.5.2.1.1   CIM_OrderedComponent.GroupComponent**

590   An instance of CIM_IPAssignmentSettingData or its subclasses, whose AddressOrigin property has the
591   value 11 (cumulative configuration) shall be the value of the GroupComponent property of an instance of
592   CIM_OrderedComponent.

593 **7.5.2.1.2   CIM_OrderedComponent.PartComponent**

594   An instance of CIM_IPAssignmentSettingData or its subclasses whose AddressOrigin property is not
595   having the value 11 (cumulative configuration), shall be the value of the PartComponent property of an
596   instance of CIM_OrderedComponent.

597 **7.5.2.1.3   CIM_OrderedComponent.AssignedSequence**

598   The relative value of the CIM_OrderedComponent.AssignedSequence property shall indicate the order in
599   which the settings are applied to their associated CIM_IPNetworkConnection instances.

600 **7.6   Representing the IP interface**

601 **7.6.1   CIM_IPProtocolEndpoint**

602   Zero or more instances of CIM_IPProtocolEndpoint may exist.

603   The following behavior is conditional on the existence of instances of CIM_IPProtocolEndpoint. Instances
604   of CIM_IPProtocolEndpoint may be associated with CIM_ComputerSystem via CIM_HostedAccessPoint.
605   Instances of CIM_IPProtocolEndpoint shall be associated with CIM_IPNetworkConnection via
606   CIM_SAPSAPDependency, where the CIM_IPProtocolEndpoint is the Dependent.

607 **7.6.1.1   CIM_IPProtocolEndpoint.AddressOrigin**

608 **7.6.1.1.1   AddressOrigin — Static**

609   A value of 3 (Static) shall indicate that this instance of CIM_IPProtocolEndpoint was assigned statically.

610 **7.6.1.1.2   AddressOrigin — DHCPv4**

611   A value of 4 (DHCP) shall indicate that this instance of CIM_IPProtocolEndpoint was obtained through an
612   associated DHCP client. The AddressOrigin property shall have a value of 4 (DHCP) when the
613   configuration is the result of an instance of CIM_DHCPSettingData representing the DHCP client settings
614   for IPv4 being successfully applied.

615 **7.6.1.1.3   AddressOrigin — DHCPv6**

616   A value of 7 (DHCPv6) shall indicate that this instance of CIM_IPProtocolEndpoint was obtained through
617   an associated DHCP client for IPv6. The AddressOrigin property shall have a value of 7 (DHCPv6) when
618   the configuration is the result of an instance of CIM_DHCPSettingData representing the DHCP client
619   settings for IPv6 being successfully applied.

620 **7.6.1.1.4   AddressOrigin — Stateless**

621   A value of 9 (Stateless) shall indicate that this instance of CIM_IPProtocolEndpoint was generated
622   automatically through the router advertisement messages.

623 **7.6.1.1.5   AddressOrigin — Link Local**

624   A value of 10 (Link Local) shall indicate that this instance of CIM_IPProtocolEndpoint was configured with
625   a Link Local address automatically by the local host.

626 **7.6.1.2   CIM_IPProtocolEndpoint.ProtocolIFType**

627   The ProtocolIFType property shall indicate the current IP address type. The value of
628   CIM_IPProtocolEndpoint.ProtocolIFType shall be 4096 (IPv4) or 4097 (IPv6).

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

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

632 **7.6.1.3   CIM_IPProtocolEndpoint.IPv4Address**

633   If the value of CIM_IPProtocolEndpoint.ProtocolIFType is 4096 (IPv4), the IPv4Address property shall
634   indicate the current IPv4 address assigned to this IP endpoint. The value of the property shall be
635   specified in dotted decimal notation as defined in IETF RFC1208. A value of 0.0.0.0 shall indicate that a
636   valid IP address is not assigned to this IP endpoint.

637   If the value of CIM_IPProtocolEndpoint.ProtocolIFType is not 4096 (IPv4), the IPv4Address property shall
638   not be specified.

639 **7.6.1.4   CIM_IPProtocolEndpoint.SubnetMask**

640   If the value of CIM_IPProtocolEndpoint.ProtocolIFType is 4096 (IPv4), the SubnetMask property shall be
641   specified by using dotted decimal notation as defined in IETF RFC1208. A value of 0.0.0.0 shall indicate
642   that a valid subnet mask is not assigned to this IP endpoint.

643   If the value of CIM_IPProtocolEndpoint.ProtocolIFType is not 4096 (IPv4), the SubnetMask property shall
644   not be specified.

645 **7.6.1.5   CIM_IPProtocolEndpoint.IPv6Address**

646   If the value of CIM_IPProtocolEndpoint.ProtocolIFType is 4097 (IPv6), the IPv6Address property shall
647   indicate the current IPv6 address assigned to this IP endpoint. The value of the property shall be
648   specified in the notation specified in IETF RFC4291, section 2.2.

649   If the value of CIM_IPProtocolEndpoint.ProtocolIFType is not 4097 (IPv6), the IPv6Address property shall
650   not be specified.

651 **7.6.1.6   CIM_IPProtocolEndpoint. IPv6SubnetPrefixLength**

652   If the value of CIM_IPProtocolEndpoint.ProtocolIFType is 4097 (IPv6), the IPv6SubnetPrefixLength
653   property shall indicate the prefix length used to specify the subnet.

654   If the value of CIM_IPProtocolEndpoint.ProtocolIFType is not 4097 (IPv6), the IPv6SubnetPrefixLength
655   property shall not be specified.

656 7.7   IP configuration management

657 7.7.1   Configuration management is supported (optional)

658 When an implementation supports management of IP configuration, there shall be one or more instances
659 of CIM_IPConfigurationService, which has methods to perform configuration management on the
660 CIM_ComputerSystem and CIM_IPNetworkConnection. These instances shall be associated with the
661 scoping instance through CIM_HostedService association.

662 If the configuration management is supported on the CIM_ComputerSystem, it shall be associated via
663 CIM_ServiceAffectsElement to the instances of the CIM_IPConfigurationService that can configure it. The
664 CIM_IPConfigurationService.ApplySettingToComputerSystem method shall be used to enable or disable
665 the CIM_IPVersionSettingData on the CIM_ComputerSystem.

666 If the configuration management is supported on an instance of CIM_IPNetworkConnection, it shall be
667 associated via CIM_ServiceAffectsElement to the instances of the CIM_IPConfigurationService that can
668 configure it. The CIM_IPConfigurationService.ApplySettingToIPNetworkConnection method shall be used
669 to enable or disable the CIM_IPVersionSettingData or CIM_IPAssignmentSettingData or its subclasses
670 on the CIM_IPNetworkConnection.

671 The above methods change IsNext and/or IsCurrent property of the CIM_ElementSettingData instance
672 associating the Managed Element with the setting. These methods are needed only when the IsCurrent
673 or IsNext property of CIM_ElementSettingData instance needs to be modified.

674 7.8   DHCP client

675 The representation of DHCP client is optional.

676 7.8.1   CIM_DHCPProtocolEndpoint

677 Zero or more instances of CIM_DHCPProtocolEndpoint may exist. Instances of
678 CIM_DHCPProtocolEndpoint shall be associated with CIM_IPNetworkConnection via
679 CIM_SAPSAPDependency, where the CIM_DHCPProtocolEndpoint is the Dependent. Each instance of
680 CIM_IPProtocolEndpoint whose IP address is assigned by DHCP may be associated with a
681 corresponding instance of CIM_DHCPProtocolEndpoint, via CIM_SAPSAPDependency, where the
682 CIM_IPProtocolEndpoint is the Dependent. The instances of CIM_DHCPProtocolEndpoint may be
683 associated to CIM_ComputerSystem via CIM_HostedAccessPoint. Each CIM_DHCPProtocolEndpoint
684 may be associated to zero or more instances of CIM_DHCPSettingData, which is a current setting (either
685 concurrent or alternate) for the CIM_IPNetworkConnection associated to the above
686 CIM_DHCPProtocolEndpoint via CIM_ElementSettingData association.

687 7.9   DNS client and configuration

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

689 7.9.1   CIM_DNSProtocolEndpoint

690 Zero or more instances of CIM_DNSProtocolEndpoint may exist. The instances of
691 CIM_DNSProtocolEndpoint shall be associated to CIM_ComputerSystem via CIM_HostedAccessPoint.

692 7.9.2   CIM_DNSSettingData

693 Zero or more instances of CIM_DNSSettingData may exist. The instances of CIM_DNSSettingData shall
694 be modeled either as concurrent setting or as alternate settings for CIM_IPNetworkConnection or as a
695 setting for CIM_DNSProtocolEndpoint. The instances of CIM_DNSSettingData that are modeled as
696 settings for CIM_IPNetworkConnection may be associated to CIM_DNSProtocolEndpoint, via
697 CIM_ElementSettingData.

698 **7.9.2.1   CIM_DNSSettingData.AddressOrigin**

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

700 **7.9.2.2   CIM_DNSSettingData.ProtocolIFType**

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

702 **7.9.2.3   CIM_DNSSettingData.DNSServerAddresses**

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

708 ### 7.9.3   CIM_DNSGeneralSettingData

709 Zero or more instances of CIM_DNSGeneralSettingData may exist. Only one of them may be associated
710 to the instance of CIM_ComputerSystem through an instance of CIM_ElementSettingData whose
711 IsCurrent property has the value 1(Is Current). Only one of them may be associated to the instance of
712 CIM_ComputerSystem through an instance of CIM_ElementSettingData whose IsNext property has the
713 value 1(Is Next).

714 ## 7.10 Relationship with a network interface

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

719 The instance of CIM_IPNetworkConnection shall be associated with instances of CIM_LANEndpoint
720 and/or with instances of CIM_VLANEndpoint via CIM_EndpointForIPNetworkConnection, where the
721 CIM_IPNetworkConnection is the Dependent. The instances of CIM_IPProtocolEndpoint may be
722 associated with instances of CIM_LANEndpoint via CIM_BindsToLANEndpoint, and/or with instances of
723 CIM_VLANEndpoint via CIM_BindsTo, where CIM_IPProtocolEndpoint is the Dependent.

724 ## 7.11 Remote services

725 ### 7.11.1 Default gateway

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

728 **7.11.1.1 CIM_RemoteServiceAccessPoint**

729 **7.11.1.1.1 CIM_RemoteServiceAccessPoint.AccessContext**

730 For the instances of CIM_RemoteServiceAccessPoint representing default gateways, the value for
731 AccessContext property shall be 2 (Default Gateway).

732 **7.11.1.1.2 CIM_RemoteServiceAccessPoint.AccessInfo**

733 For IPv4 gateways, the value of the AccessInfo property shall be the IPv4 address of the default gateway.
734 The value shall be specified in dotted decimal notation as defined in IETF RFC1208.

735 For IPv6 gateways, the value of the AccessInfo property shall be the IPv6 address of the default gateway.
736 The value shall be specified in the IPv6 notation as defined in IETF RFC4291.

737   **7.11.1.2 CIM_RemoteAccessAvailableToElement**

738   If modeled, the instances of CIM_RemoteServiceAccessPoint representing default gateways for a
739   network connection shall be associated via CIM_RemoteAccessAvailableToElement to the corresponding
740   instance of CIM_IPNetworkConnection. The instances of CIM_RemoteServiceAccessPoint representing
741   the gateways may be associated to Scoping instance using CIM_RemoteAccessAvailableToElement.

742   **7.11.1.2.1 CIM_RemoteAccessAvailableToElement.Antecedent**

743   The value of the Antecedent reference shall be the instance of CIM_RemoteServiceAccessPoint.

744   **7.11.1.2.2 CIM_RemoteAccessAvailableToElement.Dependent**

745   The value of the Dependent reference shall be the instance of CIM_IPNetworkConnection or
746   CIM_System or its subclasses.

747   **7.11.1.2.3 CIM_RemoteAccessAvailableToElement.OrderOfAccess**

748   CIM_RemoteAccessAvailableToElement.OrderOfAccess can be used to represent the list of default
749   gateways in priority order.

750   **7.11.2 DHCP servers**

751   Modeling of the DHCP servers is optional.

752   **7.11.2.1 CIM_RemoteServiceAccessPoint**

753   **7.11.2.1.1 CIM_RemoteServiceAccessPoint.AccessContext**

754   For the instances of CIM_RemoteServiceAccessPoint representing DHCP Servers, the value for
755   AccessContext property shall be 6 (DHCP Server).

756   **7.11.2.1.2 CIM_RemoteServiceAccessPoint.AccessInfo**

757   For IPv4 DHCP Servers, the value of the AccessInfo property shall be the IPv4 address of the DHCP
758   Server. The value shall be specified in dotted decimal notation as defined in IETF RFC1208.

759   For IPv6 DHCP Servers, the value of the AccessInfo property shall be the IPv6 address of the DHCP
760   Server. The value shall be specified in the IPv6 notation as defined in IETF RFC4291.

761   **7.11.2.2 CIM_RemoteAccessAvailableToElement**

762   CIM_DHCPProtocolEndpoint and CIM_RemoteServiceAccessPoint representing the DHCP servers shall
763   be associated by using CIM_RemoteAccessAvailableToElement, if both are modeled and their
764   corresponding instances exist. The instances of CIM_RemoteServiceAccessPoint representing the DHCP
765   servers may be associated to Scoping instance by using CIM_RemoteAccessAvailableToElement.

766   **7.11.2.2.1 CIM_RemoteAccessAvailableToElement.Antecedent**

767   The value of the Antecedent reference shall be the instance of CIM_RemoteServiceAccessPoint.

768   **7.11.2.2.2 CIM_RemoteAccessAvailableToElement.Dependent**

769   The value of the Dependent reference shall be the instance of CIM_DHCPProtocolEndpoint or
770   CIM_System or its subclasses.

771   **7.11.3 DNS servers**

772   Modeling of the DNS servers is optional.

773   **7.11.3.1   CIM_RemoteServiceAccessPoint**

774   **7.11.3.1.1   CIM_RemoteServiceAccessPoint.AccessContext**

775   For the instances of CIM_RemoteServiceAccessPoint representing DNS servers, the value for
776   AccessContext property shall be 3 (DNS Server).

777   **7.11.3.1.2   CIM_RemoteServiceAccessPoint.AccessInfo**

778   For IPv4 DNS servers, the value of the AccessInfo property shall be the IPv4 address of the DNS server.
779   The value shall be specified in dotted decimal notation as defined in IETF RFC1208.

780   For IPv6 DNS servers, the value of the AccessInfo property shall be the IPv6 address of the DNS server.
781   The value shall be specified in the IPv6 notation as defined in IETF RFC4291.

782   **7.11.3.2   CIM_RemoteAccessAvailableToElement**

783   CIM_DNSProtocolEndpoint and CIM_RemoteServiceAccessPoint representing the DNS servers shall be
784   associated by using CIM_RemoteAccessAvailableToElement, if both are modeled and their
785   corresponding instances exist. The instances of CIM_RemoteServiceAccessPoint representing the DNS
786   servers may be associated to Scoping instance by using CIM_RemoteAccessAvailableToElement.

787   **7.11.3.2.1   CIM_RemoteAccessAvailableToElement.Antecedent**

788   The value of the Antecedent reference shall be the instance of CIM_RemoteServiceAccessPoint.

789   **7.11.3.2.2   CIM_RemoteAccessAvailableToElement.Dependent**

790   The value of the Dependent reference shall be the instance of CIM_DNSProtocolEndpoint or
791   CIM_System or its subclasses.

792   **7.11.3.2.3   CIM_RemoteAccessAvailableToElement.OrderOfAccess**

793   CIM_RemoteAccessAvailableToElement.OrderOfAccess can be used to represent the list of DNS servers
794   in priority order.

795   **7.11.3.3   CIM_SAPSAPDependency**

796   The CIM_RemoteServiceAccessPoint instances representing the DNS servers may be associated via
797   CIM_SAPSAPDependency to the corresponding instances of CIM_IPNetworkConnection representing
798   the network connection that added the DNS server in the configuration, with CIM_IPNetworkConnection
799   as the Antecedent and CIM_RemoteServiceAccessPoint as Dependent.

800   For the DNS servers added by DHCP, the CIM_RemoteServiceAccessPoint instances representing the
801   DNS servers may be associated via CIM_SAPSAPDependency to the corresponding instances
802   CIM_DHCPProtocolEndpoint, with CIM_DHCPProtocolEndpoint as the Antecedent and
803   CIM_RemoteServiceAccessPoint as Dependent.

804   **8   Methods**

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

807   **8.1   CIM_IPConfigurationService.ApplySettingToIPNetworkConnection( )**

808   The CIM_IPConfigurationService.ApplySettingToIPNetworkConnection( ) method is used to enable or
809   disable a SettingData, as represented by an instance of CIM_IPAssignmentSettingData and/or the
810   IPVersionSettingData represented by an instance of CIM_IPVersionSettingData, to the specified

811 IPNetworkConnection, represented by an instance of CIM_IPNetworkConnection. Implementation of this
812 method is optional.

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

816 **Table 2 – CIM_IPConfigurationService.ApplySettingToIPNetworkConnection( ) method: Return
817 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).

818 **Table 3 – CIM_IPConfigurationService.ApplySettingToIPNetworkConnection( ) method: Standard
819 messages**

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

820 **Table 4 – CIM_IPConfigurationService.ApplySettingToIPNetworkConnection( ) method:
821 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
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

822 The CIM_IPConfigurationService.ApplySettingToIPNetworkConnection( ) method shall be implemented
823 as follows:

824 • The implementation shall validate that an instance of CIM_ServiceAffectsElement references
825 the CIM_IPConfigurationService instance and the CIM_IPNetworkConnection instance that is
826 identified by the IPNetworkConnection parameter to the method. If the association does not
827 exist, the return code of the method shall be 2 (Failed).

828 • The implementation shall validate that an instance of CIM_ElementSettingData associates the
829 instance of CIM_IPNetworkConnection that is identified by the IPNetworkConnection parameter
830 with the instance of CIM_IPAssignmentSettingData that is identified by the SettingData
831 parameter and/or with the instance of CIM_IPVersionSettingData, that is identified by the

832   IPVersionSettingData parameter. If the association does not exist, the return code of the
833   method shall be 2 (Failed).

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

840   **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

841 8.2   CIM_IPConfigurationService.ApplySettingToComputerSystem( )

842 The CIM_IPConfigurationService.ApplySettingToComputerSystem( ) method is used to enable or disable
843 the IPVersionSettingData represented by an instance CIM_IPVersionSettingData, to the specified
844 Computer System, represented by an instance of CIM_ComputerSystem. Implementation of this method
845 is optional.

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

848   **Table 6 – CIM_IPConfigurationService.ApplySettingToComputerSystem( ) method: Return code
849   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.

850
851

Table 7– CIM_IPConfigurationService.ApplySettingToComputerSystem( ) method: Standard messages

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

852

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

853 The CIM_IPConfigurationService.ApplySettingToComputerSystem( ) method shall be implemented as
854 follows:

855 • The implementation shall validate that an instance of CIM_ServiceAffectsElement references
856   the CIM_IPConfigurationService instance and the CIM_ComputerSystem instance that is
857   identified by the ComputerSystem parameter to the method. If the association does not exist,
858   the return code of the method shall be 2 (Failed).

859 • The implementation shall validate that an instance of CIM_ElementSettingData associates the
860   instance of CIM_ComputerSystem that is identified by the ComputerSystem parameter with the
861   instance of CIM_IPVersionSettingData that is identified by the IPVersionSettingData parameter.
862   If the association does not exist, the return code of the method shall be 2 (Failed).

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

869

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

Mode	Request	End-State	Interpretation
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

870   ## 8.3 Profile conventions for operations

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

873   The default list of operations is as follows:

874   • GetInstance

875   • EnumerateInstances

876   • EnumerateInstanceNames

877   • Associators

878   • AssociatorNames

879   • References

880   • ReferenceNames

881   ## 8.4 CIM_BindsTo

882   Table 10 lists operations that either have special requirements beyond those from DSP0200 or shall not
883   be supported.

884   **Table 10 – Operations: CIM_BindsTo**

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

885   ## 8.5 CIM_BindsToLANEndpoint

886   Table 11 lists operations that either have special requirements beyond those from DSP0200 or shall not
887   be supported.

888   **Table 11 – Operations: CIM_BindsToLANEndpoint**

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

8.6 CIM_DHCPProtocolEndpoint

890 All operations in the default list in 8.3 shall be implemented as defined in DSP0200.

8.7 CIM_DHCPSettingData

892 Table 12 lists operations that either have special requirements beyond those from DSP0200 or shall not
893 be supported

894   **Table 12 – Operations: CIM_DHCPSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	None

8.8 CIM_DNSGeneralSettingData

896 Table 13 lists operations that either have special requirements beyond those from DSP0200 or shall not
897 be supported.

898   **Table 13 – Operations: CIM_DNSGeneralSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	None

8.9 CIM_DNSProtocolEndpoint

900 All operations in the default list in 8.3 shall be implemented as defined in DSP0200.

8.10 CIM_DNSSettingData

902 Table 14 lists operations that either have special requirements beyond those from DSP0200 or shall not
903 be supported.

904   **Table 14 – Operations: CIM_DNSSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	None

8.11 CIM_ElementSettingData

906 Table 15 lists operations that either have special requirements beyond those from DSP0200 or shall not
907 be supported.

908   **Table 15 – Operations: CIM_ElementSettingData**

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

Operation	Requirement	Messages
ReferenceNames	Unspecified	None

8.12 CIM_EndpointForIPNetworkConnection

909

910 Table 16 lists operations that either have special requirements beyond those from DSP0200 or shall not
911 be supported.

912 **Table 16 – Operations: CIM_EndpointForIPNetworkConnection**

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

8.13 CIM_ExtendedStaticIPAssignmentSettingData

913

914 Table 17 lists operations that either have special requirements beyond those from DSP0200 or shall not
915 be supported.

916 **Table 17 – Operations: CIM_ExtendedStaticIPAssignmentSettingData**

Operation	Requirement	Messages
ModifyInstance	Optional	None

8.14 CIM_HostedAccessPoint

917

918 Table 18 lists operations that either have special requirements beyond those from DSP0200 or shall not
919 be supported.

920 **Table 18 – Operations: CIM_HostedAccessPoint**

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

8.15 CIM_HostedService

921

922 Table 19 lists operations that either have special requirements beyond those from DSP0200 or shall not
923 be supported.

924 **Table 19 – Operations: CIM_HostedService**

Operation	Requirement	Messages
Associators	Unspecified	None

AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

8.16 CIM_IPAssignmentSettingData

All operations in the default list in 8.3 shall be implemented as defined in DSP0200.

8.17 CIM_IPConfigurationService

All operations in the default list in 8.3 shall be implemented as defined in DSP0200.

8.18 CIM_IPNetworkConnection

All operations in the default list in 8.3 shall be implemented as defined in DSP0200.

8.19 CIM_IPProtocolEndpoint

All operations in the default list in 8.3 shall be implemented as defined in DSP0200.

8.20 CIM_IPVersionSettingData

All operations in the default list in 8.3 shall be implemented as defined in DSP0200.

8.21 CIM_OrderedComponent

Table 20 lists operations that either have special requirements beyond those from DSP0200 or shall not be supported.

Table 20 – Operations: CIM_OrderedComponent

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

8.22 CIM_RemoteAccessAvailableToElement

Table 21 lists operations that either have special requirements beyond those from DSP0200 or shall not be supported.

Table 21 – Operations: CIM_RemoteAccessAvailableToElement

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

943   ## 8.23 CIM_RemoteServiceAccessPoint

944   All operations in the default list in 8.3 shall be implemented as defined in DSP0200.

945   ## 8.24 CIM_SAPSAPDependency

946   Table 22 lists operations that either have special requirements beyond those from DSP0200 or shall not
947   be supported.

948   **Table 22 – Operations: CIM_SAPSAPDependency**

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

949   ## 8.25 CIM_ServiceAffectsElement

950   Table 23 lists operations that either have special requirements beyond those from DSP0200 or shall not
951   be supported.

952   **Table 23 – Operations: CIM_ServiceAffectsElement**

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

953 # 9   Use cases

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

955 ## 9.1   Miscellaneous object diagrams

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

965
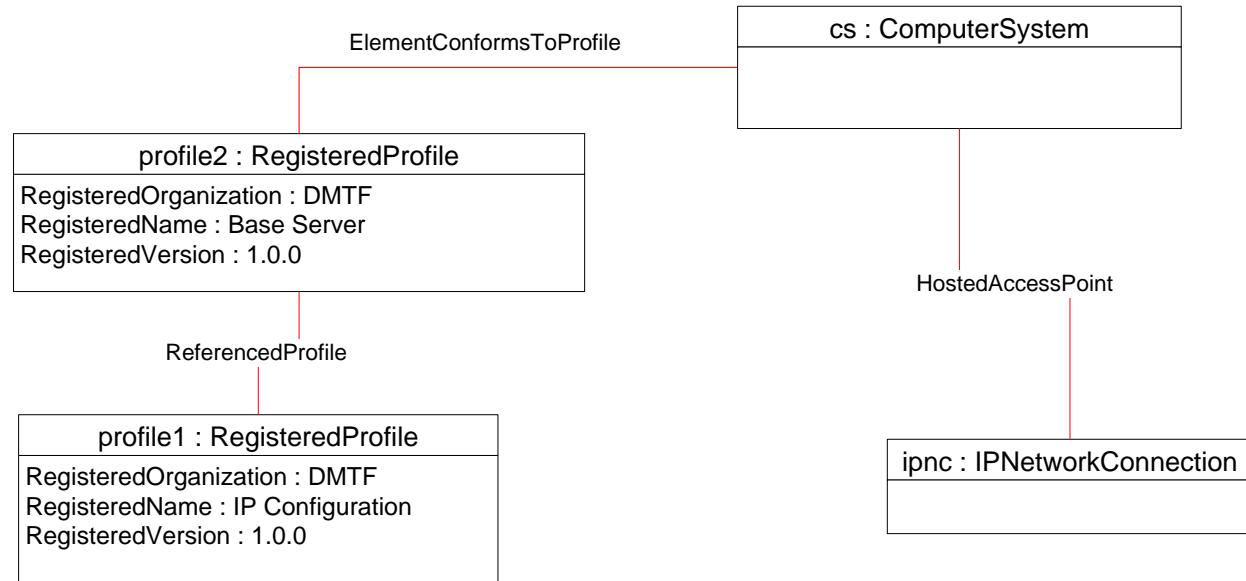
966

967 **Figure 2 – Registered profile**

968 ## 9.2   Configuration

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

972 - IPv4 is having alternate accumulation of settings. IPv4 settings are associated to instances of
973   CIM_IPAssignmentSettingData representing the accumulation of settings. The instances
974   representing alternate accumulation of settings for IPNetworkConnection-1 and
975   IPNetworkConnection-2 contain the values "IPv4C1" and "IPv4C2" for ConfigurationName,
976   respectively.

977   • IPv6 has concurrent settings. IPv6 settings are directly associated to CIM_IPNetworkConnection
978   instance.

979   • IPv4 settings are considered Pending. They take effect only on the restart of the system or
980   device.

981   • IPv6 settings are considered immediate. It takes effect immediately.

982   • IPv4 and IPv6 are currently enabled on the system. CIM_ElementSettingData associating the
983   CIM_IPVersionSettingData for IPv4 and IPv6 with CIM_ComputerSystem has IsCurrent=1

984   • For IPNetworkConnection-1, IPv4 is currently disabled. IPv6 is currently enabled. This is shown
985   by values of IsCurrent of CIM_ElementSettingData associating the CIM_IPNetworkConnection
986   with IPVersionSettingData instances.

987   • For IPNetworkConnection-2, IPv4 is currently enabled. IPv6 is currently disabled. This is shown
988   by values of IsCurrent of CIM_ElementSettingData associating the CIM_IPNetworkConnection
989   with IPVersionSettingData instances.

990   To better show the objects, the diagram in Figure 4 shows the configuration for the IPNetworkConnection-
991   1 and Figure 5 shows the configuration for IPNetworkConnection-2.

992
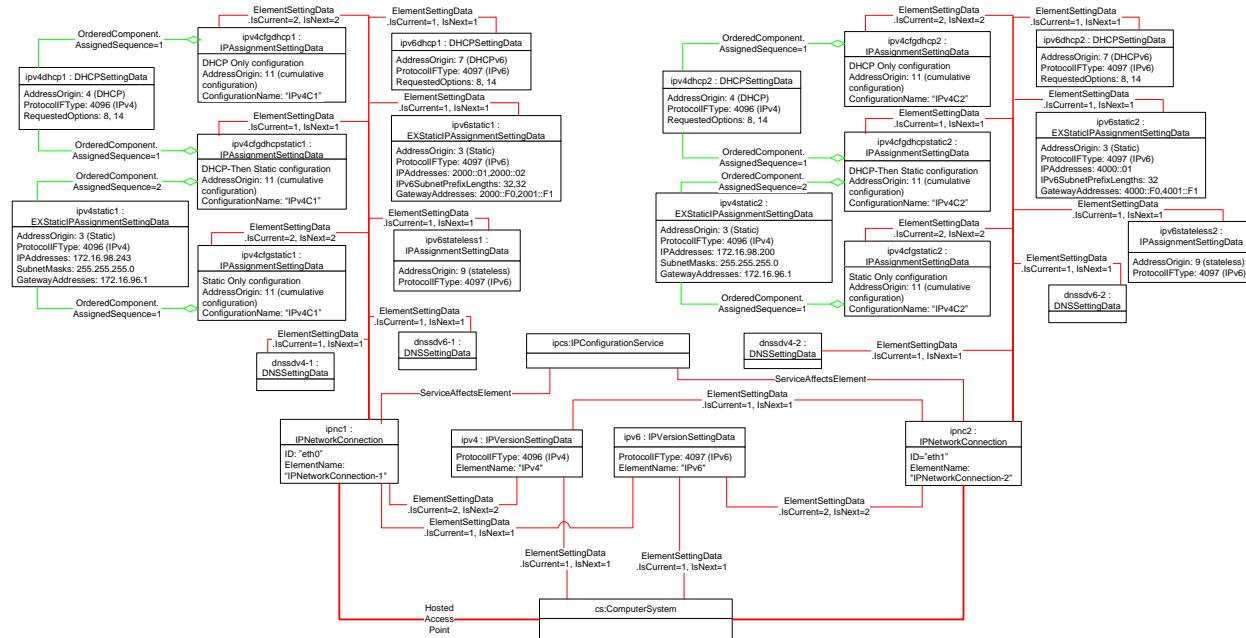
994   **Figure 3 – Configuration**

995
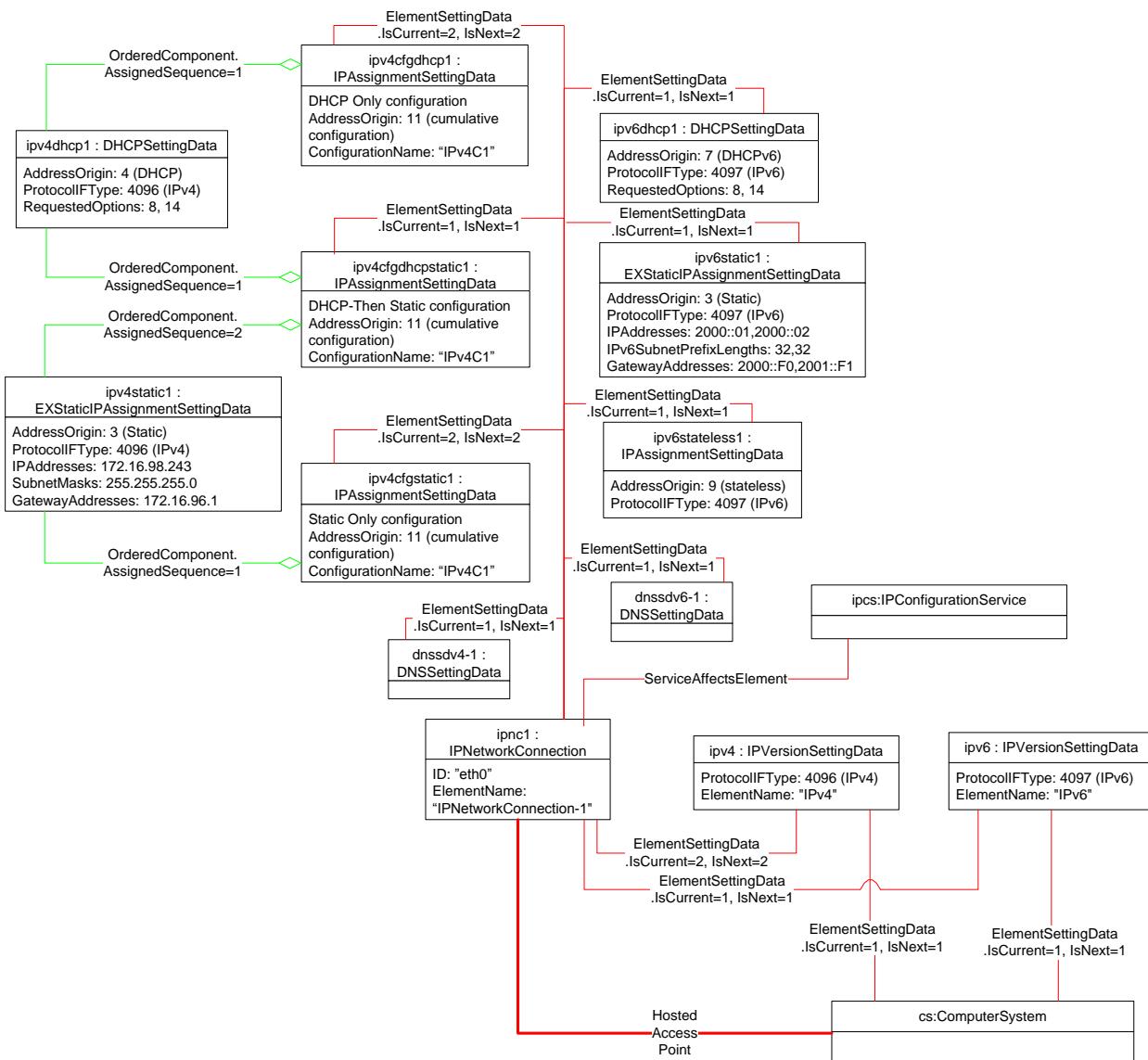
996

997   **Figure 4 – Configuration with IPNetworkConnection-1**

998
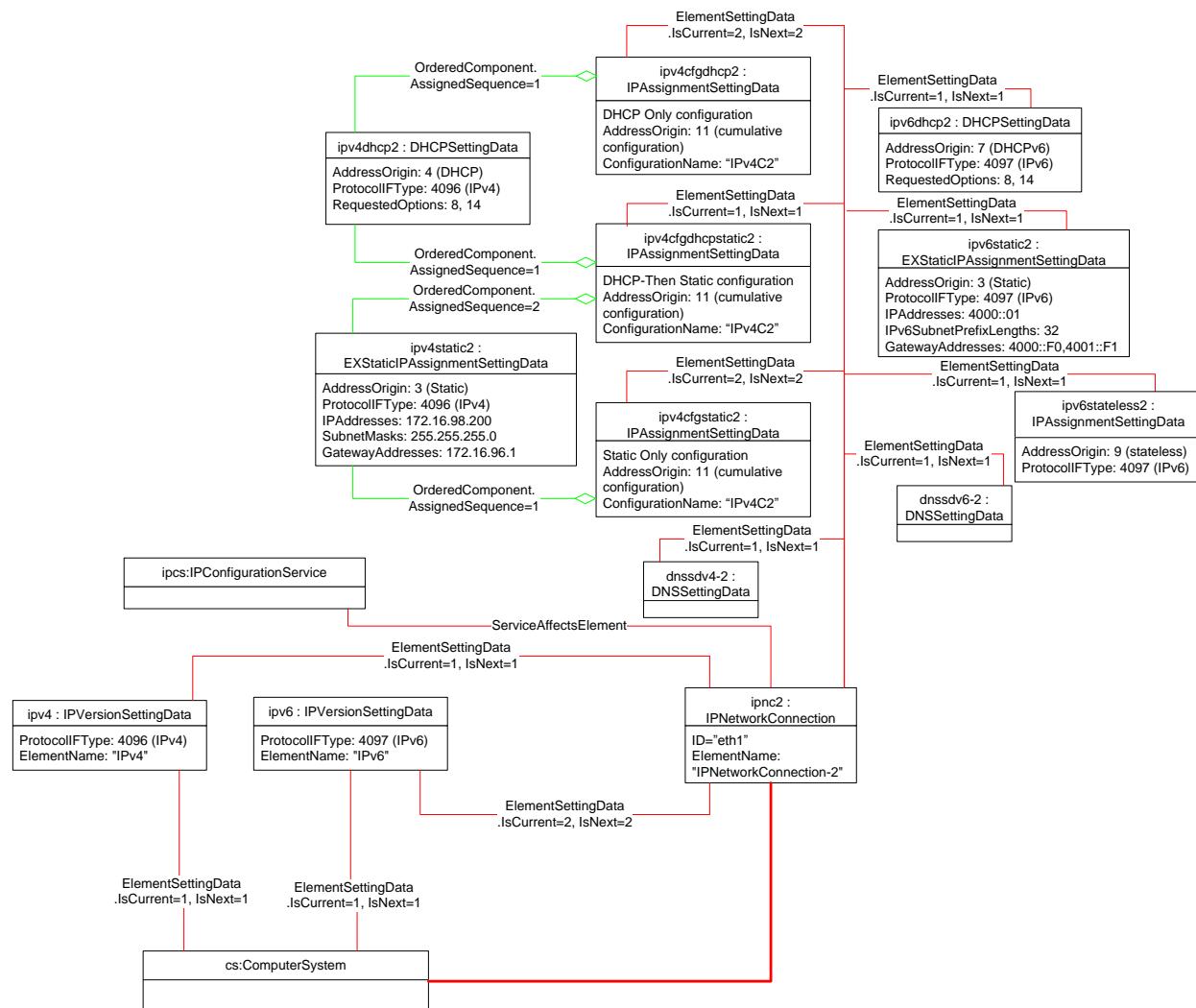
999

1000   **Figure 5 – Configuration with IPNetworkConnection-2**

1001 9.3 Dynamics – Booting of the system

1002 The object diagram shown in Figure 6 is a continuation of use case in Figure 3 as the network devices
1003 were detected. This representation is optional. It shows the instances of CIM_LANEndpoint for the
1004 network devices that were detected. The CIM_LANEndpoint instances are associated to
1005 CIM_ComputerSystem via CIM_HostedAccessPoint. The CIM_LANEndpoint instances are associated to
1006 CIM_IPNetworkConnection via CIM_EndpointForIPNetworkConnection.

1007 The following objects are not shown in Figure 6 for clarity:

1008   •   Instances of CIM_IPAssignmentSettingData for IPNetworkConnection-1 and
1009   IPNetworkConnection-2

1010
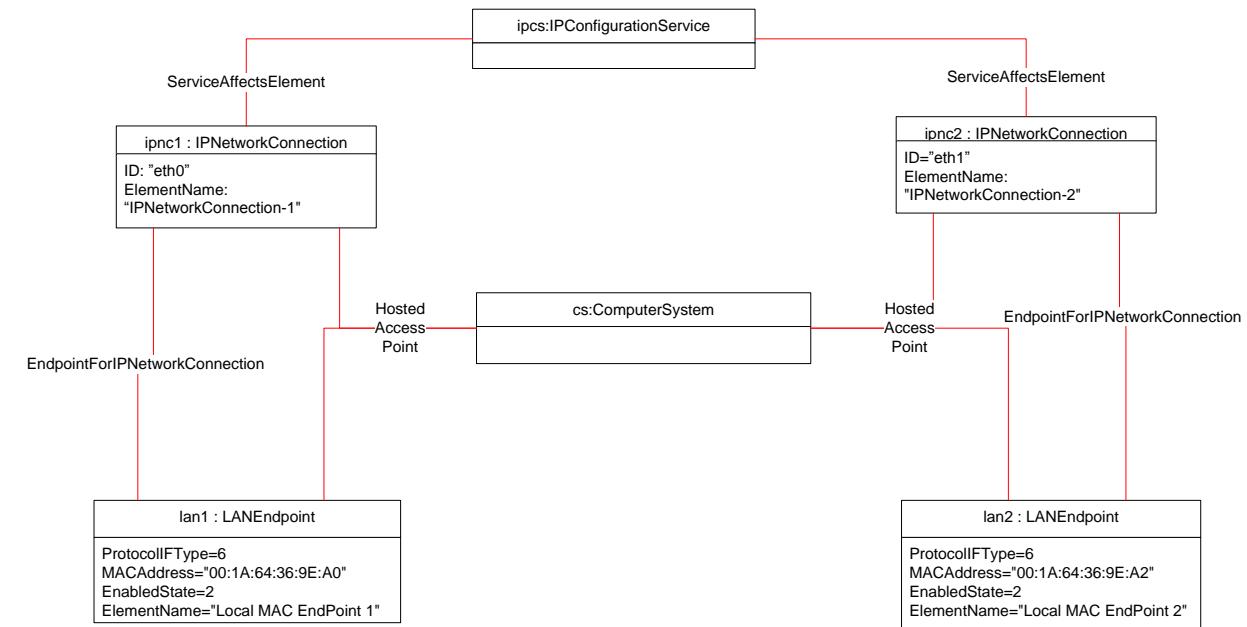
1011 **Figure 6 – Network devices detected (optional)**

1012 The object diagram shown in Figure 7 is a continuation of use case in Figure 6 as the IPv6 link local
1013 address got assigned for the IPNetworkConnection-1. It shows the instance of CIM_IPProtocolEndpoint,
1014 representing the link local address.

1015 The following objects are not shown in Figure 7 for clarity.

1016 • Instances of CIM_IPAssignmentSettingData for IPNetworkConnection-1

1017 • IPNetworkConnection-2 and instances associated with it

1018 • Instances of CIM_IPVersionSettingData

1019 • Instance of CIM_IPConfigurationService
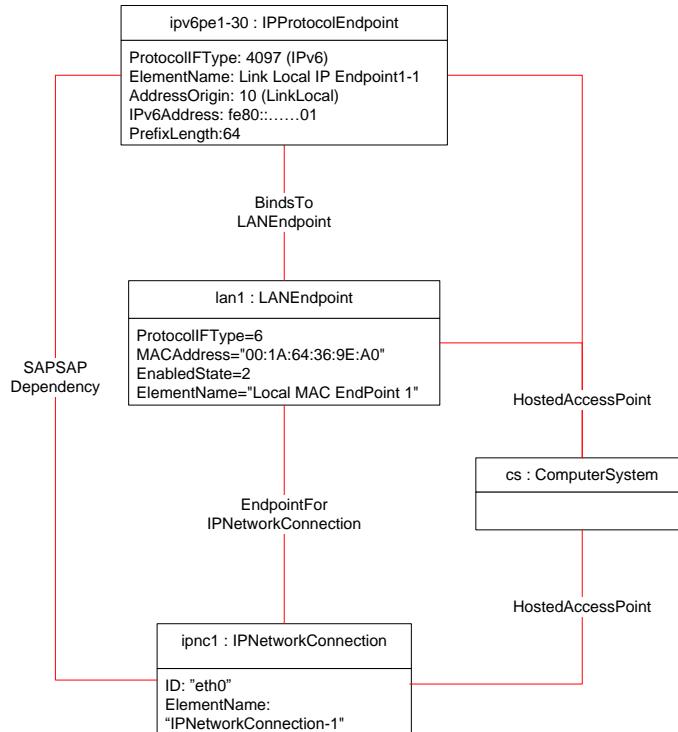
1020

1021   **Figure 7 – IPv6 Link Local IPv6 address assigned**

1022   The object diagram in Figure 8 is a continuation of use case in Figure 7, with the following updates for
1023   IPNetworkConnection-1:

1024   • Static IPv6 Address assigned – An instance of CIM_IPProtocolEndpoint added.

1025   • DNS Ready – An instance of CIM_DNSProtocolEndpoint added. Instances of
1026   CIM_RemoteServiceAccessPoint added to represent the DNS Servers.

1027   • Gateway available – Instances of CIM_RemoteServiceAccessPoint added to represent the
1028   Gateways. They are associated to CIM_IPNetworkConnection via
1029   CIM_RemoteServiceAvailableToElement.

1030   • DHCP v6 client started – An instance of CIM_DHCPProtocolEndpoint added. This is associated
1031   to CIM_IPNetworkConnection via CIM_SAPSAPDependency and CIM_ComputerSystem via
1032   CIM_HostedAccessPoint.

1033   The following objects are not shown in Figure 8 for clarity:

1034   • Instances of CIM_IPAssignmentSettingData for IPNetworkConnection-1

1035   • IPNetworkConnection-2 and instances associated with it

1036   • Instances of CIM_IPVersionSettingData

1037
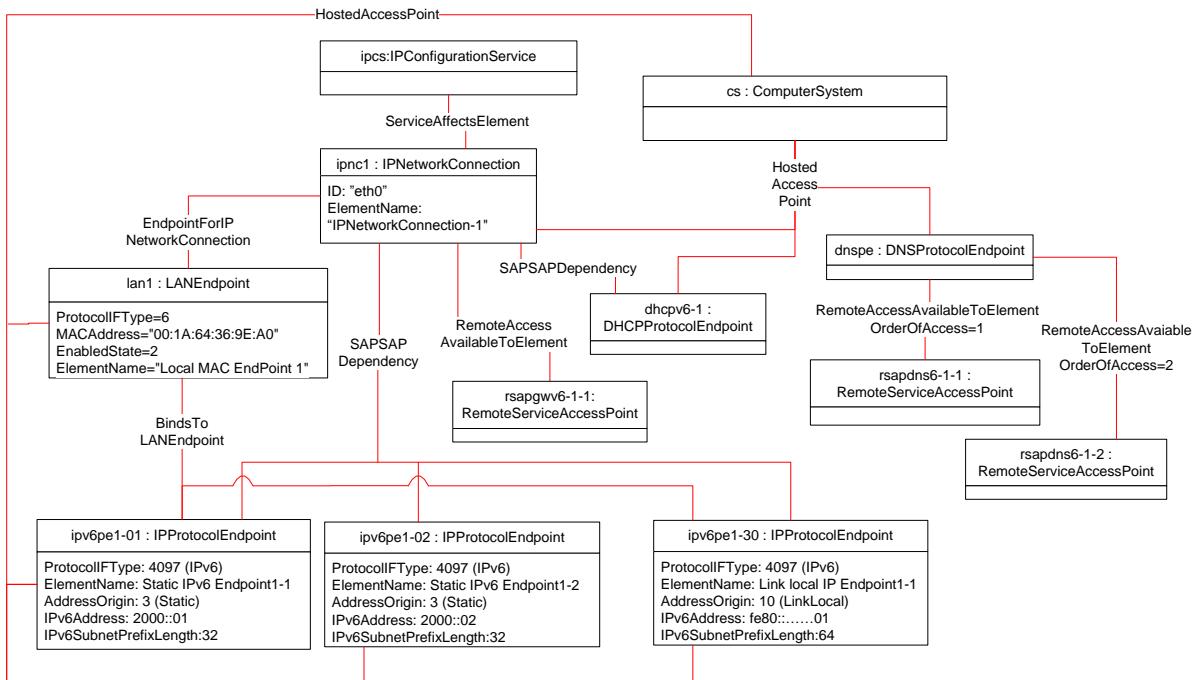
1038

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

1040 The object diagram in Figure 9 is a continuation of use case in Figure 8. Stateless IPv6 address is
1041 assigned for the IPNetworkConnection-1, which is represented by the addition of instance of
1042 CIM_IPProtocolEndpoint. Gateway and DNS were added from Router Advertisements, which are
1043 represented by the addition of instances of CIM_RemoteServiceAccessPoint.

1044 The following objects are not shown in Figure 9 for clarity.

1045   • Instances of CIM_IPAssignmentSettingData for IPNetworkConnection-1.

1046   • IPNetworkConnection-2 and instances associated with it.

1047   • Instances of CIM_IPVersionSettingData.

1048
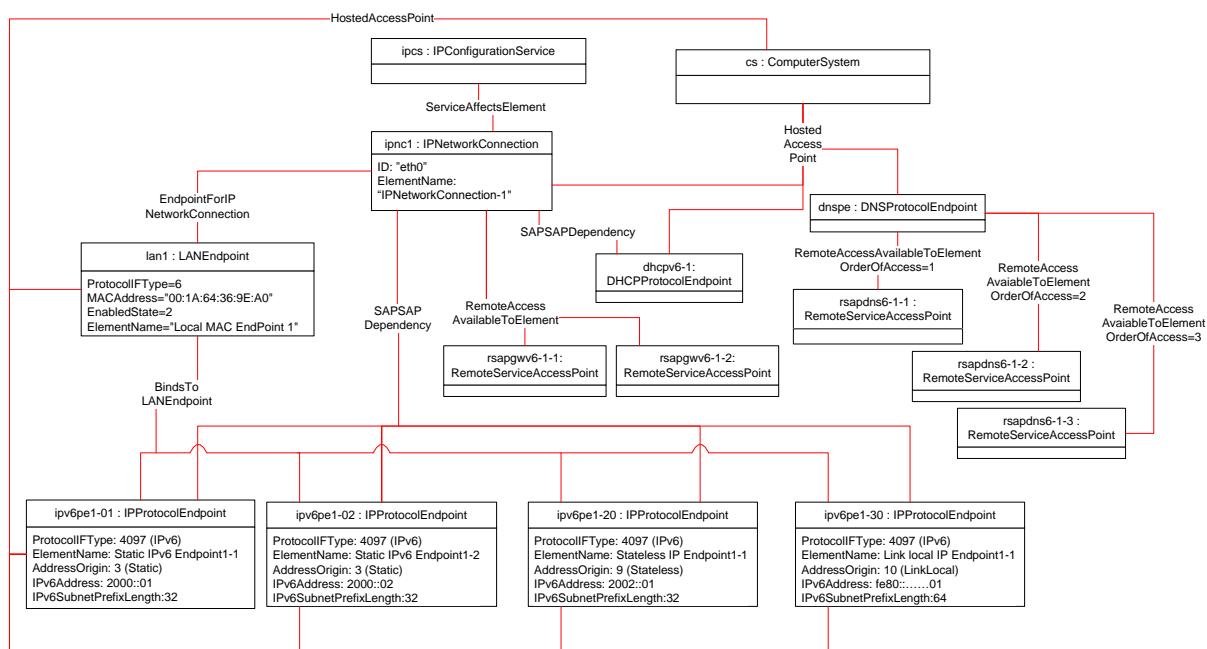
1049

1050   **Figure 9 – Stateless IPv6 assignment for IPNetworkConnection-1**

1051   The object diagram in Figure 10 is a continuation of use case in Figure 9, with following updates for
1052   IPNetworkConnection-1.

1053   • DHCP v6 address assigned – An instance of CIM_IPProtocolEndpoint added, associated to
1054   CIM_DHCPProtocolEndpoint, CIM_IPNetworkConnection, CIM_ComputerSystem (and optionally
1055   to CIM_LANEndpoint).

1056   • DHCP Server - An instance of CIM_RemoteServiceAccessPoint for DHCP Server added,
1057   associated to CIM_DHCPProtocolEndpoint.

1058   • DNS added from DHCP – Another instance of CIM_RemoteServiceAccessPoint added,
1059   associated to CIM_DNSProtocolEndpoint.

1060   • Gateway added from DHCP - Another instance of CIM_RemoteServiceAccessPoint added,
1061   associated to CIM_IPNetworkConnection.

1062   The following objects are not shown in Figure 10 for clarity.

1063   • Instances of CIM_IPAssignmentSettingData for IPNetworkConnection-1.

1064   • IPNetworkConnection-2 and instances associated with it.

1065   • Instances of CIM_IPVersionSettingData.

1066
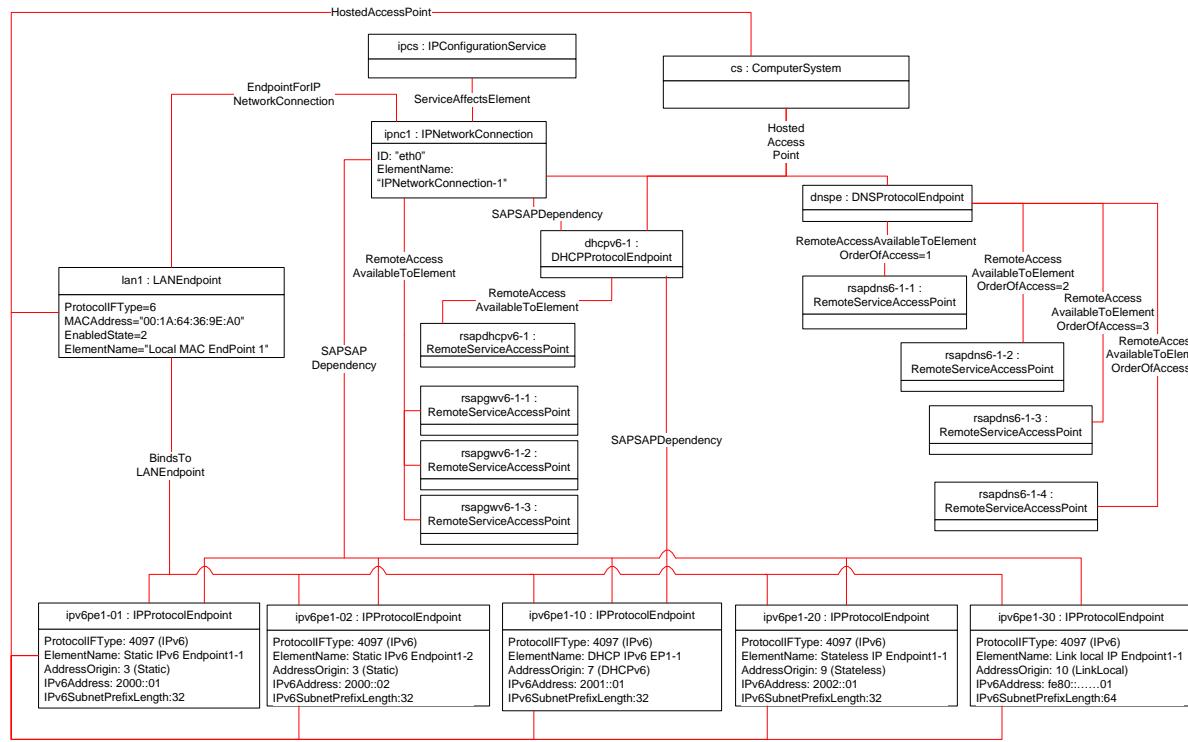
1067

1068 **Figure 10 – DHCP v6 assignment for IPNetworkConnection-1**

1069 The object diagram in Figure 11 is a continuation of use case in Figure 10, with following updates for
1070 IPNetworkConnection-2.

1071 • DHCP v4 address assigned – An instance of CIM_IPProtocolEndpoint added, associated to
1072 CIM_DHCPProtocolEndpoint, CIM_IPNetworkConnection, CIM_ComputerSystem (and optionally
1073 to CIM_LANEndpoint).

1074 • DHCP Server - An instance of CIM_RemoteServiceAccessPoint for DHCP Server added,
1075 associated to CIM_DHCPProtocolEndpoint.

1076 • DNS added from DHCP – Another instance of CIM_RemoteServiceAccessPoint added,
1077 associated to CIM_DNSProtocolEndpoint.

1078 • Gateway added from DHCP - Another instance of CIM_RemoteServiceAccessPoint added,
1079 associated to CIM_IPNetworkConnection.

1080 The following objects are not shown in Figure 11 for clarity.

1081 • Instances of CIM_IPAssignmentSettingData for IPNetworkConnection-1

1082 • Instances of CIM_IPProtocolEndpoint for IPNetworkConnection-1

1083 • Instances of CIM_IPAssignmentSettingData for IPNetworkConnection-2.

1084 • Instances of CIM_IPVersionSettingData.

1085

1086
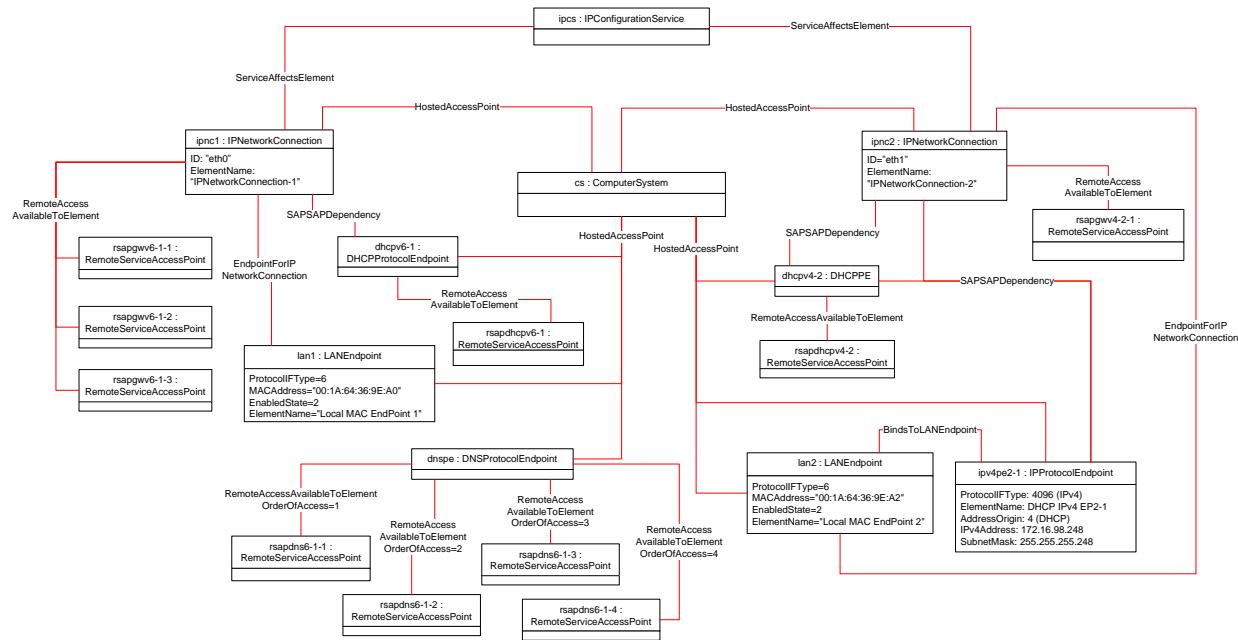
1087

1088   **Figure 11 – DHCP v4 assignment for IPNetworkConnection-2**

1089

9.4   Dynamics – Configuration change

1091   A client enables IPv4 on IPNetworkConnection-1 and IPv6 on IPNetworkConnection-2. This is shown in
1092   Figure 12.

1093   The following objects are not shown in Figure 12 for clarity.

1094   • Instances of CIM_IPAssignmentSettingData

1095   • Instances of CIM_ProtocolEndpoint (e.g., CIM_IPProtocolEndpoint)

1096   • Instances of CIM_RemoteServiceAccessPoint

1097
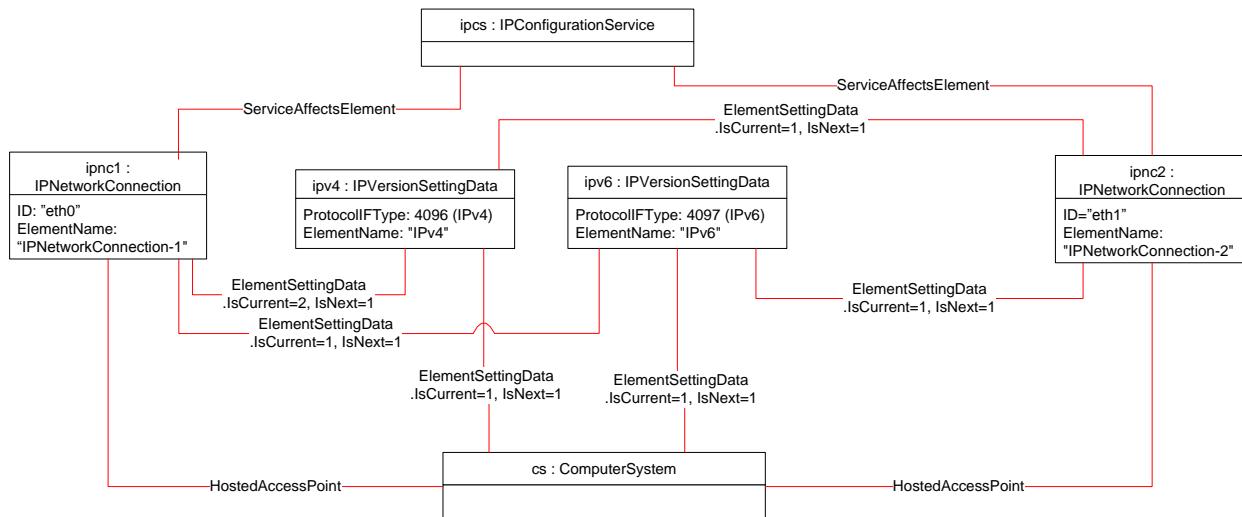
Figure 12 – Configuration change — IPv4 is enabled on IPNetworkConnection-1, IPv6 is enabled on IPNetworkConnection-2

1098

1099
1100

1101   For this system, IPv4 changes take effect only on next boot; IPv6 changes take effect immediately. Hence
1102   the IPv6 addresses, DNS, and gateways get assigned immediately on IPNetworkConnection-2. This
1103   configuration is shown in Figure 13.
1104

1105   The following objects are not shown in Figure 13 for clarity.

1106   •   Instance of IPNetworkConnection-1 and instances associated with it

1107
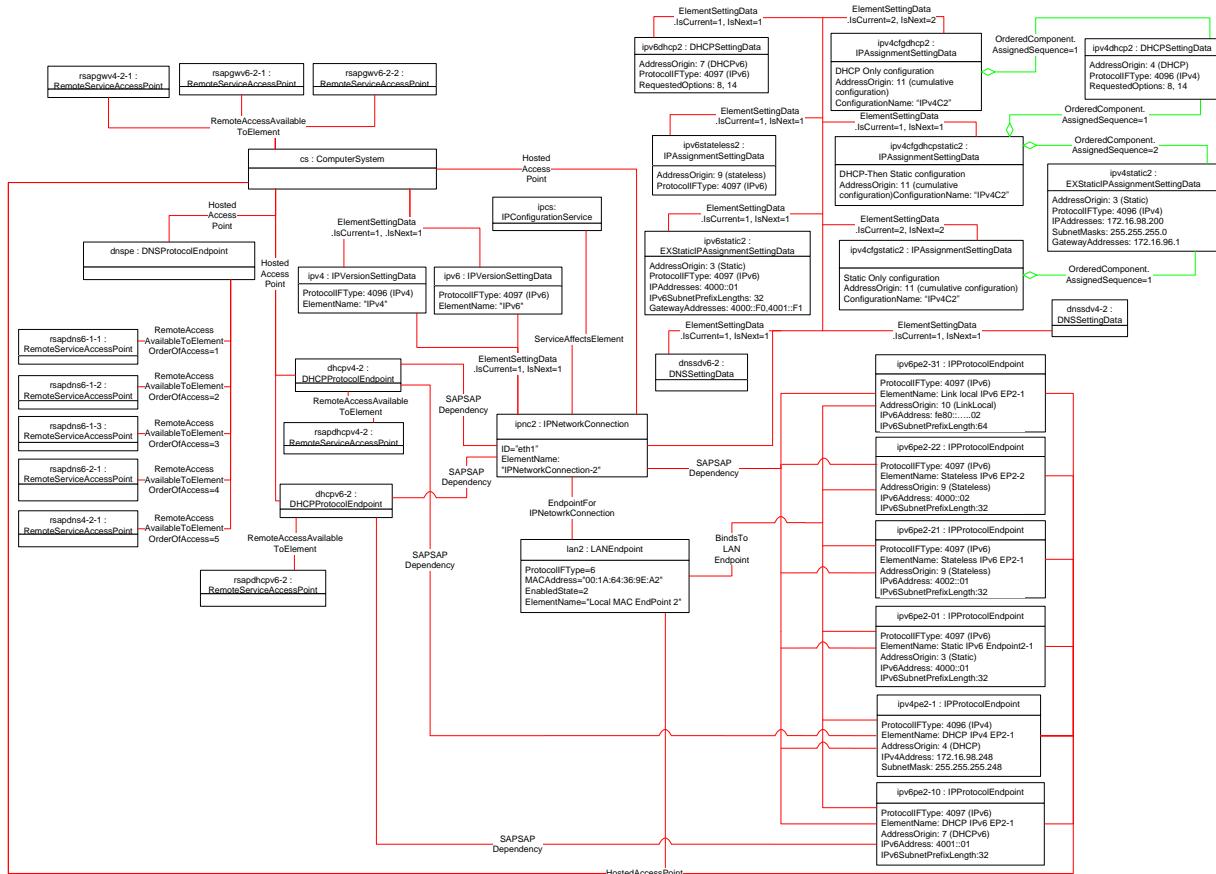
1108

1109   **Figure 13 – Configuration change — IPv6 change is taking effect.**

1110   **9.5   Determine supported settings**

1111   A client can determine which settings are supported for a given network connection as follows:

1112   1)   Find all instances of CIM_IPAssignmentSettingData and its subclasses that are associated with
1113   the CIM_IPNetworkConnection instance.

1114   2)   For each instance, query the value of the AddressOrigin property to determine the supported
1115   settings.

1116   3)   If the instance has a value 11 (cumulative configuration), it represents an accumulation of
1117   settings. Find all instances of CIM_IPAssignmentSettingData and its subclasses that are
1118   associated with this CIM_IPAssignmentSettingData instance through an instance of
1119   CIM_OrderedComponent. Query the value of the AddressOrigin property to determine the
1120   supported settings.

9.6   Determine gateway address

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

1)   Find all instances of CIM_RemoteServiceAccessPoint that are associated with the
     CIM_IPNetworkConnection instance through an instance of
     CIM_RemoteAccessAvailableToElement.

2)   For each instance of CIM_RemoteServiceAccessPoint, determine whether the value of the
     AccessContext property is "Default Gateway". If so, query the value of the AccessInfo property.

9.7   Determine method used for current IP assignment

A client can determine the method by which the IP was assigned by querying the AddressOrigin property
of the CIM_IPProtocolEndpoint instance.

9.8   Determine whether DHCP then static is supported in alternate configuration

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

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

1)   Find all instances of CIM_IPAssignmentSettingData with AddressOrigin 11 (cumulative
     configuration) that are associated with the CIM_IPNetworkConnection instance.

2)   For each instance of CIM_IPAssignmentSettingData:

     a)   Find the instance of CIM_DHCPSettingData that is associated through an instance of
          CIM_OrderedComponent.

     b)   Find the instance of CIM_ExtendedStaticIPAssignmentSettingData that is associated
          through an instance of CIM_OrderedComponent.

     c)   If the value of the AssignedSequence property of the CIM_OrderedComponent that
          associates the instance of CIM_DHCPSettingData with the instance of
          CIM_IPAssignmentSettingData is less than the value of the AssignedSequence property of
          an instance of CIM_OrderedComponent that associates the
          CIM_ExtendedStaticIPAssignmentSettingData with the instance of
          CIM_IPAssignmentSettingData. If so, DHCP then static is supported.

9.9   View default configuration

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

1)   Find all instances of CIM_ElementSettingData that associate an instance of
     CIM_IPAssignmentSettingData with the CIM_IPNetworkConnection instance.

2)   For each instance of CIM_ElementSettingData, see if the value of the IsDefault property is 1 (Is
     Default).

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

This use case applicable only for Alternate accumulation of settings.

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

1160 1) Find all instances of CIM_IPAssignmentSettingData with AddressOrigin 11 (cumulative
1161   configuration) that are associated with the CIM_IPNetworkConnection instance.

1162 2) For each instance of CIM_IPAssignmentSettingData:

1163   a) Find an instance of CIM_DHCPSettingData that is associated through an instance of
1164   CIM_OrderedComponent.

1165   b) Verify that no instances of CIM_ExtendedStaticIPAssignmentSettingData are associated
1166   with the instance of CIM_IPAssignmentSettingData.

1167   This instance of CIM_IPAssignmentSettingData represents a DHCP settings.

1168 3) Find an instance of CIM_IPConfigurationService that is associated with the
1169   CIM_IPNetworkConnection instance through an instance of CIM_ServiceAffectsElement.

1170 4) Invoke the ApplySettingToIPNetworkConnection( ) method of the CIM_IPConfigurationService
1171   instance, specifying the instances of CIM_IPNetworkConnection and
1172   CIM_IPAssignmentSettingData.

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

1175 A client can manually assign an IP to an IP network connection as follows:

1176 1) Find all instances of CIM_IPAssignmentSettingData with AddressOrigin 11 (cumulative
1177   configuration) that are associated with the CIM_IPNetworkConnection instance.

1178 2) For each instance of CIM_IPAssignmentSettingData:

1179   a) Find an instance of CIM_ExtendedStaticIPAssignmentSettingData that is associated
1180   through an instance of CIM_OrderedComponent.

1181   b) Verify that no other instances of CIM_ExtendedStaticIPAssignmentSettingData or
1182   instances of CIM_DHCPSettingData are associated with the instance of
1183   CIM_IPAssignmentSettingData through an instance of CIM_OrderedComponent.

1184   This instance of CIM_IPAssignmentSettingData represents a modifiable, static configuration for
1185   the IP network connection.

1186 3) Modify the properties of the CIM_ExtendedStaticIPAssignmentSettingData instance to contain
1187   the appropriate settings for the IP network connection.

1188 4) Find an instance of CIM_IPConfigurationService that is associated with the
1189   CIM_IPNetworkConnection instance through an instance of CIM_ServiceAffectsElement.

1190 5) Invoke the ApplySettingToIPNetworkConnection( ) method of the CIM_IPConfigurationService
1191   instance, specifying the instances of CIM_IPNetworkConnection and
1192   CIM_IPAssignmentSettingData.

9.12 Apply an accumulation of settings — Synchronously

1194 Some implementations may support making an accumulation of setting, which is previously not current,
1195 as the current accumulation of settings of an IP network connection without requiring a restart of the
1196 underlying network interface. If this behavior is supported by the implementation, then given an instance
1197 of CIM_IPNetworkConnection for which the configuration should be modified and an instance of
1198 CIM_IPAssignmentSettingData that represents the new configuration, a client can:

1199 1) Find an instance of CIM_IPConfigurationService that is associated with the
1200   CIM_IPNetworkConnection instance through an instance of CIM_ServiceAffectsElement.

1201 2) Invoke the ApplySettingToIPNetworkConnection( ) method of the CIM_IPConfigurationService,
1202   specifying the instances of CIM_IPNetworkConnection and CIM_IPAssignmentSettingData, with
1203   the value for Mode as 1.

9.13 Apply an accumulation of settings — Upon restart

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

9.14 Apply a setting — Synchronously (concurrent settings)

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

    1) Find an instance of CIM_IPConfigurationService that is associated with the CIM_IPNetworkConnection instance through an instance of CIM_ServiceAffectsElement.

    2) Invoke the ApplySettingToIPNetworkConnection( ) method of the CIM_IPConfigurationService, specifying the instances of CIM_IPNetworkConnection and CIM_IPAssignmentSettingData (or its subclass), with the value for Mode as 1.

9.15 Apply a setting — Upon restart (concurrent settings)

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

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

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

    1) Find the instance of CIM_ExtendedStaticIPAssignmentSettingData that represents the current static IPv4 settings for the network connection. Modifying IPAddresses and SubnetMasks properties, the new static IPv4 address can be added.

    2) If there is no instance of CIM_ExtendedStaticIPAssignmentSettingData that represents the current static IPv4 settings for the network connection, identify the instance of CIM_ExtendedStaticIPAssignmentSettingData that is not current. Modify IPAddresses and SubnetMasks properties. Apply this setting as the current setting as in use case 9.14 above.

10 CIM Elements

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

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_ExtendedStaticIPAssignmentSettingData	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		

10.1 CIM_BindsTo

CIM_BindsTo relates the CIM_IPProtocolEndpoint instance with the CIM_VLANEndpoint instance on which it depends. Table 25 provides information about the properties of CIM_BindsTo.

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 *

10.2 CIM_BindsToLANEndpoint

CIM_BindsToLANEndpoint relates the CIM_IPProtocolEndpoint instance with the CIM_LANEndpoint instance on which it depends. Table 26 provides information about the properties of CIM_BindsToLANEndpoint.

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 *

10.3 CIM_DHCPProtocolEndpoint

CIM_DHCPProtocolEndpoint represents the DHCP client that is associated with a network connection. Table 27 provides information about the properties of CIM_DHCPProtocolEndpoint.

Table 27 – Class: CIM_DHCPProtocolEndpoint

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

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

1251 **10.4 CIM_DHCPSettingData**

1252 CIM_DHCPSettingData represents the settings for the DHCP client. Table 28 provides information about
1253 the properties of CIM_DHCPSettingData.

1254 **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 ".*"
ProtocolIFType	Mandatory	This property shall have a value of 4096 (IPv4) or 4097 (IPv6).

1255 **10.5 CIM_DNSGeneralSettingData**

1256 CIM_DNSGeneralSettingData represents the system-wide DNS settings. Table 29 provides information
1257 about the properties of CIM_DNSGeneralSettingData.

1258 **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 ".+"

1259 **10.6 CIM_DNSProtocolEndpoint**

1260 CIM_DNSProtocolEndpoint represents the DNS client on the system. Table 30 provides information
1261 about the properties of CIM_DNSProtocolEndpoint.

1262 **Table 30 – Class: CIM_DNSProtocolEndpoint**

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

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

1263 10.7 CIM_DNSSettingData

1264 CIM_DNSSettingData represents the settings for the DNS client. Table 31 provides information about the
1265 properties of CIM_DNSSettingData.

1266   **Table 31 – Class: CIM_DNSSettingData**

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

1267 10.8 CIM_ElementSettingData — CIM_IPNetworkConnection and
1268   CIM_IPAssignmentSettingData

1269 CIM_ElementSettingData associates instances of CIM_IPAssignmentSettingData with the
1270 CIM_IPNetworkConnection instance. Table 32 provides information about the properties of
1271 CIM_ElementSettingData.

1272   **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)

1273 **10.9 CIM_ElementSettingData — CIM_IPNetworkConnection and**
1274   **CIM_IPAssignmentSettingData subclasses**

1275 CIM_ElementSettingData associates instances of subclasses of CIM_IPAssignmentSettingData with the
1276 CIM_IPNetworkConnection instance. Table 33 provides information about the properties of
1277 CIM_ElementSettingData.

1278   **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)

1279 **10.10 CIM_ElementSettingData — CIM_IPNetworkConnection and**
1280   **CIM_IPVersionSettingData**

1281 CIM_ElementSettingData associates instances of CIM_ IPVersionSettingData with the
1282 CIM_IPNetworkConnection instance. Table 34 provides information about the properties of
1283 CIM_ElementSettingData.

1284   **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)

1285 **10.11 CIM_ElementSettingData — CIM_ComputerSystem and**
1286   **CIM_IPVersionSettingData**

1287 CIM_ElementSettingData associates instances of CIM_ IPVersionSettingData with the
1288 CIM_ComputerSystem instance. Table 35 provides information about the properties of
1289 CIM_ElementSettingData.

1290   **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)

1291 **10.12 CIM_ElementSettingData — CIM_ComputerSystem and**
1292   **CIM_DNSGeneralSettingData**

1293 CIM_ElementSettingData associates instances of CIM_ DNSGeneralSettingData with the
1294 CIM_ComputerSystem instance. Table 36 provides information about the properties of
1295 CIM_ElementSettingData.

1296   **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)

1298 **10.13 CIM_ElementSettingData — CIM_DHCPProtocolEndpoint and**
1299 **CIM_DHCPSettingData**

1300 CIM_ElementSettingData associates instances of CIM_DHCPSettingData with the
1301 CIM_DHCPProtocolEndpoint instance. Table 37 provides information about the properties of
1302 CIM_ElementSettingData.

1303 **Table 37 – Class: CIM_ElementSettingData — CIM_DHCPProtocolEndpoint and**
1304 **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)

1305 **10.14 CIM_ElementSettingData — CIM_DNSProtocolEndpoint and**
1306 **CIM_DNSSettingData**

1307 CIM_ElementSettingData associates instances of CIM_DNSSettingData with the
1308 CIM_DNSProtocolEndpoint instance. Table 38 provides information about the properties of
1309 CIM_ElementSettingData.

1310 **Table 38 – Class: CIM_ElementSettingData — CIM_DNSProtocolEndpoint and**
1311 **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)

1312 **10.15 CIM_EndpointForIPNetworkConnection**

1313 CIM_EndpointForIPNetworkConnection associates an instance of CIM_IPNetworkConnection with the
1314 CIM_ProtocolEndpoint (e.g., CIM_LANEndpoint, CIM_VLANEndpoint) for the network connection. Table
1315 39 provides information about the properties of CIM_EndpointForIPNetworkConnection.

1316   **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 *

1317 **10.16 CIM_ExtendedStaticIPAssignmentSettingData**

1318 CIM_ExtendedStaticIPAssignmentSettingData represents the static IP settings for an IP network
1319 connection. Table 40 provides information about the properties of
1320 CIM_ExtendedStaticIPAssignmentSettingData.

1321   **Table 40 – Class: CIM_ExtendedStaticIPAssignmentSettingData**

Elements	Requirement	Description
InstanceID	Mandatory	**Key**
AddressOrigin	Mandatory	See clause 7.3.2.1
ProtocolIFType	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

1322 **10.17 CIM_HostedAccessPoint — CIM_IPNetworkConnection**

1323 CIM_HostedAccessPoint associates an instance of CIM_IPNetworkConnection with scoping
1324 CIM_ComputerSystem. Table 41 provides information about the properties of CIM_HostedAccessPoint.

1325   **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 *

1326 ## 10.18 CIM_HostedAccessPoint — CIM_DNSProtocolEndpoint

1327 CIM_HostedAccessPoint associates an instance of CIM_DNSProtocolEndpoint with scoping
1328 CIM_ComputerSystem. Table 42 provides information about the properties of CIM_HostedAccessPoint.

1329 **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 *

1330 ## 10.19 CIM_HostedAccessPoint — CIM_IPProtocolEndpoint or
1331 ## CIM_DHCPProtocolEndpoint

1332 CIM_HostedAccessPoint associates an instance of CIM_IPProtocolEndpoint or
1333 CIM_DHCPProtocolEndpoint with scoping CIM_ComputerSystem. Table 43 provides information about
1334 the properties of CIM_HostedAccessPoint.

1335 **Table 43 – Class: CIM_HostedAccessPoint — CIM_IPProtocolEndpoint or**
1336 **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 *

1337 ## 10.20 CIM_HostedService

1338 CIM_HostedService relates the CIM_IPConfigurationService instance to its scoping
1339 CIM_ComputerSystem instance. Table 44 provides information about the properties of
1340 CIM_HostedService.

1341 **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 *

1342   **10.21 CIM_IPAssignmentSettingData**

1343   CIM_IPAssignmentSettingData represents the settings for an IP network connection. Table 45 provides
1344   information about the properties of CIM_IPAssignmentSettingData.

1345   **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

1346   **10.22 CIM_IPConfigurationService**

1347   CIM_IPConfigurationService represents the ability to configure an IP interface. Table 46 provides
1348   information about the properties of CIM_IPConfigurationService.

1349   **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

1350   **10.23 CIM_IPNetworkConnection**

1351   CIM_IPNetworkConnection represents an IP network connection in system.

1352   Table 47 provides information about the properties of CIM_IPNetworkConnection.

1353   **Table 47 – Class: CIM_IPNetworkConnection**

Elements	Requirement	Description
SystemCreationClassName	Mandatory	**Key**
CreationClassName	Mandatory	**Key**
SystemName	Mandatory	**Key**
Name	Mandatory	**Key**
ID	Mandatory	Pattern ".*"

1354 **10.24 CIM_IPProtocolEndpoint**

1355 CIM_IPProtocolEndpoint represents an IP interface that is associated with an Ethernet interface. Table 48
1356 provides information about the properties of CIM_IPProtocolEndpoint.

1357 **Table 48 – Class: CIM_IPProtocolEndpoint**

Elements	Requirement	Description
SystemCreationClassName	Mandatory	**Key**
CreationClassName	Mandatory	**Key**
SystemName	Mandatory	**Key**
Name	Mandatory	**Key**
NameFormat	Mandatory	Pattern ".*"
ProtocolIFType	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

1358 **10.25 CIM_IPVersionSettingData**

1359 CIM_IPVersionSettingData represents an IP version. Table 49 provides information about the properties
1360 of CIM_IPVersionSettingData.

1361 **Table 49 – Class: CIM_IPVersionSettingData**

Elements	Requirement	Description
InstanceID	Mandatory	**Key**
ProtocolIFType	Mandatory	See clause 7.2

1362 **10.26 CIM_OrderedComponent**

1363 CIM_OrderedComponent associates an instance of CIM_IPAssignmentSettingData that compose a
1364 configuration with instances that are part of the configuration. Table 50 provides information about the
1365 properties of CIM_OrderedComponent.

1366 **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

1367 ## 10.27 CIM_RegisteredProfile

1368 CIM_RegisteredProfile identifies the *IP Configuration Profile* in order for a client to determine whether an
1369 instance of CIM_IPProtocolEndpoint is conformant with this profile. The CIM_RegisteredProfile class is
1370 defined by the *Profile Registration Profile* (DSP1033). With the exception of the mandatory values
1371 specified for the properties in Table 51, the behavior of the CIM_RegisteredProfile instance is in
1372 accordance with DSP1033.

1373 **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 "1.0.0".
RegisteredOrganization	Mandatory	This property shall have a value of "DMTF".

1374 ## 10.28 CIM_RemoteAccessAvailableToElement — Gateway

1375 CIM_RemoteAccessAvailableToElement associates the CIM_IPNetworkConnection instance with the
1376 CIM_RemoteServiceAccessPoint instance that represents the network gateway. Table 52 provides
1377 information about the properties of CIM_RemoteAccessAvailableToElement.

1378 **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

1379 ## 10.29 CIM_RemoteAccessAvailableToElement — DHCP server

1380 CIM_RemoteAccessAvailableToElement associates the CIM_DHCPProtocolEndpoint instance with the
1381 CIM_RemoteServiceAccessPoint instance that represents the DHCP Server. Table 53 provides
1382 information about the properties of CIM_RemoteAccessAvailableToElement.

1383 **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..*

1384 **10.30 CIM_RemoteAccessAvailableToElement — DNS server**

1385 DNS Server - CIM_RemoteAccessAvailableToElement associates the CIM_DNSProtocolEndpoint
1386 instance with the CIM_RemoteServiceAccessPoint instance that represents the DNS Server. Table 54
1387 provides information about the properties of CIM_RemoteAccessAvailableToElement.

1388 **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

1389 **10.31 CIM_RemoteAccessAvailableToElement — System ServiceAccessPoints**

1390 CIM_RemoteAccessAvailableToElement associates the CIM_ComputerSystem instance with the
1391 CIM_RemoteServiceAccessPoint instance that represents the Gateway, DHCP server and DNS servers.
1392 Table 55 provides information about the properties of CIM_RemoteAccessAvailableToElement.

1393 **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

1394 **10.32 CIM_RemoteServiceAccessPoint**

1395 CIM_RemoteServiceAccessPoint represents the managed system's view of the default gateway, DHCP
1396 Server or DNS Server. Table 56 provides information about the properties of
1397 CIM_RemoteServiceAccessPoint.

1398 **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 ".*"

1399 ## 10.33 CIM_SAPSAPDependency — CIM_IPNetworkConnection

1400 CIM_SAPSAPDependency associates the CIM_IPProtocolEndpoint or CIM_DHCPProtocolEndpoint with
1401 the CIM_IPNetworkConnection.

1402 Table 57 provides information about the properties of CIM_SAPSAPDependency.

1403 **Table 57 – Class: CIM_SAPSAPDependency — CIM_IPNetworkConnection and**
1404 **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 *

1405 ## 10.34 CIM_SAPSAPDependency — DNS server

1406 DNS Server - CIM_SAPSAPDependency associates the CIM_IPNetworkConnection instance with the
1407 CIM_RemoteServiceAccessPoint instance that represents the DNS server. Table 58 provides information
1408 about the properties of CIM_SAPSAPDependency.

1409 **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 *

1410 **10.35 CIM_SAPSAPDependency — DNS server from DHCP**

1411 DNS Server from DHCP - CIM_SAPSAPDependency associates the CIM_DHCPProtocolEndpoint
1412 instance with the CIM_RemoteServiceAccessPoint instance that represents the DNS server obtained
1413 from DHCP.

1414 Table 59 provides information about the properties of CIM_SAPSAPDependency.

1415 **Table 59 – Class: CIM_SAPSAPDependency — CIM_DHCPProtocolEndpoint and**
1416 **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 *

1417 **10.36 CIM_SAPSAPDependency — IP from DHCP**

1418 CIM_SAPSAPDependency associates the CIM_IPProtocolEndpoint representing the IP obtained from the
1419 DHCP client with the corresponding CIM_DHCPProtocolEndpoint.

1420 Table 60 provides information about the properties of CIM_SAPSAPDependency.

1421 **Table 60 – Class: CIM_SAPSAPDependency — CIM_DHCProtocolEndpoint and**
1422 **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

1423 **10.37 CIM_ServiceAffectsElement**

1424 CIM_ServiceAffectsElement associates an instance of CIM_IPConfigurationService with an instance of
1425 CIM_IPNetworkConnection or CIM_ComputerSystem that the service is able to configure. Table 61
1426 provides information about the properties of CIM_ServiceAffectsElement.

1427 **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)

10.38 CIM_ElementConformsToProfile

1429 CIM_ElementConformsToProfile associates an instance of CIM_IPNetworkConnection with its
1430 corresponding CIM_RegisteredProfile that represents the version of profile implemented. Table 62
1431 provides information about the properties of CIM_ElementConformsToProfile.

1432   **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 *

1433

1434   **ANNEX A**
1435   **(informative)**
1436
1437   **Change log**

Version	Date	Description
1.0.0	2013-01-24	

1438

1439 # Bibliography

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