prplOS Network Functionality Test Plan

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Executive Summary

This prplOS Network Functionality test plan outlines the comprehensive validation strategy for prplOS's network-based functionality through its High-Level API implementation. The testing approach focuses on verifying the reliability, performance, and compliance of core networking components within the prplOS environment.

By leveraging the High-Level API, the test suite will validate both basic connectivity features and advanced networking capabilities across these components. This systematic approach ensures comprehensive coverage of essential networking services while verifying proper integration and interaction between different network functions.

Key objectives of this test plan include:
- Validation of network functionality through the High-Level API
- Verification of bridge configuration and operation
- Assessment of IP interface management and addressing
- Evaluation of DHCPv4 and DNS
- Testing of firewall rule effectiveness

This particular test plan is one component of a broader suite of test plans for formally Certifying implementations of "prplWare and High-Level API".

The High-Level API, as an example, is a platform-agnostic API which is implemented on prpl-based platforms, but can also be implemented on others (e.g., platforms based on RDK or 3rd-party proprietary). Consequently, the test plan(s) for the High-Level API are specified in separate document(s) so that they remain platform-agnostic and hence applicable for other organizations.

There are separate test plans for the non-platform-agnostic aspects of the "prplWare and High-Level API" certification. For such certification tests, the goal is to discourage forking by verifying the authenticity and full realization of prplWare components underlying the High-Level API *in the specific implementation under test.*

This testing initiative will provide crucial validation of prplOS's networking capabilities, ensuring the platform meets its intended operational requirements.

Revision History

Version	Date	Notes
1.2.0	10-December-2026	● Added prplOS 4.1 mandatory tests: ○ 1.2.10 ○ 1.2.25 ○ 1.2.27 ○ 1.2.28 ○ 1.3.7 ○ 1.4.2 ○ 1.4.3 ○ 1.4.4 ○ 1.5.4 ○ 1.5.5 ○ 1.5.6 ○ 1.5.7 ○ 1.5.14 ○ 1.5.15 ○ 1.5.16 ○ 1.5.17 ● Added Provisional Excluded for prplOS 4.1: ○ 1.2.19 ● Fixed a text error in prplOS.1.1.6. [PCERT-107]
1.1.0	26-August-2025	● Added prplOS 4.0 mandatory tests: ○ 1.2.9

| | | ○ 1.2.26 ○ 1.2.29 ○ 1.4.6 ○ 1.4.9 ○ 1.5.1 Added Provisional Excluded for prplOS 4.0: ○ 1.2.25 ○ 1.2.27 ○ 1.2.28 ○ 1.5.4 – 1.5.7 ○ 1.5.14 – 1.5.17 ○ 1.6.7 – 1.6.8 Added DHCPv6 as mandatory and updated the Provisional Excluded list. Updated prplOS.1.4.6 - prplOS.1.4.9 parameters to be Device.DNS.Relay. Allow time for DHCPv6 lease to expire in prplOS.1.3.5 and prplOS.1.3.6. Removed Router Advertisement verification in prplOS.1.6.19. Removed IA_NA check from 1.3.15. Updated 1.3.19 to use Vendor Specific Class |

		Option. ● Removed IA_PD check from 1.3.14 ● Updated 1.3.27 to use Vendor Class ID. ● Updated 1.4.7 to find the WAN instance of DNS.Relay.Forwarding. ● Added User Class ID to 1.3.9. ● Updated 1.3.10 to use Vendor Specific Information Option.
1.0.2	28-April-2025	● Added support for prplOS 3.2. ● Added Provisional Exclude and Optional to Core Features Table. ● Removed Provisional Exclude tests from Optional Features ● Updated alias reference in prplOS1.6.7. ● Clarified USP and CWMP usage in Common Test Setup.
1.0.1	22-Jan-2025	● Added Core Features Table. ● Added DNS Optional

		Features ○ prplOS.1.4.2 ○ prplOS.1.4.3 ○ prplOS.1.4.4 ○ prplOS.1.4.6 ○ prplOS.1.4.9 ● Addressed inconsistencies in Functionality Tag and Option Feature Table.
1.0.0	14-Jan-2025	● Initial Release.

Test Organization

This document organizes tests by group based on related test methodology or goals. Each group begins with a brief set of comments pertaining to all tests within that group. This is followed by a series of description blocks; each block describes a single test. The format of the description block is as follows:

Test Label	The Test Label and Title comprise the first line of the test block. The Test Label is composed of the short test suite name, the group number, and the test number within the group, separated by periods.
Purpose	The Purpose is a short statement describing what the test attempts to achieve. It is usually phrased as a simple assertion of the feature or capability to be tested.
Reference	The References section lists cross-references to the specifications and documentation that might be helpful in understanding and evaluating the test and results.
Functionality Tag	The functionality tag indicates whether the test is mandatory or optional as defined in prpl Certification Guide.
Procedure	The procedure indicates the steps, in order, taken to perform the test. Actions are steps taken by the test tool. Expected Behavior is what a device under test is required for passing the test.

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Results

Each test in the prplOS Test Plan must have a pass and fail metric, per Section 5.2 of the [prpl Certification Program Guide](#).

Common Test Setup (CTS)

A DUT is provisioned with the following:

1. IPv4 addresses on both the WAN and LAN interfaces
2. IPv6 addresses on both the WAN and LAN interfaces.
3. WAN interfaces are using DHCPv6 and DHCPv4 to acquire addresses.
4. The following Servers are configured on the DUT.
    a. DNS
    b. NTP
5. USP is configured to allow management of the DUT
    a. USP is required for **prplWare and HL-API Certification**.
    b. To demonstrate CWMP support, an optional feature in the HL-API Test Plan, each test must additionally be executed with CWMP as the protocol.

Topology
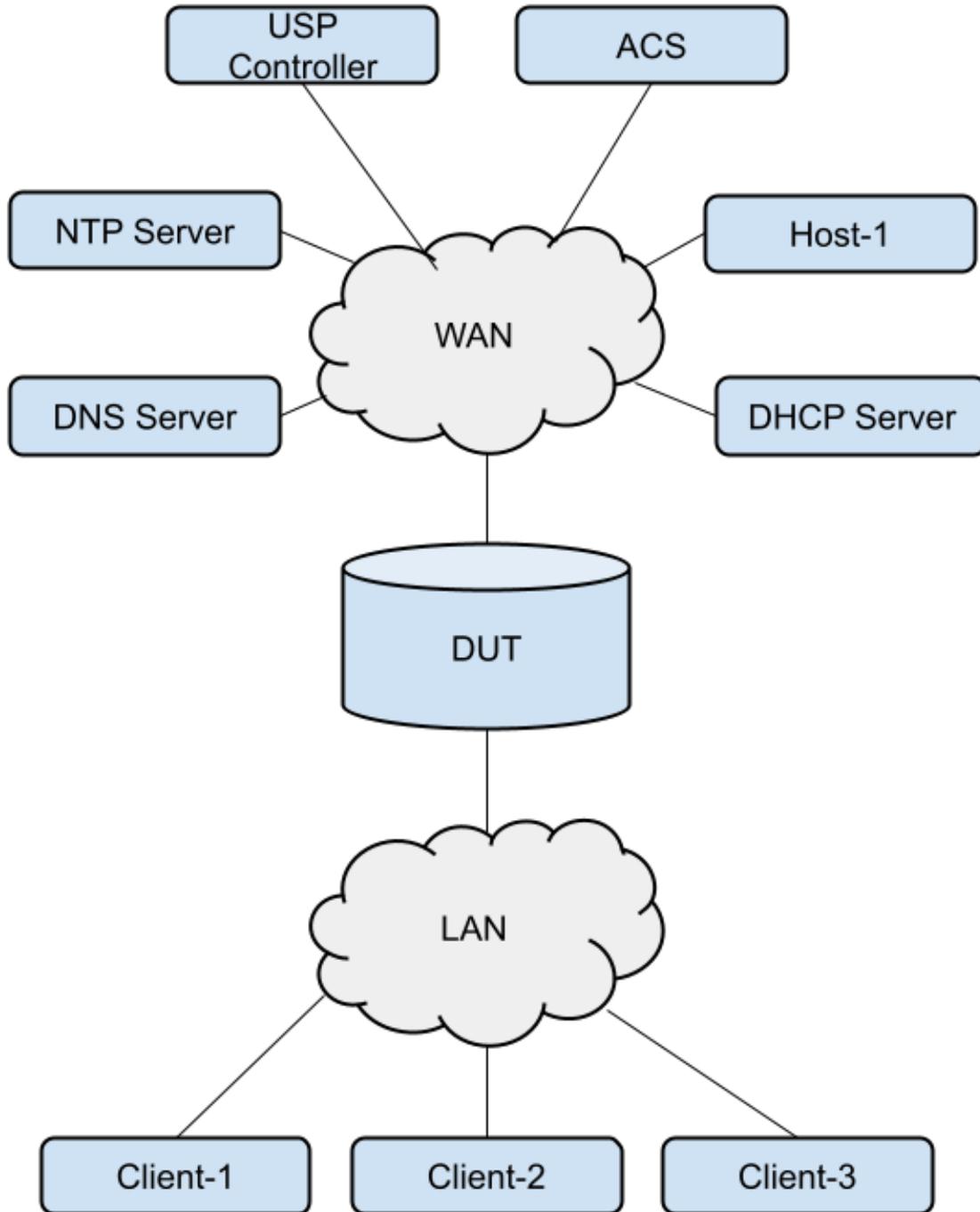
Provisional Excluded Tests

The subsequent table presents a comprehensive list of all test cases. Notably, certain test cases have uncovered issues that are currently undergoing resolution as part of prplOS maintenance. Tests designated with 'PE' are provisionally excluded from the current testing cycle, pending the release of a corrective patch in a future release of prplOS. Conversely, test cases marked with 'X' are mandatory for achieving prplWare certification for this particular version. Test cases marked with 'O' are optional features.

Group 1: Bridging

Test	prplWare 3.1	prplWare 3.2	prplWare 4.0	prplWare 4.1
prplOS.1.1.1	O	O	O	O
prplOS.1.1.2	O	O	O	O
prplOS.1.1.3	X	X	X	X
prplOS.1.1.4	X	X	X	X
prplOS.1.1.5	X	X	X	X
prplOS.1.1.6	X	X	X	X
prplOS.1.1.7	X	X	X	X
prplOS.1.1.8	PE	PE	PE	PE
prplOS.1.1.9	PE	PE	PE	PE
prplOS.1.1.10	PE	PE	PE	PE
prplOS.1.1.11	PE	PE	PE	PE
prplOS.1.1.12	PE	PE	PE	PE
prplOS.1.1.13	PE	PE	PE	PE

Group 2: DHCPv4

Test	prplWare 3.1	prplWare 3.2	prplWare 4.0	prplWare 4.1
prplOS.1.2.1	X	X	X	X
prplOS.1.2.2	X	X	X	X
prplOS.1.2.3	X	X	X	X
prplOS.1.2.4	X	X	X	X
prplOS.1.2.5	X	X	X	X
prplOS.1.2.6	X	X	X	X
prplOS.1.2.7	X	X	X	X
prplOS.1.2.8	X	X	X	X
prplOS.1.2.9	PE	PE	X	X
prplOS.1.2.10	PE	PE	PE	X
prplOS.1.2.11	X	X	X	X
prplOS.1.2.12	X	X	X	X
prplOS.1.2.13	X	X	X	X
prplOS.1.2.14	X	X	X	X
prplOS.1.2.15	X	X	X	X
prplOS.1.2.16	X	X	X	X
prplOS.1.2.17	X	X	X	X
prplOS.1.2.18	X	X	X	X
prplOS.1.2.19	X	X	X	PE
prplOS.1.2.20	PE	PE	PE	PE

prplOS.1.2.21	PE	PE	PE	PE
prplOS.1.2.22	PE	PE	PE	PE
prplOS.1.2.23	PE	PE	PE	PE
prplOS.1.2.24	PE	PE	PE	PE
prplOS.1.2.25	X	X	PE	X
prplOS.1.2.26	PE	PE	X	X
prplOS.1.2.27	X	X	PE	X
prplOS.1.2.28	X	X	PE	X
prplOS.1.2.29	PE	PE	X	X
prplOS.1.2.30	PE	PE	PE	PE

Group 3: DHCPv6

Test	prplWare 3.1	prplWare 3.2	prplWare 4.0	prplWare 4.1
prplOS.1.3.1	O	O	X	X
prplOS.1.3.2	O	O	X	X
prplOS.1.3.3	O	O	X	X
prplOS.1.3.4	O	O	PE	PE
prplOS.1.3.5	O	O	PE	PE
prplOS.1.3.6	O	O	PE	PE
prplOS.1.3.7	O	O	PE	X
prplOS.1.3.8	O	O	X	X
prplOS.1.3.9	O	O	PE	PE
prplOS.1.3.10	O	O	X	X
prplOS.1.3.11	O	O	PE	PE
prplOS.1.3.12	O	O	X	X
prplOS.1.3.13	O	O	X	X
prplOS.1.3.14	O	O	PE	PE
prplOS.1.3.15	O	O	O	O
prplOS.1.3.16	O	O	PE	PE
prplOS.1.3.17	O	O	X	X
prplOS.1.3.18	O	O	PE	PE
prplOS.1.3.19	O	O	PE	PE
prplOS.1.3.20	O	O	PE	PE
prplOS.1.3.21	O	O	PE	PE
prplOS.1.3.22	O	O	PE	PE
prplOS.1.3.23	O	O	PE	PE
prplOS.1.3.24	O	O	PE	PE
prplOS.1.3.25	O	O	PE	PE
prplOS.1.3.26	O	O	PE	PE
prplOS.1.3.27	O	O	PE	PE

Group 4: DNS

Test	prplWare 3.1	prplWare 3.2	prplWare 4.0	prplWare 4.1
prplOS.1.4.1	X	X	X	X
prplOS.1.4.2	PE	PE	PE	X
prplOS.1.4.3	PE	PE	PE	X

prplOS.1.4.4	PE	PE	PE	X
prplOS.1.4.5	X	X	X	X
prplOS.1.4.6	PE	PE	X	X
prplOS.1.4.7	X	X	X	X
prplOS.1.4.8	X	X	X	X
prplOS.1.4.9	PE	PE	X	X

Group 5: Firewall

Test	prplWare 3.1	prplWare 3.2	prplWare 4.0	prplWare 4.1
prplOS.1.5.1	PE	PE	X	X
prplOS.1.5.2	X	X	X	X
prplOS.1.5.3	X	X	X	X
prplOS.1.5.4	X	X	PE	X
prplOS.1.5.5	X	X	PE	X
prplOS.1.5.6	X	X	PE	X
prplOS.1.5.7	X	X	PE	X
prplOS.1.5.8	X	X	X	X
prplOS.1.5.9	X	X	X	X
prplOS.1.5.10	X	X	X	X
prplOS.1.5.11	X	X	X	X
prplOS.1.5.12	X	X	X	X
prplOS.1.5.13	X	X	X	X
prplOS.1.5.14	X	X	PE	X
prplOS.1.5.15	X	X	PE	X
prplOS.1.5.16	X	X	PE	X
prplOS.1.5.17	X	X	PE	X
prplOS.1.5.18	PE	PE	PE	PE
prplOS.1.5.19	PE	PE	PE	PE

Group 6: IP Interfaces

Test	prplWare 3.1	prplWare 3.2	prplWare 4.0	prplWare 4.1
prplOS.1.6.1	PE	PE	PE	PE
prplOS.1.6.2	PE	PE	PE	PE
prplOS.1.6.3	X	X	X	X
prplOS.1.6.4	X	X	X	X
prplOS.1.6.5	X	X	X	X
prplOS.1.6.6	PE	PE	PE	PE
prplOS.1.6.7	X	X	PE	PE
prplOS.1.6.8	X	X	PE	PE
prplOS.1.6.9	X	X	X	X
prplOS.1.6.10	X	X	X	X
prplOS.1.6.11	X	X	X	X
prplOS.1.6.12	X	X	X	X
prplOS.1.6.13	PE	PE	PE	PE
prplOS.1.6.14	X	X	X	X
prplOS.1.6.15	PE	PE	PE	PE
prplOS.1.6.16	X	X	X	X

prplOS.1.6.17	X	X	X	X
prplOS.1.6.18	X	X	X	X
prplOS.1.6.19	PE	PE	PE	PE
prplOS.1.6.20	X	X	X	X
prplOS.1.6.21	X	X	X	X
prplOS.1.6.22	X	X	X	X
prplOS.1.6.23	X	X	X	X
prplOS.1.6.24	PE	PE	PE	PE
prplOS.1.6.25	PE	PE	PE	PE
prplOS.1.6.26	PE	PE	PE	PE
prplOS.1.6.27	PE	PE	PE	PE
prplOS.1.6.28	PE	PE	PE	PE
prplOS.1.6.29	PE	PE	PE	PE

Optional Features

This is the list of optional features and the associated test cases.

- Multiple Ethernet LAN Ports
  - prplOS.1.1.1 – prplOS.1.1.2
- DHCPv6 Prefix Delegation
  - prplOS.1.3.15
- CWMP
  - Execute all the tests using CMWP.

Section 1: Network Functionality

Overview

The following tests verify network functionality of a DUT. USP or CWMP can be utilized for management of the DUT during the test. The objects and parameters tested in this section are available in both the USP and CWMP versions of the HL-API Data Model.

Group 1: Bridging

Scope

The following test covers bridging and vlan support of a prplOS implementation.

Overview

The tests in this group verify the DUT properly implements basic ethernet, vlans, and bridge configurations and statics.

prplOS.1.1.1: Enable Bridge

Purpose: Verify that bridges can be enabled and disabled.

Parameters:

Device.Bridging.Bridge.<LAN>.	
Enable	true
Status	Enable

Functionality Tags: Multiple Ethernet LAN Ports

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model. Each Client is attached to a different interface.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.Bridging.Bridge. <LAN>.Enable=false.	
2.	Get the parameter Device.Bridging.Bridge. <LAN>.Port.<LAN_Bridge>.Status	The DUT must return a value of Disabled for the parameter.
3.	Transmit traffic from Client-1 to Client-2.	The DUT must not forward traffic from Client-1 to Client-2.
4.	Set the parameter Device.Bridging.Bridge. <LAN>.Enable=true.	
5.	Get the parameter Device.Bridging.Bridge. <LAN>.Status	The DUT must return a value of Enabled for the parameter.
6.	Transmit traffic from Client-1 to Client-2.	The DUT must not forward traffic from Client-1 to Client-2.

prplOS.1.1.2: Enable Port

Purpose: Verify that ports can be enabled and disabled.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.	
Enable	true
Status	

Functionality Tags: Multiple Ethernet LAN Ports

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model. Each Client is attached to a different interface.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Client-2 to Client-1.	The DUT must forward traffic from Client-2 to Client-1.
2.	Set the parameter Device.Bridging.Bridge. <LAN>.Port.<LAN1>.Enable=false.	
3.	Get the parameter Device.Bridging.Bridge. <LAN>.Port.<LAN1>.Status	The DUT must return a value of DOWN for the parameter.
4.	Transmit traffic from Client-2 to Client-1.	The DUT must not forward traffic from Client-2 to Client-1.
5.	Transmit traffic from Client-2 to Host-1.	The DUT must forward traffic from Client-2 to Host-1.
6.	Set the parameter Device.Bridging.Bridge. <LAN>.Port.<LAN1>.Enable=true.	
7.	Get the parameter Device.Bridging.Bridge. <LAN>.Port.<LAN1>.Status	The DUT must return a value of UP for the parameter.

8.	Transmit traffic from Client-2 to Client-1.	The DUT must forward traffic from Client-2 to Client-1.
9.	Transmit traffic from Client-2 to Host-1.	The DUT must forward traffic from Client-2 to Host-1.

prplOS.1.1.3: Port LastChange

Purpose: Verify that LastChange parameter is properly implemented in the Port object.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>	
Enable	true
LastChange	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.LastChange	The DUT returns a value in seconds since the last operational state change.
2.	Set the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Enable=false.	
3.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.LastChange	The DUT returns a value in seconds that is less than the value in Step 1.

prplOS.1.1.4: Port BytesSent

Purpose: Verify that the statistics for Port.{i}.Stats.BytesSent are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
BytesSent	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.BytesSent	The DUT returns the value of BytesSent.
2.	Transmit ICMP Request that is 500 bytes of data from Client-1 to Host-1.	Host-1 transmits an Echo Reply to Client-1.
3.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.BytesSent	The DUT returns a value of BytesSent that is 500 bytes more than the value in Step 1.

prplOS.1.1.5: Port BytesReceived

Purpose: Verify that the statistics for Port.{i}.Stats.BytesReceived are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
BytesReceived	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Client-1 to Host-1.	The DUT must forward traffic from Client-1 to Host-1.
2.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.BytesReceived	The DUT returns the value of BytesReceived.
3.	Transmit 500 bytes of data from Client-1 to Host-1.	
4.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.BytesReceived	The DUT returns a value of BytesReceived that is 500 bytes more than the value in Step 1.

prplOS.1.1.6: Port PacketsSent

Purpose: Verify that the statistics for the Port.{i}.Stats.PacketsSent are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
PacketsSent	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.PacketsSent	The DUT returns the value of PacketsSent.
2.	Transmit 5 ICMP Request from Client-1 to Host-1.	Host-1 transmits an Echo Reply to Client-1.
3.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.PacketsSent	The DUT returns a value of PacketsSent that is 5 packets more than the value in Step 1.

prplOS.1.1.7: Port PacketsReceived

Purpose: Verify that the statistics for the Port.{i}.Stats.PacketsReceived are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
PacketsReceived	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.PacketsReceived	The DUT returns the value of PacketsReceived.
2.	Transmit 5 packets from Client-1 to Host-1.	
3.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.PacketsReceived	The DUT returns a value of PacketsReceived that is 5 packets more than the value in Step 1.

prplOS.1.1.8: Port UnicastPacketsSent

Purpose: Verify that the statistics for the Port.{i}.Stats.UnicastPacketsSent are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
UnicastPacketsSent	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.UnicastPacketsSent	The DUT returns the value of UnicastPacketsSent.
2.	Transmit 5 unicast packets from Client-1 to the DUT.	The DUT transmits unicast packets in response.
3.	Transmit 5 multicast packets from Client-1 to the DUT.	The DUT transmits multicast packets in response.
4.	Transmit 5 broadcast packets from Client-2 to the DUT.	The DUT transmits broadcast packets in response.
5.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.UnicastPacketsSent	The DUT returns a value of UnicastPacketsSent that is 5 packets more than the value in Step 1.

prplOS.1.1.9: Port UnicastPacketsReceived

Purpose: Verify that the statistics for the Port.{i}.Stats.UnicastPacketsReceived are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
UnicastPacketsReceived	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.UnicastPacketsReceived	The DUT returns the value of UnicastPacketsReceived.
2.	Transmit 5 unicast packets from Client-1 to the DUT.	
3.	Transmit 5 multicast packets from Client-1 to the DUT.	
4.	Transmit 5 broadcast packets from Client-1 to the DUT.	
5.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.UnicastPacketsReceived.	The DUT returns a value of UnicastPacketsReceived that is 5 packets more than the value in Step 1.

prplOS.1.1.10: Port MulticastPacketsSent

Purpose: Verify that the statistics for the Port.{i}.Stats.MulticastPacketsSent are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
MulticastPacketsSent	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.Mullticast PacketsSent	The DUT returns the value of MulticastPacketsSent.
2.	Transmit 5 unicast packets from Client-1 to the DUT.	The DUT transmits unicast packets in response.
3.	Transmit 5 multicast packets from Client-1 to the DUT.	The DUT transmits multicast packets in response.
4.	Transmit 5 broadcast packets from Client-1 to the DUT.	The DUT transmits broadcast packets in response.
5.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.MulticastP acketsSent	The DUT returns a value of MulticastPacketsSent that is 5 packets more than the value in Step 1.

prplOS.1.1.11: Port MulticastPacketsReceived

Purpose: Verify that the statistics for the Port.{i}.Stats.MulticastPacketsReceived are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
MulticastPacketsReceived	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.MulticastPacketsReceived	The DUT returns the value of MulticastPacketsReceived.
2.	Transmit 5 unicast packets from Client-1 to the DUT.	
3.	Transmit 5 multicast packets from Client-2 to the DUT.	
4.	Transmit 5 broadcast packets from Client-2 to the DUT.	
5.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.MulticastPacketsReceived	The DUT returns a value of MulticastPacketsReceived that is 5 packets more than the value in Step 1.

prplOS.1.1.12: Port BroadcastPacketsSent

Purpose: Verify that the statistics for the Port.{i}.Stats.BroadcastPacketsSent are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
BroadcastPacketsSent	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.Broadcast PacketsSent	The DUT returns the value of BroadcastPacketsSent.
2.	Transmit 5 unicast packets from Client-1 to the DUT.	The DUT transmits unicast packets in response.
3.	Transmit 5 multicast packets from Client-1 to the DUT.	The DUT transmits multicast packets in response.
4.	Transmit 5 broadcast packets from Client-1 to the DUT.	The DUT transmits broadcast packets in response.
5.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.Broadcast PacketsSent	The DUT returns a value of BroadcastPacketsSent that is 5 packets more than the value in Step 1.

prplOS.1.1.13: Port BroadcastPacketsReceived

Purpose: Verify that the statistics for the Port.{i}.Stats.BroadcastPacketsReceived are properly reported.

Parameters:

Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.	
BroadcastPacketsReceived	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 is attached to first Ethernet port on the DUT, labeled LAN1. LAN1 is a label that may be changed based on the alias in the data model.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Client-1 to Client-2.	The DUT must forward traffic from Client-1 to Client-2.
2.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.BroadcastPacketsReceived	The DUT returns the value of BroadcastPacketsReceived.
3.	Transmit 5 unicast packets from Client-2 to Client-1.	
4.	Transmit 5 multicast packets from Client-2 to Client-1.	
5.	Transmit 5 broadcast packets from Client-2 to Client-1.	
6.	Get the parameter Device.Bridging.Bridge.<LAN>.Port.<LAN1>.Stats.BroadcastPacketsReceived	The DUT returns a value of BroadcastPacketsReceived that is 5 packets more than the value in Step 1.

Group 2: DHCPv4

Scope

The following test covers DHCPv4 support of a prplOS implementations.

Overview

The tests in this group verify the DUT properly implements DHCPv4 configuration for both WAN and LAN interface.

prplOS.1.2.1: DHCPv4 Client Status

Purpose: Ensure the status of the DHCPv4 Client can be verified.

Parameters:

Device.DHCPv4.Client	
Enable	true
Interface	<WAN>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DHCPv4.Client.<WAN>.Status	The value returned from the DUT must be "Enabled".

prplOS.1.2.2: DHCPv4 Client DHCP Status

Purpose: Ensure the DHCP status of the DHCPv4 Client can be verified.

Parameters:

Device.DHCPv4.Client	
Enable	true
Interface	<WAN>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DHCPv4.Client.<WAN>.DHCPStatus.	The value returned from the DUT must be "Bound".
2.	Disable the DHCP Server.	
3.	Wait for DUT to enter the Renewing state.	The DUT must transmit a DHCPREQUEST message to DHCP-Server.
4.	Get the parameter Device.DHCPv4.Client.<WAN>.DHCPStatus.	The value returned from the DUT must be "Renewing".
5.	Wait for the DUT to enter the Rebind state.	The DUT must transmit a broadcast DHCPREQUEST message.
6.	Get the parameter Device.DHCPv4.Client.<WAN>.DHCPStatus.	The value returned from the DUT must be "Rebinding".
7.	Enable the DHCP Server.	The DUT must complete the DHCP exchange with the Server.
8.	Get the parameter Device.DHCPv4.Client.<WAN>.DHCPStatus	The value returned from the DUT must be "Bound".

prplOS.1.2.3: DHCPv4 Client Reports Server Address

Purpose: Verify that the DHCPv4 Client reports the server address.

Parameters:

Device.DHCPv4.Client	
Enable	true
Interface	<WAN>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DHCPv4.Client.<WAN>.DHCPServer	The IPv4 source address of the DHCP Server must be returned.

prplOS.1.2.4: DHCPv4 Client Reports DNS Server

Purpose: Verify that the DHCPv4 Client reports the DNS Server.

Parameters:

Device.DHCPv4.Client	
Enable	true
Interface	WAN Interface

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DHCPv4.Client.<WAN>.DNS Servers	The DUT must return a value of IPv4 address of the DNS-Server-1.

prplOS.1.2.5: DHCPv4 Client Reports IP address

Purpose: Verify that the DHCPv4 Client reports the IP address assigned by the DHCP Server.

Parameters:

Device.DHCPv4.Client	
Enable	true
Interface	WAN Interface

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DHCPv4.Client.<WAN>.IPAddress	The DUT must return a value of IPv4 address assigned during common test setup.

prplOS.1.2.6: DHCPv4 Client Reports IP Router

Purpose: Verify that the DHCPv4 Client reports the IP router assigned by the DHCP Server.

Parameters:

Device.DHCPv4.Client	
Enable	true
Interface	WAN Interface

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.
Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DHCPv4.Client.<WAN>.IPRouters.	The DUT must return a value of IPv4 address of the IP Router assigned in the common test setup.

prplOS.1.2.7: DHCPv4 Client Reports Subnet Mask

Purpose: Verify that the DHCPv4 Client reports the subnet mask assigned by the DHCP Server.

Parameters:

Device.DHCPv4.Client	
Enable	true
Interface	WAN Interface

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DHCPv4.Client.<WAN>.SubnetMask.	The DUT must return a value of IPv4 address of the subnet mask assigned in the common test setup.

prplOS.1.2.8: DHCPv4 Client Lease Time

Purpose: Verify that the DHCPv4 Client reports the lease time.

Parameters:

Device.DHCPv4.Client	
Enable	true
Interface	WAN Interface

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Wait for the DHCP Request from the DUT to the DHCP Server.	The DHCP Server transmits a DHCPACK with an IP address lease time of 100 seconds.
2.	Allow time for the DUT to process the DHCP message.	
3.	Get the parameter Device.DHCPv4.Client.<WAN>.LeaseTimeRemaining.	The DUT must return a value of less than 100 seconds.
4.	Wait for the DHCP Request from the DUT to the DHCP Server.	The DHCP Server transmits a DHCPACK with an IP address lease time of 150 seconds.
5.	Allow time for the DUT to process the DHCP message.	
6.	Get the parameter Device.DHCPv4.Client.<WAN>.LeaseTimeRemaining.	The DUT must return a value of less than 150 seconds.

prplOS.1.2.9: DHCPv4 Requested Option

Purpose: Verify that the DHCPv4 Client reports the requested DHCP Options.

Parameters:

Device.DHCPv4.Client.<WAN>.ReqOption.<i>.	
Enable	true
Tag	43

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Client.<WAN>.ReqOption.<ReqOption Instance>.Enable=false.	
2.	Disable the DHCP Server.	
3.	Wait 80 seconds.	The DUT transmits a DHCPDISCOVER message that does not request the Vendor-Specific Information option in the Parameter Request List.
4.	Enable the DHCP Server.	The DUT must complete the DHCP exchange with the Server.
5.	Set the parameter Device.DHCPv4.Client.<WAN>.ReqOption.<ReqOption Instance>.Enable=true.	
6.	Disable the DHCP Server.	
7.	Wait 80 seconds.	The DUT transmits a DHCPDISCOVER message with a Vendor-Specific Information option included in the Parameter Request List.

prplOS.1.2.10: DHCPv4 Sent Option

Purpose: Verify that the DHCPv4 Client reports the sent DHCP Options.

Parameters:

Device.DHCPv4.Client.<WAN>.SentOption.<i>.	
Enable	true
Tag	60
Value	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Client.<WAN>.Sent Option.<SentOption Instance>.Value=7072706C20.	
2.	Disable the DHCP Server.	
3.	Wait 80 seconds.	The DUT transmits a DHCPREQUEST message with a Vendor Class Identifier option included with value of "dhcp".
4.	Enable the DHCP Server.	The DUT must complete the DHCP exchange with the Server.
5.	Set the parameter Device.DHCPv4.Client.<WAN>.Sent Option.<SentOption Instance>.Enable=false.	
6.	Disable the DHCP Server.	
7.	Wait 80 seconds.	The DUT transmits a DHCPREQUEST message that does not include the Vendor Class Identifier option.

prplOS.1.2.11: DHCPv4 Server Enabled

Purpose: Verify that the DHCPv4 Server can be enabled and disabled.

Parameters:

Device.DHCPv4.Server	
Enable	true

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Enable=false.	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPDISCOVER message from Client-1.	Ensure the DUT does not transmit any DHCPv4 message in response to the DHCPDISCOVER.
4.	Set the parameter Device.DHCPv4.Server.Enable=true.	
5.	Allow time for the DUT to process the set.	
6.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER in response to the DHCPDISCOVER.
7.	Transmit a DHCPREQUEST message from Client-1.	The DUT must transmit a DHCPACK in response to the DHCPREQUEST.

prplOS.1.2.12: DHCPv4 Server Pool Enabled

Purpose: Verify the DHCPv4 Server pool can be enabled and disabled.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>
SubnetMask	255.255.255.0

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. Enable=false.	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPDISCOVER message from Client-1.	Ensure the DUT does not transmit any DHCPv6 message on the LAN interface.
4.	Set the parameter Device.DHCPv6.Server.Pool.<LAN>. Enable=true.	
5.	Allow time for the DUT to process the set.	
6.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER in response to the DHCPDISCOVER.
7.	Transmit a DHCPREQUEST message from Client-1.	The DUT must transmit a DHCPACK in response to the DHCPREQUEST.

prplOS.1.2.13: DHCPv4 Server Pool Status

Purpose: Verify the DHCPv4 Server pool status.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. Enable=false.	
2.	Allow time for the DUT to process the set.	
3.	Get the parameter Device.DHCPv4.Server.Pool.<LAN>. Status	The value returned from the DUT must be "Disabled".
4.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. Enable=true.	Ensure the DUT does not transmit any DHCPv4 message on the LAN interface.
5.	Allow time for the DUT to process the set.	
6.	Get the parameter Device.DHCPv4.Server.Pool.<LAN>. Status	The value returned from the DUT must be "Enabled".

prplOS.1.2.14: DHCPv4 Server Reports Clients Active

Purpose: Ensure DHCPv4 Server reports if a DHCPv4 Client is present on the LAN.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1 offering a valid IPv4 address assignment.
2.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing a valid IPv4 address.
3.	Get the parameter Device.DHCPv4.Server.Pool.<LAN>. Client.<Client-1>.Chaddr	The DUT must return the value of the MAC address of Client-1.
4.	Get the parameter Device.DHCPv4.Server.Pool.<LAN>. Client.<Client-1>.Active	The DUT must return a value of true.

prplOS.1.2.15: DHCPv4 Server Reports Address

Purpose: Ensure DHCPv4 Server reports addresses assigned using DHCP.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1 offering a valid IPv4 address assignment.
2.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing a valid IPv4 address.
3.	Get the parameter Device.DHCPv4.Server.Pool.<LAN>. Client.<Client-1>.IPv4Address.1.IPAddress.	The DUT must return the value of the IPv4 address assigned in Step 2.

prplOS.1.2.16: DHCPv4 Server Reports Address Lease

Purpose: Ensure DHCPv4 Server reports addresses lease time assigned.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>.LeaseTime=150.	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1 offering a valid IPv4 address assignment.
4.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing a valid IPv4 address and lease time of 150 seconds.
5.	Get the parameter Device.DHCPv4.Server.Pool.<LAN>.Client.<Client-1>.IPv4Address.1.LeaseTimeRemaining.	The DUT must return a time less than 80 seconds in the future.
6.	Wait T1 to transmit DHCPREQUEST to the DUT.	The DUT must transmit a DHCPACK.

7.	Get the parameter Device.DHCPv4.Server.Pool.<LAN>.Client.<Client-1>.IPv4Address.1.LeaseTimeRemaining.	The DUT must return a time that is more than T1 seconds in the future.

prplOS.1.2.17: DHCPv4 Server Reports Options

Purpose: Ensure DHCPv4 Server reports options sent by the clients on LAN.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit a DHCPDISCOVER message from Client-1 containing a VendorClassID option.	The DUT must transmit a DHCPOFFER.
2.	Transmit a DHCPREQUEST message from Client-1 to the DUT containing a VendorClassID option.	The DUT must transmit a DHCPACK to Client-1.
3.	Get all the objects in the path Device.DHCPv4.Server.Pool.<LAN>. Client.<Client-1>Option.	The DUT must return an Object that contains VendorClassID.

prplOS.1.2.18: DHCPv4 Server Lease

Purpose: Ensure DHCPv4 Server assigns the lease time.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. LeaseTime=80.	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
4.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with a lease time set to 80 seconds.

prplOS.1.2.19: DHCPv4 Address Pool Size

Purpose: Ensure DHCPv4 Server properly assigns addresses in the pool.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part. Determine the existing DHCPv4 Pool size. The pool size must be greater than 3 addresses to run this test.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameters Device.DHCPv4.Server.Pool.<LAN>. MinAddress and Device.DHCPv4.Server.Pool.<LAN>. MaxAddress so that the pool contains 3 addresses.	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in the configured pool.
4.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
5.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-3 with an address in the configured pool.
6.	Transmit a DHCPDISCOVER message from Client-3.	The DUT must transmit a DHCPOFFER.
7.	Transmit a DHCPREQUEST message from Client-3 to the DUT.	The DUT must transmit a DHCPACK to Client-3 with an address in the

		configured pool.
8.	Transmit a DHCPDISCOVER message from Client-4.	The DUT must not transmit a DHCPOFFER.

prplOS.1.2.20: DHCPv4 Address Assigned based on Hardware Address

Purpose: Ensure DHCPv4 Server properly assigns addresses based on hardware address.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>

Device.DHCPv4.Server.Pool.<Y>	
Enable	true
Chaddr	<MAC address of Client-1>
ChaddrExclude	false
ChaddrMask	FF:FF:FF:FF:FF:FF
MinAddress	<Address within LAN subnet that does not overlap with the LAN Pool range>
MaxAddress	<Address within LAN subnet that does not overlap with the LAN Pool range>

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part. Client-1 and Client-3 have the same OUI.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv4.Server.Pool.<Y> object with the parameters specified.	

2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in DHCP pool Y.
4.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
5.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with an address in the LAN address pool.
6.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. ChaddrExclude=true.	
7.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
8.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in the LAN address pool.
9.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. ChaddrExclude=false.	
10.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. ChaddrMask=FF:FF:FF:00:00:00.	
11.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
12.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in DHCP pool Y.
13.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
14.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in DHCP pool Y.

prplOS.1.2.21: DHCPv4 Address assignment based on Client ID

Purpose: Ensure DHCPv4 Server properly assigns addresses based on client id.

Parameters:

Device.DHCPv4.Server.Pool.<LAN Instance>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>

Device.DHCPv4.Server.Pool.<Y>	
Enable	true
ClientID	<Client-1 ID>
ClientIDExclude	false
MaxAddress	<Address within LAN subnet that does not overlap with the LAN Pool range>
MinAddress	<Address within LAN subnet that does not overlap with the LAN Pool range>

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv4.Server.Pool.<Y> object with the parameters specified.	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
3.	Transmit a DHCPREQUEST	The DUT must transmit a DHCPACK

	message from Client-1 to the DUT.	to Client-1 with an address in DHCP pool Y.
4.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
5.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with an address in the LAN address pool.
6.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>.ClientIDExclude=true.	
7.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
8.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in the LAN address pool.
9.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
10.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with an address in the LAN address pool.

prplOS.1.2.22: DHCPv4 Address assignment based on UserClass ID

Purpose: Ensure DHCPv4 Server properly assigns addresses based on user class id.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>

Device.DHCPv4.Server.Pool.<Y>	
Enable	true
UserClassID	<UserClassID-1>
UserClassIDExclude	false
MaxAddress	<Address within LAN subnet that does not overlap with the LAN Pool range>
MinAddress	<Address within LAN subnet that does not overlap with the LAN Pool range>

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv4.Server.Pool.<Y> object with the parameters specified.	
2.	Transmit a DHCPDISCOVER message from Client-1 with a UserClassID option with a value of	The DUT must transmit a DHCPOFFER.

	<UserClassID-1>.	
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in DHCP pool Y.
4.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
5.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with an address in the LAN address pool.
6.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. UserClassIDExclude=true.	
7.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
8.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in the LAN address pool
9.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
10.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with an address in the LAN address pool.

prplOS.1.2.23: DHCPv4 Address assignment based on VendorClass ID

Purpose: Ensure DHCPv4 Server properly assigns addresses based on vendor class id.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>

Device.DHCPv4.Server.Pool.<Y>	
Enable	true
VendorClassID	<VendorClassID-1>
VendorClassIDExclude	false
MaxAddress	<Address within LAN subnet that does not overlap with the LAN Pool range>
MinAddress	<Address within LAN subnet that does not overlap with the LAN Pool range>

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv4.Server.Pool.<Y> object with the parameters specified.	
2.	Transmit a DHCPDISCOVER message from Client-1 with a VendorClassID option with a value of	The DUT must transmit a DHCPOFFER.

	<VendorClassID-1>.	
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in DHCP pool Y.
4.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
5.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with an address in the LAN address pool.
6.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. VendorIDExclude=true.	
7.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
8.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in the LAN address pool.
9.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
10.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with an address in the LAN address pool.

prplOS.1.2.24: DHCPv4 Address assignment based on Reserved

Purpose: Ensure DHCPv4 Server properly assigns addresses based on reserved address.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All
MaxAddress	<Max Address in range on LAN>
MinAddress	<Address before MaxAddress>
ReservedAddresses	<MaxAddress>

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the above parameters so that the LAN Address pool contains two addresses and the ReservedAddresses parameter contains the MaxAddress address.	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address with the MinAddress.
4.	Transmit a DHCPDISCOVER message from Client-2.	The DUT NOT must transmit a DHCPOFFER.

prplOS.1.2.25: DHCPv4 Address assigns static address

Purpose: Ensure DHCPv4 Server properly assigns a static address based on the mac address of the client.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
AllowDevices	All

Device.DHCPv4.Server.Pool.<LAN>.StaticAddress.<Y>.	
Enable	true
Chaddr	<MAC address of Client-1>
Yiaddr	<Address Y in LAN Pool>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv4.Server.Pool.<LAN Instance>.Static.<Y> object with the parameters specified.	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with Address Y
4.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
5.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with an address in the

		DHCP range, that is not Address Y.
6.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. Static.<Y>.Chaddr=<MAC address of Client-2>.	
7.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
8.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in the DHCP range, that is not Address Y.
9.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
10.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with Address Y.
11.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. Static.<Y>.Enable=false.	
12.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER.
13.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 with an address in the DHCP range, that is not Address Y.
14.	Transmit a DHCPDISCOVER message from Client-2.	The DUT must transmit a DHCPOFFER.
15.	Transmit a DHCPREQUEST message from Client-2 to the DUT.	The DUT must transmit a DHCPACK to Client-2 with Address Y.

prplOS.1.2.26: DHCPv4 Server DNS Servers

Purpose: Ensure DHCPv4 Server properly advertises DNS Servers.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. DNSServers=<IP address DNS-Server-1>.	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing the DNS Option with the IP address of DNS-Server-1.
4.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. DNSServers=<IP address DNS-Server-1>,<IP address DNS-Server-2>.	
5.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
6.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing the DNS Option with the IP addresses of DNS-Server-1 and DNS-Server-2.
7.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>.	

	DNSServers=<IP address DNS-Server-1>,<IP address DNS-Server-2>, <IP address of DNS-Server-3>.	
8.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
9.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing the DNS Option with the IP addresses of DNS-Server-1, DNS-Server-2 and DNS-Server-3.
10.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>.DNSServers=<IP address DNS-Server-1>.	
11.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
12.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing the DNS Option with the IP address of DNS-Server-1.

prplOS.1.2.27: DHCPv4 Server Domain Name

Purpose: Ensure DHCPv4 Server properly advertises domain name.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. DomainName=test.example.com	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing the Domain Name Option with the test.example.com.

prplOS.1.2.28: DHCPv4 Server Subnet Mask

Purpose: Ensure DHCPv4 Server properly advertises subnet mask.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true
MaxAddress	<Max Address in range on LAN>
MinAddress	<Min Address in range on LAN>
SubnetMask	255.255.255.0

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>. SubnetMask=255.0.0.0	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing a subnet mask option with a value of 255.0.0.0.

prplOS.1.2.29: DHCPv4 Server IPRouters

Purpose: Ensure DHCPv4 Server properly advertises default routers on the LAN.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv4.Server.Pool.<LAN Instance>.IPRouters=<DUT LAN address>.	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing an IPRouters option with the LAN address of the DUT.
4.	Set the parameter Device.DHCPv4.Server.Pool.<LAN Instance>.IPRouters=<Address not assigned on the LAN>	
5.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
6.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing an IPRouters option with address from Step 4.

prplOS.1.2.30: DHCPv4 Server Option

Purpose: Ensure DHCPv4 Server properly advertises DHCP Options.

Parameters:

Device.DHCPv4.Server.Pool.<LAN>.	
Enable	true

Device.DHCPv4.Server.<LAN>.Option.<i>.	
Enable	true
Tag	46
Value	0104

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add the object Device.DHCPv4.Server.Pool.<LAN>.Option.<i> as specified.	
2.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
3.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 containing an NetBIOS over TCP/IP Node Type option with a M-node (4) type.
4.	Set the parameter Device.DHCPv4.Server.Pool.<LAN>.Option.<i>.Enabled=false.	
5.	Transmit a DHCPDISCOVER message from Client-1.	The DUT must transmit a DHCPOFFER to Client-1.
6.	Transmit a DHCPREQUEST message from Client-1 to the DUT.	The DUT must transmit a DHCPACK to Client-1 that doesn't contain the

		NetBIOS over TCP/IP Node Type option.

Group 3: DHCPv6

Scope

The following test covers DHCPv6 support of a prplOS implementation.

Overview

The tests in this group verify the DUT properly implements DHCPv6 configuration for both WAN and LAN interfaces.

prplOS.1.3.1: DHCPv6 Client Status

Purpose: Ensure the status of the DHCPv6 Client can be verified.

Parameters:

Device.DHCPv6.Client	
Enable	true
Interface	<WAN>
DUID	<returned from device>
RapidCommit	true
RequestAddresses	true
RequestPrefixes	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Client.<WAN>.Enable=false.	
2.	Allow time for the DUT to process the set.	
3.	Get the parameter Device.DHCPv6.Client.<WAN>.Status	The value returned from the DUT must be "Disabled".
4.	Set the parameter Device.DHCPv6.Client.<WAN>.Enable=true.	
5.	Get the parameter Device.DHCPv6.Client.<WAN>.Status	The value returned from the DUT must be "Enabled".

prplOS.1.3.2: DHCPv6 Client IA_NA

Purpose: Ensure DHCPv6 IA_NA can be enabled and disabled on the DHCPv6 Client.

Parameters:

Device.DHCPv6.Client	
Enable	true
Interface	WAN Interface
DUID	<returned from device>
RapidCommit	true
RequestAddresses	true
RequestPrefixes	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Client.<WAN>.RequestAddresses=false.	
2.	Wait for IA_NA lifetime.	DUT must not transmit any DHCPv6 Solicit, Renew or Rebind messages containing IA_NA options.
3.	Set the parameter Device.DHCPv6.Client.<WAN>.RequestAddresses=true.	
4.	Allow time for the DUT to process the set.	The DUT must transmit a DHCPv6 Solicit message.
5.	DHCP Server responds with a IA_NA containing a valid IPv6 address with a lifetime of 80 seconds.	
6.	Wait T1 seconds.	

7.		The DUT must transmit a DHCPv6 Renew message with an assigned address in the IA_NA.

prplOS.1.3.3: DHCPv6 Client IA_PD

Purpose: Ensure DHCPv6 IA_PD can be enabled and disabled on the DHCPv6 Client.

Parameters:

Device.DHCPv6.Client	
Enable	true
Interface	<WAN>
DUID	<returned from device>
RapidCommit	true
RequestAddresses	true
RequestPrefixes	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Client.<WAN>.RequestPrefixes=false.	
2.	Wait for IA_PD lifetime.	DUT must not transmit any DHCPv6 Solicit, Renew or Rebind messages containing IA_PD options.
3.	Set the parameter Device.DHCPv6.Client.<WAN>.RequestPrefixes=true.	
4.	Allow time for the DUT to process the set.	The DUT must transmit a DHCPv6 Solicit message.
5.	DHCP Server responds with a IA_PD containing a valid IPv6 prefix.	
6.	Wait T1 seconds.	

7.		The DUT must transmit a DHCPv6 Renew message with an assigned prefix in the IA_PD.

prplOS.1.3.4: DHCPv6 Client Rapid Commit

Purpose: Ensure Rapid Commit option can be enabled and disabled on the DHCPv6 Client.

Parameters:

Device.DHCPv6.Client	
Enable	true
Interface	<WAN>
DUID	<returned from device>
RapidCommit	true
RequestAddresses	true
RequestPrefixes	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Client.<WAN>.Rapid Commit=false.	
2.	Wait for IA_NA lifetime.	
3.		DUT transmits a DHCPv6 Solicit message. The message must not contain a Rapid Commit option.
4.	Set the parameter Device.DHCPv6.Client.<WAN>.Rapid Commit=true.	
5.	Wait for IA_NA lifetime.	
6.		DUT must transmit a DHCPv6 Solicit message. The message must contain a Rapid Commit option.

7.	The DHCP Server transmits a DHCP Reply message with a valid IA_NA and IA_PD.	
8.	Wait for IA_NA lifetime.	The DUT must not transmit any DHCPv6 message indicating it processed the Rapid Commit.
9.		The DUT must transmit DHCPv6 Renew message with the IA_NA and IA_PD Options from Step 7.

prplOS.1.3.5: DHCPv6 Client Renew (T1 Timer)

Purpose: Verify that the T1 timer on the DHCPv6 Client.

Parameters:

Device.DHCPv6.Client	
Enable	true
Interface	<WAN>
DUID	<returned from device>
RapidCommit	true
RequestAddresses	true
RequestPrefixes	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.
The DHCPv6 assigned address lifetime before the test starts should be 80 seconds.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Client.<WAN>.SuggestedT1=20	
2.	Allow for the current leases to expire by not responding to any Renew or Rebind messages.	The DUT transmits a DHCPv6 Solicit message after current leases expire.
3.		The DUT transmits a DHCPv6 Solicit messages.
4.	The DHCPv6 Server assigns the DUT an address (IA_NA) with a T1 value set to 0.	
5.	Wait for 20 seconds.	
6.	Wait for 5 seconds for DHCPv6	The DUT transmits a DHCPv6

	messages.	Renew message.
7.	Set the parameter Device.DHCPv6.Client.<WAN>.SuggestedT1=40.	
8.	Allow for the current leases to expire by not responding to any Renew messages.	The DUT transmits a DHCPv6 Solicit message after current leases expire.
9.		The DUT transmits a DHCPv6 Solicit messages.
10.	The DHCPv6 Server assigns the DUT an address (IA_NA) with a T1 value set to 0.	
11.	Wait for 40 seconds.	
12.	Wait for 5 seconds for a DHCPv6 messages.	The DUT transmits a DHCPv6 Renew message.

prplOS.1.3.6: DHCPv6 Client Rebind (T2 Timer)

Purpose: Verify that the T2 timer on the DHCPv6 Client.

Parameters:

Device.DHCPv6.Client	
Enable	true
Interface	<WAN>
DUID	<returned from device>
RapidCommit	true
RequestAddresses	true
RequestPrefixes	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.
The DHCPv6 assigned address lifetime before the test starts should be 80 seconds.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Client.<WAN>.SuggestedT2=40	
2.	Allow for the current leases to expire by not responding to any Renew or Rebind messages.	The DUT transmits a DHCPv6 Solicit message after current leases expire.
3.		The DUT transmits a DHCPv6 Solicit messages.
4.	The DHCPv6 Server assigns the DUT an address (IA_NA) with a T2 value of 0.	
5.	Wait for 40 seconds.	
6.	Wait for 10 seconds for DHCPv6	The DUT transmits a DHCPv6

	messages.	Rebind message.
7.	Set the parameter Device.DHCPv6.Client.<WAN>.Suggested T2=80.	
8.	Allow for the current leases to expire by not responding to any Renew or Rebind messages.	The DUT transmits a DHCPv6 Solicit message after current leases expire.
9.		The DUT transmits a DHCPv6 Solicit messages with a T2 timer of 80 seconds.
10.	The DHCPv6 Server assigns the DUT an address (IA_NA) with a T2 value of 0.	
11.	Wait for 80 seconds.	
12.	Wait for 10 seconds for a DHCPv6 messages.	The DUT transmits a DHCPv6 Rebind message.

prplOS.1.3.7: DHCPv6 Client Requested Options

Purpose: Verify that the DHCP client transmits DHCPv6 options as requested.

Parameters:

Device.DHCPv6.Client	
Enable	true
Interface	<WAN>
DUID	<returned from device>
RapidCommit	true
RequestAddresses	true
RequestPrefixes	true
RequestedOptions	23,31,32

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Client.<WAN>.RequestedOptions="23,24,31,32"	
2.	Disable DHCP Server and wait for IA_NA lifetime.	
3.	Enable the DHCP Server and wait for DHCPv6 messages from the DUT.	The DUT transmits a DHCPv6 Solicit message with Domain Search List Option (24).
4.	Wait for T1 seconds.	The DUT transmits a DHCPv6 Renew message containing the Domain Search List Option.
5.	Set the parameter Device.DHCPv6.Client.<WAN	

	Instance>.RequestedOptions="23,31, 32"	
6.	Disable DHCP Server and wait for IA_NA seconds.	
7.	Enable the DHCP Server and wait for DHCPv6 messages from the DUT.	The DUT transmits a DHCPv6 Solicit message without Domain Search List Option (24).

prplOS.1.3.8: DHCPv6 Client Server Information

Purpose: Verify the DHCP Server information is correct from the DHCP Client.

Parameters:

Device.DHCPv6.Client	
Enable	true
Interface	WAN Interface
DUID	<returned from device>
RapidCommit	true
RequestAddresses	true
RequestPrefixes	true
RequestedOptions	23,31,32

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DHCPv6.Client.<WAN>.Server.<DHCP Server>.SourceAddress	The IPv6 source address of the DHCP Server must be returned.
2.	Get parameter Device.DHCPv6.Client.<WAN>.Server.<DHCP Server>.DUID	The DUID of the DHCP Server must be returned.

prplOS.1.3.9: DHCPv6 Client Sent Options

Purpose: Verify that the DHCP client properly reports the sent DHCP options.

Parameters:

Device.DHCPv6.Client.<Y>.SentOptions	
Enable	true
Tag	15
Value	00021234

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv6.Client.<Y> object with the parameters specified in the table above.	
2.		The DUT must transmit a DHCPv6 Solicit message with the User Class Option.
3.	The DHCPv6-Server transmits a DHCPv6 Advertise message containing a User Class Option in response.	The DUT must transmit a DHCPv6 Request message with the User Class Option containing a value in the parameter table.

prplOS.1.3.10: DHCPv6 Client Received Options

Purpose: Verify that the DHCP client properly reports the received DHCP options.

Parameters:

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Allow for the current leases to expire by not responding to any Renew or Rebind messages.	The DUT transmits a DHCPv6 Solicit message after current leases expire.
2.		The DUT transmits a DHCPv6 Solicit messages.
3.	The DHCPv6 Server assigns the DUT an address (IA_NA) and includes a Vendor Specific Information Option.	
4.	Get the object Device.DHCPv6.Client.<WAN Instance>.ReceivedOption	The DUT must return a row in the Object for Vendor Specific Information Option with values received from the DHCP Server.

prplOS.1.3.11: Enable DHCPv6 Server

Purpose: Ensure DHCPv6 Server can be enabled and disabled.

Parameters:

Device.DHCPv6.Server	
Enable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Enable=false.	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPv6 Solicit message from Client-1.	Ensure the DUT does not transmit any DHCPv6 message on the LAN interface.
4.	Transmit a DHCPv6 Information Request message from Client-1.	Ensure the DUT does not transmit any DHCPv6 message on the LAN interface.
5.	Set the parameter Device.DHCPv6.Server.Enable=true.	
6.	Allow time for the DUT to process the set.	
7.	Transmit a DHCPv6 Solicit message from Client-1.	The DUT must transmit a DHCPv6 Advertise in response.
8.	Transmit a DHCPv6 Request message from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Reply in response.
9.	Transmit a DHCPv6 Information Request message from Client-1.	The DUT must transmit a DHCPv6 Information Reply in response.

prplOS.1.3.12: DHCPv6 Server Pool Enable

Purpose: Verify the DHCPv6 Server pool can be enabled and disabled.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>.	
Enable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Enable=false.	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPv6 Solicit message from Client-1.	Ensure the DUT does not transmit any DHCPv6 message on the LAN interface.
4.	Transmit a DHCPv6 Information Request message from Client-1.	Ensure the DUT does not transmit any DHCPv6 message on the LAN interface.
5.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Enable=true.	
6.	Allow time for the DUT to process the set.	
7.	Transmit a DHCPv6 Solicit message from Client-1.	The DUT must transmit a DHCPv6 Advertise in response.
8.	Transmit a DHCPv6 Request message from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Reply in response.
9.	Transmit a DHCPv6 Information Request message from Client-1.	The DUT must transmit a DHCPv6 Information Reply in response.

prplOS.1.3.13: DHCPv6 Server Pool Status

Purpose: Verify the DHCPv6 Server pool status.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>.	
Enable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Enable=false.	
2.	Wait for 10 seconds.	
3.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Status	The value returned from the DUT must be "Disabled".
4.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Enable=true.	
5.	Wait for 10 seconds	
6.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Status	The value returned from the DUT must be "Enabled".

prplOS.1.3.14: Enable DHCPv6 Server IA_NA

Purpose: Ensure DHCPv6 Server can enable and disable IA_NA offering on the LAN interface.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAEnable=false.	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPv6 Solicit message from Client-1 requesting an IA_NA option.	Ensure the DUT must not offer an IA_NA option to Client-1 in the DHCPv6 Advertise message.
4.	Transmit a DHCPv6 Information Request message from Client-1.	The DUT must transmit a DHCPv6 Reply in response.
5.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAEnable=true.	
6.	Allow time for the DUT to process the set.	
7.	Transmit a DHCPv6 Solicit message from Client-1 requesting an IA_NA option.	The DUT must transmit a DHCPv6 Advertise message with an IA_NA option in response.
8.	Transmit a DHCPv6 Information	The DUT must transmit a DHCPv6

	Request message from Client-1.	Information Reply in response.

prplOS.1.3.15: Enable DHCPv6 Server IA_PD

Purpose: Ensure DHCPv6 Server can enable and disable IA_PD offering on the LAN interface.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IAPDEnable=false.	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPv6 Solicit message from Client-1 requesting an IA_PD option.	Ensure the DUT must not offer an IA_PD option to Client-1 in the DHCPv6 Advertise message.
4.	Transmit a DHCPv6 Information Request message from Client-1.	The DUT must transmit a DHCPv6 Reply in response.
5.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IAPDEnable=true.	
6.	Allow time for the DUT to process the set.	
7.	Transmit a DHCPv6 Solicit message from Client-1 requesting an IA_PD option.	The DUT must transmit a DHCPv6 Advertise message with an IA_PD option in response.
8.	Transmit a DHCPv6 Information Request message from Client-1.	The DUT must transmit a DHCPv6 Information Reply in response.

prplOS.1.3.16: DHCPv6 Server Report Clients Active.

Purpose: Ensure DHCPv6 Server reports if a DHCPv6 Client is present on the LAN.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit a DHCPv6 Solicit message from Client-1.	The DUT must transmit a DHCPv6 Advertise to Client-1 with an IA_NA option.
2.	Transmit a DHCPv6 Request message from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Reply to Client-1 with an IA_NA option containing a valid IPv6 address.
3.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Client.<Client-1 Instance>.SourceAddress	The DUT must return the IPv6 source address of Client-1.
4.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Client.<Client-1 Instance>.Active	The DUT must return a value of true.

prplOS.1.3.17: DHCPv6 Server Report Clients Assigned Address

Purpose: Ensure DHCPv6 Server reports if a DHCPv6 Client assigned address.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit a DHCPv6 Solicit message from Client-1 containing IA_NA option.	The DUT must transmit a DHCPv6 Advertise to Client-1 with an IA_NA option.
2.	Transmit a DHCPv6 Request message with an IA_NA from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Reply to Client-1 with an IA_NA option containing a valid IPv6 address with a preferred and valid lifetime greater than 0.
3.	Allow time for the DUT to process the DHCP message.	
4.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Client.<Client-1>.IPv6Address.1.IPAddress	The DUT must return the address of Client-1 assigned in Step 2.
5.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Client.<Client-1>.IPv6Address.1.PreferredLifetime	The DUT must return a preferred lifetime that is less than the lifetime assigned in Step 2.
6.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Client.<Client-	The DUT must return a valid lifetime that is less than the lifetime assigned in Step 2.

	1>.IPv6Address.1.ValidLifetime	

prplOS.1.3.18: DHCPv6 Server Report Clients Assigned Prefixes

Purpose: Ensure DHCPv6 Server reports if a DHCPv6 Client assigned prefixes.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit a DHCPv6 Solicit message containing an IA_PD from Client-1.	The DUT must transmit a DHCPv6 Advertise to Client-1 with an IA_PD option.
2.	Transmit a DHCPv6 Request message containing an IA_PD from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Reply to Client-1 with an IA_PD option containing a valid IPv6 prefix with a preferred and valid lifetime greater than 0.
3.	Allow time for the DUT to process the DHCP message.	
4.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Client.<Client-1>.IPv6Prefix.1.Prefix	The DUT must return the prefix of Client-1 assigned in Step 2.
5.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Client.<Client-1>.IPv6Prefix.1.PreferredLifetime	The DUT must return a preferred lifetime that is less than the lifetime assigned in Step 2.
6.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Client.<Client-	The DUT must return a valid lifetime that is less than the lifetime assigned in Step 2.

	1>.IPv6Prefix.1.ValidLifetime	

prplOS.1.3.19: DHCPv6 Server Options

Purpose: Ensure DHCPv6 Server reports DHCP options sent to the clients.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Options.1.Tag=17	
2.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Options.1.Value to an appropriate value.	
3.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Options.1.Enable=true	
4.	Allow time for the DUT to process the set.	
5.	Transmit a DHCPv6 Solicit message from Client-1.	The DUT must transmit a DHCPv6 Advertise to Client-1 with Vendor Specific Information (17) option.
6.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.Options.1.Enable=false	
7.	Allow time for the DUT to process the set.	

8.	Transmit a DHCPv6 Solicit message from Client-1 containing ORO Option with a SOL_MAX_RT and an IA_NA Option.	The DUT must transmit a DHCPv6 Advertise to Client-1 without the Vendor Specific Class (16) Option.

prplOS.1.3.20: Manually Assign Address in DHCPv6 Pool

Purpose: Ensure DHCPv6 Server will assign manually configured addresses on the LAN interface.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part. The LAN interface has a static ULA address configured.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAManualPrefixes=Device.IP.Interface.<LAN ULA Instance>.IPv6Prefix	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPv6 Solicit message from Client-1 requesting an IA_NA option.	Ensure the DUT must offer an IA_NA to Client-1 in the DHCPv6 Advertise message with IAAddress in the manually assigned address prefix.
4.	Transmit a DHCPv6 Request message from Client-1 requesting an IA_NA option.	Ensure the DUT must offer an IA_NA to Client-1 in the DHCPv6 Reply message with IAAddress in the manually assigned address prefix.

prplOS.1.3.21: DHCPv6 Server IA_NA Address Available

Purpose: Ensure DHCPv6 Server reports the addresses pool being assigned on the LAN interface.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part. The LAN interface has a static ULA address configured.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAManualPrefixes=Device.IP.Interface.<LAN ULA Instance>.IPv6Prefix	
2.	Allow time for the DUT to process the set.	
3.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAPrefixes	The DUT must return Device.IP.Interface.<LAN ULA Instance>.IPv6Prefix has one the path names returned.

prplOS.1.3.22: Manually Assign Prefixes in DHCPv6 Pool

Purpose: Ensure DHCPv6 Server will assign manually configured prefixes on the LAN interface.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part. The LAN interface has a static ULA prefix configured.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IAPDManualPrefixes=Device.IP.Interface.<LAN ULA Prefix Instance>.IPv6Prefix	
2.	Allow time for the DUT to process the set.	
3.	Transmit a DHCPv6 Solicit message from Client-1 requesting an IA_PD option.	Ensure the DUT must offer an IA_PD to Client-1 in the DHCPv6 Advertise message with IAPrefix in the manually assigned address prefix.
4.	Transmit a DHCPv6 Request message from Client-1 requesting an IA_PD option.	Ensure the DUT must offer an IA_PD to Client-1 in the DHCPv6 Reply message with IAPrefix in the manually assigned address prefix.

prplOS.1.3.23: DHCPv6 Server IA_PD Address Available

Purpose: Ensure DHCPv6 Server reports the prefix pool being assigned on the LAN interface.

Parameters:

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part. The LAN interface has a static ULA prefix configured.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IAPDManualPrefixes=Device.IP.Interface.<LAN ULA Instance>.IPv6Prefix	
2.	Allow time for the DUT to process the set.	
3.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IAPDPrefixes	The DUT must return Device.IP.Interface.<LAN ULA Instance>.IPv6Prefix has one the path names returned.

prplOS.1.3.24: DHCPv6 Assign information by DUID

Purpose: Ensure DHCPv6 Server assigns addresses based on DUID.

Parameters:

Device.IP.Interface.<A>.Prefix	
Enable	true
Prefix	2001:0001:0000:0001::
StaticType	Static

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Device.DHCPv6.Server.Pool.<Y>	
Enable	true
IANAEnable	true
IAPDEnable	true
DUID	<Client-1 DUID>
DUIDExclude	false
IANAManualPrefixes	Device.IP.Interface.<A>.Prefix

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv6.Server.Pool.<Y> object with the parameters specified in the table above.	
2.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAPrefixes	The value returned from the DUT must be the Path Name of a row in the IP.Interface.{i}.IPv6Prefix. table.
3.	Get the parameter Prefix using the Path Name returned in Step 2.	The DUT must return a valid IPv6 Prefix.
4.	Allow time for the DUT to process the set.	
5.	Transmit a DHCPv6 Solicit message from Client-1.	The DUT must transmit a DHCPv6 Advertise with the address in 2001:0001:0000:0001::/64 range in response.
6.	Transmit a DHCPv6 Request message from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Reply with the address in 2001:0001:0000:0001::/64 range in response.
7.	Transmit a DHCPv6 Solicit message from Client-2.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
8.	Transmit a DHCPv6 Request message from Client-2.	The DUT must transmit a DHCPv6 Reply in response using an address range from address in Step 3.
9.	Set the parameter Device.DHCPv6.Server.Pool.<Y>.DUIDExclude=true.	
10.	Allow time for the DUT to process the set.	
11.	Transmit a DHCPv6 Solicit message from Client-1.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
12.	Transmit a DHCPv6 Request message from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.

13.	Transmit a DHCPv6 Solicit message from Client-2.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
14.	Transmit a DHCPv6 Request message from Client-2.	The DUT must transmit a DHCPv6 Reply in response using an address range from address in Step 3.

prplOS.1.3.25: DHCPv6 Assign information by Source Address

Purpose: Ensure DHCPv6 Server assigns addresses based on Source Address.

Parameters:

Device.IP.Interface.<A>.Prefix	
Enable	true
Prefix	2001:0001:0000:0001::
StaticType	Static

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Device.DHCPv6.Server.Pool.<Y>	
Enable	true
IANAEnable	true
IAPDEnable	true
SourceAddress	<Client-1 Link Local Address>
SourceAddressExclude	false
IANAManualPrefixes	Device.IP.Interface.<A>.Prefix

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part. The DHCPv6 assigned address lifetime before the test starts should be 80 seconds.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv6.Server.Pool.<Y> object with the parameters specified.	
2.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAPrefixes	The value returned from the DUT must be the Path Name of a row in the IP.Interface.{i}.IPv6Prefix. table.
3.	Get the parameter Prefix using the Path Name returned in Step 2.	The DUT must return a valid IPv6 Prefix.
4.	Allow time for the DUT to process the set.	
5.	Transmit a DHCPv6 Solicit message from Client-1.	The DUT must transmit a DHCPv6 Advertise with the address in 2001:0001:0000:0001::/64 range in response.
6.	Transmit a DHCPv6 Request message from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Reply with the address in 2001:0001:0000:0001::/64 range in response.
7.	Transmit a DHCPv6 Solicit message from Client-2.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
8.	Transmit a DHCPv6 Request message from Client-2.	The DUT must transmit a DHCPv6 Reply in response using an address range from address in Step 3.
9.	Set the parameter Device.DHCPv6.Server.Pool.<Y>.SourceAddressExclude=true.	
10.	Allow time for the DUT to process the set.	
11.	Transmit a DHCPv6 Solicit message from Client-1.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
12.	Transmit a DHCPv6 Request message from Client-1 to the DUT.	The DUT must transmit a DHCPv6 Reply in response using an address from Step 3.

13.	Transmit a DHCPv6 Solicit message from Client-2.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
14.	Transmit a DHCPv6 Request message from Client-2.	The DUT must transmit a DHCPv6 Reply in response using an address range from address in Step 3.

prplOS.1.3.26: DHCPv6 Assign information by UserClassID

Purpose: Ensure DHCPv6 Server assigns addresses based on UserClassID.

Parameters:

Device.IP.Interface.<A>.Prefix	
Enable	true
Prefix	2001:0001:0000:0001::
StaticType	Static

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Device.DHCPv6.Server.Pool.<Y>	
Enable	true
IANAEnable	true
IAPDEnable	true
UserClassID	<UserClassID-11>
UserClassExclude	false
IANAManualPrefixes	Device.IP.Interface.<A>.Prefix

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv6.Server.Pool.<Y> object with the parameters specified.	
2.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAPrefixes	The value returned from the DUT must be the Path Name of a row in the IP.Interface.{i}.IPv6Prefix. table.
3.	Get the parameter Prefix using the Path Name returned in Step 2.	The DUT must return a valid IPv6 Prefix.
4.	Allow time for the DUT to process the set.	
5.	Transmit a DHCPv6 Solicit message from Client-1 with a UserClassID Option in the ORO.	The DUT must transmit a DHCPv6 Advertise with the address in 2001:0001:0000:0001::/64 range in response.
6.	Transmit a DHCPv6 Request message from Client-1 to the DUT with a UserClassID Option with <UserClassID-1>.	The DUT must transmit a DHCPv6 Reply with the address in 2001:0001:0000:0001::/64 range in response.
7.	Transmit a DHCPv6 Solicit message from Client-2.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
8.	Transmit a DHCPv6 Request message from Client-2.	The DUT must transmit a DHCPv6 Reply in response using an address range from address in Step 3.
9.	Set the parameter Device.DHCPv6.Server.Pool.<Y>.UserClassIDExclude=true.	
10.	Allow time for the DUT to process the set.	
11.	Transmit a DHCPv6 Solicit message from Client-1 with a UserClassID Option in the ORO.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
12.	Transmit a DHCPv6 Request message from Client-1 to the DUT with a UserClassID Option with <UserClassID-1>.	The DUT must transmit a DHCPv6 Reply in response using an address from Step 3.

13.	Transmit a DHCPv6 Solicit message from Client-2.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
14.	Transmit a DHCPv6 Request message from Client-2.	The DUT must transmit a DHCPv6 Reply in response using an address range from address in Step 3.

prplOS.1.3.27: DHCPv6 Assign information by VendorClassID

Purpose: Ensure DHCPv6 Server assigns addresses based on VendorClassID.

Parameters:

Device.IP.Interface.<A>.Prefix	
Enable	true
Prefix	2001:0001:0000:0001::
StaticType	Static

Device.DHCPv6.Server.Pool.<LAN Instance>	
Enable	true
IANAEnable	true
IAPDEnable	true

Device.DHCPv6.Server.Pool.<Y>	
Enable	true
IANAEnable	true
IAPDEnable	true
UserClassID	<VendorClassID-1>
UserClassExclude	false
IANAManualPrefixes	Device.IP.Interface.<A>.Prefix

Functionality Tags: DHCPv6 Feature

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.DHCPv6.Server.Pool.<Y> object with the parameters specified in the table above.	
2.	Get the parameter Device.DHCPv6.Server.Pool.<LAN Instance>.IANAPrefixes	The value returned from the DUT must be the Path Name of a row in the IP.Interface.{i}.IPv6Prefix. table.
3.	Get the parameter Prefix using the Path Name returned in Step 2.	The DUT must return a valid IPv6 Prefix.
4.	Allow time for the DUT to process the set.	
5.	Transmit a DHCPv6 Solicit message from Client-1 with a VendorClassID Option in the ORO.	The DUT must transmit a DHCPv6 Advertise with the address in 2001:0001:0000:0001::/64 range in response.
6.	Transmit a DHCPv6 Request message from Client-1 to the DUT with a VendorClassID Option with <UserClassID-1>.	The DUT must transmit a DHCPv6 Reply with the address in 2001:0001:0000:0001::/64 range in response.
7.	Transmit a DHCPv6 Solicit message from Client-2.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
8.	Transmit a DHCPv6 Request message from Client-2.	The DUT must transmit a DHCPv6 Reply in response using an address range from address in Step 3.
9.	Set the parameter Device.DHCPv6.Server.Pool.<Y>.VendorClassExclude=true.	
10.	Allow time for the DUT to process the set.	
11.	Transmit a DHCPv6 Solicit message from Client-1 with a VendorClassID Option in the ORO.	The DUT must transmit a DHCPv6 Advertise with the address in 2001:0001:0000:0001::/64 range in response.
12.	Transmit a DHCPv6 Request message from Client-1 to the DUT	The DUT must transmit a DHCPv6 Reply with the address in

	with a VendorClassID Option with <VendorClassID-1>.	2001:0001:0000:0001::/64 range in response.
13.	Transmit a DHCPv6 Solicit message from Client-2.	The DUT must transmit a DHCPv6 Advertise in response using an address from Step 3.
14.	Transmit a DHCPv6 Request message from Client-2.	The DUT must transmit a DHCPv6 Reply in response using an address range from address in Step 3.

Group 4: DNS

Scope

The following test covers DNS support of a prplOS implementation.

Overview

The tests in this group verify the DUT properly implements DNS configuration for both WAN and LAN interfaces.

prplOS.1.4.1: DNS Client Status

Purpose: Ensure the DNS Client can be enabled and disabled while reporting the correct status.

Parameters:

Device.DNS.Client	
Enable	true

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.DNS.Client.Status.	The value returned from the DUT must be "Enabled".

prplOS.1.4.2: DNS Server from DHCPv4

Purpose: Ensure the DNS Client learns DNS Servers via DHCPv4.

Parameters:

Device.DNS.Client	
Enable	true

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the object Device.DNS.Client.Server.	The DUT must return the table that contains all the DNS servers. The value i is the instance that contains a Type=DHCPv4.
2.	Get the parameter Device.DNS.Client.Server.{i}.DNSServer.	The value returned from the DUT must be the IPv4 address of DNS-Server1.
3.	Get the parameter Device.DNS.Client.Server.{i}.Status.	The value returned from the DUT must be "Enabled".
4.	Set the parameter Device.DNS.Client.Server.{i}.Enabled=false.	
5.	Get the parameter Device.DNS.Client.Server.{i}.Status.	The value returned from the DUT must be "Disabled".

prplOS.1.4.3: DNS Server from DHCPv6

Purpose: Ensure the DNS Client learns DNS Servers via DHCPv6.

Parameters:

Device.DNS.Client	
Enable	true

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the object Device.DNS.Client.Server.	The DUT must return the table that contains all the DNS servers.The value i is the instance that contains a Type=DHCPv6.
2.	Get the parameter Device.DNS.Client.Server.{i}.DNSServer.	The value returned from the DUT must be the IPv6 address of DNS-Server1.
3.	Get the parameter Device.DNS.Client.Server.{i}.Status.	The value returned from the DUT must be "Enabled".
4.	Set the parameter Device.DNS.Client.Server.{i}.Enabled =false.	
5.	Get the parameter Device.DNS.Client.Server.{i}.Status.	The value returned from the DUT must be "Disabled".

prplOS.1.4.4: DNS Server from Router Advertisement

Purpose: Ensure the DNS Client learns DNS Servers via Router Advertisements.

Parameters:

Device.DNS.Client	
Enable	true

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit a Router Advertisement with RDNSS option containing the IPv6 address of DNS-Server1.	
2.	Get the object Device.DNS.Client.Server.	The DUT must return the table that contains all the DNS servers.The value i is the instance that contains a Type=RouterAdvertisement.
3.	Get the parameter Device.DNS.Client.Server.{i}.DNSServer.	The value returned from the DUT must be the IPv6 address of DNS-Server1.
4.	Get the parameter Device.DNS.Client.Server.{i}.Status.	The value returned from the DUT must be "Enabled".
5.	Set the parameter Device.DNS.Client.Server.{i}.Enabled=false.	
6.	Get the parameter Device.DNS.Client.Server.{i}.Status.	The value returned from the DUT must be "Disabled".

prplOS.1.4.5: Static DNS

Purpose: Ensure the DNS Client is properly configured statically.

Parameters:

Device.DNS.Client	
Enable	true

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the object Device.DNS.Client.Server.	The DUT must return the table that contains all the DNS servers.The value i is the instance that contains a Type=Static.
2.	Set the parameter Device.DNS.Client.Server.{i}.DNSServer=<LAN Address not assigned>.	
3.	Get the parameter Device.DNS.Client.Server.{i}.DNSServer.	The value returned from the DUT must be valued as assigned in Step 2.
4.	Get the parameter Device.DNS.Client.Server.{i}.Status.	The value returned from the DUT must be "Enabled".
5.	Set the parameter Device.DNS.Client.Server.{i}.Enabled=false.	
6.	Get the parameter Device.DNS.Client.Server.{i}.Status.	The value returned from the DUT must be "Disabled".

prplOS.1.4.6: Enable DNS Proxy

Purpose: Ensure the DNS Proxy can be enabled and disabled while reporting the correct status.

Parameters:

Device.DNS.Relay	
Enable	true

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.DNS.Relay.Enable=false.	
2.	Wait for 10 seconds.	
3.	Transmit a DNS Query from Client-1 to the DUT.	The DUT must not transmit the relayed DNS query to DNS-Server-1.
4.	Get the parameter Device.DNS.Relay.Status.	The value returned from the DUT must be "Disabled".
5.	Set the parameter Device.DNS.Relay.Enable=true.	
6.	Transmit a DNS Query from Client-1 to the DUT.	The DUT must transmit the relayed DNS query to DNS-Server-1.
7.	Get the parameter Device.DNS.Relay.Status.	The value returned from the DUT must be "Enabled".

prplOS.1.4.7: DNS Proxy from DHCPv4

Purpose: Ensure the DNS Client learns DNS Proxies via DHCPv4.

Parameters:

Device.DNS.Relay	
Enable	true

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the object Device.DNS.Relay.Forwarding.	The DUT must return the table that contains all the DNS servers. The value i is the instance that contains a Type=DHCPv4 and Interface=<WAN>.
2.	Get the parameter Device.DNS.Relay.Forwarding.{i}.DNSServer.	The value returned from the DUT must be the IPv4 address of DNS-Server1.
3.	Get the parameter Device.DNS.Relay.Forwarding.{i}.Status.	The value returned from the DUT must be "Enabled".
4.	Set the parameter Device.DNS.Relay.Forwarding.{i}.Enabled=false.	
5.	Get the parameter Device.DNS.Relay.Forwarding.{i}.Status.	The value returned from the DUT must be "Disabled".

prplOS.1.4.8: DNS Proxy from DHCPv6

Purpose: Ensure the DNS Client learns DNS Proxies via DHCPv6.

Parameters:

Device.DNS.Client	
Enable	true

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the object Device.DNS.Relay.Forwarding.	The DUT must return the table that contains all the DNS servers. The value i is the instance that contains a Type=DHCPv6.
2.	Get the parameter Device.DNS.Relay.Forwarding.{i}.DNSServer.	The value returned from the DUT must be the IPv6 address of DNS-Server1.
3.	Get the parameter Device.DNS.Relay.Forwarding.{i}.Status.	The value returned from the DUT must be "Enabled".
4.	Transmit a DNS Query from Client-1 to the DUT over IPv6.	The DUT must transmit the relayed DNS query to DNS-Server-1.
5.	Set the parameter Device.DNS.Relay.Forwarding.{i}.Enabled=false.	
6.	Get the parameter Device.DNS.Relay.Forwarding.{i}.Status.	The value returned from the DUT must be "Disabled".
7.	Transmit a DNS Query from Client-1 to the DUT.	The DUT must not transmit the relayed DNS query to DNS-Server-1.

prplOS.1.4.9: DNS Proxy from Router Advertisement

Purpose: Ensure the DNS Client learns DNS Proxies via Router Advertisements.

Parameters:

Device.DNS.Relay	
Enable	true

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit a Router Advertisement with RDNSS option containing the IPv6 address of DNS-Server1.	
2.	Get the object Device.DNS.Relay.Forwarding.	The DUT must return the table that contains all the DNS servers.The value i is the instance that contains a Type=RouterAdvertisement.
3.	Get the parameter Device.DNS.Client.Forwarding.{i}.DNSServer.	The value returned from the DUT must be the IPv6 address of DNS-Server1.
4.	Get the parameter Device.DNS.Client.Forwarding.{i}.Status.	The value returned from the DUT must be "Enabled".
5.	Transmit a DNS Query from Client-1 to the DUT over IPv6.	The DUT must transmit the relayed DNS query to DNS-Server-1.
6.	Set the parameter Device.DNS.Client.Forwarding.{i}.Enabled=false.	
7.	Get the parameter Device.DNS.Client.Forwarding.{i}.Status.	The value returned from the DUT must be "Disabled".
8.	Transmit a DNS Query from Client-1 to the DUT.	The DUT must not transmit the relayed DNS query to DNS-Server-1.

Group 5: Firewall

Scope

The following test covers Firewall support of a prplOS implementations.

Overview

The tests in this group verify the DUT properly implements firewall configuration and security.

prplOS.1.5.1: Enable Firewall

Purpose: Ensure the Firewall can be enabled and disabled with the correct reporting status.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.WAN2LAN_medium

Device.Firewall.Policy.WAN2LAN_medium	
Chain	Device.Firewall.Chain.Medium
Enable	true

Device.Firewall.Chain.Medium	
Enable	true

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Host-1 to Client-1.	The DUT must NOT forward traffic from Host-1 to Client-1.

2.	Set the parameter Device.Firewall.Enabled=false.	
3.	Transmit traffic from Host-1 to Client-1.	The DUT must forward traffic from Host-1 to Client-1.

prplOS.1.5.2: Firewall LastChange

Purpose: Ensure the Firewall reports the LastChange time correctly.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.Firewall.LastChange	The DUT returns a dateTime since the last operational state change.
2.	Set the parameter Device.Firewall.Enabled=false.	
3.	Get the parameter Device.Firewall.LastChange	The DUT returns a value that is a different later time then the value returned in Step 1.

prplOS.1.5.3: Default Policy

Purpose: Ensure the Firewall sets the DefaultPolicy.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.WAN2LAN_medium

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Host-1 to Client-1.	The DUT must NOT forward traffic from Host-1 to Client-1.
2.	Set the parameter Device.Firewall.Level.Medium.Default Policy=Accept	
3.	Transmit traffic from Host-1 to Client-1.	The DUT must forward traffic from Host-1 to Client-1.

prplOS.1.5.4: Enable Firewall Policies

Purpose: Ensure the DUT properly enables firewall policies.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.IPV6_Medium. Rule.<X> object with the parameters specified in the table above.	
2.	Transmit traffic from Host-1 to Client-1.	The DUT must forward traffic from Host-1 to Client-1.
3.	Get the parameter Device.Firewall.Policy.IPV6_WAN2LAN_medium.Status	The value returned from the DUT must be "Enabled".
4.	Set the parameter Device.Firewall.Policy.IPV6_WAN2LAN_medium.Enable=false	
5.	Transmit traffic from Host-1 to Client-1.	The DUT must NOT forward traffic from Host-1 to Client-1.
6.	Get the parameter Device.Firewall.Policy.IPV6_WAN2LAN_medium.Status	The value returned from the DUT must be "Disabled".

prplOS.1.5.5: Enable Firewall Chain

Purpose: Ensure the DUT properly enables firewall chains.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.IPV6_Medium. Rule.<X> object with the parameters specified in the table above.	
2.	Transmit traffic from Host-1 to Client-1.	The DUT must forward traffic from Host-1 to Client-1.
3.	Set the parameter Device.Firewall.Chain.IPV6_Medium. Enable=false.	
4.	Transmit traffic from Host-1 to Client-1.	The DUT must NOT forward traffic from Host-1 to Client-1.

prplOS.1.5.6: Enable Firewall Rules

Purpose: Ensure the DUT properly enables firewall rules.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	2

Device.Firewall.Chain.IPV6_Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	3

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.IPV6_Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.IPV6_Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit an ICMP Ping from Host-1 to Client-1.	The DUT must forward ICMP Ping from Host-1 to Client-1.
4.	Get the parameter Device.Firewall.Chain.IPv6_Medium.Rule.<X>.Status	The value returned from the DUT must be "Enabled".
5.	Get the parameter Device.Firewall.Chain.IPV6_Medium.Rule.<Y>.Status	The value returned from the DUT must be "Enabled".
6.	Set the parameter Device.Firewall.Chain.IPV6_Medium.Rule.<X>.Enable=false	
7.	Transmit an ICMP Ping from Host-1 to Client-1.	The DUT must NOT forward traffic from Host-1 to Client-1.
8.	Get the parameter Device.Firewall.Chain.IPv6_Medium.Rul	The value returned from the DUT must be "Disabled".

	e.<X>.Status	

prplOS.1.5.7: Firewall Rules Protocol

Purpose: Ensure the DUT properly implements a firewall based on protocol.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1

Protocol	6

Device.Firewall.Chain.Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2
Protocol	-1

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit TCP traffic from Host-1 to Client-1.	The DUT must forward TCP traffic from Host-1 to Client-1.
4.	Transmit UDP traffic from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.Protocol=17	
6.	Transmit TCP traffic from Host-1 to Client-1.	The DUT must not forward TCP traffic from Host-1 to Client-1.
7.	Transmit UDP traffic from Host-1 to	The DUT must forward UDP traffic

	Client-1.	from Host-1 to Client-1.

prplOS.1.5.8: Firewall Rules based on IP Version, IPv4 Policy

Purpose: Ensure the DUT properly implements a firewall based on IP version.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.WAN2LAN_medium

Device.Firewall.Policy.WAN2LAN_medium	
Chain	Device.Firewall.Chain.Medium
Enable	true
IPVersion	4

Device.Firewall.Chain.Medium	
Enable	true

Device.Firewall.Chain.Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1

IPVersion	4

Device.Firewall.Chain.Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit IPv4 traffic from Host-1 to Client-1.	The DUT must forward IPv4 traffic from Host-1 to Client-1.
4.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.IPVersion=6.	
5.	Transmit IPv4 traffic from Host-1 to Client-1.	The DUT must not forward IPv4 traffic from Host-1 to Client-1.

prplOS.1.5.9: Firewall Rules based on IP Version, IPv6 Policy

Purpose: Ensure the DUT properly implements a firewall based on IP version.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.IPV6_Chain.Medium
Enable	true
IPVersion	6

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept

Order	1
IPVersion	6

Device.Firewall.Chain.IPV6_Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit IPv6 traffic from Host-1 to Client-1.	The DUT must forward IPv6 traffic from Host-1 to Client-1.
4.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.IPVersion=4.	
5.	Transmit IPv6 traffic from Host-1 to Client-1.	The DUT must not forward IPv6 traffic from Host-1 to Client-1.

prplOS.1.5.10: Firewall Rules based on IPv4 Source Address

Purpose: Ensure the DUT properly implements a firewall based on IPv4 source address.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.WAN2LAN_medium

Device.Firewall.Policy.WAN2LAN_medium	
Chain	Device.Firewall.Chain.Medium
Enable	true

Device.Firewall.Chain.Medium	
Enable	true

Device.Firewall.Chain.Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1
SourceIP	<Host-1 IPv4 Address>

IPVersion	4

Device.Firewall.Chain.Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit IPv4 traffic from Host-1 to Client-1.	The DUT must forward IPv4 traffic from Host-1 to Client-1.
4.	Transmit IPv4 traffic from Host-2 to Client-1.	The DUT must not forward IPv4 traffic from Host-2 to Client-1.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X> .SourceIP=<Host-2 IPv4 Address>.	
6.	Transmit IPv4 traffic from Host-1 to Client-1.	The DUT must not forward IPv4 traffic from Host-1 to Client-1.
7.	Transmit IPv4 traffic from Host-2 to Client-1.	The DUT must forward IPv4 traffic from Host-2 to Client-1.

prplOS.1.5.11: Firewall Rules based on IPv6 Source Address

Purpose: Ensure the DUT properly implements a firewall based on IPv6 source address.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1

SourceIP	<Host-1 IPv6 Address>
IPVersion	6

Device.Firewall.Chain.IPV6_Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit IPv6 traffic from Host-1 to Client-1.	The DUT must forward IPv6 traffic from Host-1 to Client-1.
4.	Transmit IPv6 traffic from Host-2 to Client-1.	The DUT must not forward IPv6 traffic from Host-2 to Client-1.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.SourceIP=<Host-2 IPv6 Address>.	
6.	Transmit IPv6 traffic from Host-1 to Client-1.	The DUT must not forward IPv6 traffic from Host-1 to Client-1.

7.	Transmit IPv6 traffic from Host-2 to Client-1.	The DUT must forward IPv6 traffic from Host-2 to Client-1.

prplOS.1.5.12: Firewall Rules based on IPv4 Destination Address

Purpose: Ensure the DUT properly implements a firewall based on IPv4 destination address.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.WAN2LAN_medium

Device.Firewall.Policy.WAN2LAN_medium	
Chain	Device.Firewall.Chain.Medium
Enable	true

Device.Firewall.Chain.Medium	
Enable	true

Device.Firewall.Chain.Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1
DestIP	<Client-1 IPv4 Address>

IPVersion	4

Device.Firewall.Chain.Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit IPv4 traffic from Host-1 to Client-1.	The DUT must forward IPv4 traffic from Host-1 to Client-1.
4.	Transmit IPv4 traffic from Host-1 to Client-2.	The DUT must not forward IPv4 traffic from Host-1 to Client-2.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.SourceIP=<Host-2 IPv4 Address>.	
6.	Transmit IPv4 traffic from Host-1 to Client-1.	The DUT must not forward IPv4 traffic from Host-1 to Client-1.
7.	Transmit IPv4 traffic from Host-1 to Client-2.	The DUT must forward IPv4 traffic from Host-1 to Client-2.

prplOS.1.5.13: Firewall Rules based on IPv6 Destination Address

Purpose: Ensure the DUT properly implements a firewall based on IPv6 destination address.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1

SourceIP	<Host-1 IPv6 Address>
IPVersion	6

Device.Firewall.Chain.IPV6_Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit IPv6 traffic from Host-1 to Client-1.	The DUT must forward IPv6 traffic from Host-1 to Client-1.
4.	Transmit IPv6 traffic from Host-1 to Client-2.	The DUT must not forward IPv6 traffic from Host-1 to Client-2.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.SourceIP=<Host-2 IPv6 Address>.	
6.	Transmit IPv6 traffic from Host-1 to Client-1.	The DUT must not forward IPv6 traffic from Host-1 to Client-1.

7.	Transmit IPv6 traffic from Host-1 to Client-2.	The DUT must forward IPv6 traffic from Host-1 to Client-2.

prplOS.1.5.14: Firewall Rules based on TCP Source Port

Purpose: Ensure the DUT properly implements a firewall based on source port.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1

SourcePort	49600
Protocol	6

Device.Firewall.Chain.IPV6_Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit TCP traffic with a source port of 49600 from Host-1 to Client-1.	The DUT must forward UDP traffic from Host-1 to Client-1.
4.	Transmit TCP traffic with a source port of 51000 from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.SourcePort=51000.	
6.	Transmit TCP traffic with a source port of 49600 from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.

7.	Transmit TCP traffic with a source port of 51000 from Host-1 to Client-1.	The DUT must forward UDP traffic from Host-1 to Client-1.

prplOS.1.5.15: Firewall Rules based on UDP Source Port

Purpose: Ensure the DUT properly implements a firewall based on source port.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1

SourcePort	49600
Protocol	17

Device.Firewall.Chain.IPV6_Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit UDP traffic with a source port of 49600 from Host-1 to Client-1.	The DUT must forward UDP traffic from Host-1 to Client-1.
4.	Transmit UDP traffic with a source port of 51000 from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.SourcePort=51000.	
6.	Transmit UDP traffic with a source port of 49600 from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.

7.	Transmit UDP traffic with a source port of 51000 from Host-1 to Client-1.	The DUT must forward UDP traffic from Host-1 to Client-1.

prplOS.1.5.16: Firewall Rules based on TCP Destination Port

Purpose: Ensure the DUT properly implements a firewall based on the destination port.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true

Target	Accept
Order	1
DestPort	80
Protocol	6

Device.Firewall.Chain.IPV6_Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit TCP port 80 traffic from Host-1 to Client-1.	The DUT must forward HTTP traffic from Host-1 to Client-1.
4.	Transmit TCP port 443 from Host-1 to Client-1.	The DUT must not forward HTTPS traffic from Host-1 to Client-1.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>	

	.SourcePort=443.	
6.	Transmit TCP port 80 traffic from Host-1 to Client-1.	The DUT must not forward HTTP traffic from Host-1 to Client-1.
7.	Transmit TCP port 443 from Host-1 to Client-1.	The DUT must forward HTTPS traffic from Host-1 to Client-1.

prplOS.1.5.17: Firewall Rules based on UDP Destination Port

Purpose: Ensure the DUT properly implements a firewall based on the destination port.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.IPV6_WAN2LAN_medium

Device.Firewall.Policy.IPV6_WAN2LAN_medium	
Chain	Device.Firewall.Chain.IPV6_Medium
Enable	true

Device.Firewall.Chain.IPV6_Medium	
Enable	true

Device.Firewall.Chain.IPV6_Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1

DestPort	80
Protocol	17

Device.Firewall.Chain.IPV6_Medium.Rule.< Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit UDP port 80 traffic from Host-1 to Client-1.	The DUT must forward HTTP traffic from Host-1 to Client-1.
4.	Transmit UDP port 443 from Host-1 to Client-1.	The DUT must not forward HTTPS traffic from Host-1 to Client-1.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X> .SourcePort=443.	
6.	Transmit UDP port 80 traffic from Host-1 to Client-1.	The DUT must not forward HTTP traffic from Host-1 to Client-1.

7.	Transmit UDP port 443 from Host-1 to Client-1.	The DUT must forward HTTPS traffic from Host-1 to Client-1.

prplOS.1.5.18: Firewall Rules based on Source Mac

Purpose: Ensure the DUT properly implements a firewall based on the Source MAC address.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.WAN2LAN_medium

Device.Firewall.Policy.WAN2LAN_medium	
Chain	Device.Firewall.Chain.Medium
Enable	true

Device.Firewall.Chain.Medium	
Enable	true

Device.Firewall.Chain.Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1
SourceMAC	<Host-1 Source MAC>

Device.Firewall.Chain.Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit traffic from Host-1 to Client-1.	The DUT must forward traffic from Host-1 to Client-1.
4.	Transmit traffic from Host-2 to Client-1.	The DUT must not forward traffic from Host-2 to Client-1.
5.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.SourceMAC=<Host-2 MAC address>	
6.	Transmit traffic from Host-1 to Client-1.	The DUT must not forward traffic from Host-1 to Client-1.
7.	Transmit traffic from Host-2 to Client-1.	The DUT must forward traffic from Host-2 to Client-1.

prplOS.1.5.19: Firewall Rules based on DSCP

Purpose: Ensure the DUT properly implements a firewall based on the DSCP value.

Parameters:

Device.Firewall	
Enable	true
Config	Policy
PolicyLevel	Device.Firewall.Level.Medium.

Device.Firewall.Level.Medium.	
DefaultPolicy	Drop
Policies	Device.Firewall.Policy.WAN2LAN_medium

Device.Firewall.Policy.WAN2LAN_medium	
Chain	Device.Firewall.Chain.Medium
Enable	true

Device.Firewall.Chain.Medium	
Enable	true

Device.Firewall.Chain.Medium.Rule.<X>	
Enable	true
Target	Accept
Order	1
DSCP	40

Device.Firewall.Chain.Medium.Rule.<Y>	
Enable	true
Target	Reject
Order	2

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.Firewall.Chain.Medium.Rule.<X> object with the parameters specified in the table above.	
2.	Add a new Device.Firewall.Chain.Medium.Rule.<Y> object with the parameters specified in the table above.	
3.	Transmit UDP traffic with DSCP-40 from Host-1 to Client-1.	The DUT must forward UDP traffic from Host-1 to Client-1.
4.	Transmit UDP traffic with DSCP-41 from Host-1 to Client-1.	The DUT must forward UDP traffic from Host-1 to Client-1.
5.	Transmit UDP traffic with DSCP-32 from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.
6.	Transmit UDP traffic with DSCP-33 from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.
7.	Set the parameter Device.Firewall.Chain.Medium.Rule.<X>.DSCP=32	
8.	Transmit UDP traffic with DSCP-40 from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.
9.	Transmit UDP traffic with DSCP-41 from Host-1 to Client-1.	The DUT must not forward UDP traffic from Host-1 to Client-1.

10.	Transmit UDP traffic with DSCP-32 from Host-1 to Client-1.	The DUT must forward UDP traffic from Host-1 to Client-1.
11.	Transmit UDP traffic with DSCP-33 from Host-1 to Client-1.	The DUT must forward UDP traffic from Host-1 to Client-1.

Group 6: IP Interfaces

Scope

The following test covers IPv4 and IPv6 addressing in a prplOS implementations.

Overview

The tests in this group verify the DUT properly implements IP addressing, subnetting/prefixing, and statistics for both WAN and LAN.

prplOS.1.6.1: IPv4 Status

Purpose: Ensure that DUT properly reports IPv4.

Parameters:

Device.IP.	
IPv4Capable	
IPv4Enable	
IPv4 Status	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.IPv4Capable.	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.IPv4Enable.	The value returned from the DUT must be true.
3.	Get the parameter Device.IP.IPv4Status	The DUT must return a value of Enabled for the parameter.

prplOS.1.6.2: IPv6 Status

Purpose: Ensure that DUT properly reports IPv6.

Parameters:

Device.IP.	
IPv6Capable	
IPv6Enable	
IPv6Status	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.IPv6Capable.	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.IPv6Enable.	The value returned from the DUT must be true.
3.	Get the parameter Device.IP.IPv6Status	The DUT must return a value of Enabled for the parameter.

prplOS.1.6.3: IPv4 WAN Status

Purpose: Ensure that DUT properly reports the WAN IPv4 status.

Parameters:

Device.IP.Interface.<WAN>.	
Enable	
IPv4Enable	
Status	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<WAN>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<WAN>.Status	The DUT must return a value of Up for the parameter.
3.	Get the parameter Device.IP.Interface.<WAN>.IPv4Enable	The value returned from the DUT must be true.

prplOS.1.6.4: IPv6 WAN Status

Purpose: Ensure that DUT properly reports the WAN IPv6 status.

Parameters:

Device.IP.Interface.<WAN>.	
Enable	
IPv6Enable	
Status	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<WAN>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<WAN>.Status	The DUT must return a value of Up for the parameter.
3.	Get the parameter Device.IP.Interface.<WAN>.IPv6Enable	The value returned from the DUT must be true.

prplOS.1.6.5: IPv4 WAN Address

Purpose: Ensure that DUT properly reports the WAN IPv4 address.

Parameters:

Device.IP.Interface.<WAN>.IPv4Address.{i}.	
Enable	
IPAddress	
Status	
SubnetMask	
AddressingType	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<WAN>.IPv4Address.<primary>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<WAN>.IPv4Address.<primary>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<WAN>.IPv4Address.<primary>.IPAddress	The DUT must return a value of IPv4 address of the WAN interface for the parameter.
4.	Get the parameter Device.IP.Interface.<WAN>.IPv4Address.<primary>.SubnetMask	The DUT must return a value of IPv4 subnet mask of the WAN interface for the parameter.
5.	Device.IP.Interface.<WAN>.IPv4Adress.<primary>.AddressingType	The DUT must return a value of DHCP for the parameter.

prplOS.1.6.6: IPv6 Link Local WAN Address

Purpose: Ensure that DUT properly reports the WAN IPv6 link-local address.

Parameters:

Device.IP.Interface.<WAN>.IPv6Address.<LLA>.	
Enable	
IPAddress	<IPv6 Link Local Address>
IPAddressStatus	
Status	
Origin	
PreferredLifetime	
ValidLifetime	
Anycast	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<LLA>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<LLA>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<LLA>.IPAddress	The DUT must return a value of IPv6 link local address of the WAN interface for the parameter.
4.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<LLA>.IPAddressStatus	The DUT must return a value of Preferred for the parameter.

5.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<LLA>.Origin	The DUT must return a value of AutoConfigured for the parameter.
6.	Device.IP.Interface.<WAN>.IPv6Adress.<LLA>.PreferredLifetime	The DUT must return a value of 9999-12-31T23:59:59Z for the parameter.
7.	Device.IP.Interface.<WAN>.IPv6Adress.<LLA>.ValidLifetime	The DUT must return a value of 9999-12-31T23:59:59Z for the parameter.
8.	Device.IP.Interface.<WAN>.IPv6Adress.<LLA>.Anycast	The value returned from the DUT must be false.

prplOS.1.6.7: IPv6 Global WAN Address

Purpose: Ensure that DUT properly reports the WAN IPv6 global address.

Parameters:

Device.IP.Interface.<WAN>.IPv6Adress.<GUA_RA/DHCP>.	
Enable	
IPAddress	<IPv6 Global Unicast Address>
IPAddressStatus	
Status	
Origin	
PreferredLifetime	
ValidLifetime	
Anycast	
Prefix	<IPv6 Prefix from Router Advertisement>

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part. The alias GUA_RA is used when using SLAAC for WAN addressing. The alias DHCP is used when using DHCPv6 for WAN addressing.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA/DHCP>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA/DHCP>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<WAN>.IPv6Addr	The DUT must return a value of IPv6 link local address of the WAN

	ess.<GUA_RA/DHCP>.IPAddress	interface for the parameter.
4.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA/DHCP>.IPAddressStatus	The DUT must return a value of Preferred for the parameter.
5.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA/DHCP>.Origin	The DUT must return a value of AutoConfigured or DHCPv6 for the parameter based on the configuration.
6.	Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA/DHCP>.PreferredLifetime	The DUT must return a value equal to the time when it will expire based on the time supplied from Router Advertisements or DHCPv6.
7.	Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA/DHCP>.ValidLifetime	The DUT must return a value equal to the time when it will expire based on the time supplied from Router Advertisements or DHCPv6.
8.	Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA/DHCP>.Anycast	The value returned from the DUT must be false.

prplOS.1.6.8: IPv6 WAN Router Advertisement Prefix

Purpose: Ensure that DUT properly reports the WAN IPv6 Router Advertisement prefix.

Parameters:

Device.IP.Interface.<WAN>.IPv6Prefix.<GUA_RA>.	
Enable	
Prefix	<IPv6 Address prefix>
Status	
Origin	
PreferredLifetime	
ValidLifetime	
PrefixStatus	
OnLink	
Autonomous	
StaticType	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA>.Prefix	The DUT must return a value of IPv6 prefix address of the WAN interface for the parameter.

4.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA_RA>.Origin	The DUT must return a value of RouterAdvertisement for the parameter based on the configuration.
5.	Device.IP.Interface.<WAN>.IPv6Adress.<GUA_RA>.PreferredLifetime	The DUT must return a value equal to the time when it will expire based on the preferred lifetime supplied from Router Advertisement.
6.	Device.IP.Interface.<WAN>.IPv6Adress.<GUA_RA>.ValidLifetime	The DUT must return a value equal to the time when it will expire based on the valid lifetime supplied from Router Advertisement.
7.	Device.IP.Interface.<WAN>.IPv6Adress.<GUA_RA>.PrefixStatus	The value returned from the DUT must be Preferred.
8.	Device.IP.Interface.<WAN>.IPv6Adress.<GUA_RA>.OnLink	The value returned from the DUT must be true.
9.	Device.IP.Interface.<WAN>.IPv6Adress.<GUA_RA>.Autonomous	The value returned from the DUT must be true.
10.	Device.IP.Interface.<WAN>.IPv6Adress.<GUA_RA>.StaticType	The DUT must return a value of Inapplicable for the parameter.
11.	Device.IP.Interface.<WAN>.IPv6Adress.<GUA_RA>.ChildPrefixBits	The DUT must return a value of the empty string for the parameter.

prplOS.1.6.9: IPv6 WAN Prefix Delegation

Purpose: Ensure that DUT properly reports the WAN IPv6 prefix delegation.

Parameters:

Device.IP.Interface.<WAN>.IPv6Prefix.<GUA_IAPD>.	
Enable	
Prefix	<IPv6 Address prefix>
Status	
Origin	
PreferredLifetime	
ValidLifetime	
PrefixStatus	
OnLink	
Autonomous	
StaticType	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<WAN>.IPv6Address.<GUA>.Prefix	The DUT must return a value of IPv6 prefix address of the WAN interface for the parameter.

4.	Get the parameter Device.IP.Interface.<WAN>.IPv6Addr ess.<GUA>.Origin	The DUT must return a value of PrefixDelegation for the parameter based on the configuration.
5.	Device.IP.Interface.<WAN>.IPv6Adre ss.<GUA>.PreferredLifetime	The DUT must return a value equal to the time when it will expire based on the preferred lifetime supplied from DHCPv6 IA_PD.
6.	Device.IP.Interface.<WAN>.IPv6Adre ss.<GUA>.ValidLifetime	The DUT must return a value equal to the time when it will expire based on the valid lifetime supplied from DHCPv6 IA_PD.
7.	Device.IP.Interface.<WAN>.IPv6Adre ss.<GUA>.PrefixStatus	The value returned from the DUT must be Preferred.
8.	Device.IP.Interface.<WAN>.IPv6Adre ss.<GUA>.OnLink	The value returned from the DUT must be false.
9.	Device.IP.Interface.<WAN>.IPv6Adre ss.<GUA>.Autonomous	The value returned from the DUT must be false.
10.	Device.IP.Interface.<WAN>.IPv6Adre ss.<GUA>.StaticType	The DUT must return a value of Inapplicable for the parameter.
11.	Device.IP.Interface.<WAN>.IPv6Adre ss.<GUA>.ChildPrefixBits	The DUT must return a value of the empty string for the parameter.

prplOS.1.6.10: IPv4 LAN Status

Purpose: Ensure that DUT properly reports the LAN IPv4 status.

Parameters:

Device.IP.Interface.<LAN>.	
Enable	
IPv4Enable	
Status	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<LAN>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<LAN>.Status	The DUT must return a value of Up for the parameter.
3.	Get the parameter Device.IP.Interface.<LAN>.IPv4Enable	The value returned from the DUT must be true.

prplOS.1.6.11: IPv6 LAN Status

Purpose: Ensure that DUT properly reports the WAN IPv6 status.

Parameters:

Device.IP.Interface.<LAN>.	
Enable	
IPv6Enable	
Status	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<LAN>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<LAN>.Status	The DUT must return a value of Up for the parameter.
3.	Get the parameter Device.IP.Interface.<LAN>.IPv6Enable	The value returned from the DUT must be true.

prplOS.1.6.12: IPv4 LAN Address

Purpose: Ensure that DUT properly reports the LAN IPv4 address.

Parameters:

Device.IP.Interface.<LAN>.IPv4Address.<LAN>.	
Enable	
IPAddress	
Status	
SubnetMask	
AddressingType	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<LAN>.IPv4Address.<LAN>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<LAN>.IPv4Address.<LAN>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<LAN>.IPv4Address.<LAN>.IPAddress	The DUT must return a value of IPv4 address of the LAN interface for the parameter.
4.	Get the parameter Device.IP.Interface.<LAN>.IPv4Address.<LAN>.SubnetMask	The DUT must return a value of IPv4 subnet mask of the LAN interface for the parameter.
5.	Device.IP.Interface.<LAN>.IPv4Address.<LAN>.AddressingType	The DUT must return a value of Static for the parameter.

prplOS.1.6.13: IPv6 Link Local LAN Address

Purpose: Ensure that DUT properly reports the LAN IPv6 link-local address.

Parameters:

Device.IP.Interface.<LAN>.IPv6Address.<LLA>.	
Enable	
IPAddress	<IPv6 Link Local Address>
IPAddressStatus	
Status	
Origin	
PreferredLifetime	
ValidLifetime	
Anycast	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<LLA>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<LLA>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<LLA>.IPAddress	The DUT must return a value of IPv6 link local address of the LAN interface for the parameter.
4.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<LLA>.IPAddressStatus	The DUT must return a value of Preferred for the parameter.

5.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<LLA>.Origin	The DUT must return a value of AutoConfigured for the parameter.
6.	Device.IP.Interface.<LAN>.IPv6Adress.<LLA>.PreferredLifetime	The DUT must return a value of 9999-12-31T23:59:59Z for the parameter.
7.	Device.IP.Interface.<LAN>.IPv6Adress.<LLA>.ValidLifetime	The DUT must return a value of 9999-12-31T23:59:59Z for the parameter.
8.	Device.IP.Interface.<LAN>.IPv6Adress.<LLA>.Anycast	The value returned from the DUT must be false.

prplOS.1.6.14: IPv6 Global LAN Address

Purpose: Ensure that DUT properly reports the LAN IPv6 global address.

Parameters:

Device.IP.Interface.<LAN>.IPv6Adress.<GUA>.	
Enable	
IPAddress	<IPv6 Global Unicast Address>
IPAddressStatus	
Status	
Origin	
PreferredLifetime	
ValidLifetime	
Anycast	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<GUA>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<GUA>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<GUA>.IPAddress	The DUT must return a value of IPv6 global address of the LAN interface for the parameter.
4.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<GUA>.IPAddressStatus	The DUT must return a value of Preferred for the parameter.

5.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<GUA>.Origin	The DUT must return a value of AutoConfigured for the parameter based on the configuration.
6.	Device.IP.Interface.<LAN>.IPv6Adress.<GUA>.PreferredLifetime	The DUT must return a value equal to the time when it will expire based on the time supplied from DHCPv6.
7.	Device.IP.Interface.<LAN>.IPv6Adress.<GUA>.ValidLifetime	The DUT must return a value equal to the time when it will expire based on the time supplied from DHCPv6.
8.	Device.IP.Interface.<LAN>.IPv6Adress.<GUA>.Anycast	The value returned from the DUT must be false.

prplOS.1.6.15: IPv6 LAN Prefix

Purpose: Ensure that DUT properly reports the LAN IPv6 Router Advertisement prefix.

Parameters:

Device.IP.Interface.<LAN>.IPv6Prefix.<GUA>.	
Enable	
Prefix	<IPv6 Address prefix>
Status	
Origin	
PreferredLifetime	
ValidLifetime	
PrefixStatus	
OnLink	
Autonomous	
StaticType	
ParentPrefix	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<GUA>.Enable	The value returned from the DUT must be true.
2.	Get the parameter Device.IP.Interface.<LAN>.IPv6Address.<GUA>.Status	The DUT must return a value of Enabled for the parameter.
3.	Get the parameter Device.IP.Interface.<LAN>.IPv6Addre	The DUT must return a value of IPv6 prefix address from within the IA_PD

	ss.<GUA>.Prefix	range for the parameter.
4.	Get the parameter Device.IP.Interface.<LAN>.IPv6Addre ss.<GUA>.Origin	The DUT must return a value of Child for the parameter.
5.	Device.IP.Interface.<LAN>.IPv6Adres s.<GUA_RA>.PreferredLifetime	The DUT must return a value equal to the time when it will expire based on the preferred lifetime supplied in the IA_PD.
6.	Device.IP.Interface.<LAN>.IPv6Adres s.<GUA_RA>.ValidLifetime	The DUT must return a value equal to the time when it will expire based on the preferred lifetime supplied in the IA_PD.
7.	Device.IP.Interface.<LAN>.IPv6Adres s.<GUA_RA>.PrefixStatus	The value returned from the DUT must be Preferred.
8.	Device.IP.Interface.<LAN>.IPv6Adres s.<GUA_RA>.OnLink	The value returned from the DUT must be true.
9.	Device.IP.Interface.<LAN>.IPv6Adres s.<GUA_RA>.Autonomous	The value returned from the DUT must be true.
10.	Device.IP.Interface.<LAN>.IPv6Adres s.<GUA_RA>.StaticType	The DUT must return a value of Child for the parameter.
11.	Get the parameter Device.IP.Interface.<LAN>.IPv6Addre ss.<GUA_RA>.ParentPrefix	The value returned must be the path of the WAN IA_PD prefix.
12.	Transmit a Router Solicitation from Client-1.	The DUT transmits a Router Advertisement with values specified in the above steps.

prplOS.1.6.16: IPv4 LAN Change Address

Purpose: Ensure that DUT properly applies changes to the IPv4 LAN address.

Parameters:

Device.IP.Interface.<LAN>.IPv4Address.<LAN>.	
IPAddress	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.IP.Interface.<LAN>.IPv4Address.<LAN>.IPAddress=10.10.10.1	
2.	Transmit ICMP Echo Request from Client-1 to 10.10.10.1.	The DUT must transmit an ICMP Echo Reply to Client-1.

prplOS.1.6.17: IPv4 LAN SubnetMask

Purpose: Ensure that DUT properly applies changes to the IPv4 LAN subnet mask.

Parameters:

Device.IP.Interface.<LAN>.IPv4Address.<LAN>.	
SubnetMask	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.IP.Interface.<LAN>.IPv4Address.<LAN>.SubnetMask=255.0.0.0	
2.	Transmit ICMP Echo Request from Client-1 with source address of 192.0.2.1 to DUT LAN address.	The DUT must transmit an ICMP Echo Reply to Client-1.
3.	Transmit ICMP Echo Request from Client-1 with source address of 192.168.10.1 to DUT LAN address.	The DUT must transmit an ICMP Echo Reply to Client-1.

prplOS.1.6.18: IPv6 ULA

Purpose: Ensure that DUT properly sets the IPv6 Unique Local Address.

Parameters:

Device.IP.Interface.<LAN>.IPv6Adress.<ULA>.	
Enable	true
IPAddress	FD02:CAFE::1
Anycast	false

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Add a new Device.IP.Interface.<LAN>.IPv6Address.<ULA> object with the parameters specified.	
2.	Transmit ICMPv6 Echo Request from Client-1 to FD02:CAFE::1.	The DUT must transmit an ICMP Echo Reply to Client-1.

prplOS.1.6.19: MTU Configuration

Purpose: Ensure that DUT properly sets the MTU configuration.

Parameters:

Device.IP.Interface.<LAN>.	
MaxMTUSize	1300

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Set the parameter Device.IP.Interface.<LAN>.MaxMTUSize=1300.	
2.	Transmit IPv6 UDP Traffic with size of 1500 from Client-1 to Host-1.	The DUT must transmit an ICMPv6 Packet Too Big message in response to UDP traffic.

prplOS.1.6.20: IP Interface BytesSent

Purpose: Verify the statistics for IP.Interface.{i}.Stats.BytesSent are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
BytesSent	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<LAN>.Stats.Byte sSent	The DUT returns the value of BytesSent.
2.	Transmit 500 bytes of data from Client-1 to Host-1.	Host-1 transmits an Echo Reply to Client-1.
3.	Get the parameter Device.IP.Interface.<LAN>.Stats.Byte sSent	The DUT returns a value of BytesSent that is 500 bytes more than the value in Step 1.

prplOS.1.6.21: IP Interface BytesReceived

Purpose: Verify that the statistics for IP.Interface.{i}.Stats.BytesReceived are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
BytesReceived	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Client-1 to Host-1.	The DUT must forward traffic from Client-1 to Host-1.
2.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.BytesReceived	The DUT returns the value of BytesReceived.
3.	Transmit 500 bytes of data from Client-1 to Host-1.	
4.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.BytesReceived	The DUT returns a value of BytesReceived that is 500 bytes more than the value in Step 1.

prplOS.1.6.22: IP Interface PacketsSent

Purpose: Verify the statistics for IP.Interface.{i}.Stats.PacketsSent are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
PacketsSent	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Device.IP.Interface.<LAN>.Stats.PacketsSent	The DUT returns the value of PacketsSent
2.	Transmit 5 packets from Client-1 to Host-1.	Host-1 transmits a 5 Echo Replies to Client-1.
3.	Get the parameter Device.IP.Interface.<LAN>.Stats.PacketsSent	The DUT returns a value of PacketsSent that is 5 more than the value in Step 1.

prplOS.1.6.23: IP Interface PacketsReceived

Purpose: Verify that the statistics for IP.Interface.{i}.Stats.PacketsReceived are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
PacketsReceived	

Functionality Tags: Core

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Client-1 to Host-1.	The DUT must forward traffic from Client-1 to Host-1.
2.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.PacketsReceived	The DUT returns the value of PacketsReceived.
3.	Transmit 5 packets from Client-1 to Host-1.	
4.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.PacketsReceived	The DUT returns a value of PacketsReceived that is 5 packets more than the value in Step 1.

prplOS.1.6.24: IP Interface UnicastPacketsSent

Purpose: Verify the statistics for IP.Interface.{i}.Stats.UnicastPacketsSent are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
UnicastPacketsSent	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Client-1 to Client-2.	The DUT must forward traffic from Client-1 to Client-2.
2.	Get the parameter Device.IP.Interface.<LAN>.Stats.UnicastPacketsSent	The DUT returns the value of UnicastPacketsSent
3.	Transmit 5 unicast packets from Client-1 to the DUT.	The DUT transmits unicast packets in response.
4.	Transmit 5 multicast packets from Client-1 to the DUT.	The DUT transmits multicast packets in response.
5.	Transmit 5 broadcast packets from Client-2 to the DUT.	The DUT transmits broadcast packets in response.
6.	Get the parameter Device.IP.Interface <LAN>.Stats.UnicastPacketsSent	The DUT returns a value of UnicastPacketsSent that is 5 packets more than the value in Step 1.

prplOS.1.6.25: IP Interface UnicastPacketsReceived

Purpose: Verify that the statistics for IP.Interface.{i}.Stats.UnicastPacketsReceived are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
UnicastPacketsReceived	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.UnicastPacketsReceived	The DUT returns the value of UnicastPacketsReceived.
2.	Transmit 5 unicast packets from Client-1 to the DUT.	
3.	Transmit 5 multicast packets from Client-1 to the DUT.	
4.	Transmit 5 broadcast packets from Client-1 to the DUT.	
5.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.UnicastPacketsReceived	The DUT returns a value of UnicastPacketsReceived that is 5 packets more than the value in Step 1.

prplOS.1.6.26: IP Interface MulticastPacketsSent

Purpose: Verify the statistics for IP.Interface.{i}.Stats.MulticastPacketsSent are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
MulticastPacketsSent	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Client-1 to Client-2.	The DUT must forward traffic from Client-1 to Client-2.
2.	Get the parameter Device.IP.Interface.<LAN>.Stats.MulticastPacketsSent	The DUT returns the value of MulticastPacketsSent
3.	Transmit 5 unicast packets from Client-1 to the DUT.	The DUT transmits unicast packets in response.
4.	Transmit 5 multicast packets from Client-1 to the DUT.	The DUT transmits multicast packets in response.
5.	Transmit 5 broadcast packets from Client-2 to the DUT.	The DUT transmits broadcast packets in response.
6.	Get the parameter Device.IP.Interface <LAN>.Stats.MulticastPacketsSent	The DUT returns a value of MulticastPacketsSent that is 5 packets more than the value in Step 1.

prplOS.1.6.27: IP Interface MulticastPacketsReceived

Purpose: Verify that the statistics for IP.Interface.{i}.Stats.MulticastPacketsReceived are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
MultiPacketsReceived	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.MulticastPacketsReceived	The DUT returns the value of MulticastPacketsReceived.
2.	Transmit 5 unicast packets from Client-1 to the DUT.	
3.	Transmit 5 multicast packets from Client-1 to the DUT.	
4.	Transmit 5 broadcast packets from Client-1 to the DUT.	
5.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.MultiPacketsReceived	The DUT returns a value of MulticastPacketsReceived that is 5 packets more than the value in Step 1.

prplOS.1.6.28: IP Interface BroadcastPacketsSent

Purpose: Verify the statistics for IP.Interface.{i}.Stats.BroadcastPacketsSent are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
BroadPacketsSent	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Transmit traffic from Client-1 to Client-2.	The DUT must forward traffic from Client-1 to Client-2.
2.	Get the parameter Device.IP.Interface.<LAN>.Stats.BroadcastPacketsSent	The DUT returns the value of BroadcastPacketsSent
3.	Transmit 5 unicast packets from Client-1 to the DUT.	The DUT transmits unicast packets in response.
4.	Transmit 5 multicast packets from Client-1 to the DUT.	The DUT transmits multicast packets in response.
5.	Transmit 5 broadcast packets from Client-2 to the DUT.	The DUT transmits broadcast packets in response.
6.	Get the parameter Device.IP.Interface <LAN>.Stats.BroadcastPacketsSent	The DUT returns a value of BroadcastPacketsSent that is 5 packets more than the value in Step 1.

prplOS.1.6.29: IP Interface BroadcastPacketsReceived

Purpose: Verify that the statistics for IP.Interface.{i}.Stats.BroadcastPacketsReceived are properly reported.

Parameters:

Device.IP.Interface.<LAN>.Stats.	
MultiPacketsReceived	

Functionality Tags: Provisional Exclude

Test Setup: Common Test Setup is used at the beginning of each part.

Procedure:

Step	Action	Expected Behavior
1.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.BroadcastPacketsReceived	The DUT returns the value of BroadPacketsReceived.
2.	Transmit 5 unicast packets from Client-1 to the DUT.	
3.	Transmit 5 multicast packets from Client-1 to the DUT.	
4.	Transmit 5 broadcast packets from Client-1 to the DUT.	
5.	Get the parameter Get the parameter Device.IP.Interface.<LAN>.Stats.BroadPacketsReceived	The DUT returns a value of BroadcastPacketsReceived that is 5 packets more than the value in Step 1.

References

- [TR-181](), Device Data Model, Broadband Forum
- [TR-069](), CPE WAN Management Protocol, Broadband Forum
- [USP](), User Services Platform, Broadband Forum