RFC Compliance Test Report
# PIM-SMV6 Results
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OpenSourceRouting
a project by the Network Device Education Foundation, Inc (www.NetDEF.org)

FRROUTING

| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| Type | FRR | FRR | FRR | FRR | FRR | FRR | FRR |
| Commit ID | 99477bc | 62ac43d | 86a5e5a | 933b834 | 7a2b85a | 61ba3a4 | 852b11e |
| Commit Date | 2022-11-03 | 2023-01-10 | 2023-03-13 | 2023-03-16 | 2023-04-23 | 2023-06-14 | 2023-11-22 |

**ANVL-PIM-SMV6-1.1**

**MAY**

draft-ietf-pim-sm-v2-new-12.txt s3. p8-9 PIM-SM Protocol Overview

PIM-SM Protocol Overview
In phase one, a multicast receiver expresses its interest in receiving traffic destined for a multicast group.  Typically it does this using IGMP[6] or MLD[4], but other mechanisms might also serve this purpose.

| Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
|---|---|---|---|---|---|---|
| Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

**ANVL-PIM-SMV6-1.2**

**MUST**

draft-ietf-pim-sm-v2-new-12.txt s3. p8 PIM-SM Protocol Overview

PIM-SM Protocol Overview
Regardless of how it is created, the primary role of the MRIB in the PIM protocol is to provide the next hop router along a multicast-capable path to each destination subnet.The MRIB is used to determine the next hop neighbor to which any PIM Join/Prune message is sent

| Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
|---|---|---|---|---|---|---|
| Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: unpredict | Debian 12: pass |

**ANVL-PIM-SMV6-1.3**

**MUST**

NEGATIVE
draft-ietf-pim-sm-v2-new-12.txt s3. p8 PIM-SM Protocol Overview

PIM-SM Protocol Overview
Regardless of how it is created, the primary role of the MRIB in the PIM protocol is to provide the next hop router along a multicast-capable path to each destination subnet. The MRIB is used to determine the next hop neighbor to which any PIM Join/Prune message is sent

| Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
|---|---|---|---|---|---|---|
| Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: unpredict |

**ANVL-PIM-SMV6-1.4**

**MUST**

draft-ietf-pim-sm-v2-new-12.txt s3. p9 PIM-SM Protocol Overview

PIM-SM Protocol Overview
Join messages are resent periodically so long as the receiver remains in the group

| Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
|---|---|---|---|---|---|---|
| Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-1.5** **MUST** | NEGATIVE: draft-ietf-pim-sm-v2-new-12.txt s3. p9 PIM-SM Protocol Overview | | | | | | |
| | PIM-SM Protocol Overview<br>The RP receives these encapsulated data packets, decapsulates them, and forwards them onto the shared tree. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-1.6** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s3 p9-10 PIM-SM Protocol Overview | | | | | | |
| | PIM-SM Protocol Overview<br>Although Register-encapsulation may continue indefinitely, for these reasons, the RP will normally choose to switch to native forwarding. To do this, when the RP receives a register-encapsulated data packet from source S on group G, it will normally initiate an (S,G) source-specific Join towards S. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-1.7** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s3 p10 PIM-SM Protocol Overview | | | | | | |
| | PIM-SM Protocol Overview<br>When packets from S also start to arrive natively at the RP, the RP will be receiving two copies of each of these packets. At this point, the RP starts to discard the encapsulated copy of these packets, and it sends a RegisterStop message back to S"s DR to prevent the DR unnecessarily encapsulating the packets. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-1.8** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s3 p10 PIM-SM Protocol Overview | | | | | | |
| | PIM-SM Protocol Overview<br>To obtain lower latencies, a router on the receiver"s LAN, typically the DR, may optionally initiate a transfer from the shared tree to a source-specific shortest-path tree (SPT). To do this, it issues an (S,G) Join towards S. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-1.9 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s3 p10-11 PIM-SM Protocol Overview ||||||| |
| | PIM-SM Protocol Overview<br>At this point the receiver (or a router upstream of the receiver) will be receiving two copies of the data - one from the SPT and one from the RPT. When the first traffic starts to arrive from the SPT, the DR or upstream router starts to drop the packets for G from S that arrive via the RP tree. ||||||| |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-1.10 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s3 p11 PIM-SM Protocol Overview ||||||| |
| | PIM-SM Protocol Overview<br>At this point the receiver (or a router upstream of the receiver) will be receiving two copies of the data - one from the SPT and one from the RPT.  When the first traffic starts to arrive from the SPT, the DR or upstream router starts to drop the packets for G from S that arrive via the RP tree.  In addition, it sends an (S,G) Prune message towards the RP.  This is known as an (S,G,rpt) Prune.<br>Here DUT is considered as an upstream router. The verification is made that the Join/Prune msg send by DUT has RPT-bit set ||||||| |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: unpredict |
| ANVL-PIM-SMV6-1.11 **MAY** | draft-ietf-pim-sm-v2-new-12.txt s3 p12 PIM-SM Protocol Overview ||||||| |
| | PIM-SM Protocol Overview<br>PIM-SM routers need to know the address of the RP for each group for which they have (*,G) state. This address is obtained through a bootstrap mechanism. ||||||| |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-1.12 **MAY** | draft-ietf-pim-sm-v2-new-12.txt s3. p12 PIM-SM Protocol Overview ||||||| |
| | PIM-SM Protocol Overview<br>PIM-SM routers need to know the address of the RP for each group for which they have (*,G) state. This address is obtained through static configuration. ||||||| |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-1.13 **MUST** | ANVL Setup Verification | | | | | | |
| | PIM-SM Protocol Overview<br>Quick test to verify that DUT sends Assert message with metric value correctly | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-1.14 **MUST** | ANVL Setup Verification | | | | | | |
| | PIM-SM Protocol Overview<br>Quick test to verify that DUT sends Assert message with metric preference value correctly | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-1.15 **MUST** | ANVL Setup Verification | | | | | | |
| | PIM-SM Protocol Overview<br>Quick test to verify that DUT sends Register message with IP Source set to the IP address where it come from. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-3.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.1.3 p17 (*,G) State | | | | | | |
| | (*,G) State<br>The upstream (*,G) Join/Prune timer is used send out to override Prune(*,G) messages from peers on an upstream LAN interface | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-3.2 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.1.3 p17 (*,G) State | | | | | | |
| | (*,G) State<br>The last RPF neighbor towards the RP is stored because if the MRIB changes then the RPF neighbor towards the RP may change. If it does so, then we need to trigger a new Join (*,G) to the new upstream neighbor | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-3.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.1.3 p17 (*,G) State | | | | | | |
| | (*,G) State<br>The last RPF neighbor towards the RP is stored because if the MRIB changes then the RPF neighbor towards the RP may change. If it does so, then we need to trigger a Prune(*,G) to the old upstream neighbor. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-4.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.1.4 p19 (S,G) State | | | | | | |
| | (S,G) State<br>The upstream (S,G) Join/Prune timer is used send out to override Prune(S,G) messages from peers on an upstream LAN interface | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: pass |
| ANVL-PIM-SMV6-4.2 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.1.4 p19 (S,G) State | | | | | | |
| | (S,G) State<br>The last RPF neighbor towards the S is stored because if the MRIB changes then the RPF neighbor towards the S may change. If it does so, then we need to trigger a new Join (S,G) to the new upstream neighbor | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-4.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.1.4 p19 (S,G) State | | | | | | |
| | (S,G) State<br>The last RPF neighbor towards the S is stored because if the MRIB changes then the RPF neighbor towards the S may change. If it does so, then we need to trigger a Prune(S,G) to the old upstream neighbor. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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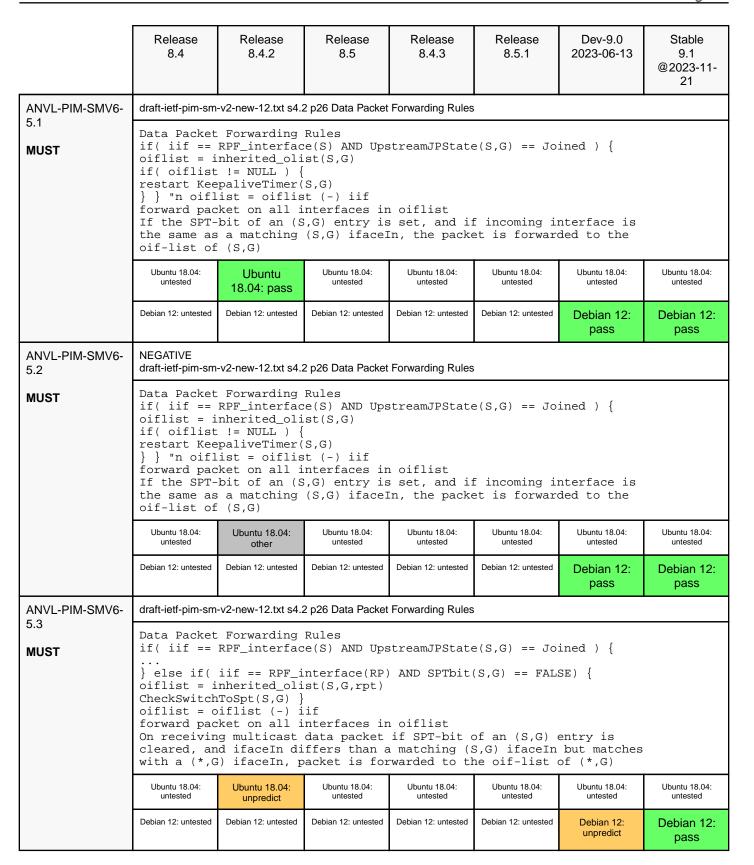| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-4.4 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.1.4 p19 (S,G) State | | | | | | |
| | (S,G) State<br>If the router detects through a changed GenID in a Hello message that the upstream neighbor towards S has rebooted, then it should re-instantiate state by sending a Join(S,G). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-4.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.1.4 p19 (S,G) State | | | | | | |
| | (S,G) State<br>Amongst other things, this is necessary for the so-called "turnaround rules" - when the RP uses (S,G) joins to stop encapsulation, and then (S,G) prunes to prevent traffic from unnecessarily reaching the RP. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-4.6 **MUST** | NEGATIVE<br>draft-ietf-pim-sm-v2-new-12.txt s4.1.4 p19 (S,G) State | | | | | | |
| | (S,G) State<br>The SPTbit is used to indicate whether forwarding is taking place on the (S,G) Shortest Path Tree (SPT) or on the (*,G) tree. When SPTbit is FALSE, only (*,G) forwarding state is used to forward packets from S to G. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-4.7 **MUST** | draft-ietf-pim-sm-v2-new-07.ps s4.1.4 p19 (S,G) State | | | | | | |
| | (S,G) State<br>The SPTbit is used to indicate whether forwarding is taking place on the (S,G) Shortest Path Tree (SPT) or on the (*,G) tree. When SPTbit is TRUE, both (*,G) and (S,G) forwarding state are used. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-5.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.2 p26 Data Packet Forwarding Rules | | | | | | |
| | Data Packet Forwarding Rules<br>if( iif == RPF_interface(S) AND UpstreamJPState(S,G) == Joined ) {<br>oiflist = inherited_olist(S,G)<br>if( oiflist != NULL ) {<br>restart KeepaliveTimer(S,G)<br>} } "n oiflist = oiflist (-) iif<br>forward packet on all interfaces in oiflist<br>If the SPT-bit of an (S,G) entry is set, and if incoming interface is<br>the same as a matching (S,G) ifaceIn, the packet is forwarded to the<br>oif-list of (S,G) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-5.2 **MUST** | NEGATIVE<br>draft-ietf-pim-sm-v2-new-12.txt s4.2 p26 Data Packet Forwarding Rules | | | | | | |
| | Data Packet Forwarding Rules<br>if( iif == RPF_interface(S) AND UpstreamJPState(S,G) == Joined ) {<br>oiflist = inherited_olist(S,G)<br>if( oiflist != NULL ) {<br>restart KeepaliveTimer(S,G)<br>} } "n oiflist = oiflist (-) iif<br>forward packet on all interfaces in oiflist<br>If the SPT-bit of an (S,G) entry is set, and if incoming interface is<br>the same as a matching (S,G) ifaceIn, the packet is forwarded to the<br>oif-list of (S,G) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-5.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.2 p26 Data Packet Forwarding Rules | | | | | | |
| | Data Packet Forwarding Rules<br>if( iif == RPF_interface(S) AND UpstreamJPState(S,G) == Joined ) {<br>...<br>} else if( iif == RPF_interface(RP) AND SPTbit(S,G) == FALSE) {<br>oiflist = inherited_olist(S,G,rpt)<br>CheckSwitchToSpt(S,G) }<br>oiflist = oiflist (-) iif<br>forward packet on all interfaces in oiflist<br>On receiving multicast data packet if SPT-bit of an (S,G) entry is<br>cleared, and ifaceIn differs than a matching (S,G) ifaceIn but matches<br>with a (*,G) ifaceIn, packet is forwarded to the oif-list of (*,G) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: unpredict | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: unpredict | Debian 12: pass |

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FRROUTING

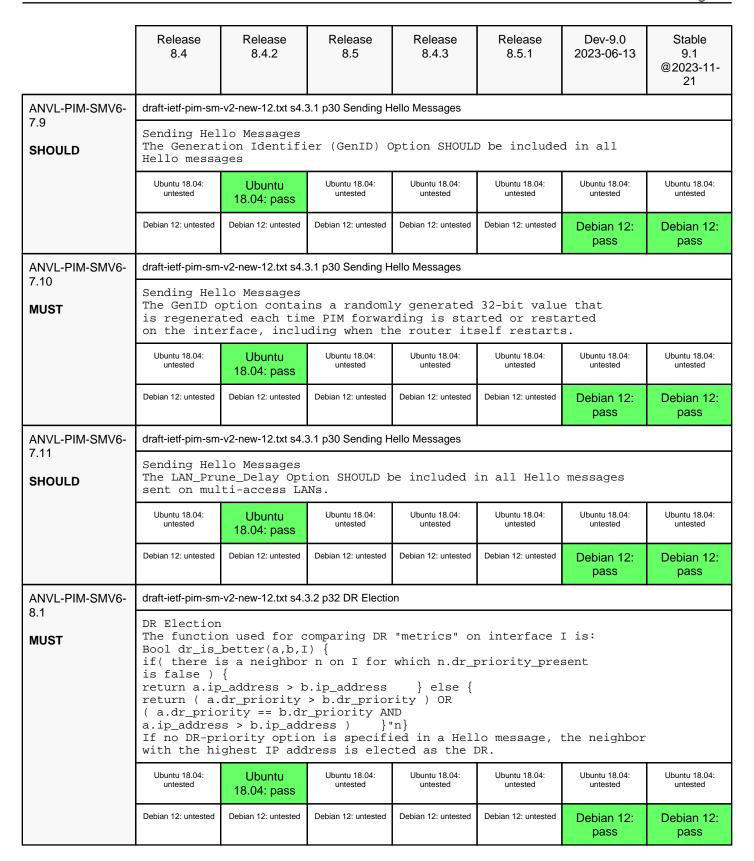| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-5.4** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.2 p26 Data Packet Forwarding Rules | | | | | | |
| | `Data Packet Forwarding Rules`<br>`oiflist = NULL`<br>`if( iif == RPF_interface(S) AND UpstreamJPState(S,G) == Joined ) {`<br>`...`<br>`} else if( iif == RPF_interface(RP) AND SPTbit(S,G) == FALSE) {`<br>`...`<br>`} else {`<br>`# Note: RPF check failed`<br>`if ( SPTbit(S,G) == TRUE AND iif is in inherited_olist(S,G) ) {`<br>`send Assert(S,G) on iif`<br>`} else if ( SPTbit(S,G) == FALSE AND`<br>`iif is in inherited_olist(S,G,rpt) {`<br>`send Assert(*,G) on iif`<br>`} }`<br>`oiflist = oiflist (-) iif`<br>`forward packet on all interfaces in oiflist`<br>`On receiving multicast data packet, if incoming interface does not`<br>`match (S,G) ifaceIn or (*,G) ifaceIn, the packet is not forwarded` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-5.5** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.2 p26 Data Packet Forwarding Rules | | | | | | |
| | `Data Packet Forwarding Rules`<br>`if ( SPTbit(S,G) == TRUE AND iif is in inherited_olist(S,G) ) {`<br>`send Assert(S,G) on iif`<br>`} else if ( SPTbit(S,G) == FALSE AND`<br>`iif is in inherited_olist(S,G,rpt) {`<br>`send Assert(*,G) on iif`<br>`}`<br>`On receipt a data from S to G on interface iif, if SPT-bit is TRUE,`<br>`it will send an Assert(S,G) on iif.` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-5.6** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.2 p26 Data Packet Forwarding Rules | | | | | | |
| | `Data Packet Forwarding Rules`<br>`if ( SPTbit(S,G) == TRUE AND iif is in inherited_olist(S,G) ) {`<br>`send Assert(S,G) on iif`<br>`} else if ( SPTbit(S,G) == FALSE AND`<br>`iif is in inherited_olist(S,G,rpt) {`<br>`send Assert(*,G) on iif`<br>`}`<br>`On receipt a data from S to G on interface iif, if SPT-bit is FALSE,`<br>`it will send an Assert(*,G) on iif.` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-6.1**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt 4.2.2 p29<br>Setting and Clearing the (S,G) SPT bit | | | | | | |
| | Setting and Clearing the (S,G) SPT bit<br>Thus, when a packet arrives, the (S,G) SPTbit is updated as follows:<br>void<br>Update_SPTbit(S,G,iif) {<br>if ( iif == RPF_interface(S)<br>AND JoinDesired(S,G) == TRUE<br>AND ( DirectlyConnected(S) == TRUE<br>OR RPF_interface(S) != RPF_interface(RP)<br>OR inherited_olist(S,G,rpt) == NULL<br>OR RPF"(S,G) == RPF"(*,G) ) ) {<br>Set SPTbit(S,G) to TRUE<br>}    }<br>Here The RPF interface to S is different from the RPF interface to the RP<br>Here RP Tree is built by (*,G) Join message | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-7.1**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p29 Sending Hello Messages | | | | | | |
| | Sending Hello Messages<br>PIM-Hello messages are sent periodically on each PIM-enabled interface. Hello messages must be sent every Hello-Period> seconds. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-7.2**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p29 Sending Hello Messages | | | | | | |
| | Sending Hello Messages<br>Hello messages MUST be sent on all active interfaces, including physical point-to-point links, and are multicast to address 224.0.0.13 (the ALL-PIM-ROUTERS group). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-7.3**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p29 Sending Hello Messages | | | | | | |
| | Sending Hello Messages<br>When PIM is enabled on an interface or a router first starts,the hello timer of that interface is set to a random value between 0 and Triggered_Hello_Delay. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-7.5 **MAY** | NEGATIVE draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p30 Sending Hello Messages | | | | | | |
| | Sending Hello Messages The neighbors will not accept Join/Prune from a router unless they have first heard a Hello message from that router. (This test is for (*,G) join state) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-7.6 **MAY** | NEGATIVE draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p30 Sending Hello Messages | | | | | | |
| | Sending Hello Messages The neighbors will not accept Join/Prune from a router unless they have first heard a Hello message from that router. (This test is for (S,G) join state) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-7.7 **SHOULD** | draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p30 Sending Hello Messages | | | | | | |
| | Sending Hello Messages The DR_Election_Priority Option SHOULD be included in every Hello message. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-7.8 **SHOULD** | draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p30 Sending Hello Messages | | | | | | |
| | Sending Hello Messages The DR_Election_Priority Option SHOULD be included in every Hello message, even if no DR election priority is explicitly configured on that interface. The default priority is 1. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-7.9**<br><br>**SHOULD** | draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p30 Sending Hello Messages | | | | | | |
| | Sending Hello Messages<br>The Generation Identifier (GenID) Option SHOULD be included in all Hello messages | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-7.10**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p30 Sending Hello Messages | | | | | | |
| | Sending Hello Messages<br>The GenID option contains a randomly generated 32-bit value that is regenerated each time PIM forwarding is started or restarted on the interface, including when the router itself restarts. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-7.11**<br><br>**SHOULD** | draft-ietf-pim-sm-v2-new-12.txt s4.3.1 p30 Sending Hello Messages | | | | | | |
| | Sending Hello Messages<br>The LAN_Prune_Delay Option SHOULD be included in all Hello messages sent on multi-access LANs. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-8.1**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election<br>The function used for comparing DR "metrics" on interface I is:<br>Bool dr_is_better(a,b,I) {<br>if( there is a neighbor n on I for which n.dr_priority_present is false ) {<br>return a.ip_address > b.ip_address    } else {<br>return ( a.dr_priority > b.dr_priority ) OR<br>( a.dr_priority == b.dr_priority AND<br>a.ip_address > b.ip_address )    }"n}<br>If no DR-priority option is specified in a Hello message, the neighbor with the highest IP address is elected as the DR. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-8.2**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election<br>The function used for comparing DR "metrics" on interface I is:<br>Bool dr_is_better(a,b,I) {<br>if( there is a neighbor n on I for which n.dr_priority_present<br>is false ) {<br>return a.ip_address > b.ip_address    } else {<br>return ( a.dr_priority > b.dr_priority ) OR<br>( a.dr_priority == b.dr_priority AND<br>a.ip_address > b.ip_address )    }"n}<br>If DR-priority option is specified in a Hello message. The DR<br>election priority is a 32-bit unsigned number and the numerically<br>larger priority is always preferred.<br>(When DUT is elected as DR) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-8.3**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election<br>The function used for comparing DR "metrics" on interface I is:<br>Bool dr_is_better(a,b,I) {<br>if( there is a neighbor n on I for which n.dr_priority_present<br>is false ) {<br>return a.ip_address > b.ip_address    } else {<br>return ( a.dr_priority > b.dr_priority ) OR<br>( a.dr_priority == b.dr_priority AND<br>a.ip_address > b.ip_address )    }"n}<br>If DR-priority option is specified in a Hello message. The DR<br>election priority is a 32-bit unsigned number and the numerically<br>larger priority is always preferred.<br>(When ANVL is elected as DR) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-8.4 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election<br>The function used for comparing DR "metrics" on interface I is:<br>Bool dr_is_better(a,b,I) {<br>if( there is a neighbor n on I for which n.dr_priority_present<br>is false ) {<br>return a.ip_address > b.ip_address     } else {<br>return ( a.dr_priority > b.dr_priority ) OR<br>( a.dr_priority == b.dr_priority AND<br>a.ip_address > b.ip_address )     }"n}<br>If DR-priority option is specified in a Hello message, the neighbor<br>with the DR-priority is equal to that of the others then the highest IP<br>address is elected as the DR.<br>(When DUT is elected as DR) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: unpredict | Debian 12: unpredict |
| ANVL-PIM-SMV6-8.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election<br>The function used for comparing DR "metrics" on interface I is:<br>Bool dr_is_better(a,b,I) {<br>if( there is a neighbor n on I for which n.dr_priority_present<br>is false ) {<br>return a.ip_address > b.ip_address     } else {<br>return ( a.dr_priority > b.dr_priority ) OR<br>( a.dr_priority == b.dr_priority AND<br>a.ip_address > b.ip_address )     }"n}<br>If DR-priority option is specified in a Hello message, the neighbor<br>with the DR-priority is equal to that of the others then the highest IP<br>address is elected as the DR.<br>(When ANVL is elected as DR) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-8.6 **MAY** | draft-ietf-pim-sm-v2-new-12.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election<br>A router"s idea of the current DR on an interface can change when<br>a neighbor times out. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-8.7 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election A router"s idea of the current DR on an interface can change when a router"s own DR priority changes. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: pass |
| ANVL-PIM-SMV6-8.8 **MUST** | draft-ietf-pim-v2-new-07.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election The Neighbor Liveness Timer (NLT(N,I)) is reset to Hello_Holdtime (from the Hello Holdtime option) whenever a Hello message is received containing a Holdtime option. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-8.9 **MAY** | draft-ietf-pim-smi-v2-new-07.txt s4.3.2 p32 DR Election | | | | | | |
| | DR Election A router"s idea of the current DR on an interface can change when a PIM-Hello message is received, when a neighbor times out, or when a router"s own DR priority changes. If the router becomes the DR or ceases to be the DR, this will normally cause the DR Register state-machine to change state. (Here selection of the new DR to be one with the highest IP address) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-10.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4 p35 PIM Register Messages | | | | | | |
| | PIM Register Messages The Designated Router (DR) on a LAN or point-to-point link encapsulates multicast packets from local sources to the RP for the relevant group unless it recently received a Register Stop message for that (S,G) or (*,G) from the RP. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-10.2** **MUST** | NEGATIVE <br> draft-ietf-pim-sm-v2-new-12.txt s4.4 p35 PIM Register Messages | | | | | | |
| | PIM Register Messages <br> The Designated Router (DR) on a LAN or point-to-point link encapsulates multicast packets from local sources to the RP for the relevant group unless it recently received a Register Stop message for that (S,G) or (*,G) from the RP. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-10.3** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4 p35 PIM Register Messages | | | | | | |
| | PIM Register Messages <br> The Designated Router (DR) on a LAN or point-to-point link does not encapsulates multicast packets from local sources to the RP for the relevant group if it recently received a Register Stop message for that (S,G) from the RP. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: pass |
| **ANVL-PIM-SMV6-10.4** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4 p35 PIM Register Messages | | | | | | |
| | PIM Register Messages <br> When the DR receives a Register Stop message from the RP, it starts a Register Stop timer to maintain this state. Just before the Register Stop timer expires, the DR sends a Null-Register Message to the RP to allow the RP to refresh the Register Stop information at the DR. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: pass |
| **ANVL-PIM-SMV6-11.1** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR <br> In Join(J) state if DR receives RegisterStop Message, then it will go to Prune(P) state by removing register tunnel and set Register-Stop Timer. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-11.2 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In Join(J) state if CouldRegister(S,G) becomes false then it will go to NoInfo(NI) State<br>Here CouldRegister(S,G) -> FALSE is achieved by making I_am_DR(RPF_interface(S))->FALSE | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |
| ANVL-PIM-SMV6-11.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In Join(J) state if RP(G) changes, then the DR updates Register tunnel | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-11.4 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In Join Pending(JP) state if RegStop timer expires then the DR will go to Join(J) state by adding the register tunnel | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: pass |
| ANVL-PIM-SMV6-11.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In Join Pending(JP) state if RP changed then the DR will go to Join(J) state by adding the register tunnel and cancel the Register-Stop Timer. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: FAIL |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-11.6**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In Join Pending(JP) state if CouldRegister(S,G) becomes false then it will go to NoInfo(NI) State<br>Here CouldRegister(S,G) -> FALSE is achieved by making I_am_DR(RPF_interface(S))->FALSE | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |
| **ANVL-PIM-SMV6-11.7**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In Join Pending(JP) state if RegStop is received The the DR goes to Prune(P) state and set RegStop timer to randomised RSI - probetime | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| **ANVL-PIM-SMV6-11.8**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In Prune(P) state if CouldRegister(S,G) becomes false then it will go to NoInfo(NI) State<br>Here CouldRegister(S,G) -> FALSE is achieved by making I_am_DR(RPF_interface(S))->FALSE | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |
| **ANVL-PIM-SMV6-11.9**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In Prune(P) state if RP(G) changes, then the DR goes to Join(J) state and adds Register Channel | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-11.10 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p37 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>In NoInfo(NI) if CouldRegister(S,G) becomes true then DR will go to Join(J) State<br>Here CouldRegister(S,G) -> TRUE is achieved by making I_am_DR(RPF_interface(S))->TRUE | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |
| ANVL-PIM-SMV6-11.11 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.1 p39 Sending Register Messages from the DR | | | | | | |
| | Sending Register Messages from the DR<br>A RegisterStop(*,G) should be treated as a RegisterStop(S,G) for all existing (S,G) Register state machines | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-12.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p40 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>When an RP receives a Register message, the course of action is decided according to the following pseudocode:<br>Packet_arrives_on_rp_tunnel( pkt ) {<br>...<br>if(( inherited_olist(S,G) == NULL ) OR SPTbit(S,G)) {<br>send RegisterStop(S,G) to outer.src<br>} else {<br>...<br>}<br>}<br>...<br>}<br>If ( inherited_olist(S,G) == NULL )then RP send RegisterStop(S,G) to outer.src i.e., the DRs address. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-12.2**<br><br>**MUST** | NEGATIVE<br>draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p40 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>When an RP receives a Register message, the course of action is<br>decided according to the following pseudocode:<br>Packet_arrives_on_rp_tunnel( pkt ) {<br>...<br>if(( inherited_olist(S,G) == NULL ) OR SPTbit(S,G)) {<br>send RegisterStop(S,G) to outer.src<br>} else {<br>if( ! pkt.NullRegisterBit ) {<br>decapsulate and pass the inner packet to the normal<br>forwarding path for forwarding on the (*,G) tree.<br>}     }"n    ..."n}<br>If (S,G) entry with cleared (0) SPT bit exists, and received Register<br>without Null-Register-Bit set to 1 then RP decapsulate and pass the<br>inner packet to the normal forwarding path. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-12.3**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p40 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>When an RP receives a Register message, the course of action is<br>decided according to the following pseudocode:<br>Packet_arrives_on_rp_tunnel( pkt ) {<br>...<br>if(( inherited_olist(S,G) == NULL ) OR SPTbit(S,G)) {<br>send RegisterStop(S,G) to outer.src<br>} else {<br>if( ! pkt.NullRegisterBit ) {<br>decapsulate and pass the inner packet to the normal<br>forwarding path for forwarding on the (*,G) tree.<br>}     }"n    ..."n}<br>If (inherited_olist(S,G) != NULL) and there is no (S,G) entry<br>and received Register has Null-Register-Bit set to 0 then<br>RP decapsulate and pass the inner packet to the normal<br>forwarding path for forwarding on the (*,G) tree. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-12.4 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p40 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>When an RP receives a Register message, the course of action is<br>decided according to the following pseudocode:<br>Packet_arrives_on_rp_tunnel( pkt ) {<br>...<br>if( I_am_RP( G ) && outer.dst == RP(G) ) {<br>...<br>} else {<br>send RegisterStop(S,G) to outer.src<br># Note (*)<br>}}<br>Here it is tested if (I_am_RP( G ) -> FALSE) RP sent a Register Stop<br>Message | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-12.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p40 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>When an RP receives a Register message, the course of action is<br>decided according to the following pseudocode:<br>Packet_arrives_on_rp_tunnel( pkt ) {<br>...<br>if( I_am_RP( G ) && outer.dst == RP(G) ) {<br>...<br>} else {<br>send RegisterStop(S,G) to outer.src<br># Note (*)<br>}}<br>Here it is tested if (I_am_RP(G) -> FALSE) RP does not forward the data | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-12.6 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p40 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>When an RP receives a Register message, the course of action is<br>decided according to the following pseudocode:<br>Packet_arrives_on_rp_tunnel(pkt) {<br>...<br>if (I_am_RP(G) && outer.dst == RP(G)) {<br>...<br>} else {<br>send RegisterStop(S,G) to outer.src<br># Note (*)<br>}}<br>Here (outer.dst == RP(G))->FALSE | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-12.7 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p40 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>When an RP receives a Register message, the course of action is decided according to the following pseudocode:<br>Packet_arrives_on_rp_tunnel( pkt ) {<br>...<br>if( I_am_RP( G ) && outer.dst == RP(G) ) {<br>...<br>if(( inherited_olist(S,G) == NULL ) OR SPTbit(S,G)) {<br>...<br>} else {<br>if( ! pkt.NullRegisterBit ) {<br>decapsulate and pass the inner packet to the normal forwarding path for forwarding on the (*,G) tree.<br>}        }"n    } "n    "n}<br>Here pkt.NullRegisterBit -> TRUE | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-12.8 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p41 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>Just like any forwarded packet, the HopLimit of the original data packet is decremented after it is decapsulated from the Register Tunnel. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-12.9 **MUST** | NEGATIVE<br>draft-ietf-pim-sm-v2-new-12.txt s4.4.2 p41 Receiving Register Messages at the RP | | | | | | |
| | Receiving Register Messages at the RP<br>Just like any forwarded packet, the HopLimit of the original data packet is decremented after it is decapsulated from the Register Tunnel. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-14.1 **MAY** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p46 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>If a router has no RP information (e.g. has not recently received a BSR message) then it may choose to accept Join(*,G) and treat the RP in the message as RP(G). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-14.2 **MAY** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p46 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>If a router has no RP information (e.g. has not recently received a BSR message) then it may choose to accept Prune(*,G) and treat the RP in the message as RP(G). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-14.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p47 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In NoInfo(NI) state by receiving Prune(*,G) message the (*,G) downstream state machine on interface I remains in the NoInfo state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-14.4 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p47-48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In NoInfo(NI) state by receiving Join(*,G) message the (*,G) downstream state machine on interface I transitions to the Join state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-14.5 **MUST** | NEGATIVE<br>draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In NoInfo(NI) state by receiving Join(*,G) message the (*,G) downstream state machine on interface I transitions to the Join state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-14.6**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In Join(J) state by receiving Join(*,G) message the (*,G) downstream state machine on interface I remains in Join state, and the Expiry Timer (ET) is restarted, set to maximum of its current value and the HoldTime from the triggering Join/Prune message. (When current value is smaller than HoldTime from the triggering Join/Prune message) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-14.7**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In Join(J) state by receiving Join(*,G) message the (*,G) downstream state machine on interface I remains in Join state, and the Expiry Timer (ET) is restarted, set to maximum of its current value and the HoldTime from the triggering Join/Prune message. (When current value is greater than HoldTime from the triggering Join/Prune message) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-14.8**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In Join(J) state by receiving Join(*,G) message the (*,G) downstream state machine on interface I remains in Join state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-14.9**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In Join(J) state by receiving Prune(*,G) message the (*,G) downstream state machine on interface I transitions to the PrunePending state. The PrunePending timer is started; if the router has one neighbor on that interface; then it is set to zero causing it to expire immediately. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-14.10 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages In Join(J) state by receiving Prune(*,G) message the (*,G) downstream state machine on interface I transitions to the PrunePending state. The PrunePending timer is started; it is set to the J/P_Override_Interval(I) if the router has more than one neighbor on that interface; | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-14.11 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages In Join(J) state if the Expiry Timer for the (*,G) downstream state machine on interface I expires. The (*,G) downstream state machine on interface I transitions to the NoInfo state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-14.12 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p47 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages In PrunePending(PP) state by receiving Prune(*,G) message the (*,G) downstream state machine on interface I remains into the PrunePending state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-14.13 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages In PrunePending(PP) state by receiving Join(*,G) message the (*,G) downstream state machine on interface I transitions to the Join state. The PrunePending timer is canceled (without triggering an expiry event). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-14.14**<br><br>**MUST** | NEGATIVE<br>draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In PrunePending(PP) state by receiving Join(*,G) message the (*,G) downstream state machine on interface I transitions to the Join state. The PrunePending timer is canceled (without triggering an expiry event). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-14.15**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In PrunePending(PP) state by receiving Join(*,G) message the (*,G) downstream state machine on interface I transitions to the Join state. The Expiry Timer is restarted, set to maximum of its current value and the HoldTime from the triggering Join/Prune message. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-14.16**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p49 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In PrunePending(PP) state if the Expiry Timer for the (*,G) downstream state machine on interface I expires. The (*,G) downstream state machine on interface I transitions to the NoInfo state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-14.17**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p49 Receiving (*,G) Join/Prune Messages | | | | | | |
| | Receiving (*,G) Join/Prune Messages<br>In PrunePending(PP) state if the PrunePending Timer for the (*,G) downstream state machine on interface I expires. The (*,G) downstream state machine on interface I transitions to the NoInfo state. A PruneEcho(*,G) is sent onto the subnet connected to interface I. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-15.1** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p50 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages<br>In NoInfo(NI) state by receiving Prune(S,G) message the (S,G) downstream state machine on interface I remains in the NoInfo state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-15.2** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p51 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages<br>In NoInfo(NI) state by receiving Join(S,G) message the (S,G) downstream state machine on interface I transitions to the Join state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-15.3** **MUST** | NEGATIVE<br>draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p51 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages<br>In NoInfo(NI) state by receiving Join(S,G) message the (S,G) downstream state machine on interface I transitions to the Join state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-15.4** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p51 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages<br>In Join(J) state by receiving Join(S,G) message the (S,G) downstream state machine on interface I remains in Join state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-15.5 <br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p51 Receiving (S,G) Join/Prune Messages | | | | | | |
| | `Receiving (S,G) Join/Prune Messages`<br>`In Join(J) state by receiving Join(S,G) message the (S,G)`<br>`downstream state machine on interface I remains in Join state, and`<br>`the Expiry Timer (ET) is restarted, set to maximum of its current`<br>`value and the HoldTime from the triggering Join/Prune message.`<br>`(When current value is greater than HoldTime from the triggering`<br>`Join/Prune message)` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-15.6 <br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p51 Receiving (S,G) Join/Prune Messages | | | | | | |
| | `Receiving (S,G) Join/Prune Messages`<br>`In Join(J) state by receiving Join(S,G) message the (S,G)`<br>`downstream state machine on interface I remains in Join state, and`<br>`the Expiry Timer (ET) is restarted, set to maximum of its current`<br>`value and the HoldTime from the triggering Join/Prune message.`<br>`(When current value is smaller than HoldTime from the triggering`<br>`Join/Prune message)` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-15.7 <br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p51 Receiving (S,G) Join/Prune Messages | | | | | | |
| | `Receiving (S,G) Join/Prune Messages`<br>`In Join(J) state by receiving Prune(S,G) message the (S,G)`<br>`downstream state machine on interface I transitions to the`<br>`PrunePending state. The PrunePending timer is started; if the router`<br>`has one neighbor on that interface; then it is set to zero causing it`<br>`to expire immediately.` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-15.8 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p51 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages<br>In Join(J) state by receiving Prune(S,G) message the (S,G) downstream state machine on interface I transitions to the PrunePending state. The PrunePending timer is started; it is set to the J/P_Override_Interval(I) if the router has more than one neighbor on that interface; | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-15.9 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p51 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages<br>In Join(J) state if the Expiry Timer for the (S,G) downstream state machine on interface I expires. The (S,G) downstream state machine on interface I transitions to the NoInfo state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-15.10 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p50 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages<br>In PrunePending(PP) state by receiving Prune(S,G) message the (S,G) downstream state machine on interface I remains into the PrunePending state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-15.11 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p52 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages<br>In PrunePending(PP) state by receiving Join(S,G) message the (S,G) downstream state machine on interface I transitions to the Join state. The PrunePending timer is canceled (without triggering an expiry event). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-15.12 <br><br> **MUST** | NEGATIVE <br> draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p52 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages <br> In PrunePending(PP) state by receiving Join(S,G) message the (S,G) downstream state machine on interface I transitions to the Join state. The PrunePending timer is canceled (without triggering an expiry event). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: pass |
| ANVL-PIM-SMV6-15.13 <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p52 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages <br> In PrunePending(PP) state by receiving Join(S,G) message the (S,G) downstream state machine on interface I transitions to the Join state. The Expiry Timer is restarted, set to maximum of its current value and the HoldTime from the triggering Join/Prune message. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-15.14 <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p52 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages <br> In PrunePending(PP) state if the Expiry Timer for the (S,G) downstream state machine on interface I expires. The (S,G) downstream state machine on interface I transitions to the NoInfo state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-15.15 <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.3 p52 Receiving (S,G) Join/Prune Messages | | | | | | |
| | Receiving (S,G) Join/Prune Messages <br> In PrunePending(PP) state if the PrunePending Timer for the (S,G) downstream state machine on interface I expires. The (S,G) downstream state machine on interface I transitions to the NoInfo state. A PruneEcho(S,G) is sent onto the subnet connected to interface I. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-16.1** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p54 Receiving (S,G,rpt) Join/Prune Messages <br> draft-ietf-pim-sm-v2-new-07.ps s4.5.4 p40 Figure 5: Downstream per-interface (S,G,rpt) state-machine | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages <br> In NoInfo(NI) state by receiving Join(S,G,rpt) message the (S,G,rpt) downstream state machine on interface I remains in the NoInfo state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-16.2** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p55 Receiving (S,G,rpt) Join/Prune Messages | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages <br> In NoInfo(NI) state by receiving Prune(S,G,rpt) message the (S,G,rpt) downstream state machine on interface I transitions to PrunePending(PP) state. The PrunePending timer is started; it is set to the J/P_Override_Interval(I) if the router has more than one neighbor on that interface; otherwise it is set to causing it to expire immediately (Here DUT has only one downstream neighbor) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-16.3** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p55 Receiving (S,G,rpt) Join/Prune Messages | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages <br> In NoInfo(NI) state by receiving Prune(S,G,rpt) message the (S,G,rpt) downstream state machine on interface I transitions to PrunePending(PP) state. The PrunePending timer is started; it is set to the J/P_Override_Interval(I) if the router has more than one neighbor on that interface | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-16.4** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p54 Receiving (S,G,rpt) Join/Prune Messages | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages <br> In PrunePending(PP) state by receiving Prune(S,G,rpt) message the (S,G,rpt) downstream state machine on interface I remains in the PrunePending(PP) state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-16.5**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p55 Receiving (S,G,rpt) Join/Prune Messages | | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages<br>In PrunePending (PP) state by receiving Join(*,G) message the (S,G,rpt) downstream state machine on interface I transitions to the PrunePendingTmp(PP") state. If the (*,G) message does not contain (S,G,rpt) Prune information the downstream state machine on interface I transitions to NoInfo state | | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass | |
| **ANVL-PIM-SMV6-16.6**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p55 Receiving (S,G,rpt) Join/Prune Messages | | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages<br>In PrunePending (PP) state by receiving Join(S,G,rpt) message the (S,G,rpt) downstream state machine on interface I transitions to NoInfo state. ET and PPT are canceled. | | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass | |
| **ANVL-PIM-SMV6-16.7**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p55-56 Receiving (S,G,rpt) Join/Prune Messages | | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages<br>In PrunePending (PP) state if the PrunePending Timer for the (S,G,rpt) downstream state machine on interface I expires. The (S,G,rpt) downstream state machine on interface I transitions to the Pruned state | | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass | |
| **ANVL-PIM-SMV6-16.8**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p56 Receiving (S,G,rpt) Join/Prune Messages | | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages<br>In Pruned(P) state by receiving Join(*,G) message the (S,G,rpt) downstream state machine on interface I transitions to PruneTmp state. If the (*,G) message does not contain (S,G,rpt) Prune information the downstream state machine on interface I transitions to NoInfo state<br>(Here DUT has only one downstream neighbor) | | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass | |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-16.9 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p56 Receiving (S,G,rpt) Join/Prune Messages | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages<br>In Pruned (P) state by receiving Join(S,G,rpt) message the (S,G,rpt) downstream state machine on interface I transitions to NoInfo state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: unpredict |
| ANVL-PIM-SMV6-16.10 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p56 Receiving (S,G,rpt) Join/Prune Messages | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages<br>In Pruned(P) state by receiving Prune(S,G,rpt) message the (S,G,rpt) downstream state machine on interface I remains in Pruned state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-16.11 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p56 Receiving (S,G,rpt) Join/Prune Messages | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages<br>In Pruned(P) state by receiving Prune(S,G,rpt) message the (S,G,rpt) downstream state machine on interface I remains in Pruned state. The Expiry Timer (ET) is restarted, set to maximum of its current value and the HoldTime from the triggering Join/Prune message. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-16.12 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.4 p56 Receiving (S,G,rpt) Join/Prune Messages | | | | | | |
| | Receiving (S,G,RPT) Join/Prune Messages<br>In Pruned(P) state if the Expiry Timer for the (S,G,rpt) downstream state machine on interface I expires. The (S,G,rpt) downstream state machine on interface I transitions to the NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-18.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.6 p64 Sending (*,G) Join/Prune Messages | | | | | | |
| | `Sending (*,G) Join/Prune Messages`<br>`JoinDesired(*,G) becomes True`<br>`The downstream state for (*,G) has changed so that at least one`<br>`interface is in immediate_olist(*,G), making JoinDesired(*,G) become`<br>`True. The upstream (*,G) state machine transitions to Joined state. Send`<br>`Join(*,G) to the appropriate upstream neighbor, which is RPF"(*,G).`<br>`(Here Join List verified)` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-18.2 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.6 p64 Sending (*,G) Join/Prune Messages s4.10.5.1, p116 Group Set Source List Rules | | | | | | |
| | `Sending (*,G) Join/Prune Messages`<br>`JoinDesired(*,G) becomes True`<br>`The downstream state for (*,G) has changed so that at least one`<br>`interface is in immediate_olist(*,G), making JoinDesired(*,G) become`<br>`True. The upstream (*,G) state machine transitions to Joined state. Send`<br>`Join(*,G) to the appropriate upstream neighbor, which is RPF"(*,G).`<br>`(Here WC and RPT Bit are checked)` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-18.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.6 p64 Sending (*,G) Join/Prune Messages | | | | | | |
| | `Sending (*,G) Join/Prune Messages`<br>`JoinDesired(*,G) becomes False`<br>`The downstream state for (*,G) has changed so no interface is in`<br>`immediate_olist(*,G), making JoinDesired(*,G) become False. The upstream`<br>`(*,G) state machine transitions to NotJoined state. Send Prune(*,G) to`<br>`the appropriate upstream neighbor, which is RPF"(*,G).`<br>`(Here Prune List verified)` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-18.4 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.6 p64 Sending (*,G) Join/Prune Messages s4.10.5.1, p116 Group Set Source List Rules | | | | | | |
| | Sending (*,G) Join/Prune Messages<br>JoinDesired(*,G) becomes False<br>The downstream state for (*,G) has changed so no interface is in immediate_olist(*,G), making JoinDesired(*,G) become False. The upstream (*,G) state machine transitions to NotJoined state. Send Prune(*,G) to the appropriate upstream neighbor, which is RPF"(*,G).<br>(Here WC and RPT Bit are checked) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-18.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.6 p64-65 Sending (*,G) Join/Prune Messages | | | | | | |
| | Sending (*,G) Join/Prune Messages<br>When the upstream (*,G) state-machine is in Joined state, if the Join Timer (JT) expires, indicating time to send a Join(*,G). Send Join(*,G) to the appropriate upstream neighbor, which is RPF"(*,G). Restart the Join Timer (JT) to expire after t_periodic seconds. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-18.6 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.6 p66 Sending (*,G) Join/Prune Messages | | | | | | |
| | Sending (*,G) Join/Prune Messages<br>When the upstream (*,G) state-machine is in Joined state, if the RPF"(*,G) GenID changes then the upstream (*,G) state machine remains in Joined state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-19.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.7 p69 Sending (S,G) Join/Prune Messages | | | | | | |
| | Sending (S,G) Join/Prune Messages<br>The downstream state for (S,G) has changed so that at least one interface is in inherited_olist(S,G), making JoinDesired(S,G) become True.<br>(Verify (S,G) Join List contains the Source Address in Join List) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-19.2**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.7 p69 Sending (S,G) Join/Prune Messages s4.10.5.1, p116 Group Set Source List Rules | | | | | | |
| | Sending (S,G) Join/Prune Messages<br>The source address S (with cleared RPT and WC bits) is included in the join list of a periodic Join/Prune for an active (S,G) entry with cleared RPT-bit flag and oif-list is not null.<br>(Here WC and RPT Bit are checked) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: pass |
| **ANVL-PIM-SMV6-19.3**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.7 p69 Sending (S,G) Join/Prune Messages | | | | | | |
| | Sending (S,G) Join/Prune Messages<br>JoinDesired(S,G) becomes False<br>The downstream state for (S,G) has changed so no interface is in inherited_olist(S,G), making JoinDesired(S,G) become False. The upstream (S,G) state machine transitions to NotJoined state. Send Prune(S,G) to the appropriate upstream neighbor, which is RPF"(S,G)<br>(Here Prune List verified) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: pass |
| **ANVL-PIM-SMV6-19.4**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.7 p69 Sending (S,G) Join/Prune Messages s4.10.5.1, p116 Group Set Source List Rules | | | | | | |
| | Sending (S,G) Join/Prune Messages<br>JoinDesired(S,G) becomes False<br>The downstream state for (S,G) has changed so no interface is in inherited_olist(S,G), making JoinDesired(S,G) become False. The upstream (S,G) state machine transitions to NotJoined state. Send Prune(S,G) to the appropriate upstream neighbor, which is RPF"(S,G)<br>(Here WC and RPT Bit are checked) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-19.5**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.7 p69 Sending (S,G) Join/Prune Messages | | | | | | |
| | Sending (S,G) Join/Prune Messages<br>When the upstream (S,G) state-machine is in Joined state, if the Join Timer (JT) expires, indicating time to send a Join(S,G). Send Join(S,G) to the appropriate upstream neighbor, which is RPF"(S,G). Restart the Join Timer (JT) to expire after t_periodic seconds. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-19.6**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.6 p66 Sending (S,G) Join/Prune Messages | | | | | | |
| | Sending (S,G) Join/Prune Messages<br>When the upstream (S,G) state-machine is in Joined state, if the RPF"(S,G) GenID changes then the upstream (S,G) state machine remains in Joined state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-20.1**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.9 p75-76 State Machine for (S,G,rpt) Triggered Messages | | | | | | |
| | State Machine for (S,G,rpt) Triggered Messages<br>In "NotPruned" State, if PruneDesired(S,G,rpt)->TRUE the action is to send a Prune(S,G,rpt) to RPF"(S,G,rpt) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| **ANVL-PIM-SMV6-20.2**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.9 p76 State Machine for (S,G,rpt) Triggered Messages | | | | | | |
| | State Machine for (S,G,rpt) Triggered Messages<br>If the router is in the Pruned(S,G,rpt) state, and PruneDesired(S,G,rpt) changes to FALSE, this could be because the router no longer has RPTJoinDesired(G) true, or it now wishes to receive traffic from S again. If it is not the former the action is to send a Join(S,G,rpt) to RPF"(S,G,rpt) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-21.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p77 (S,G) Assert State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>This router has lost an (S,G) assert on interface I. It must not forward packets for G onto interface I. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-21.2 **MUST** | NEGATIVE:<br>draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p77 (S,G) Assert State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>This router has lost an (S,G) assert on interface I. It must not forward packets for G onto interface I. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-21.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p77 (S,G) Assert State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>The winning router sends an Assert message containing its own metric to that outgoing interface(State machine)<br>(This is performed with (S,G)-(S,G) assert | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-21.4 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p80-81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in NoInfo state, if an inferior assert is received for (S,G) with the RPT bit cleared and CouldAssert(S,G,I) == TRUE, We transition to the "I am Assert Winner" state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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**FRROUTING**

| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-21.5**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p80-81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in NoInfo state, if an assert is received for (S,G) with the RPT bit set(it"s a (*,G) assert) and CouldAssert(S,G,I) == TRUE, We Send Assert(S,G). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| **ANVL-PIM-SMV6-21.6**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p80-81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in NoInfo state, if an (S,G) data packet comes on Interface I and CouldAssert(S,G,I) == TRUE, We transition to the<br>"I am Assert Winner" state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-21.7**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in NoInfo state, if an (S,G) data packet comes on Interface I and CouldAssert(S,G,I) == TRUE, we Send Assert(S,G) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: unpredict | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: unpredict | Debian 12: unpredict |
| **ANVL-PIM-SMV6-21.8**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Winner" State, if we receive an (S,G) assert that has a worse metric than our own. Whoever sent the assert is in error, and so we remains in "I am Assert Winner" State | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-21.9** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Winner" State, if we receive an (S,G) assert that has a worse metric than our own. Whoever sent the assert is in error, and so we re-send an (S,G) Assert | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: unpredict | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: unpredict | Debian 12: unpredict |
| **ANVL-PIM-SMV6-21.10** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Winner" State, if we receive an (S,G) assert that has a worse metric than our own. Whoever sent the assert is in error, and so we re-send an (S,G) Assert and so we set the timer to Assert_Time> - Assert_Override_Interval> | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-21.11** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Winner" State, if we receive an (*,G) assert mentioning S that has a worse metric than our own. Whoever sent the assert is in error, and so we remains in "I am Assert Winner" State | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| **ANVL-PIM-SMV6-21.12** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Winner" State, if we receive an (*,G) assert mentioning S that has a worse metric than our own. Whoever sent the assert is in error, and so we re-send an (S,G) Assert | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-21.13 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p81 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Winner" State, if we receive an (*,G) assert mentioning S that has a worse metric than our own. Whoever sent the assert is in error, and so we set the timer to Assert_Time> - Assert_Override_Interval> | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-21.14 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p82 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Winner" State, if we receive an (S,G) assert that has a better metric than our own, we transition to "I am Assert Loser" state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-21.15 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p82 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Winner" State, if CouldAssert(S,G,I) become false, we send a "canceling assert" with an infinite metric. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: unpredict | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: unpredict | Debian 12: unpredict |
| ANVL-PIM-SMV6-21.16 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p82 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Loser" State, we receive an assert that is better than that of the current assert winner. We stay in Loser state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-21.17 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p82 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Loser" State, we receive an assert from the current assert winner that is better than our own metric for this (S,G) (although the metric may be worse than the winner"s previous metric). We stay in Loser state. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-21.18 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p82 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Loser" State, if we receive an assert from the current assert winner that is worse than our own metric for this group, we transition to NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |
| ANVL-PIM-SMV6-21.19 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p82 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Loser" State, the (S,G) assert timer expires, we transition to NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-21.20 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p82-83 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Loser" State, we receive a Hello message from the current winner reporting a different GenID from the one it previously reported, we transition to the "NoInfo" state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |

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| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-21.21**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p83 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Loser" State, my_assert_metric(S,G,I) has changed so that now my assert metric for (S,G) is better than the metric we have stored for current assert winner. We transition to NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |
| **ANVL-PIM-SMV6-21.22**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p83 (S,G) Assert Message State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Loser" State, interface I used to be the RPF interface for S, and now it is not. We transition to NoInfo state, deleting this (S,G) assert state action as delete assert info | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| **ANVL-PIM-SMV6-21.23**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.1 p77 (S,G) Assert State Machine | | | | | | |
| | (S,G) Assert Message State Machine<br>When in "I am Assert Loser" State, we receive a Join(S,G) that has the Upstream Neighbor Address field set to one my IP address on interface I. The action is to transition to NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |
| **ANVL-PIM-SMV6-22.1**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p84 (*,G) Assert State Machine | | | | | | |
| | (*,G) Assert State Machine<br>This router has lost an (*,G) assert on interface I. It must not forward packets for G onto interface I. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-22.2 **MUST** | NEGATIVE: draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p84 (*,G) Assert State Machine | | | | | | |
| | (*,G) Assert State Machine This router has lost an (*,G) assert on interface I. It must not forward packets for G onto interface I. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p86 (*,G) Assert State Machine | | | | | | |
| | (*,G) Assert State Machine The winning router sends an Assert message containing its own metric to that outgoing interface(State machine) (this is performed with (*,G)-(*,G) assert | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.4 **MUST** | draft-ietf-pim-v2-sm-01.txt s4.6.2 p88 (*,G) Assert Message State Machine, s4.10.6 p121 Assert Message Format | | | | | | |
| | (*,G) Assert State Machine Receive Inferior Assert We receive a (*,G) assert that has a worse metric than our own. Whoever sent the assert has lost, and so we re-send a (*,G) Assert, and restart the timer. (Here check that RPT bit is set for the Assert sent by Assert Winner) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p88 (*,G) Assert Message State Machine | | | | | | |
| | (*,G) Assert State Machine When in NoInfo state, if an (S,G) data packet comes on Interafce I and CouldAssert(*,G,I) == TRUE, we transition to the "I am Assert Winner" state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-22.6 <br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p88 (*,G) Assert Message State Machine | | | | | | |
| | `(*,G) Assert State Machine`<br>`When in NoInfo state, if an (S,G) data packet comes on Interface I and`<br>`CouldAssert(*,G,I) == TRUE, we Send Assert(*,G)` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.7 <br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p88 (*,G) Assert Message State Machine | | | | | | |
| | `(*,G) Assert State Machine`<br>`When in "I am Assert Winner" State, we receive a (*,G) assert that has`<br>`a better metric than our own. We transition to "I am Assert Loser"`<br>`state` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.8 <br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p89 (*,G) Assert Message State Machine | | | | | | |
| | `(*,G) Assert State Machine`<br>`When in "I am Assert Winner" State,if CouldAssert(*,G,I) become false,`<br>`we send a "canceling assert" with an infinite metric.` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.9 <br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p89 (*,G) Assert Message State Machine | | | | | | |
| | `(*,G) Assert State Machine`<br>`When in "I am Assert Loser" State, we receive a (*,G) assert that is`<br>`better than that of the current assert winner. We stay in Loser state.` | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-22.10 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p89 (*,G) Assert Message State Machine | | | | | | |
| | (*,G) Assert State Machine<br>When in "I am Assert Loser" State, we receive a (*,G) assert from the current assert winner that is better than our own metric for this group (although the metric may be worse than the winner"s previous metric).<br>We stay in Loser state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.11 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p89 (*,G) Assert Message State Machine | | | | | | |
| | (*,G) Assert State Machine<br>When in "I am Assert Loser" State, if we receive an assert from the current assert winner that is worse than our own metric for this group we transition to NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.12 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p89 (*,G) Assert Message State Machine | | | | | | |
| | (*,G) Assert State Machine<br>When in "I am Assert Loser" State, the (*,G) assert timer expires, we transition to NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.13 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p89 (*,G) Assert Message State Machine | | | | | | |
| | (*,G) Assert State Machine<br>When in "I am Assert Loser" State, we receive a Hello message from the current winner reporting a different GenID from the one it previously reported, we transition to the "NoInfo" state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-22.14 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p90 (*,G) Assert Message State Machine | | | | | | |
| | (*,G) Assert State Machine<br>When in "I am Assert Loser" State, My route metric rpt_assert_metric(G,I) has changed so that now my assert metric for (*,G) is better than the metric we have stored for current assert winner. We transition to NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.15 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p96 (*,G) Assert Message State Machine | | | | | | |
| | (*,G) Assert State Machine<br>When in "I am Assert Loser" State, interface I used to be the RPF interface for RP, and now it is not. We transition to NoInfo state, deleting this (*,G) assert state action as delete assert info | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-22.16 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.2 p90 (*,G) Assert Message State Machine | | | | | | |
| | (*,G) Assert State Machine<br>When in "I am Assert Loser" State, we receive a Join(*,G) that has the Upstream Neighbor Address field set to one my IP address on interface I. The action is to transition to NoInfo state | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| ANVL-PIM-SMV6-23.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.3 p91 Assert Metrics | | | | | | |
| | Assert Metrics<br>If all fields are equal, the IP address of the router that sourced the Assert message is used as a tie-breaker, with the highest IP address winning.<br>(This is for (*,G) Assert) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-23.2**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.6.3 p91 Assert Metrics<br>(This is for (S,G) Assert) | | | | | | |
| | Assert Metrics<br>If all fields are equal, the IP address of the router that sourced the Assert message is used as a tie-breaker, with the highest IP address winning. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: unpredict |
| **ANVL-PIM-SMV6-24.2**<br><br>**MAY** | draft-ietf-pim-sm-v2-new-12.txt s4.8.1 p100 Group-to-RP Mapping | | | | | | |
| | Group-to-RP Mapping<br>if the set of possible group-range-to-RP mappings changes, each router will need to check whether any existing groups are affected. This may, for example, cause a DR or acting DR to re-join a group to the new RP.<br>(This is done for (*,G) Join) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-25.1**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.9 p102 Source-Specific Multicast | | | | | | |
| | Source-Specific Multicast<br>A range of multicast addresses, currently ff3X::4000:0000 in IPv6, is reserved for SSM, and the choice of semantics is determined by the multicast group address in both data packets and PIM messages.<br>((*,G) Join Message with group address is in SSM range) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-25.2**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.9 p102 Source-Specific Multicast | | | | | | |
| | Source-Specific Multicast<br>A range of multicast addresses, currently 232.0.0.0/8 in IPv4, is reserved for SSM, and the choice of semantics is determined by the multicast group address in both data packets and PIM messages.<br>((S,G) Join Message with group address is in SSM range) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-26.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.9.1 p102 Protocol Modifications for SSM destination addresses ||||||| |
| | Protocol Modifications for SSM destination addresses<br>For a multicast address G in the SSM reserved range a router MUST NOT send a Register message for any packet that is destined to an SSM address. ||||||| |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-26.2 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.9.1 p102 Protocol Modifications for SSM destination addresses ||||||| |
| | Protocol Modifications for SSM destination addresses<br>For a multicast address G in the SSM reserved range a router acting as an RP MUST NOT forward any Register-encapsulated packet that has an SSM destination address. ||||||| |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-26.3 **SHOULD** | draft-ietf-pim-sm-v2-new-12.txt s4.9.1 p102 Protocol Modifications for SSM destination addresses ||||||| |
| | Protocol Modifications for SSM destination addresses<br>For a multicast address G in the SSM reserved range A router MAY be configured to advertise itself as a Candidate RP for an SSM address. If so, it SHOULD respond with a RegisterStop message to any Register message containing a packet destined for an SSM address. ||||||| |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-27.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.9.2 p103 PIM-SSM-only Routers ||||||| |
| | PIM-SSM-only Routers<br>Additionally, the Packet forwarding rules of Section 4.2 can be simplified in a PIM-SSM-only router:<br>If (iif == RPF_interface(S) AND UpstreamJPState(S,G) == Joined ) {<br>oiflist = inherited_olist(S,G)<br>} else if(iif is in inherited_olist(S,G) ) {<br>send Assert(S,G) on iif} ||||||| |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-27.2** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.9.2 p103 PIM-SSM-only Routers | | | | | | |
| | PIM-SSM-only Routers<br>Additionally, the Packet forwarding rules of Section 4.2 can be simplified in a PIM-SSM-only router:<br>if (iif == RPF_interface(S) AND UpstreamJPState(S,G) == Joined ) {<br>oiflist = inherited_olist(S,G)<br>} else if( iif is in inherited_olist(S,G) ) {<br>send Assert(S,G) on iif<br>}<br>oiflist = oiflist (-) iif<br>forward packet on all interfaces in oiflist | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-28.1** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10 p104 PIM Packet Formats | | | | | | |
| | PIM Packet Formats<br>All PIM control messages have IP protocol number 103. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-28.2** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10 p104 PIM Packet Formats | | | | | | |
| | PIM Packet Formats<br>Reserved field is set to 0 on transmission | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-28.3** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10 p105 PIM Packet Formats | | | | | | |
| | PIM Packet Formats<br>The checksum is a standard IP checksum,i.e. the 16-bit one"s Complement of the one"s complement sum of the entire PIM message, excluding the "Multicast data packet" section of the Register message. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-29.1**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.1 p106 Encoded Source and Group Address Formats | | | | | | |
| | Encoded Source and Group Address Formats<br>If the message is sent for a single group then the Mask length must equal the address length in bits for the given Address Family and Encoding Type.(e.g.128 for native IPv6 encoding) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-29.2**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.1 p106 Encoded Source and Group Address Formats | | | | | | |
| | Encoded Source and Group Address Formats<br>[B]idirectional PIM indicates the group range should use Bidirectional PIM. For PIM-SM defined in this specification, this bit MUST be zero. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-29.3**<br><br>**MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.1 p106 Encoded Source and Group Address Formats | | | | | | |
| | Encoded Source and Group Address Formats<br>Admin Scope [Z]one indicates the group range is an admin scope zone. This is used in the Bootstrap Router Mechanism only. For all other purposes, this bit is set to zero (Here we are considering Non-BSR message) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-29.4**<br><br>**MUST** | NEGATIVE<br>draft-ietf-pim-sm-v2-new-12.txt s4.10.1 p106 Encoded Source and Group Address Formats | | | | | | |
| | Encoded Source and Group Address Formats<br>Admin Scope [Z]one indicates the group range is an admin scope zone. This is used in the Bootstrap Router Mechanism only. For all other purposes, this bit is set to zero and ignore on receipt | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-29.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.1 p107 Encoded Source and Group Address Formats | | | | | | | |
| | Encoded Source and Group Address Formats<br>The Sparse bit is a 1 bit value, set to 1 for PIM-SM. | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-29.6 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.1 p107 Encoded Source and Group Address Formats | | | | | | | |
| | Encoded Source and Group Address Formats<br>The WC(or WildCard) bit is a 1 bit value for use with PIM Join/Prune messages. (S,G) source list entries have the Source-Address set to the address of the source S, the Source-Address Mask-Len set to the full length of the IP address and have both the WC and RPT bits of the Encoded-Source-Address cleared. | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-29.7 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.1 p107 Encoded Source and Group Address Formats | | | | | | | |
| | Encoded Source and Group Address Formats<br>The RPT (or Rendezvous Point Tree) bit is a 1 bit value for use with PIM Join/Prune messages (see section 4.10.5.1 ). If the WC bit is 1, the RPT bit MUST be 1. | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-29.8 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.1 p107 Encoded Source and Group Address Formats | | | | | | | |
| | Encoded Source and Group Address Formats<br>The RPT (or Rendezvous Point Tree) bit is a 1 bit value for use with PIM Join/Prune messages (see section 4.10.5.1 ). If the WC bit is 1, the RPT bit MUST be 1. | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-30.1** **SHOULD** | draft-ietf-pim-sm-v2-new-12.txt s4.10.2 p109 Hello Message Format | | | | | | |
| | Hello Message Format<br>Hello messages with a Holdtime value set to "0" are also sent by a router on an interface about to go down... These are effectively goodbye messages and the receiving routers should immediately time out the neighbor information for the sender.<br>(Here the testing is done on whether DUT correctly times out a neighbor) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: unpredict | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-30.2** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.2 p109 Hello Message Format | | | | | | |
| | Hello Message Format<br>Hello messages with a Holdtime value set to `0" are also sent by a router on an interface changing IP address | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| **ANVL-PIM-SMV6-30.3** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.2 p109 Hello Message Format | | | | | | |
| | Hello Message Format<br>Hello messages with a Holdtime value set to `0" are also sent by a router on an interface about to go down | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-31.1** **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.3 p111 Register Message Format | | | | | | |
| | Register Message Format<br>The checksum for Registers is done only on first 8 bytes of packet, including the PIM header and the next 4 bytes, excluding the data packet portion | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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FRROUTING

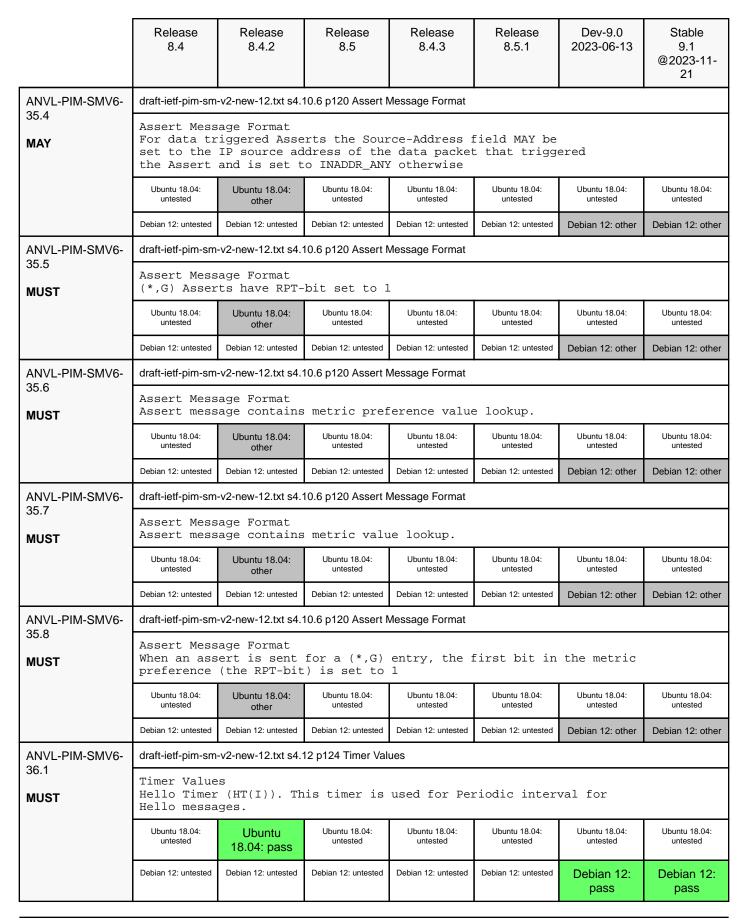| | Release 8.4 | Release 8.4.2 | Release 8.5 | Release 8.4.3 | Release 8.5.1 | Dev-9.0 2023-06-13 | Stable 9.1 @2023-11-21 |
|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-31.2 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.3 p111 Register Message Format | | | | | | |
| | Register Message Format<br>If the router is a DR for a source that it is directly connected to,<br>it sets the B bit to 0 in the Register message | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-32.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.4 p112 RegisterStop Message | | | | | | |
| | RegisterStop Message<br>For Register-Stops, the Mask Len field contains full address<br>length * 8 (e.g. 128 for IPv6 native encoding), if the message<br>is sent for a single group | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-33.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.5 p115 Join/Prune Message Format | | | | | | |
| | Group Set Source List Rules<br>Within one PIM Join/Prune message, all the Multicast Group Addresses,<br>Joined Source addresses and Pruned Source addresses MUST be of the<br>same address family. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-34.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.5.1 p116 Group Set Source List Rules | | | | | | |
| | Group Set Source List Rules<br>(*,G) source list entries have the Source-Address set to the<br>address of the RP for group G, the Source-Address Mask-Len set to the<br>full length of the IP address and have both the WC and RPT bits of the<br>Encoded-Source-Address set. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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| **ANVL-PIM-SMV6-34.2**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.5.1 p116-117 Group Set Source List Rules | | | | | | |
| | Group Set Source List Rules (S,G) source list entries have the Source-Address set to the address of the source S, the Source-Address Mask-Len set to the full length of the IP address and have both the WC and RPT bits of the Encoded-Source-Address cleared. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-34.3**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.5.1 p115 Group Set Source List Rules | | | | | | |
| | Group Set Source List Rules The wildcard group set is represented by the entire multicast range - the beginning of the multicast address range in the group address field and the prefix length of the multicast address range in the mask length field of the Multicast Group Address,e.g ff00::/8 for IPv6. (This test is for IPv6) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-35.1**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.6 p120 Assert Message Format | | | | | | |
| | Assert Message Format Source specific asserts are sent by routers forwarding a specific source on the shortest-path tree(SPT bit is TRUE). (S,G) Asserts have the Group-Address field set to the group G and Source-Address field set to source S | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| **ANVL-PIM-SMV6-35.2**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.6 p120 Assert Message Format | | | | | | |
| | Assert Message Format (S,G) Asserts have RPT-bit set to 0 | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-35.3**  **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.6 p120 Assert Message Format | | | | | | |
| | Assert Message Format Group specific asserts are sent by routers forwarding data for the group and source(s) under contention on the shared tree. (*,G) Asserts have the Group-Address field set to the group G | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-35.4 **MAY** | draft-ietf-pim-sm-v2-new-12.txt s4.10.6 p120 Assert Message Format | | | | | | |
| | Assert Message Format<br>For data triggered Asserts the Source-Address field MAY be set to the IP source address of the data packet that triggered the Assert and is set to INADDR_ANY otherwise | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-35.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.6 p120 Assert Message Format | | | | | | |
| | Assert Message Format<br>(*,G) Asserts have RPT-bit set to 1 | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-35.6 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.6 p120 Assert Message Format | | | | | | |
| | Assert Message Format<br>Assert message contains metric preference value lookup. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-35.7 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.6 p120 Assert Message Format | | | | | | |
| | Assert Message Format<br>Assert message contains metric value lookup. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-35.8 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.10.6 p120 Assert Message Format | | | | | | |
| | Assert Message Format<br>When an assert is sent for a (*,G) entry, the first bit in the metric preference (the RPT-bit) is set to 1 | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-36.1 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.12 p124 Timer Values | | | | | | |
| | Timer Values<br>Hello Timer (HT(I)). This timer is used for Periodic interval for Hello messages. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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| ANVL-PIM-SMV6-36.2 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.5.2 p48 Receiving (*,G) Join/Prune Messages | | | | | | | |
| | Timer Values In Join(J) state if the Expiry Timer for the (*,G) downstream state machine on interface I expires. The (*,G) downstream state machine on interface I transitions to the NoInfo state. | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-36.3 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.12 p125 Timer Values | | | | | | | |
| | Timer Values Assert Timer (AT(*,G,I), AT(S,G,I)). This timer is used for period after last assert before assert state is timed out. Default: 180 secs. | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-36.4 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.12 p126 Timer Values | | | | | | | |
| | Timer Values Upstream Join Timer (JT(*,*,RP), JT(*,G), JT(S,G)). This timer is used for period between Join/Prune messages. Default: 60 seconds | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-36.5 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.12 p126 Timer Values | | | | | | | |
| | Timer Values Upstream Join Timer (JT(*,*,RP), JT(*,G), JT(S,G)). Suppression period when someone else sends a J/P message so we don"t need to do so. Value: rand(1.1 * t_periodic, 1.4 * t_periodic) when Suppression_Enabled(I) is true, 0 otherwise. | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-36.7 **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.12 p126 Timer Values | | | | | | | |
| | Timer Values Upstream Join Timer (JT(*,*,RP), JT(*,G), JT(S,G)). This timer is used for period between Join/Prune messages (Here JT(S,G)) is tested | | | | | | | |
| | | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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| **ANVL-PIM-SMV6-36.8** <br><br> **MUST** | draft-ietf-pim-sm-v2-new-12.txt s4.12 p127 Timer Values | | | | | | |
| | Timer Values <br> KeepAlive Timer (KAT(S,G)). This timer is the Period after last (S,G) data packet during which (S,G) Join state will be maintained even in the absence of (S,G) Join messages. Default : 210 seconds. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-41.1** <br><br> **MUST** | draft-ietf-pim-sm-bsr-12.txt s1.2 p7 Protocol Overview | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution <br> BSMs are originated periodically to ensure consistency after failure restoration. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.2** <br><br> **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution <br> If Bootstrap Timer expires, and current state is `P-BSR", the router goes to E-BSR state and after receiving a non-preferred BSM, it remains in the E-BSR state and originates a BSM that contains the BSR priority value of the included BSR & the address of the bootstrap router for the domain. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.3** <br><br> **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution <br> In E-BSR state and after receiving a preferred BSM, it goes to the C-BSR state & forward BSM; store RP-Set; set Bootstrap timer to BS_Timeout. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.4** <br><br> **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution <br> In P-BSR state and after receiving a preferred BSM, it goes to the C-BSR state & forward BSM; store RP-Set; set Bootstrap timer to BS_Timeout. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-41.5 **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution In P-BSR state and after receiving a non-preferred BSM, it remains in the P-BSR state & forward BSM | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-41.6 **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution In C-BSR state and after receiving a preferred BSM, it remains in the C-BSR state & forward BSM; store RP-Set; set bootstrap timer to BS_Timeout | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-41.7 **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution In C-BSR state and after receiving a preferred BSM, it remains in the C-BSR state & forward BSM; store RP-Set; set bootstrap timer to BS_Timeout (Note: A Bootstrap message is also preferred if it is from the current BSR with a lower weight than the previous BSM it sent, provided that if the router is a Candidate BSR the current BSR still has a weight higher or equal than the router itself.) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-41.8 **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution In C-BSR state and after receiving a non-preferred BSM, it goes to the P-BSR state & forward BSM; set bootstrap timer to BS_Rand_Override> (Note:A Bootstrap message is received from the elected BSR, but the BSR Priority field in the received message has changed, so that now the currently elected BSR has lower weight that the router itself.) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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| **ANVL-PIM-SMV6-41.9**<br><br>**MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>In C-BSR state when bootstrap timer expires, it goes to<br>the P-BSR state & set bootstrap timer to BS_Rand_Override | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.10**<br><br>**MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.1 p11 Per-Scope-Zone Candidate-BSR State Machine | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>In E-BSR state if the BS Timer expires the BSR originates<br>BSM and set BS Timer to BS_Period | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.11**<br><br>**MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.2 p13 Per-Scope-Zone State Machine for Non-Candidate-BSR Routers | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>If the included BSR is not preferred over, and not equal to, the<br>currently active BSR If the Bootstrap Timer has expired and the receiving<br>router is not a C-BSR, the Bootstrap message is then forwarded<br>(Note: Per-Scope-Zone State-machine for Non-Candidate-BSR Routers) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-41.12**<br><br>**MUST** | draft-ietf-pim-sm-bsr-12.txt s3.1.2 p13 Per-Scope-Zone State Machine for Non-Candidate-BSR Routers | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>The router knows the identity of the current BSR, and is using the<br>RP-Set provided by that BSR. Only bootsrap messages from that BSR or<br>from a C-BSR with higher weight than the current BSR will be accepted | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| ANVL-PIM-SMV6-41.13 **MUST** | NEGATIVE draft-ietf-pim-sm-bsr-12.txt s3.1.2 p13 Per-Scope-Zone State Machine for Non-Candidate-BSR Routers | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution The router knows the identity of the current BSR, and is using the RP-Set provided by that BSR. Only bootsrap messages from that BSR or from a C-BSR with higher weight than the current BSR will be accepted | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| ANVL-PIM-SMV6-41.14 **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.2 p19 Sending Candidate-RP-Advertisement Messages | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution Every C-RP periodically unicasts a C-RP-Adv to the BSR... (Note: Here the unicast test is performed) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-41.15 **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.2 p19 Sending Candidate-RP-Advertisemnt Message | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution Every C-RP periodically unicasts a C-RP-Adv to the BSR... (Note: Here the periodic test is performed) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-41.16 **SHOULD** | draft-ietf-pim-sm-bsr-12.txt s3.2 p19 Sending Candidate-RP-Advertisement Messages | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution C-RPs should by default send C-RP-Adv messages with the Priority field set to 192. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| ANVL-PIM-SMV6-41.17 **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.2 p19 Sending Candidate-RP-Advertisement Messages | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution If the C-RP is a ZBR for an admin scope zone, then the Admin Scope Zone bit MUST be set in the C-RP-Adv messages it sends for that scope zone; otherwise this bit MUST NOT be set. (Note: Admin Scope Zone bit is unset) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-41.18**<br><br>**MUST** | draft-ietf-pim-sm-bsr-12.txt s3.3 p21 Creating the RP-Set at the BSR | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>For each RP-address, the "RP-Holdtime" field is set to the Holdtime from the C-RP-Set, subject to the constraint that it MUST be larger than BS_Period and SHOULD be larger than 2.5 times BS_Period to allow for some Bootstrap messages getting lost.<br>(Note: Here we test the MUST part "... MUST be larger than BS_Period") | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.19**<br><br>**SHOULD** | draft-ietf-pim-sm-bsr-12.txt s3.3 p21 Creating the RP-Set at the BSR | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>For each RP-address, the "RP-Holdtime" field is set to the Holdtime from the C-RP-Set, subject to the constraint that it MUST be larger than BS_Period and SHOULD be larger than 2.5 times BS_Period to allow for some Bootstrap messages getting lost.<br>(Note: Here we test the SHOULD part "...SHOULD be larger than 2.5 times BS_Period") | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.20**<br><br>**MUST** | draft-ietf-pim-sm-bsr-12.txt s3.3 p21 Creating the RP-Set at the BSR | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>There MUST however be a minimum of BS_Min_Interval between each time a BSM is sent. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.21**<br><br>**MUST** | draft-ietf-pim-sm-bsr-12.txt s3.4 p23 Forwarding Bootstrap Messages | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>One is that a bootstrap message is not forwarded if its No-Forward bit is set, ... | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-41.22** **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.4 p23 Forwarding Bootstrap Messages | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>When a Bootstrap message is forwarded, it is forwarded out of every multicast-capable interface which has PIM neighbors (including the one over which the message was received). | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-41.23** **MAY** | draft-ietf-pim-sm-bsr-12.txt s3.5 p24 Bootstrap Messages to New and Rebooting Routers | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>one router on the LAN sends a stored copy of the Bootstrap message for each admin scope zone to the new or rebooting router...This message SHOULD be sent as a No-Forward Bootstrap message ... For backwards compatibility, this message MAY instead or in addition be sent as a Unicast Bootstrap message,...<br>(Note: Here ANVL checks that whether the Bootstrap MSG send by DUT has Multicast or Unicast destination. If the destination is Multicast then it should be No-Forward Bootstrap message) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-41.24** **MUST** | NEGATIVE<br>draft-ietf-pim-sm-bsr-12.txt s3.5 p24 Bootstrap Messages to New and Rebooting Routers | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>To allow new or rebooting routers to learn the RP-Set quickly, when a Hello message is received from a new neighbor, or a Hello message with a new GenID is received from an existing neighbor, one router on the LAN sends a stored copy of the Bootstrap message for each admin scope zone to the new or rebooting router. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-41.26** **MUST** | draft-ietf-pim-sm-bsr-12.txt s4 p25 Message Formats | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>Usually, Bootstrap messages are multicast with TTL 1 to the ALL-PIM-ROUTERS group, ...<br>(Note: Here DUT originates the Bootstrap Message) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-41.27** **MUST** | draft-ietf-pim-sm-bsr-12.txt s4 p25 Message Formats | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>Usually, Bootstrap messages are multicast with TTL 1 to the<br>ALL-PIM-ROUTERS group, ...<br>(Note: Here DUT forwards the Bootstrap Message) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-41.28** **MUST** | draft-ietf-pim-sm-bsr-12.txt s4 p25 Message Formats | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>Usually, Bootstrap messages are multicast with TTL 1 to the<br>ALL-PIM-ROUTERS group, ...<br>(Note: here we check IP TTL value) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.29** **MUST** | draft-ietf-pim-sm-bsr-12.txt s4 p25 Message Formats | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>Usually, Bootstrap messages are multicast with TTL 1 to the<br>ALL-PIM-ROUTERS group, but in some circumstances (described<br>in section 3.5.2) Bootstrap messages are unicast to a specific<br>PIM neighbor.<br>(Note: here we check IP TTL value for forwarded BSM) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-41.30** **MAY** | draft-ietf-pim-sm-bsr-12.txt s4.1 p28 Bootstrap Message Format | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>The length (in bits) of the mask to use in the hash function. For IPv6<br>we recommend a value of 126. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-41.31** **MUST** | draft-ietf-pim-sm-bsr-12.txt s4.2 p32 Candidate-RP-Advertisement Message Format | | | | | | |
| | Bootstrap Router Election and RP-Set Distribution<br>C-RPs MUST NOT send C-RP-Adv messages with a Prefix Count of `0". | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |

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|---|---|---|---|---|---|---|---|
| **ANVL-PIM-SMV6-42.1** **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.6 p25 Receiving and Using the RP-Set | | | | | | |
| | Receiving and using the RP-Set<br>If a mapping is not already part of the RP-Set, it is added to the RP-Set and the associated Group-to-RP mapping Expiry Timer (GET) is initialized to the holdtime from the Bootstrap message.  Its priority is set to the Priority from the Bootstrap message. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: FAIL | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: FAIL | Debian 12: FAIL |
| **ANVL-PIM-SMV6-42.2** **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.6 p25 Receiving and Using the RP-Set | | | | | | |
| | Receiving and using the RP-Set<br>If a mapping is already part of the RP-Set, it is updated with the Priority from the Bootstrap message and its associated GET is reset to the holdtime from the Bootstrap message. | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: other | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: other | Debian 12: other |
| **ANVL-PIM-SMV6-42.3** **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.6 p25 Receiving and Using the RP-Set | | | | | | |
| | Receiving and using the RP-Set<br>If a mapping is not already part of the RP-Set, it is added to the RP-Set and the associated Group-to-RP mapping Expiry Timer (GET) is initialized to the holdtime from the Bootstrap message.  Its priority is set to the Priority from the Bootstrap message.<br>(Note: This test is for rp-priority) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |
| **ANVL-PIM-SMV6-42.4** **MUST** | draft-ietf-pim-sm-bsr-12.txt s3.6 p25 Receiving and Using the RP-Set | | | | | | |
| | Receiving and using the RP-Set<br>If a mapping is already part of the RP-Set, it is updated with the Priority from the Bootstrap message and its associated GET is reset to the holdtime from the Bootstrap message.<br>(Note: This test is for rp-priority) | | | | | | |
| | Ubuntu 18.04: untested | Ubuntu 18.04: pass | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested | Ubuntu 18.04: untested |
| | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: untested | Debian 12: pass | Debian 12: pass |