<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
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<th>Release 8.2.2</th>
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</thead>
<tbody>
<tr>
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<td>FRR</td>
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<td>7a377a1</td>
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<td>23db048</td>
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**ANVL-ISISV6-1.1**

ISO/IEC 10589:1992(E)s9.5 p49 Level 1 LAN IS to IS hello PDU

1. Intra-domain Routing Protocol Discriminator = 0x83
2. PDU type = 15
3. Version/Protocol ID extension = 1
4. Version = 1

<table>
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<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>FreeBSD 12.0: unittest</td>
<td>FreeBSD 12.0: unittest</td>
<td>FreeBSD 12.0: unittest</td>
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<td>FreeBSD 12.0: pass</td>
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<td>FreeBSD 12.0: unittest</td>
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</tbody>
</table>
### ANVL-ISISV6-1.2

**MUST**

ISO/IEC 10589:1992(E)s9.5 p49 Level 1 LAN IS to IS hello PDU

Level 1 LAN IS to IS Hello PDU

- Bit 6-8 of PDU Type (5th octet), Reserved (7th octet), bit 3-8 of Reserved/Circuit Type (9th octet) and 8th bit of Priority are reserved which are always set to zero in Level 1 LAN IS to IS hello PDU.

|---------------------|---------------------|---------------------|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|

### ANVL-ISISV6-1.3

**MUST**

ISO/IEC 10589:1992(E)s9.5 p49 Level 1 LAN IS to IS hello PDU

Level 1 LAN IS to IS Hello PDU

The valid ID Length field shall take any one of these following values:

1. An Integer between 1 and 8, inclusive, indicating an ID field of the corresponding length
2. The Value zero, which indicates a six octet ID, field length
3. The Value 255, which means a null ID field (i.e., zero length)

<table>
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<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
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## ANVL-ISISV6-1.4

**MUST**

ISO/IEC 10589:1992(E)s9.5 p49-50 Level 1 LAN IS to IS hello PDU

In a LAN Level 1 IIH the Circuit Type must be either 1 or 3

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## ANVL-ISISV6-1.5

**MUST**

ISO/IEC 10589:1992(E)s9.5 p50 Level 1 LAN IS to IS hello PDU

RFC 1195 s5.3.1 p37-38 Level 1 LAN IS to IS hello PDU

RFC 5308 p2-4 s2 IPv6 Reachability TLV
s3 IPv6 Interface Address TLV
s4 IPv6 NLPID

Level 1 LAN IS to IS Hello PDU

The valid Codes that must be present in the VARIABLE LENGTH FIELD of Level 1 LAN IS to IS hello PDU are:

- Area Address
- Authentication Information
- Protocols Supported
- IPv6 Interface Address

<table>
<thead>
<tr>
<th>FreeBSD</th>
<th>FreeBSD</th>
<th>FreeBSD</th>
<th>FreeBSD</th>
<th>FreeBSD</th>
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<td>12.0: untested</td>
<td>12.0: untested</td>
<td>12.0: pass</td>
<td>12.0: pass</td>
<td>12.0: pass</td>
<td>12.0: pass</td>
<td>12.0: pass</td>
<td>12.0: pass</td>
<td>12.0: pass</td>
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<td>Release 7.3</td>
<td>Release 7.5</td>
<td>Release 8.0</td>
<td>Release 8.2.2</td>
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<td>RFC 1195 s4.4 p32 Maintaining Router Adjacencies</td>
<td>Level 1 LAN IS to IS Hello PDU</td>
<td>The Protocol supported field must be present in all IS-IS Hello Packets send by IP-only routers</td>
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<tr>
<td>MUST</td>
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</tr>
<tr>
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<td>FreeBSD 12.0: untested</td>
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<td>Level 1 LAN IS to IS Hello PDU</td>
<td>The Protocol Supported field must be present in all IS-IS Hello Packets send by IP-only routers</td>
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</table>
### ANVL-ISISV6-1.8

**ISO/IEC 10589:1992(E)s9.6 p51 Level 2 LAN IS to IS hello PDU**

**MUST**

Level 1 LAN IS to IS Hello PDU
Level 2 LAN IS to IS hello PDU must have
1. Intra-domain Routing Protocol Discriminator = 0x83
2. PDU type = 16
3. Version/Protocol ID extension = 1
4. Version = 1

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### ANVL-ISISV6-1.9

**ISO/IEC 10589:1992(E)s9.6 p51 Level 2 LAN IS to IS hello PDU**

**MUST**

Level 1 LAN IS to IS Hello PDU
Bit 6-8 of PDU Type (5th octet), Reserved (7th octet), bit 3-8 of Reserved/Circuit Type (9th octet) and 8th bit of Priority are reserved which are always set to zero in Level 2 LAN IS to IS hello PDU.

<table>
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</table>

**ANVL-ISISV6-1.10**

**MUST**

ISO/IEC 10589:1992(E)s9.6 p51 Level 2 LAN IS to IS hello PDU

Level 1 LAN IS to IS Hello PDU

The valid ID Length field shall take any one of these following values:

1. An Integer between 1 and 8, inclusive, indicating an ID field of the corresponding length
2. The Value zero, which indicates a six octet ID, field length
3. The Value 255, which means a null ID field (i.e., zero length)

<table>
<thead>
<tr>
<th></th>
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</table>

**ANVL-ISISV6-1.11**

**MUST**

ISO/IEC 10589:1992(E)s9.6 p51 Level 2 LAN IS to IS hello PDU

Level 1 LAN IS to IS Hello PDU

In a LAN Level 2 IIH the Circuit Type must be either 2 or 3

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</tr>
</thead>
<tbody>
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Test Report created at 2022-03-22 13:41:33 UTC
## Release 2.0.2
ISO/IEC 10589:1992(E) s9.6 p51-52 Level 2 LAN IS to IS hello PDU
RFC 1195 s5.3.2 p38-39 Level 2 LAN IS to IS hello PDU
RFC 5308 p2-4 s2 IPv6 Reachability TLV
s3 IPv6 Interface Address TLV
s4 IPv6 NLPIID

**MUST**

### Level 1 LAN IS to IS Hello PDU
The valid Codes that must be present in the VARIABLE LENGTH FIELD
of Level 2 LAN IS to IS hello PDU are:
- Area Address
- Protocols Supported
- IPv6 Interface Address

<table>
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## Release 3.0.3

## Release 4.0

## Release 5.0.1

## Release 6.0.3

## Release 7.0.1

## Release 7.1

## Release 7.3

## Release 7.5

## Release 8.0

## Release 8.2.2

## ANVL-ISISV6-1.12

### MUST

RFC 1195 s4.4 p32 Maintaining Router Adjacencies
s5.2 p34 Overview of IP-specific Information for IS-IS

### Level 1 LAN IS to IS Hello PDU
The Protocol supported field must be present in all IS-IS Hello
Packets send by IP-only routers

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<td>FreeBSD 12.0: pass</td>
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<td>Release 3.0.3</td>
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<td></td>
<td>Level 1 LAN IS to IS Hello PDU</td>
<td>IP capable routers need to know what network layer protocols are supported by other routers in their area</td>
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## RFC Compliance Test Report

### ISISV6 Results

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</tbody>
</table>

**MUST**

Level 1 LAN IS to IS Hello PDU

Each interface corresponding to the SNPA over which is transmitted can have maximum of 15 IPv6 addresses.
We necessarily modify the contents to be 0-15 16 octet IPv6 interface addresses instead of 0-63 4 octet IPv4 interface address.

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| **ANVL-ISISV6-1.21** |       |       |       |       |       |       |       |       |       |       |       |       |

**MUST**

Level 1 LAN IS to IS Hello PDU

IP capable routers need to know what network layer protocols are supported by other routers in their area.

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<td>Each interface corresponding to the SNPA over which it is transmitted can have a maximum of 15 IPv6 addresses</td>
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### ANVL-ISISV6-1.24

**MUST**

- Level 1 LAN IS to IS Hello PDU
  - Each Interface corresponding to the SNPA over which a L1 LAN IIH PDU is transmitted can have a maximum of 15 IPv6 Addresses.
  - We necessarily modify the contents to be 0-15 16 octet IPv6 interface addresses instead of 0-63 4 octet IPv4 interface address.

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### ANVL-ISISV6-1.25

**MUST**

- Level 1 LAN IS to IS Hello PDU
  - For LSPs the "Interfaces Address" TLVs MUST contain only the non-link-local IPv6 addresses assigned to the IS.

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<th>Release 7.5</th>
<th>Release 8.0</th>
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| **ANVL-ISISV6-1.26** RFC 5308 s3 p4 IPv6 Interface Address TLV
| Level 1 LAN IS to IS Hello PDU For LSPs the "Interfaces Address" TLVs MUST contain only the non-link-local IPv6 addresses assigned to the IS. |
| FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass |
| **ANVL-ISISV6-2.1** ISO/IEC 10589:1992(E) s9.8 p54 Level 1 LSPDU
| Level 1 LSPDU Test that the level 1 LSP must have Intradomain Routing Protocol Discriminator = 0x83, PDU Type = 18, Version/Protocol ID extension (2nd octet) = 1 and Version (6th octet) = 1 in the Header |
| FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass |
## ANVL-ISISV6-2.2

### ISO/IEC 10589:1992(E) s9.8 p54 Level 1 Link State PDU

#### MUST

Level 1 LSPDU

Bit 6-8 of PDU Type (5th octet) and Reserved (7th octet) are reserved which are always set to zero in Level 1 Link State PDU

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## ANVL-ISISV6-2.3

### ISO/IEC 10589:1992(E) s9.8 p54-55 Level 1 Link State PDU

#### MUST

Level 1 LSPDU

The valid ID Length field shall take any one of these following values:
1. An integer between 1 and 8 ,inclusive, indicating an ID field of corresponding length
2. The value zero, which indicates a six octet ID, field length
3. The value 255, which means a null ID field (i.e., zero length)

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**ISIV6-2.4**

**MUST**

ISO/IEC 10589:1992(E) s9.8 p54-55 Level 1 Link State PDU
RFC 1195 s5.3.4, p40-43 Level 1 Link State PDU
RFC 5308 p2-4 s2 IPv6 Reachability TLV
s3 IPv6 Interface Address TLV
s4 IPv6 NLPID

Level 1 LSPDU
The valid codes that must be present in the VARIABLE LENGTH FIELD of level 1 link state PDU are:
- Area Addresses
- Intermediate system Neighbors
- Protocols Supported
- IPv6 Reachability Information

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**ISIV6-2.11**

**MUST**

ISO/IEC 10589:1992(E) s9.9 p57 Level 2 LSPDU

Level 1 LSPDU
Test that the level 2 LSP must have Intradomaim Routing Protocol Discriminator =0x83, PDU Type=20, Version/Protocol ID extension(3rd octet) = 1 and Version (6th octet) = 1 in the Header

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## ANVL-ISISV6-2.12

**ISO/IEC 10589:1992(E) s9.9 p57 Level 2 Link State PDU**

- **MUST**
  - Level 1 LSPDU
  - Bit 6–8 of PDU Type (5th octet) and Reserved (7th octet) are reserved which are always set to zero in Level 2 Link State PDU

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## ANVL-ISISV6-2.13

**ISO/IEC 10589:1992(E) s9.9 p57 Level 2 Link State PDU**

- **MUST**
  - Level 1 LSPDU
  - The valid ID Length field shall take any one of these following values:
    1. An integer between 1 and 8, inclusive, indicating an ID field of corresponding length
    2. The value zero, which indicates a six octet ID field length
    3. The value 255, which means a null ID field (i.e., zero length)

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## ANVL-ISISV6-2.14

MUST

ISO/IEC 10589:1992(E) s9.9 p57-59 Level 2 Link State PDU  
RFC 1195 s5.3.5.43-48 Level 2 Link State PDU  
RFC 5308 p2-4 s2 IPv6 Reachability TLV  
s3 IPv6 Interface Address TLV  
s4 IPv6 NLPID

**Level 1 LSPDU**  
The valid codes that must be present in the VARIABLE LENGTH FIELD  
of level 2 link state PDU are:  
Area Addresses  
Intermediate system Neighbors  
Protocols Supported  
IPv6 Reachability Information

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## ANVL-ISISV6-2.17

MUST

RFC 1195 S3.1 P15 Exchange of routing information

**Level 1 LSPDU**  
IS-IS requires that any codes in a received PDU that are not  
recognized are ignored and passed through unchanged

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## RFC Compliance Test Report

### ISISV6 Results

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<th>Release 7.3</th>
<th>Release 7.5</th>
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<th>Release 8.2.2</th>
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### ANVL-ISISV6-2.18

**MUST**

RFC 1195 S3.1 P15 Exchange of routing information

Level 1 LSPDU
IS-IS requires that any codes in a received PDU that are not recognized are ignored and passed through unchanged

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### ANVL-ISISV6-3.1

**MUST**

ISO/IEC 10589:1992(E) s9.10 p60 Level 1 complete sequence numbers PDU

Level 1 Complete Sequence Numbers PDU
Level 1 complete sequence number PDU must have Intra-domain Routing protocol Discriminator = 0x83, PDU Type = 24, Version/Protocol ID extension (3rd octet) = 1 and Version (6th octet) = 1 in the header

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**ANVL-ISISV6-3.2**

**MUST**

ISO/IEC 10589:1992(E) s9.10 p60 Level 1 Complete sequence number PDU

Level 1 Complete Sequence Numbers PDU

Bit 6-8 of PDU Type (5th octet) and Reserved (7th octet) are reserved which are always set to zero in Level 1 complete sequence.

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**ANVL-ISISV6-3.3**

**MUST**

ISO/IEC 10589:1992(E) s9.10 p57 Level 1 complete sequence numbers PDU

Level 1 Complete Sequence Numbers PDU

The valid ID Length field in a Level 1 Complete Sequence Number PDU shall take any one of these following values:
1. An integer between 1 and 8, inclusive, indicating an ID field of corresponding length
2. The value zero, which indicates a six octet ID, field length
3. The value 255, which means a null ID field (i.e., zero length)

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ANVL-
ISISV6-3.4
MUST

ISO/IEC 10589:1992(E) s9.10 p60-61 Level 1 complete sequence numbers
PDU
RFC 1195 s5.3.6,p48-49 Level 1 complete sequence numbers PDU

Level 1 Complete Sequence Numbers PDU
The valid codes that must be present in the VARIABLE LENGTH FIELD of
level 1 complete sequence numbers PDU are:
1. LSP Entries
2. Authentication Information

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ANVL-
ISISV6-3.5
MUST

ISO/IEC 10589:1992(E) s9.10 p61-62 Level 2 complete sequence numbers
PDU
Level 2 complete sequence number PDU must have Intra-domain Routing
protocol Discriminator = 0x83, PDU Type = 25, Version/Protocol ID
extension (3rd octet) = 1 and Version (6th octet) = 1 in the header

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<td>Level 1 Complete Sequence Numbers PDU</td>
<td>Bit 6–8 of PDU Type (5th octet) and Reserved(7th octet) are reserved which are always set to zero in Level 2 complete sequence numbers PDU</td>
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<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
</tr>
</tbody>
</table>

| **ANVL-ISISV6-3.7** | MUST | ISO/IEC10589:1992(E) s9.11 p61-62 Level 2 complete sequence numbers PDU | Level 1 Complete Sequence Numbers PDU | The valid ID Length field in a Level 2 Complete Sequence Number PDU shall take any one of these following values: 1. An integer between 1 and 8, inclusive, indicating an ID field of corresponding length 2. The value zero, which indicates a six octet ID, field length 3. The value 255, which means a null ID field (i.e., zero length) | | | | | | |
| FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass |
**ANVL-ISISV6-3.8 MUST**

ISO/IEC 10589:1992(E) s9.11 p62 Level 2 complete sequence numbers PDU  
RFC 1195 s5.3.7.p49 Level 2 complete sequence numbers PDU

Level 1 Complete Sequence Numbers PDU  
The valid codes that must be present in the VARIABLE LENGTH FIELD of level 2 complete sequence numbers PDU are:  
1. LSP Entries  
2. Authentication Information

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</thead>
<tbody>
<tr>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
</tr>
</tbody>
</table>

**ANVL-ISISV6-3.9 MUST**

ISO/IEC 10589(E) s9.12 p62-63 Level 1 partial sequence numbers PDU

Level 1 Complete Sequence Numbers PDU  
Level 1 partial sequence number PDU must have Intra-domain Routing protocol Discriminator=0x83, PDU Type=26, Version/Protocol ID extension (3rd octet)=1 and Version (6th octet)=1 in the header

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</tr>
</thead>
<tbody>
<tr>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
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</tr>
<tr>
<td>2.0.2</td>
<td>3.0.3</td>
<td>4.0</td>
<td>5.0.1</td>
<td>6.0.3</td>
<td>7.0.1</td>
<td>7.1</td>
<td>7.3</td>
<td>7.5</td>
<td>8.0</td>
<td>8.2.2</td>
</tr>
</tbody>
</table>

**ANVL-ISISV6-3.10**

ISO/IEC 10589:1992(E) s9.12 p63 Level 1 partial sequence number PDU

Bit 6–8 of PDU Type (5th octet) and Reserved (7th octet) are reserved which are always set to zero in Level 1 partial sequence numbers PDU

|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

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</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
</tr>
</tbody>
</table>

**ANVL-ISISV6-3.11**

ISO/IEC 10589:1992(E) s9.12 p63 Level 1 partial sequence number PDU

Level 1 Complete Sequence Numbers PDU

The valid ID Length field shall take any one of these following values:
1. An integer between 1 and 8 , inclusive, indicating an ID field of corresponding length
2. The value zero, which indicates a six octet ID, field length
3. The value 255, which means a null ID field (i.e., zero length)

|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
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<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
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<td>FreeBSD 12.0: unpredict</td>
</tr>
</tbody>
</table>

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|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
### ANVL-ISISV6-3.12

**ISO/IEC 10589:1992(E) s9.12 p63 Level 1 partial sequence number PDU**

RFC 1195 s5.3.8, p49 Level 1 partial sequence number PDU

Level 1 Complete Sequence Numbers PDU

The valid codes that must be present in the VARIABLE LENGTH FIELD of level 1 partial sequence numbers PDU are:

1. LSP Entries
2. Authentication Information

<table>
<thead>
<tr>
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<tbody>
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<td>unpredict</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
</tr>
</tbody>
</table>

<table>
<thead>
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<tbody>
<tr>
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<td>pass</td>
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<td>pass</td>
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<td>pass</td>
</tr>
</tbody>
</table>

### ANVL-ISISV6-3.13

**ISO/IEC 10589(E) s9.12 p64-65 Level 2 partial sequence numbers PDU**

Level 1 Complete Sequence Numbers PDU

Level 2 partial sequence number PDU must have Intra-domain Routing protocol Discriminator=0x83, PDU Type=27, Version/Protocol ID extension (3rd octet)=1 and Version (6th octet)=1 in the header

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>pass</td>
<td>unpredict</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td>pass</td>
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<td>pass</td>
<td>pass</td>
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<th>FreeBSD 12.0:</th>
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<th>FreeBSD 12.0:</th>
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</thead>
<tbody>
<tr>
<td>unpredict</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
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<td>pass</td>
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</tbody>
</table>

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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>test</td>
<td>test</td>
<td>test</td>
<td>test</td>
<td>test</td>
<td>test</td>
<td>test</td>
<td>test</td>
<td>test</td>
<td>test</td>
</tr>
</tbody>
</table>
## ANVL-ISISV6-3.14

**MUST**

ISO/IEC 10589:1992(E) s9.12 p64 Level 2 partial sequence number PDU

Level 1 Complete Sequence Numbers PDU

Bit 6-8 of PDU Type (5th octet) and Reserved(7th octet) are reserved which are always set to zero in Level 2 partial sequence numbers PDU

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
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<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>pass</td>
<td>unpredict</td>
<td>pass</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
</tr>
</tbody>
</table>

<table>
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<tr>
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<th>FreeBSD 12.0</th>
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<th>FreeBSD 12.0</th>
<th>FreeBSD 12.0</th>
<th>FreeBSD 12.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>unpredict</td>
<td>tested</td>
<td>detected</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
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<td>tested</td>
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<table>
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<th>FreeBSD 12.2</th>
<th>FreeBSD 12.2</th>
<th>FreeBSD 12.2</th>
<th>FreeBSD 12.2</th>
<th>FreeBSD 12.2</th>
<th>FreeBSD 12.2</th>
<th>FreeBSD 12.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
</tr>
</tbody>
</table>

## ANVL-ISISV6-3.15

**MUST**

ISO/IEC 10589:1992(E) s9.12 p64 Level 2 partial sequence number PDU

Level 1 Complete Sequence Numbers PDU

The valid ID Length field shall take any one of these following values:
1. An integer between 1 and 8 ,inclusive, indicating an ID field of corresponding length
2. The value zero, which indicates a six octet ID, field length
3. The value 255, which means an null ID field (ie zero length)

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
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<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>pass</td>
<td>unpredict</td>
<td>pass</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FreeBSD 12.0</th>
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<th>FreeBSD 12.0</th>
<th>FreeBSD 12.0</th>
<th>FreeBSD 12.0</th>
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<th>FreeBSD 12.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>unpredict</td>
<td>tested</td>
<td>detected</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
</tr>
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</table>

<table>
<thead>
<tr>
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<th>FreeBSD 12.2</th>
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<th>FreeBSD 12.2</th>
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</thead>
<tbody>
<tr>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
<td>tested</td>
</tr>
</tbody>
</table>
**ANVL-ISISV6-3.16**

ISO/IEC 10589:1992(E) s9.12 p64 Level 2 partial sequence number PDU  
RFC 1195 s5.3.9,p49 Level 2 partial sequence number PDU

MUST

Level 1 Complete Sequence Numbers PDU  
The valid codes that must be present in the VARIABLE LENGTH FIELD of level 2 partial sequence numbers PDU are:
1. LSP Entries  
2. Authentication Information

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</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
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<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
</tr>
</tbody>
</table>

**ANVL-ISISV6-4.1**

ISO/IEC 10589:1992(E), s7.2.4, p14, Links

Links  
IS discover neighbours and forms adjacencies by exchanging ISIS Hello PDUs.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: test</td>
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<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
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<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
<td>FreeBSD 12.0: test</td>
</tr>
</tbody>
</table>
### ANVL-ISISV6-4.2

**RFC 1195, s5.1, p33, Overview of ISIS PDUs**

**MUST**

**Links**

Hello packets are used to initialize and maintain adjacencies between neighbouring ISs.

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
</tr>
</tbody>
</table>

### ANVL-ISISV6-4.3

**ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs**

**MUST**

An L1 IS shall transmit only L1 LAN IIHs.

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
</tr>
</tbody>
</table>
## ANVL\-ISISV6-4.4

**SHOULD**

ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs

Links

An L1 IS should contain the manualAreaAddresses and LAN Addresses of L1 IS adjacencies.

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: untested</td>
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</tr>
</tbody>
</table>

## ANVL\-ISISV6-4.5

**MUST**

ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs

Links

An L1 IS shall transmit L1 LAN IIHs to the multi-destination address AllL1ISs.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
</tr>
</tbody>
</table>

FreeBSD 12.2: pass FreeBSD 12.2: pass
### ANVL-ISISV6-4.6

**ISO/IEC 10589:1992(E), s8.4.2, Broadcast subnetwork IIH PDUs**

**MUST**

L1 ISs shall listen on the multi-destination address AllL1ISs.

<table>
<thead>
<tr>
<th>Release</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0.2</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>untested</td>
<td>untested</td>
<td>untested</td>
<td>untested</td>
<td>untested</td>
<td>untested</td>
<td>untested</td>
<td>untested</td>
</tr>
<tr>
<td>3.0.3</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>untested</td>
<td>untested</td>
<td>untested</td>
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<td>4.0</td>
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<td>5.0.1</td>
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<td>6.0.3</td>
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<tr>
<td>7.0.1</td>
<td></td>
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<td>7.1</td>
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<td>7.5</td>
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<td>8.2.2</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

- FreeBSD 10.3: pass
- FreeBSD 10.3: untested
- FreeBSD 12.0: untested
- FreeBSD 12.2: untested

### ANVL-ISISV6-4.7

ISO/IEC 10589:1992(E), s8.4.2, Broadcast subnetwork IIH PDUs

**MUST**

L1 ISs shall reject any L1 LAN IIH that doesn't have the destination as AllL1ISs.

<table>
<thead>
<tr>
<th>Release</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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<td>FAIL</td>
<td>FAIL</td>
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<td>3.0.3</td>
<td>FAIL</td>
<td>FAIL</td>
<td>FAIL</td>
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<td>6.0.3</td>
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<td>8.2.2</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

- FreeBSD 10.3: FAIL
- FreeBSD 12.0: FAIL
- FreeBSD 12.2: FAIL
- FreeBSD 12.2: untested
- FreeBSD 12.2: FAIL
- FreeBSD 12.2: FAIL
<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANVL-ISISV6-4.8</strong></td>
<td>ISO/IEC 10589:1992(E), s8.4.2.1, p44, IIH PDU acceptance tests</td>
<td><strong>SHOULD</strong></td>
<td>If the IDLength of the L1 IIH is not equal to the value of the IS routingDomainIDLength, it should be discarded.</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: untested</td>
<td>FreeBSD 10.3: untested</td>
<td>FreeBSD 10.3: untested</td>
<td>FreeBSD 10.3: untested</td>
</tr>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
</tr>
</tbody>
</table>

| ANVL-ISISV6-4.9 | ISO/IEC 10589:1992(E), s8.4.2.2, p45, Receipt of L1 LAN IIH PDUs | **SHOULD** | If the received L1 IIH's areaAddresses do not match any of the manualAreaAddressess of the L1 IS, it should reject the adjacency. | FreeBSD 10.3: pass | FreeBSD 10.3: pass | FreeBSD 10.3: pass | FreeBSD 10.3: untested | FreeBSD 10.3: untested | FreeBSD 10.3: untested | FreeBSD 10.3: untested | FreeBSD 10.3: untested |
| FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested |
### ANVL-ISISV6-4.10

ISO/IEC 10589:1992(E), s8.4.2.2, p45, Receipt of L1 IIH PDUs
ISO/IEC 10589:1992(E), s8.2.4.2, p38, IIH PDU Processing

**MUST**

**Links**

If the received L1 IIHs areaAddress field matches any of the values from the manualAreaAddresses of the L1 IS, it shall accept the adjacency.

|-------------------|-------------------|-------------------|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|

<table>
<thead>
<tr>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
</tr>
</thead>
</table>

|------------------------|------------------------|------------------------|------------------------|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|

### ANVL-ISISV6-4.11

ISO/IEC 10589:1992(E), s8.4.2.2, p45, Receipt of L1 IIH PDUs
ISO/IEC 10589:1992(E), s8.2.4.2, p38, IIH PDU Processing

**MUST**

**Links**

If the received L1 IIHs maximumAreaAddresses value is equal to the ISs maximumAreaAddresses, accept the PDU.

|-------------------|-------------------|-------------------|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|

<table>
<thead>
<tr>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
</tr>
</thead>
</table>

|------------------------|------------------------|------------------------|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
ISO/IEC 10589:1992(E), s8.4.2.2, p45, Receipt of L1 IIH PDUs

**MUST**

If the L1 ISs maximumAreaAddresses is not 3, then it will discard all L1 IIH with non matching maximumAreaAddresses value.

### FreeBSD 10.3: pass
- FreeBSD 10.3: pass
- FreeBSD 10.3: pass
- FreeBSD 10.3: pass

### FreeBSD 12.0: untested
- FreeBSD 12.0: untested
- FreeBSD 12.0: untested
- FreeBSD 12.0: untested

### FreeBSD 12.2: untested
- FreeBSD 12.2: untested
- FreeBSD 12.2: untested
- FreeBSD 12.2: untested

ISO/IEC 10589:1992(E), s8.4.2.5.1, p45, New Adjacencies

**MUST**

When an L1 IS receives an L1 LAN IIH from another IS (R), then the next L1 IIH generated by the IS will include R.

### FreeBSD 10.3: pass
- FreeBSD 10.3: pass
- FreeBSD 10.3: pass
- FreeBSD 10.3: pass

### FreeBSD 12.0: untested
- FreeBSD 12.0: untested
- FreeBSD 12.0: untested
- FreeBSD 12.0: untested

### FreeBSD 12.2: untested
- FreeBSD 12.2: untested
- FreeBSD 12.2: untested
- FreeBSD 12.2: untested
**ANVL-ISISV6-4.15**

ISO/IEC 10589:1992(E), s8.4.2.5.1, p45, New Adjacencies

MUST

When an L1 IS receives an L1 LAN IIH with its own entry, then it shall create an adjacency.

|-------------------|-------------------|-------------------|------------------------|------------------------|------------------------|------------------------|------------------------|

**ANVL-ISISV6-4.16**

ISO/IEC 10589:1992(E), s8.4.2.5.2, p45, New Adjacencies

MUST

If a neighbour is not heard within the Holding Time, the L1 IS shall purge it from the database.

|-------------------|-------------------|-------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
### RFC Compliance Test Report

**ISISV6 Results**

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
</tr>
</tbody>
</table>

**ANVL-ISISV6-5.1**

**MUST**

ISO/IEC 10589:1992(E), s7.2.4, p14, Links

Broadcast Subnetwork IIH PDUs

IS discover neighbours and forms adjacencies by exchanging ISIS Hello PDUs.

- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass

**Ubuntu 16.04:** pass

- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass

**FreeBSD 12.0:** untested

- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested

**FreeBSD 12.2:** untested

- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** pass

**ANVL-ISISV6-5.2**

**MUST**

RFC 1195, s5.1, p33, Overview of ISIS PDUs

Broadcast Subnetwork IIH PDUs

Hello packets are used to initialize and maintain adjacencies between neighbouring ISs.

- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass
- **FreeBSD 10.3:** pass

**Ubuntu 16.04:** pass

- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass
- **Ubuntu 16.04:** pass

**FreeBSD 12.0:** untested

- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested
- **FreeBSD 12.0:** untested

**FreeBSD 12.2:** untested

- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
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- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** untested
- **FreeBSD 12.2:** pass

- **FreeBSD 12.2:** pass
### ANNLSISV6-5.3

**MUST**

ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs

**Broadcast Subnetwork IIH PDUs**

An L2 IS shall transmit only L2 LAN IIHs.

|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

<table>
<thead>
<tr>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
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</table>

### ANNLSISV6-5.4

**SHOULD**

ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs

**Broadcast Subnetwork IIH PDUs**

An L2 IIH sent by L2 IS should contain the manual Area Addresses and LAN Addresses of L2 IS adjacencies.

|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

<table>
<thead>
<tr>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: untested</th>
<th>FreeBSD 12.0: pass</th>
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<th>FreeBSD 12.0: pass</th>
</tr>
</thead>
</table>

|-----------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
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<table>
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<tr>
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</table>

### FreeBSD 12.2: passed

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</thead>
</table>

### FreeBSD 12.2: passed

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### FreeBSD 12.2: passed

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### FreeBSD 12.2: passed

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### FreeBSD 12.2: passed

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### FreeBSD 12.2: passed

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</thead>
</table>
ISO/IEC 10589:1992(E), s8.4.2, Broadcast subnetwork IIH PDUs

Broadcast Subnetwork IIH PDUs
L2 ISs shall reject any L2 LAN IIH that doesn't have the destination as AllL2ISs.

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
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</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

ISO/IEC 10589:1992(E), s8.4.2.1, IIH PDU acceptance tests

Broadcast Subnetwork IIH PDUs
If the IDLength of the L2 IIH is not equal to the value of the ISs routingDomainIDLength, it should be discarded.

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
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</thead>
<tbody>
<tr>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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</table>
### ANVL-ISISV6-5.9

**MUST**

ISO/IEC 10589:1992(E), s8.4.2.5.1, p45, New Adjacencies

Broadcast Subnetwork IIH PDUs

When an L2 IS receives an L2 LAN IIH from another IS (R), then the next L2 IIH generated by the IS will include R.

|-------------------|-------------------|-------------------|-------------------|----------------------|----------------------|----------------------|----------------------|----------------------|

### ANVL-ISISV6-5.10

**MUST**

ISO/IEC 10589:1992(E), s8.4.2.5.1, p45, New Adjacencies

Broadcast Subnetwork IIH PDUs

When an L2 IS receives an L2 LAN IIH with its own entry, then it shall create an adjacency.

|-------------------|-------------------|-------------------|-------------------|----------------------|----------------------|----------------------|----------------------|----------------------|

<table>
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|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|

FreeBSD 12.2: pass
ISO/IEC 10589:1992(E), s8.4.2.5.2, p45, New Adjacencies

If a neighbour is not heard within the Holding Time, the L2 IS shall purge it from the database.

ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs

More Broadcast Subnetwork IIH PDUs

An L1/L2 IS shall create separate adjacencies on receipt of L1 and L2 LAN IIH.

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
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<th>Release 7.3</th>
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<tbody>
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| FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass |
| FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: pass |

ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs

More Broadcast Subnetwork IIH PDUs
An L1/L2 IS shall transmit both L1 and L2 LAN IIHs.

ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs

More Broadcast Subnetwork IIH PDUs
An L1/L2 IS shall listen on the multi-destination address AllL1ISs and AllL2ISs for L1 and L2 LAN IIHs.

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<th>FreeBSD 10.3</th>
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| unpredict    | pass         | pass         | pass         | pass         | untested     | untested     | untested     | untested     | untested     | untested     | untested     | untested     | untested     |

| FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 | FreeBSD 12.2 |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| pass         | pass         | pass         | pass         | pass         | untested     | untested     | untested     | untested     | untested     | untested     | untested     | untested     | untested     |
| pass         | pass         | pass         | pass         | pass         | untested     | untested     | untested     | untested     | untested     | untested     | untested     | untested     | untested     |
### ANVL-ISISV6-6.4

**MUST**

ISO/IEC 10589:1992(E), s8.4.2, p44, Broadcast subnetwork IIH PDUs

More Broadcast Subnetwork IIH PDUs

An L1/L2 IS shall reject any LAN IIH that doesn’t have the destination as AllL1ISs or AllL2ISs.

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<tr>
<th>Release 2.0.2</th>
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<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
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<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
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</thead>
</table>

### ANVL-ISISV6-7.1

**MUST**

ISO/IEC 10589:1992(E) s7.2.3 p14 Broadcast subnetwork

RFC 1195 s4.3 p31 Designated routers and Pseudonodes

Broadcast Subnetwork

Election process of level 1 designated IS is done by verifying priority field in the IIH

|-------------------|-------------------|-------------------|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|

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<th>FreeBSD 12.0: untested</th>
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<th>FreeBSD 12.0: FAIL</th>
<th>FreeBSD 12.0: FAIL</th>
<th>FreeBSD 12.0: FAIL</th>
<th>FreeBSD 12.0: FAIL</th>
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<tbody>
<tr>
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|-----------------------|-----------------------|-----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
### ANVL-ISISV6-7.2

ISO/IEC 10589:1992(E) s7.2.3 p14 Broadcast subnetwork
RFC 1195 s4.3 p31 Designated routers and Pseudonodes

**MUST**

Broadcast Subnetwork
Election process of level 1 designated IS is done by verifying priority field in the IIH

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
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<th>Release 7.1</th>
<th>Release 7.3</th>
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<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: FAIL</td>
<td>FreeBSD 12.0: FAIL</td>
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<td>FreeBSD 12.0: FAIL</td>
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<td>FreeBSD 12.0: FAIL</td>
</tr>
</tbody>
</table>

### ANVL-ISISV6-7.3

ISO/IEC 10589:1992(E) s7.2.3 p14 Broadcast subnetwork
RFC 1195 s4.3 p31 Designated routers and Pseudonodes

**MUST**

Broadcast Subnetwork
Election process of level 1 designated IS is done by verifying priority field in the IIH and the MAC address

<table>
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<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
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<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
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<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
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Test Report created at 2022-03-22 13:41:33 UTC
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<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
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<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
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<td>ISO/IEC 10589:1992(E) s7.2.3 p14 Broadcast subnetwork</td>
<td>RFC 1195 s4.3 p31 Designated routers and Pseudonodes</td>
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</table>

**ANVL-ISISV6-7.5**
ISO/IEC 10589:1992(E) s8.4.5 p46 LAN designated IS

**MUST**
Broadcast Subnetwork
An L1 IS becomes an L1 Designated IS, it shall transmit L1 pseudonode LSP

<table>
<thead>
<tr>
<th></th>
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</table>
## ANVL-ISISV6-7.6

### MUST

ISO/IEC 10589:1992(E) s8.4.5 p47 LAN designated ISs

- **Broadcast Subnetwork**
  - An L1 IS shall transmit L1 LAN IIHs with the LAN ID field set to the LAN ID of the designated L1 IS

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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## ANVL-ISISV6-8.1

### MUST

ISO/IEC 10589:1992(E) s7.2.3 p14 Broadcast subnetwork

RFC 1195 s4.3 p31 Designated routers and Pseudonodes

- **Designated Routers and Pseudonodes**
  - Election process of level 2 designated IS is done by verifying priority field in the IIH

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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</tbody>
</table>

FreeBSD 12.2: pass

FreeBSD 12.2: pass
Designated Routers and Pseudonodes

Election process of level 2 designated IS is done by verifying priority field in the IIH

| ANVL-ISISV6-8.2       | ISO/IEC 10589:1992(E) s7.2.3 p14 Broadcast subnetwork
|                       | RFC 1195 s4.3 p31 Designated routers and Pseudonodes |

| MANDATORY             | MUST                                                                 |
|                       | Designated Routers and Pseudonodes                                    |
|                       | Election process of level 2 designated IS is done by verifying priority field in the IIH and the MAC address |

<table>
<thead>
<tr>
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Test Report created at 2022-03-22 13:41:33 UTC
## ISIV6 Results

### MUST

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<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: FAIL</td>
<td>FreeBSD 12.0: FAIL</td>
</tr>
</tbody>
</table>

### ISO/IEC 10589:1992(E) s7.2.3 p14 Broadcast subnetwork

- Designated Routers and Pseudonodes
- Election process of level 2 designated IS is done by verifying priority field in the IIH and the MAC address

### ISO/IEC 10589:1992(E) s8.4.5 p46 LAN designated IS

- Designated Routers and Pseudonodes
- An L2 IS becomes an L2 Designated IS, it shall transmit L2 pseudonode LSP
### ANVL-ISISV6-8.6

**MUST**

ISO/IEC 10589:1992(E) s8.4.2 p47 LAN designated ISs

Designated Routers and Pseudonodes

An L2 IS shall transmit L2 LAN IIHs with the LAN ID field set to the LAN ID of the designated L2 IS

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
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<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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</tbody>
</table>

### ANVL-ISISV6-9.1

**MUST**

RFC 1195 s3.9 p25 Authentication

IIH PDU Acceptance Tests

If authentication is enabled on a circuit and the received L1 LAN IIH doesn't contain the authentication information field, the L1 IS shall discard the PDU

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
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<th>Release 7.3</th>
<th>Release 7.5</th>
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</tr>
</thead>
<tbody>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>ISO/IEC 10589:1992(E) s8.4.2.1 p45 IIH PDU Acceptance Tests</td>
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<tr>
<td>3.0.3</td>
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</tr>
<tr>
<td>4.0</td>
<td>MUST An L1 IS will include authentication information of type Password containing the circuitTransmitPassword as the authentication value in its L1 LAN IIH PDU if authentication is enabled on the circuit</td>
<td>MUST If authentication is enabled on a circuit and the received L1 LAN IIH contains authentication information of type Password, and if this Password matches any of the circuitReceivePasswords, then the L1 IS accepts the PDU</td>
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FreeBSD 12.0: untested FreeBSD 12.0: untested FreeBSD 12.0: untested FreeBSD 12.0: untested Free BSD 12.0: untested FreeBSD 12.0: untested FreeBSD 12.0: untested FreeBSD 12.0: untested

FreeBSD 12.0: pass FreeBSD 12.0: pass FreeBSD 12.0: pass FreeBSD 12.0: pass FreeBSD 12.0: pass FreeBSD 12.0: pass FreeBSD 12.0: pass FreeBSD 12.0: pass
### ANVL-ISISV6-9.4

ISO/IEC 10589:1992(E) s8.4.2.1 p45 IIH PDU Acceptance Tests  
RFC 1195 s3.9 p25 Authentication

**MUST**

If authentication is enabled on a circuit and the received L1 LAN IIH contains authentication information of type Password, and if this Password does not match any of the circuitReceivePasswords, then the L1 IS discards the PDU

<table>
<thead>
<tr>
<th>FreeBSD</th>
<th>FreeBSD</th>
<th>FreeBSD</th>
<th>FreeBSD</th>
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</table>

### ANVL-ISISV6-9.5

ISO/IEC 10589:1992(E) s8.4.2.1 p45 IIH PDU Acceptance Tests  
RFC 1195 s3.9 p25 Authentication

**MUST**

If authentication is enabled on a circuit and the received L1 LAN IIH contains authentication information of a type that the IS doesn't implement, then the IS discards the PDU

<table>
<thead>
<tr>
<th>FreeBSD</th>
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</thead>
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</tbody>
</table>

**Test Report created at 2022-03-22 13:41:33 UTC**
## ANVL-ISISV6-10.1

ISO/IEC 10589:1992(E) s8.4.2.1 p45 IIH PDU Acceptance Tests
RFC 1195 s3.9 p25 Authentication

**MUST**

If authentication is enabled on a circuit and the received L2 LAN IIH doesn’t contain the authentication information field, the L2 IS shall discard the PDU

<table>
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<tr>
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<tbody>
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<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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</table>

## ANVL-ISISV6-10.2

ISO/IEC 10589:1992(E) s8.4.4 p46 Transmission of LAN IIH PDUs
RFC 1195 s3.9 p25 Authentication

**MUST**

An L2 IS will include authentication information of type Password containing the circuitTransmitPassword as the authentication value in its L2 LAN IIH PDU if authentication is enabled on the circuit

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<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: pass</td>
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Test Report created at 2022-03-22 13:41:33 UTC
## ISO/IEC 10589:1992(E) s8.4.2.1 p45 IIH PDU Acceptance Tests
### RFC 1195 s3.9 p25 Authentication

**MUST**

If authentication is enabled on a circuit and the received L2 LAN IIH contains authentication information of type Password, and if this Password matches any of the circuitReceivePasswords, then the L2 IS accepts the PDU

### FreeBSD 10.3:
- pass
- untested

### FreeBSD 12.0:
- untested

### FreeBSD 12.2:
- untested

### Ubuntu 16.04:
- pass
- untested

### FreeBSD 12.0:
- untested

### FreeBSD 12.2:
- untested

### FreeBSD 12.3:
- untested

### FreeBSD 12.4:
- pass

### FreeBSD 12.5:
- untested

### FreeBSD 12.6:
- untested

### FreeBSD 12.7:
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### FreeBSD 12.8:
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### FreeBSD 12.9:
- untested

### FreeBSD 13.0:
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### FreeBSD 13.1:
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### FreeBSD 13.8:
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### FreeBSD 19.1:
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### FreeBSD 19.2:
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### FreeBSD 19.3:
- untested
### ANVL-ISISV6-10.5

ISO/IEC 10589:1992(E) s8.4.2.1 p45 IIH PDU Acceptance Tests
RFC 1195 s3.9 p25 Authentication

**MUST**

Authentication
If authentication is enabled on a circuit and the received L2 LAN IIH contains authentication information of a type that the IS doesn’t implement, then the IS discards the PDU

<table>
<thead>
<tr>
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### ANVL-ISISV6-11.1

ISO/IEC 10589:1992(E) s7.3.2 p19-p20 Generation of local link state information

**MUST**

Generation of Local Link State Information
The update process is responsible for generating Link State PDUs under the following circumstances.
- Upon Timer Expiration (LSPGenerationTimer)

<table>
<thead>
<tr>
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<td>FreeBSD 12.0: untested</td>
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<td>Generation of Local Link State Information</td>
<td>The Intermediate System shall regenerate every LSP at intervals of atmost maximum LSPGeneration interval</td>
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<td>FreeBSD 12.0: untested</td>
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<td>Generation of Local Link State Information</td>
<td>The Intermediate System shall regenerate every LSP at intervals of atmost maximum LSPGeneration interval</td>
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</table>
### ANVL-ISISV6-11.4

**ISO/IEC 10589:1992(E) s7.3.16.1 p29 Sequence number**

*Generation of Local Link State Information*

When the sequence number reaches the Sequence Modulus, the routing module should be disabled for a period of at least MaxAge + ZeroAgeLifetime

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### ANVL-ISISV6-11.5

**ISO/IEC 10589:1992(E) s7.3.16.3-4 p29 Remaining LifeTime Field & LSP Expiration synchronization**

*Generation of Local Link State Information*

If the Remaining LifeTime field of the received LSP is zero, the system shall purge that LSP from its database and synchronizes by flooding an expired LSP

<table>
<thead>
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### ISO/IEC 10589:1992(E) s7.3.16.3-4 p29 Remaining LifeTime Field & LSP Expiration synchronization

**ANVL-ISISV6-11.6**

**MUST**

Generation of Local Link State Information

If the Remaining LifeTime field of the received LSP is zero, the system shall purge that LSP from its database and synchronizes by flooding an expired LSP.

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### ISO/IEC 10589:1992(E) s7.3.2 p19-p20 Generation of local link state information

**ANVL-ISISV6-11.7**

**MUST**

Generation of Local Link State Information

The update process is responsible for generating Link State PDUs under the following circumstances.

- Upon Timer Expiration (LSPGenerationTimer)

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</table>
ISO/IEC 10589:1992(E) s7.3.16.1 p29 Sequence number

**Generation of Local Link State Information**

When the sequence number reaches the Sequence Modulus, the routing module should be disabled for a period of at least MaxAge + ZeroAgeLifetime

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ISO/IEC 10589:1992(E) S7.3.4 P21 Multiple LSPs

**Multiple LSPs**

If an LSP becomes empty because of all the adjacencies reported in that LSP no longer exists, an IS may purge that LSP instead of re-issuing it

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Test Report created at 2022-03-22 13:41:33 UTC
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<th>MUST</th>
<th>ISO/IEC 10589:1992(E) s7.2.8.1 p15 Computing routes through overloaded Intermediate systems</th>
</tr>
</thead>
<tbody>
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<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: untested</td>
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</table>

Multiple LSPs
The Decision Process shall not utilise a link to an Intermediate system neighbour from an IS whose LSPs have the LSP Data-base Overload indication set.

<table>
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<th>ANVL-ISISV6-17.8</th>
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</table>

Multiple LSPs
If an LSP becomes empty because of all the adjacencies reported in that LSP no longer exists, an IS may purge that LSP instead of re-issuing it.
### ANVL-ISISV6-17.11

**MUST**

ISO/IEC 10589:1992(E) s7.2.8.1 p15 Computing routes through overloaded Intermediate systems

The Decision Process shall not utilise a link to an Intermediate system neighbour from an IS whose LSPs have the LSP Data-base Overload indication set.

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### ANVL-ISISV6-17.13

**MUST**

RFC 5308, s2, p2 IPv6 Reachability TLV

The external bit in IPv6 Reachability TLV must be set to 0 to indicate internal metric

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</tr>
</tbody>
</table>

### FreeBSD 10.3: Results

- Pass: 10.3
- Fail: 10.3
- Untested: 10.3

### Ubuntu 16.04: Results

- Pass: 16.04
- Fail: 16.04
- Untested: 16.04

### FreeBSD 12.0: Results

- Pass: 12.0
- Fail: 12.0
- Untested: 12.0

### FreeBSD 12.2: Results

- Pass: 12.2
- Fail: 12.2
- Untested: 12.2
### ANVL-ISISV6-17.14

**MUST**

The external bit in IPv6 Reachability TLV must be set to 0 to indicate internal metric

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</tbody>
</table>

### ANVL-ISISV6-17.15

**MUST**

If a prefix is advertised with a metric larger than MAX_V6_PATH_METRIC (0xFE000000), this prefix MUST not be considered during the normal SPF computation.

<table>
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<tr>
<th></th>
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</tr>
</tbody>
</table>
### ISO/IEC 10589:1992(E) S7.2.5 P14 Multiple LSPs for the same system

#### MUST

**Propagation of LSPs**
- The following information shall be taken only from LSP with LSP number zero and disregarded if the LSP number is non-zero
- 1. The setting of the LSP Database Overload bit
- 2. The value of the IS Type field
- 3. The Area Addresses option field

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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</tr>
</tbody>
</table>

### ISO/IEC 10589:1992(E) S7.3 P19 Update process

#### MUST

**Propagation of LSPs**
- The update process is responsible for generating and propagating Link State information reliably throughout the routing domain

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<thead>
<tr>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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Test Report created at 2022-03-22 13:41:33 UTC
Table: ISO/IEC 10589:1992(E) S7.3.2 P19-20

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<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
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</table>

Table: ISO/IEC 10589:1992(E) S7.3.8 P22

<table>
<thead>
<tr>
<th>ANVL-ISISV6-18.4</th>
<th>MUST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propagation of LSPs</td>
<td></td>
</tr>
<tr>
<td>The update process is responsible for generating Link State PDUs under the following circumstances:</td>
<td></td>
</tr>
<tr>
<td>- When notified by the subnetwork dependent functions of an adjacency database change</td>
<td></td>
</tr>
<tr>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
</tr>
</tbody>
</table>
## ANVL-ISISV6-18.5

### MUST

ISO/IEC 10589:1992(E) S7.3.15.1 P24-25 Action on receipt of Link state PDU

**Propagation of LSPs**

If this is a level 1 LSP and the Maximum Area Address field is not equal to the value of the ISs Maximum Area Address then the PDU shall be discarded

<table>
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<tr>
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</table>

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### ANVL-ISISV6-18.6

### MUST


**Propagation of LSPs**

Duplicate PDUs are detected and dropped

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**ANVL-ISISV6-18.7**

**ISO/IEC 10589:1992(E) s7.3.14.2 p24 Propagation of LSPs**

Propagation of LSPs
Level 1 Link State PDUs shall be propagated on circuits, which have at least one Level 1 adjacency

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</thead>
<tbody>
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</table>

**ANVL-ISISV6-18.8**

**ISO/IEC 10589:1992(E), s7.3.14.2, p24, Propagation of LSPs**

Propagation of LSPs
When propagating a L1 LSP on a broadcast subnetwork, the IS shall transmit to the multi-destination Address AllL1IS.

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<tbody>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: pass</td>
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<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
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<th>Release 7.3</th>
<th>Release 7.5</th>
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<th>Release 8.2.2</th>
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</thead>
<tbody>
<tr>
<td><strong>ANVL-ISISV6-18.9</strong></td>
<td>ISO/IEC 10589:1992(E) s7.3.14.2 p24 Propagation of LSPs</td>
<td>MUST</td>
<td>When an Intermediate System receives a LSP older than the one stored in the database, the stored link state PDU needs to be sent on the link from which the older one was received</td>
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<tr>
<td><strong>ANVL-ISISV6-18.10</strong></td>
<td>ISO/IEC 10589:1992(E) S7.3.16.3 P29 Remaining Lifetime Field</td>
<td>MUST</td>
<td>When the source generates a link state PDU, it shall set the Remaining Lifetime to MaxAge. Before transmitting a link state PDU to a neighbour, a system shall decrement the Remaining Lifetime</td>
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</tbody>
</table>
### ANVL-ISISV6-18.12
**MUST**

RFC 1195 S3.1 P15 Exchange of routing information

**Propagation of LSPs**

Level 1 routers need to know what IP address are reachable from each level 1 router in their area

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> predict</td>
<td><strong>Ubuntu 16.04:</strong> FAIL</td>
<td><strong>Ubuntu 16.04:</strong> FAIL</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> FAIL</td>
</tr>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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</tbody>
</table>

### ANVL-ISISV6-18.13
**MUST**

RFC 1195 S3.7 P24 IP-Only Operation

**Propagation of LSPs**

Some of the VARIABLE LENGTH fields from IS-IS link packet must be omitted for IP only routers
- The End System Neighbours entries are omitted
- The Prefix Neighbours entries are omitted

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
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<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
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</thead>
<tbody>
<tr>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
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<td><strong>Ubuntu 16.04:</strong> pass</td>
<td><strong>Ubuntu 16.04:</strong> pass</td>
</tr>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: untested</td>
</tr>
</tbody>
</table>
### Multiple LSPs for the Same System

The following information shall be taken only from LSP with LSP number zero and disregarded if the LSP number is non-zero:

1. The setting of the LSP Database Overload bit
2. The value of the IS Type field
3. The Area Addresses option field

### Update process

The update process is responsible for generating and propagating Link State information reliably throughout the routing domain.
### ANVL-ISISV6-19.3

**MUST**

ISO/IEC 10589:1992(E) S7.3.2 P19-20 Generation of local link state information

Multiple LSPs for the Same System

The update process is responsible for generating Link State PDUs under the following circumstances:
- When notified by the subnetwork dependent functions of an adjacency database change

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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</thead>
<tbody>
<tr>
<td>FreeBSD 12.0</td>
<td>FreeBSD 12.0</td>
<td>FreeBSD 12.0</td>
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</tr>
</tbody>
</table>

### ANVL-ISISV6-19.4

**MUST**

ISO/IEC 10589:1992(E) S7.3.8 P22 Generation of level 2 pseudonode LSPs

Multiple LSPs for the Same System

The Area Addresses option will not be present when an IS generates a level 2 Link State PDU on behalf of pseudonode

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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<th>FreeBSD 10.3</th>
</tr>
</thead>
<tbody>
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<td>FreeBSD 12.0</td>
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<tr>
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<tr>
<td>2.0.2</td>
<td></td>
<td></td>
<td>4.0</td>
<td></td>
<td>5.0.1</td>
<td>6.0.3</td>
<td></td>
<td>7.0.1</td>
<td>7.1</td>
</tr>
</tbody>
</table>

**ANVL-ISISV6-19.5**

ISO/IEC 10589:1992(E) S7.3.15 P24-25 Action on receipt of Link state PDU

**MUST**

Multiple LSPs for the Same System
If this is a level 2 LSP and the Maximum Area Address field is not equal to the value of the ISs Maximum Area Address then the PDU shall be discarded

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
</tr>
</tbody>
</table>

**ANVL-ISISV6-19.6**

ISO/IEC 10589:1992(E) s7.3.14.1 p23 Propagation of LSPs

**MUST**

Multiple LSPs for the Same System
Duplicate PDUs are detected and dropped

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</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
</tr>
</tbody>
</table>
### ISO/IEC 10589:1992(E), s7.3.14.2, p24, Propagation of LSPs

#### Multiple LSPs for the Same System

Level 2 Link State PDUs shall be propagated on circuits, which have at least one Level 2 adjacency.

<table>
<thead>
<tr>
<th>FreeBSD 10.3: pass</th>
<th>FreeBSD 10.3: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.2: pass</th>
<th>FreeBSD 12.2: pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
</tbody>
</table>

#### Multiple LSPs for the Same System

When propagating a L2 LSP on a broadcast subnetwork, the IS shall transmit to the multi-destination Address AllL2IS.

<table>
<thead>
<tr>
<th>FreeBSD 10.3: pass</th>
<th>FreeBSD 10.3: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.0: pass</th>
<th>FreeBSD 12.2: pass</th>
<th>FreeBSD 12.2: pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
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<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
<tr>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.2: pass</td>
<td>FreeBSD 12.2: pass</td>
</tr>
</tbody>
</table>
ISO/IEC 10589:1992(E) s7.3.14.2 p24 Propagation of LSPs

**Multiple LSPs for the Same System**
When an Intermediate System receives a LSP older than the one stored in the database, the stored link state PDU needs to be sent on the link from which the older one was received.

### FreeBSD
- **10.3**: FAIL
- **12.0**: untested

### Ubuntu
- **16.04**: pass
- **16.04**: pass

### FreeBSD 12.2
- **12.2**: pass

ISO/IEC 10589:1992(E) s7.3.15.1 p24 Action on receipt of a link state PDU

**Multiple LSPs for the Same System**
If the ID Length of the PDU is not equal to the value of the ISs routingDomainISLength, the PDU shall be discarded.

### FreeBSD
- **10.3**: pass
- **12.0**: pass

### Ubuntu
- **16.04**: pass
- **16.04**: pass

### FreeBSD 12.2
- **12.2**: pass

- **12.2**: pass
ISO/IEC 10589:1992(E) S7.3.16.3 P29 Remaining Lifetime Field

Multiple LSPs for the Same System
When the source generates a link state PDU, it shall set the Remaining Lifetime to MaxAge. Before transmitting a link state PDU to a neighbour, a system shall decrement the Remaining Lifetime.

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>pass</td>
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<td>pass</td>
<td>pass</td>
<td>pass</td>
<td>pass</td>
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<tr>
<td>FreeBSD 12.0:</td>
<td>FreeBSD 12.0:</td>
<td>FreeBSD 12.0:</td>
<td>FreeBSD 12.0:</td>
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</tbody>
</table>

RFC 1195 S3.2 P17 Exchange of routing information

Multiple LSPs for the Same System
Level 2 routers need to know what IP address are reachable from each level 2 router in their area.

<table>
<thead>
<tr>
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<tbody>
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<td>FreeBSD 12.0:</td>
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<tr>
<td>FAIL</td>
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</tr>
</tbody>
</table>
## ANVL-ISIV6-19.14

**MUST**

- Multiple LSPs for the Same System
- Some of the VARIABLE LENGTH fields from IS-IS link packet must be omitted for IP only routers
- The End System Neighbours entries are omitted
- The Prefix Neighbours entries are omitted

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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<tbody>
<tr>
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</table>

## ANVL-ISIV6-20.1

**MUST**

- Sequence Numbers
- When a system initializes, it shall start with sequence number with 1 for its own Link State PDUs:

<table>
<thead>
<tr>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
<th>FreeBSD 10.3</th>
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</tr>
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<tr>
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<td>FAIL</td>
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<td>FAIL</td>
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<tbody>
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</tr>
<tr>
<td>Release 2.0.2</td>
<td>Release 3.0.3</td>
<td>Release 4.0</td>
<td>Release 5.0.1</td>
<td>Release 6.0.3</td>
<td>Release 7.0.1</td>
<td>Release 7.1</td>
<td>Release 7.3</td>
<td>Release 7.5</td>
<td>Release 8.0</td>
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</tr>
<tr>
<td><strong>ANVL-ISISV6-20.2</strong></td>
<td>ISO/IEC 10589:1992(E) s7.3.16.1 p28 sequence numbers</td>
<td><strong>SHOULD</strong></td>
<td>The sequence number of any actually generated Link State PDU should not be zero</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: pass</td>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: pass</td>
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<td>FreeBSD 12.0: pass</td>
</tr>
<tr>
<td><strong>ANVL-ISISV6-20.3</strong></td>
<td>ISO/IEC 10589:1992(E) s7.3.16.1 p29 sequence numbers</td>
<td><strong>MUST</strong></td>
<td>Update sequence number depending on the sequence number received from system in the domain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: pass</td>
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</table>
### ANVL-ISISV6-20.4

**MUST**

ISO/IEC 10589:1992(E) s7.3.16.2 p29 LSP confusion

Sequence Numbers

If the sequence numbers match, but checksums do not and the LSP is not generated by the local system, then store the LSP with zero Remaining Lifetime, and flood the LSP.

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### ANVL-ISISV6-21.1

**MUST**

ISO/IEC 10589:1992(E) s7.3.16.1 p28 sequence numbers

LSP Confusion

When a system initializes, it shall start with sequence number with 1 for its own Link State PDUs.

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<td>Release 5.0.1</td>
<td>Release 6.0.3</td>
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<tr>
<td>The sequence number of any actually generated Link State PDU should not be zero:</td>
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<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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| **ANVL-ISISV6-21.3** | | | | | | | | | |
| ISO/IEC 10589:1992(E) s7.3.16.1 p29 sequence numbers | | | | | | | | | |
| MUST | | | | | | | | | |
| LSP Confusion | | | | | | | | | |
| Update sequence number depending on the sequence number received from system in the domain | | | | | | | | | |
| FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: pass | FreeBSD 12.0: untested | FreeBSD 12.0: pass | FreeBSD 12.0: pass | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested |
### LSP Confusion

If the sequence numbers match, but checksums do not and the LSP is not generated by the local system, then store the LSP with zero Remaining Lifetime, and flood the LSP.

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
<th>Release 7.0.1</th>
<th>Release 7.1</th>
<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
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<td>FreeBSD 12.0: pass</td>
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<td>FreeBSD 12.0: untested</td>
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</table>

### Making the Update Reliable I

On broadcast links, Designated Intermediate System shall periodically multicast Complete Sequence Number Packet instead of explicit acknowledgement for each Link State Packet that it received.

<table>
<thead>
<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
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<th>Release 7.3</th>
<th>Release 7.5</th>
<th>Release 8.0</th>
<th>Release 8.2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
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<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: untested</td>
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<tr>
<td>Release 2.0.2</td>
<td>Release 3.0.3</td>
<td>Release 4.0</td>
<td>Release 5.0.1</td>
<td>Release 6.0.3</td>
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<tr>
<td><strong>ANVL-ISISV6-22.4</strong></td>
<td>ISO/IEC 10589:1992(E), s7.3.17, p30, Making the update reliable</td>
<td><strong>MUST</strong></td>
<td>Making the Update Reliable</td>
<td>On broadcast links, Designated Intermediate System shall periodically multicast Complete Sequence Number Packet instead of explicit acknowledgement for each Link State Packet that it received</td>
<td>FreeBSD 10.3: FAIL</td>
<td>FreeBSD 10.3: unpredict</td>
<td>FreeBSD 10.3: pass</td>
<td>FreeBSD 10.3: unpredict</td>
<td>FreeBSD 10.3: passed</td>
<td>FreeBSD 10.3: unpredict</td>
</tr>
<tr>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: unpredict</td>
<td>FreeBSD 12.0: pass</td>
<td>FreeBSD 12.0: unpredict</td>
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</table>

| **ANVL-ISISV6-24.1** | ISO/IEC 10589:1992(E) s7.3.19.1 p31 Entering the waiting state | **MUST** | Entering the Waiting State | When an LSP cannot be stored, the LSP shall be ignored and waiting State will be entered | FreeBSD 10.3: pass | FreeBSD 10.3: pass | FreeBSD 10.3: pass | FreeBSD 10.3: pass | FreeBSD 10.3: pass | FreeBSD 10.3: pass |
| FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict | FreeBSD 12.0: unpredict |
### Enter the Waiting State

When an LSP cannot be stored, the LSP shall be ignored and waiting State will be entered.

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<tr>
<th>Release 2.0.2</th>
<th>Release 3.0.3</th>
<th>Release 4.0</th>
<th>Release 5.0.1</th>
<th>Release 6.0.3</th>
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<th>Release 8.0</th>
<th>Release 8.2.2</th>
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</thead>
<tbody>
<tr>
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<td><strong>FreeBSD 10.3:</strong> pass</td>
<td><strong>FreeBSD 10.3:</strong> unpredict</td>
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### RFC 3719 Section 2.1 Page 3 "MaxAge"

MaxAge SHOULD exceed maximumLSPGenerationInterval by at least 300 seconds.

**Note:** Verify the RemainingLifeTime of the Packet.

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<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: untested</td>
<td>FreeBSD 12.0: FAIL</td>
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**ANVL-ISISV6-24.2**

**MUST**

ISO/IEC 10589:1992(E) s7.3.19.1 p31 Entering the waiting state

**ANVL-ISISV6-25.2**

**SHOULD**

ISISUpdate - RFC 3719

MaxAge SHOULD exceed maximumLSPGenerationInterval by at least 300 seconds.

**Note:** Verify the RemainingLifeTime of the Packet.
### ANVL-ISISV6-25.3

**RFC3719 Section 2.2 Page 4** "ISISv6HoldingMultiplier"

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#### ANVL-ISISV6-25.4

**RFC3719 Section 3.1 Page 4** "ID Length"

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<td>If a router encounters a PDU with an ID Length different from 0 or 6, section 7.3.15.a.2 dictates that it MUST discard the PDU</td>
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| SHOULD | RFC3719 Section 3.2 Page 5 “maximumAreaAddresses” |
|        | ISISUpdate – RFC 3719 |
|        | An implementation SHOULD use the value 3. |
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### RFC3719 Section 3.2 Page 5 “maximumAreaAddresses”

**MUST**

If a router receives a PDU with maximumAreaAddresses that is not 0 or 3, it MUST discard the PDU, as described in section 7.3.15.a.3

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### RFC3719 Section 3.3 Page 5 “Protocol Version”

**MUST**

If a router receives a PDU with a value other than 1 for either field, it MUST drop the packet.

Note: Verify the Version field

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### ANVL: ISISV6-25.9

**RFC3719 Section 3.3 Page 5 "Protocol Version"

**MUST**

If a router receives a PDU with a value other than 1 for either field, it **MUST** drop the packet.

*Note: Verify the Version/Protocol ID field*

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### ANVL: ISISV6-25.23

**RFC3719 Section 11 Page 11 "Doppelganger LSPs"

**MUST**

A complete set of CSNPs is a set whose Start LSPID and End LSPID ranges cover the complete possible range of LSPIDs.

*(i.e., there is no possible LSPID value which does not appear within the range of one of the CSNPs in the set)*.

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### RFC Compliance Test Report

**ISISV6 Results**

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<td>RFC1195, s3.2, p17 Hierarchical Abbreviation of IP Reachability Information</td>
<td><strong>MUST</strong></td>
<td>Hierarchical Abbreviation of IP Reachability Information</td>
<td>Any address obtained from a level 1 LSP which is NOT superceded by the manually configured information is included in the level 2 LSPs</td>
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| **ANVL-ISISV6-26.2** | RFC1195, s3.2, p17 Hierarchical Abbreviation of IP Reachability Information | **MUST** | Hierarchical Abbreviation of IP Reachability Information | Any address obtained from a level 1 LSP which is NOT superceded by the manually configured information is included in the level 2 LSPs | | | | | | | |
| FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: untested | FreeBSD 12.0: FAIL | FreeBSD 12.0: FAIL | FreeBSD 12.0: FAIL | FreeBSD 12.0: FAIL | FreeBSD 12.0: FAIL | FreeBSD 12.0: FAIL | FreeBSD 12.0: FAIL |
## ANVL-ISISV6-26.3
### MUST

Hierarchical Abbreviation of IP Reachability Information
If a prefix is redistributed from a higher level to a lower level (e.g., Level 2 to Level 1), the up/down bit is set to 1.

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## ANVL-ISISV6-28.2
### SHOULD

ISISUpdate - RFC 3719 Part 2
MaxAge SHOULD exceed maximumLSPGenerationInterval by atleast 300 seconds
Note: Verify the RemainingLifeTime of the Packet

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| ANVL-ISISV6-28.4 | RFC3719 Section 3.1 Page 4 "ID Length" | | | | | | | | | | |
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### ANVL-ISISV6-28.5

**RFC3719 Section 3.1 Page 4 " ID Length"**

If a router encounters a PDU with an ID Length different from 0 or 6, section 7.3.15.a.2 dictates that it MUST discard the PDU.

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### ANVL-ISISV6-28.8

**RFC3719 Section 3.3 Page 5 " Protocol Version"**

If a router receives a PDU with a value other than 1 for either field, it MUST drop the packet.

Note: Verify the Version field.

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Test Report created at 2022-03-22 13:41:33 UTC
### ANVL-ISISV6-28.9

**MUST**

RFC3719 Section 3.3 Page 5 “Protocol Version”

If a router receives a PDU with a value other than 1 for either field, it MUST drop the packet.

Note: Verify the Version/Protocol ID field

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### ANVL-ISISV6-28.23

**MUST**

RFC3719 Section 11 Page 11 “Doppelganger LSPs”

A complete set of CSNPs is a set whose Start LSPID and End LSPID ranges cover the complete possible range of LSPIDs. (i.e., there is no possible LSPID value which does not appear within the range of one of the CSNPs in the set).

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