

# Draft-hares-idr-update-attri- low-bits-fix-01

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# Topics

- What change is
- Why Changed
- Example of what broke
- What's seen in Wild
- What broke

# RFC4271 section 4.3

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
| Attr. Flags |Attr. Type Code  |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
```

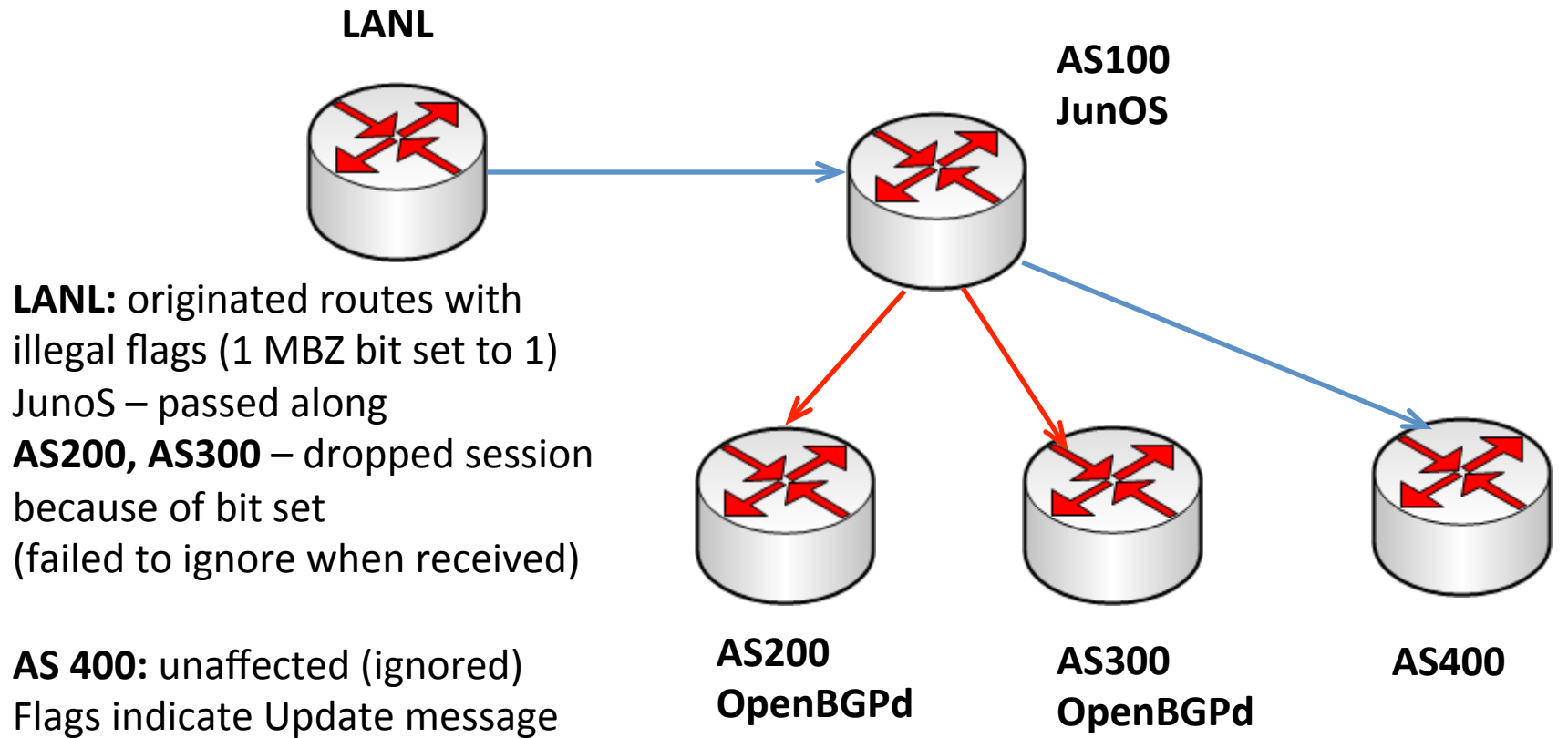
**Original Text:** The lower-order four bits of the Attribute Flags octet are unused. They MUST be zero when sent and MUST be ignored when received

**Corrected Text:** The lower-order four bits of the Attribute Flags octet are unused. They MUST be zero when originated or propagated. When received, any MUST be accepted and ignored.

# RFC4271 Section 4.3

- Disagreement on what when sent means.
  - The issue has been that one school of thought considers that "when sent" means when originated.
  - Another holds that "when sent" means when originated or propagated.
- This draft takes the second approach of "when sent" being when originated or propagated.

# Scenario that broke



Excerpted from presentation by Jeff Wheeler  
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**Red flags – dropped session**  
**Blue – working**

# Cases seen in Wild.

- always ignore bits received, and always send zero (originated or propagated);
- always ignore bits received, always send zero bits (originated), and propagate what was received;
- if non-zero bits are received, drop the peering session;
- by special condition (policy) handle set bits or set bits, and propagate;and
- always sets bits under special conditions, and propagates bits.

# Options tried

1. "Sent" means "Originated" or "propagated".
  - Pro: simplest solution.
  - Con: we'll never be able to use those flags for anything transitive. This is what's in -01.
2. "Sent" means "Originated", and flags are to be unchanged on propagation. This is what was in -00.
  - Pro: protect ability to use those flags someday.
  - Con: noncompliant routers known in the field, reset sessions. Also, risk of ambiguity -- what exactly does "propagate" mean?
3. Through a capability, enable #2, else do #1. This is what Jeff Wheeler outlined.
  1. Pro: protect ability to use those flags someday (though less so than option 2). Safe for interoperation with noncompliant routers.
  2. Con: More complex than #1 without adding much value?

# Chairs conclusion

- There's minimal likelihood that new flags will ever actually be deployed for anything transitive, since there is no way to ensure they'll work Internet-wide.
- So, -01 proposes lowest-cost solution: Must Be Zero.
- Note: This leaves the door ajar for introduction of peerwise use of reserved flags (with appropriate capability use, etc).



# Discussion

- What next (led by Stewart Bryant)