RIFT Auto-Flood Reflection
draft-head-rift-auto-fr-03

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What’s new in version 3?

• **Added common_flood_reflection.thrift Model**
  • Similar to common_evpn.thrift in Auto-EVPN.

• Carries the node’s Flood Reflection information.
  • IPv6 Loopback
  • IPv4 Loopback (if applicable)
  • IS-IS System ID
  • IS-IS NET Address
  • FR Cluster ID
  • Etc.
What's new in version 3?

- **Derivation for Flood Reflector IPv4 Loopback Addresses**
  - New derivation function exclusively for Flood Reflectors.
  - Factors in Flood Reflector preference.

```rust
/// auto FR V4 loopback for FRs
pub fn auto_fr_cidfrpref2frv4loopback(_cid: UnsignedFloodReflectionClusterIDType,
                                      preference: u8) -> Result<IPv4Address, ServiceErrorType> {
    if preference > MAX_AUTO_FR_FRS as _ {
        Err(ServiceErrorType::INTERNALRIFTERROR)
    } else {
        let m = ((AUTO_FR_V4LOOPBACKNET as IPv4Address) << (32 - AUTO_FR_V4LOOPBACKMASK)) | (preference as IPv4Address);
        Ok(m)
    }
}
```
What’s new in version 3?

- Derivation for FR Client IPv4 Loopback Addresses
  - Function now used exclusively for Flood Reflector Clients.
  - Detects IPv4 loopback collisions between Flood Reflectors and Flood Reflector Clients.
  - Effectively guarantees that Flood Reflectors will always work.

```rust
pub fn auto_fr_cidsid2v4loopback(cid: UnsignedFloodReflectionClusterIDType, sid: UnsignedSystemID) -> IPv4Address {
...
    let (frpr, frm) = auto_fr_v4frpref(cid);
    let v4m = U32MASKS[frm as usize];

    let mut m = ((AUTO_FR_V4LOOPBACKNET as IPv4Address) << (32 - AUTO_FR_V4LOOPBACKMASK)) | derived;

    // collision with elected FR v4 prefixes, rederive
    if (m & v4m as IPv4Address) == frpr {
        derived ^= IPv4Address::MAX;
        derived &= (!U32MASKS[AUTO_FR_V4LOOPBACKMASK]) as IPv4Address;
        m = ((AUTO_FR_V4LOOPBACKNET as IPv4Address) << (32 - AUTO_FR_V4LOOPBACKMASK)) | derived;
    }

    m as _
}
```
What’s new in version 3?

• **Miscellaneous Type Changes**
  • Several types now have “Unsigned” prepended to their names.
    • e.g. FloodReflectionClusterIDType -> **Unsigned**FloodReflectionClusterIDType
    • Mostly cosmetic.
    • Makes for less code with casting.

• **YANG Placeholder**
  • Added a section in the appendix for an Auto-FR YANG model.

• **Editorial Stuff**
  • Reference updates (e.g. IS-IS Flood Reflection is now RFC9377).
What’s next?

• Completed YANG Model

• Working Group adoption
  • Waiting on the RIFT Base Spec in order to recharter and adopt.
Thanks