Reliable PIM Registers
draft-anish-reliable-pim-register
IETF 102 Montreal 2018

Stig Venaas,

Toerkess Eckert,

Anish Peter,

Robert Kebler,

Vikram Nagarajan

IETF 101 - March-2018

Update since IETF101

- Still at draft-acg-mboned-deprecate-interdomain-asm-02
    - No update done since IETF101
    - Think that document is in good shape for Working Group adoption
        - Will revisit things we still want to enhance next slide
        - But only worth continuing to invest into this draft if the WG supports it

- Why should you care about this draft ?
    - Strange optimization in some exotic part of the PIM Universe ?
    - No ! Important piece of the puzzle to update our protocol landscape for the 21st century

Strategy

- We want the best compromise between moving the industry to what we understand to be "best working" and "what is feasible"
    - Main issue: Our constituencies are are Network Operators, and evolving to "the best" has a key third-party dependency we can badly influence: Application developers
    - SPs can pretty well influence applications running across their network. Especially their won, like IPTV and derivations (e.g.: in the cable/MSO space)
        - Hence we try to deprecate ASM Interdomain (SP space) in favor of ASM
    - Intradomain can not do this as easily (I tried for >15 years to influence apps)
        - Best hope is that SSM apps written for the Interdomain/SP (consumer, @home) space trickle into enterprises and replace ASM applications. And we help make that happen through docs.
    - Until then: > 90% of IP multicast deployments are intra-enterprise and need to use PIM-SM as the most well understood, widely deployed, interoperable, and topology scaleable ASM solution.
        - Bidir-PIM is unfortunately not easy enough to be deployed for other than "highly business critical ASM applications"
            - Seemingly more and more Bidir-PIM (NICE!!!), but
            - Higher HW requirements, no widely operationalized distributed RP redundancy schemes for larger interdomain networks with multiple sites. Lower traffic efficiency no shortest path trees.
            - Aka: ideal for single-site networks only, otherwise WAN BW becomes an issue!!!!!

Strategy

- How can we get rid of MSDP ?
  - This is the next, most important step in the evolution of the Multicast protocol set.
    - It is only experimental when we figured out it won't work well enough across Internet (scale)
      - And because of this, we never got an IPv6 version.
    - But it is the best PIM-SM intradomain RP redundancy scheme
      - Can be managed (MIB)
      - Good vendor extensions to control policies: limit total state with #SA and filter
      - Great for troubleshooting: SA cache == can troubleshoot consistency of state across RPs
      - RELIABLE: Uses TCP. In intradomain PIM-SM with RPs spread across WAN sites, this reliability and TCP congestion control make the RP-set reliable.
    - We would like to replace MSDP with RFC4610 (PIM Register), but the above operational aspects are missing! But we can fix it (IMHO) with two pieces of work
      - YANG model work for RFC4610 that is also including the necessary objects to allow limiting number of states, filters and caching of received register information (all optional of course)
      - THIS DRAFT to allows RFC4610 PIM-SM registers to use TCP (Port)
    - Being able to use PORT DR<->RP is a great added value too, but not equally strategically important
      - Key deployments benefitting will be servers with large number of (S,G) streams!

Summary

- Would like to ask PIM working group to adopt this document
  - As part of our protocol evolution strategy:
- Overall preference for SSM –> start/focus on interdomain ASM deprecation.
- Update protocol spec status
  - Historic for old (IGMPv1/IGMPv2/… MSDP), STANDARD for new (IGMPv3/MLDv2,…)
- Continue strong commitment for intradomain only PIM-SM/ASM
  - It's a large part of the revenue (unless a vendor only sells to SPs)
  - Eliminate MDSP (HISTORIC/DEPRECATED – "thank you for your services, please go now")
  - Make RFC4610 + PORT evolve to (full) STANDARD
    - Supporting the same degree of operational elements and reliability as current most widely deployed highly reliable PIM-SM domain (MSDP mesh groups)
- Main missing text in doc
  - Relationship to this strategy explained in doc, adjustments
(e.g.: where MSDP is mentioned)

Thank You