Reliable PIM Registers
draft-anish-reliable-pim-register
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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 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