Deprecating ASM
for Interdomain Multicast

draft-acg-mboned-deprecate-interdomain-asm-00

Mikael Abrahamsson, mikael.abrahamsson@t-systems.de

Tim Chown, tim.chown@jisc.ac.uk

Lenny Giuliano, lenny@juniper.net

(and probably Toerless ᴹ)

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Draft history

- Original purpose:
  - Document multicast service models (at a high level)
  - Discuss their use cases; document deployment examples
  - And, importantly, to **recommend use of SSM**

- Feedback given at IETF 99 and IETF 100:
  - Strip back on text on the models
  - Focus on deprecating interdomain ASM and promoting use of SSM
  - Don't preclude use of intradomain ASM

- Result: *draft-acg-mboned-deprecate-interdomain-asm-00* posted, which aims to define more specifically what we mean by deprecating interdomain ASM

Reminder of one of the drivers for this work…

- Initial proposal made by David Farmer on Internet2 multicast list
  - See https://lists.internet2.edu/sympa/arc/wg-multicast/2017-06/msg00001.html

- "I propose that **general purpose classic IPv4 ASM be deprecated** on the Internet2 R&E Backbone. The primary propose of this change is to simplify multicast support for the new MPLS based R&E Backbone, by mostly eliminating the need for MSDP.   SSM for both IPv4 and IPv6, and Embedded-RP for IPv6, should continue to be supported on the Internet2 R&E Backbone, as they do not require MSDP. "

Draft structure

- Intro
- Brief ASM / SSM description
- Discussion of ASM and SSM deployment
- Advantages of SSM for interdomain multicast
- Recommendations
  - Primarily deprecating ASM for interdomain
  - … plus related topics
- Note on congestion control
- Security considerations

High-level statement

"This document recommends the deprecation of the use of Any-Source Multicast (ASM) for interdomain multicast.

It recommends the use of Source-Specific Multicast (SSM) for interdomain multicast applications, and that hosts and routers that are expected to handle such applications fully support SSM.

The recommendations in this document do not preclude the continued use of ASM within a single organisation or domain, and are especially easy to adopt when already using the preferred ASM protocol options there (PIM-SM)."

4.1: Deprecating ASM for interdomain

- Deprecate ASM for interdomain multicast
- Implicitly all hosts and routers supporting such applications fully support SSM
  - BCP for interdomain SSM is in RFC 8313
- Applies to MSDP (IPv4) and Embedded-RP (IPv6)
- Recommends against use of PIM-SM with an RP where multicast tunnels are used between domains
- Interdomain means "*run on routers operated by two or more separate operational entities*"
- More inclusive interpretation includes devices under different operator control, e.g., set-top boxes
- **Not** making MSDP Historic (allows for intradomain use)

4.2: Network support for IGMPv3/MLDv2

- Recommends all hosts supporting multicast and any security appliances handling it support IGMPv3 and MLDv2
- (See also RFC 4604)
- RFC6434-bis makes MLDv2 a MUST in hosts
- Snooping MUST support IGMPv3 and MLDv2
- (See also RFC 4541)

4.3/4.4: Building application support for SSM

- Applications should use SSM, and operate correctly in an SSM environment, triggering IGMPv3/MLDv2 messages to signal use of SSM
- Added note on programming language support
  - Noted current websockets limitation
- If feasible, we recommend making applications use SSM, even if initially for use in an intradomain environment supporting ASM
  - Noting the operational simplifications also apply intradomain
  - And that PIM-SSM is a subset of PIM-SM

- **Implicitly pushing source discovery above network layer**

4.5/4.6: Further work for IETF?

- Documenting common practices for SSM support in applications
  - Converting ASM applications into SSM ones
  - Best practice for SSM support in greenfield designs

- Documenting an ASM/SSM protocol mapping mechanism
  - a mechanism to translate a (*,G) join or leave to a (S,G) join or leave, for a specific source, S
  - Some vendor–specific mechanisms exist today; a standardised one would be desirable?
  - Would be an **interim** solution (yeah, but….)

4.7: Filtering ASM ?

- While ASM is deprecated interdomain, we recommend NOT filtering such addresses, to allow for development and deployment of the mapping mechanism

- May recommend this in the future

4.8: Not precluding intradomain ASM

- Intradomain ASM is still common today in enterprises and campuses

- *"This document does not preclude continued use of ASM in the intradomain scenario. If an organisation, or AS, wishes to use multiple multicast domains within its own network border, that is a choice for that organisation to make, and it may then use MSDP or Embedded-RP internally within its own network."*

Thoughts?

- Are we now heading in the right direction?

- What do we do with the text we cut from the previous *draft-acg-mboned-multicast-models-02* document?
  - Park it until this document is done?

- We made suggestions in the new draft to work on
  - BCP to convert ASM applications into SSM application
  - Documenting an ASM/SSM protocol mapping mechanism

- Comments?