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Mtrace Version 2: Traceroute Facility for IP Multicast

draft-ietf-mboned-mtrace-v2-02

Hitoshi Asaeda
Tatsuya Jinmei
Bill Fenner
Steve Casner

Changes from -01

- Change TLV field
- Add augmented response block
- Eliminate multicast response
- Fix some TODOs due to the comments in the last meeting

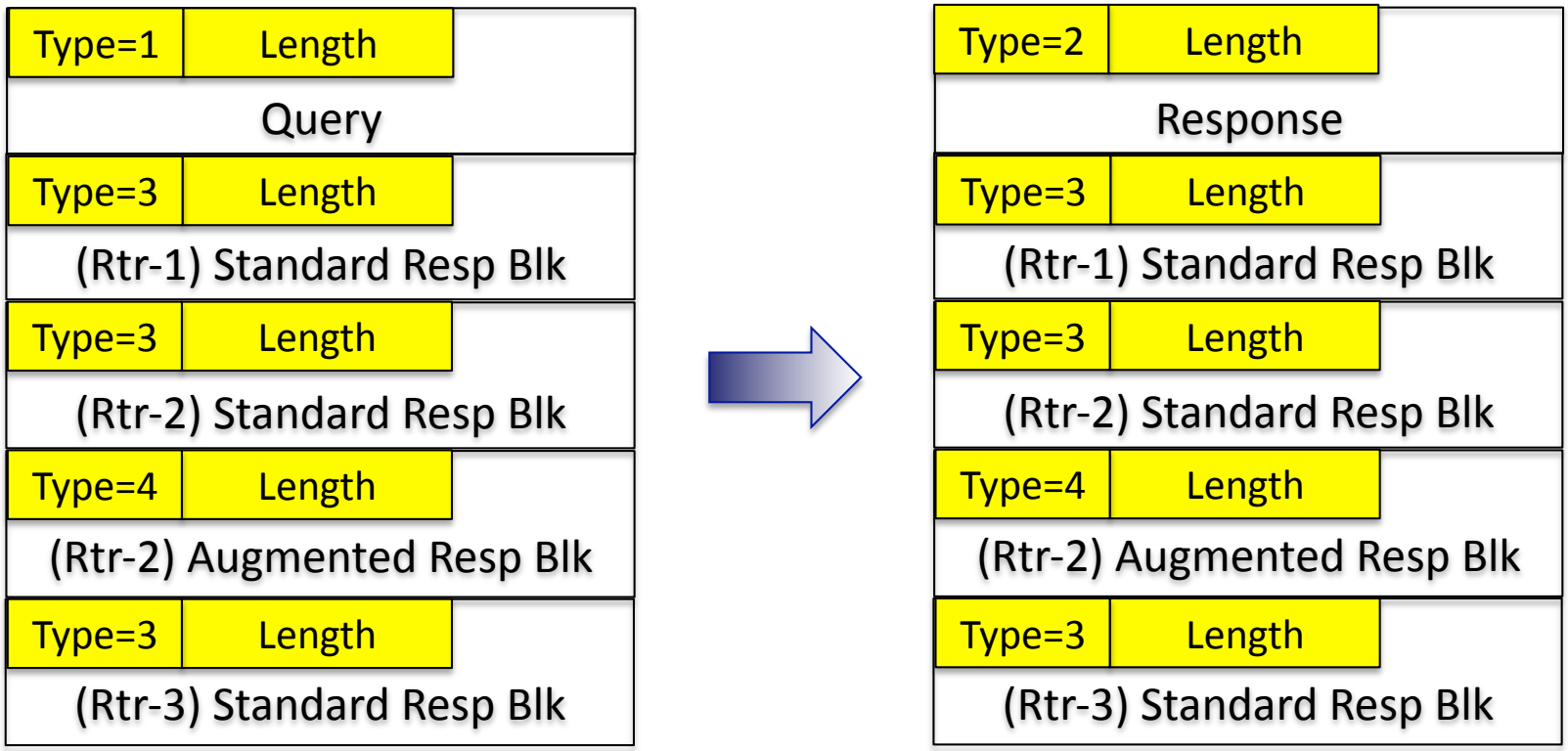
No Multicast Response

- IANA has assigned 224.0.1.32, mtrace.mcast.net, as the default multicast address for IPv4 mtrace responses
  - Eliminate this operation from mtrace2
  - Every mtrace2 response MUST be replied to "Response Address" specified in mtrace2 Query header

Mtrace2 TLV Header

Code	Type
1	Mtrace2 Query
2	Mtrace2 Response
3	Mtrace2 Standard Response Block
4	Mtrace2 Augmented Response Block

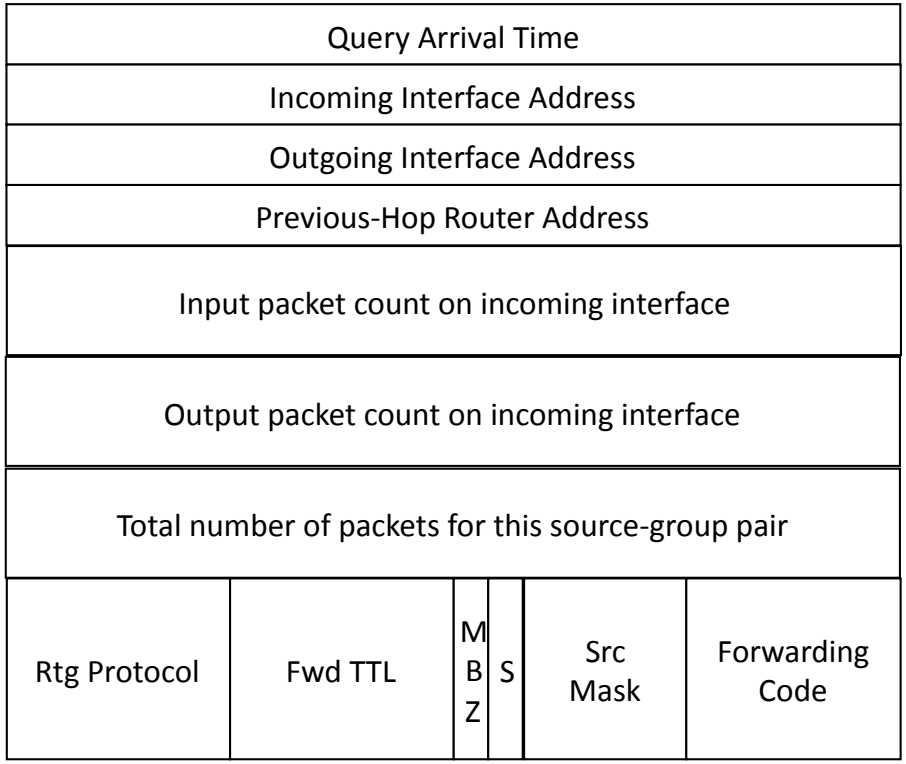
Mtrace2 Message Example



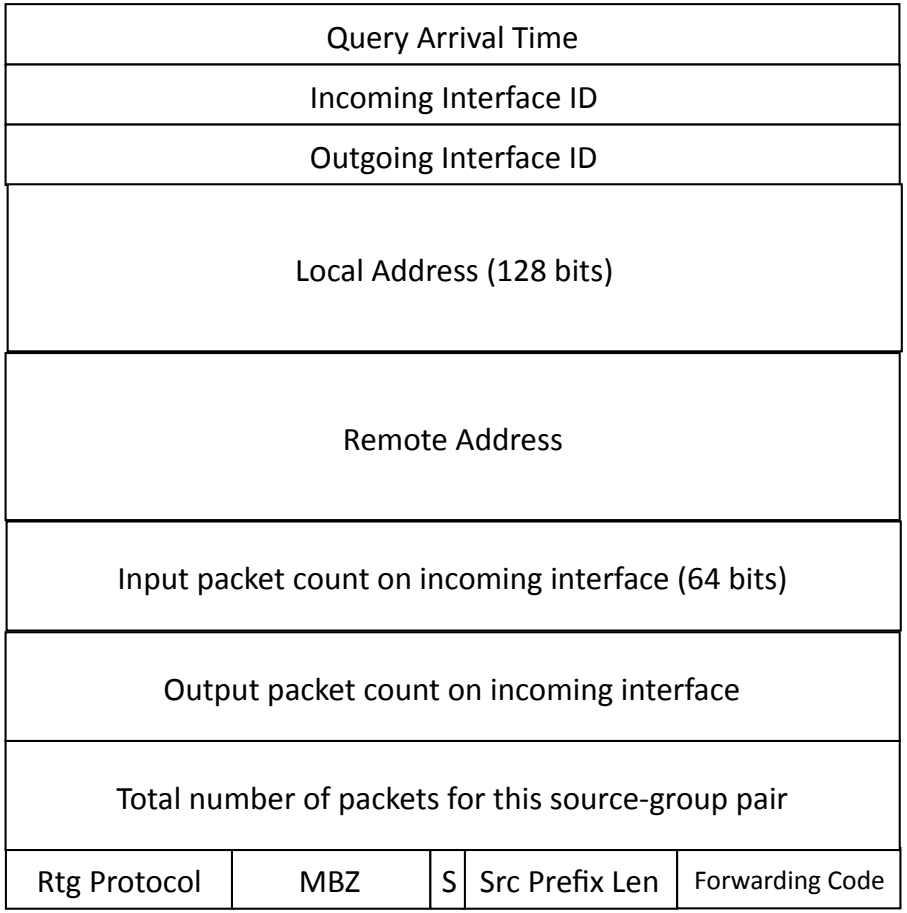
TLV Conditions

- An mtrace2 message MUST contain one Mtrace2 Query or Response.
- An mtrace2 message MAY contain one or multiple Mtrace2 Standard and Augmented Responses.
- A multicast router that sends mtrace2 request MUST NOT contain multiple Mtrace2 Standard blocks but MAY contain multiple Augmented Response blocks.
  - Now, Augmented Response block flexibly includes various statistical data and can be used for future extension

Standard Response Block

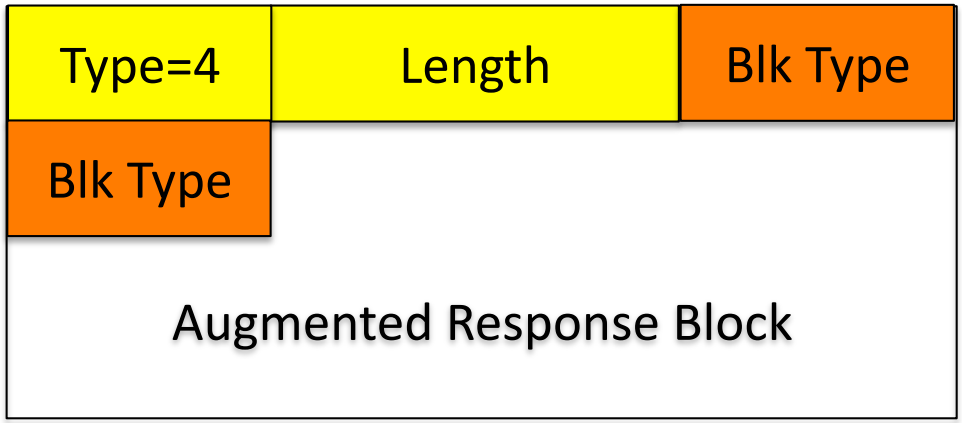


IPv4



IPv6

Augmented Response Block



- Augmented Response Block Type (16 bits)
  - Aims to add various functions especially for getting statistical or diagnostic data of supported protocols (e.g. PIM-SM, IGMP/MLD proxy)
  - Flexible for enhancement
  - No block type definitions yet

Open Issue

- NO_SPACE
  - Comments in the last meeting: No limit on length but should limit whole packet to MTU
  - 9.2.2. If there was no room, fill in the response code "NO_SPACE" in the *previous* hop's response block, and forward the packet to the requester
  - 10.8. When the NO_SPACE error occurs, the client might try to continue the trace by starting it at the last hop in the trace. It can do this by unicasting to this router's outgoing interface address, keeping all fields the same.
  - Some security concern?

Next Step

- Revise the draft
  - Fix open issues, make editorial improvement, and present the new draft at the next IETF
- Implementation
  - We've been developing mtrace2 command and router-side implementations that cooperate with XORP (via xorpsh)