



# IGMP/MLD Error Feedback

[draught-morin-mboned-igmpmld-error-feedback](#)

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# Problem statement / History

- There are cases where an IGMP/MLD querier won't take into account a Membership Report
  - ◆ lack of resources
  - ◆ policy
  - ◆ SSM configuration
  - ◆ IGMP version
  - ◆ ...
- It would be useful to provide multicast-applications with feedback on these issues
  - ◆ and not just let them timeout
- History of related proposals
  - ◆ (such feedback was existing in IGMPv0 / RFC988)
  - ◆ DSLForum asked for this two years ago
    - proposed a solution to the magma WG  
<http://www1.ietf.org/mail-archive/web/magma/current/msg00815.html>
    - suggested that the solution wasn't appropriate (good reasons)
  - ◆ requirement formulated in [draft-ietf-mboned-maccnt-req](#)
    - *“Notification to Users of the Result of the Join Request: It should be possible to provide information to the user about the status of his/her join request (granted/denied/other).”*



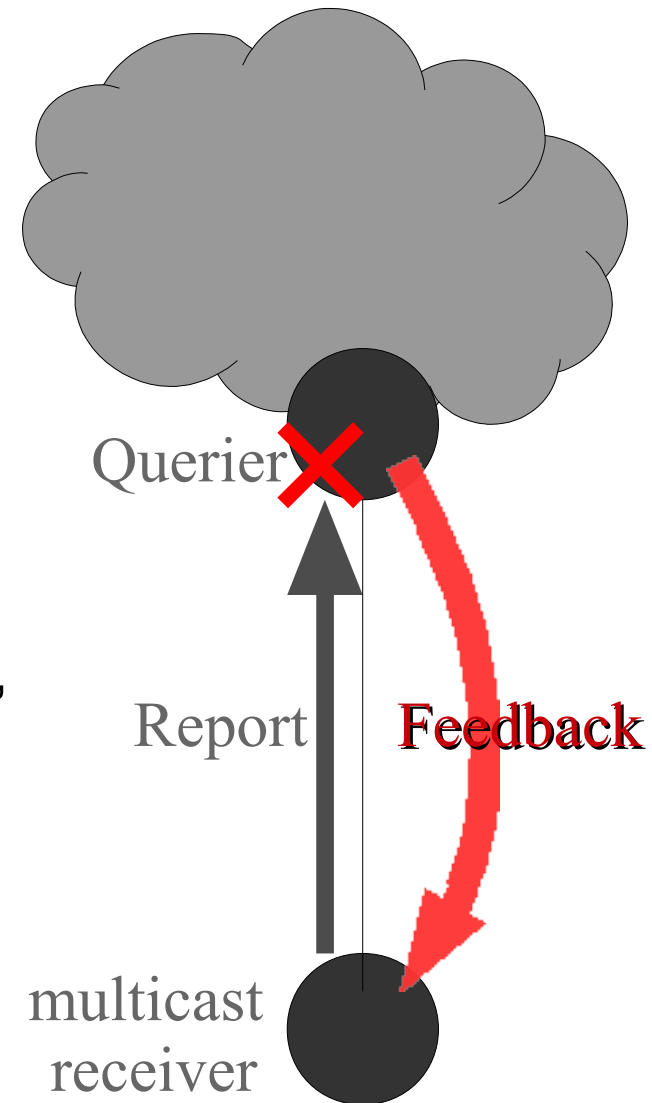
# Proposed solution - principle

## ■ Principles

- ◆ Feedback is **informational only**
  - no impact on Host or Querier state machine
  - doesn't introduce compatibility issues
- ◆ Only about persistent issues
  - **not** meant to carry information about transient errors (like network failures)

## ■ Simple idea:

- ◆ a new message : the **Feedback message**
  - *(more on this later)*
- ◆ on reception of a Report that cannot be honored, the IGMP/MLD Querier can send a Feedback message
  - in unicast toward the Report sender (if IGMPv3/MLDv2)
  - in multicast toward the Group (if IGMPv2/MLDv1)
- ◆ IGMP/MLD Host can interpret it and inform the applications





# Overview of changes in recent revision

- First draft was submitted for IETF70
- Last revision :
  - ◆ Brian Haberman joined as a co-author
  - ◆ We now specify an encoding for the Feedback message
    - procedures were updated accordingly
  - ◆ The possibility was added to UDP-encapsulate the Feedback message
    - to allow bringing the information to application running on hosts not supporting this spec
  - ◆ Detailed an example of how information can be pushed to the application layer (based on POSIX Socket API)

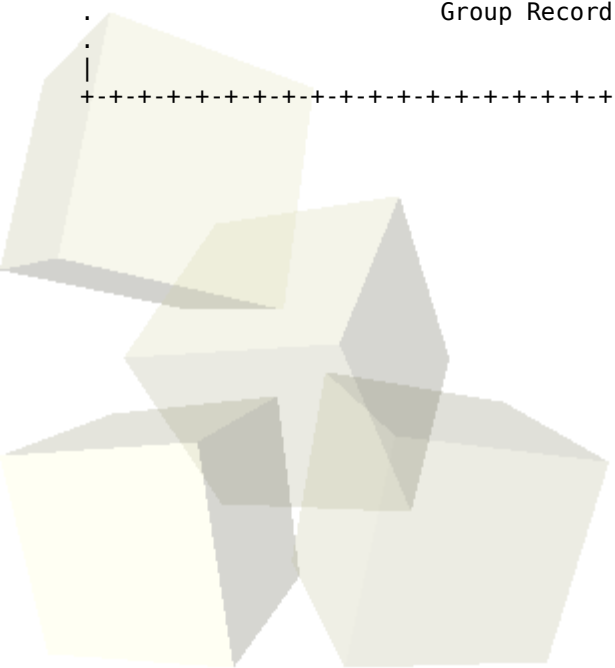
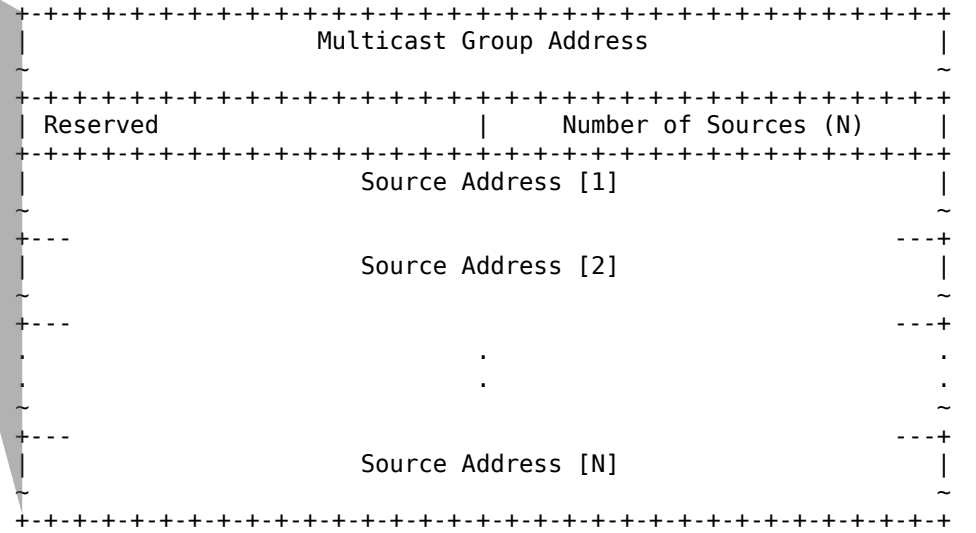
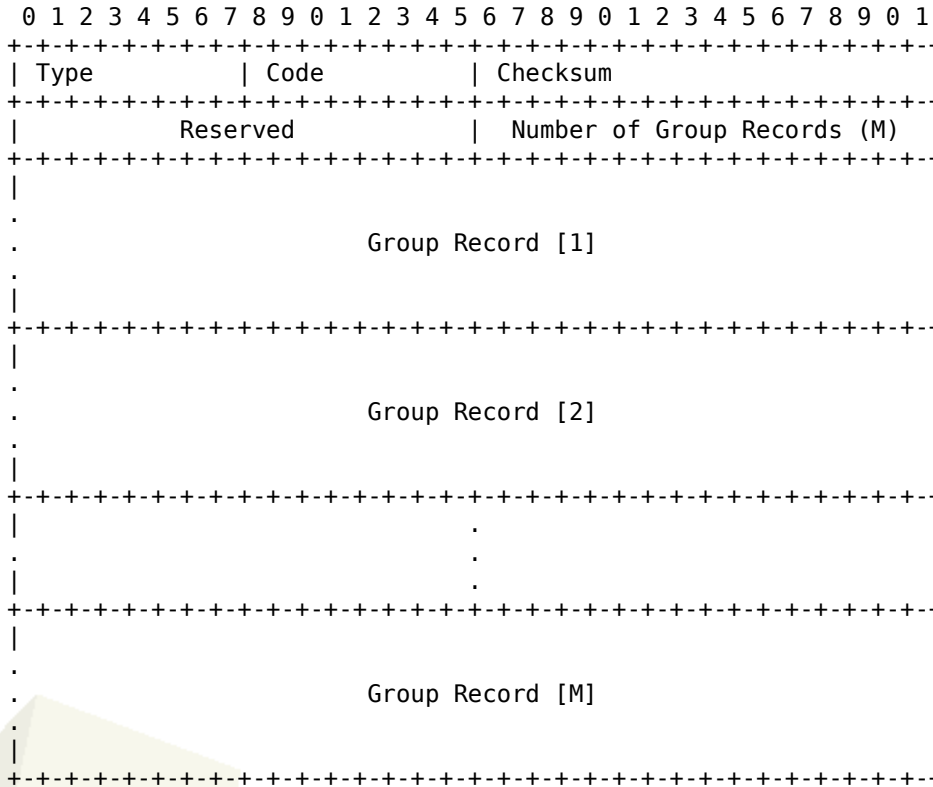


# Proposed message encoding

- the Feedback message is an IGMP or MLD/ICMPv6 message
  - ◆ IGMP type 0xYY in the IPv4 case
  - ◆ ICMPv6 type 0xZZ in the Ipv6 case
    - with no quote of the original message
  - ◆ Includes the standard IGMP/MLD checksum
- Content is the same, for both the IGMP and MLD message:
  - ◆ An error code indicate the reason for the error
  - ◆ The rest of the packet is essentially the same as in an IGMPv3/MLDv2 Report message:
    - includes one or more “Group records”
    - each “Group record” specifies the multicast group address in error, and zero, one or more source addresses



# Message encoding





# UDP encapsulation

## ■ Problem

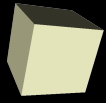
- ◆ How can an application running on a host OS that doesn't implement this spec, receive the feedback ?

## ■ Proposed solution (Toerless Eckert)

- ◆ Allow the Querier to also send the Feedback message encapsulated in a UDP packet

## ■ Observations

- ◆ The UDP payload is the same as the Feedback message
  - Except that checksum is set to zero (already one in UDP)
- ◆ Port has to be reserved from IANA
  - avoid ports below 1024 which require specify rights under some OSes to be bound to



- We think the draught is now well brewed
- Please read it
  - ◆ has more details about : procedure details, IGMP/MLD proxy support, UDP encap, link with application layer, security issues
  - ◆ feedback is welcome!
- We would like to know...
  - ◆ ... if the working group finds the subject important and if this work is considered a good starting point ?
  - ◆ ... how to proceed ?