

draft-venaas-pim-igmp-mld- extension

M. Sivakumar

S. Venaas

Z. Zhang

Overview

- A generic way of extending IGMPv3/MLDv2 messages
 - Defines extension type and registry
- Defines a type extension for BIER
 - Used for IGMPv3/MLDv2 BIER overlay when IGMPv3/MLDv2 messages are BIER encapsulated
 - Used by BIER ingress/egress routers
- This draft probably belongs in the pim WG since it defines an IGMP/MLD extension and registry, while current use case is in bier WG for IGMP/MLD overlay (draft-ietf-bier-mld).

IGMP/MLD Additional Data

- In RFC 3376 (IGMPv3)

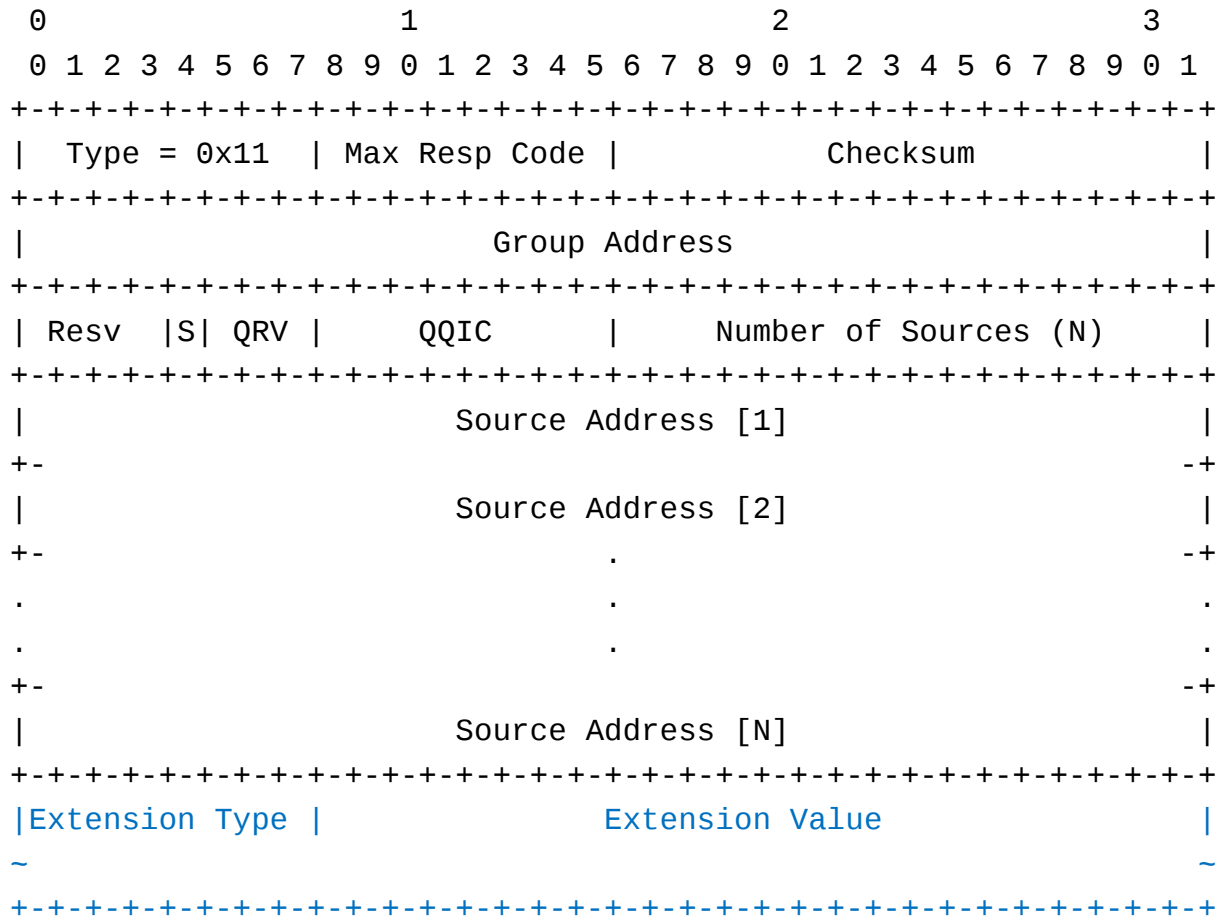
4.1.10. Additional Data

If the Packet Length field in the IP header of a received Query indicates that there are additional octets of data present, beyond the fields described here, IGMPv3 implementations **MUST** include those octets in the computation to verify the received IGMP Checksum, but **MUST** otherwise ignore those additional octets.

When sending a Query, an IGMPv3 implementation **MUST NOT** include additional octets beyond the fields described here.

- Similar language for reports, and for queries/reports in RFC 3810

Example IGMP query with extension as additional data



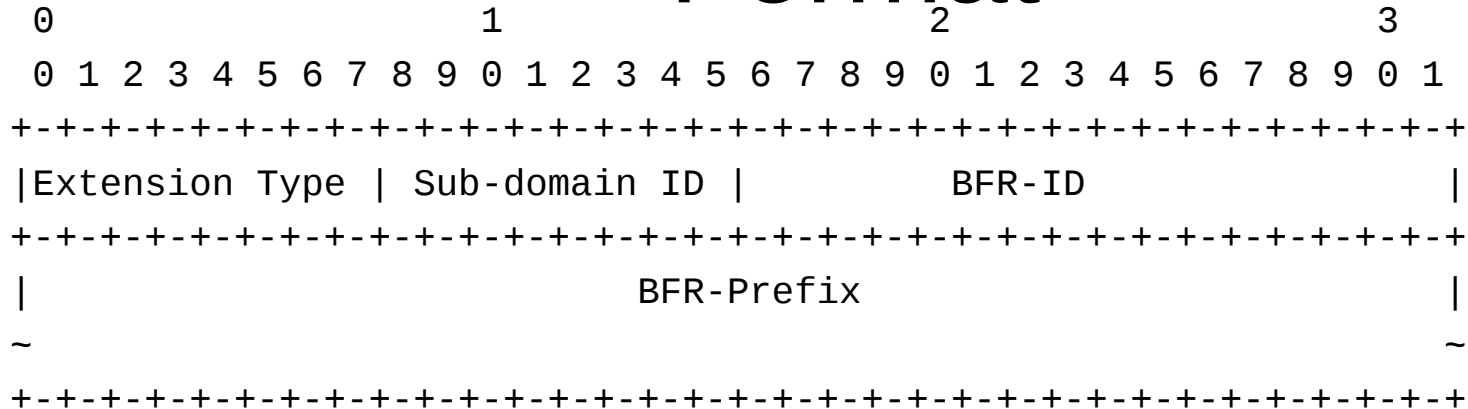
Extension Type

- We think it is good to have an extension type in case there may be multiple extensions for different purposes.
- Implementations that support a specific type processes the type as defined.
- Implementations that don't support an extension type, as well as current implementations, treat it as Additional Data in the RFC and does not process the type.
- Extensions should not be common. Cannot expect router and host implementations in general to be updated.

IGMP/MLD BIER Extension

- IGMP/MLD BIER Overlay (draft-ietf-bier-mld) uses IGMP/MLD with BIER encapsulation to signal receiver interest between BIER routers.
- When a BIER router receives an IGMP/MLD Report, it needs to know the BIER Sub-Domain ID, BFR-Prefix and BFR-ID of the sender.
 - This determines the Sub-Domain and Bit-set to use when forwarding multicast data over BIER
- For debugging, logging and querier election, it may also be useful for queries.
- draft-ietf-bier-mld states that all BIER encapsulated IGMPv3/MLDv2 messages MUST use the BIER extension.
- Only BIER routers need to support extension. Never used without BIER encapsulation.

IGMP/MLD BIER Extension Format



- The extension type would be a fixed value assigned by IANA identifying this particular format
- The remaining fields identifies the BIER router that originated the IGMP/MLD message