IPv6 Query for Enabled In-situ OAM Capabilities

draft-ietf-6man-icmpv6-ioam-conf-state-08

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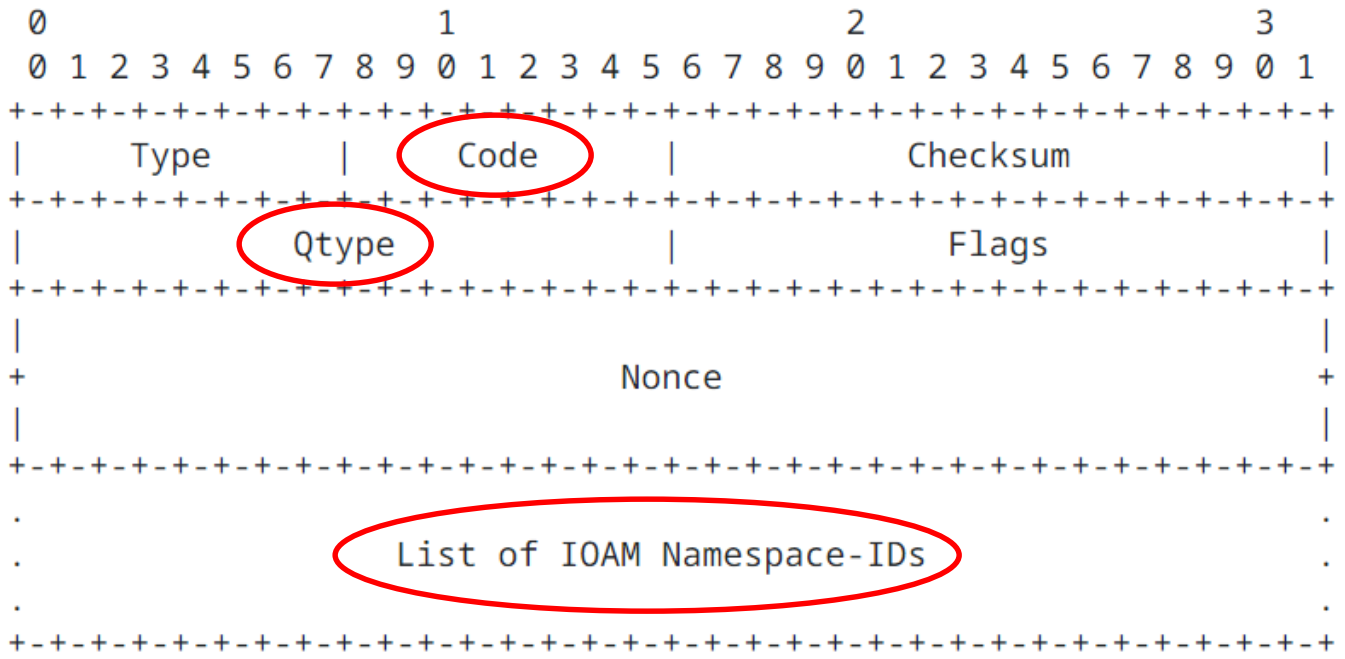
Recap of this draft

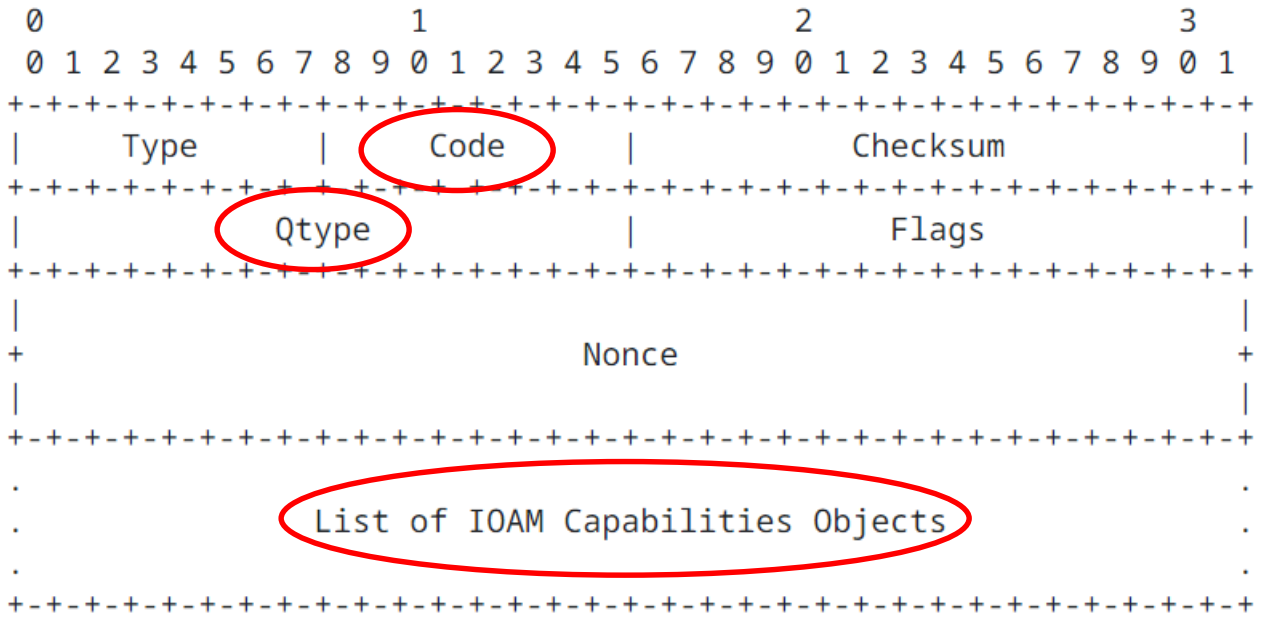
- This draft defines ICMPv6 extensions to achieve IOAM Capabilities Discovery in IPv6 Networks
  - A companion document of RFC 9359 developed in IPPM WG
  - Use RFC 4620 “IPv6 Node Information Queries” as a foundation for extension
  - For the Node IOAM Information Query mechanism, five IOAM Capabilities Objects are defined:
    - IOAM Tracing Capabilities Object
    - IOAM Proof of Transit Capabilities Object
    - IOAM Edge-to-Edge Capabilities Object
    - IOAM DEX Capabilities Object
    - IOAM End-of-Domain Object

IPv6 Node IOAM Request



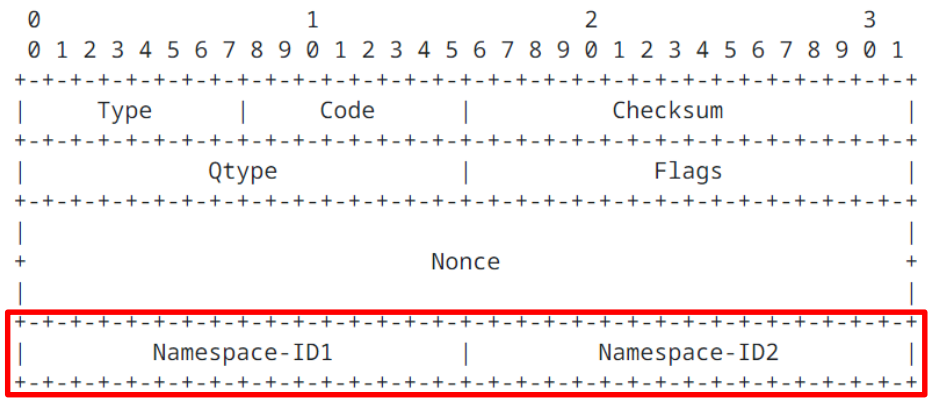
- For IPv6 Node IOAM Request, this draft defines
  - New Qtype – Indicates the NI Query is a node IOAM capabilities query
  - New Code – Indicates the Data field contains a list of IOAM Namespace-IDs
  - New Data – A list of IOAM Namespace-IDs

IPv6 Node IOAM Reply

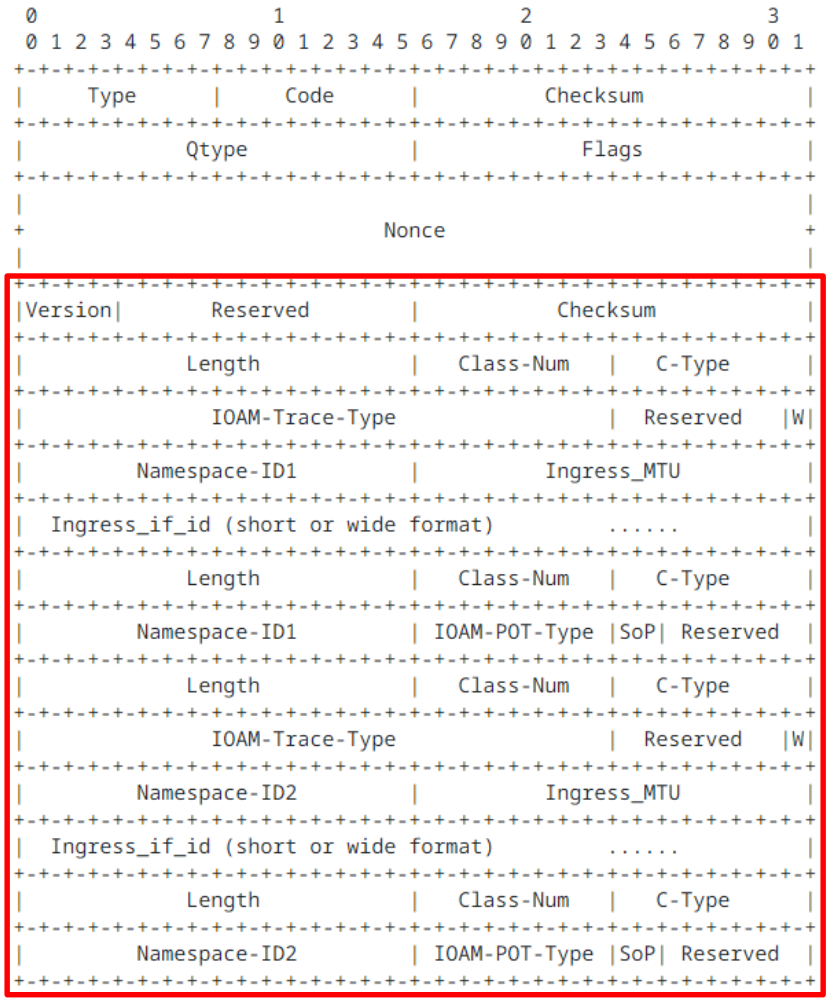


- For IPv6 Node IOAM Reply, this draft defines
  - New Qtype – Copied from the IPv6 Node IOAM Request
  - New Code – 1) No Matched Namespace-ID 2) Exceed the minimum IPv6 MTU
  - New Data – A list of IOAM Capabilities Objects

Example: IPv6 Node IOAM Request/Reply



IPv6 Node IOAM Request



IPv6 Node IOAM Reply

Next step

- WG Last Call?

- Backup Slides

Recap of RFC 9359

- RFC 9359 (developed by IPPM WG) defines a general method for IOAM Capabilities Discovery.
  - **Abstract:** “This document describes a generic format for use in echo request/reply mechanisms, which can be used within an IOAM-Domain, allowing the IOAM encapsulating node to discover the enabled IOAM capabilities of each IOAM transit and IOAM decapsulating node. The generic format is intended to be used with a variety of data planes such as IPv6, MPLS, Service Function Chain (SFC), and Bit Index Explicit Replication (BIER).”
  - Published in April 2023.

History of this draft

- The authors believe it is a stable WG draft after several rounds of reviews and revisions.
  - **2021.10** -00 individual draft. Requested to assign two new ICMPv6 types for Echo Request/Reply.
  - **2022.09** -02 individual draft. Reused existing ICMPv6 types 139/140 as allocated for RFC 4620.
  - **2022.12** -00 WG draft. Adopted by this WG.
  - **2023.10** -02 WG draft. Improved security section and provided more examples.
  - **2024.06** -04 WG draft. Cleaned up the whole draft.
  - **2024.06** -06 WG draft. Fixed a bug in the examples.
  - **2025.06** -08 WG draft. Editorial improvements.