

Quality of Service Option for Proxy Mobile IPv6

draft-ietf-netext-pmip6-qos-01.txt

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Motivation and Scope

- Mobile operator systems enable QoS differentiation to serve mobile access through cellular radio
 - QoS policy control for 3G radio access from Policy and Charging Control (PCC) system
- Connectivity through non-cellular access supported for handover (WiFi, WiMax)
 - IP network QoS accomplished by DiffServ mechanisms
- A single operator deploying both a cellular and a non-cellular access network may want harmonized QoS management
 - Standardization started interfacing PCC to MAG for non-cellular radio access
- Demand for a PCC-independent solution
 - For networks, which do not deploy a PCC system
 - For all networks until PCC support available for non-cellular access

Scope of this work

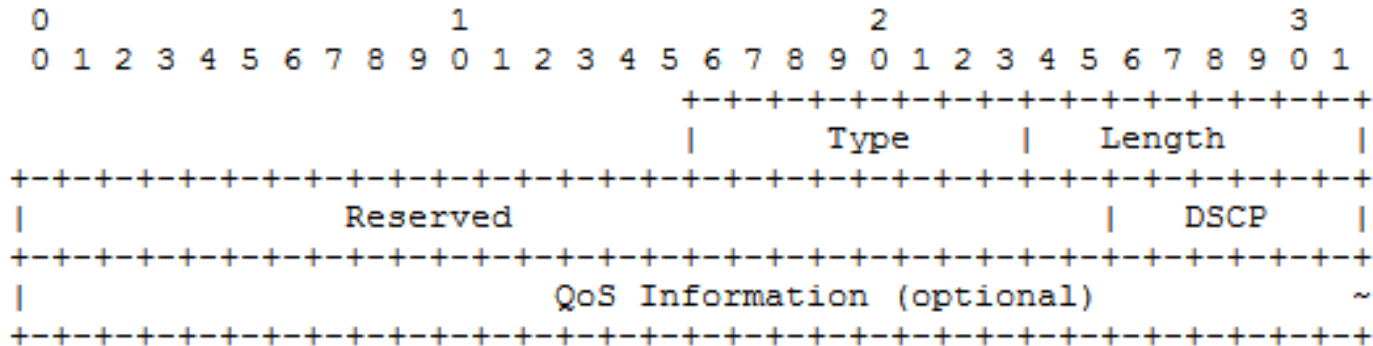
- Supports enabling QoS differentiation of traffic between MAG and LMA for any non-cellular access
 - In-band QoS signalling
 - Mainly enforcement and validation of uplink QoS at the MAG
- Support mapping of QoS policies between radio-specific QoS classes and IP network
 - Transport of Flow Information and DSCP
 - Implicit mapping between DSCP and QoS Class Indexes
 - Interpretation of QoS information is deployment specific, hence out of scope
- Focus on the signaling between MAG and LMA
- Handover of available and enforced QoS policy rules
 - Established while MN accesses through 3G radio access
- Establish QoS for sessions which start at non-3G radio access

Progress & Status

- Initial version of this draft presented at IETF82 in Taipei
- Adopted as WG document after IETF83 in Paris
- Received valuable comments during adoption call
 - Editorial fixes in -00
 - Implicit mapping between DSCP and QoS Class Indexes
- **Current Version 01**
 - Addresses comments about interpretation of QoS policies
 - Revised QoS option format to allow unambiguous application of QoS policies
 - QoS attributes apply either per-MN or per-mobility session
 - Per-mobility session attributes opt for per-flow application
 - Can carry Traffic Selector to apply per-flow

QoS option

- New option for PBU/PBA
 - MN scoped option or applies either at the mobility session or at the IP flow level



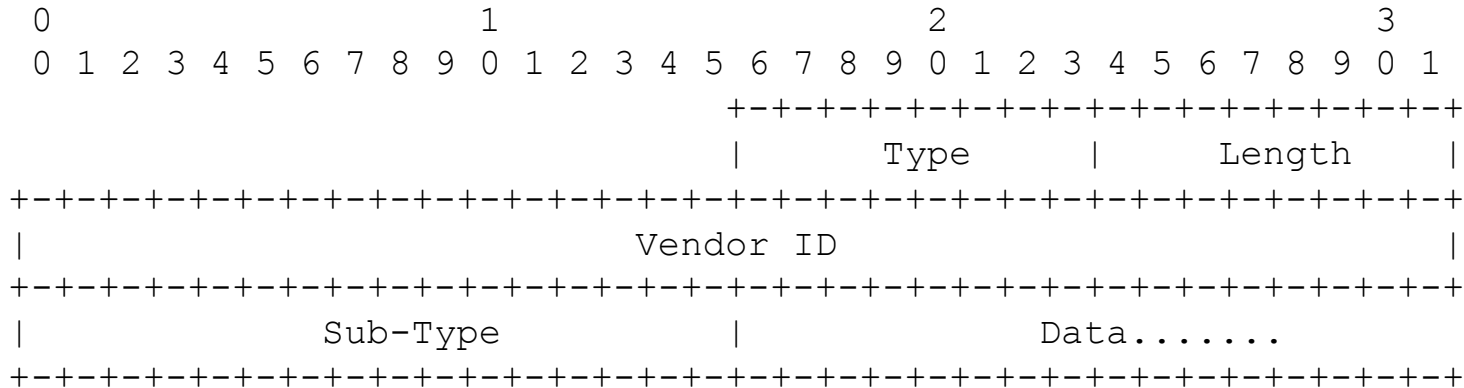
Optional QoS Information (sub-options)

So far described in the specification:

- Per MN Aggregate Maximum Downlink Bitrate
- Per MN Aggregate Maximum Uplink Bitrate
- Per Mobility Session Aggregate Maximum Downlink Bitrate
- Per Mobility Session Aggregate Maximum Uplink Bitrate
- Allocation and Retention Priority (ARP)
 - Per Mobility Session or per Flow/Flow-Aggregate
- Guaranteed Downlink Bitrate
 - Per Mobility Session or per Flow/Flow-Aggregate
- Guaranteed Uplink Bitrate
 - Per Mobility Session or per Flow/Flow-Aggregate

To be discussed

- Do we need a vendor specific option?
 - E.g. to be flexible in the definition of QoS information
- Not yet considered in version -01



Next Steps

- Reviews and comments appreciated
 - Completeness
 - Specification
 - Attributes
 - Readability
- Drive document towards clear and mature specification

Backup Slides

- Main Use Cases
- Message Sequences
 - Handover of QoS rules
 - Establishment of QoS rules

Main Use Cases

- Handover of established QoS rules to non-cellular radio access
 - Apply same QoS differentiation on the path between LMA and MAG, which serves cellular access
 - Enable mapping of admitted QoS classes to QoS differentiation techniques of non-cellular access, e.g. .11e
- Establishment of QoS rules while MN is attached to non-cellular radio access
 - MAG may propose QoS rules to LMA for approval
 - Priority class indicated in uplink
 - MAG may assess QoS according to flow information
 - MN may utilize access-specific control plane (e.g. WMM) to indicate demand for QoS differentiation
 - LMA authorizes proposed QoS or assesses QoS according to flow information

Operation: Establishment of QoS rules

