

IP Parcels and Advanced Jumbos (AJs)

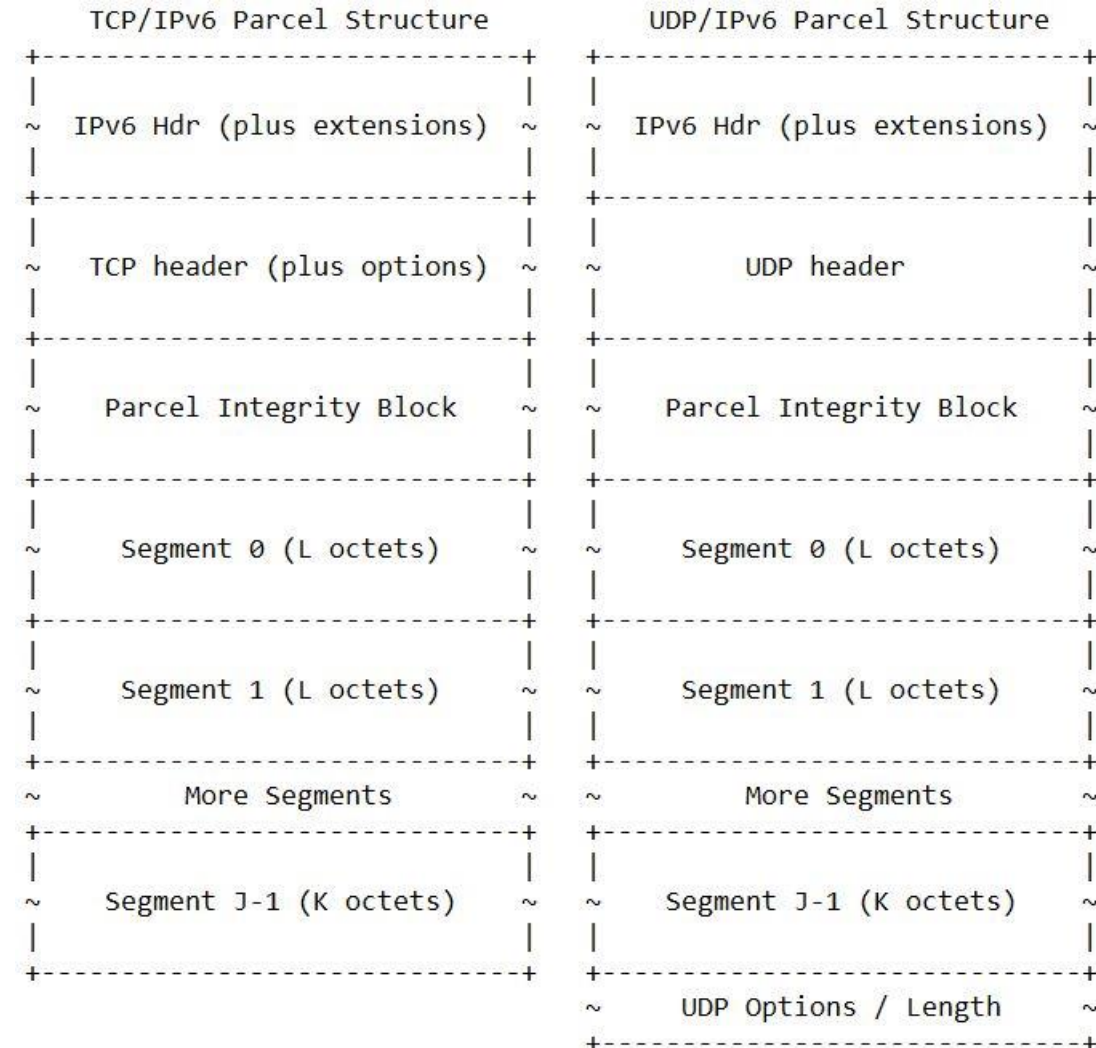
IETF 121 6MAN Session – November 7, 2024

<https://datatracker.ietf.org/doc/draft-templin-6man-parcels2>

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Problem Statement and Solution Summary

- Traditional {TCP,UDP}/IP packets include single upper layer protocol segment
- Segment Offload services concatenate up to 64 segments in a single buffer for improved local system performance
- Need: package multi-segment buffers for network transmission → IP Parcels
- Parcels can exceed 64KB; Hop-by-Hop (HBH) extended length field plus HBH compliance confirmation required
- Parcel packaging solution alternatives:
 - RFC2675 Jumbo Payload option
 - RFC9268 IPv6 Minimum Path MTU option



Next Steps

- RFC2675 has many MUST/MUST NOTs (RFC9268 more permissive)
 - Parcels use IPv6 Minimum Path MTU HBH option; distinguished by Opt Data Len
- Parcel Payload Length provides HBH length; Code/Check test HBH compliance
- Advanced Jumbos (AJs) are single-segment parcels from 0 to 2^{32} octets
- Parcels, AJs engage new link model with header integrity checked HBH and payload integrity checked End-to-End (E2E)
- Forward Error Correction (FEC) can repair errored payloads; reduce retransmissions
- Next Steps – Working Group Item?

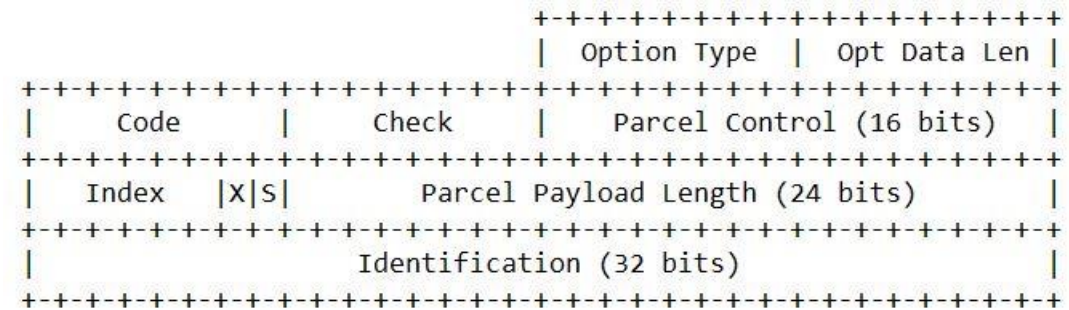


Figure 2: IPv6 Parcel Payload Option

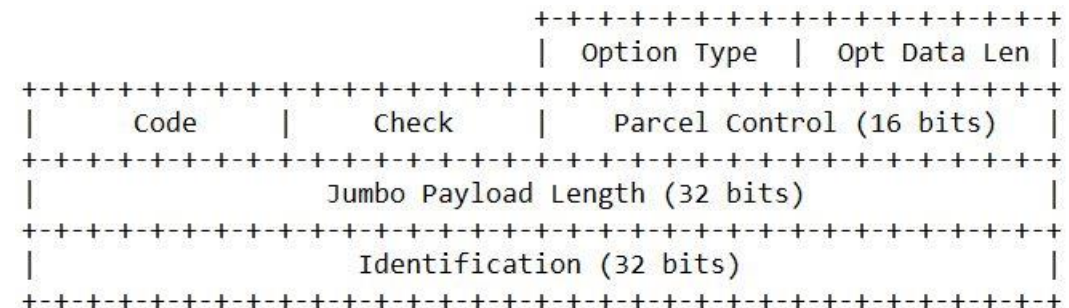


Figure 7: Parcel Payload Option for Advanced Jumbos