IKEv2 Link Maximum Atomic Packet and Packet Too Big Notification Extension

`draft-liu-ipsecme-ikev2-mtu-dect`

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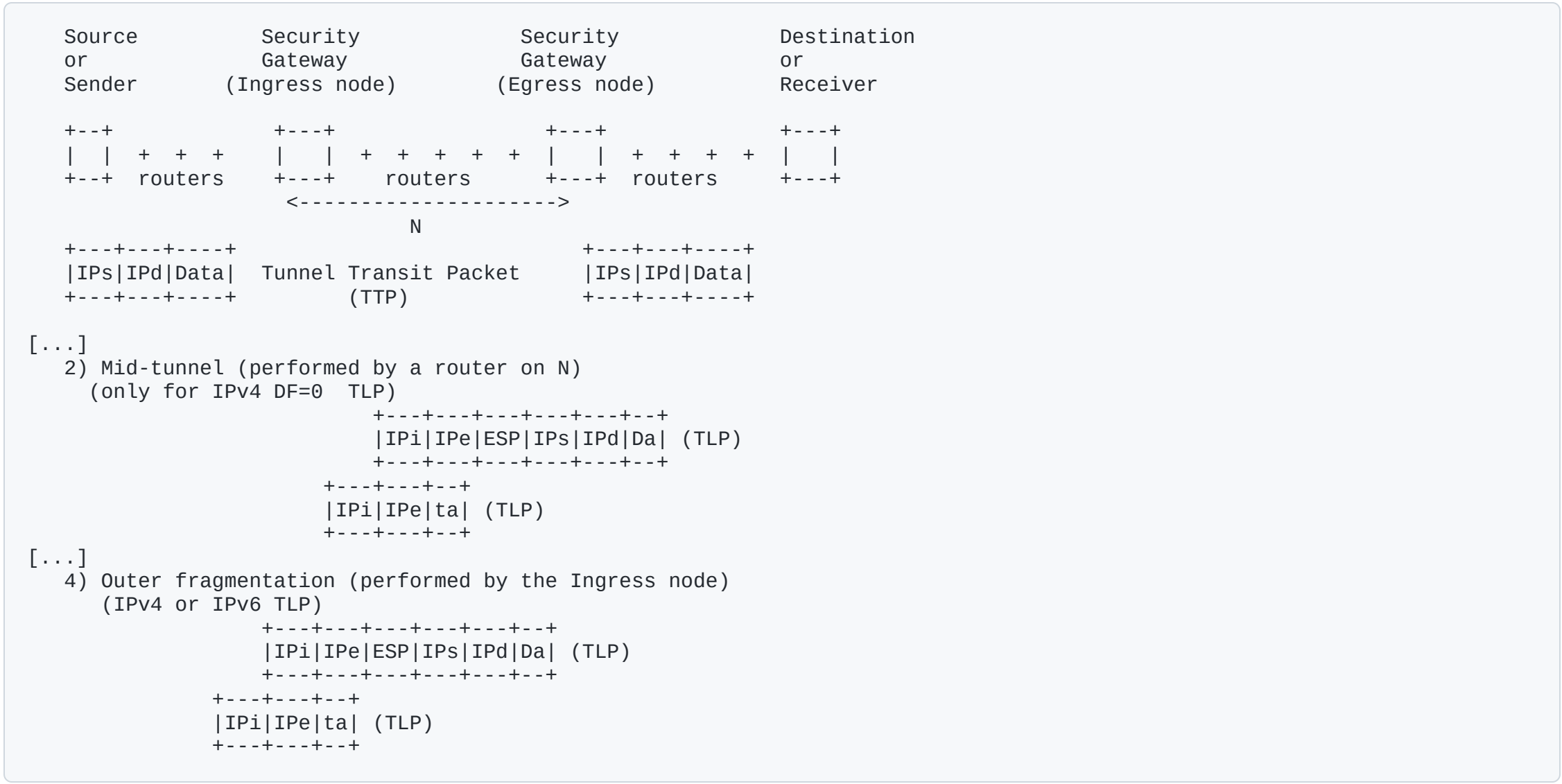
Problem Statement

Fragments reassembling at the egress security gateway requires additional resources which under heavy load results in service degradations.

When Reassembly is observed ?



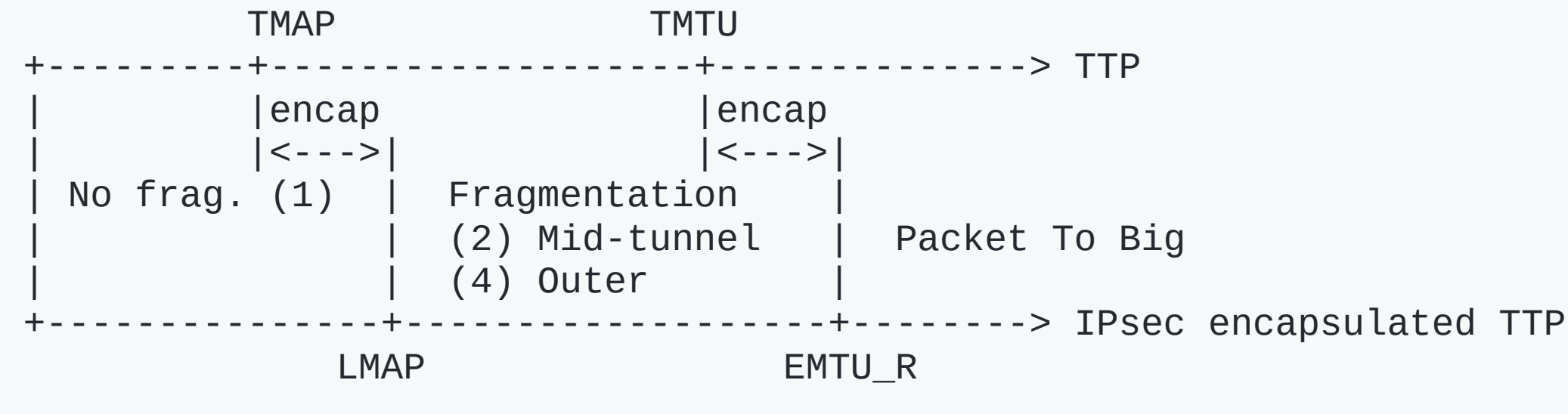
In both cases, the Egress nodes:

1. Reassembles fragments for an IPsec packet

- fragment < LMAP

2. Processes the reassembled IPsec packet

- (reassembled) IPsec encapsulated TTP < EMTU_R



We define two notification payload:

1. Link Maximum Atomic Packet Notification (LMTA)

- To inform the Ingress node of the observed LMAP

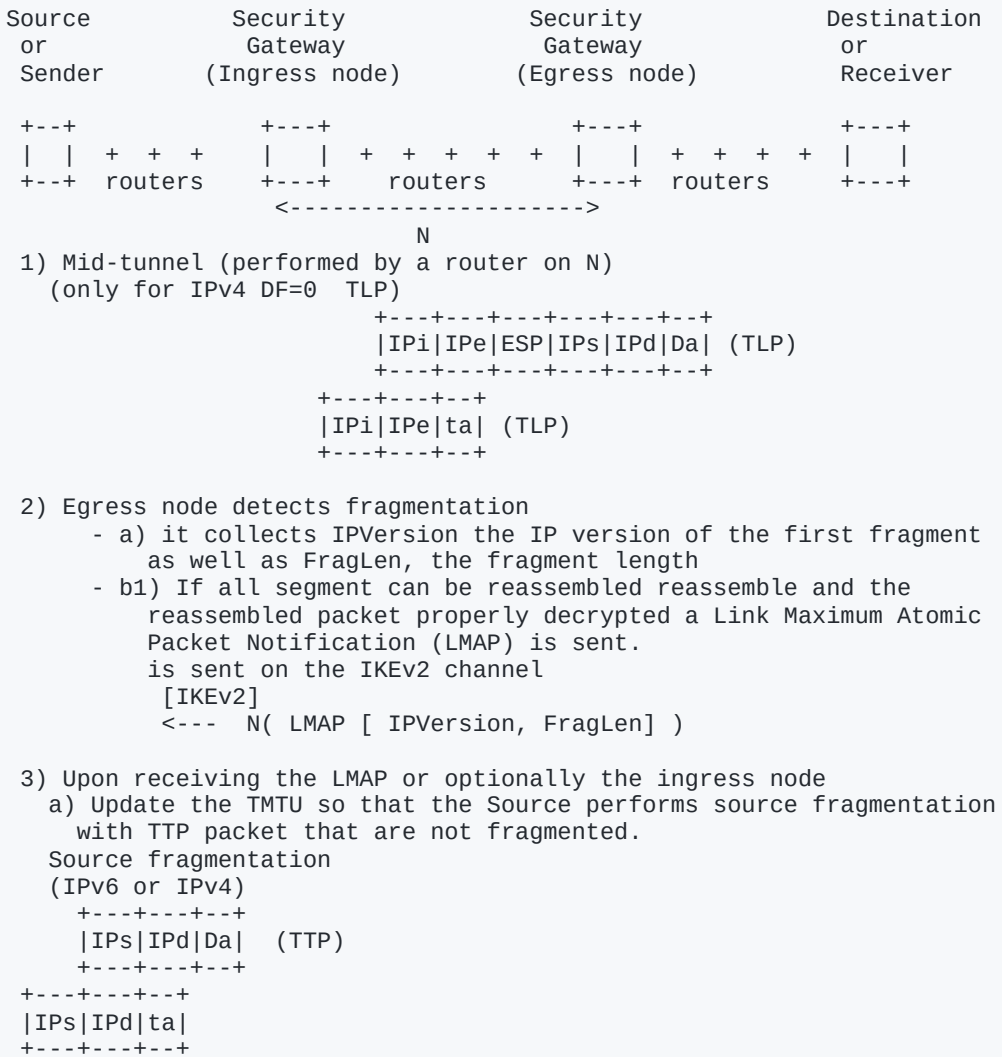
2. Packet Too Big Notification (PTB)

- to inform the Ingress node of the EMTU, LMTU

Given LMTA, EMTU_R the Ingress node is able to:

1. Compute the TMAP and TMTU
2. Inform the Source of appropriate TTP size (or perform inner fragmentation)

Illustrative Example (LMAP)



Where we are:

We considered ALL received comments with `ietf-intarea-tunnels` terminology, Generalize the protocol to IPv4 and IPv6, add PTB,...

We implemented it and it solves our issue.

Remaining discussion:

- `ietf-intarea-tunnels` considers the router component - carrying the TTP - and the interface component - handling LTP - independent. Independence of the Tunnel MTU (for TTP) and link layer MTU for (LTP) is provided by performing outer fragmentation when needed.
- [RFC4301] takes another view considers the router component can adapt to the specific needs of the interface component. This is what we do here.

We are looking for adoption

Thanks.