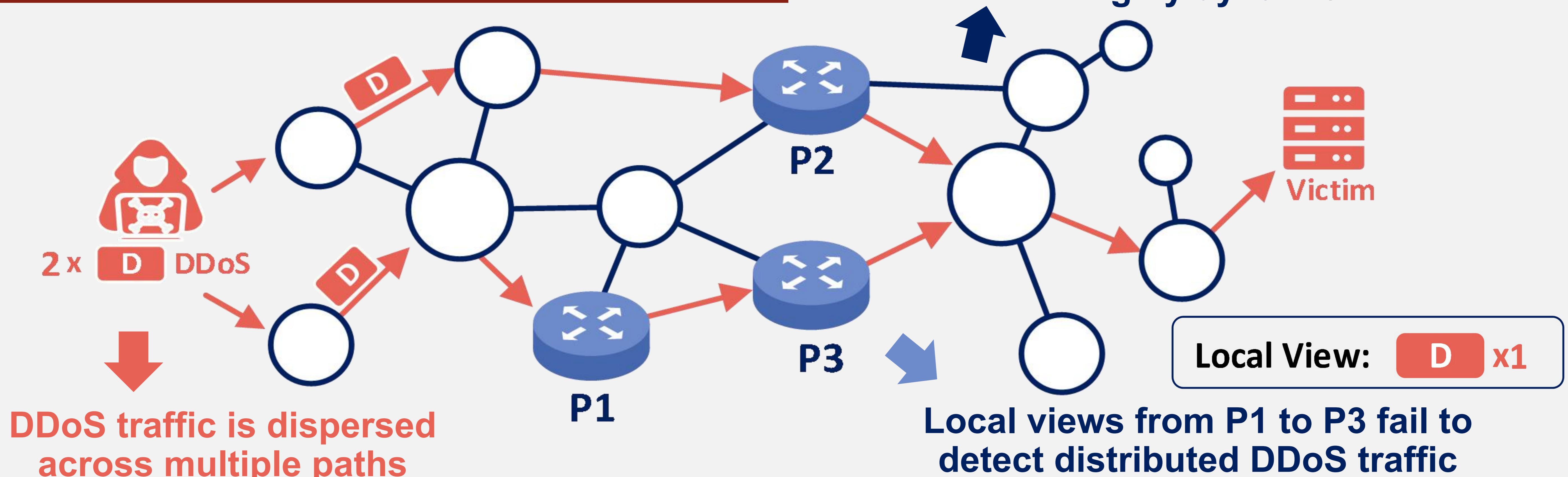


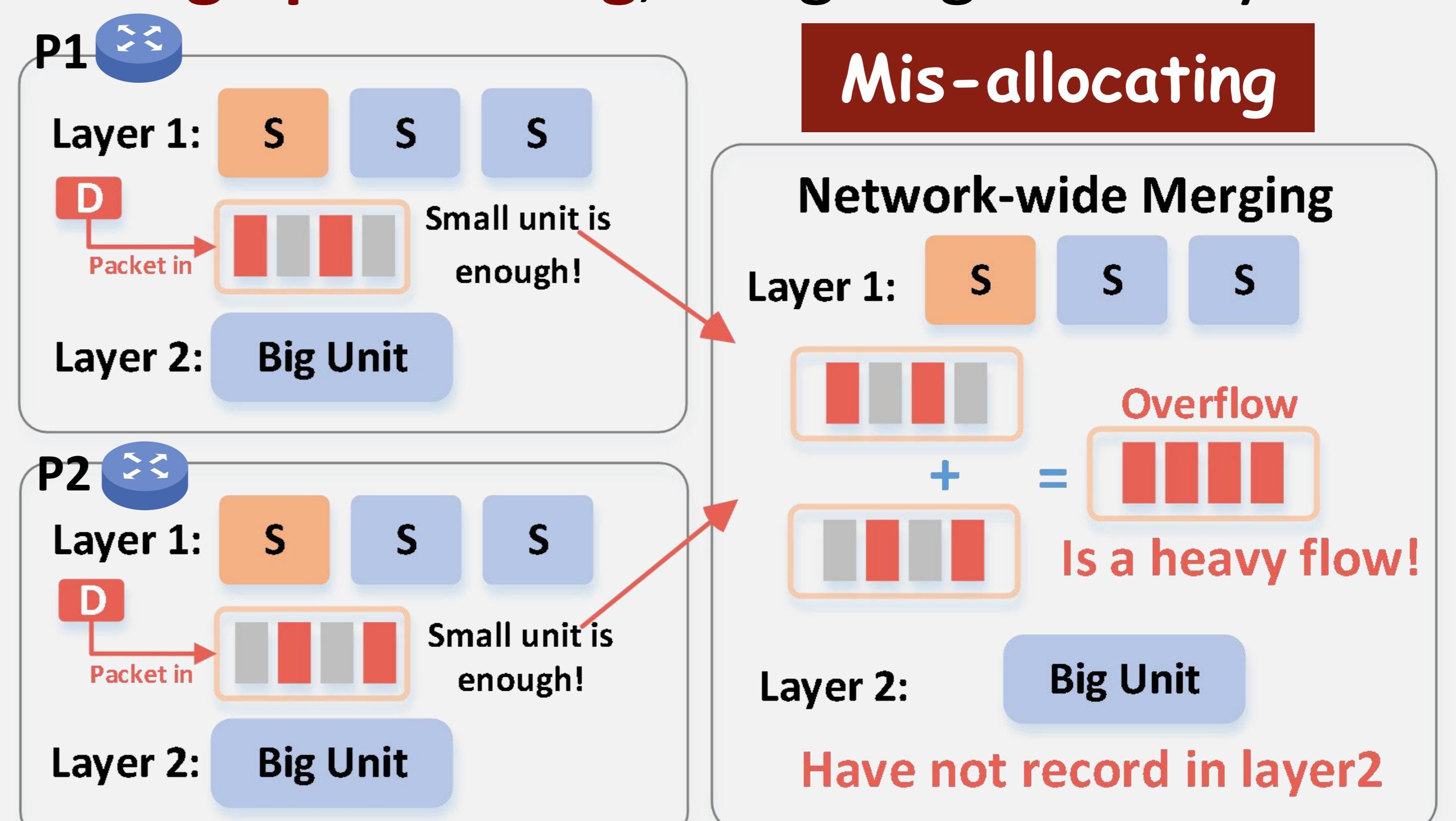
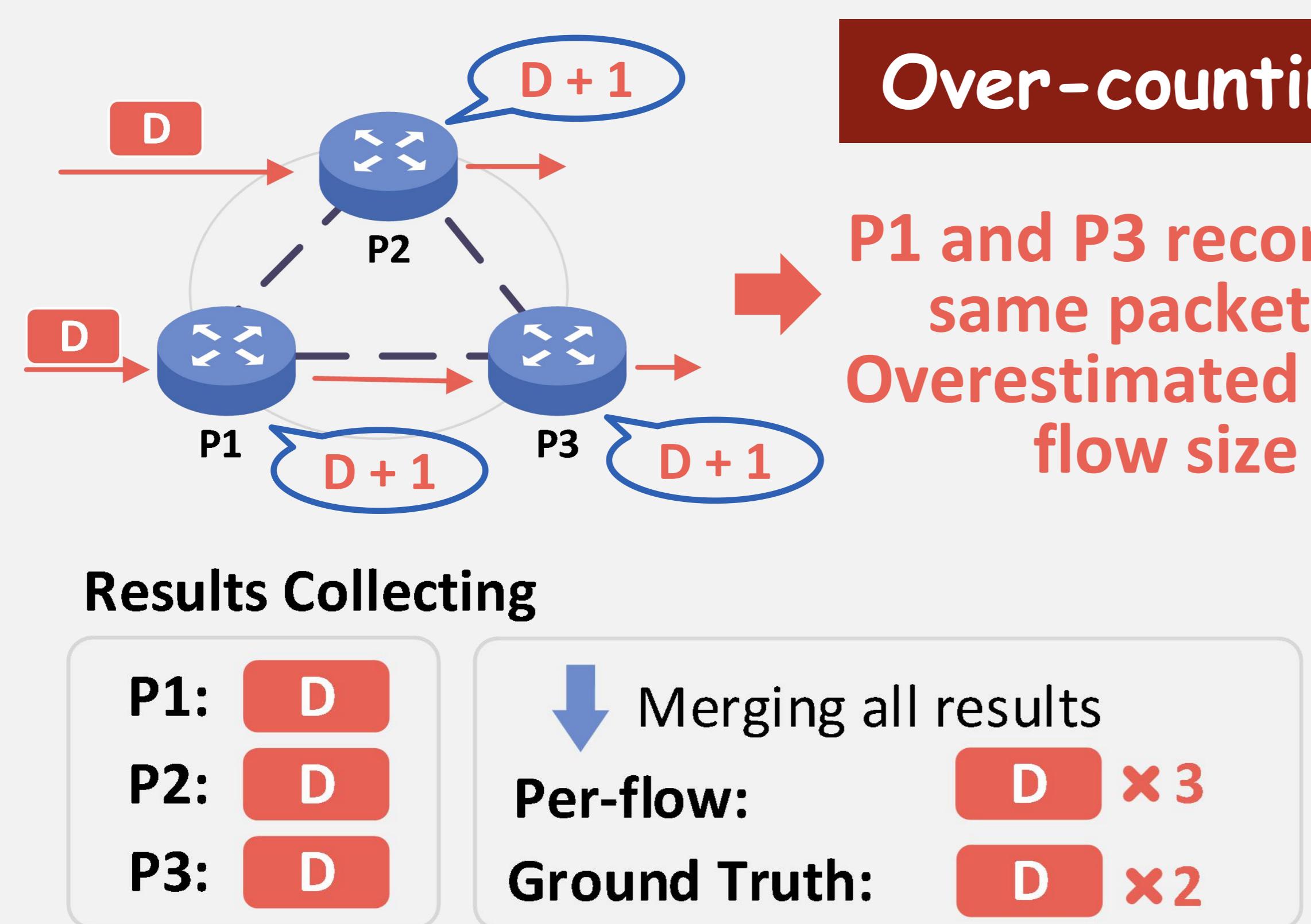
Network-Wide DDoS Detection with Routing-Oblivious Per-Flow Measurement

Network-wide measurement

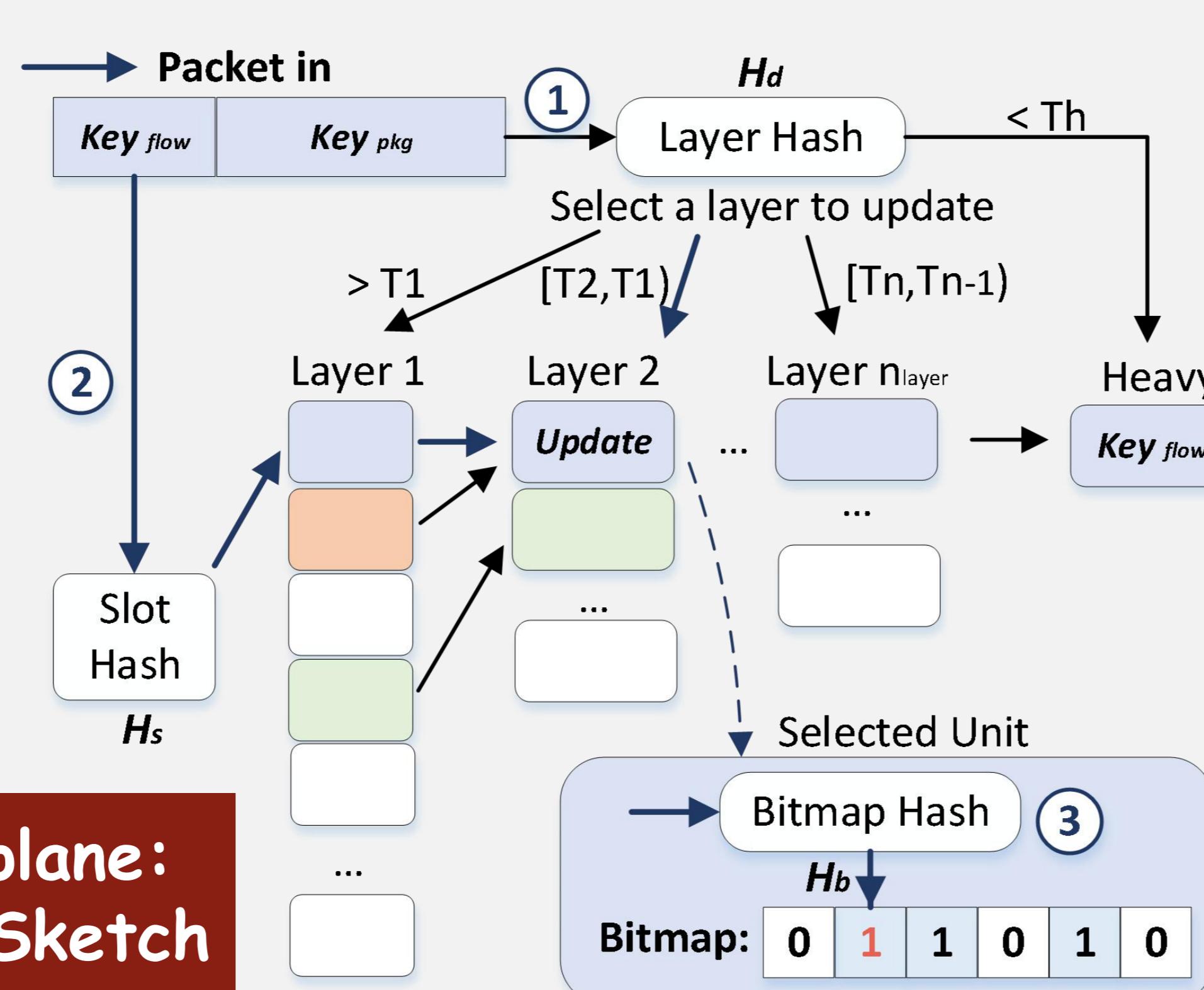
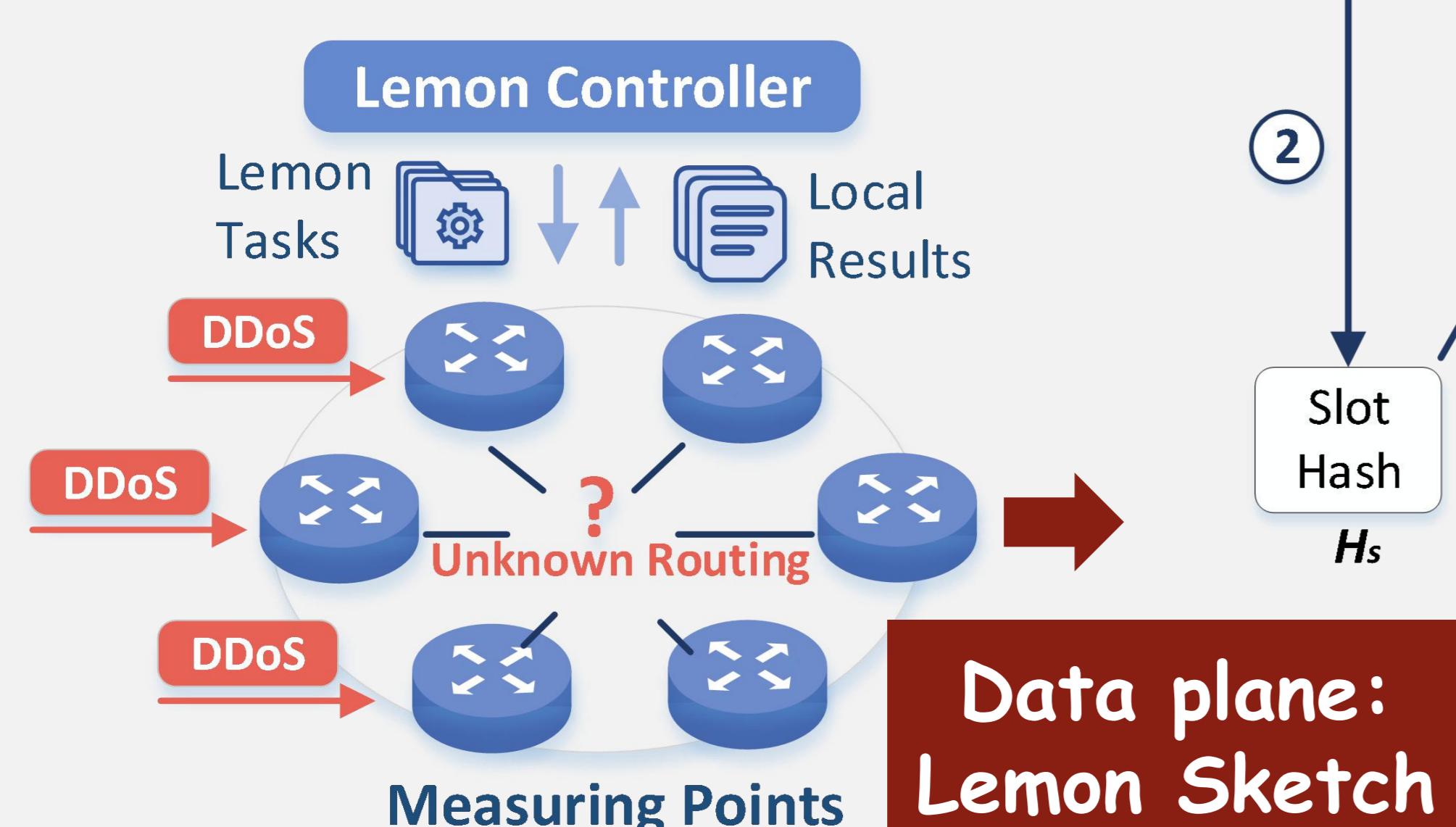


- Packets traversing multiple measurement points are **recorded multiple times**

- Current sketches **save space via multi-stage processing**, assigning flows by size.



Lemon Overview



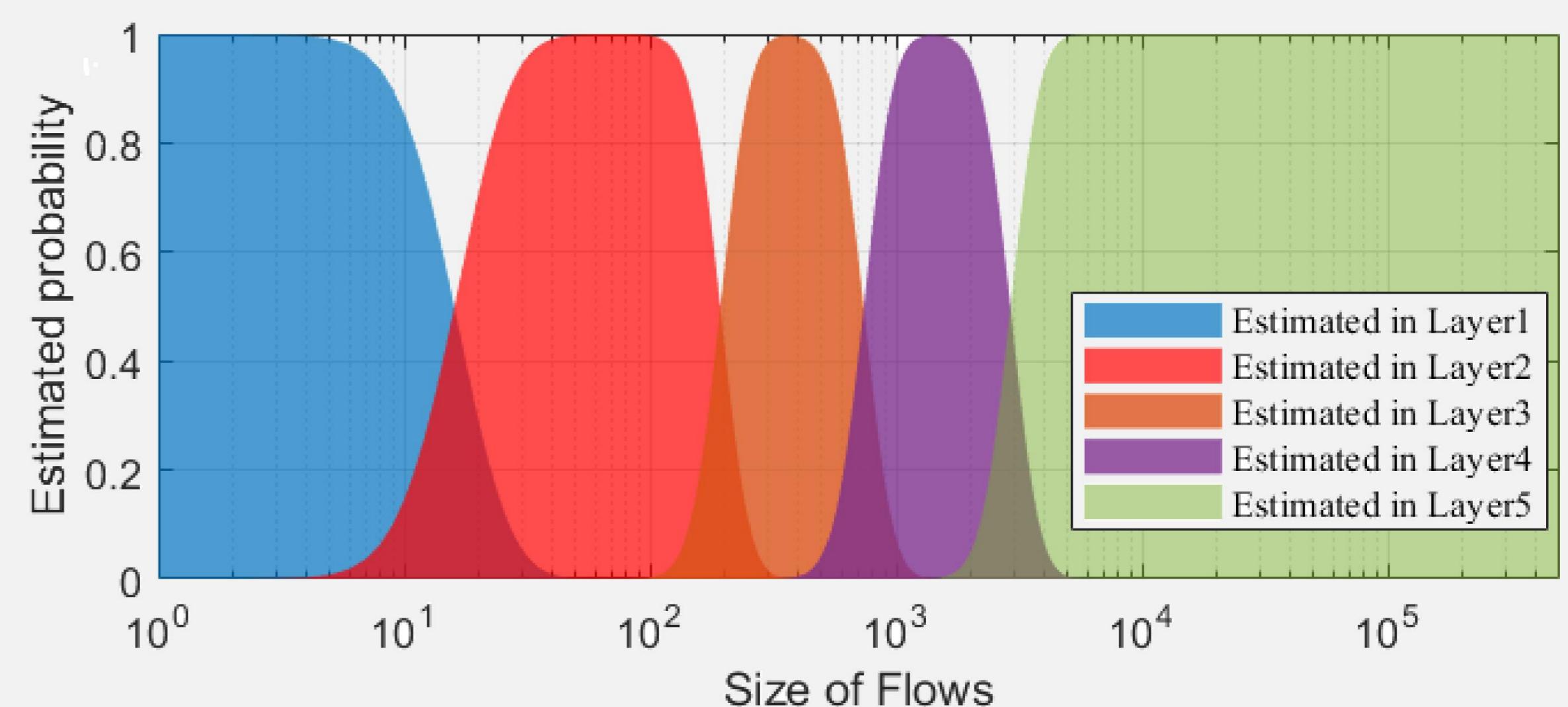
Over-counting-free

Each packet is uniquely identified by Key_{pkg} , reframing the packet counting as per-flow cardinality estimation

Mis-allocating-free

Assigns flows to units fully depends on the hash results of Key_{pkg} and Key_{flow} , ensures globally consistent updates

- Lemon segregates flows with different sizes into different layers**



- Accurate network-wide measurement results support DDoS detection**

