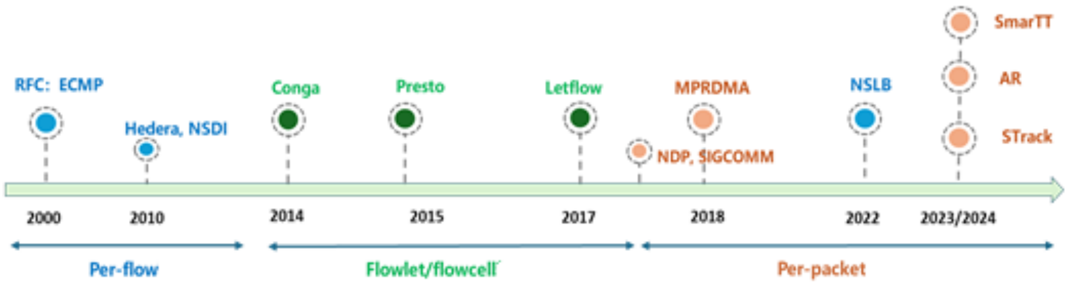
Open Challenges Proposal

Call Identifier: OCF-OC1-Challenge1

Challenge: Enhancing Overall Network Throughput Under Mixed Per-Packet and Per-Flow Load Balancing Traffic

Background: To address intelligent stateless computing services, load balancing is transitioning from per-flow mode to per-packet mode, since per-packet spray is able to distribute traffic more effectively, hence improving overall performance. Hybrid load balancing traffic, such as a combination of per-packet and per-flow load balancing traffic, can coexist on a network. In this scenario, when per-flow load balancing traffic creates local hotspots and further triggers Priority-based Flow Control (PFC), the throughput of per-packet load balancing traffic experiences significant backoff, resulting in severe performance degradation.



Technical Challenge: Develop an optimal solution for scenarios involving both per-packet and per-flow load balancing.

Main Objectives: The proposed algorithm has to be able to adapt to network changes, ensuring that performance remains at least 90% of the pure per-packet load balancing, when the PFC is triggered by the per-flow traffic.

Deliverables: The solution must be validated on the NetiSim platform using a network with 320 xPU processors and a 3-layer cross-pod topology.

Duration: 6 Months

Available Funding: 60k€

Sponsor: Huawei – Zhe Lou (zhe.lou@huawei.com)