Computing Aware Traffic Steering Consideration for Mobile User Plane Architecture

draft-dcn-dmm-cats-mup-00

Minh-Ngoc Tran (Soongsil University), Younghan Kim (Soongsil University)
Problem Statement

- Draft draft-mhkk-dmm-mup-architecture proposes a Mobile User Plane architecture for DMM in which a MUP controller converts mobility session information into Dataplane routing information.

- Consider anycast address is used for services (Multiple instances of a same service is represented by a single IP address).

  ➔ Upper mobility management system’s session information might Not be optimal in term of service instance’s location (e.g closest geographical instance might not be the optimal one, it might currently serve too much users).

  ➔ Enhance anycast address support for this MUP DMM architecture? (could be in scope of DMM multicast support requirement)
  ➔ MUP-C capability to convert session info to routing information toward optimal service instance?
Proposed Architecture

Integrate Computing-Aware Traffic Steering (CATS) concept in [1] into MUP-C


- Service Computing and Underlay Network metrics are collected and distributed to CATS-MUP-C
- For each user session, CATS-MUP-C’s C-PS bases on current information and selects the optimal service instance’s location
- Then, CATS-MUP-C convert session information to corresponding routing information toward the chosen service instance’s location

*Metrics distribution method, optimal selection algorithm is in CATS scope, not this proposal

Session Information + UE location + Anycast service address (= CS-ID)

- CS-ID: CATS Service ID
- C-PS: CATS Path Selector
- C-NMA: CATS Network Metric Agent
- C-SMA: CATS Service Metric Agent
Summary

• A solution to add anycast support to previously proposed MUP architecture
• By integrating CATS capabilities into MUP-C
• Future draft versions might discuss possible changes to procedure and routing types.

• We welcome any comments and suggestions. Thank you!