Introducing End-to-End Location Awareness in Packet-Optical Networks

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Innovation

- Future services are deployed close to the end user, which requires an edge-cloud continuum, which provides low-latency and high-bandwidth connectivity, while leveraging the scalability and processing power of cloud computing, such as in vehicle collision avoidance.

- We propose an architecture for provisioning and update of location-aware connectivity-services, as well as augmented data models.

Architecture

Workflow

Conclusions

- This demo presents location-awareness in connectivity services and network topologies.
- It also proposes an augmented data model for topology and connectivity services to include GPS coordinates and Regions into endpoints and connectivity-service constraints.
- The architecture considers the requested connectivity-service provisioning and update considering that connectivity services might need migration due to the dynamic nature of joint edge-cloud continuum.

Demonstration

- An emulated topology consisting of three access nodes exposing their location, connected to optical nodes that are in turn connected to a datacenter.
- The user node can then connect to the DC by means of the closest edge node, depending on its present location, which is introduced as a constraint to the connectivity service request/update.

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