



OPEN

Compute Project

Edge Project Charter

Revision 0.2

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Revision

Sept 30, 2018	Initial draft by Bill Carter(OCP), Craig White (Nokia), Mikko Ohvo (Nokia), Mike Moore (Nokia)
July 14, 2020	Update Charter to make HW Architecture agnostic. Open up the scope of the sub-project beyond the openEDGE formfactor by Mike Moore (Nokia)

Background

Edge Computing is focused on low latency, high throughput access to compute and storage resources for end users and the applications this can enable such as, IOT, Advanced Vehicle Traffic, Dense urban communication, and advanced personal communication services. Edge Computing can provide dramatically improved customer experience by providing resources that are only a single hop away. For the mobile telco operator, Edge Computing will allow functions such a vRAN to be realized in small locations. These are not necessarily base of tower facilities, but other locations such as office buildings, shopping malls, and many other space constrained locations

There are many types of compute processing that can be done in the Edge Computing servers, including VM's for VNF's, and also to provide access to acceleration hardware such as GPU's. Additionally, the AI/ML applications this platform enables can be used to process data not only on the users data, but also on both the Edge Compute system, and also the applications that run on that platform.

Edge Computing offers Telco Providers several way to reduce TCO. It can allow efficient deployment of new services for only certain groups of users, rather than deploying these services network wide. TCO can also be reduced since it is possible to decrease the load on network links by not having to send and receive data to central sites. Edge Compute processing can also be used reduce the total signaling load.

The Edge Compute sub-Project will create a Telco optimized chassis along with the associated computing sleds. Edge Compute designs are intended to fit into small sites with limited space and power budgets, and will be compatible with 19in Posts/Racks.

Project Charter

The Edge Sub-Project shall create specifications, standards, support documentation and reference designs which will enable global adoption of the Edge Computing Platforms which meets the requirements of Telco Providers. It is expected that participants in this project is will be across the entire ecosystem, including Telco Service Providers (adopters), OCP solution providers (suppliers), ODM/OEM manufacturers, and key technology providers. In order to ensure that existing relevant expertise in the OCP is utilized and to make sure that the wider OCP community informed about Edge Computing, the project will solicit input by providing technical presentations to the other OCP projects/committees especially the Rack and Power, Server, and Networking projects.

Project Goals

The Edge Sub-Project shall focus on standardization and definition of the critical interfaces, operational parameters, and environmental conditions that enables adopters to have access to a non-proprietary multi-vendor supply chain of Edge Compute Devices.

Critical interfaces and operations parameters shall be defined for the following interfaces:

- A. The interface between a rack of equipment and the facility or cabinet that houses such rack. The facility shall include both indoor and outdoor space.
- B. The interface between IT equipment and the rack, including but not limited to the mechanical, electrical, and management APIs.
- C. The interface between an enclosure and functional sub-assemblies that fit into such enclosure. In this case, the enclosure is defined as the mechanical assembly that mounts into an equipment rack and provides power and mechanical integrity to the functional sub-assembly. The functional sub-assembly may be a server node.

Critical interfaces shall also include firmware components:

- A. Functional sub-assemblies such as server, storage, and HW accelerators share conform to a published and open APIs.
- B. The firmware which controls, aggregates, and provides telemetry information shall be open sourced on a <https://github.com/opencomputeproject> project directory.

In Scope Activity & Workstreams

The project will gather requirements and specifications for the Edge Computing Platforms from the adopters. This will include dimensions, power budgets, cooling requirements, and networking requirements. While the project welcomes input from all members, requirements from adopters who are either actively deploying or planning to deploy Edge Computing Solutions will be more valued than other input.

Where applicable, the only specifications in scope for Chassis designs must be OCP Accepted (full design packages). This is to ensure that these critical dimensions are adequately specified and interoperable. An example of this is the initial Open Edge Chassis, which was the seed contribution for the Edge Sub-Project.

Device Designs, which may include acceleration, networking, and/or storage capabilities, will be specified and while OCP Accepted specifications are desired, OCP Inspired specifications for these will be allowed.

Work Streams

1. Requirement specification for Edge Data Center Chassis (dimensions, power budget, cooling requirements etc.)
2. Initial proposal for Edge Data Center Equipment Specification based on contributions from parties collaborating in project group.
3. Certification process or criteria for equipment that shall meet the above specs.
- 4.

Out of Scope