



OPEN
Compute Project

Proposed Charter For Modular Data Center Subproject

Revision History

Date	Name	Description
04/09/2018	Roberto Söderhäll	V#0.1 initial Charter draft resulting from request within mail correspondences
04/11/2018	Brevan Ryher	1st project call
04/18/2018	Roberto Söderhäll	V#0.2 Review of markups from first Project call
04/25/2018	Brevan Reyher	2nd project call

Contents

License	4
Mission Statement	4
Project Scope	4
Organization	7
APPENDICES	8
Appendix 1 -	9
Appendix 2 -	9
Appendix 3 – Meeting Cadence	11
Appendix 4 - Focus Areas	11

License

? n.a I think

Mission Statement

The mission of Open Compute Data Center Facility is to create a set of Data Center technologies that are dis-aggregated and fully open allowing for rapid innovation in the Data Center space.

The OCP Data Center Facility Project will develop an open-source Modular Data Center Specification to support OCP Hardware and contribute it to the OCP Community. The collaborative Specification will include Design Files and Reference Architectures. Multiple Solution Providers can develop and offer an OCP Accepted product to the market from the Specification. The project will provide the capability for OCP Hardware users to leverage the inherent advantages of Modular Data Center advantages in efficiency and scalability.

Project Scope

High Level Descriptive Scope

The Data Center Facility Project is to facilitate & enable new and innovative open Data Center design, creations & collaborations, project validation & testing, and OCP Community contributions.

The Data Center Facility Project is also to bring to Data Center technologies what has already enabled OCP open servers & storage including:

- Optimized design of the Modular data center for OCP-hardware regarding maintainability
- Optimized design of the Modular data center for OCP-hardware regarding scalability
- Energy efficient power & cooling designs

MVP of robustness regarding fire and burglary

In-Scope Technology Categories

The initial “in-scope” coverage of the MDC Sub- Project is described by the following layers / categories of Data Center technologies:

Category Level	Description
Level “3” (initially out of scope)	Techniques for reuse of energy from the MDC for other purposes, as district heating, Green houses, swimming arenas etc.
Level “2”	Modular built devices for supporting systems as cooling, power and monitoring environments as Monitor Operation Centrals

Level "1"	Universal Form Factor "MVP OCP-Modular Data Center" for Standards Based OCP H/W as <ul style="list-style-type: none"> ● OCP servers ● OCP switches ● OCP DC power supply ● OpenRack + 19" Form Factors ● Interconnects & Integration, Standards Based Cabling ● Energy Efficient Power Supplies & Cooling
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Later phases of the project may also include systems to be "reuse of energy ready" with prepared connections for external heat pumps for district heating etc.

Out-of-Scope Technology Categories

This project does not intend to develop areas including fresh air cooling or liquid cooling systems. The project does, however, expect the results of its initiatives and contributions to support a wide variety of technologies and design in these areas.

Key Project Focus Areas

Per the collaborative team efforts at the First project call for OCP MDC on April 11th, 2018, the following key focus areas were captured and summarized).

Open Modular Data Center

- Size (Form factor of the MDC LxWxH)
- Scalability
- Robustness (Fire/Burglar protection, weight load capacity)
- Redundancy level
- Power distribution (MDB, cabling, bus bars, DC etc.)
- Cooling system (In-row, displacement, CRAC's etc.)
- Security systems (Alarms, fire extinguishing systems etc.)
-

Form Factors

- Open racks 19" V2 Olympus
- OCP servers
- OCP switches
- OCP DC power
- Existing Cooling systems (Schneider, Rittal etc.)
- Existing power distribution systems AC
- Existing fire extinguishing systems (Novec 1230 etc.)
- End-User – Telco, etc.
- Etc

- Etc

Project Mission

- Open MDC Definition
 - Drawings (floor plan, facades, 3D interior/exterior)
 - Technical specs (construction, material etc.)
 - Reference table of applicable Standards
 - Capacity descriptions when using OCP H/W
 - number of rack
 - heat loads
 - - etc
 -
- OCP Open Hardware Management Analog Key Drivers
 - Common, Standard form factors
 - Capex & Opex reduction
 - 100% standards based hardware implementation
 - etc

Potential Futures

- Open MDC ready to interact with society by reuse of the waste energy?
- Add on solutions for Fresh Air Cooling (direct/indirect)

Organization

The following is modeled after creation & publication of the OCP AMD 3.0 Roadrunner Server Project, though may be modified after a few iterations to best move the project forward.

1. Project Co-Chairs – facilitate the flow of information, determine consensus, define scope, commit documents, ..., etc.

Names / Org

2. Program Management & Communications – Names / Orgs
3. Core Working Group – initial founding members committed moving the project forward between meetings. Contribution examples include guidance & advice, specification document feedback & contributions, code contributions, etc.

Names / Org

4. Expanded Working Group – additional cross-industry community contributing members committed to moving the project forward between meetings. Contribution examples incl. guidance & advice, specification document feedback & contributions etc.
5. Advisory – Monthly Advisory meetings, key topics discussions, design & development topics
6. Open Compute Formal Events – As per OCP schedule.

APPENDICES

Appendix 1 -

Appendix 2 -

OPENPACKET CHARTER:

Summary:

The Open MDC Project's focus is on Modular Data Center optimized for OCP hardware. The Open MDC project is an OCP foundation technology vertical allowing for continuous network innovation that will lower the TCO and raise the ROI of data center facility technologies. By leveraging industry leading technologies, Open MDC will address end user and technology requirements for the entire range of data center facility functions.

Mission Statement:

When open design of Modular Data Centers move in concert they can improve efficiency, reduce power consumption, and allow for flexible and modular specifications.

Project Naming:

“Open Modular Data Center”
“Open MDC”
“Open Micro MDC”
“ etc”
“etc...”

Let's vote!

Themes:

Themes organized into the following 2 categories:

R = “Requirements / “Must Do”

D = “Design Discussion Topic / Q+A”

Scope

Data-Center - not so much defining the TIER levels more MVP level confirmed by the end users.

Focus on the following areas:

- Maintainability
- Energy efficiency (cooling and power)
- Optimization of space regarding
 - o OCP H/W
 - o Transportation (truck, train and boat)
 - o Cost-efficient (CAPEX/OPEX)

What is the typical MDC size (how many racks, IT-load density)?

Scalability scale out by stacking on height or adding side by side can be a focus area?

etc.

etc.

Goals

TIMEFRAME?

Suggested Milestones

- MS 1 End of June: Presentation of draft drawings and tech specs
- MS 2 Beginning of September: Finalising 1.0
- MS 3 OCP Summit in Amsterdam: Release of OCP MDC 1.0

Hardware Requirements

I need input to start writings this text

Appendix 3 – Meeting Cadence

“Meeting Cadence” contents will be discussed during the upcoming call April 11th 2018

Weekly Wednesdays except Monthly DCF call days.

The formal meetings will have the following meeting schedules:

Working Group

Will meet as needed between other project formal meetings. A notice of any meeting /conference call will be sent to the general list for anyone interested. In addition, the Working Group is responsible for coordinating with other OCP tracks/projects to insure uniform implementation and clarity when there is overlap.

General Assemblies

Will be co-terminus with the Open Compute Summits. These meeting will be for a wider audience with update on the past efforts and anticipated progress.

Advisory

Will be take place approximately every month and will discuss the progress made, open issues and anticipated progress. These calls are intended provide direction/focus of efforts and approve any new projects.

It is anticipated the Sub-Project meeting cadences will follow this pattern although Sub-Projects may decide on different cadences based on their requirements.

Appendix 4 - Focus Areas

“Focus Areas” contents will be discussed during the upcoming call April 11th 2018 Workshop. The following is a place-holder for a future document version.

Sub-Project	Description
Environmental Design	Mechanicals, Cooling, Power, Environmental Management Systems, etc