


# QCT Rackgo X
# **Yosemite V2**

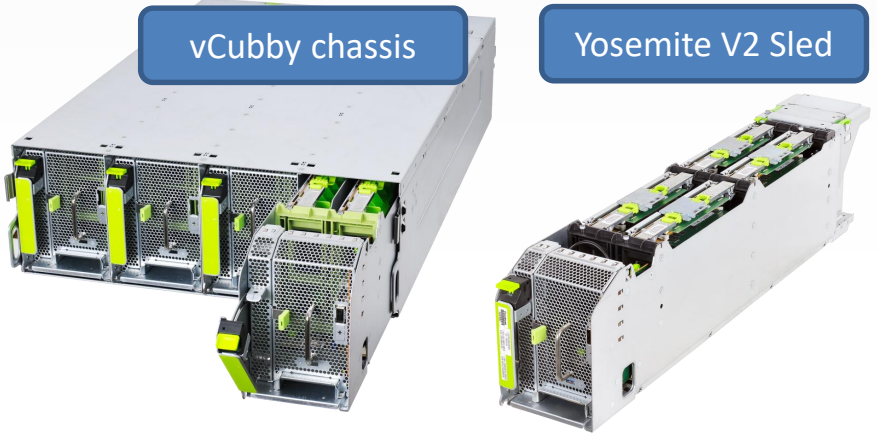
2018/10/11

# Agenda

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- Why Need This Product
- Mechanical View-System Level
- Mechanical View-Sled Level
- Mechanical View-Server Card Level
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- Block Diagram of Server Card-Twin Lakes
- Enhancement From V1 to V2
- Compatible Components List & User Guide
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- OCP Tenets/Principles

# Overview

- Introduction
  - ‘’Rackgo X Yosemite V2’’ is new generation platform that enables with Intel Xeon Processor Skylake-D Product Family. Each Yosemite V2 sled hosts up to ‘’4x OCP compliant 1P server cards’’ or ‘’2x 1P server cards & 2x device cards’’. And each vCubby chassis can hold up to 4x Yosemite V2 sleds




- Contributions
  - Design package
  - Product submission to Marketplace.
    - Product Recognition: Accepted level

- Specification Reference
  - Facebook Multi-Node Server Platform: Yosemite V2 Design Specification v1.0 spec

# Why Needs This Product



- More and more computing capability requirement than before for various application, for example, AI(artificial intelligence)
- High density Yosemite V2 with next generation CPU to provide higher computing performance & memory capacity

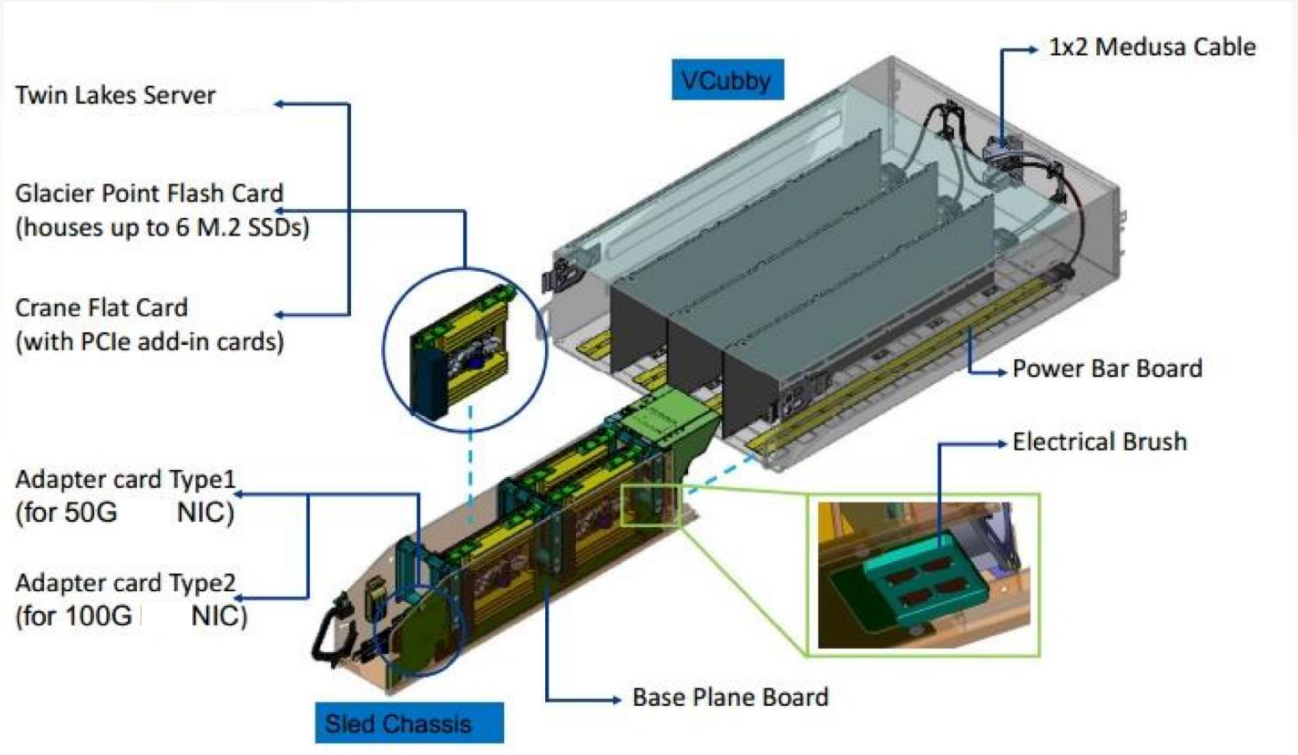
# High Level Features-Yosemite V2 Sled



| Function | Description |
|---|---|
| Processor | • Intel Skylake-D, Xeon processor, up to 18 cores, TDP up to 110W. Twin Lakes only support 86W |
| Memory | • Up to 4 DDR4 channels (2DIMMs / channel)<br>• Max Memory capacity of Twin Lakes: 128GB. 16GB*8 or 32GB*4 |
| External I/O Connections | • 32 x PCIe Gen3 Lanes (CPU)<br>  • (6) X4 to gold finger<br>  • (2) X4 to high-speed storage drive M.2 connector on Twin Lakes.<br>• 20 x Gen3 over HSIO (PCH)<br>  • (1) X4 PCIe for Mellanox CX-4 LX mezzanine<br>  • (1) USB 3.0 for DCI<br>  • (1) PCIe X1 for VGA<br>• (1) USB 2.0 to baseboard<br>• (1) Serial connection(Tx/Rx only)<br>• I2C Management connection<br>• Power On/Off, Reset control |
| Storage | • (3) M.2 connectors. One for boot drive(PCIe or SATA). Two for high-speed storage drive(PCIe). |

# Mechanical View-System Level

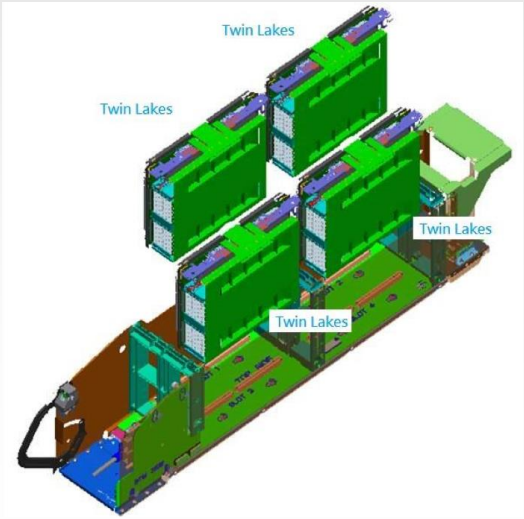




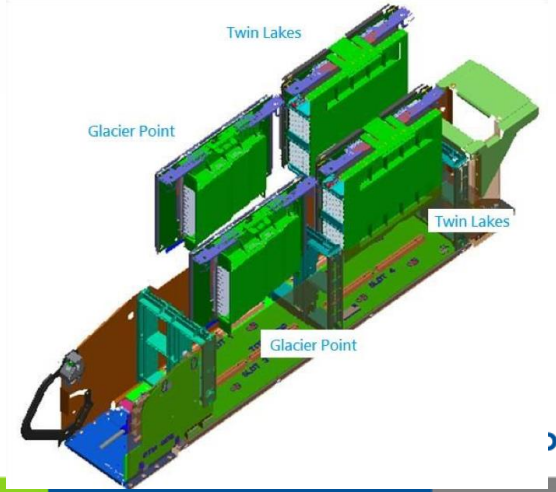
# Mechanical View-Sled Level



All Computes



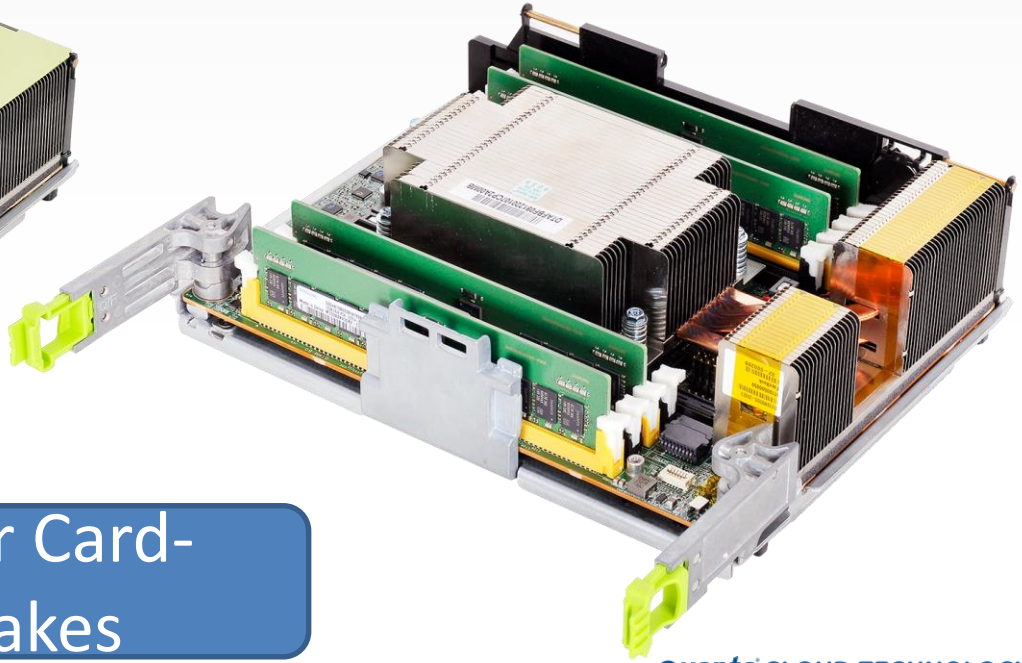

Different Configurations




2xComputes w/ 2x M.2 carrier cards

# Mechanical View-Server Card Level



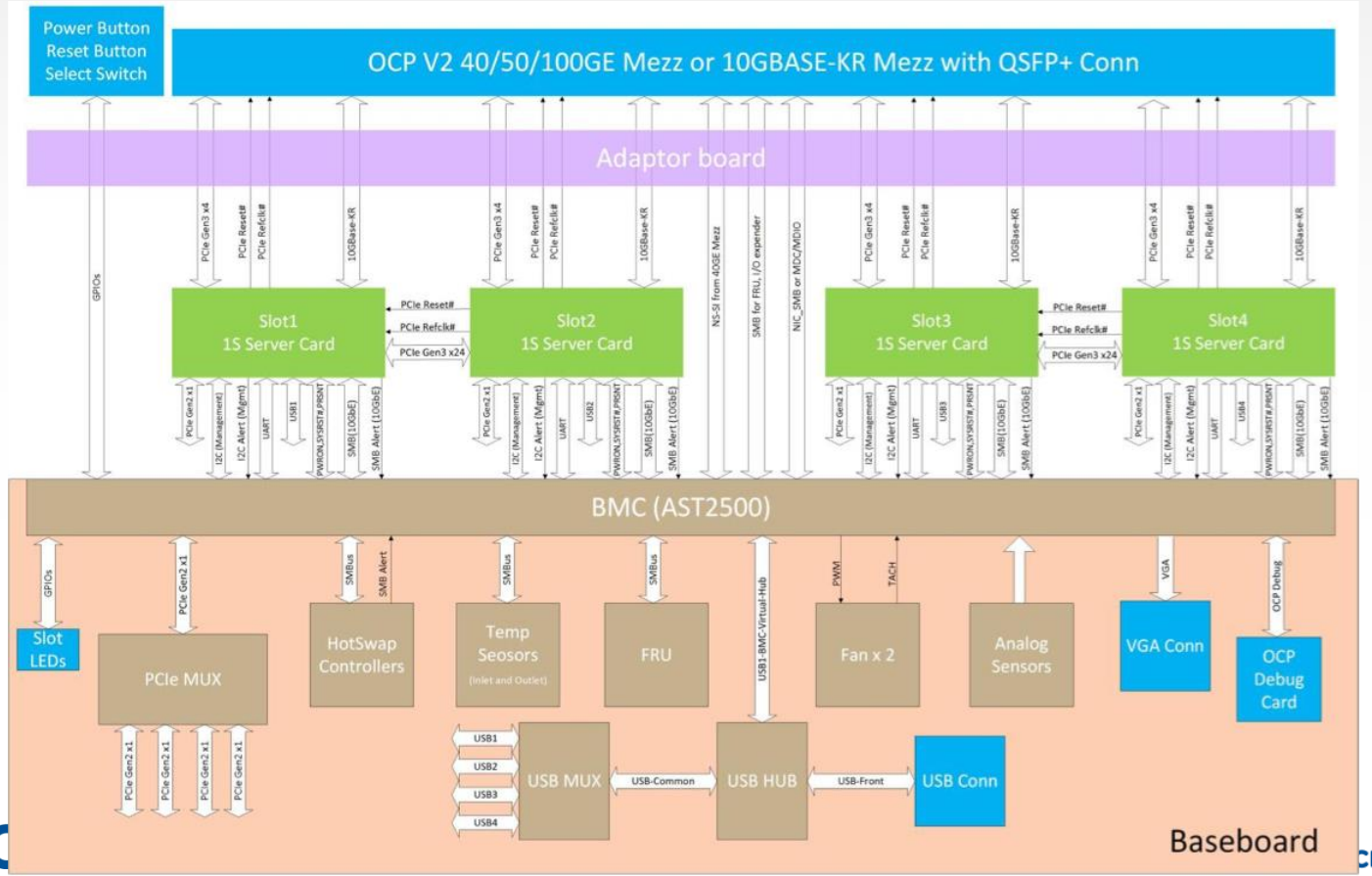


1P Server Card-
Twin Lakes

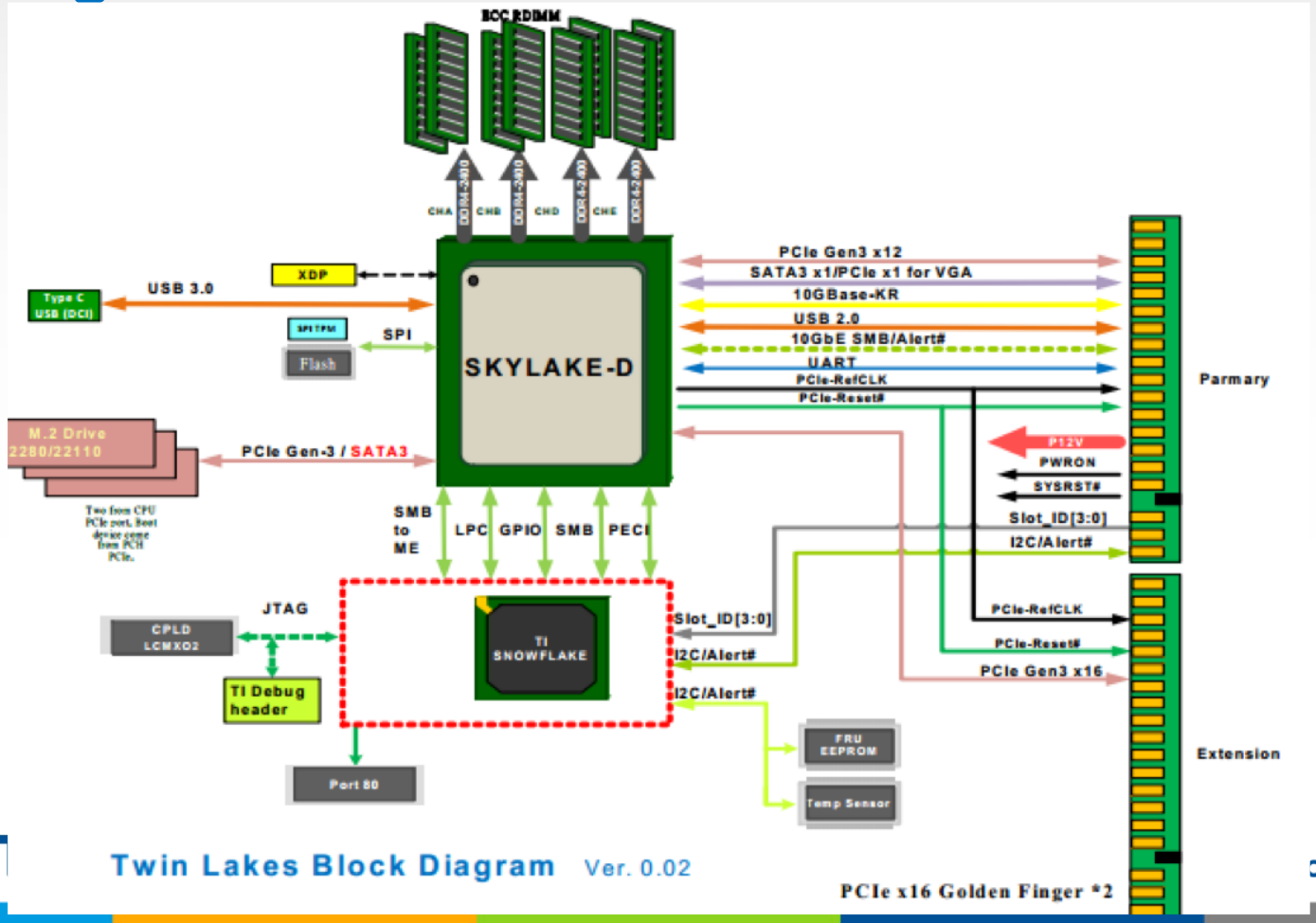
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# Block Diagram of Sled-Yosemite V2 Sled



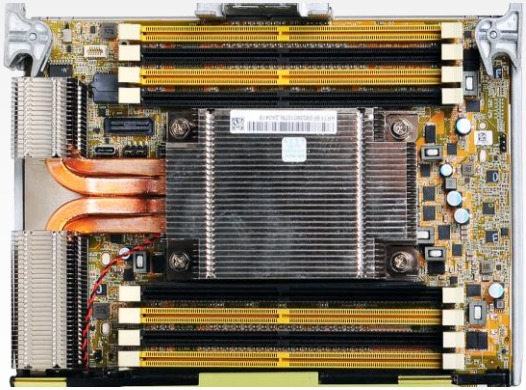
# Block Diagram of Server Card-Twin Lakes



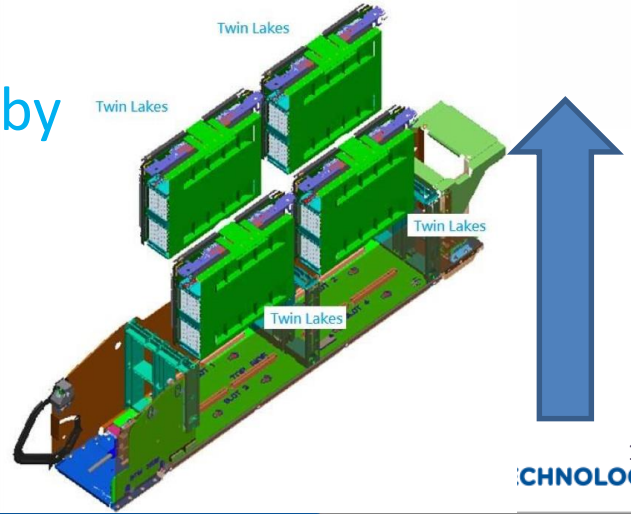

Twin Lakes Block Diagram Ver. 0.02

# Enhancement From V1 to V2

- 8 DIMM/server card compare to V1 (4xDIMM)



- Install server card vertically with new V-cubby compare to V1 Cubby chassis (horizontally)



# Compatible Components List & User Guide

- ‘’QCT Rackgo X OCP Debug Card with LCD’’ could be operated with Yosemite V2 sled

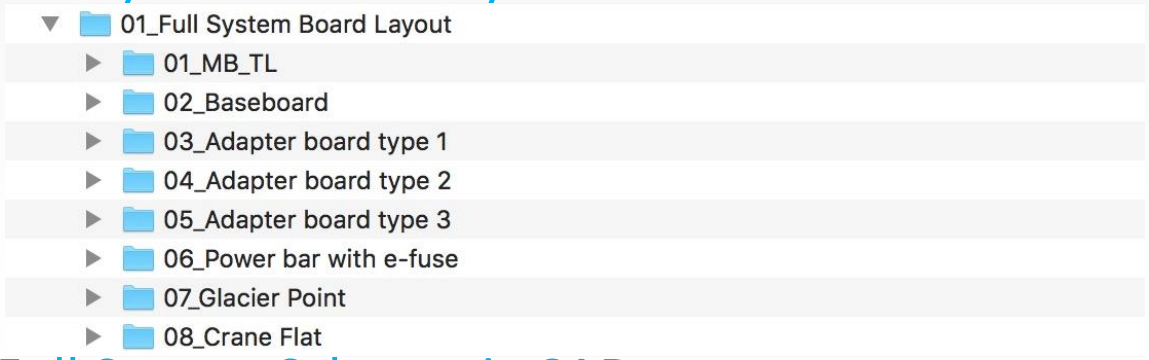


QCT Rackgo X OCP Debug Card with LCD

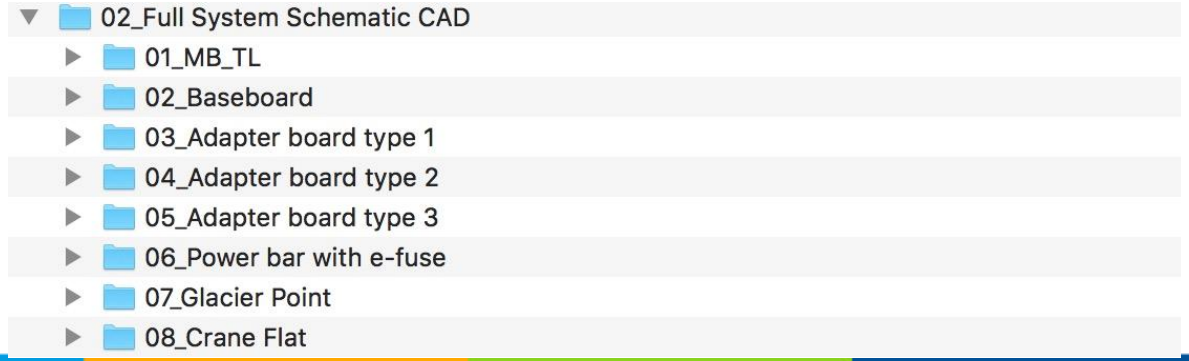
Rackgo X Yosemite V2 Sled

# Design Files Contribution- 01_Electricals

- 01_Full System Board Layout

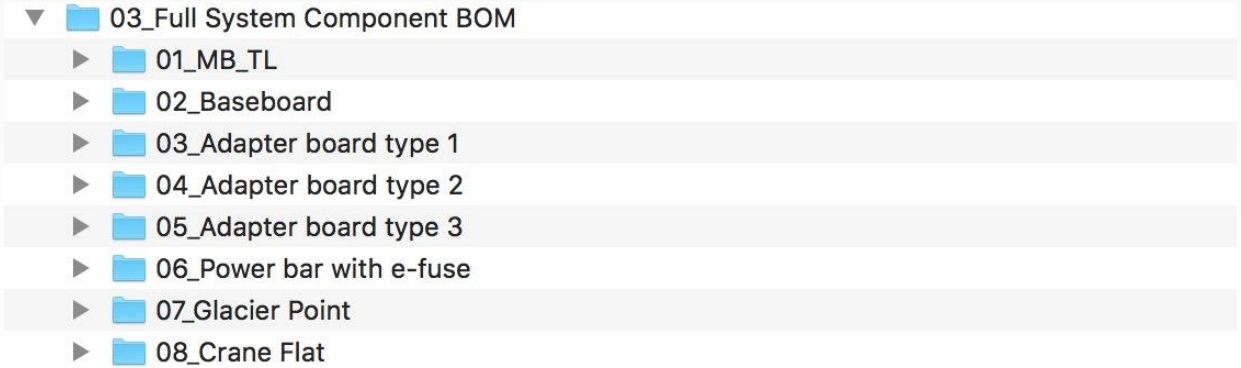



- 02_Full System Schematic CAD

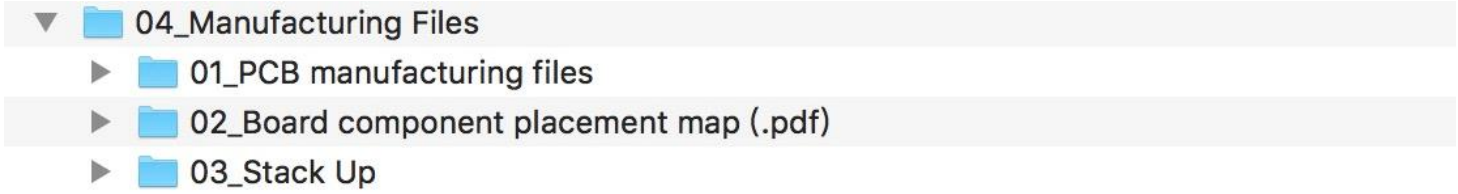


# Design Files Contribution- 01_Electricals

- 03_Full System Component BOM

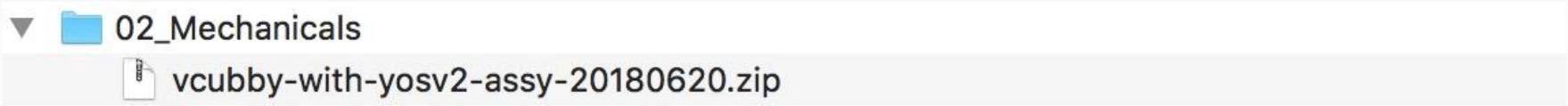



- 04_Manufacturing Files

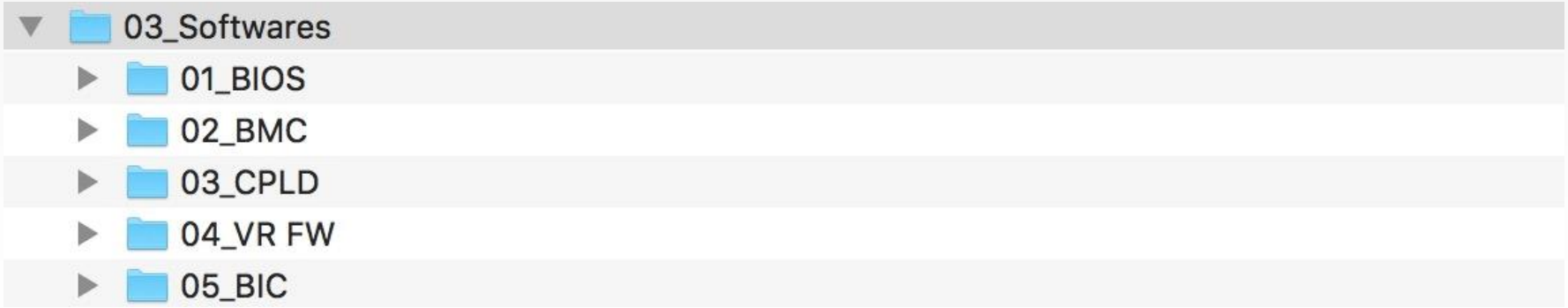


# Design Files Contribution-02_Mechanicals

- Mechanical files



# Design Files Contribution-03_Software



# OCP Tenets/Principles

- **Efficiency**
  - Modularized design for user to easily allocate the compute/storage/accelerator ratio according to different workload
- **Scalability**
  - Define a new 1S server card form factor for different modularized compute, storage or accelerator application
- **Openness**
  - Comply with ORv2 standard
- **Impact**
  - Provide an high efficiency & modularized design to extend the different possible applications

# Thanks!