



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
- Design Files Contribution
- 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



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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) Max Memory capacity of Twin Lakes: 128GB. 16GB*8 or 32GB*4
	 32 x PCIe Gen3 Lanes (CPU) (6) X4 to gold finger (2) X4 to high-speed storage drive M.2 connector on Twin Lakes. 20 x Gen3 over HSIO (PCH)
External I/O	• (1) X4 PCIe for Mellanox CX-4 LX mezzanine
Connections	 (1) USB 3.0 for DCI (1) PCIe X1 for VGA (1) USB 2.0 to baseboard (1) Serial connection(Tx/Rx only) I2C Management connection Power On/Off, Reset control
Storage	 (3) M.2 connectors. One for boot drive(PCIe or SATA). Two for high-speed storage drive(PCIe).

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Mechanical View-System Level



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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



CHNOLOGY

- Install server card <u>vertically</u> with new V-cubby compare to V1 Cubby chassis (horizontally)
- Twin Lakes



Enhancement From V1 to V2

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



Compatible Components List & User Guide

• "QCT Rackgo X OCP Debug Card with LCD" could be operated with Yosemite V2 sled



Design Files Contribution-01_Electricals

> 01 Full System Board Layout 01_Full System Board Layout 01 MB TL 02_Baseboard 03_Adapter board type 1 04_Adapter board type 2 05_Adapter board type 3 06 Power bar with e-fuse 07 Glacier Point 08_Crane Flat O2_Full System Schematic CAD 02_Full System Schematic CAD 01_MB_TL 02 Baseboard 03_Adapter board type 1 04_Adapter board type 2

- 05_Adapter board type 3
- 06_Power bar with e-fuse
- 🚞 07_Glacier Point
- 📄 08_Crane Flat

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Design Files Contribution-01_Electricals

O3_Full System Component BOM

- 03_Full System Component BOM
 - 01_MB_TL
 02 Baseboard
 - 03_Adapter board type 1
 - 04_Adapter board type 2
 - 05_Adapter board type 3
 - 06_Power bar with e-fuse
 - O7_Glacier Point
 - 08_Crane Flat

➤ 04_Manufacturing Files

- 04_Manufacturing Files
 - 01_PCB manufacturing files
 - 02_Board component placement map (.pdf)
 - 03_Stack Up

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Design Files Contribution-02_Mechanicals

➤ Mechanical files

02_Mechanicals

vcubby-with-yosv2-assy-20180620.zip



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Design Files Contribution-03_Software

▼	O3_Softwares
	▶ ■ 01_BIOS
	▶
	▶
	04_VR FW
	▶ 05_BIC



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 a high efficiency & modularized design to extend the different possible applications



Thanks!



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