

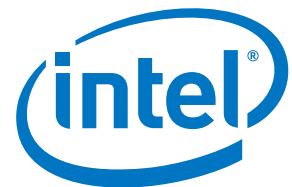
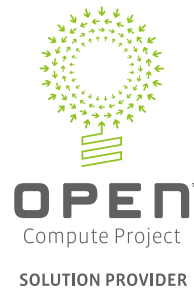
QCT Rack System Portfolio

Rackgo M | Rackgo X



**HOW CAN
HYPERSCALE
RACK DESIGN
BE INNOVATED
LIKE NEVER BEFORE?
ASK US.**

Quanta CLOUD TECHNOLOGY



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Technology.



QCT Rack Systems

The exponential growth in compute and storage requirement in datacenters has gone hand in hand with a strong increase in their power consumption over the past few years. In an attempt to keep operating budgets low, QCT has long been committed to providing ways of optimizing datacenter hardware architecture.

QCT rack systems offer revolutionary conventional system design for datacenters. While providing an unequalled level of power efficiency for the most demanding application, rack system modular architectures also offer datacenter the configuration flexibility and exceptional ease to upgrade.

With industry's best engineer team, QCT offers two completely different rack infrastructures in Rackgo X and Rackgo M. Each offers unique features which set benefit to your specific datacenter needs.

Rackgo[®] M



QCT Rackgo M based on the OCP Open Cloud Server (OCS) specifications contributed by Microsoft[®] is an innovative solution for running business applications that is built to integrate server, storage and networking functionality with technology exchange and heterogeneous management. QCT Rackgo M offers ease, density, availability, affordability and scalability that are central to the blade technology promise. QCT Rackgo M shares the same design concept of blade servers with integrated storage, all in an easy-to-use package that is designed specifically for the office and distributed enterprise environment.

Infrastructure Introduction

One Rackgo M chassis holds up to 24 compute and storage blades in any combination of your choice with integrated chassis management module in a mere 12U rack space. The chassis centralizes the high efficiency power suppliers (5+1 redundancy) for up to a pool of 8K watt power source, and utilizes large fan walls to reach the operational efficiency beyond the conventional servers currently available in the market.

A Multiple Option of Blades

QCT Rackgo M offers two different types of blades. MC510 compute blade supports the latest Intel[®] Xeon[®] processor E5-2600 v3 product family to provide unprecedented computing performance. With up to eight 2.5" hard disks (four hot-swap and four fixed), MC510 blade provides astonishing compute and storage integration that is so easy-to-use. MS100 storage blade supports up to ten 3.5" 6TB fixed (non hot-swap) hard disks with the highest storage density in an 1/2U architecture, ideal for Hadoop and distributed software applications.

Similarity to Blade Server

Furthermore, with both 40Gbps-ready (network) and 12G-SAS-ready (storage) tray backplane design, Rackgo M increases data transfer speed and efficiency across blade servers and networks. The shared single compute/storage tray backplane design and pre-configured rear cables function the same as the blade midplane to help reduce service complexity and allow enterprise businesses to run mission critical applications.

Network and Storage Cabling Via Backplane Architecture

QCT Rackgo M offers an unique passive backplane for simplicity and signal integrity risk reduction, and architectural flexibility for multiple network types such as 10Gbe/40Gbe Copper/Optical. For any enterprise service teams, no cable touch required helps reduce the TCO during production operations and on-site support.

MC510 Compute Blade

Open Cloud Server
(OCS) Inspired Platform



Compute Blade

MC510 compute sled supports the latest generation of Intel® Xeon® E5-2600 v3 family providing the unprecedented compute performance. With up to 8x 2.5" hard disks (4x hot-swappable, 4x fixed), MC510 provides astonishing compute and storage integration that is so easy-to-use.

Processor	(2) Intel® Xeon® processor E5-2600 v3 product family
Chipset	Intel® C610
Memory	(16) 2133 MHz DDR4 RDIMM/ LRDIMM
Storage	(4) 2.5" hot-plug, 4x 2.5" fixed SSD
Network	Option 1: Intel® 82599ES dual-port 10GbE SFP+ mezzanine card
Controller	Option 2: Mellanox® CX3-PRO dual-port 40GbE mezzanine card
Expansion Slot	Option 1: (1) x8 PCIe 3.0 QCT SAS mezzanine slot (1) x8 PCIe 3.0 QCT Network OCS mezzanine slot
Form Factor	Half-width blade

MS100 Storage Blade

High Density Half-Width
JBOD with up to 6TB
Storage Capacity



Storage Blade

MS100 storage sled supports up to 10x 3.5" 6TB fixed (non-swappable) hard drives to provide the highest storage density in 1/2U architecture, is ideal for Hadoop and distributed software application.

Controller Module	(1) SAS Interface Modules (SIM)
External I/O Ports	(2) 6Gb/s mini-SAS port
Storage	(10) 3.5" fixed SAS/SATA HDD/SSDs
Form Factor	Half-width blade

Rackgo X

Rackgo X, An Innovative Rack Solution Inspired by OCP

The cloud is changing at the speed of light. Chief Technology Officers working on datacenter build-out, say data growth, lack of space, and power and cooling issues are their biggest challenges. Conventional datacenter hardware cannot keep up with the growing density and large capacity requirements of datacenters that demand more efficient and simplified hardware design. QCT's pioneering ideas and engineering excellence help meet their needs.

QCT Rackgo X is a rack solution inspired by the Open Compute Project (OCP, www.opencompute.org) standard. Designed for low CAPEX and OPEX with simplicity, energy and cooling efficiency, high density, serviceability, scalability, and manageability, Rackgo X is ideally suited for cloud service providers or large enterprise datacenters looking for the highest level of efficiency.



Serviceability and Easy Maintenance

Designed for easy cold aisle operation, most service parts are tool-less and can be replaced in the front aisle. The Rackgo X boasts serviceability.

Compared to conventional design where each node equips its own power supply unit (PSU), the Rackgo X's centralized PSUs in the rack greatly reduce total PSUs. Its vanity-free design eliminates excessive components and reduces the total component number, resulting in minimized maintenance efforts and a better mean time between failures (MTBF).

Like the LEGO concept, Rackgo X provides modular units to be built on each other. QCT Rackgo X includes four server options, one microserver, one JBOD storage and QuantaMesh network switches as the basic building blocks. Customers can choose components to fit the specific needs of their datacenter applications.

Rackgo X F06A (4-Node)

High Density 2U4N System with Optimal IO Expansion



- Open Rack 1.0 Compatible
- Latest Generation Platform with DDR4
- Flexible OCP Network Option
- Cold Aisle Serviceability



Processor	Processor Type: Intel® Xeon® processor E5-2600 v3 product family Max. TDP Support: 135W Number of Processors: 2 Internal Interconnect: 6.4 / 7.2 / 8.0 GT/s L3 Cache: Up to 45MB
Chipset	Intel® C610
Memory	Memory Type: 2133 MHz DDR4 RDIMM/ LRDIMM Total Slots: 16 Capacity: Up to 256GB RDIMM/ 512GB LRDIMM Memory Size: 16GB, 8GB RDIMM/ 32GB LRDIMM
Network Controller	QCT OCP network mezzanine options* (Please refer to our Compatible Component List for more information) LOM: (1) Dedicated 1GbE management port per node
Storage Controller	Onboard: Intel® C610: (6) SATA 6Gb/s ports SATA RAID 0, 1, 10
Onboard Storage	(1) mSATA
Video	Integrated AST2300 with 8MB DDR3 video memory
Form Factor	(4) nodes in 2OU (Open Rack) Rackmount
Dimensions	W x H x D (inch): 21.1 x 3.5 x 34.6 W x H x D (mm): 536 x 89 x 880
Expansion Slot	Mezzanine Slot: (1) PCIe Gen3 x8 OCP network mezzanine Slot PCIe Slot: (2) PCIe Gen3 x8 LP MD-2
Storage	(2) 2.5" hot-plug per node
Front I/O	(1) USB port per node (1) OCP debug header per port (1) Dedicated Rj45 management port (1) Power button (1) Reset button
Fan	(6) hot-plug system fans
Operating Environment	Operating temperature: 5°C to 35°C (41°F to 95°F) Non-operating temperature: -40°C to 65°C (-40°F to 149°F) Operating relative humidity: 50% to 85%RH Non-operating relative humidity: 20% to 90%RH
Weight	45kg (99lb)

* Please refer to Compatible Component List at QCT website (<http://www.quantaqct.com/account/download>)

Rackgo X F06D (4-Node)

Revolutionary Converged Multi-node Infrastructure



- Industrial Leading 32-Bays Storage in 2U4N System
- Modular Design, with Full Potential in the Future.
- Latest Generation Platform with DDR4
- Open Rack 1.0 Compatible



Processor	Processor Type: Intel® Xeon® processor E5-2600 v3 product family Max. TDP Support: 135W or 145W* Number of Processors: 2 Internal Interconnect: 6.4 / 8.0 / 9.6 GT/s L3 Cache: Up to 45MB
Chipset	Intel® C610
Memory	Memory Type: 2133 MHz DDR4 RDIMM/ LRDIMM Total Slots: 16 Capacity: Up to 256GB RDIMM/ 512GB LRDIMM Memory Size: 16GB, 8GB RDIMM/ 32GB LRDIMM
Network Controller	QCT OCP network mezzanine options** (Please refer to our Compatible Component List for more information) LOM: (1) Dedicated 1GbE management port per node
Storage Controller	Optional Controller (more options refer to the CCL): QCT LSI® 3008 12Gb/s SAS mezzanine, RAID 0,1,10 QCT LSI® 3108 6Gb/s RAID mezzanine, RAID 0, 1, 5, 10. RAID 6 with additional RAID key
Onboard Storage	(1) mSATA
Video	Integrated AST2400 with 8MB DDR3 video memory
Form Factor	(4) nodes in 2OU (Open Rack) Rackmount
Dimensions	W x H x D (inch): 21.1 x 3.5 x 34.6 W x H x D (mm): 536 x 89 x 880
Expansion Slot	Mezzanine Slot: (1) PCIe Gen3 x8 OCP network mezzanine Slot PCIe Slot: (1) PCIe Gen3 x8 LP MD-2
Storage	(8) 2.5" hot-plug per node
Front I/O	(1) USB port per node (1) OCP debug header per port (1) Dedicated Rj45 management port (1) Power button (1) Reset button
Fan	(6) hot-plug system fans
Operating Environment	Operating temperature: 5°C to 35°C (41°F to 95°F) Non-operating temperature: -40°C to 65°C (-40°F to 149°F) Operating relative humidity: 50% to 85%RH Non-operating relative humidity: 20% to 90%RH

* Restriction applies. Please contact QCT Sales representative regarding 145W support

** Please refer to Compatible Component List at QCT website (<http://www.quantaqct.com/account/download>)

Rackgo X F03A (4-Node)



High Density 2U4N System for Maximum Performance

Processor	(2) Intel® Xeon® processor E5-2600, E5-2600 v2 product family
Chipset	Intel® C602
Memory	(16) 1866/1600/1333 MHz DDR3 RDIMM per node
Drive Bay	Option 1: (4) 2.5" hot-plug per node Option 2: (2) 2.5" hot-plug per node
Network Controller	QCT Mellanox® ConnectX-3 dual-port 10G SFP+ mezzanine card per node (optional)
Expansion Slot	Option 1: (1) x8 PCIe 3.0 LP MD-2 per node Option 2: (2) x8 PCIe 3.0 LP MD-2 per node
Form Factor	(4) nodes in 2OU (Open Rack) Rackmount

Rackgo X F03C (3-Node)



2U3N Design is Ideally for the Balance Workload and Flexible IO Options

Processor	(2) Intel® Xeon® processor E5-2600, E5-2600 v2 product family
Chipset	Intel® C602
Memory	(16) 1866/1600/1333 MHz DDR3 RDIMM per node
Drive Bay	(1) 3.5" fixed SATA per node
Network Controller	QCT Intel® 82599ES dual-port 10G SFP+ mezzanine card per node (optional)
Expansion Slot	(2) x8 PCIe 3.0 LP MD-2 per node
Form Factor	(3) nodes in 2OU (Open Rack) Rackmount

Rackgo X S1M (42-Node)



World's Densest 42-Node Microserver System

Processor	(1) Intel® Atom™ processor C2000 product family
Chipset	Intel® Atom™ processor C2000 SoC
Memory	(4) 1333/1067 MHz DDR3 ECC SODIMM per node
Storage	(1) mSATA connector per node
Network Controller	Intel® Atom™ processor C2000 SoC 2.5 per node
Form Factor	2OU (Open Rack) Rackmount

Rackgo X JBR



High Density 2U JBOD with Tool-less Tray Design

Controller Module	(2) SAS Interface Modules (SIM)
External I/O Ports	(2) 6Gb/s mini-SAS port per SIM
Storage	(28) 3.5" or 2.5" hot-plug SAS/SATA HDD/SSDs
Management Port	(1) OCP debug management port
Fan	(6) Hot-swappable dual roter fan modules per system
Form Factor	2OU (Open Rack) Rackmount

Rackgo X JBFA



High Density 2U JBOD with Tool-less Tray Design

Controller Module	(2) SAS Interface Modules (SIM)
External I/O Ports	(2) 12Gb/s mini-SAS port per SIM
Storage	(30) 3.5" and 2.5" SAS/SATA hot-pluggable HDDs
Management Port	(1) OCP debug management port
Fan	(6) Hot-swappable dual roter fan modules per system
Form Factor	2OU (Open Rack) Rackmount

Rack Specification

QCT Rackgo X offers three unique rack specifications for different usage model.

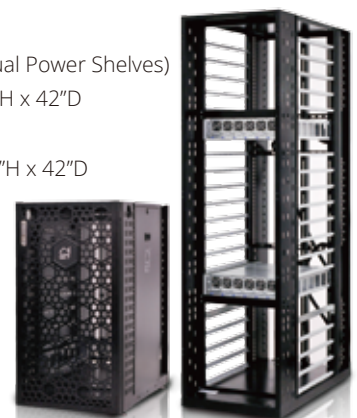
General Specification :

- Racks are based on OCP Open Rack 1.0 spec
- Each power shelf contain 5+1 redundant PSUs
- Each Power shelf provide total 12.5Kwatt with 2500Watt PSUs
- Support 230V 3-phase 50A power

Options :

- 43 OU (Single Power Shelf/ Dual Power Shelves)
Rack Dimension: 24" W x 86.6H x 42"D
- 20 OU (Single Power Shelf)
Rack Dimension: 24" W x 43.9"H x 42"D

(1 OU=1.89")



20 OU

43 OU

Optimized Rack Configurations

QCT provides a full line of services for datacenter customers, from testing systems, to delivering fully configured racks, to deploying racks on the customer's site. To help customers get started with the Rackgo X rack solution, QCT offers three rack architectures to suit different types of workloads. Each architecture has been fully tested and validated for optimized and balanced performance. Datacenter customers can choose from the three rack configurations or build their own racks. QCT Rackgo X helps datacenters achieve " best performance per watt, per dollar. "



X300

Compute Intensive

- 64 compute nodes
- 2 power zones
- 1052 kg



X500

Storage Intensive

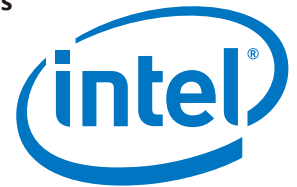
- 14 compute nodes
- 14 storage nodes
- 392 HDD/1.56PB
- 1 power zone
- 1108 kg



X700

Balanced workloads

- 24 compute nodes
- 12 storage nodes
- 336 HDD/1.34PB
- 1 power zone
- 1086 kg



Build a more secure Cloud with Intel® Technology.

About QCT

QCT (Quanta Cloud Technology) is a global datacenter solution provider extending the power of hyperscale datacenter design in standard and open SKUs to all datacenter customers.

Product lines include servers, storage, network switches, integrated rack systems and cloud solutions, all delivering hyperscale efficiency, scalability, reliability, manageability, serviceability and optimized performance for each workload.

QCT offers a full spectrum of datacenter products and services from engineering, integration and optimization to global supply chain support, all under one roof.

The parent of QCT is Quanta Computer Inc., a Fortune Global 500 technology engineering and manufacturing company.

<http://www.QuantaQCT.com>

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QCT authorized partner

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