



Today and Future of OCP Market in Japan

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What is Open Compute Project ?



Certification and Interoperability	Data Center
Hardware Management	HPC
Networking	Open Rack
Server	Storage
Telco	

OCP MEETS INDUSTRY

1

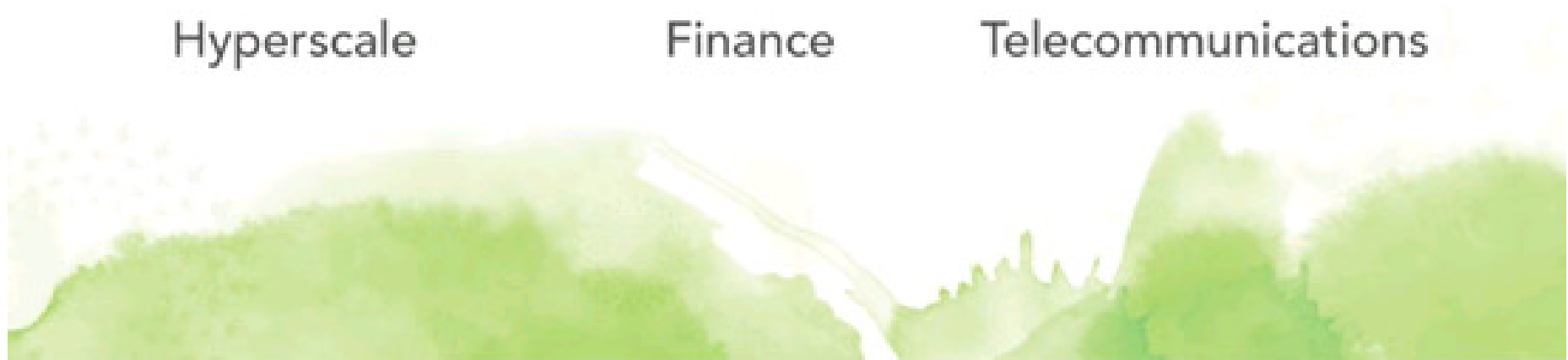
Hyperscale

2

Finance

3

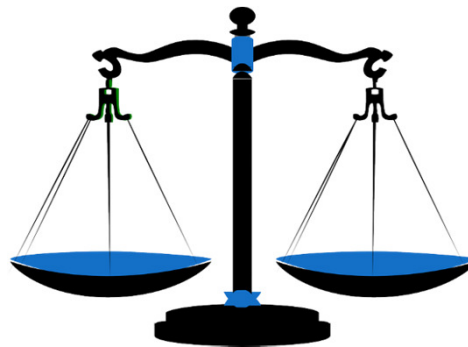
Telecommunications



- ✓ **Cost Effective**
- ✓ **Flexibility**
- ✓ **Scalability (Scale out)**
- ✓ **Building new system**
- ✓ **Reliability**
- ✓ **Availability**
- ✓ **Scalability (Scale UP)**
- ✓ **Replace current system**



OCP Target System



Enterprise System

Enterprise System > > > **OCP Target System**



Reliability

2nd Platform (Enterprise)



3rd Platform (OCP Target)



1. Japanese Culture

- To use New Technology(challenge) is Risk
- Require introduction example of other Company

2. Facility

- Open Rack is US Spec.
- Difficult to install OCP in Japanese Data Center.

3. Cost

- There are many Server manufacture in Japan.
Intense price competition
- Don't have enough volume

YAHOO!
JAPAN

<http://www.yahoo.co.jp>



Yahoo! JAPAN Implementation & Operation of OCP systems

Cloud Computing Days Tokyo
2016/10/25
Yahoo! JAPAN Site Operations

Yahoo! JAPAN

- Yahoo! JAPAN is one of the largest internet company in Japan
- Our 100+ services earn 62billion PV per month



Yahoo! JAPAN

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- 6+ DCs (1DC in the US)
- 100,000 servers



Growing Data Center

- Increasing number of servers
 - ◆ lots of models, vendors...
 - ◆ Increasing operation cost
- Unifying models and vendors?
 - ◆ Supply disruption risks

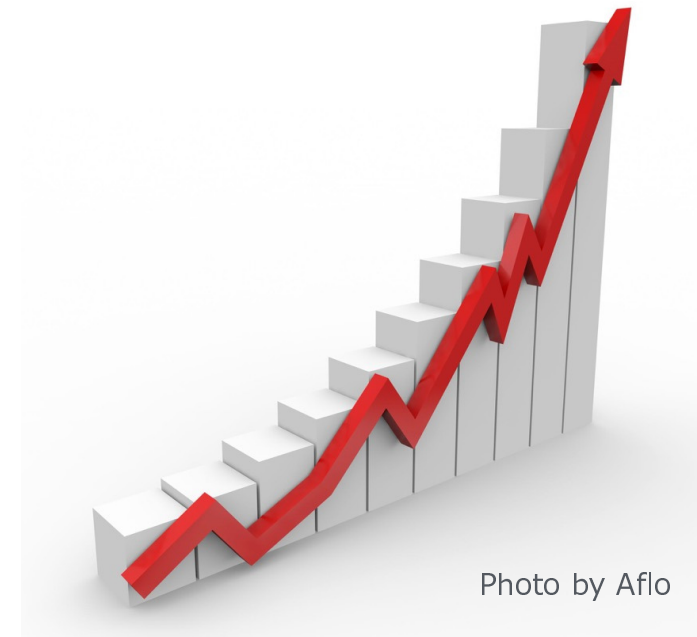


Photo by Aflo

Growing Data Center

P 12

- Increasing number of servers
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- Unifying models and vendors?
 - ◆ Supply disruption risks

We want **unified specification** hardware
from **multi-vendor**

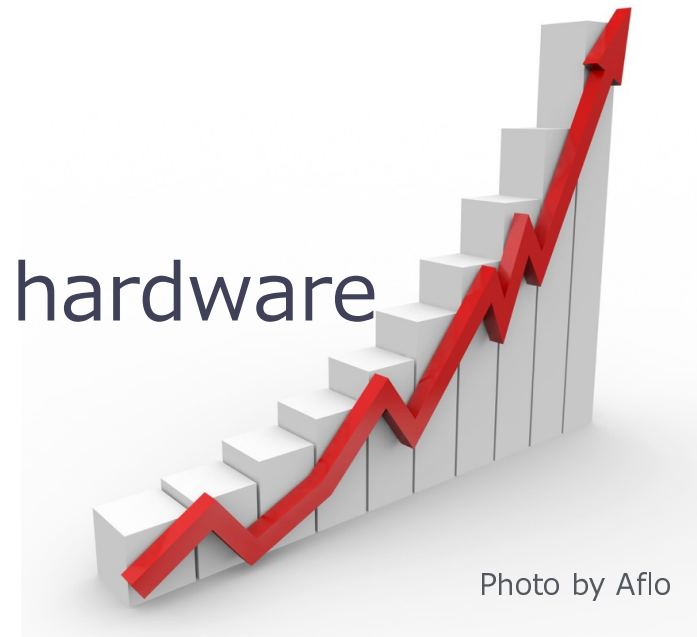


Photo by Aflo



OPEN
Compute Project

Why choose OCP?

- Open-source hardware design
- Designed for Hyperscale
 - ◆ Efficiency
 - ◆ Scale
 - ◆ Simplicity
 - ◆ Vanity Free
 - ◆ Easy to Operate
- Standing On the Shoulder of “Tech Giants”
 - ◆ Facebook, Google, Microsoft...

Yahoo! JAPAN & OCP

- 2014: Started to consider OCP
- Oct. 2015: Implemented OCP for OpenStack in YJ America
- Feb. 2016: Implemented OCP for Hadoop in YJ America
- Aug. 2016: Implemented OCP for OpenStack in JAPAN





Impressions

- Pros
 - ◆ High-maintainability
 - tool-less parts
 - replaceable in the cold aisle
 - ◆ Flexibility in selecting parts
- Cons
 - ◆ Long delivery time
 - ◆ Required high-volume order

**“80% of the service parts are
designed to be easily replaced in 3 minutes”**

We Tested



Photo by Aflo

Test Environment

P 21

- Compute node (3nodes / 20U model)
- One operator
- Measuring time of parts replacement
 - ◆ Disk, DIMM, CPU, NIC, Raid Card...
- Average time of 2 person



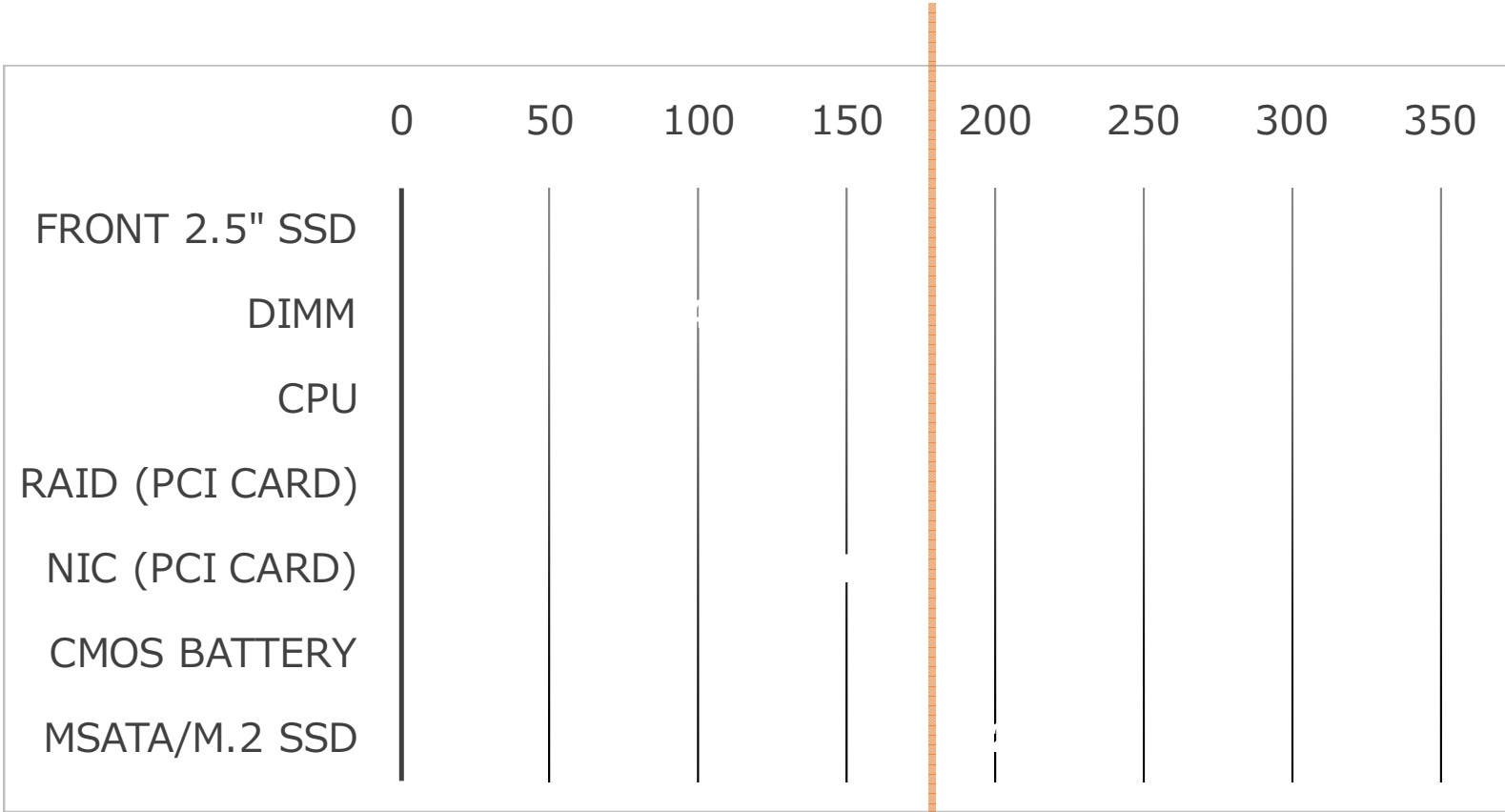


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Result

	0	50	100	150	200	250	300	350
FRONT 2.5" SSD								
DIMM								
CPU								
RAID (PCI CARD)								
NIC (PCI CARD)								
CMOS BATTERY								
MSATA/M.2 SSD								

Result



3minutes

Result

less

■ 2.5" SSD x6

■ DIMM x16

■ NIC x1

■ CMOS BATTERY x1

24

3minutes

■ CPU x2

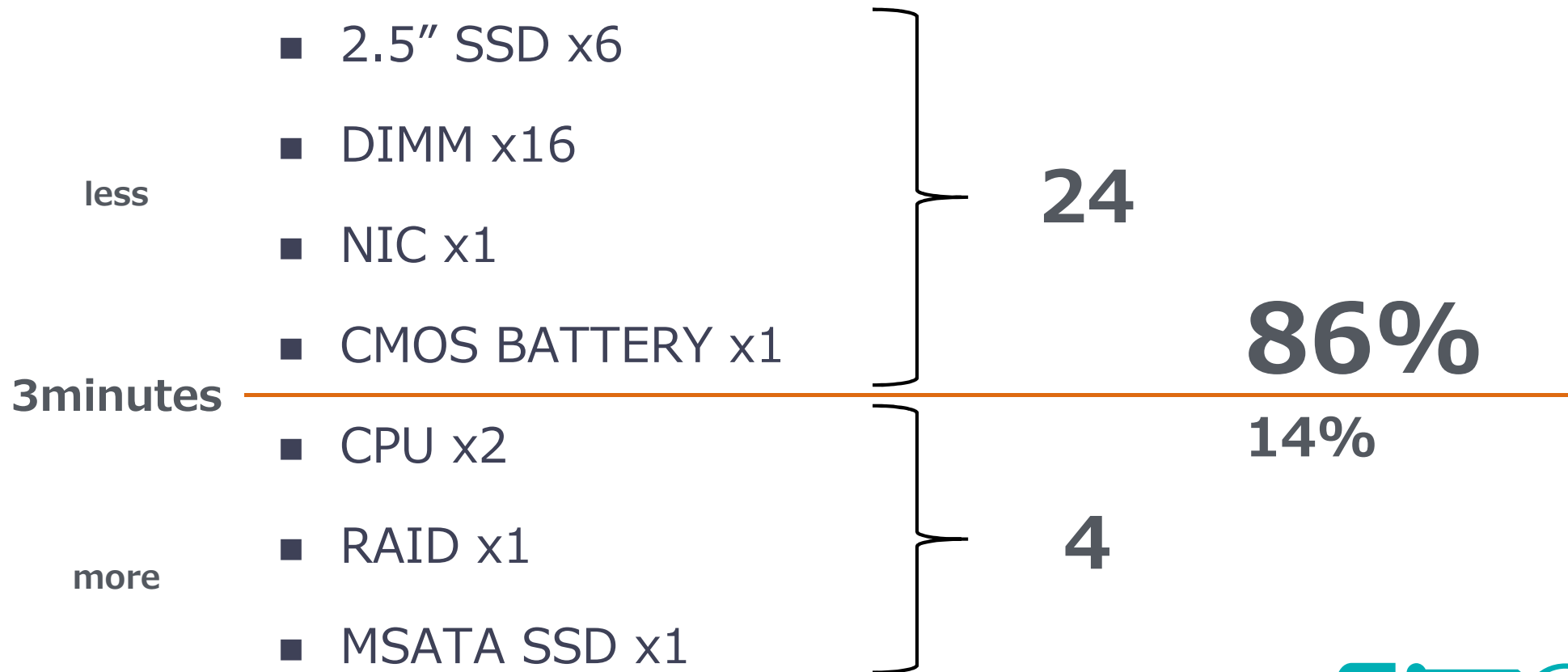
■ RAID x1

■ MSATA SSD x1

4

more

Result





Conclusion

- We implemented OCP systems in the US and Japan DCs
- Our purpose is to improve efficiency and to reduce costs
- We can reduce operating costs by using OCP
- What we expect from ODM
 - ◆ Quick delivery, Low cost, Small lot, Quality

- Benefits of open-source community is proportional to the number of users
 - ◆ Volume discount
 - ◆ Knowledge sharing
 - ◆ Problem finding

We want to increase OCP users in Japan



OPEN
Compute Project



Thank you.

Yahoo! JAPAN
Yusuke Sato

How to solve about facility?



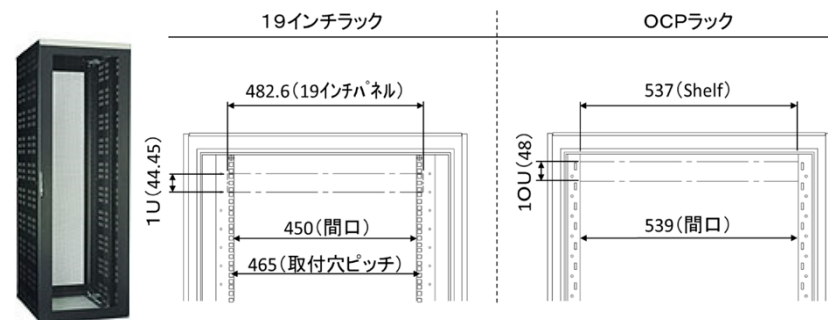
Open Rack

- Open Rack v2
- seismic qualification (planning)



Power Supply

- Single phase 200V, 3phase 200V, HVDC
- Battery backup unit (BBU) option



How to solve about cost ?

#1 : Create more orders (building eco-system)

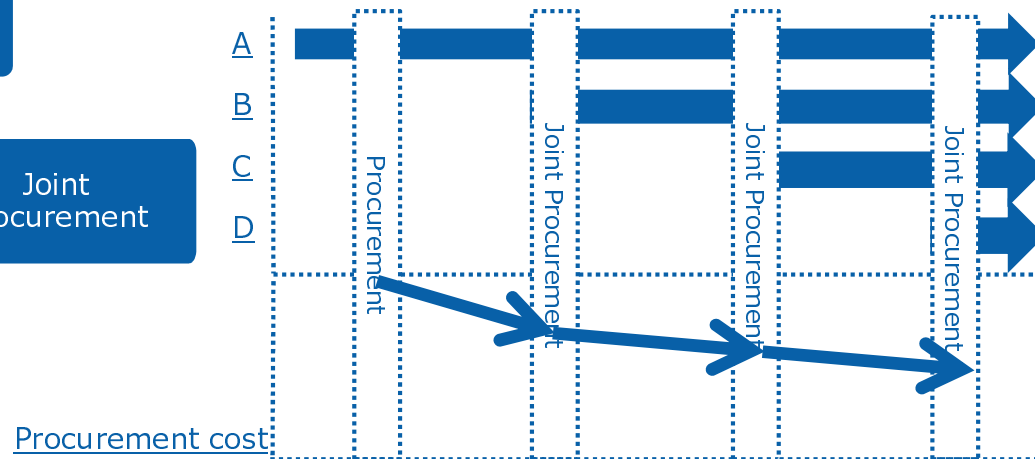
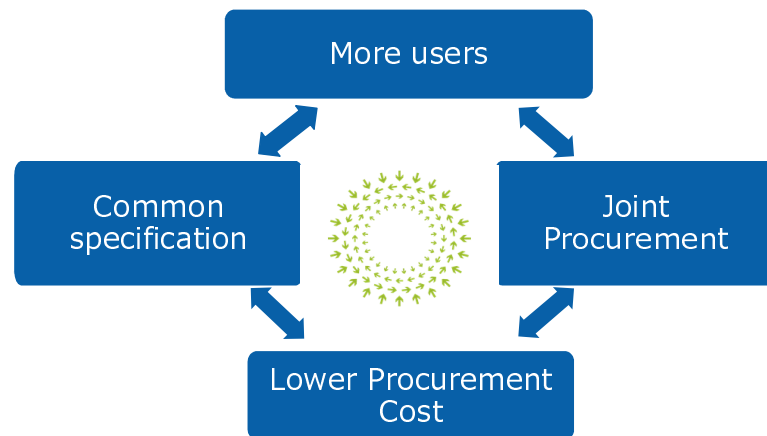
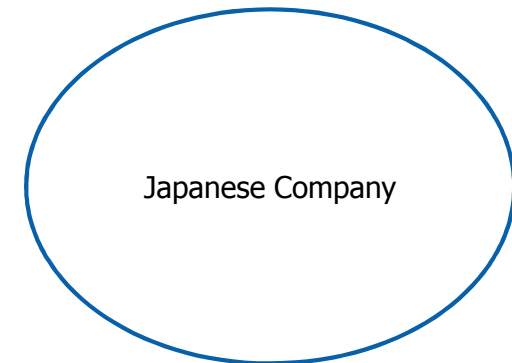
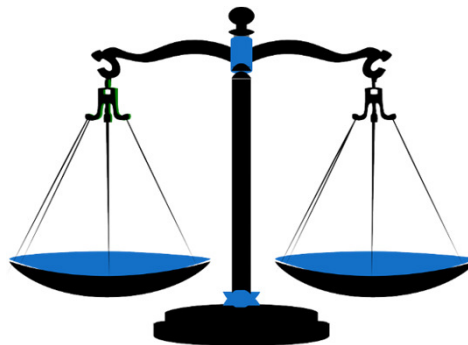


#2 : Open Hardware

OCP specifications MB, Chassis	Disk	Memory	Full assembly of server	Rack cabinet assembly of nodes into racks
ODMs	Disk vendor	Memory vendor	ODMs	ODMs/SIer



How to solve about cost ?



Start Using OCP Tomorrow !!

CTC DataCenter



1

OCP in CTC DC Tour !

OCP OpenRack, OCP server, storage demo

2

POC Service !

Free remote NW access, **No Charge** for using OCP gears!

3

Easy Installing !

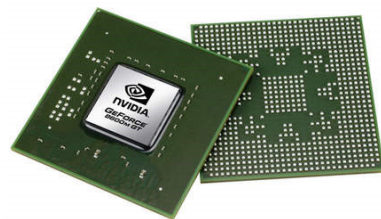
Free service for installing OCP OpenRack in DC,
No charge of cost to change PDU in the machine room,
5 Free remote NW access accounts!!



Let's Try to Challenge Joint procurement



New Technology



OpenPOWER

Together with US



▼ *Challenging Tomorrow's Changes*