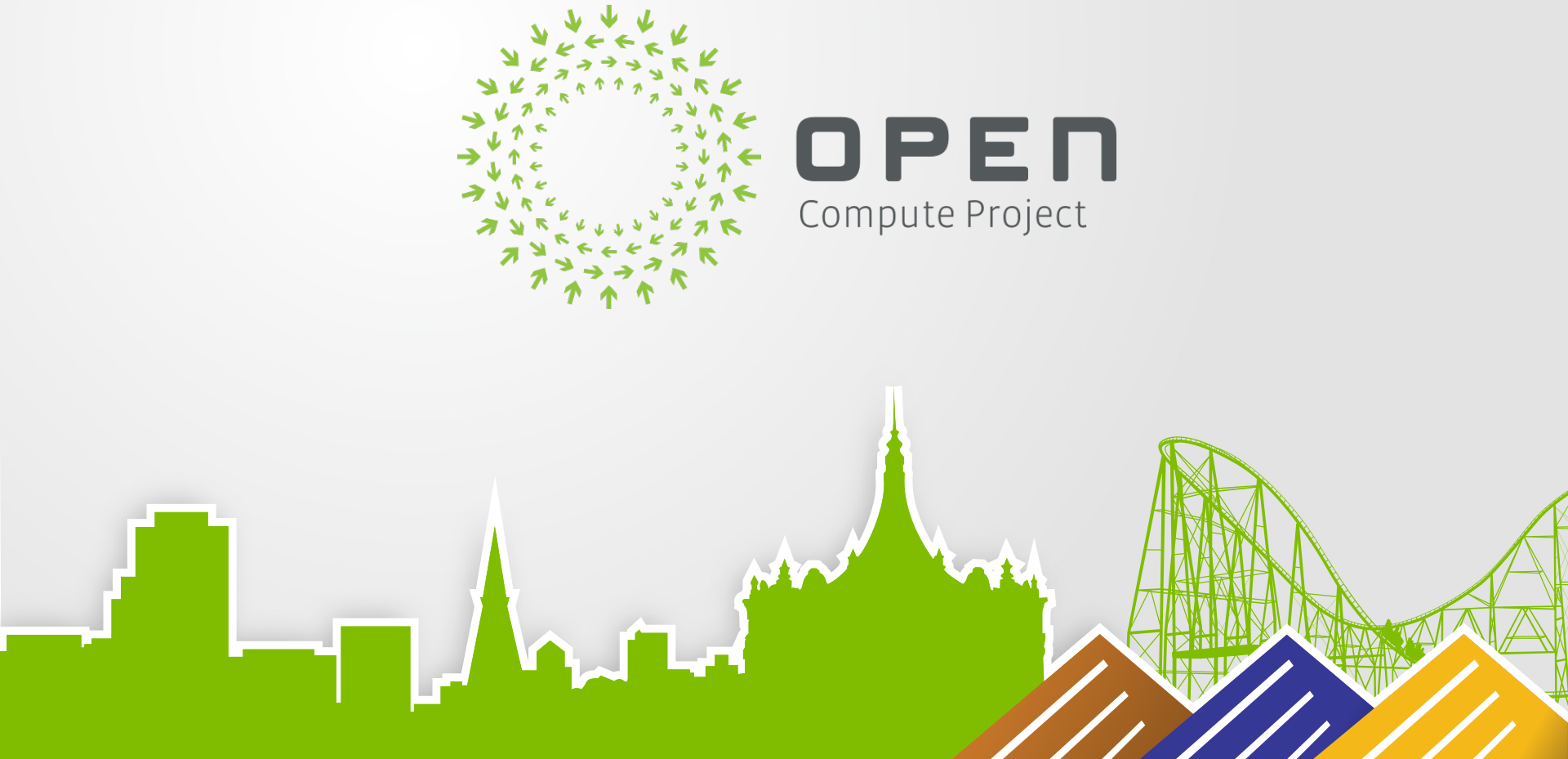
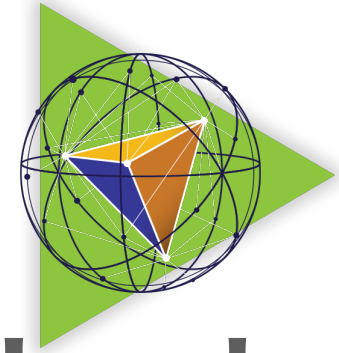

OPEN
Compute Project



Implementing an OCP Strategy

How OCP has changed the way we run our DCs

Masaharu Miyamoto
YJ America
Senior Server Engineer

OPEN HARDWARE. OPEN SOFTWARE. OPEN FUTURE.

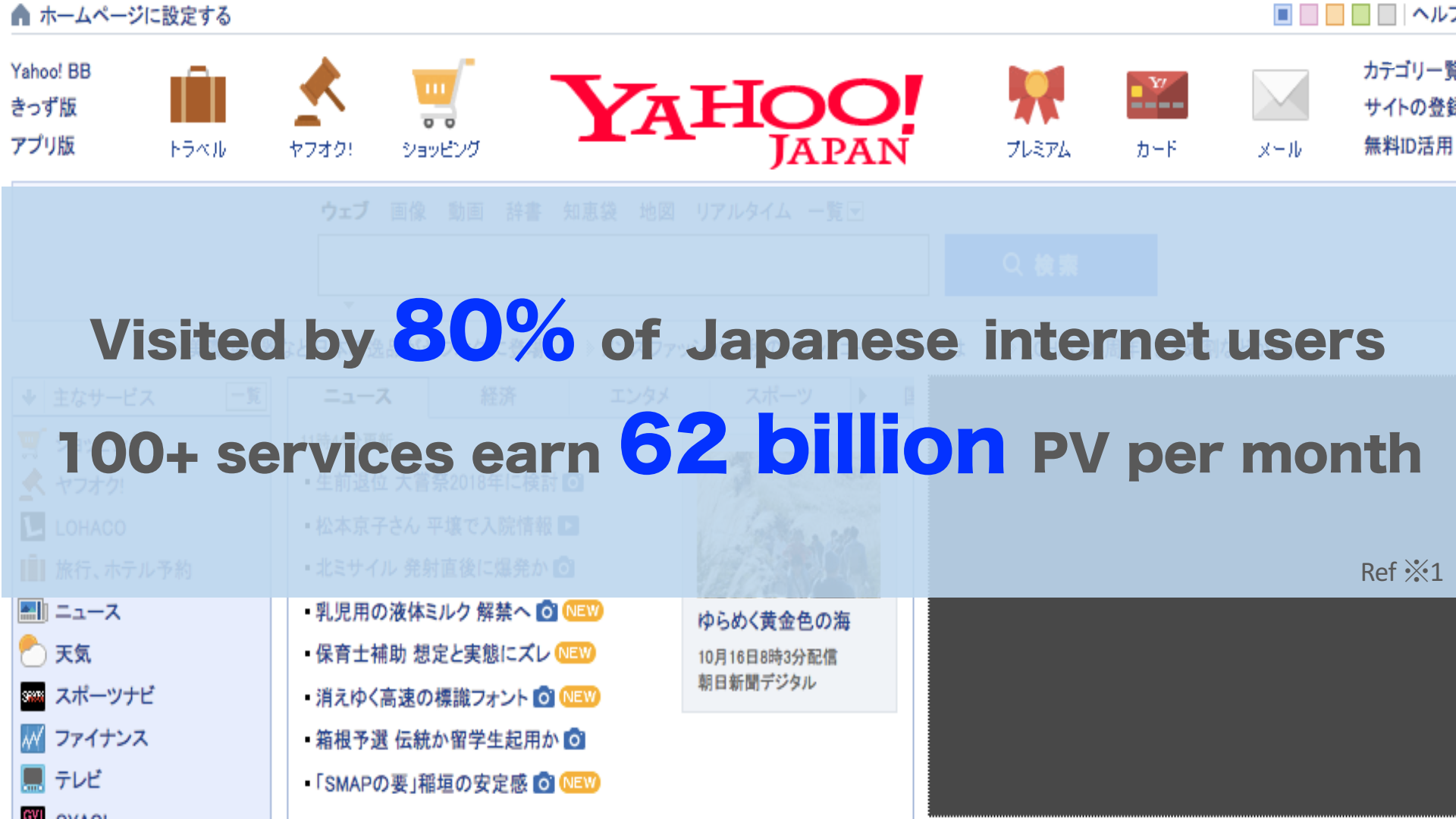
OPEN Compute Project

Who we are...

2014:
- Established Yahoo! JAPAN American subsidiary

2015:
- Operating Datacenter in Washington

Current Organization:
- CA 3 employees (Business + Big data)
- WA 5 employees (Infrastructure + Admin)



Visited by **80%** of Japanese internet users

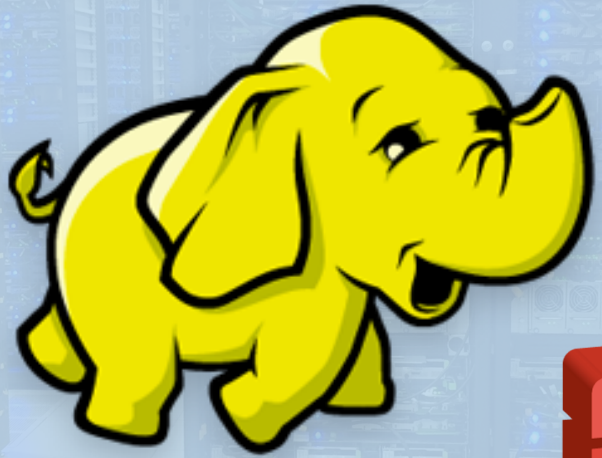
100+ services earn **62 billion** PV per month

Ref ※1


ホームページに設定する
Yahoo! BB
きっず版
アプリ版
トラベル
ヤフオク!
ショッピング
YAHOO! JAPAN
プレミアム
カード
メール
カテゴリー
サイトの登
無料ID活用
6+ DCs (1DC in the US)
100,000 servers
ニュース
天気
スポーツナビ
ファイナンス
テレビ
乳児用の液体ミルク 解禁へ NEW
保育士補助 想定と実態にズレ NEW
消えゆく高速の標識フォント NEW
箱根予選 伝統か留学生起用か
「SMAPの要」稲垣の安定感 NEW
ゆらめく黄金色の海
10月16日8時3分配信
朝日新聞デジタル

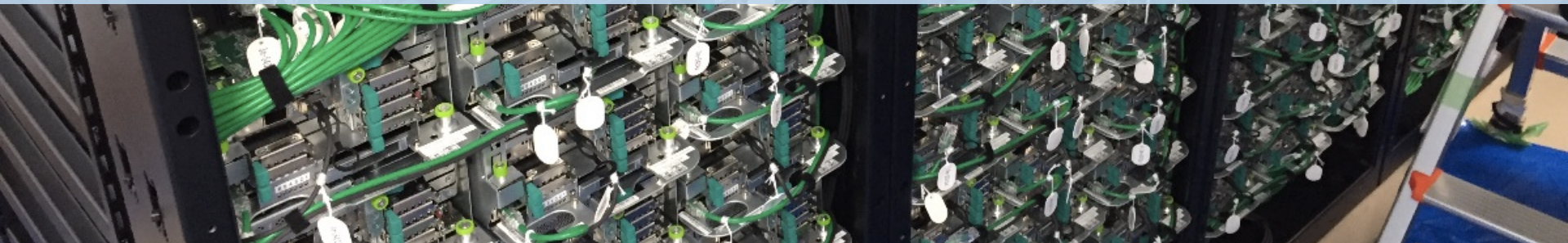

Us

Us




JAPAN

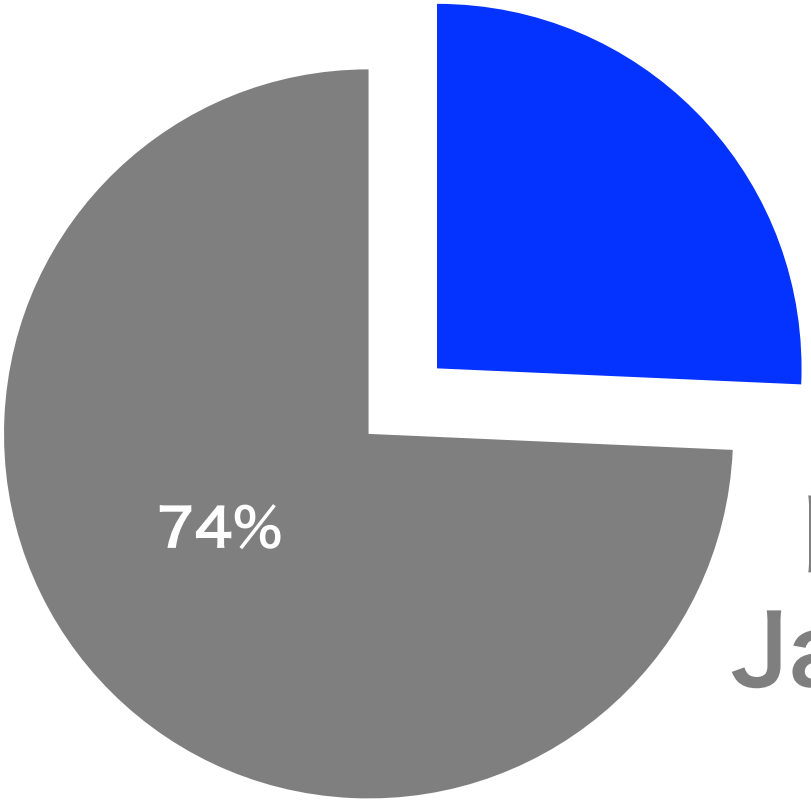
JAPAN



Why we chose US

Electricity

Yahoo! JAPAN Internal DC Total Cost

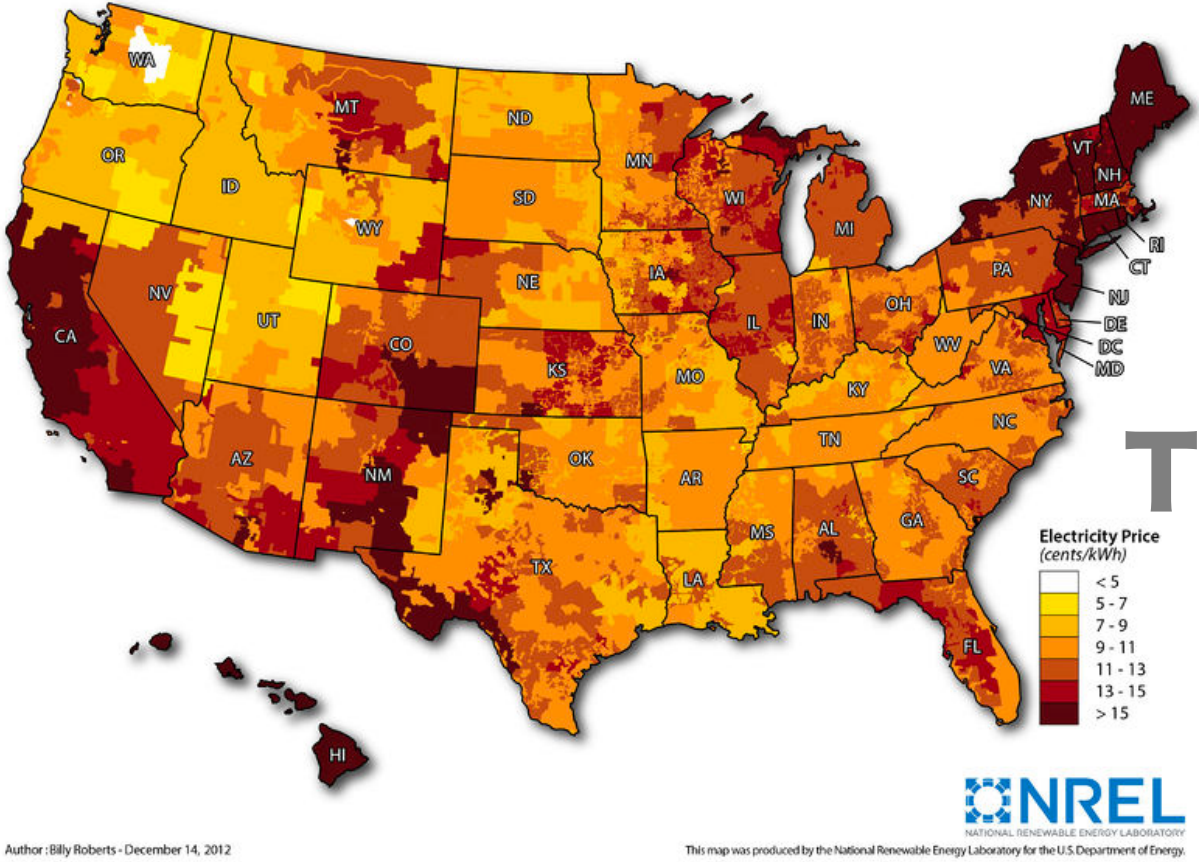


Electricity Cost

26%

Electricity rates in Japan are increasing

Electricity Prices in the US

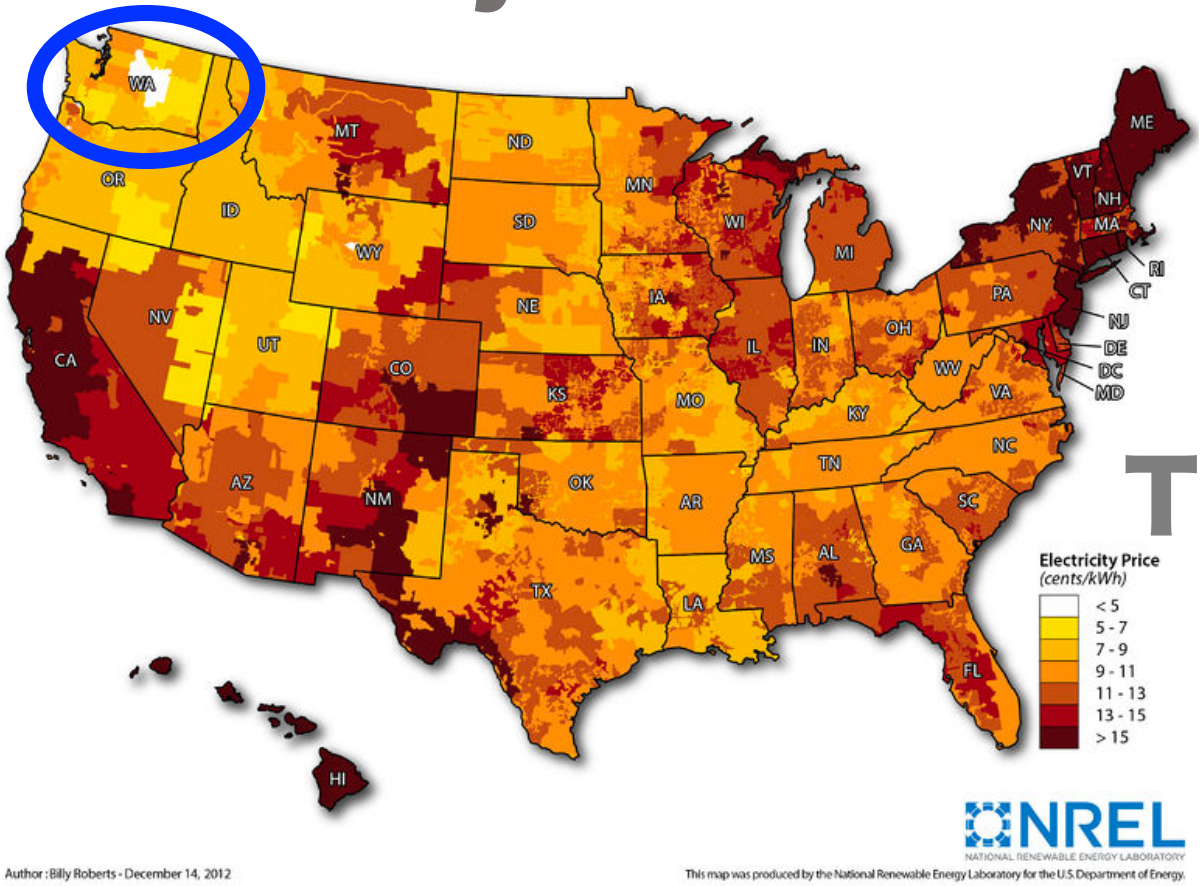


Total DC Cost

↓ 22%

Ref ※2

Electricity Prices in the US



Total DC Cost

↓ 22%

Ref ※1

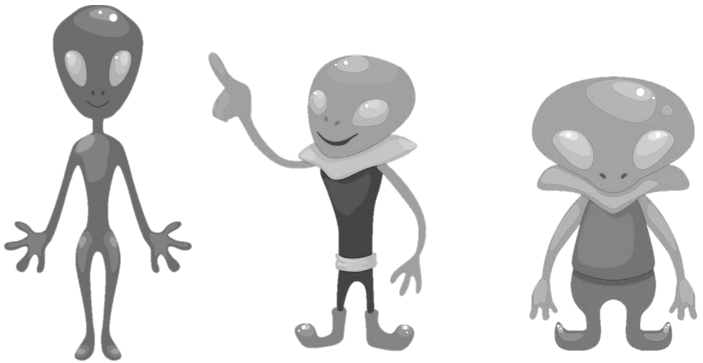
Finding Our Architecture Design


Many choices
...almost too many

YJ America
Architecture Design

Engineers

3



Infrastructure is Growing

Infrastructure
is Growing

No Time to Waste

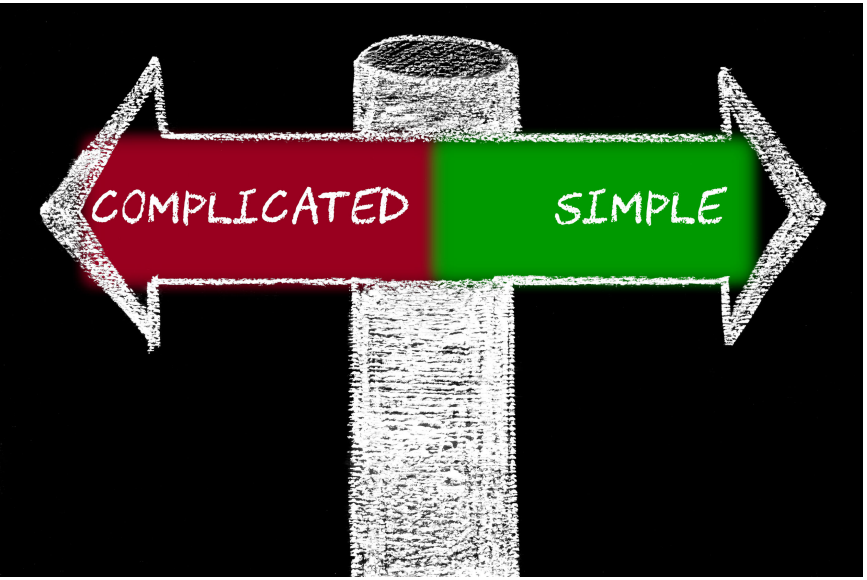
Immature

Immature

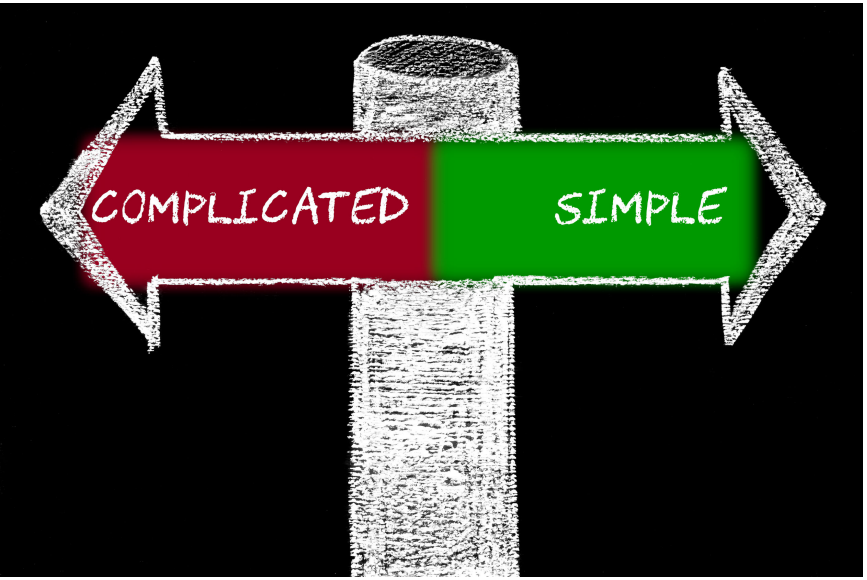
Difficult

Starting From Zero

Hyperscale Architecture



Scale out model is simple



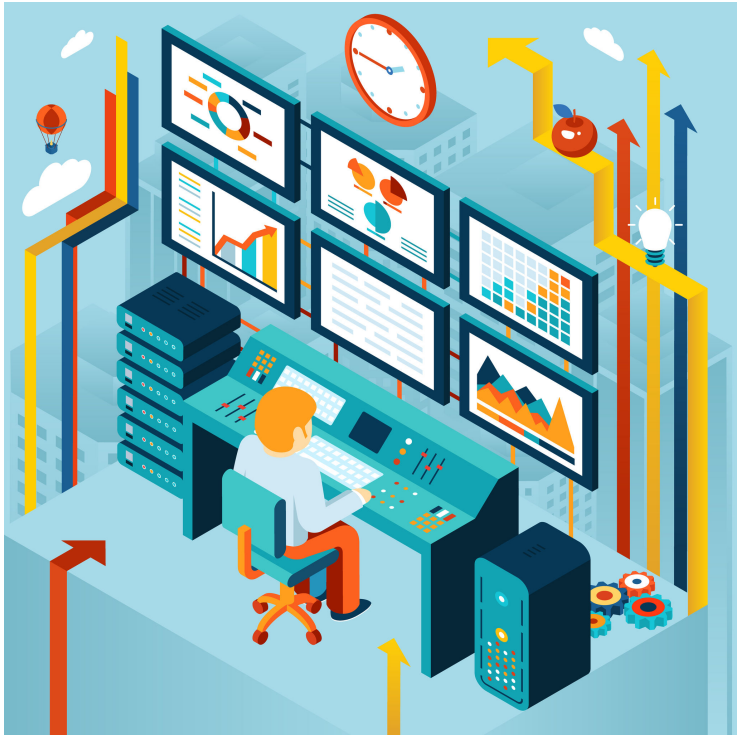
Scale out model
is simple

Relatively
easy to introduce

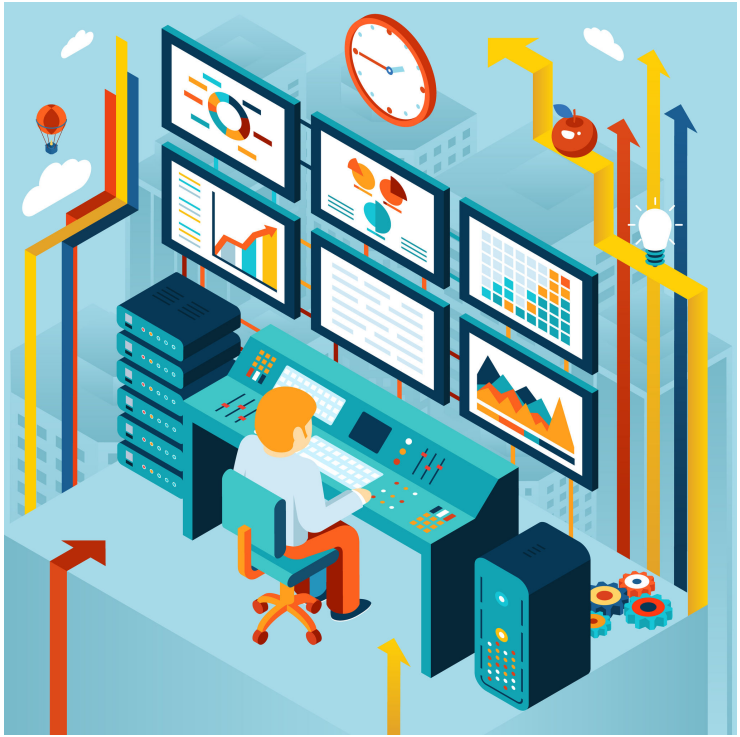
Focus on promoting their projects

Focus on promoting their projects

Key people are willing to discuss with you



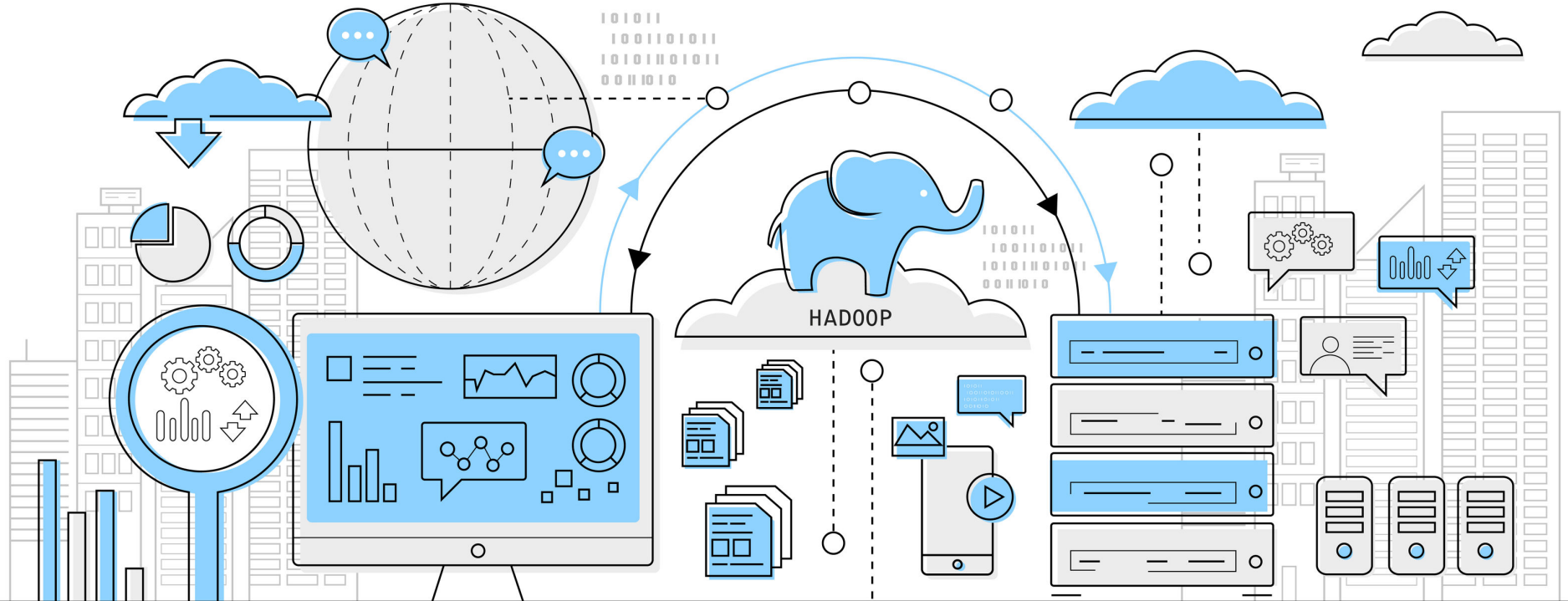
Other Hyperscale DC have actual experience



Other Hyperscale DC
have actual experience

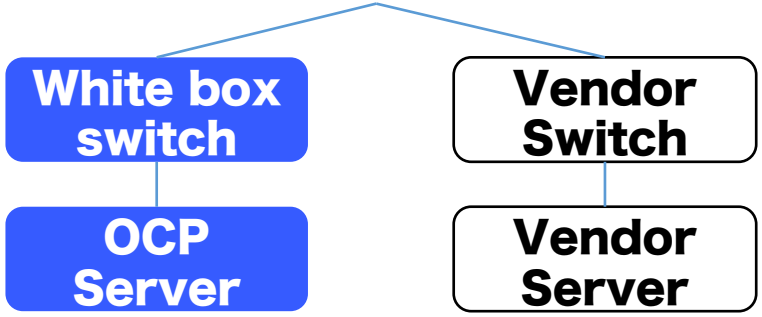
**Potential Issues are
already Resolved**

Case:
Hadoop Infrastructure Design




One of the Largest
Scale Servers in the World
Available to the Public

Hadoop System



OCP

31 Racks

Conventional

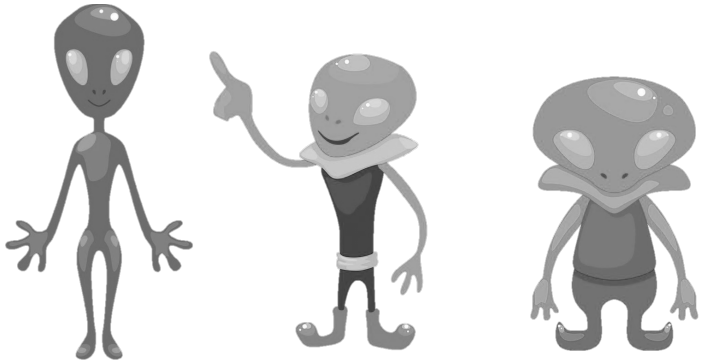
32 Racks

Introduction of each server model

HW ISSUES:

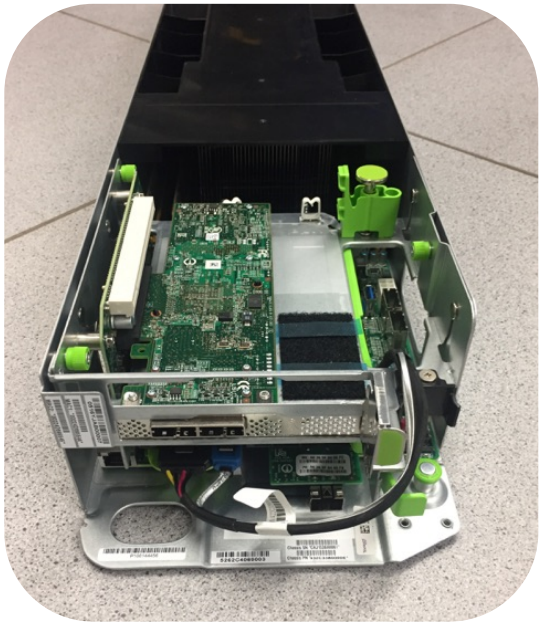
- **OCP** < Conventional

Resolving Issues



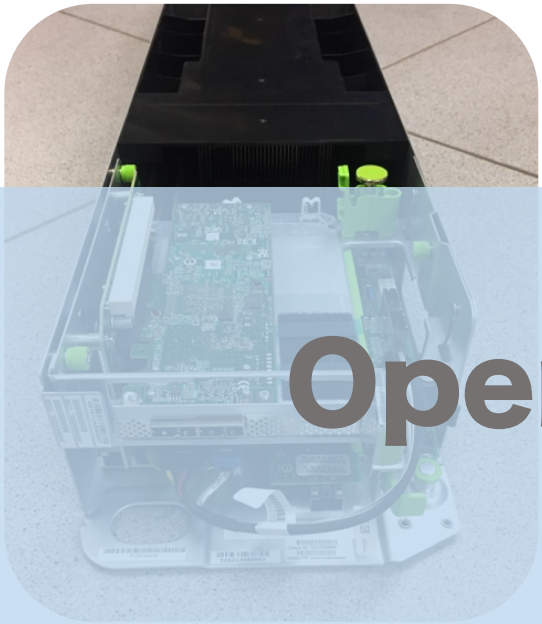
3 Engineers

Resource Problem



Frontend Maintenance

No Power Cable

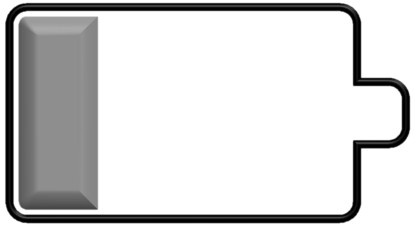


Frontend Maintenance

Operation Error

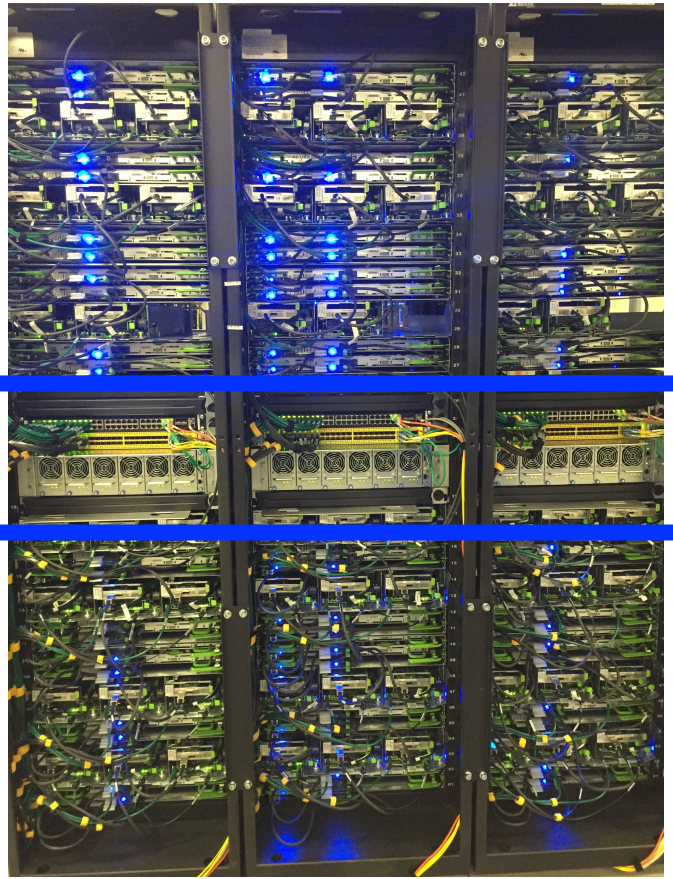
0

No Power Cable



Older Datacenter

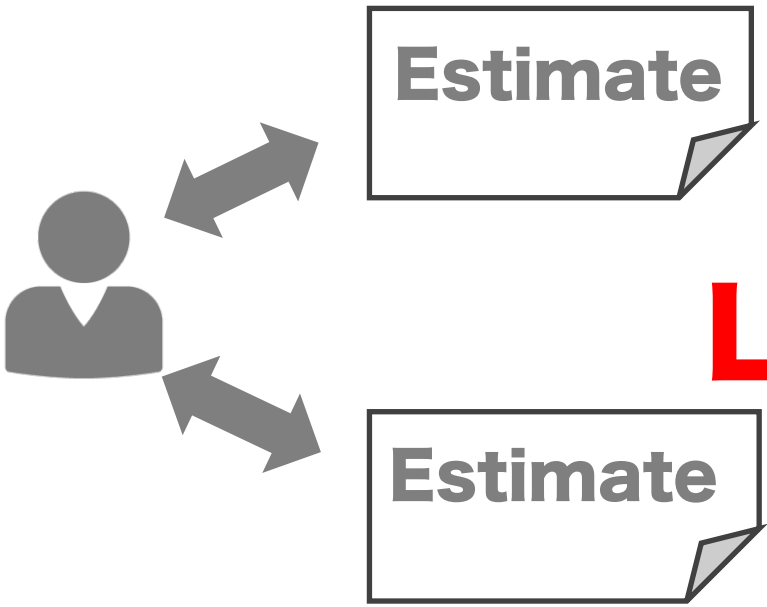
Limited Power



Centralized Power Management

High Efficiency Power Supply

Company A

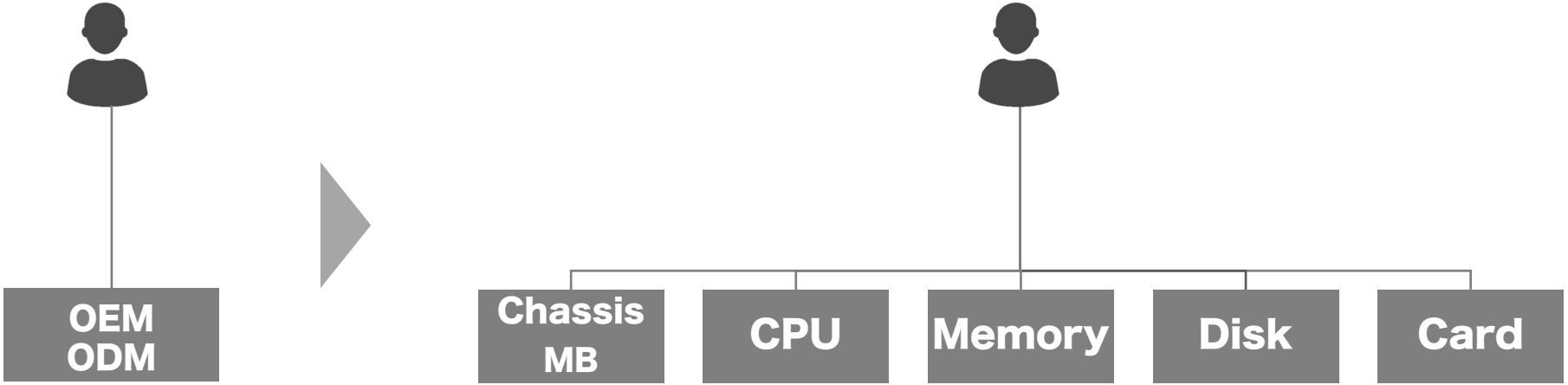


Few Vendor Contact

Less Competition

Company B

Change of Procurement



- More choices at **Lower Costs**
- Stock is all **Common Parts**
- **Avoid Disruption** risk

Cons

Prolonged test period

Long Delivery time

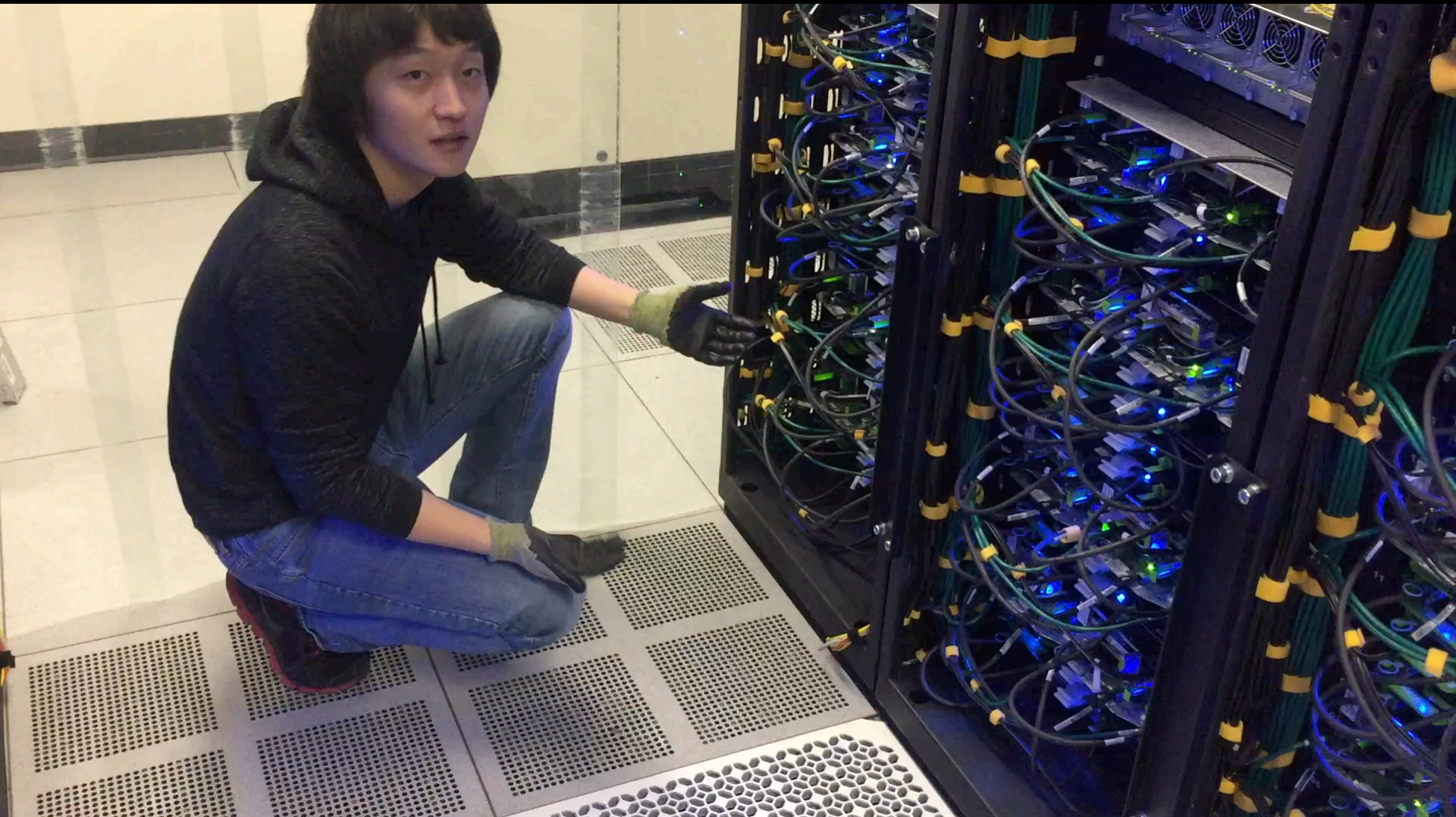
Required **High Volume** order

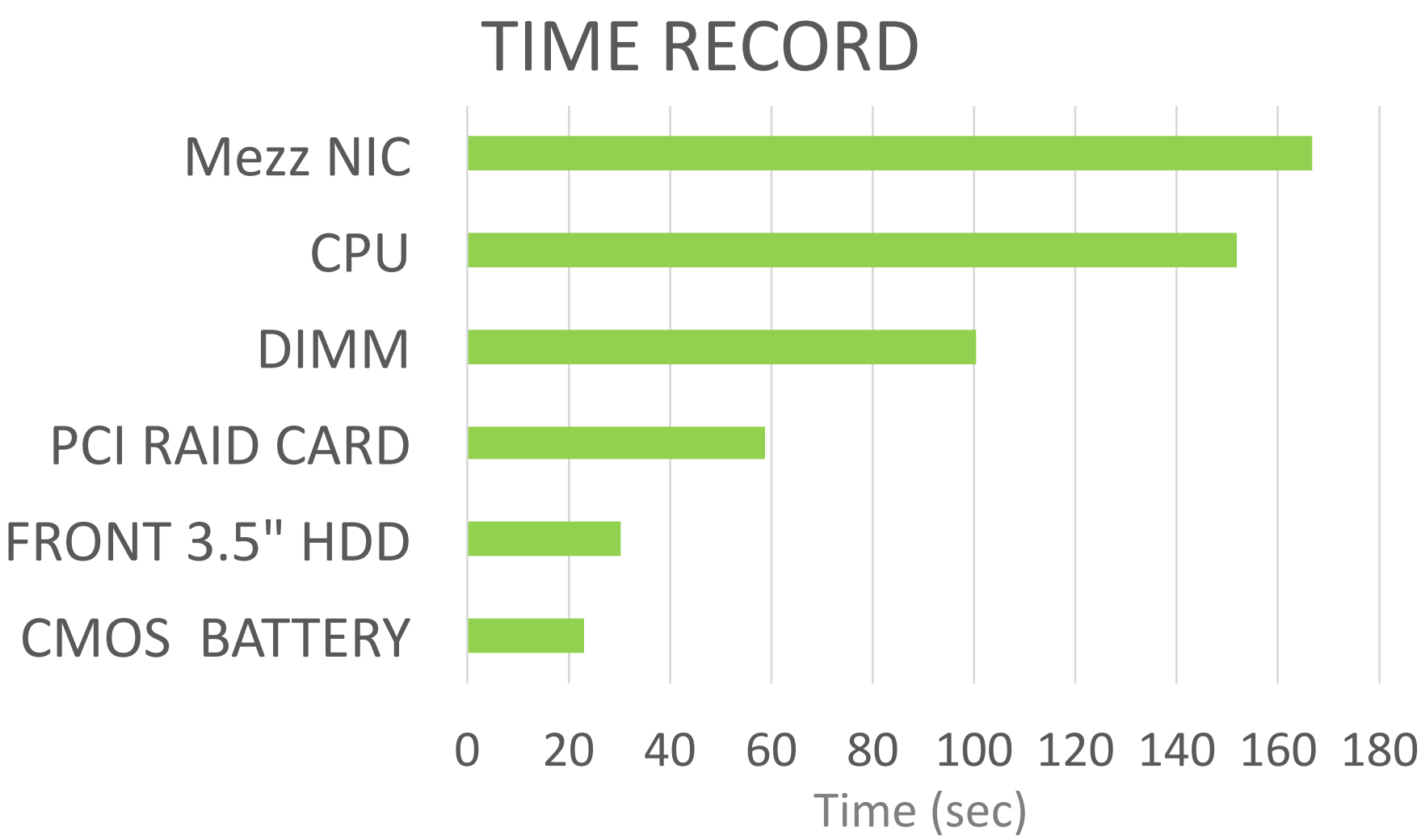
“80% of the service parts are designed to be easily replaced in 3 minutes”

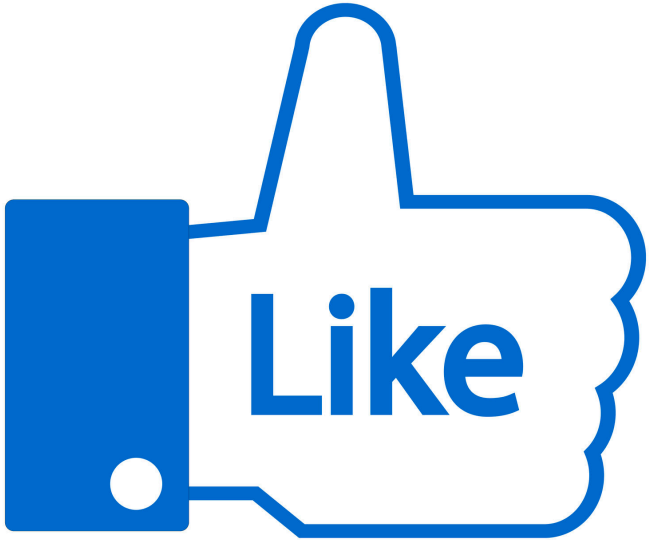

We Tested

Test Environment

- Compute node (3nodes / 2OU model)
- One operator
- Parts replaced:
  - Disk, DIMM, CPU, NIC, Raid Card, CMOS
- Average time of 2 person




TIME RECORD
Mezz NIC
CPU
DIMM
PCI RAID CARD
FRONT 3.5" HDD
CMOS BATTERY
0
20
40
60
80
100
120
140
160
180
Time (sec)


Like

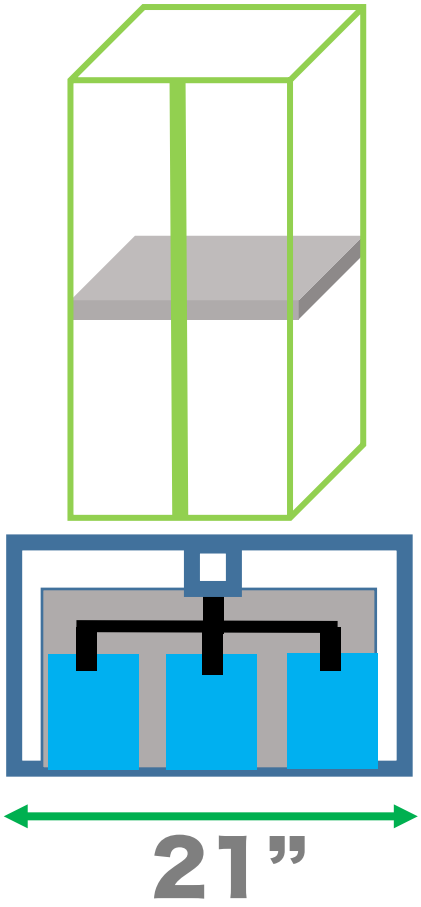
Our Approach

Our Challenge

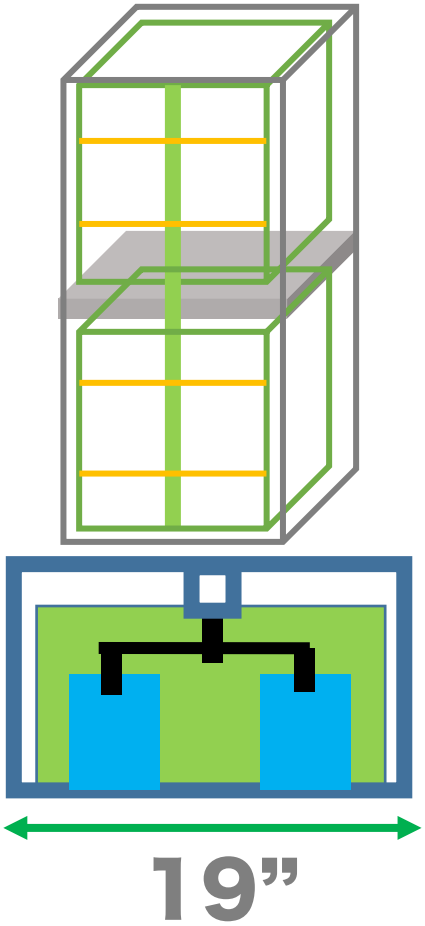
What if I want to use OCP, but I only have 19” racks ?

So, we have built this!

21” OpenRack



19” EIA Rack



Rail
Bracket
+
Bus bar

2 Sled Tray

We'll be working with Community

ITOCHU Techno-Solutions Corporation
伊藤忠テクノソリューションズ株式会社

We welcome your feedback and collaboration!

ocp@ctc-america.com

Conclusion

You can **Focus On** non-hardware issues

Able to **Reduce** maintenance time

Working with OCP community towards the same goal is very **Exciting**

Community is **Eager** to support users

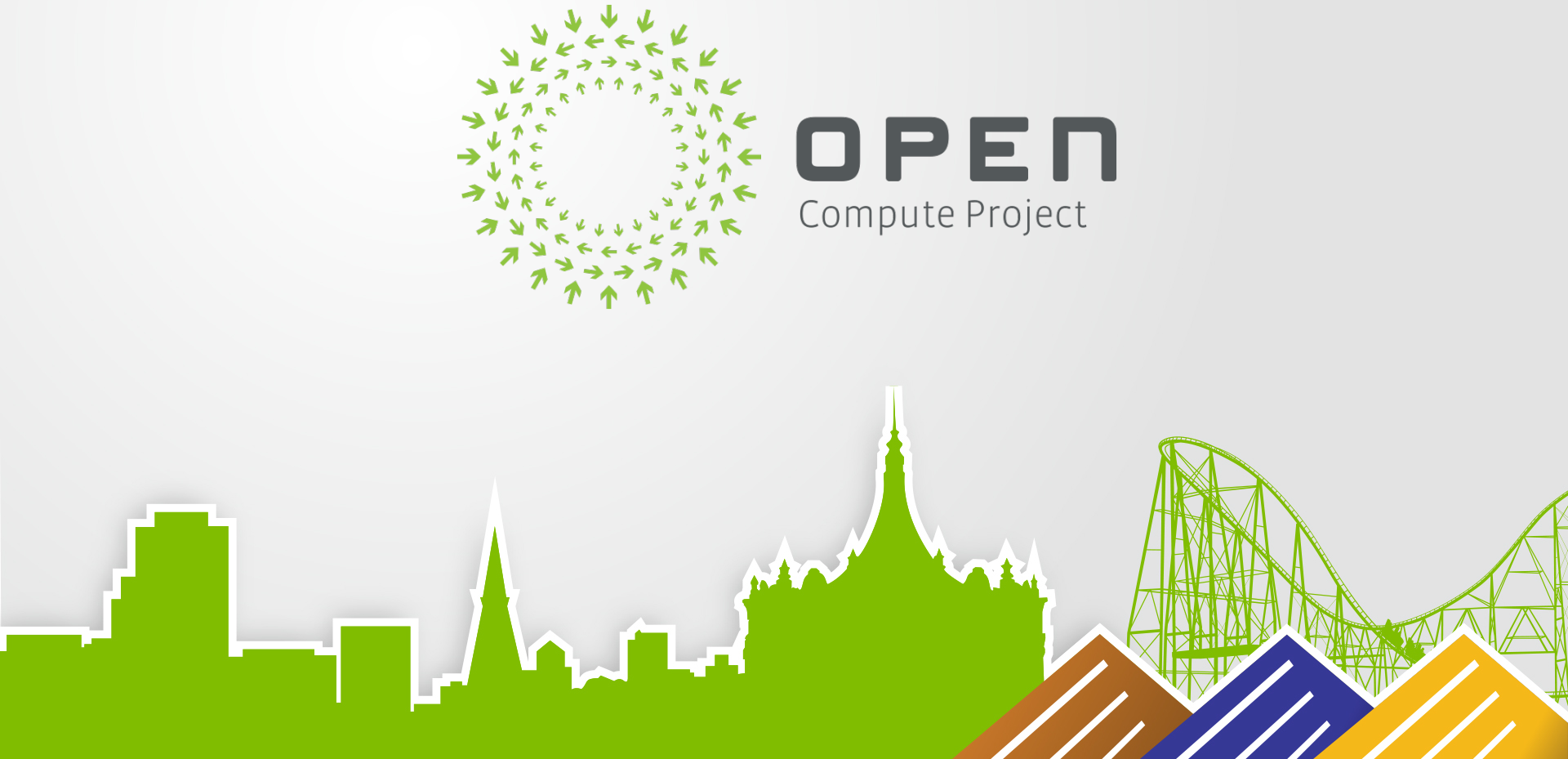
Conclusion

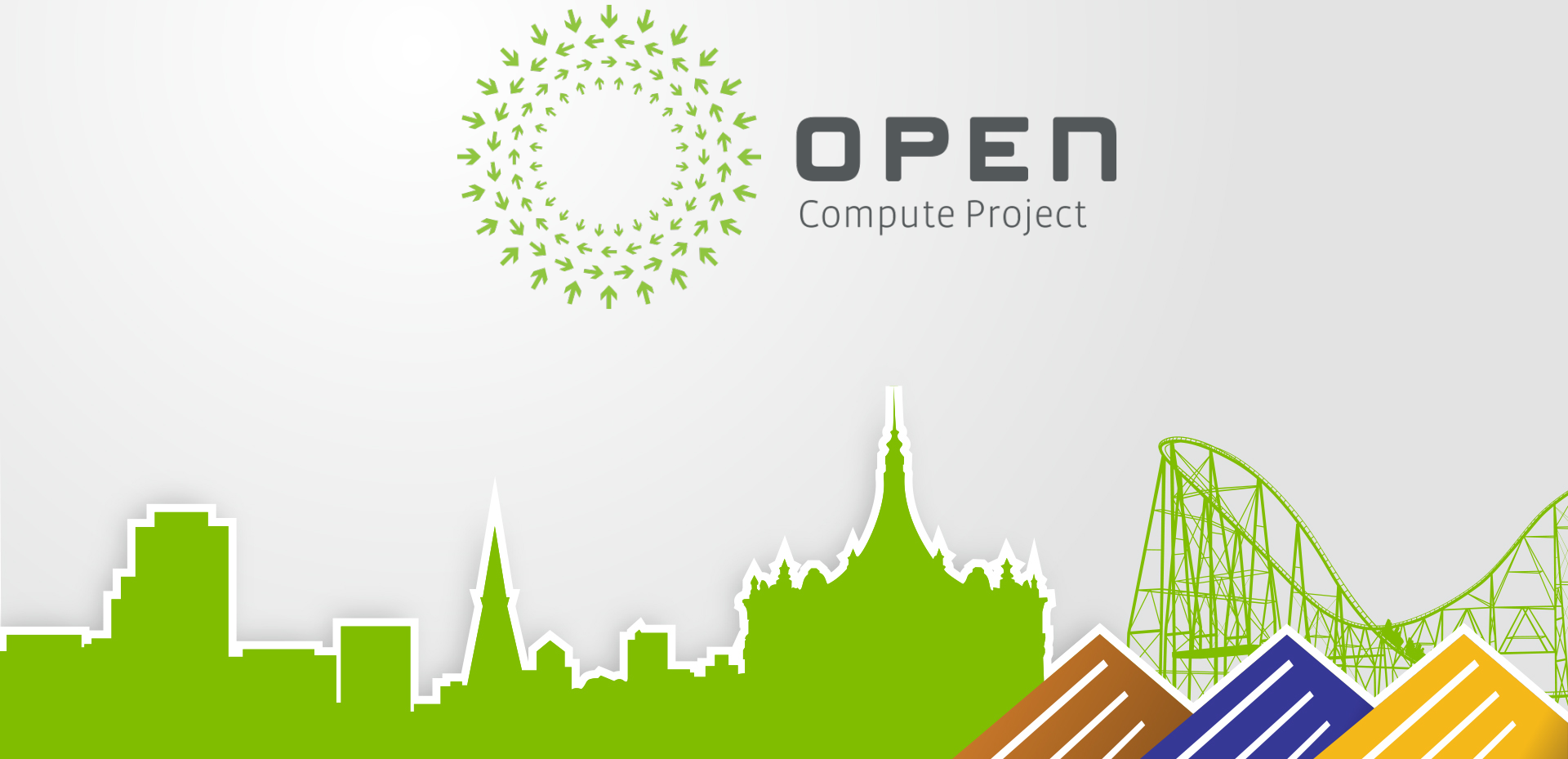
You can **F**ocus **O**n non-hardware issues

Able to **R**educe maintenance time

Working with OCP community towards the same goal is very **E**xciting

Community is **E**ager to support users


OPEN
Compute Project


OPEN
Compute Project