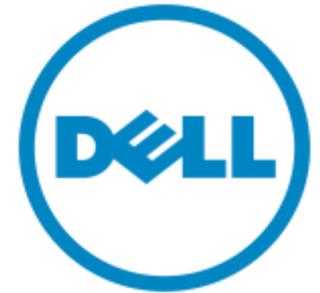


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# The Best Value Solution

## High Performance Computing (HPC)



Ngai Wai Chung  
Senior Manager – Hyper Scale Computing

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# Our design philosophy sets us apart

**OPEN**

- Industry standard solutions
- No technology lock-in

**CAPABLE**

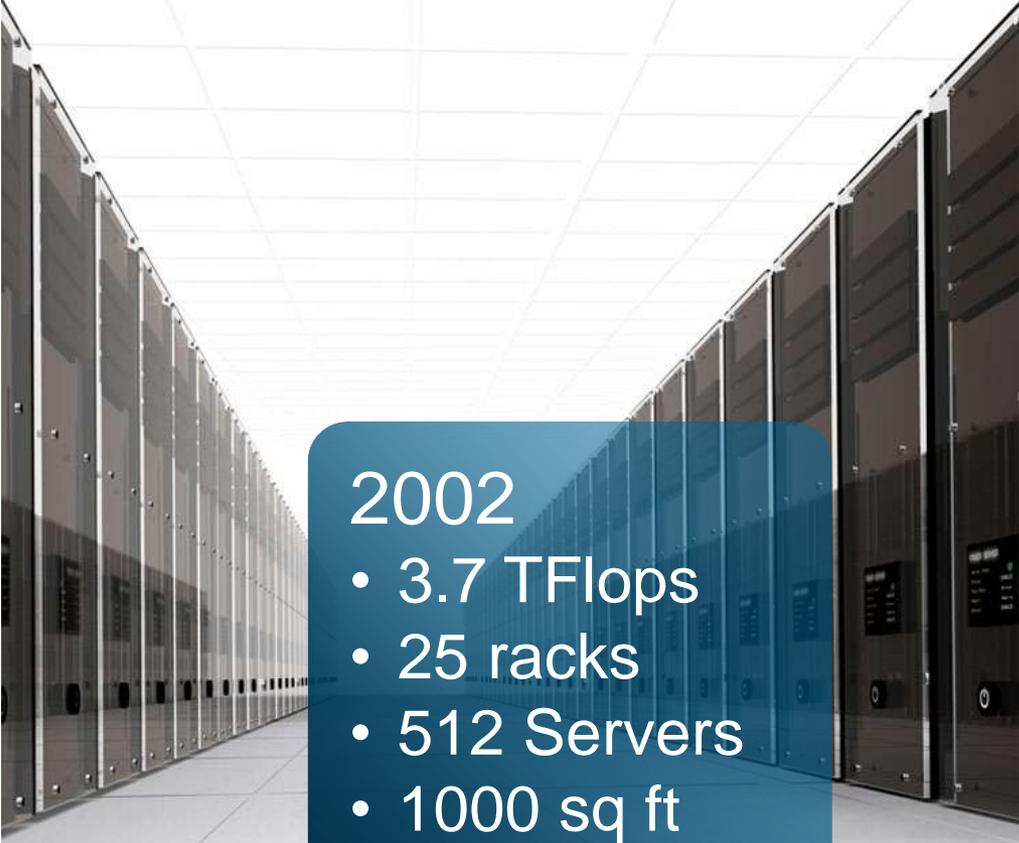
- Innovative products
- Purposeful design

**AFFORDABLE**

- Designed for low TCO
- Sustainable computing



# ... Where would you rather be? know your proximity to optimized



2002

- 3.7 TFlops
- 25 racks
- 512 Servers
- 1000 sq ft
- 128 kW



2010

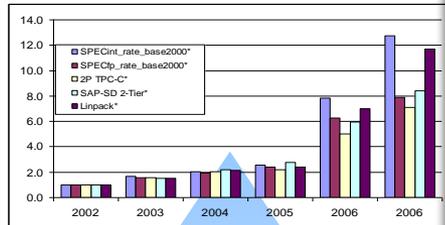
- 3.7 TFlops
- 1 rack
- 53 Servers
- 40 sq ft
- 21 kW

**Don't plan for what you have today...**

**Plan for tomorrow and realize returns**

# Server Platform Trends

## Performance



- Processor core density nearing x8/socket
- System memory density 256GB in Dell 11<sup>th</sup> Gen
- More performance w/o significantly raising thermal profile
- Status quo system architectures will yield more underutilized servers

## Power & Cooling

- Mainstream adoption of Energy Smart server platforms



- Power management enhancements and more granular device control (PMBus)
- Power control/reporting integration with standard management frameworks
- Rack design and thermal controls changing to scale with increasing compute density

## Workload Abstraction

- Industry focus on scalability and consolidation technologies
- Chip enablement continues to fuel performance and functionality
- Major OS vendors competing for virtualization market
- Commodity Grid computing advancements (Clouds, Distributed Computing and PaaS)



Helps researchers solve problems faster...



# Process transactions as the speed of light



“Innovation distinguishes between a leader and a follower” Steve Jobs



# Dell and RES (Renewable Energy Systems) — Powering Green Energy

Wind farm developer assesses sites 20 times faster (from 1 year down to 2 weeks to map the wind in a country) and cuts power use by around 75 per cent with Dell blade cluster



"Failure or delay was not an option, and, as we had limited HPC experience, we asked Dell to deliver a turnkey solution that was guaranteed to work. That's exactly what it did."

*Peter Stuart, Technical Manager,  
RES (Renewable Energy Systems)*

<http://i.dell.com/sites/content/corporate/case-studies/en/Documents/2010-res-10008303.pdf>



# Thank You!

