# HP Update
## IDC HPC Forum, Tucson

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May 1, 2013

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# Make it Matter

Tackle any challenge, with HPC solutions from HP

## Overcome barriers to Innovation and Scale

- Realized system performance and throughput
- Power capacity and cost
- Infrastructure complexity and inflexibility

| Faster | Better | Smarter |
| --- | --- | --- |
| Speed advancements with a converged infrastructure, purpose-built for scale. | Optimize your performance footprint with the world's most efficient systems. | Deploy easily, adapt quickly to change, and improve quality of service. |


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# The Next Generation ProLiant Family for Hyperscale

Extending modularity and innovation with workload driven product developments

## HP ProLiant SL6500 Servers

Dense, efficient, serviceable, shared infrastructure for hyperscale

## HP ProLiant SL4500 Servers

Densest storage, efficiency and serviceability purpose-built for big data

## HP Moonshot Servers

Unprecedented scale, efficiency and choice with the world's first software defined servers


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# The first server purpose-built for big data

## Introducing the HP ProLiant SL4500 server


- **Workload Optimized**
- **Converged and balanced architecture**
- **ProLiant class solution**

## Built on HP ProLiant Gen8 server innovations

| | | | |
|---|---|---|---|
| **UP TO 27** Compute nodes per rack | **UP TO 540** Drives per rack | **UP TO 500K** IOPs per server | **UP TO 2.2PB** per rack [1] |


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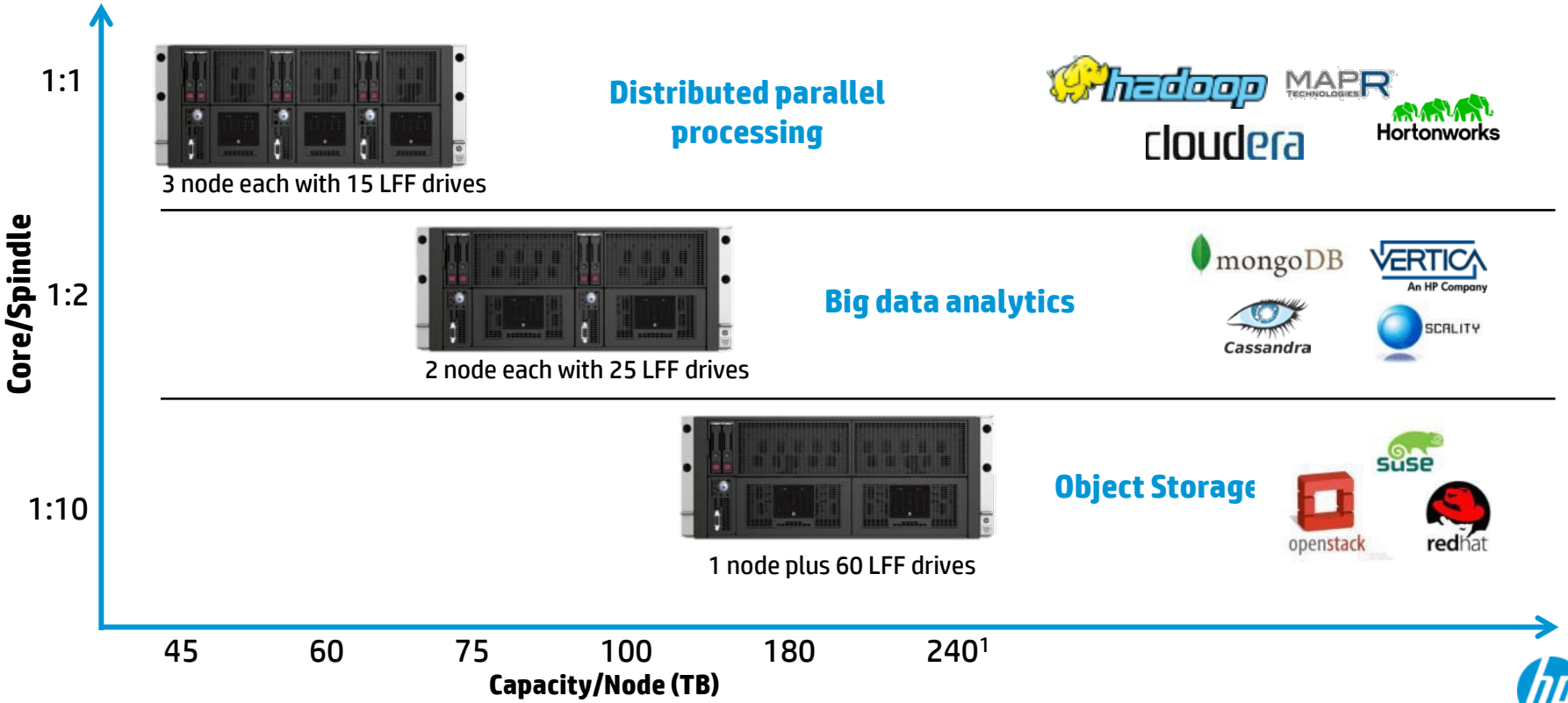
www.hp.com/go/proliant/bigdataserver

[1] 4TB Drives Q1 2013

# Optimized for big data workloads

Match your exact needs with an ideal combination of core to spindle ratios





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[1] 4TB Drives Q1 2013

# HP Moonshot System

The world's first  software defined server

**Moonshot 1500 Chassis**
Supports shared components including power, cooling, and management and fabric

**Software defined servers**
45 individually serviceable hot-plug cartridges

| 80% | 77% | 89% | 97% [1] |
|---|---|---|---|
| Less space | Less cost | Less energy | Less complexity |

Source: HP internal research


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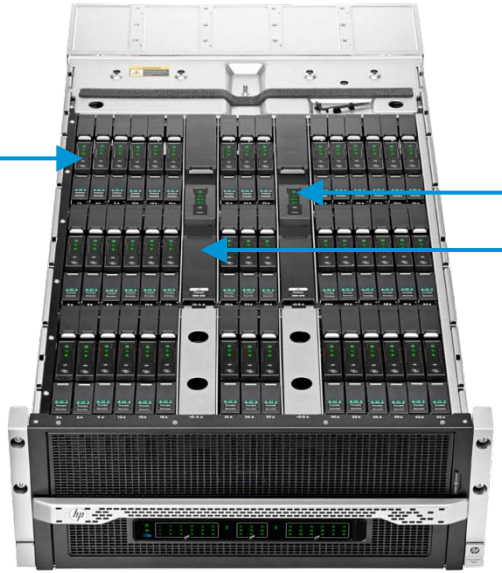
# HP Moonshot 1500 Chassis front view

The essential foundation for the new style of IT

## 45 hot-plug cartridges

- Single-server = 45 servers per chassis
- Quad-server =180 servers per chassis (future capability)

Compute, Storage, or Combination
x86 , ARM, or Accelerator



## Dual low-latency switches

- HP Moonshot-45G Switch Module (45 x1Gb downlinks)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# Servers tailored and tuned for specific workloads

Delivering on the promise of software defined servers

**Workloads**

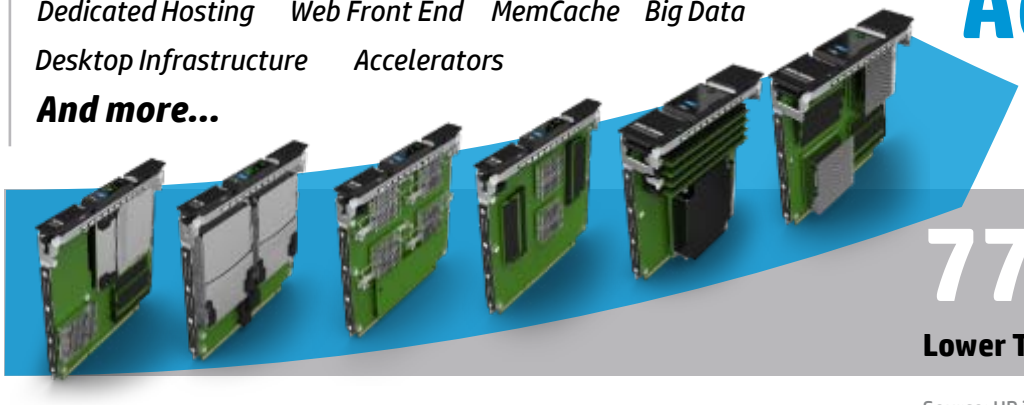
*Dedicated Hosting* *Web Front End* *MemCache* *Big Data*

*Desktop Infrastructure* *Accelerators*

***And more...***

**Advanced**

**Optimized**



**77%** (1)

**Lower TCO for dedicated hosting**

Source: HP internal research

## Revolutionary cartridge design enabling business breakthroughs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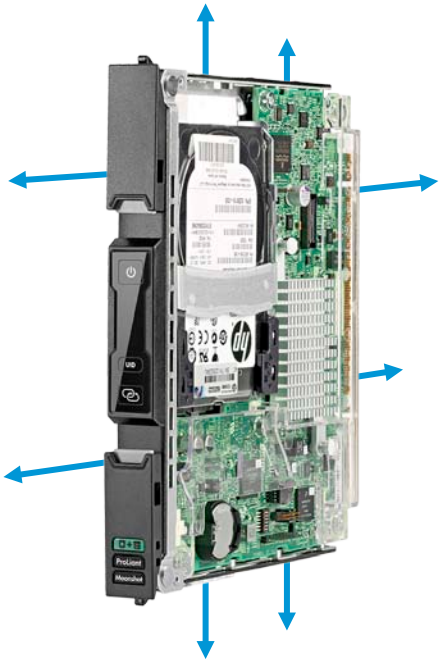
# Highly flexible fabric

Supporting a range of current and future capabilities




**Traffic isolation and stacking for resiliency**
with dual low-latency switches

**Economical and flexible storage**
with shared storage lanes

**Multiple servers managed as one platform**
with dedicated iLO network

**Integrated cluster fabric**
with point-to-point connectivity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# HP Pathfinder Innovation Ecosystem

Select technology partnerships focused on quicker, customer-driven innovation



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# Enabling a new style of IT

Driving breakthrough efficiency and scale for customers

HP Moonshot Server

## HP Pathfinder Innovation Ecosystem

Select technology partnerships focused on quicker, customer-driven innovation

- **Leading Technology Partnerships**
- **Solution Builder Program**
- **Faster time to innovation**

## HP Moonshot Concierge Support

New ownership experience including Discovery Labs, expertise and on-demand capacity

- **HP Discovery Lab**
- **Service & Consulting**
- **Acquire on your terms**

www.hp.com/go/moonshot


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# What's next?

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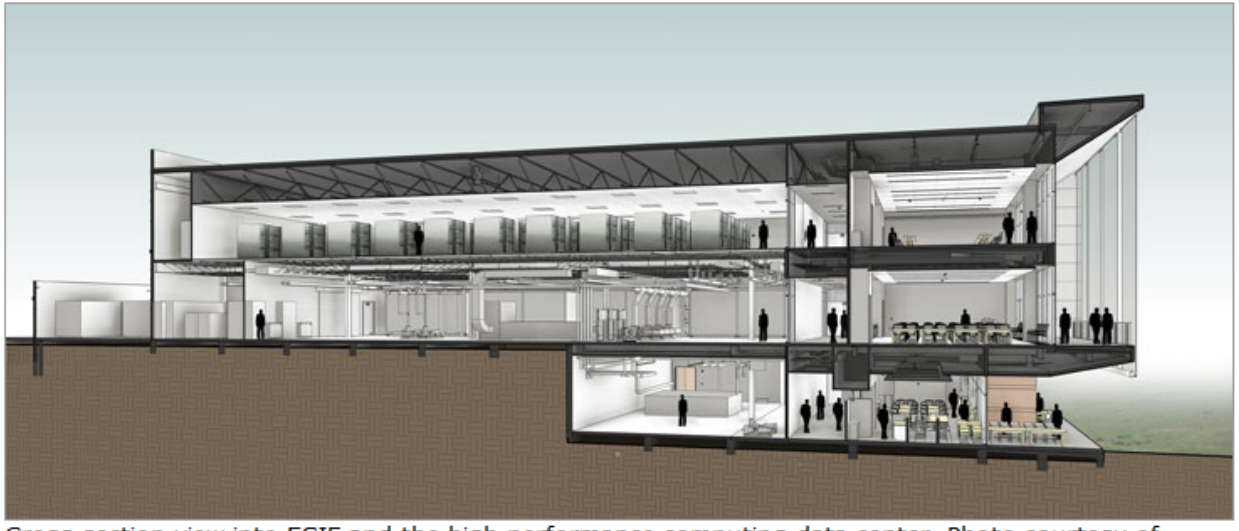
*News Release NR-3212*

NREL
NATIONAL RENEWABLE ENERGY LABORATORY
www.nrel.gov

# NREL Selects Partners for New High Performance Computer Data Center



Cross section view into ESIF and the high performance computing data center. Photo courtesy of SmithGroup JJR.

## NREL to work with HP and Intel to create one of the world's most energy efficient data centers.

**September 5, 2012**

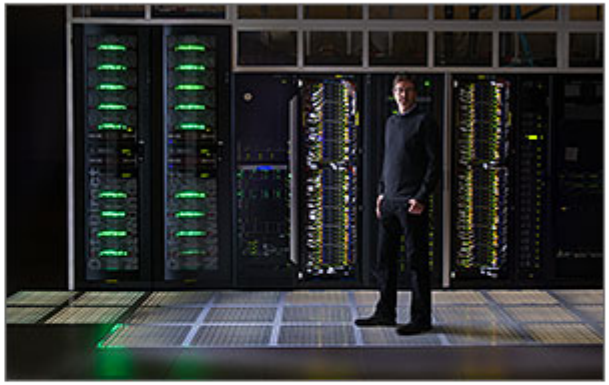
The U.S. Department of Energy's National Renewable Energy Laboratory (NREL) has selected HP and Intel to provide a new energy-efficient high performance computer (HPC) system dedicated to energy systems integration, renewable energy research, and energy efficiency technologies. The new center will provide additional computing resources to

# New Ultra-Efficient HPC Data Center Debuts

**March 11, 2013**

Scientists and researchers at the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) are constantly innovating, integrating novel technologies, and "walking the talk." Since 1982, NREL has won 52 R&D 100 Awards — known in the research and development community as "the Oscars of Innovation" — for its groundbreaking work.

When it came time for the lab to build its own high performance computing (HPC) data center, the NREL team knew it would have to be made up of firsts: The first HPC data center dedicated solely to advancing energy systems integration, renewable energy research, and energy efficiency technologies. The HPC data center ranked first in the world when it comes to energy efficiency. The first petascale HPC to use warm-water liquid cooling and reach an



http://www.nrel.gov/news/features/feature_detail.cfm/feature_id=2133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Deploy easily, adapt quickly to change, and improve quality of service.


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# Thank you

*HP-CAST 20 – Leipzig, Germany 14-15 Jun'13*
*HP-CAST 21 – Denver, Colorado 15-16 Nov'13*

*www.hp-cast.org*

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