**Solution brief**

# Pioneering enterprise-class 64-bit ARM server technology

## HP Moonshot System on 64-bit ARM®

Increasing server choice with a balanced set of processing power, and memory that changes the economics of IT



### Specs at a glance

**Server cartridge**
HP ProLiant m400 Server Cartridge

**Compute**
Applied Microsystems X-Gene
1 processor/eight cores, 2.4 GHz

**Memory**
DDR3 PC3L-12800 SDRAM (1,600 MHz):
64 GB (8 x 8 GB)

**Storage**
M.2 2280 solid-state device: 120 GB, 240 GB, or 480 GB

**Networking**
Moonshot-45XGc Switch Module, Moonshot 4QSFP+ Uplink Module

**Operating system**
Ubuntu server 14.04 LTS

## Scale without sacrifice

You stake your profitability on your ability to provide individualized, interactive, and value-added Web-based services to your customers. That means you need to scale as your customer base grows, without sacrificing any aspect of that user experience.

But as you grow, the economics and lack of flexibility of traditional rack-mount servers can pose a real challenge to meeting the demands of the business. This is due to the fact that traditional servers require you to overbuy compute in order to obtain the required memory and I/O throughput. This makes it difficult to reduce costs on power and infrastructure while maintaining as small of a physical footprint as possible.

## Align IT with the business

HP Moonshot is designed in perfect alignment with the revolution in mobile computing, where energy-efficient computing is a design priority.

For memory-intensive applications, memory cannot always be sized independently of processing cost. As a result, you often have to choose between too little memory in a server that's priced just right and a costlier server with just the right memory but with far more compute power than you really need. Now you have a choice with the HP Moonshot 64-bit ARM server. It offers 2X the memory of typical mid-range servers, enabling dramatic performance gains in memory bandwidth and overall server productivity, while reducing power costs relative to overbuying compute.

It also boosts efficiency by sharing management, power, cooling, fabric, and networking resources across all servers in the Moonshot chassis.

## Is 64-bit ARM right for you?

- Do you feel you are making a trade-off between processor type and addressable memory with your current technology?
- Are you looking for ways to get more server nodes into your existing rack infrastructure?
- Do you use in-memory caching such as memcached?
- Would you rather not purchase and operate higher-end servers just to get more memory?
- Are you using Canonical Ubuntu, open source, LAMP stack, or home-grown applications?
- Are you running apps on run-time environments such as Java, PHP, Perl, or Python?
- Could you benefit from more active load balancing?

## Enterprise-class performance, reliability, and efficiency

With HP Moonshot on 64-bit ARM, you can achieve:

- **First mover advantage**—Be a first mover to capture the competitive benefits of 64-bit ARM technology.
- **Better return on investment**—Using HP Moonshot for both the client-facing Web tier and the Web application tier can reduce total cost of ownership on average by 30 percent when compared to traditional rack-mount deployments, which use a mix of mid- and high-end servers.[1]
- **Unparalleled density**—4X more Web serving compute with the same power, cooling and space and 2X the memory of typical mid-range servers.[2]

## Bringing it all together

HP Moonshot on 64-bit ARM gives you the ability to buy and use only what you need, make better use of data center space and power, and service an ever-growing customer base. And you still get the performance you need from energy-efficient ARM-based system-on-chips integrated circuits that are tuned for scale-out workloads, like Web caching.

Additionally, HP is committed to developing the ARM ecosystem. Approved software developers have the opportunity to develop, test, and port applications through the HP Moonshot ARM64 Software Developer Program. Together, we will develop differentiated, value-added solutions that will help further accelerate innovation and choice in the marketplace.

HP Moonshot is ready for the future, today.

**Learn more at**
**hp.com/go/moonshot**

[1,2] HP Internal testing, running HP Moonshot with HP ProLiant m400 Server Cartridge in a 10GbE network environment against an industry standard 1U rack-mount server.

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