HP Moonshot System

The world's first software defined server

Accelerated innovation and opportunity

Today, powerful processors are embedded into almost any kind of device. Operating systems for such devices have become small and powerful enough to facilitate a wide range of functions and interactions—and almost anything can be connected to the Internet. In this Internet of Things (IoT)—billions of devices can track, gather and process information, or provide a service—all while seamlessly interacting with other data.

The IoT presents companies with exciting new ways to drive market differentiation, deepen customer relationships, and deliver growth and profitability—forever changing how consumers and businesses interact.

What do you do with all the information?

How do you collect massive amounts of disparate information, run analytics, and make sense of the data in order to deliver individualized, interactive, and value-added services to your customers?

To unlock the power of this information, solutions must be able to aggregate all of it, correlate the events, and make use of the data. And this information processing has to run somewhere in your data center—and it has to run at massive scale.

These specialized workloads—called IoT solutions—require a new style of IT that can achieve optimal performance and efficient scaling.

Why is a new style of IT required?

General-purpose x86 servers will continue to run traditional enterprise applications that support your business functions. In contrast, new IoT solutions require an infrastructure that can deliver innovative solutions at unprecedented speed and scale.

The key is workload specialization—efficiently and easily aligning balanced amounts of compute, memory, storage, and scalability.
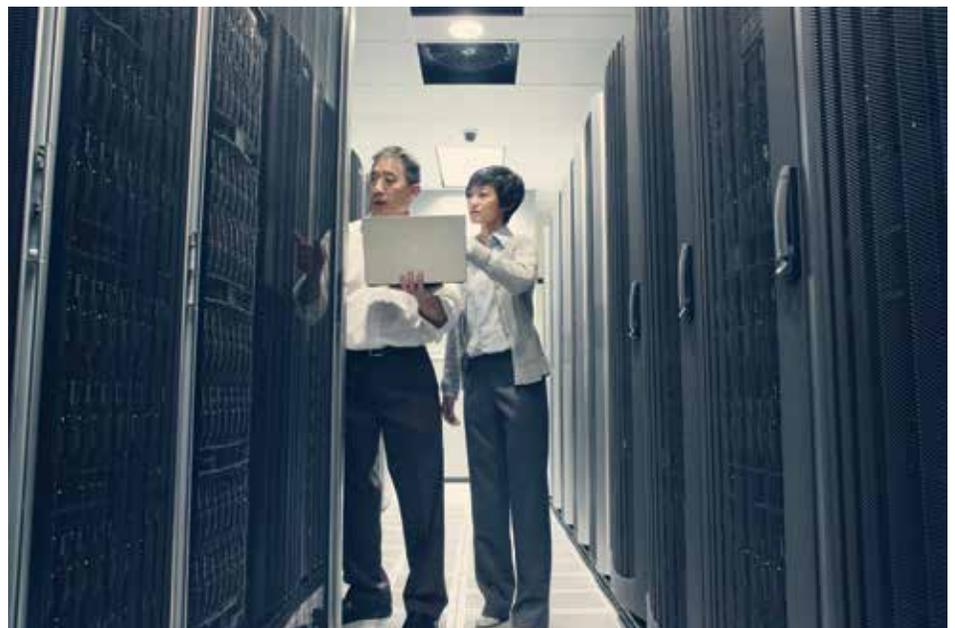
HP Moonshot System: the world's first software defined server platform

When your business is the infrastructure, you are always developing innovative, creative, and quick responses to the ever-changing expectations of your customers and the competitive market. You need the latest technology now—and it needs to scale out to meet demand from an unconstrained and unpredictable user base.

Enabling faster innovation at unprecedented scale starts with the **HP Moonshot 1500 Chassis**, which supports shared components, including power, cooling, management, and fabric for 45 individually serviceable hot-plug **servers**.

The Moonshot System delivers maximum density with unparalleled power efficiency—requiring up to 89 percent less energy, 80 percent less space, and 77 percent less cost than traditional servers.[1]

Software defined servers are tailored and tuned for specific IoT solutions—specialized solutions that provide optimal results for a given workload, from dedicated hosting, data analytics, and Web front end to more advanced functions such as Graphics Processing Units (GPUs), Digital Signal Processors (DSPs), and Field-Programmable Gate Arrays (FPGAs).

The **HP Pathfinder Innovation Ecosystem** brings together leading technology partners delivering what they do best on the Moonshot System. For you, this means having access to the latest technology and solutions at a groundbreaking time-to-market cadence measured in months rather than years. As part of this ecosystem, the Solution Builder Program harnesses a growing community of silicon and software partners to bring you white papers and reference architectures of tested, stable, and optimized application stacks.

"There's a Server for that!"

The **HP ProLiant Moonshot Server** is available today with the Intel® Atom™ Processor S1260. This software defined server provides effective results in a dedicated hosting environment—giving you the ability to generate greater revenue from a smaller footprint while driving down your operational costs with low-energy processors and a direct-attached disk drive.

We have a growing library of software defined servers, utilizing cutting-edge technology from HP partners. Each server will target specific IoT solutions that support emerging Web, cloud, and massive-scale environments, as well as analytics and telecommunications. Future servers are under development for big data, high-performance computing, gaming, financial services, telecommunications, genomics, facial recognition, video analysis, and more. These will be released at accelerated rates of up to three times faster, enabling applications and future business models.

[1] According to HP engineering internal research.

Technical specifications

HP ProLiant Moonshot Server

Processor	Intel Atom Processor S1260, 2.0 GHz
Cache memory	1 MB
On system management processor	Through HP Moonshot 1500 Chassis Management module
Memory protection	Advanced ECC (multi-bit error protection)
Memory	
Type	Unbuffered (UDIMM), ECC @ 1333 MHz
DIMM slots available	1 SO-DIMM Slot
Configuration	8 GB (1x8 GB)
Network controller	Broadcom® 5720 Dual-port 1Gb Ethernet Controller
Storage controller	Marvell® 9125
Storage device	Hard Drive
	Each server will ship with a SATA HDD or SATA SSD
Maximum internal storage (per HP ProLiant Moonshot Server)	
Quick release SATA 2.5"	1 TB: 1 x 1 TB SATA
	500 GB: 1 x 500 GB SATA
	200 GB: 1 x 200 GB SATA SSD

Technical specifications (continued)

Industry standard compliance	ACPI 2.0b Compliant
	SMBIOS 2.6.1
	PXE Support
Interfaces	
Network RJ-45 for management	Two RJ-45 are located on the HP Moonshot 1500 Chassis Management Module. One is for the HP Moonshot iLO Chassis Management and one is for daisy chaining iLO
SFP+ connector	Six 10GbE SFP+ connectors per HP Moonshot-6SFP Uplink
Health LED	47 front for server/switch health, one per server and switch when access panel is removed
Power	1 front and one per server and switch when access panel is removed
UID for node	1 front and 1 rear (on management module) and one per server and switch when access panel is removed
Drive health LED	One per server and switch when access panel is removed
Operating systems and virtualization software support for ProLiant servers	Canonical Ubuntu 12.04
	Red Hat Enterprise Linux 6.4
	SUSE Linux Enterprise Server 11 SP2
Form factor	HP Moonshot 1500 Chassis—4.3U form factor
	HP ProLiant Moonshot Server is constructed to allow for 45 servers to fit vertically into the HP Moonshot 1500 Chassis
	HP Moonshot 45G Switch Modules Kits are designed for up to two switches to install vertically into the HP Moonshot 1500 Chassis. An HP Moonshot-6SFP Uplink Module Kits are required per switch.

Technical specifications

HP Moonshot 1500 Chassis

Power specifications	To review typical system power ratings, use the HP Power Advisor, available through the online tool at: hp.com/go/proliant-energy-efficient or hp.com/go/hppoweradvisor.
Common slot power supplies	Each Moonshot Chassis comes with a minimum of two (2) HP Common Slot (CS) Power Supplies. HP CS Power Supply options are available in a 1200W configuration. All HP CS power sources are UL, CE Mark Compliant, hot-plug, and support redundant configurations.
System fans	5 Dual-Rotor, Hot-Plug Fans, N+1
Form factor	4.3U
On system management	HP Moonshot 1500 Chassis Management module, complete with support for SL-APM The HP Moonshot 1500 Chassis Management module manages the health of the chassis and servers. HP Moonshot iLO Chassis Management Firmware is the gateway for aggregated chassis management on HP Moonshot.

A new level of support for a new style of IT

When it comes to integrating the HP Moonshot System into your existing data center, we want to help ensure that it is a seamless experience. **HP Moonshot Concierge Support** provides customized services that are optimized for scale and total cost of ownership—delivered when and where you need them; a new approach to the way you acquire your compute capacity; and expertise delivered through HP Foundation Care, Datacenter Care, consulting services, and Proactive Care services so your Moonshot experience fits your specific needs. To learn more about Moonshot Concierge Support and HP Services, please visit hp.com/services/hyperscale.

Because you'll want to test drive your applications on the new system and select the right solution for your needs, the **HP Discovery Lab**—with facilities located around the world—provides you with unfettered access to technology, industry experts, and peers for precise application testing and benchmarking. Inquire about the Discovery Lab at hpdiscovery.lab@hp.com.

Innovation is what we do

The HP way is to innovate. It's in our DNA.

We invented the first x86 server and the first blade, and we introduced Converged Infrastructure to the industry. These are just a few of the hundreds of examples that demonstrate our ability to design, build, and deliver information technologies and services that change how leaders conduct business.

HP Moonshot System will lead a new era of accelerated innovation for our customers while delivering breakthrough efficiency, scale, and simplification. It offers a system for innovation supported by the HP Pathfinder Innovation Ecosystem, and it delivers breakthrough technology at an accelerated pace to help you capitalize on new market opportunities.

At HP, we don't just believe in the power of technology. We believe in the power of people when technology works for them. To help you create and make it matter. To help you run your organization as successfully as possible.

HP Factory Express

Customize your IT lifecycle management, from acquisition of new IT, management of existing assets, and removal of unneeded equipment. **hp.com/go/hpfinancialservices**

HP Factory Express provides customization and deployment services along with your storage and server purchases. You can customize hardware to your exact specifications in the factory—helping to speed deployment. For more information, please visit hp.com/go/factoryexpress.

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

Sign up for updates
hp.com/go/getupdated

Share with colleagues

Rate this document

4AA4-6076ENW, April 2013