

MULTIVENDOR DATACENTER SUPPLY CHAIN SUITS MULTIVENDOR CLOUDS

HP/FOXCONN JOINT VENTURE PROMISES TO SHAKE UP THE SERVER MARKET BY OFFERING UNIQUE ADVANTAGES FOR LARGE DIRECT CUSTOMERS

EXECUTIVE SUMMARY

Large service providers like Facebook and Amazon are undergoing rapid growth due to consumer adoption of mobile computing and emerging Internet of Things (IoT) devices and infrastructure. IT is at the heart of their business, and the datacenter is their factory. They are increasingly focused on total cost of ownership (TCO) which includes both the acquisition cost of their datacenter equipment and the operating cost of using this equipment during its lifetime.

Most hyperscale customers historically have relied on the leading global server manufacturers (OEMs) for their server infrastructure. However, the largest of these customers now specify and buy servers directly from the Taiwanese companies (ODMs) who design and manufacture servers on the OEMs' behalf. These ODMs have been gaining significant server market share over the last several years at the expense of traditional server brands.

In April 2014, HP and Foxconn announced a joint venture agreement to develop a server product line that combines the time-to-market agility and cost-optimized focus of Foxconn with the economies of scale, global reach, world class integration, and service/support of HP. After a number of months of market anticipation, HP and Foxconn recently launched the HP Cloudline product family: a cost-optimized, no frills solution specifically for large cloud service providers (CSPs).

The HP/Foxconn joint venture is a good move for HP and provides the company with additional credibility in the hyperscale server market. This partnership has the potential to create a hybrid model for scale-out service providers who want cost-optimized servers that are backed by the service, support, and reach of a leading global server brand. The new partnership and Cloudline brand of servers promise to stir up the server industry. Competitors like Dell, Cisco, Lenovo, and leading ODMs are sure to react with new product lines, aggressive sales tactics, and possible competing joint venture agreements.

Large CSPs and other large HP direct customers looking toward large scale private cloud deployment should evaluate HP's full product portfolio and understand where Cloudline may provide benefit for their scale-out workloads. These customers should also work with HP directly to understand what custom configuration options, new products, Open Compute compatible options, and service/support offerings may be available today and in the future as a part of the Cloudline product portfolio.

MEGATRENDS AND MARKET DRIVERS

Over the last decade, large search engine, social media, and cloud providers have built giant datacenter capacity to power their internet services, and they have found themselves needing a new type of server to support their massive scale. As a service provider, profit and loss are tied directly to the IT and to the datacenter. This creates a continual focus on total cost of ownership (TCO) driven largely by both the acquisition cost of the equipment (taking into account performance per capital expense purchase price) and the operating cost of using this equipment (power consumption, management, and physical space costs) during its lifetime.

Large service providers demand no frills, standardized configurations for each of their workloads which are purchased and deployed at large scale. These customers know exactly what they need and aren't shy about making suppliers compete for their business. They do not single-source their IT, as it would create too much risk for them. Many of these service providers work directly with major component providers for price breaks and to influence upcoming technologies and designs. The demands of these customers for improved economies-of-scale have resulted in a number of efforts to create open hardware standards (e.g., Open Compute Project, Project Scorpio) along with open design and open software principles.

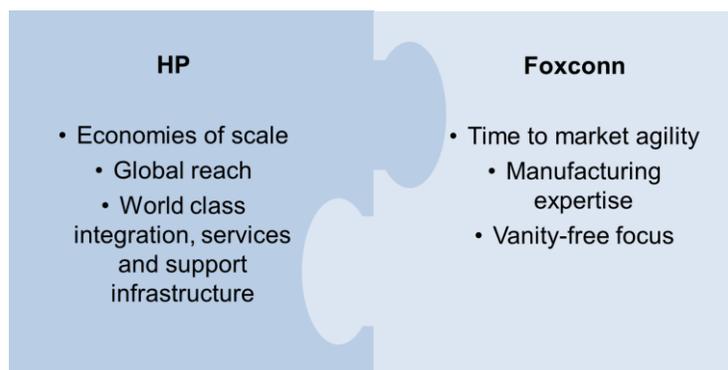
In addition to "vanity-free" servers and standardized configurations, large service providers don't want to pay for or have the need for extensive service and support contracts that come standard with traditional servers from large name brand manufacturers. These companies have invested in teams of in-house developers to write their own application stacks with resiliency built in to the software layer. One internal systems administrator is responsible for hundreds of servers, and when a server goes down, workload(s) are automatically reallocated to other servers. As a result, admins do not necessarily need immediate break/fix services. Instead, they have on-site parts lockers where they can swap out server parts, or even entire servers.

These service provider customers historically relied on the leading global manufacturers (OEMs) like HP, Dell, and IBM for their server infrastructure. However, the largest of these customers (web giants like Facebook and Amazon) have “eliminated the middleman”. They now specify and buy servers directly from the Taiwanese companies (ODMs) who design and manufacture servers on the OEMs’ behalf. ODMs like [Quanta](#), Wistron, and others have created new lines of business or subsidiaries to sell directly to the service providers with nimble business models that allow them to create custom configurations at a rapid pace. Their manufacturing expertise, cost-optimized design principles, and spartan service/support models allow them to compete aggressively on price. These ODMs have been gaining significant server market share over the last several years at the expense of traditional server brands, with particular success in the service provider segment.

HP AND FOXCONN PARTNERSHIP OVERVIEW

In April 2014, HP and Foxconn broke new ground by [announcing a joint venture agreement](#) between the two companies to create a new line of cloud-optimized servers specifically targeting service providers. This joint venture is the first to blur the lines between ODM and OEM. It offers the potential to provide some unique advantages to the server market: the time to market agility, manufacturing expertise, and vanity-free focus of an ODM with the economies of scale, global reach, and world class integration, services and support infrastructure of HP.

FIGURE 1: HP AND FOXCONN PERCEIVED STRENGTHS



The HP/Foxconn partnership provides HP with additional credibility in the hyperscale market and blocks competitors like Cisco and Dell from engaging in this type of agreement with Foxconn. It also provides HP with the ability to compete directly with other ODM players who are gaining headway with the service providers without

compromising their existing product lines and traditional IT business focus. And as the leading server provider in the market, HP can translate the high volume discounts they receive into aggressive pricing for customers—a huge potential advantage in this highly cost sensitive market. That scale will also allow HP to deliver servers at scale quickly anywhere in the world.

HP and Foxconn should expect both ODM and OEM competitors to respond to this new partnership by doubling down on efforts to target service providers with compelling offerings. This could result in new product lines or competing ODM/OEM joint ventures in the near future. The risk is that HP and Foxconn aren't able to move fluidly and that the decision making apparatuses of two large companies cannot move fast enough to adapt to the industry's response to this relationship.

THE UNVEILING OF HP CLOUDLINE

After more than two quarters of market anticipation since the initial partnership announcement, HP and Foxconn have announced the HP Cloudline brand of servers as the result of their joint venture. The primary target customers for HP Cloudline are cloud service providers who buy large numbers of servers at a time and may not need all the bells and whistles required by traditional IT customers. We expect the product line may make its way into other markets such as scale-out commercial and institutional HPC environments. HP Cloudline servers are available for direct order only, and are not available via channel partners at this time. These servers are orderable only at rack-scale (think about a dozen racks or more). With this in mind, HP's customer reach for HP Cloudline will be limited to only very large service provider and enterprise private cloud customers that can be addressed by their direct sales channels.

HP CLOUDLINE SERVERS

The HP Cloudline CL2100 (1U 2 socket) and CL2200 (2U 2 socket) are the first Cloudline servers in the market with shipments beginning in calendar Q1 2015. Both products are based on the Intel Xeon E5-2600v3 (Haswell-EP) processors, include up to 16 DDR4 ECC RDIMM/LRDIMM slots and have multiple PCI slots for I/O expansion. The CL2100 includes either 8 small form factor (SFF) hot-swap SATA or SAS drives or 4 large form factor (LFF) hot-swap SATA or SAS drives, while the C2200 offers 3 times the potential drive capacity with 24 SFF or 12 LFF options. The CL2100 includes a single fixed 650w power supply (standard or Platinum), while the CL2200 has redundant 750w PSUs. All models include 2 front USB 2.0 ports, 1 rear serial port, 1 rear VGA

port, and a range of 1G and 10G networking options dependent on the model and customer preference.

FIGURE 2: HP CLOUDLINE CL2100 & CL2200



HP Cloudline servers do not come with HP ProLiant features such as iLO, Smart Array, OneView, HP SmartMemory or SmartDrives, since large service providers generally do not need or want to pay for these features. HP Cloudline servers are equipped with IPMI (Intelligent Platform Management Interface) for basic hardware monitoring and remote management systems. IPMI is widely used by large service providers as a baseline for their management tools and practices and should simplify integration of new Cloudline servers into their existing datacenter environments. In addition, HP offers a range of service and support contract options for Cloudline dependent on the service provider's requirements.

LOUDLINE PRODUCT POSITIONING

One of the key challenges for HP will be positioning the value of Cloudline versus both competitive offerings and also within their own broad server product portfolio.

Cloudline will be competing with solutions from ODM providers like [Quanta](#), MiTAC, WiWynn (Wistron), and Supermicro. These companies offer very similar standard rack-mount products targeted at scale-out service providers at similar price points to Cloudline providing little room to differentiate. With this in mind, HP will likely focus their differentiation on key benefits HP can provide over a pure-play ODM. These benefits include global scale, faster delivery times, global integration capabilities, a full line of service and support options, and their broad server portfolio and innovation capabilities (e.g., SL, Apollo, Moonshot) which provides customers with a wider range of choices.

Within HP's own server product portfolio, Cloudline is positioned as a cost-optimized, no frills solution specifically for large cloud service providers. Cloudline will not compete for business in the traditional enterprise space that the ProLiant brand services today. Enterprise customers generally require servers with broad operating system and application software certifications and advanced out-of-the-box systems management

tools. In addition, they expect their servers to undergo extensive product testing, include the latest bells/whistles that make them reliable and easy to service, and rely on comprehensive warranty agreements with hands-on service and support from their solution provider. With this in mind, HP ProLiant will continue to be the best choice in the HP industry standard server product portfolio to service enterprise customers' needs. Table 1 provides an overview of how HP describes the primary differences between the ProLiant and Cloudline product portfolios.

TABLE 1: HP PROLIANT AND HP CLOUDLINE COMPARISON

	HP ProLiant	HP Cloudline
Application	Any, general purpose	Cloudy, homogeneous, availability delivered by software
Systems Management	Advanced systems management tools, iLO including IPMI support	Standards based tools including IPMI 2.0
Warranty	Next business day, onsite standard Flexible options	Parts only standard Flexible options
Design	User-friendly tool-free, focused on operations simplicity	Vanity free
Validation	Broad enterprise system and deep product testing	Customer focused with limited OS and hardware validation
Deal size	Any	>500 nodes

HP CLOUDLINE CUSTOMER SUCCESS: QIHOO 360

A number of large service providers are currently evaluating and testing HP Cloudline in their datacenter environments. Qihoo 360 Technology Co. Ltd. provides internet and mobile security products and services in China to 500 million monthly active PC internet users and more than 640 million mobile users. After evaluating a number of other solutions, this fast-growing company has chosen to add 20,000 Cloudline servers to its environment. Qihoo 360 chose the Cloudline servers for four primary reasons.

- Qihoo 360 found the Cloudline servers quick to deploy and easy to manage/maintain.
- Cloudline servers provide a higher price/performance ratio for Qihoo 360's workloads than traditional server offerings.
- The Cloudline systems were found to be extremely energy efficient—a key factor for Qihoo 360 as their server farm approaches 100,000 systems.
- HP offers custom design services to support Qihoo 360's energy-efficient data center project in western China.

Qihoo 360 is a longstanding HP customer and values HP's reputation for reliability. They believe HP struck an optimal balance between reliability and price-performance with the introduction of the Cloudline portfolio.

CALL TO ACTION

The HP/Foxconn partnership and Cloudline brand promise to stir up the server industry, and competitors are sure to react with new product lines, aggressive sales tactics, and possible competing joint venture agreements. The collective HP and Foxconn organizations need to prepare to be nimble and act quickly. The Cloudline product team should consider adding new products to their product portfolio in the near future that are compliant with open hardware standards such as Open Compute and align themselves with the open source software community to ensure support with the solution stacks required by large service providers.

Large service providers and other large HP direct customers looking toward large scale private cloud deployment should evaluate HP's full product portfolio and understand where Cloudline may provide benefit for their scale-out workloads. These customers should also work with HP directly to understand what custom configuration options, new products, and service/support offerings may be available as a part of the Cloudline product portfolio.

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