Insight

HPC QView: 1Q16 Snapshot of the Major Players and Trends

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IDC OPINION

IDC's most recent Worldwide High-Performance Technical Server QView reveals that quarterly revenue increased by about 3% from 1Q15 to 1Q16, with 1Q16 revenue reaching $2.57 billion. IDC estimates that 2016 revenue should only grow by about 3–5%, but growth is expected to return to historical averages of about 6–8% in 2017 out to 2020. That said, there are a number of emerging trends within the sector that could significantly alter this trajectory:

- The anticipated wide-scale availability of Intel's Knights Landing, the looming contest between Intel's OmniPath interconnect and Mellanox's InfiniBand, and the profusion of open HPC-related organizations – such as OpenHPC, OpenCL, Open ACC, OpenStack, OpenPOWER, and Open Compute – that could upset the current, and sometimes delicate, balance of open and proprietary hardware and software.
- Something to think about: the increasing use and sophistication of virtualization and related container technologies will increasingly have an effect on the overall HPC sector as more and more users will be looking for the same ease of use features available in a virtualized cloud environment for their HPC environment. In essence, the industry may increasingly have to shift its emphasis from looking at issues of HPC in the cloud to those concerned with offering clouds on its HPCs.

IN THIS INSIGHT

This IDC Insight examines some of the major takeaways from the most recent Worldwide High-Performance Technical Server QView. Worldwide quarterly HPC server revenue increased by about 3% from 1Q15 to 1Q16, with 1Q16 revenue reaching $2.57 billion, and the most aggressive growth was realized by some of the smaller HPC vendors: SGI, Sugon, and Cray showed the best 1Q15–1Q16 growth in the sector at 62%, 28%, and 22%, respectively. Meanwhile, HPE, the largest supplier to the HPC sector, and Dell, at number 2, saw gains of 1.2% and 6.0%, respectively. Lenovo showed almost no change in revenue. IDC believes that there are a number of compelling technology issues that could materially change the calculus of the sector that include new processors, new interconnects, and the rising impact of both open and virtualization software.

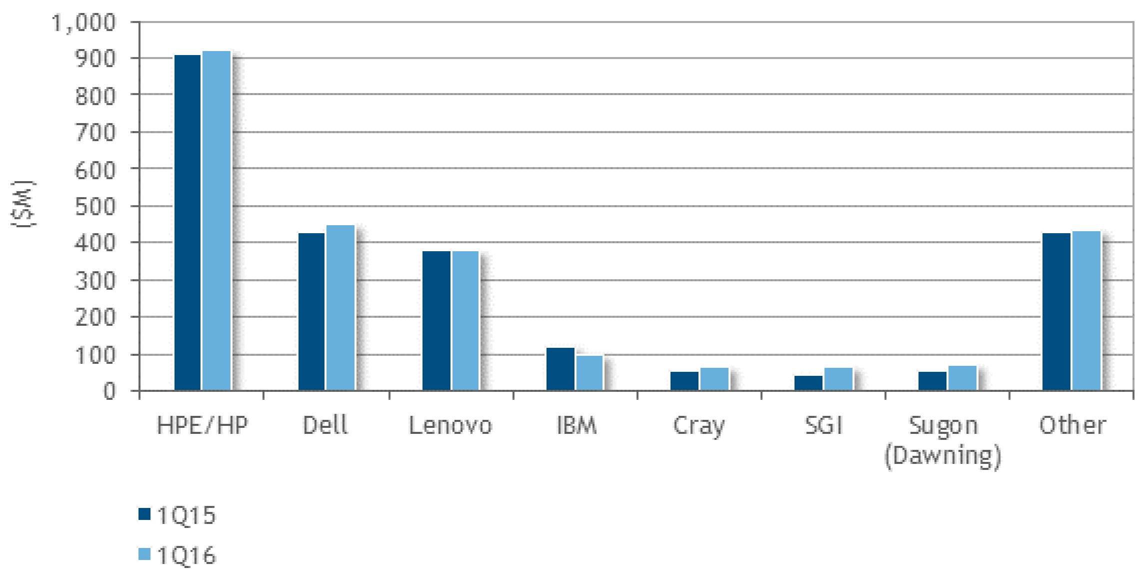
SITUATION OVERVIEW

IDC's most recent Worldwide High-Performance Technical Server QView reveals that worldwide quarterly HPC server revenue increased by about 3% from 1Q15 to 1Q16, with 1Q16 revenue reaching $2.57 billion. Note that the fourth quarter is typically the largest quarter and can often have a major impact on growth for the full year, so first-quarter trends need to be kept in perspective:

- Gains were well distributed, albeit not evenly, across the major HPC vendors, with the most aggressive growth realized by some of the smaller HPC vendors: SGI, Sugon, and Cray showed the best 1Q15–1Q16 growth in the sector at 62%, 28%, and 22%, respectively.
- 1Q15–1Q16 growth rates for some of the larger players were smaller as might be expected — it's difficult to expand a large revenue base as quickly as a smaller one. HPE, the largest supplier to the HPC sector, and Dell, at number 2, saw gains of 1.2% and 6.0%, respectively. Lenovo showed almost no change in revenue.
- Of the major vendors, only IBM saw a 1Q15–1Q16 revenue pullback, at about 17% (see Figure 1).

FIGURE 1

Worldwide HPC Server Revenue by Major Vendor, 1Q15 and 1Q16



Source: IDC, 2016

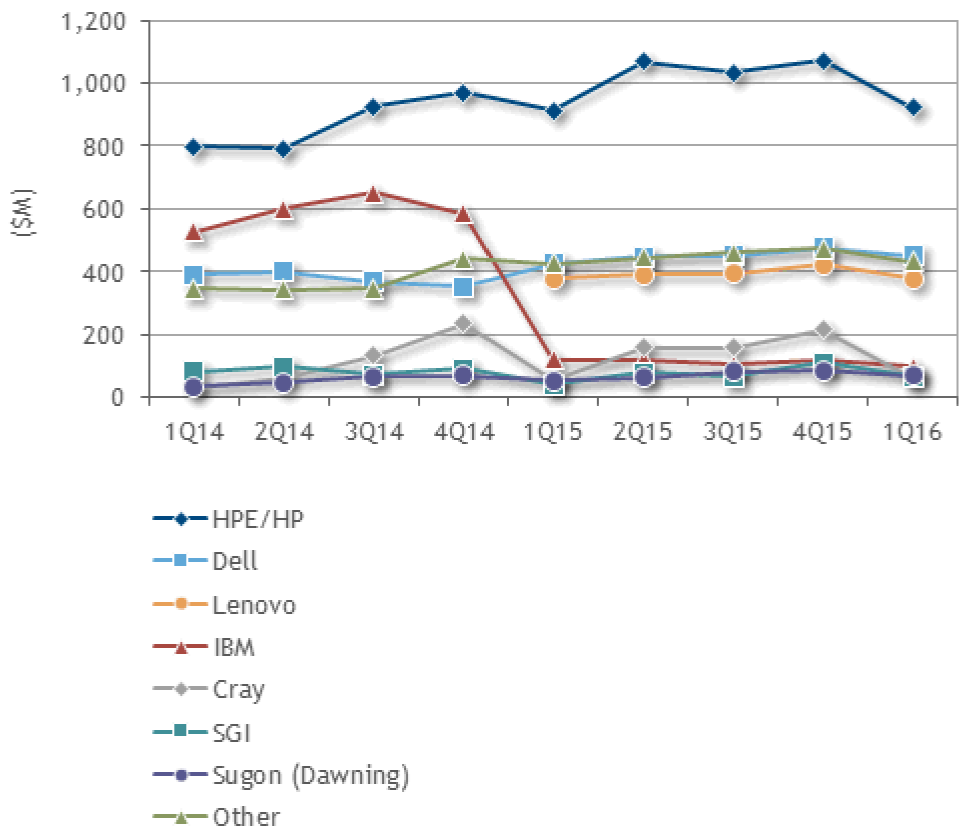
For the longer term, HPC revenue over the past nine quarters shows that the major vendor market shares have settled into a post IBM/Lenovo x86 server sale steady state, but there are some interesting developments worth noting:

- HPE continues to solidify its position as the number 1 HPC vendor. 1Q15–1Q16 growth was about 1%. Coming off an impressive growth rate of about 11% for the entire sector in 2015, HPE results fortify IDC estimates of a slower HPC sector growth for 2016.

- Despite the significant – and typical – swings in Cray's revenue stream, the firm continues to exhibit strong positive growth, with revenue increasing by 27% from 2014 to 2015. Indeed, Cray's 1Q16 revenue was up more than 22% over its 1Q15 numbers and more than double its 1Q14 revenue.
- Lenovo, China's largest HPC vendor, had impressive gains in HPC shipments as seen on the TOP500 list – where Lenovo went from zero systems on the list in June 2015 to an astounding 84 on the June 2016 list announced at ISC in Frankfurt. Lenovo's HPC market share leaped with the acquisition of IBM's x86 server business, and the company continue to hold onto most of the acquired business (running at about $380 million to $400 million a quarter in HPC server sales) (see Figure 2 and Table 1).

FIGURE 2

Worldwide HPC Server Revenue by Major Vendor, 1Q14–1Q16



Source: IDC, 2016

TABLE 1

Worldwide HPC Server Revenue Share by Vendor, 1Q16

	Share (%)
HPE/HP	35.9
Dell	17.6
Lenovo	14.8
IBM	3.8
Cray	2.5
SGI	2.6
Sugon (Dawning)	2.7
Fujitsu	1.5
NEC	1.1
Bull Atos	0.9
Other	16.8

Source: IDC, 2016

FUTURE OUTLOOK

Although it is too early to predict exactly what kind of year the HPC sector will be for the market writ large and the individual vendors that service it, IDC analysts are confident that revenue growth, albeit not at the over 11% high rate of 2015, will be the order of the day. IDC estimates that 2016 should grow by about 3–5%, returning to historical average of about 6–8% in 2017 and out to 2020. That said, there are a number of emerging trends within the sector that could significantly alter this trajectory:

- The scheduled wide-scale availability of Intel's next-generation Xeon and Knights Landing processors during this period could extend the company's existing HPC market dominance in the face of a growing number of competitors that include ARM, OpenPOWER, and GPU-based processors such as NVIDIA's Tesla P-100.
- The looming contest between Intel's OmniPath and Mellanox's InfiniBand could create some interesting dynamics within both the HPC supplier base and their users as the two firms will be working hard to cement their places as leading providers of high-speed interconnects.

- The profusion of open organizations — such as OpenHPC, OpenCL, Open ACC, OpenStack, OpenPOWER, and Open Compute — could upset the current, and sometimes delicate, balance of open and proprietary HPC hardware and software, creating new opportunities and challenges for both vendors and users faced with a raft of new HPC foundations, associations, confederations, and cooperative entities. Major vendors in particular will need to decide which dance partners to choose and how much time and money to devote to each.
- Finally, the increasing use (albeit from a small base) and sophistication of virtualization and related container technologies will increasingly have an effect on the overall HPC sector as more and more users will be looking for the same ease of use features that are available in a visualized cloud environment for their HPC environments. In essence, the industry could soon be shifting its emphasis from looking primarily at issues of HPCs in the cloud to offering clouds on its HPCs.

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