HPC Market for 2017

- Total worldwide HPC market (servers, storage, software, etc.) reached $35.4 billion in 2017, up 1.6% from 2016
- Demand-side indicators were up; supply-side indicators were down. What happened?
  - Large increase in spending on power and cooling in commercial sites (over half of market); masked by moving out-of-budget
  - Cloud had a breakout year
  - Storage was weak relative to server spending (GPUs)
  - Some vendors did well in HPC, poorly in other enterprise servers
  - The software and services categories both declined

Data cited from multiple forecast and survey reports. Inquire with Intersect360 Research, info@intersect360.com.
HPC 2017 vs. 2016

$34.8 B

Cloud, up 44%
Networks, Software, and Services all declined
Storage, up <3%
Servers, up >7%

$35.4 B

$1.1B

HPC Cloud 2017 vs. 2016

All cloud categories grew

Raw cycles grew only along with overall market for compute

Budget outlooks have improved, especially in government sector.

HPC User Budget Map: Budget Outlooks

Fundamental Drivers

• Drivers for HPC:
  – There is always more science to do
  – There are always harder problems to solve
  – Most HPC usage is commercial
  – Plus: AI!

• Drivers for HPC in Cloud:
  – Suitable to variable workloads
  – Availability of high-performance components
  – Maturation of licensing models
  – Plus: AI!
HPC 2017 Revenue by Vertical

Academic, 17.7%

Commercial, 56.6%

Government, 25.7%

HPC 2017 Revenue by Vertical

- Commercial, 56.6%
- Academic, 17.7%
- Government, 25.7%

HPC Server Shares, 2017

HPC Storage Shares, 2017

Hyperscale Market in 2017

• Grew 25% Y/Y to $44B ($35B in 2016)
• Consolidating further into Tier 1
  – Orgs spending over $1B/year on IT
  – Nine Tier 1 companies in 2017
    • Eight in 2016
    • One more just missed in 2017
• Market is through its original major expansion, now entering consolidation phase
AI / Deep Learning / Machine Learning

• Roughly $4.5 Billion dedicated to machine learning in 2017; >90% comes from Hyperscale
• Within HPC, most advanced use cases are in finance
• We are monitoring spending patterns
  – Are budgets increasing?
  – What is the effect on configurations?
  – On premise versus cloud
• 56% of HPC organizations are running machine learning
  – Usually with same hardware as HPC
  – Often with changes to configuration, particularly with GPUs
  – Little effect on overall budgets compared to what was planned
  – To the extent that it is done as part of an HPC environment, it is already counted in our numbers

Report: Machine Learning’s Impact on HPC
In every sector, more than half of the respondents were either running or investigating whether to implement machine learning at their organization.

More academic site were currently running machine learning programs today than other sectors. We assume much of this use is supporting research efforts.

Very few sites (~10%) were not running nor investigating machine learning.