

HPC PATTERNS TOWARDS EVER BIGGER DATA

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Accelerating Understanding Summit Paris, 31st May 2016

JUST HOW FAR CAN WE SEE?

https://en.wikipedia.org/wiki/Hubble_Space_Telescope#

HPC PATTERNS

A little history...

Picture from <http://www.columbia.edu/cu/computinghistory/eniac.html>

THE SUPERCOMPUTERS

1961
IBM 7030



1964
CDC 6600



1976
CRAY 1

1982
Cray X-MP



1985
CM-1

1993
CRAY T3E

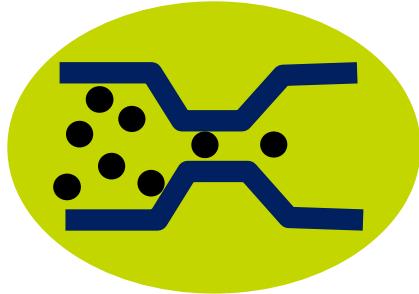


2015
Tianhe-2

Picture from <http://www.techworm.net>

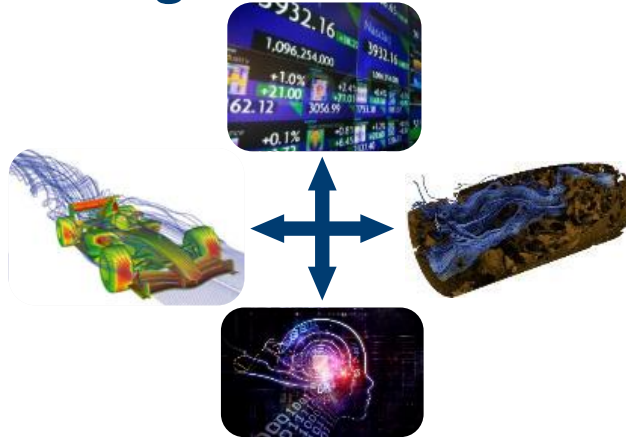
Today's HPC Challenges

“The Walls” System Bottlenecks



Memory | I/O | Storage
Energy Efficient Performance
Space | Resiliency |
Unoptimized Software

Divergent Infrastructure

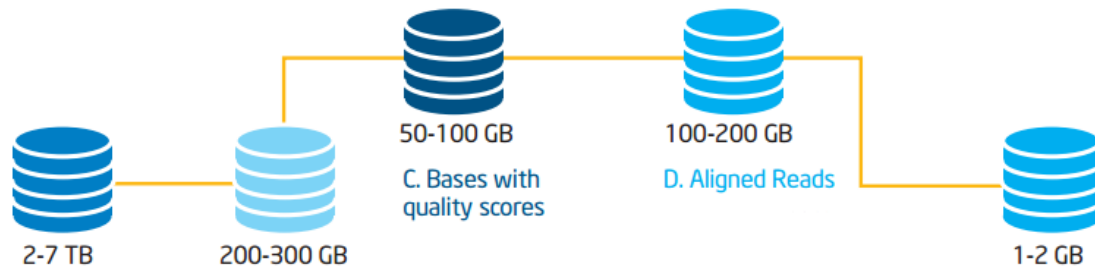
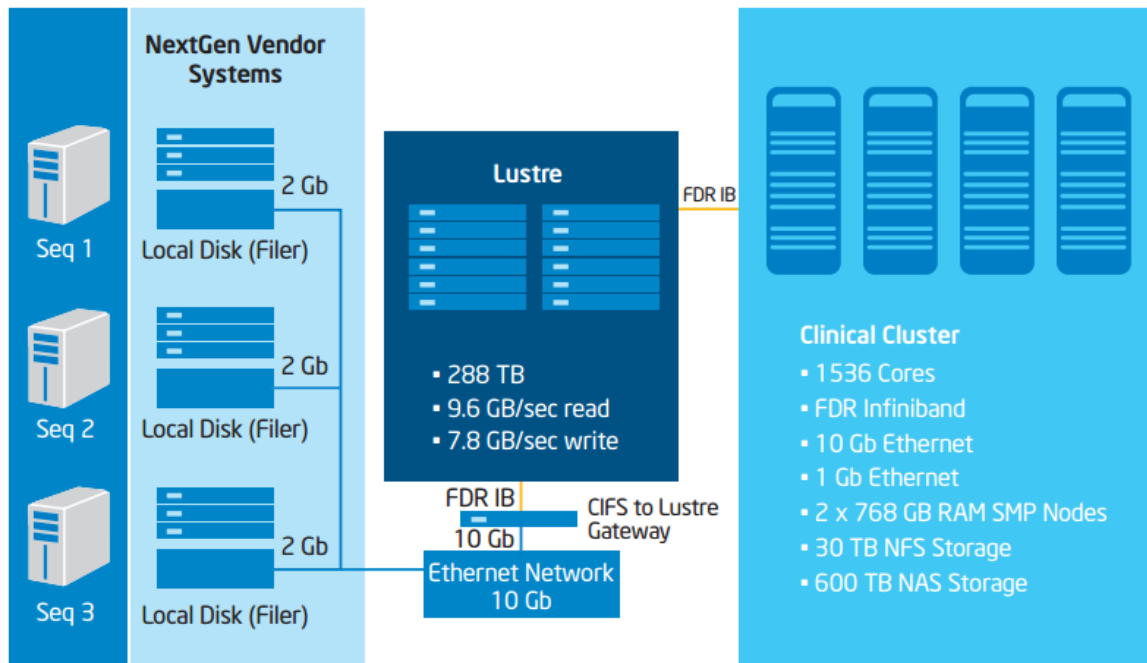


Resources Split Among
Modeling and Simulation | Big
Data Analytics | Machine
Learning | Visualization

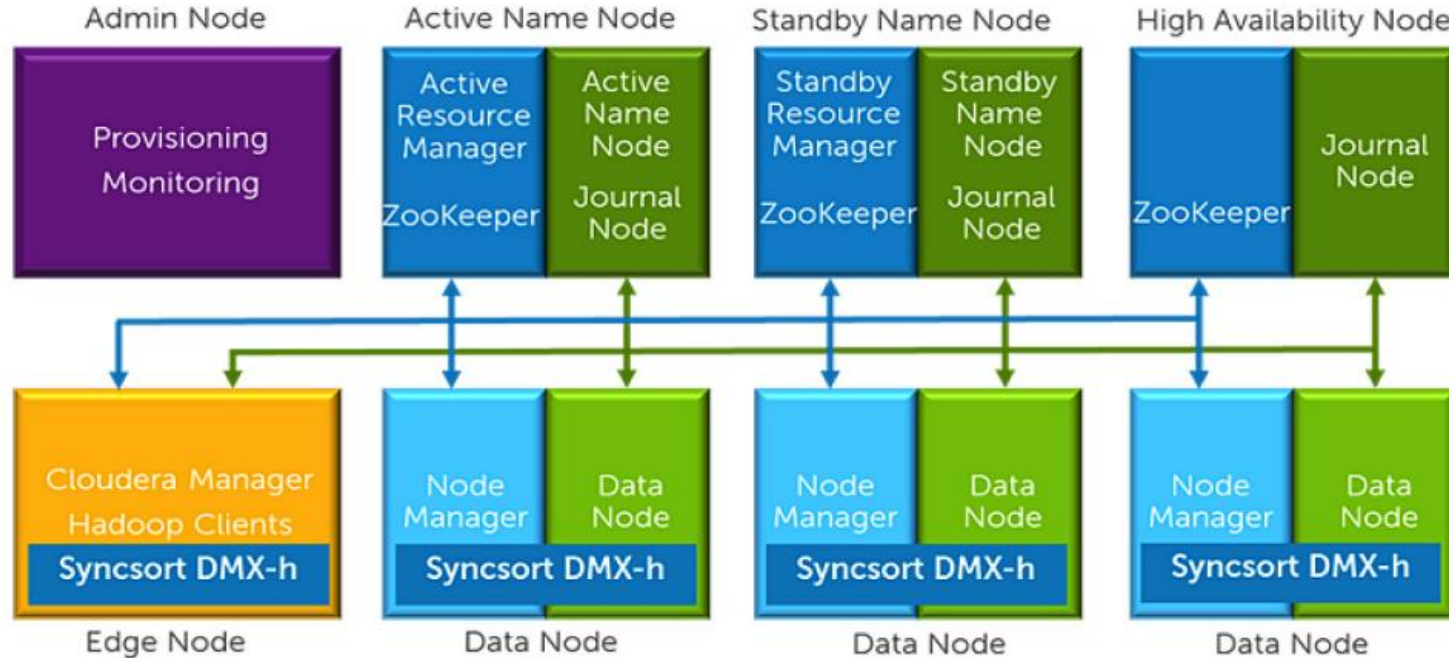
Barriers to Extending Usage



Democratization at Every
Scale | Cloud Access |
Exploration of New Parallel
Programming Models



ETL Offload Solution



Changing the game for health life science – big data & analytics

The SAP HANA* platform: From batch to real-time



A single, blazingly fast, in-memory database
for transactional and analytical applications



Up to 10,000x faster†
query performance



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through database migration or non-disruptive “sidecar” solutions

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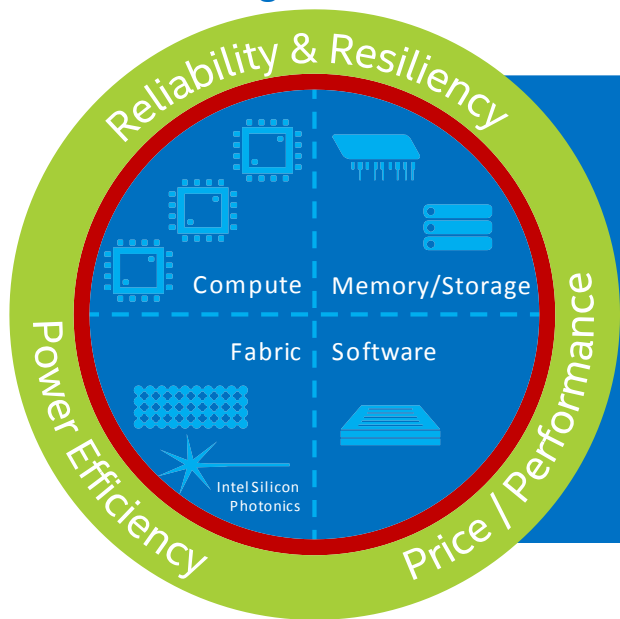
REDUCE IT COST AND COMPLEXITY WHILE IMPLEMENTING NEW DATA-DRIVEN BUSINESS MODELS.

†Source: <http://www.saphana.com/community/blogs/blog/2012/08/05/the-business-value-of-speed>

*Other names and brands may be claimed as the property of others.

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Intel® Xeon Phi™ Processors
Intel® Xeon Phi™ Coprocessors

Intel® Solutions for Lustre*
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Intel® Omni-Path Architecture
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Thank You.

