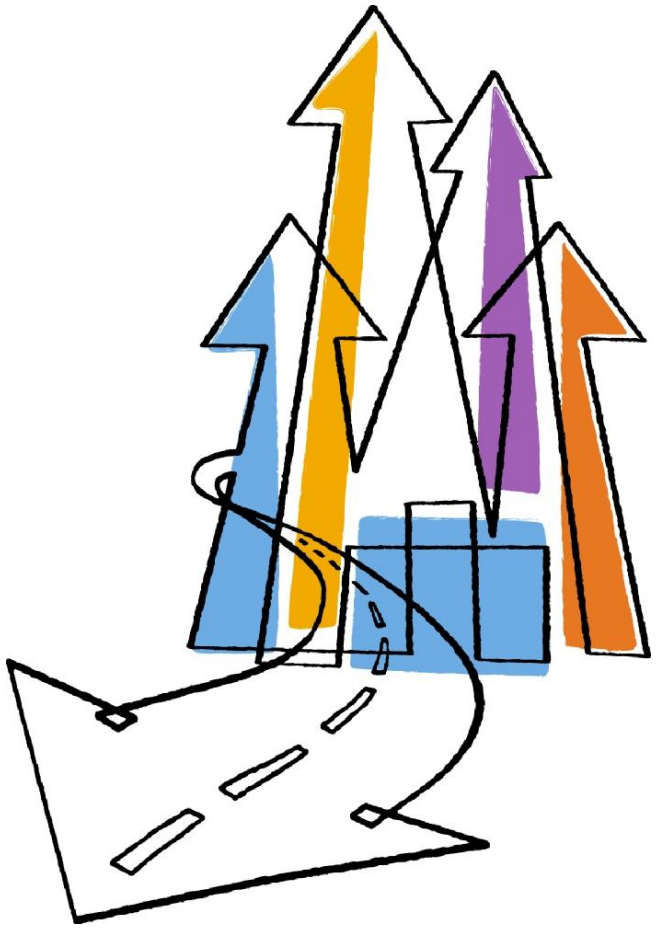
NetApp

Go further, faster®

Scaling Storage from Seismic Depths to Sequoia Heights



SC11

Booth #2605

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Agenda

- Who are we?
- What keeps you up at night?
- What will let you sleep?
- Achieving scalability

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Big Data ABC's

NetApp acquired Engenio E-Series solutions to address Big Data ABCs

Analytics

Gain Insight

Real-time analytics for extremely large data sets

Bandwidth

Go Fast

Intense data and computational workloads

Content

Lose Nothing

Boundless secure scalable data storage

- Purpose-built solutions for demanding workloads
- Real-time results accelerating business success
- Confidently store, retain and access data at scale

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Broad and Deep Customers And Partners

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Enterprise Customers

LPL Financial Services
Wells Fargo
中国电信 China Telecom
Kingfisher
Coca-Cola
Bank of America
verizon
BMW
Sabre
JCPenney
WEB.DE
Walmart
Save money. Live better.
PetroChina
Mercedes-Benz
HCA
Hospital Corporation of America
BlueCross BlueShield Association

HPC Customers

Jülich Forschungszentrum
NASA
Oak Ridge National Laboratory
NOAA
Raytheon
Oak Ridge National Laboratory
Managed by UT-Battelle for the Department of Energy
NERSC
bp
HLRN
Los Alamos National Laboratory
CGGVeritas
INES
Centre Informatique National de l'Enseignement Supérieur
BAE SYSTEMS
Météo France
Toujours un temps d'avance
university of groningen
Lawrence Livermore National Laboratory
GENERAL DYNAMICS
National Geospatial-Intelligence Agency
CEA
Sandia National Laboratories

OEM Partners

sgi
INNOVATION FOR RESULTS
CRAY
IBM
BULL
DELL
Verari systems
F1 PLATFORMS
FUJITSU
Sun
ORACLE
BLUE ARC
TERASCALA
TERADATA
Raising Intelligence
acer
panasas

Alliance Partners

lustre
OPENFABRICS ALLIANCE
S3B
QLOGIC
SNIA
IBM
EMULEX
FCIA
INFINIBAND TRADE ASSOCIATION
Storage Performance Council
Mellanox TECHNOLOGIES

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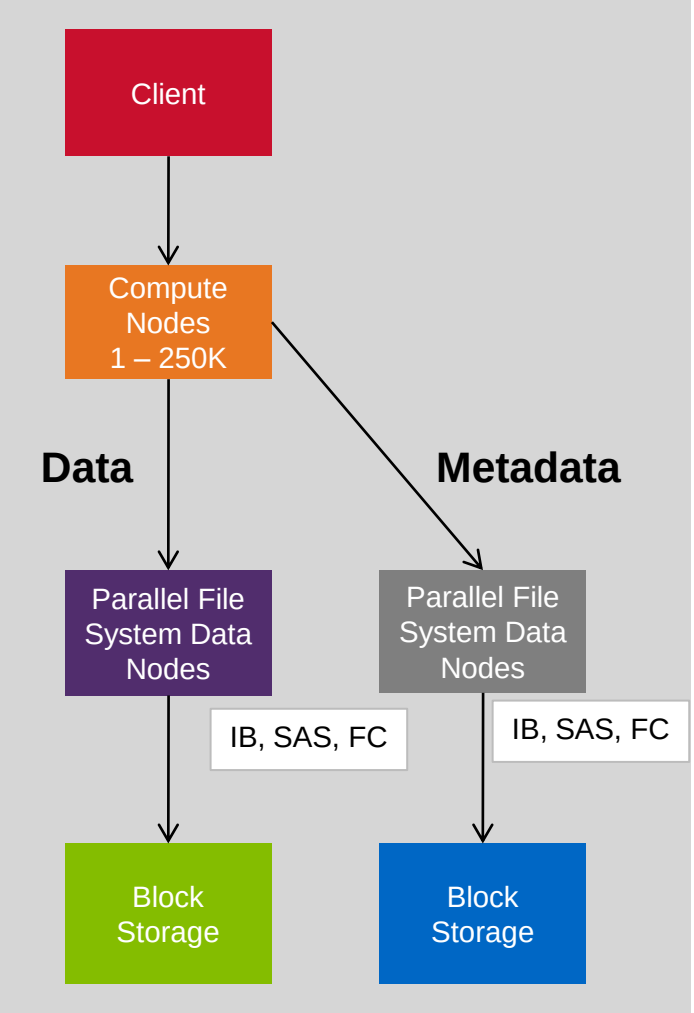
What keeps you up at night?



- **Performance**
  - Get bigger jobs done in a shorter amount of time
  - Get more jobs done in the same amount of time
  - Address widening gap between compute & storage
- **Reliability**
  - Minimize system downtime
  - Enable data integrity and availability
- **Storage efficiency**
  - Performance density, capacity density, power density
- **Cost**
  - Acquisition cost
  - Operating expense

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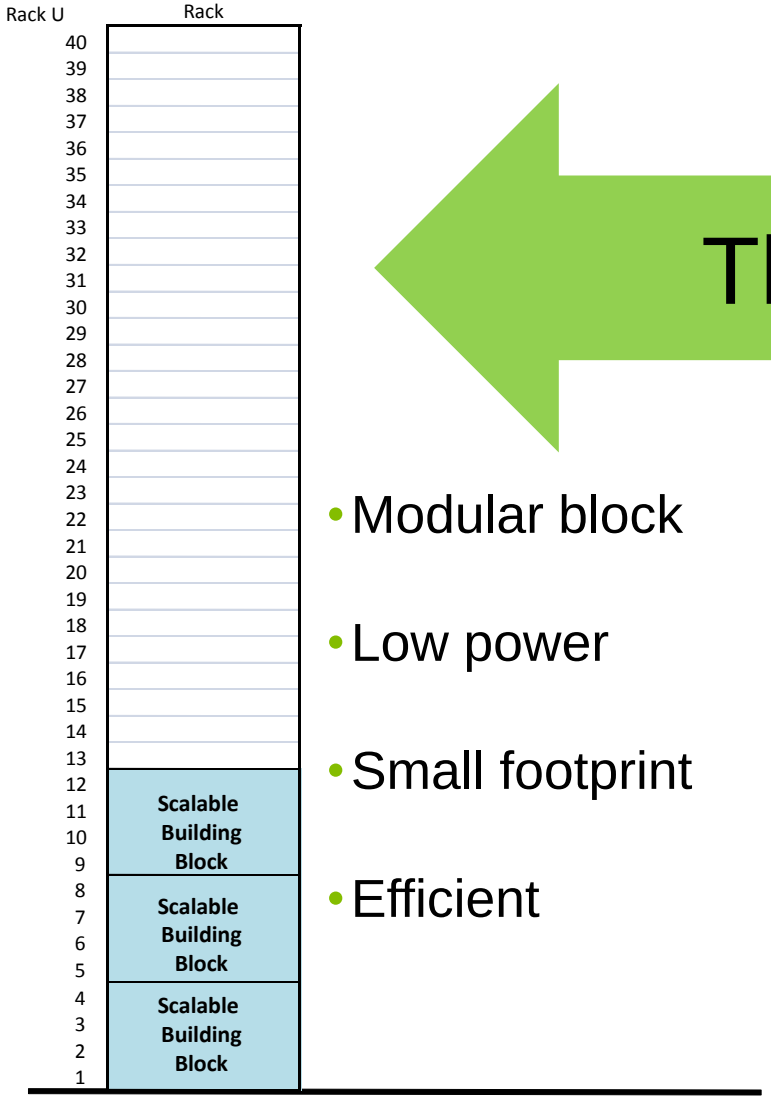
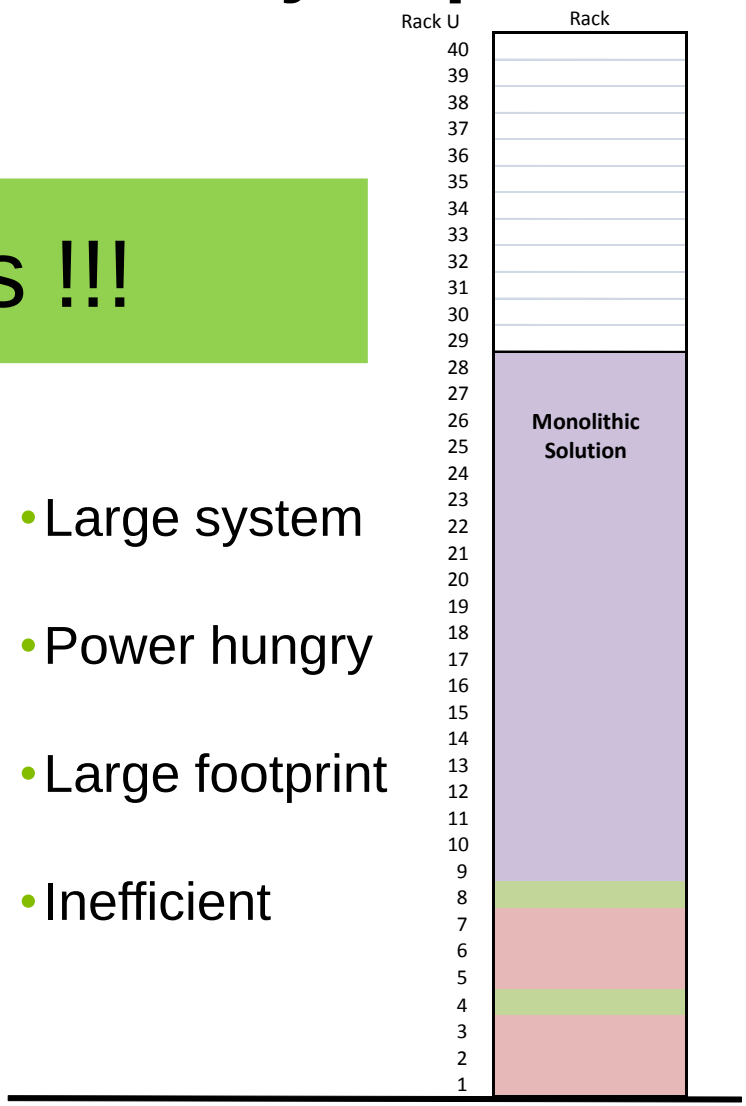
What will let you sleep?
How to Solve – which would you prefer?



This !!!

- Modular block
- Low power
- Small footprint
- Efficient

- Large system
- Power hungry
- Large footprint
- Inefficient



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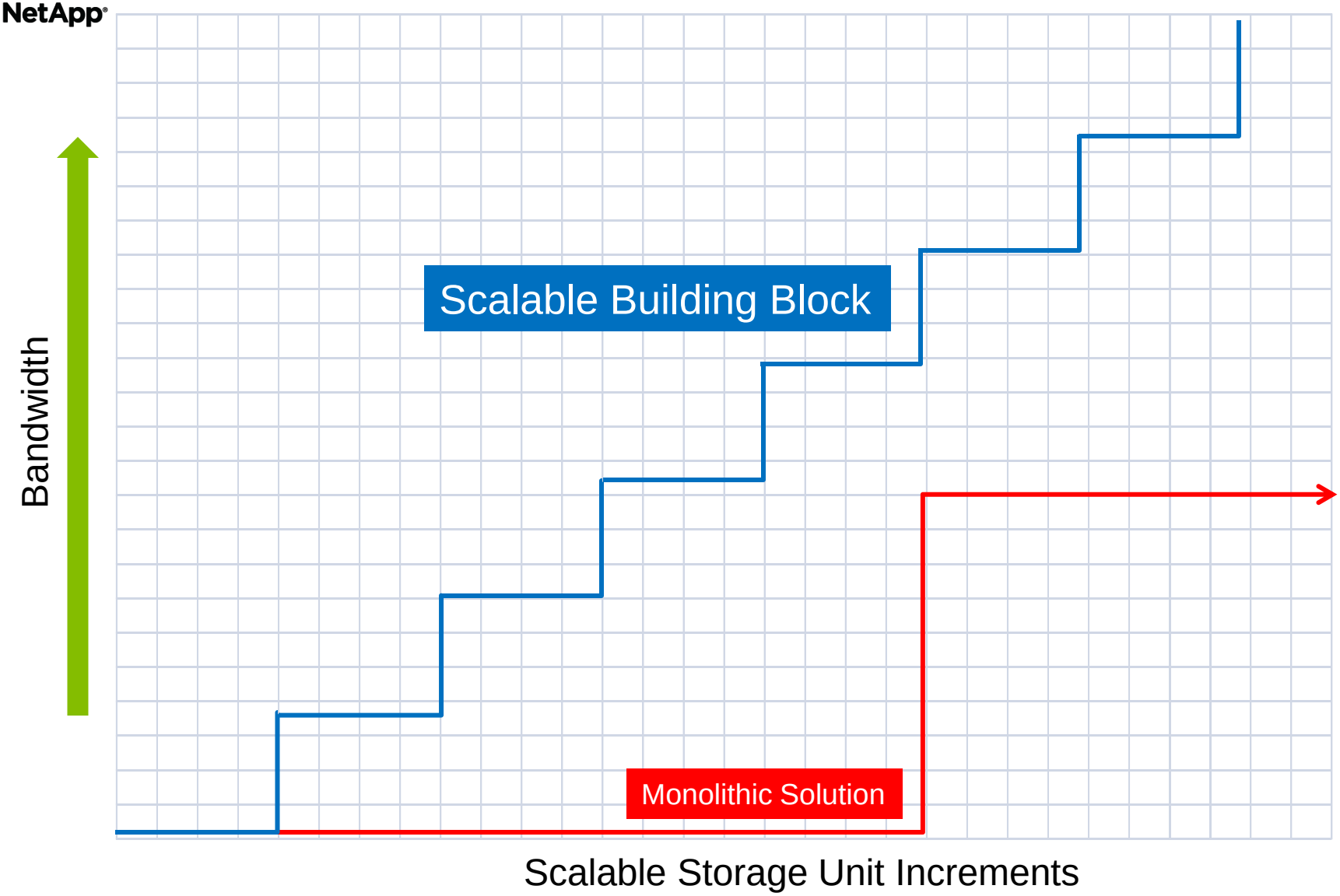
Flexible Scalability



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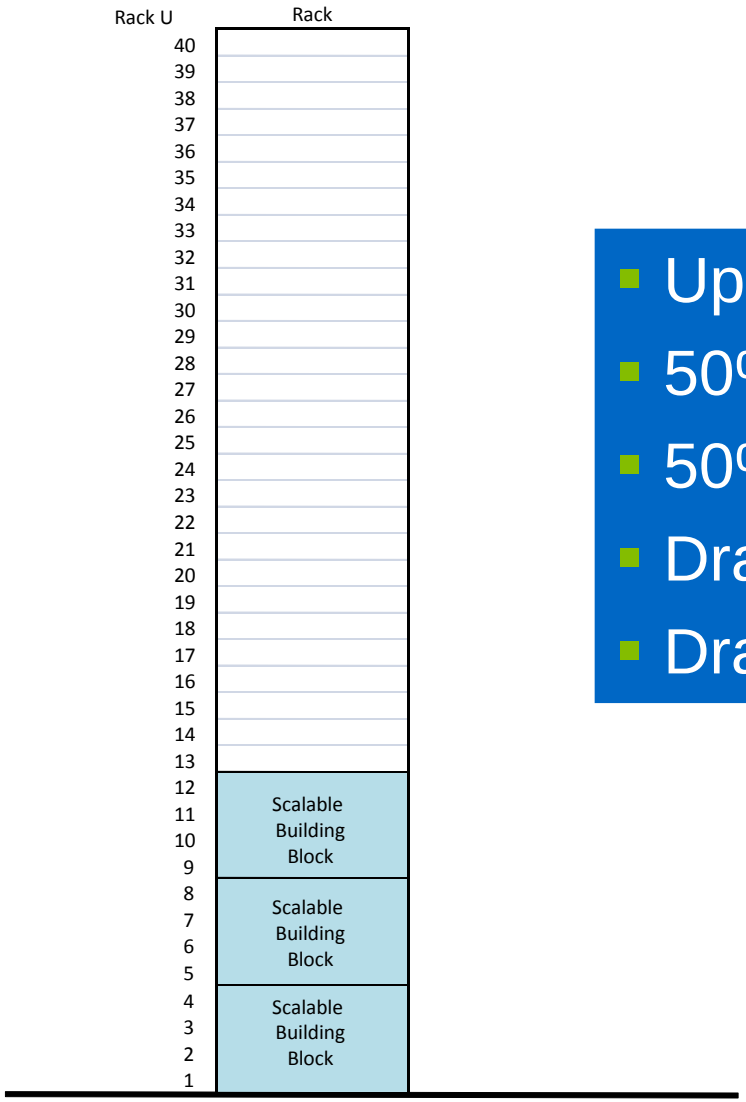
Measurable Benefits



- Up to 40% fewer drives
- 50% vertical space
- 50% the power
- Dramatically better write density
- Dramatically better read density

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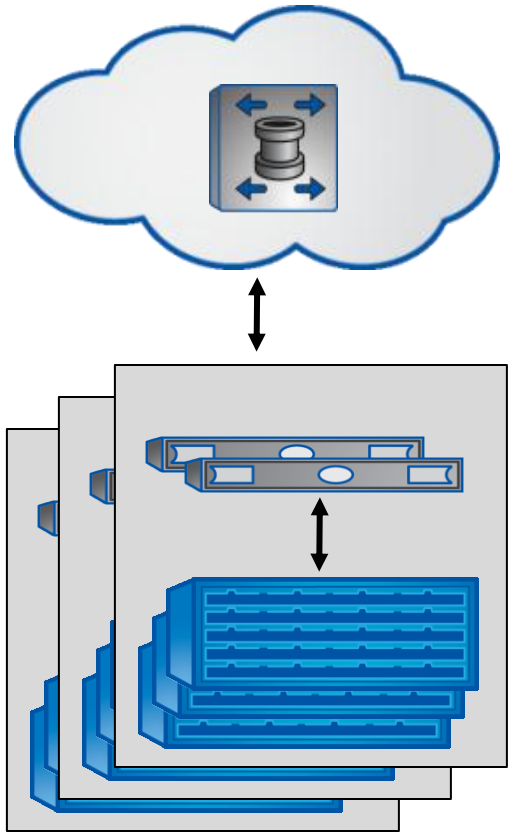
Achieving Scalability

IPC Network

File System Nodes

Block Storage



- IPC Cluster Connect
  - IPC ←→ file System Nodes
  - InfiniBand
- High performance, low latency block IO
  - InfiniBand
  - SAS
- Purpose built storage
  - Robust
  - Resilient

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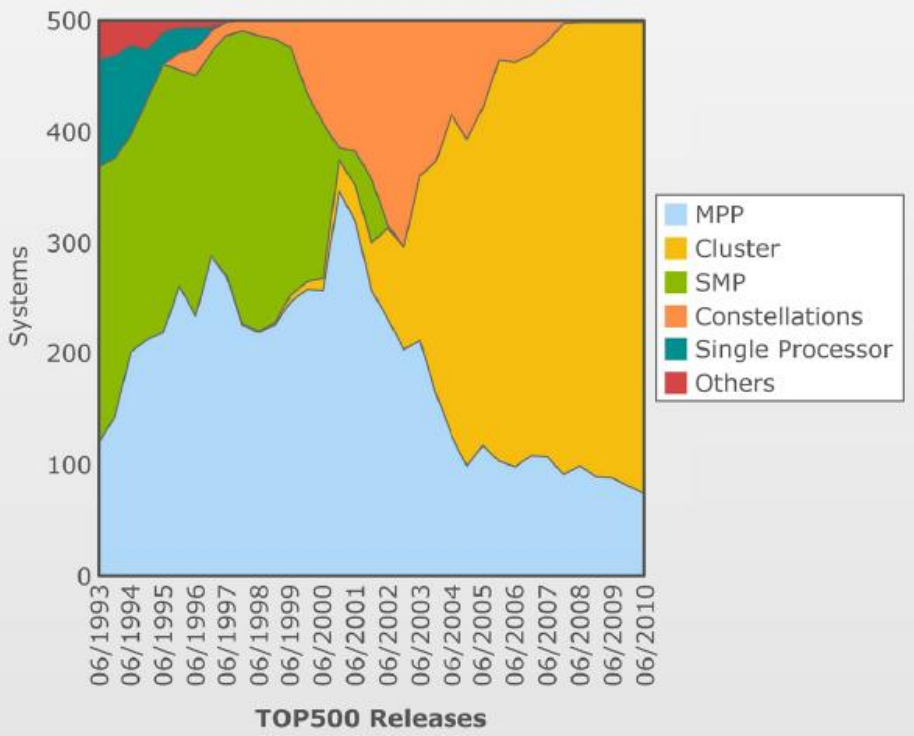
Not the first time



Top500, June 2010

- Compute tipped from monolithic (MPP) to modular (Clustered)
- Storage is now

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Closing Thoughts

- Intelligent, reliable performance is paramount

- Modularity is optimal

- Purpose built a must

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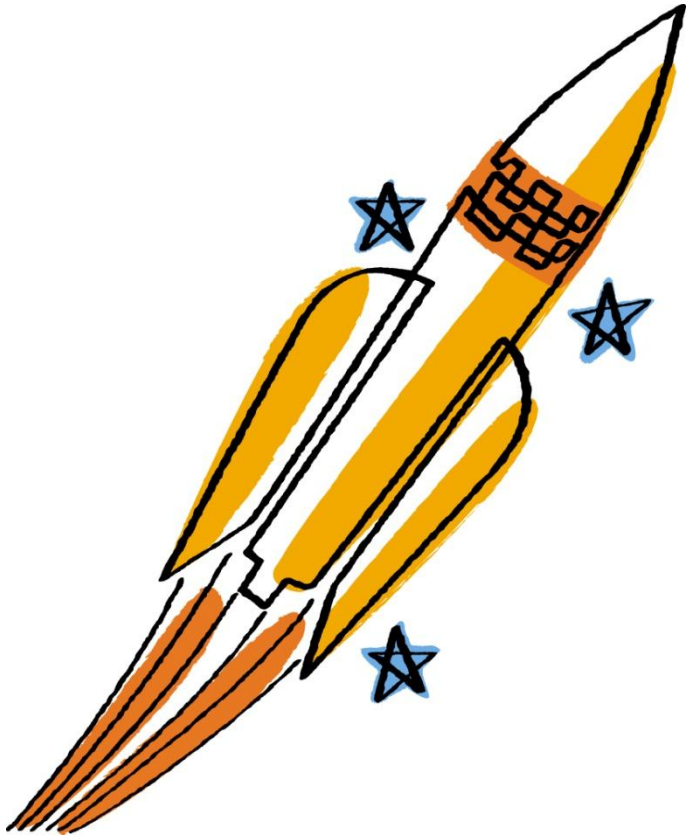
Thank you



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