CEA’S DATA CENTRIC STRATEGY

Random Access

Salishan 2016 | Guillaume Colin de Verdière

APRIL 2016
GCdV
Tera 100: the fastest data mover in 2010

Tera 100

Viz cluster

{/tmp}

200GB/s

100 GB/s

300GB/s

2PB

10GB/s

10GB/s

8PB

30 PB
(LTO5)

200GB/s

10GB/s

{/scratch}

{/store}

GcdV
Tera 1000: Push Data to the Limit

Tera 1000
- KNL

Tera 1000
- Haswell

Viz cluster
- 100GB/s

2TB/s

300GB/s

300 GB/s

GS1K

FC-SAN

12 GB/s

T1K-F
- Flash storage
- 4 PB

/store
- 30 PB

DDN

/scratch
- 20 PB

Seagate

240 PB
(T10000-D)

GCdV

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Tera 1000: Push Data to the Limit

Tera 1000
KNL

Tera 1000
Haswell

Viz cluster

Diskless supercomputer

T1K-F
Flash storage

/store

/scratch

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Tera 1000: Push Data to the Limit

IO Proxies inside the machine

Decouple storage from compute
Flow control
Hog control
An allocated resource

Tera 1000
KNL

Viz cluster...

Tera 1000
Haswell

Flash storage
T1K-F

/store
/scratch
Flash Storage
Acts as an I/O accelerator
Fast checkpoint restart
Fast node crash recovery