

Lawrence Berkeley National Laboratory

LBL Publications

Title

PGF Computing Resources

Permalink

<https://escholarship.org/uc/item/4ks996z0>

Authors

Yumae, Brian
Brand, Jeremy

Publication Date

2008-12-04

Scaling

The potential for exceeding existing datacenter space with increases in computing resource requirements greater than 2x/year is very high. Strategies for managing growth at or above this level are a priority, including leveraging external computing resources and expertise wherever possible.

Resource Strategies

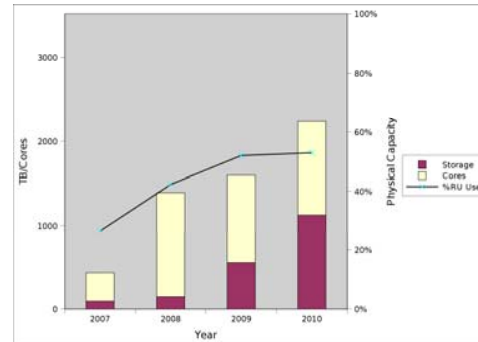
Short Term / Ongoing Plans

- Maintain high computing resource densities
- Regularly update physical resource utilization
- Investigate latest technologies for potential deployment
- Increase resources gradually instead of bursts
- Utilize high efficiency/low power systems
- Deploy VM's when possible
- Tune data retention windows
- Leverage external resources

Long Term plans

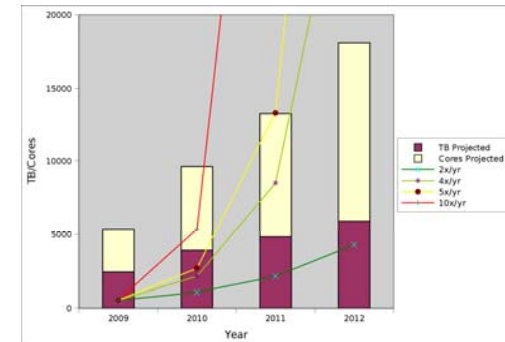
- Investigate external computing resource options
- Investigate co-location options
- Analyze options for expanding existing datacenters

Short Term Physical Resource Utilization



Resource Assumptions:
2x increase in PI requirements over 2009

Projected Physical Resource Utilization



Resource Assumptions:
50% split of remaining RU between TB/Cores in 2009
Core/RU increases of 16, 24 and 32 starting 2010
TB/RU increases of 6, 8, and 12 starting 2010
TB/Cores from 2009 replaced in 2012

External Resources



Infrastructure expertise leveraged to date:

- NERSC: HPSS archive storage, cluster
- ESnet: 10G WAN connectivity
- LBLnet: LAN planning and support, 10G compute node/storage network

