PRObE

Parallel Reconfigurable Observational Environment

Robert Ricci

GEC 13, March 2012

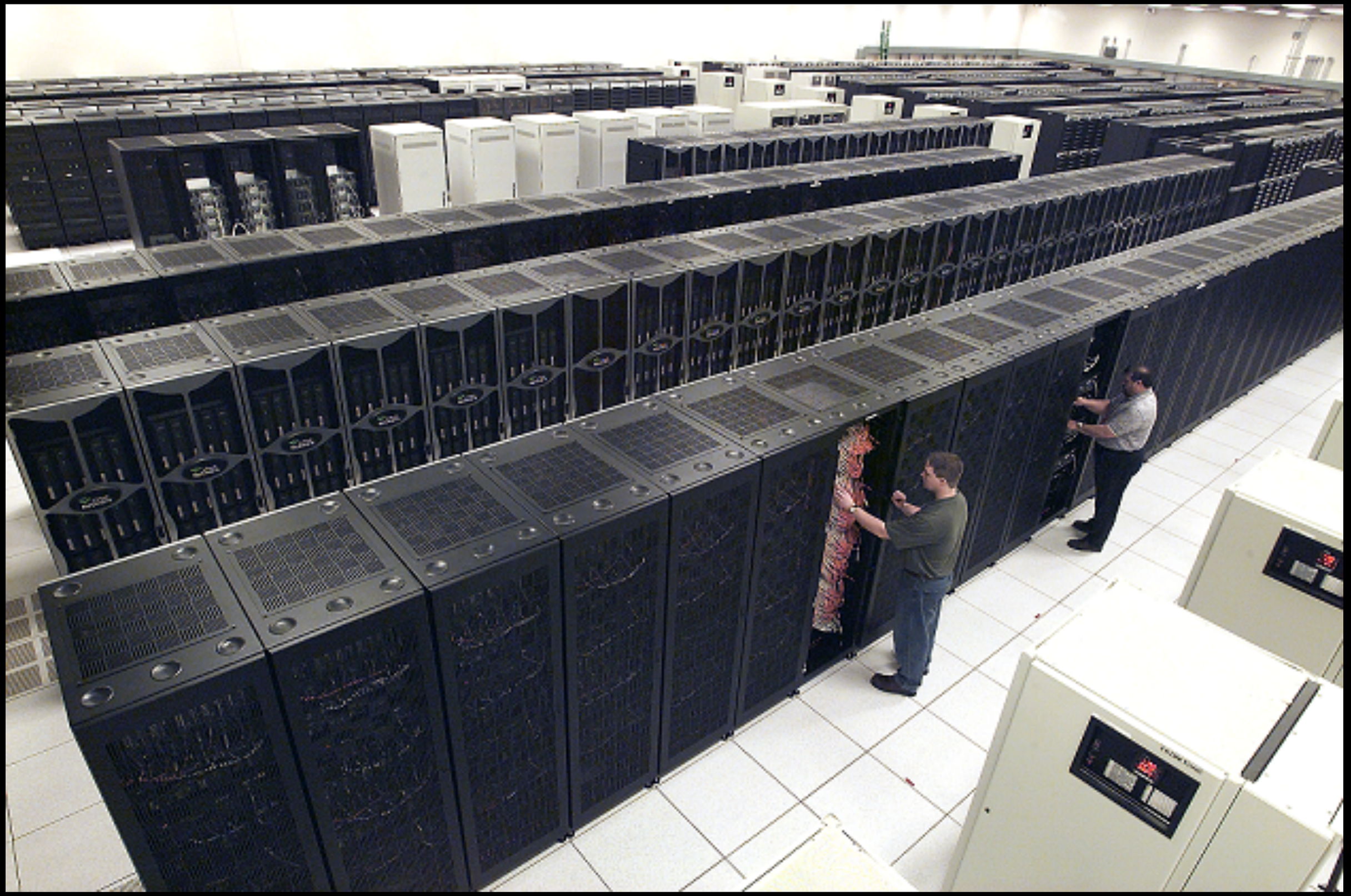
Put thousands of bare-metal machines in the hands of networking and systems researchers

Los Alamos
NATIONAL LABORATORY
EST. 1943

New Mexico
CONSORTIUM

Carnegie Mellon

THE
UNIVERSITY
OF UTAH



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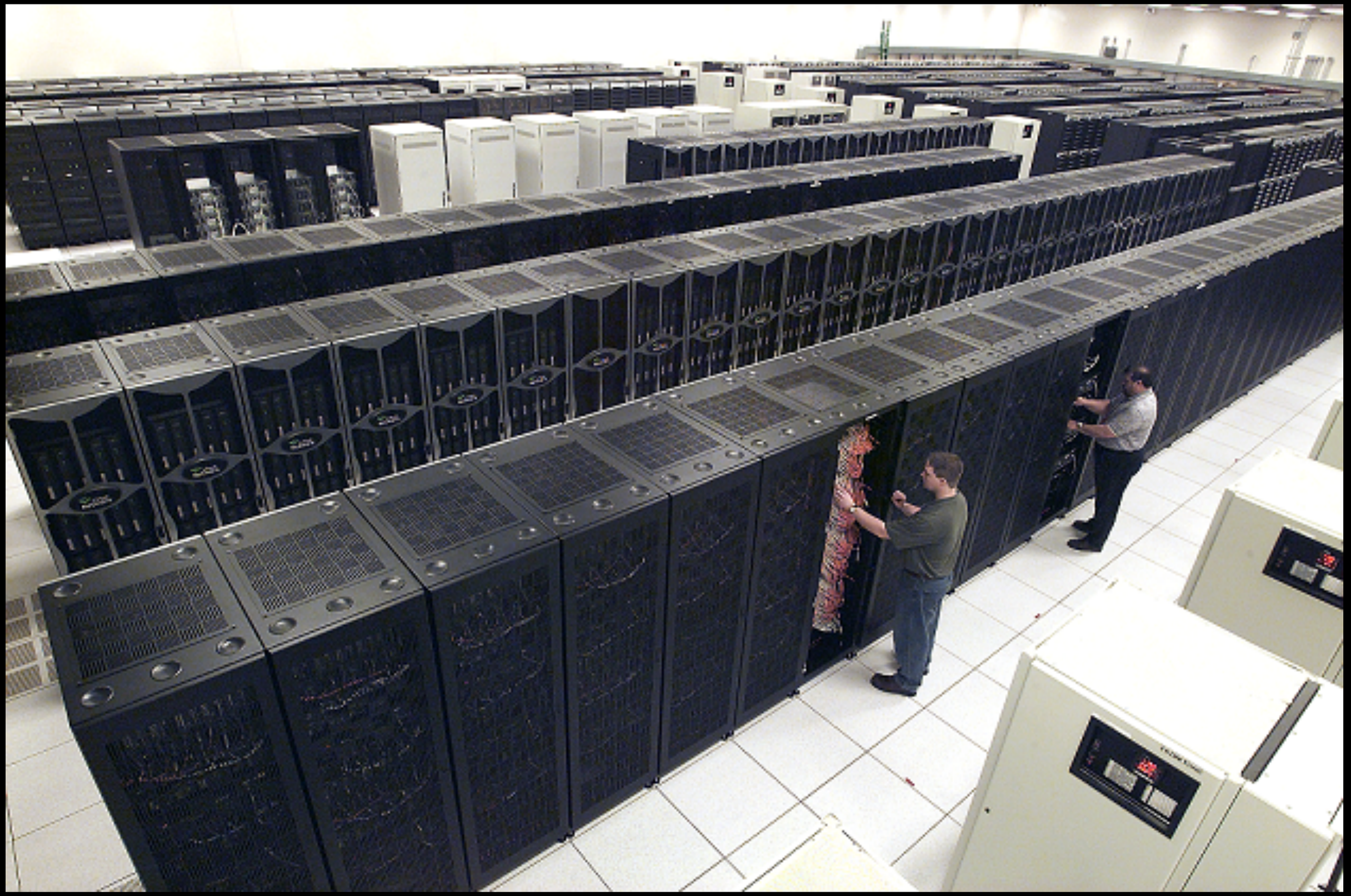
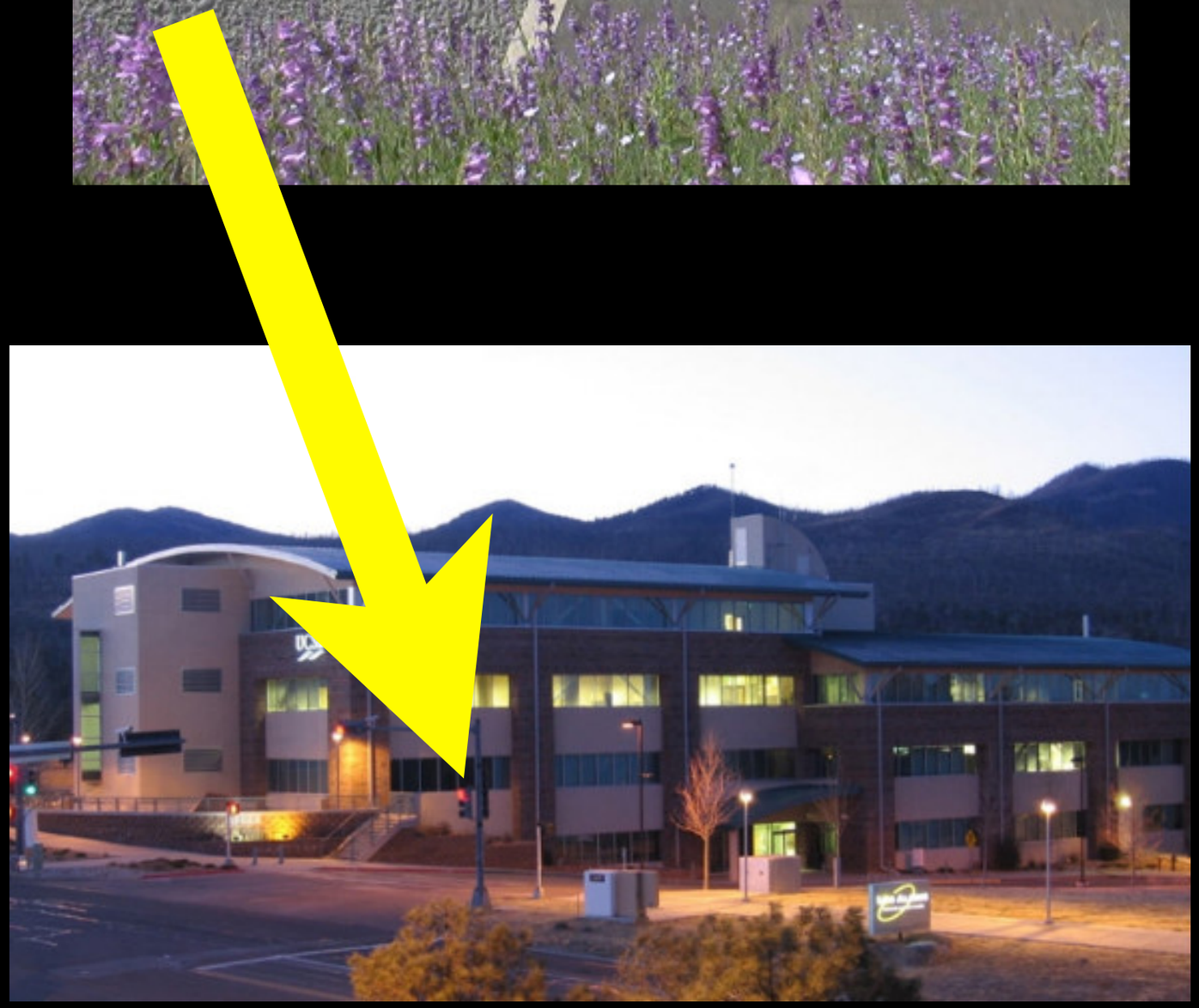


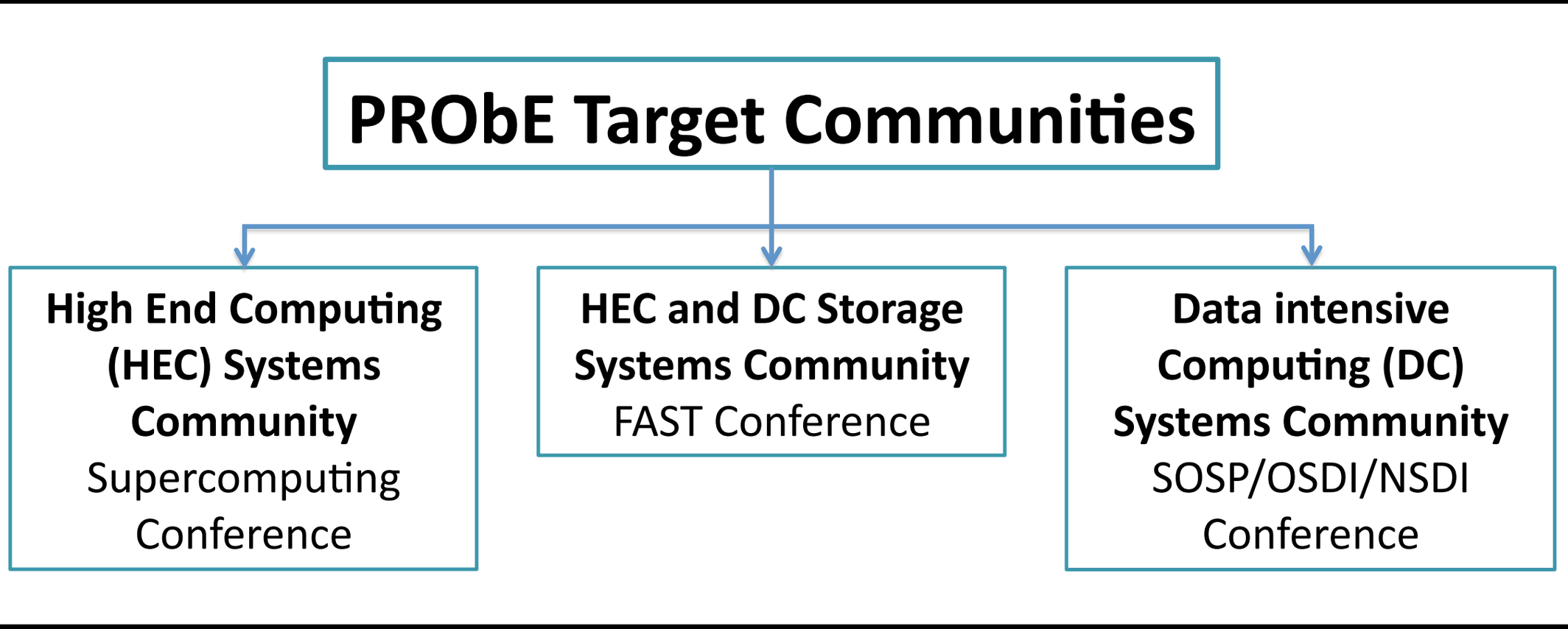
Los Alamos National Laboratory
operated by University of California for the Department of Energy



PRObE Usage Model

- Specifically target research that needs
  - A very large cluster
  - Exclusive, low-level access
  - For days or weeks
- Emulate failure scenarios

NFS's "who can apply" rules
Includes international and corporate research
(partnership with US university recommended)

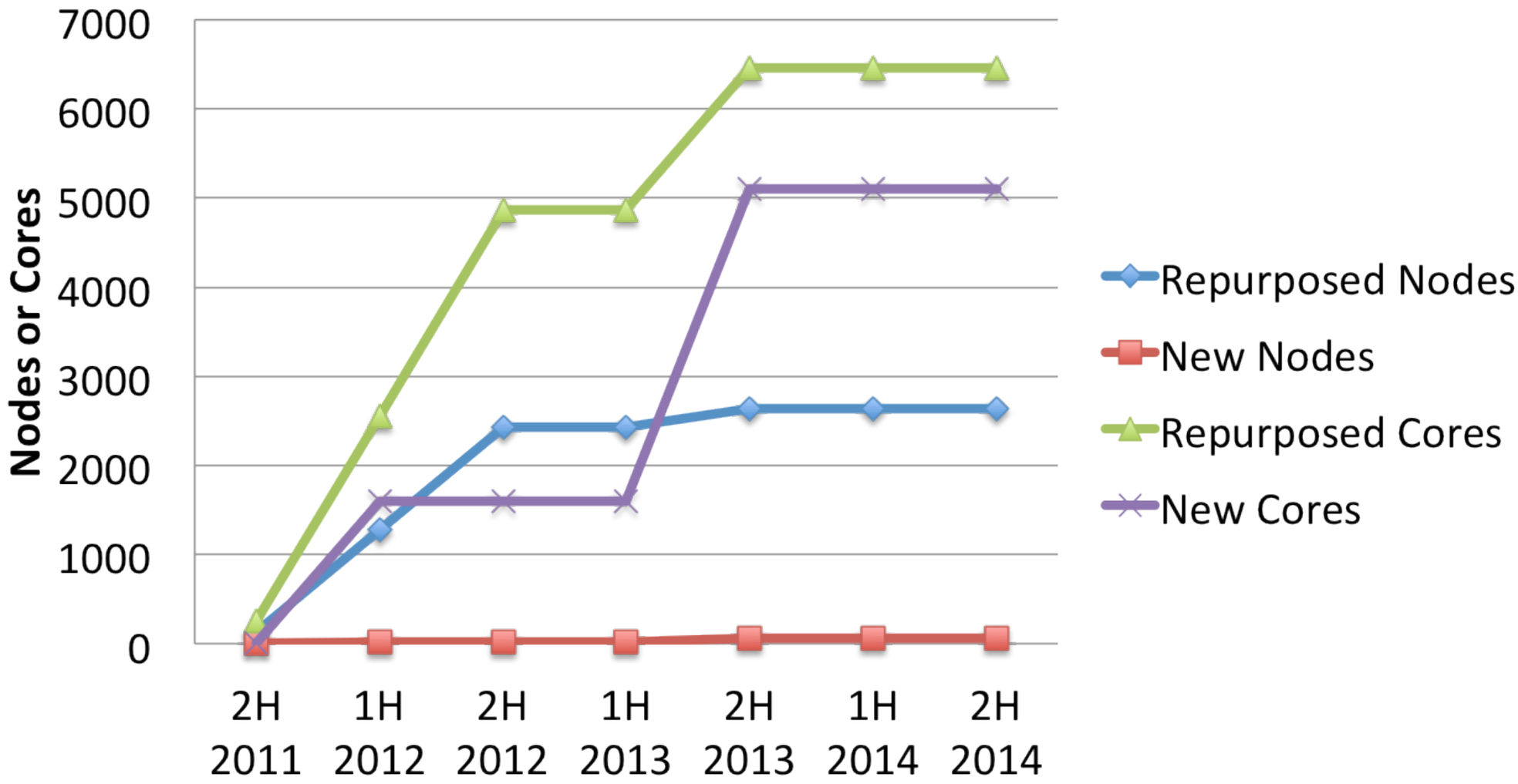


marmot.pdl.cmu.edu

- Initial 128 node cluster at CMU (Marmot)
- Infiniband, dual Ethernet, 2TB drive / node

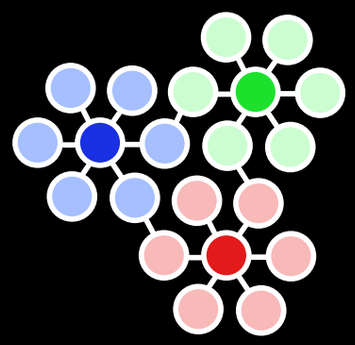
Next cluster: 1,000 nodes, Ethernet and Infiniband

Target Availability Date: April 1


7000
6000
5000
4000
3000
2000
1000
0
Nodes or Cores
2H 2011
1H 2012
2H 2012
1H 2013
2H 2013
1H 2014
2H 2014
Repurposed Nodes
New Nodes
Repurposed Cores
New Cores

PRObE and GENI

- "Volunteer" federation with GENI
- Providing several aggregates
- Its own set of allocation and vetting policies
- Considering connections through ESNET



PR0bE

Parallel Reconfigurable
0bservational Environment

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