



Commercial Exploitation of Grid Technology

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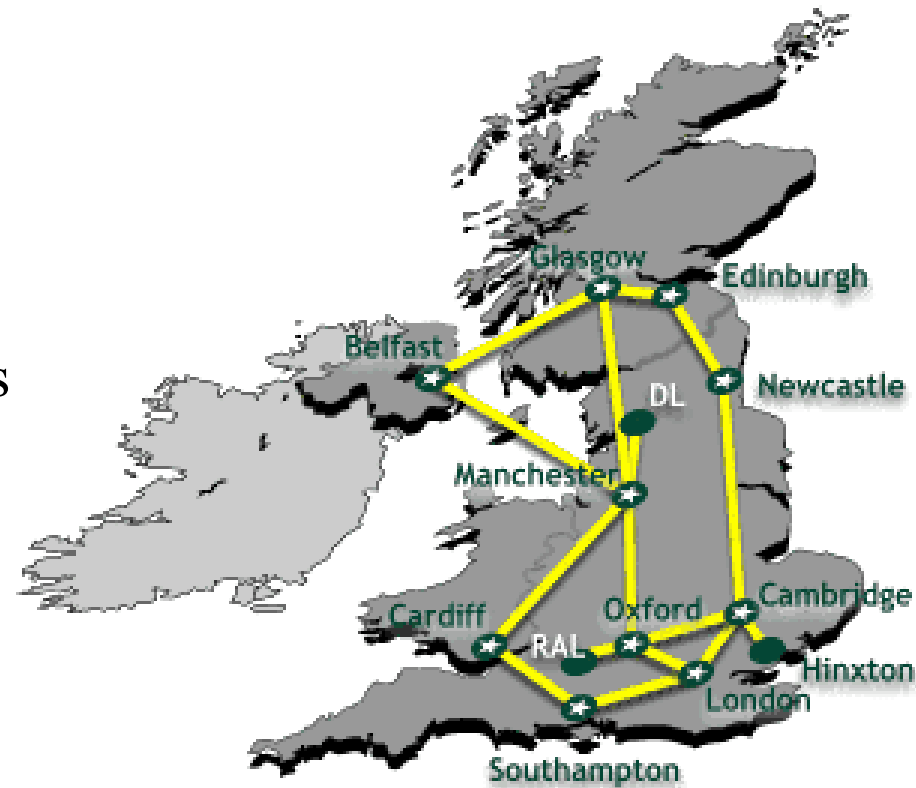


Commercial Exploitation of Grid Technology

- Sun and the eScience Programme
- Context
- What is *Grid*?
- Sun's Grid Products
- Example Grid Implementation
- Conclusions

eScience Programme

- EPCC / NeSC
 - Sun DCG Project
- Imperial / LeSC
 - EPIC: Portals
 - Computational Markets
- White Rose
- Sun HPC/Grid
 - Oxford & OCCF
 - Cambridge



1987

The Network is the Computer

2002

The Computer built out of the Network

Datacenter Architecture for the Next Decade



Emerging Technology Themes

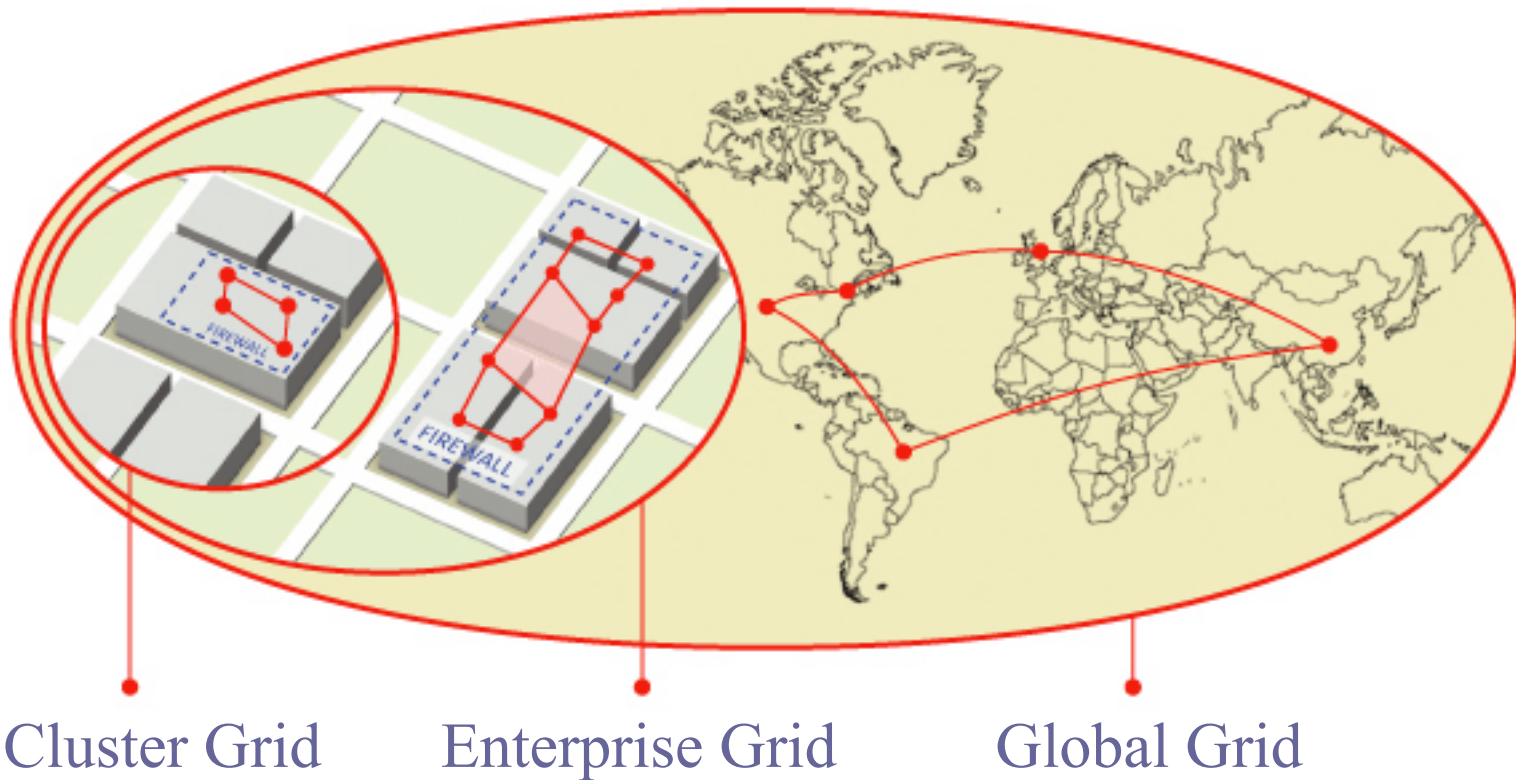
- Virtualization of resources
 - compute (Grid)
 - data (SAN)
 - management (N1)
- Utility Computing
 - buy computing – not computers
 - manage services – not servers
- Need to reduce complexity

What does *Grid* mean?

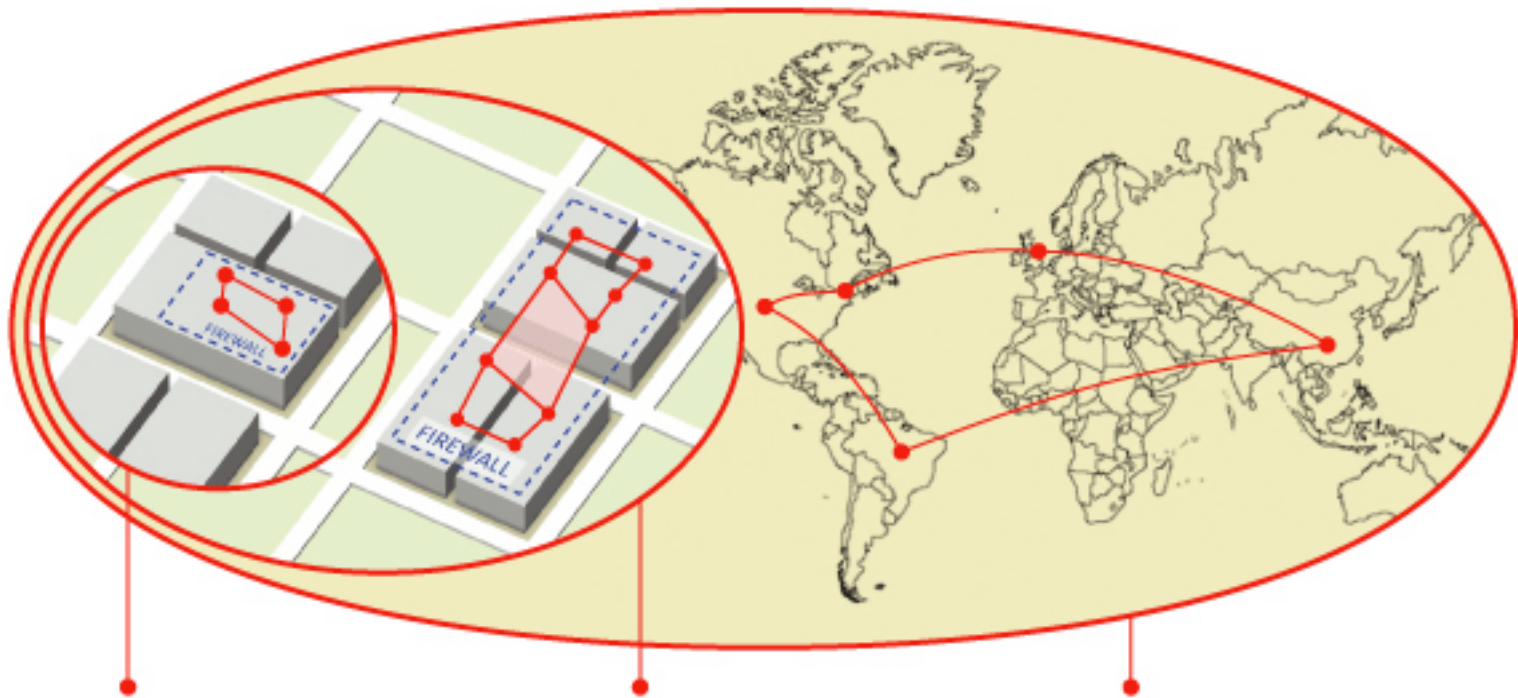
- Free PC cycles accessed over the Internet
- Connecting Crays together
- “...provide pervasive, dependable, consistent and inexpensive access to advanced computational capabilities, databases, sensors and people ”

DTI eScience web page

What does *Grid* mean?



Key Issues

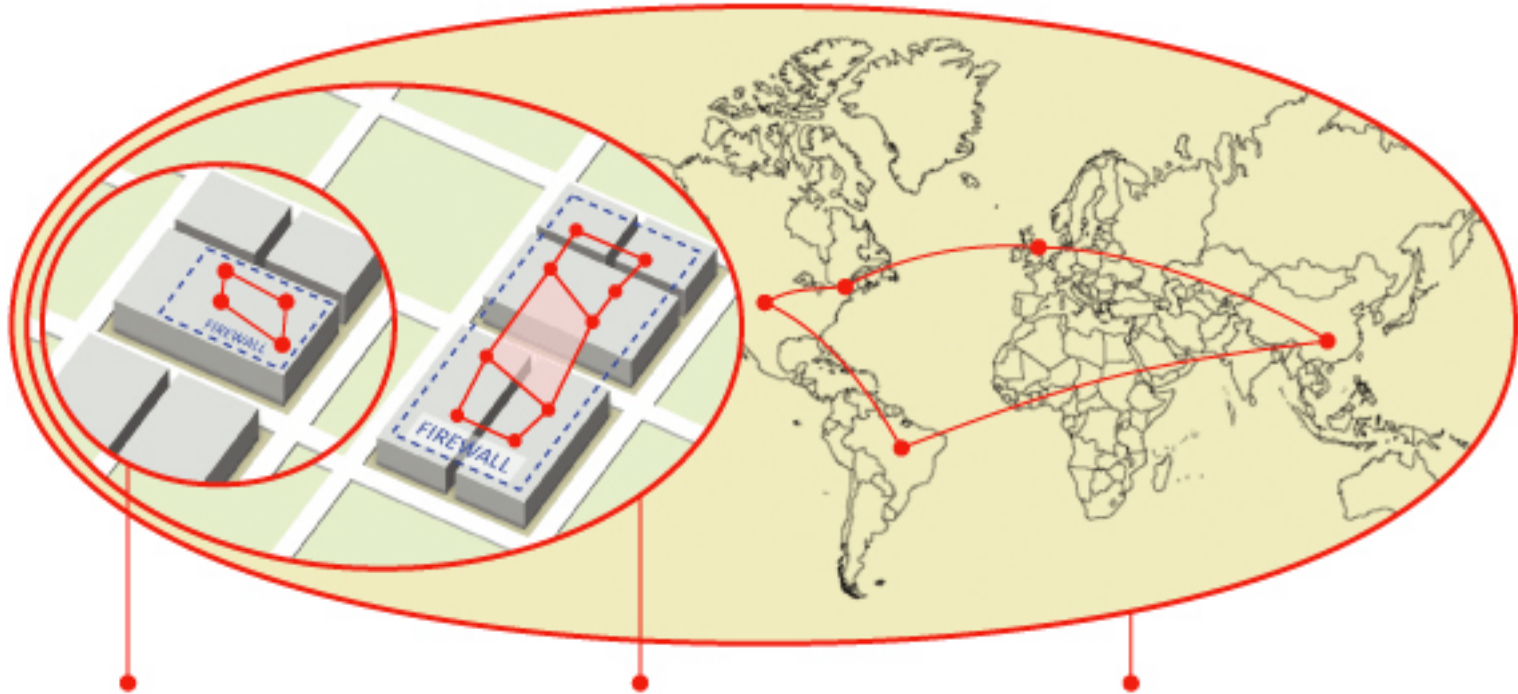


Cluster Grid
- resource
management

Enterprise Grid
- policies

Global Grid
- security

Commercial Exploitation

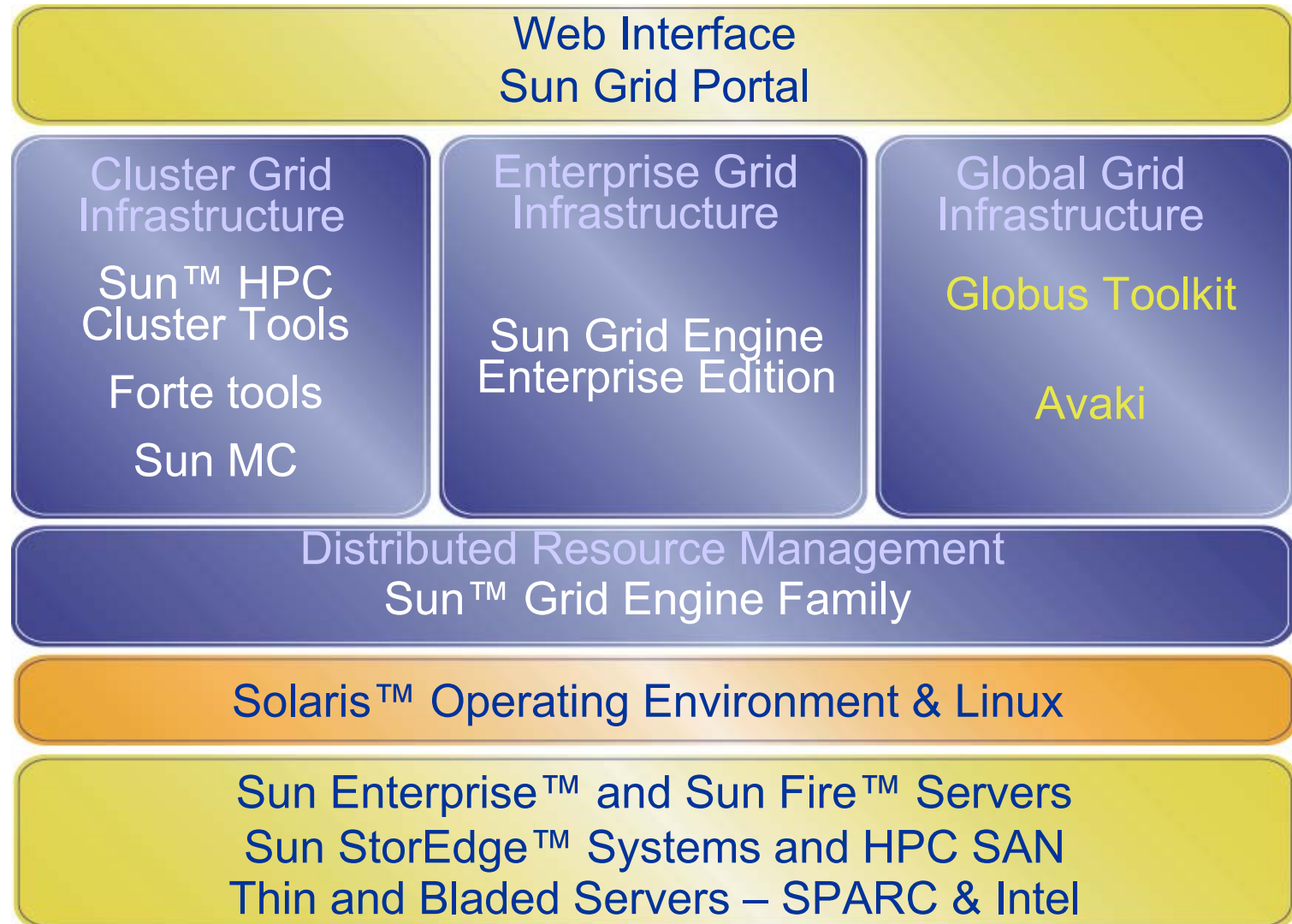


Cluster Grid
- done deal

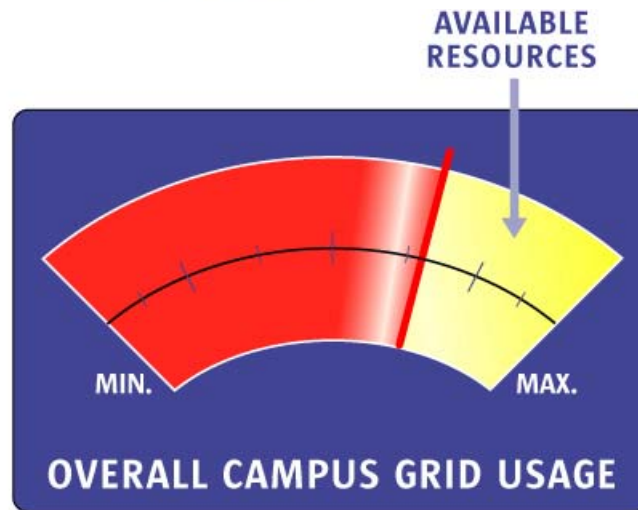
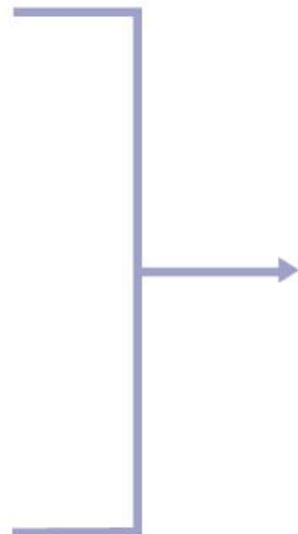
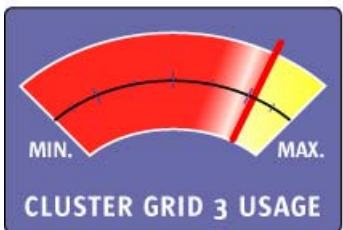
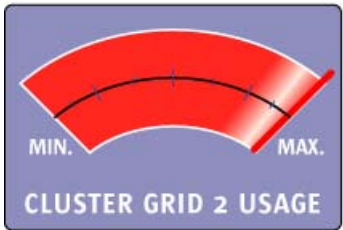
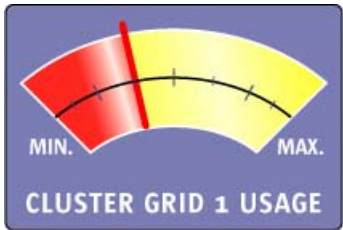
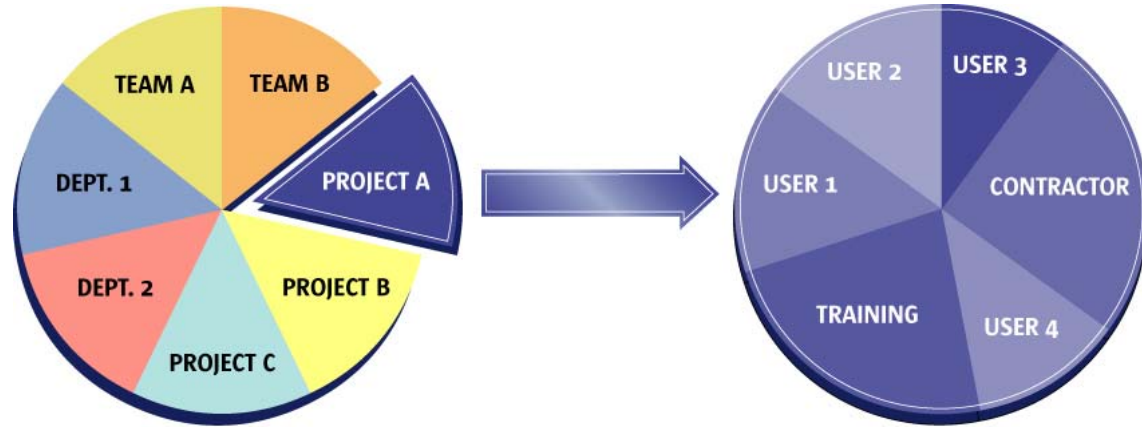
Enterprise Grid
- big opportunity

Global Grid
- immature

Sun Grid Solution Stack



SGE Enterprise Edition



Grid Solutions

- **Infrastructure Audit**
 - systems, network, storage, applications
- **Grid Pilot Projects**
- **Implementation Services**
 - Sun Grid Software Stack
 - Portal
 - SGE EE (HA, Globus integration)
- **Pre-configured Cluster-Grids**
- **Application Performance Tuning**

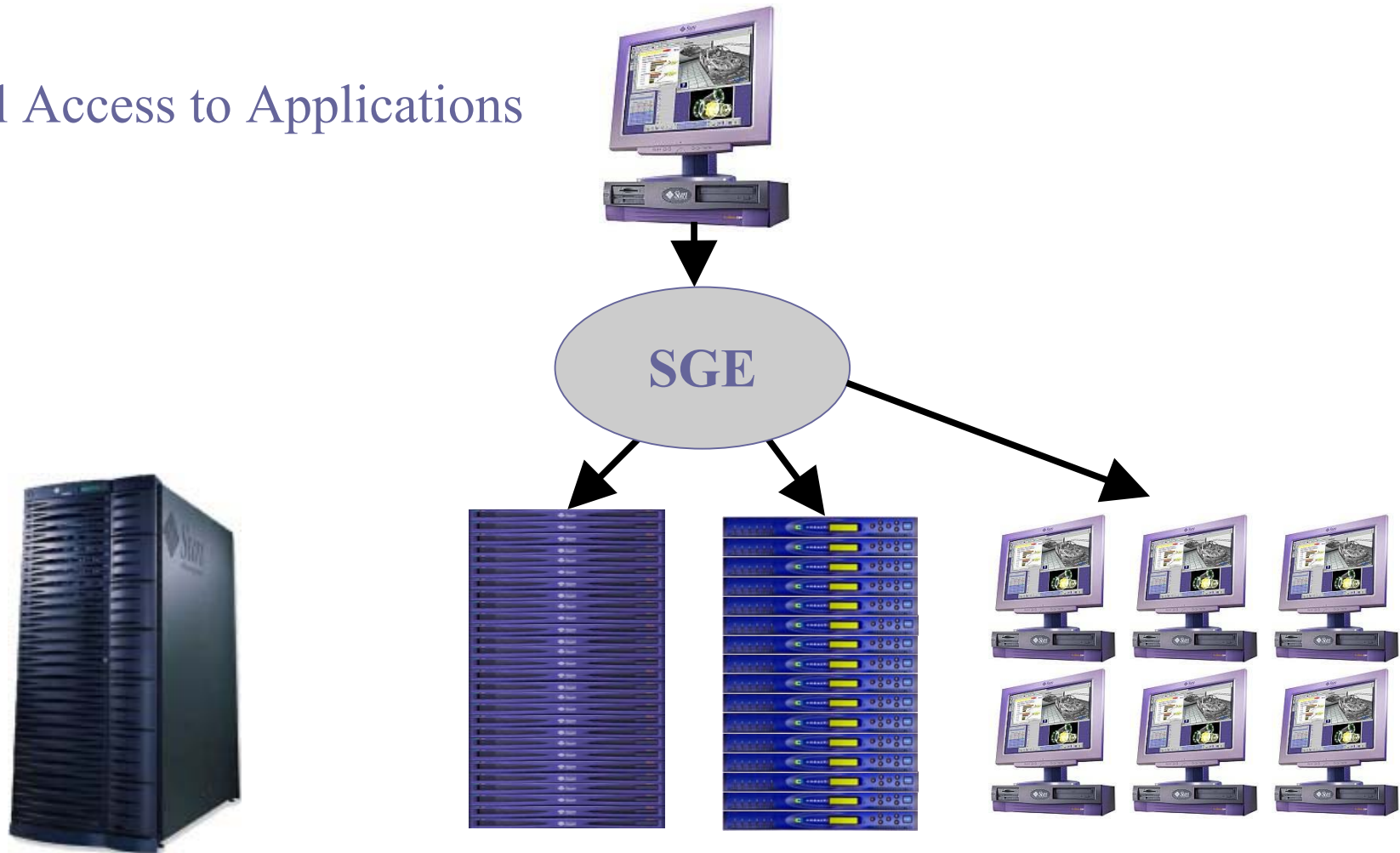
Example Grid Architecture

Portal Access to Applications



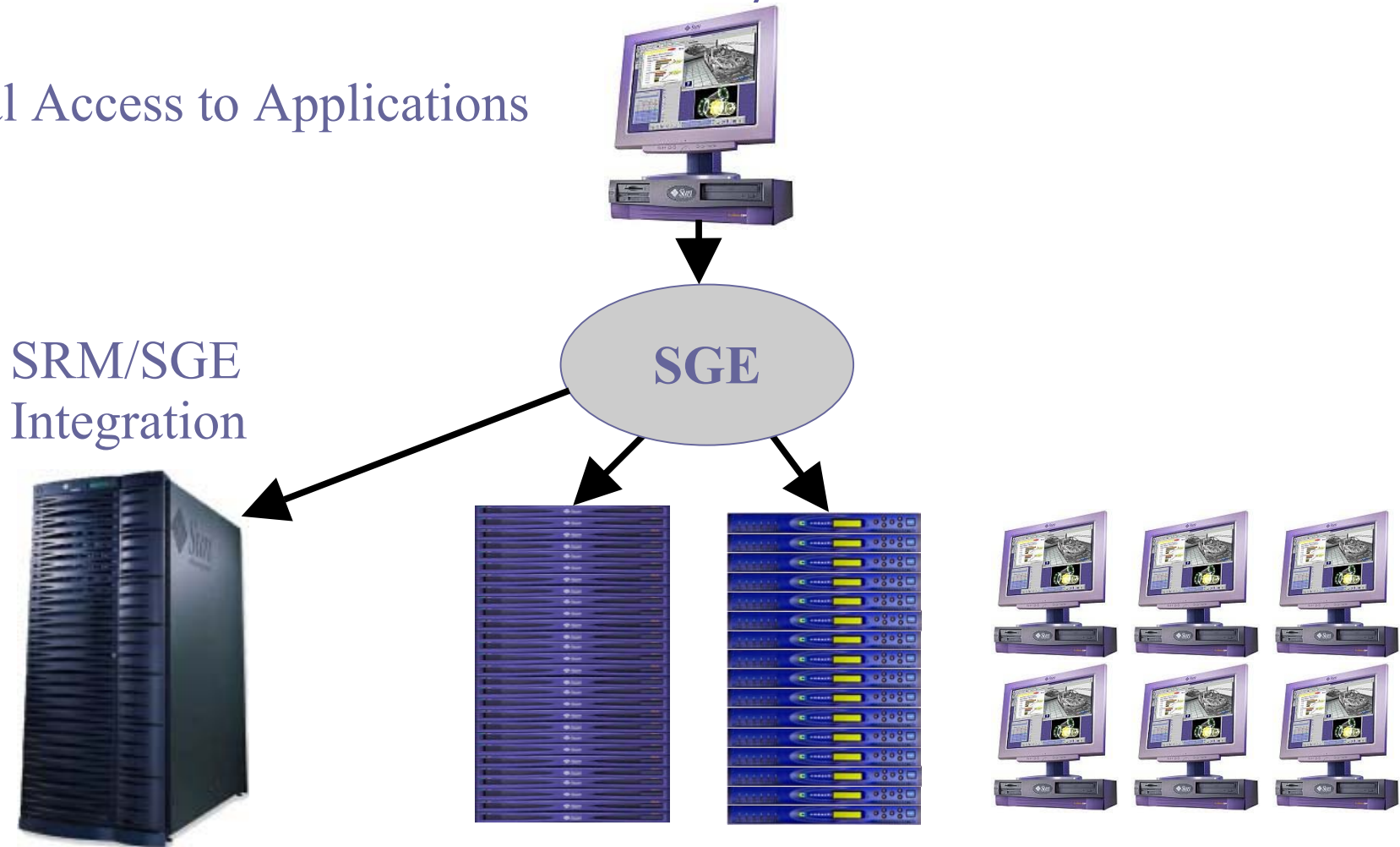
Evenings and Weekends

Portal Access to Applications



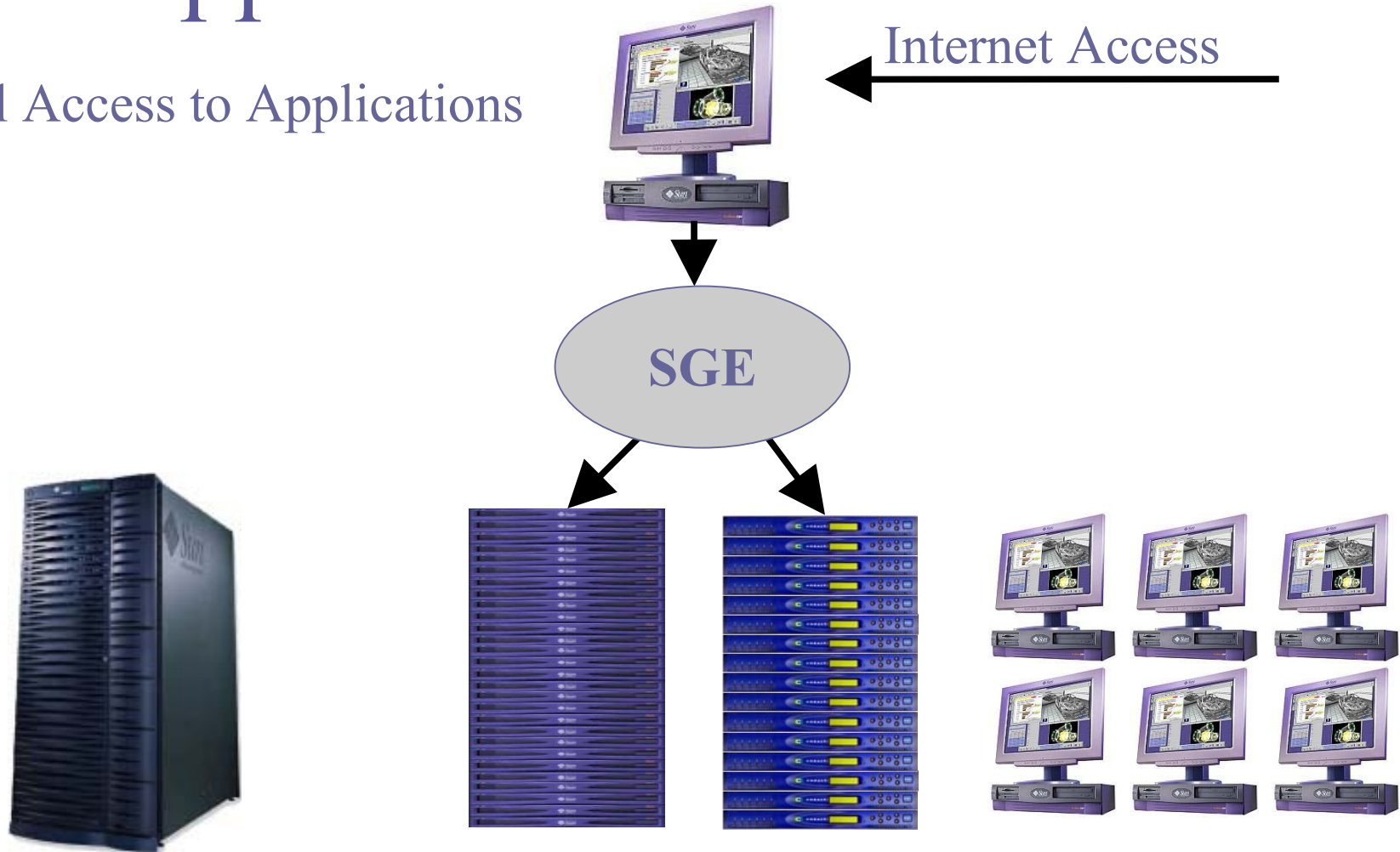
Utilize Spare Data Centre Cycles

Portal Access to Applications



Customer Access to Applications

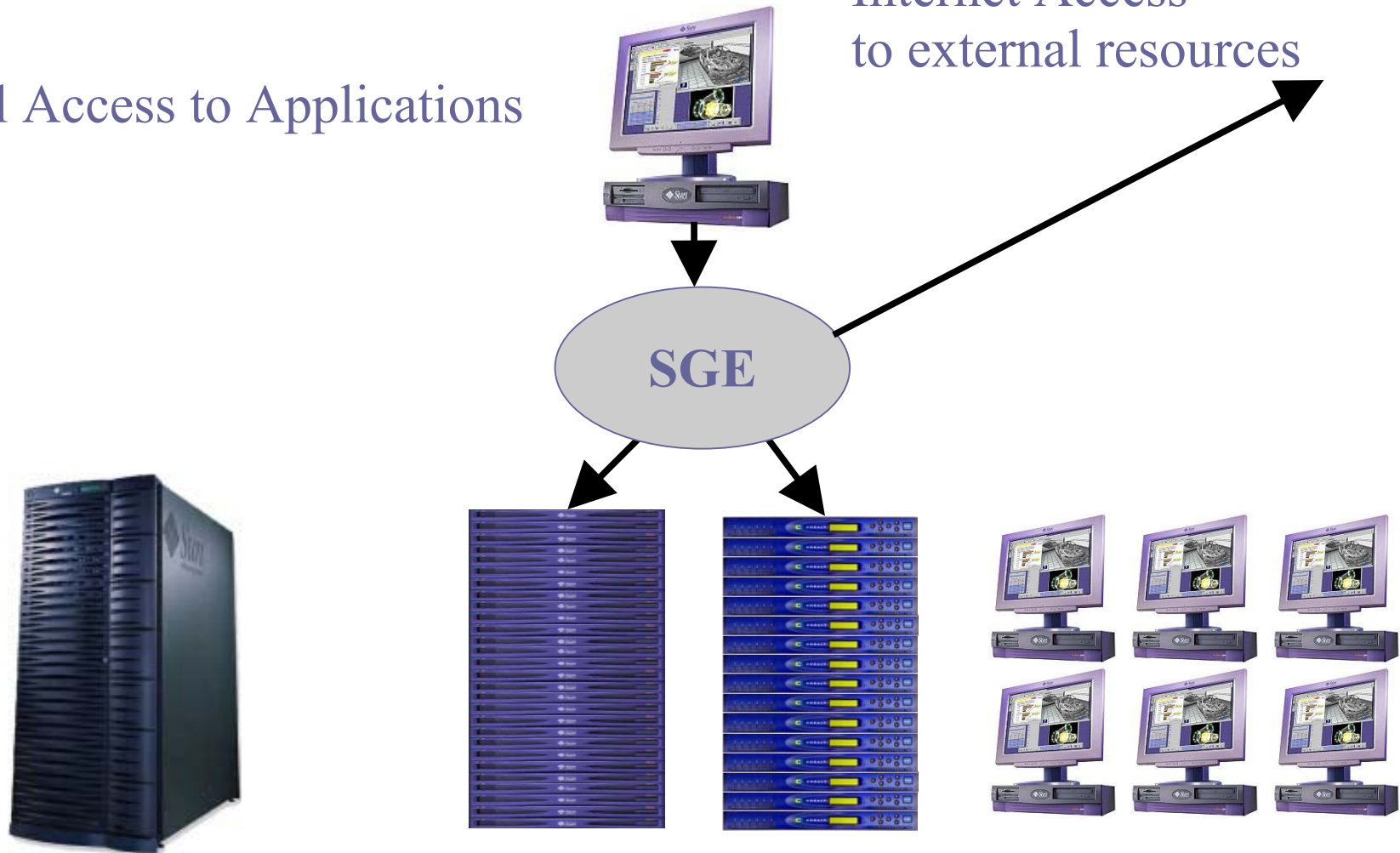
Portal Access to Applications



Access External Resources

Portal Access to Applications

Internet Access
to external resources



Benefits of Grid Architecture

- Flexibility
- Maximize use of resources
 - save money
- Future proof
 - Cluster Grid is Global Grid enabled

Sun Grid Customers



Conclusion

- Grid and N1 are the building blocks for computing in the 21st Century
- Sun has integrated and integratable Grid solution stack
- Sun has Grid Solutions today that deliver customer value

Where to get more information

- <http://www.sun.com/grid>
 - **Grid overview, products, success stories**
- <http://www.sun.com/gridware>
 - **Grid Engine detail**
- <http://gridengine.sunsource.net>
 - **Grid Engine Open Source project**
- <http://wwws.sun.com/software/grid/solutions/docs.htm>
 - **Grid Solutions**
- <http://wwws.sun.com/software/grid/success.html>
 - **Grid customers identified in this presentation**
- <http://wwws.sun.com/software/solutions/n1/>
 - **N1 information**



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