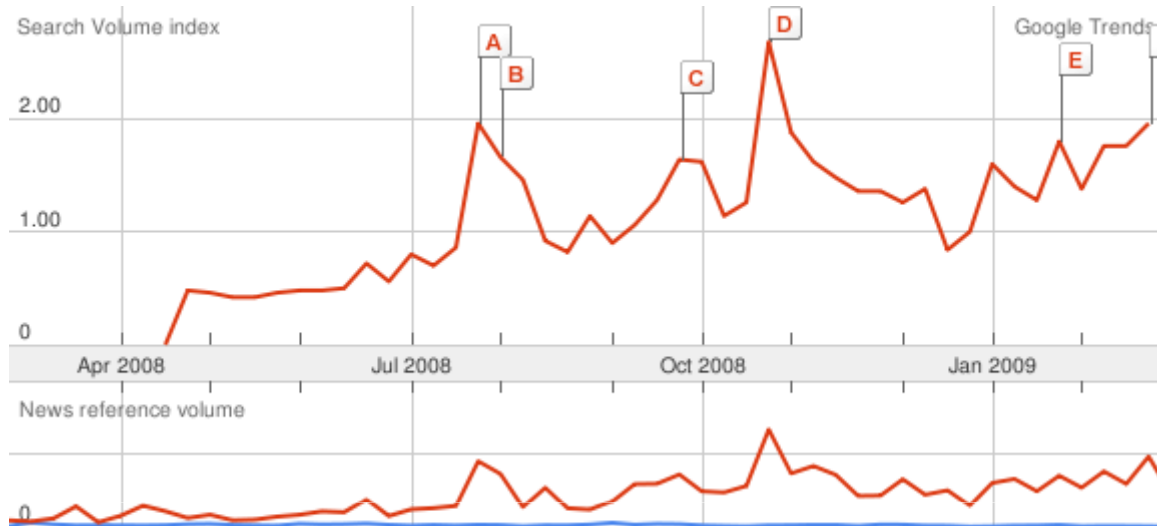


EGEE UF 4/OGF25/OGF Europe 2
“From Grids to Clouds”

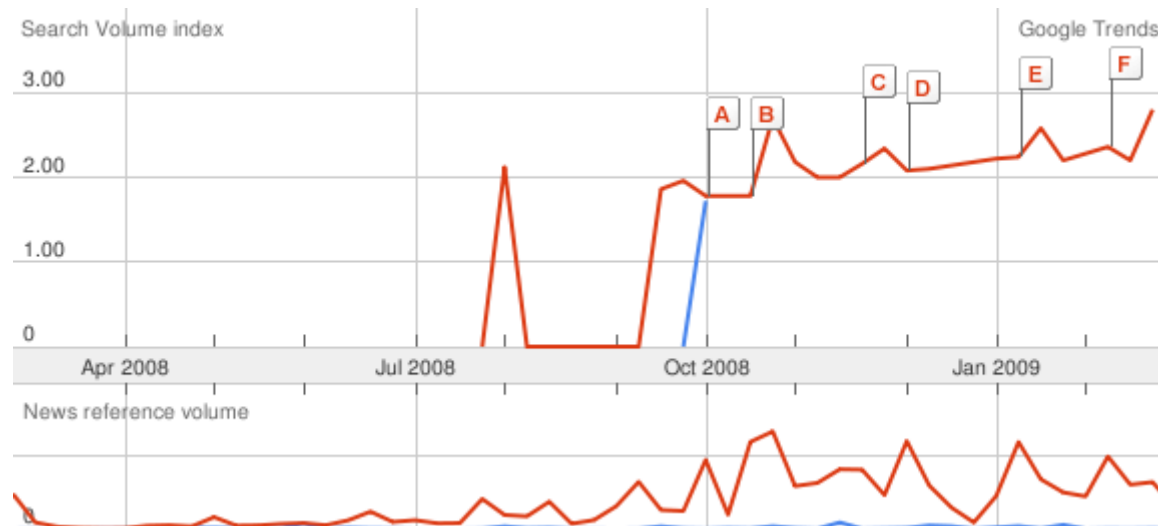
Grids and Clouds

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Grid Computing, Cloud Computing



Grid Services, Cloud Services



Origins of the Terms

- Both first commonly used in the context of IT in the early 1990s
 - Grid: metaphor for distributed computing in science and engineering
 - Cloud: metaphor for a computer network in the context of network management
- What they have come to mean
 - Grid Computing: virtual organizations share compute resources over a network
 - Cloud Computing: anybody can access data and compute services over the internet

Some Characteristics of Grid and Cloud

Grid

- scientific research, collaboration
- share local resources
- heterogeneous, real resources
- geographically distributed; locally owned and managed
- no central management
- publicly funded & operated (slow evolution)
- subject to public policy
- complex interface
- open standards (OGF ...)
- interoperability important

Cloud

- web services, business apps
- make huge data centers available
- homogeneous virtualized resources
- geographically distributed; centrally owned and managed
- managed by a single entity
- privately funded & operated (rapid evolution)
- pay-as-you-go
- simple interface(s)
- no standards today
- no interoperability, but ...

Convergence of Grid and Cloud

- Users must drive establishment of standard APIs between the layers of cloud architectures (DaaS, SaaS, DBaaS, PaaS, IaaS on top of physical compute and storage hardware)
- Users must drive interoperability standards among cloud service providers
- Interoperating clouds look a lot like a grid

Cloud Computing at the International Supercomputing Conference

- Wed June 24, Hamburg, Germany
- <http://www.supercomp.de/isc09>
- <http://www.supercomp.de/isc09/Program/Att-a-Glance/Cloud-Computing-HPC-Synergy-or-Competition>

Cloud Computing & HPC: Synergy or Competition

<http://www.supercomp.de/isc09/Program/At-a-Glance/Cloud-Computing-HPC-Synergy-or-Competition>

- Scott McClellan
Chief Technologist & Vice President, Hewlett-Packard
- David Turek
Vice President Deep Computing, IBM
- Prof. Dr. Dr. Thomas Lippert
Director, Jülich Supercomputing Center (JSC)
- Prof. Dr. Dan Reed
Scalable & Multicore Computing Strategist, Microsoft Research
- Robin Williamson
Engineering Director, Google
- Simone Brunozzi
Amazon Web Services Technology Evangelist – Europe, Amazon
- Prof. Dr. Raghu Ramakrishnan
Chief Scientist for Audience & Cloud Computing, Yahoo!