Open Science Grid

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New User Community Engagement

Campus Cyberinfrastructure Workshop Series

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Catalyst for Innovation

The OSG vision

Transform compute and data intensive science through a cross-domain self-managed **national distributed** cyber-infrastructure that **brings together** campus and community infrastructure and facilitating the needs of Virtual Organizations at all scales

Submit local, Run Global

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OSG Principles

- Characteristics -
  - **Provide guaranteed and opportunistic access to shared resources.**
  - Operate a heterogeneous environment both in services available at any site and for any VO, and multiple implementations behind common interfaces.
  - **Interface to Campus and Regional Grids.**
  - **Federate with other national/international Grids.**
  - Support multiple software releases at any one time.

- Drivers -
  - **Delivery to the schedule, capacity and capability of LHC and LIGO:**
    - **Contributions to/from and collaboration with the US ATLAS, US CMS, LIGO software and computing programs.**
  - Support for/collaboration with other physics/non-physics communities.
  - Partnerships with other Grids - especially EGEE and TeraGrid.
  - Evolution by deployment of externally developed new services and technologies:.

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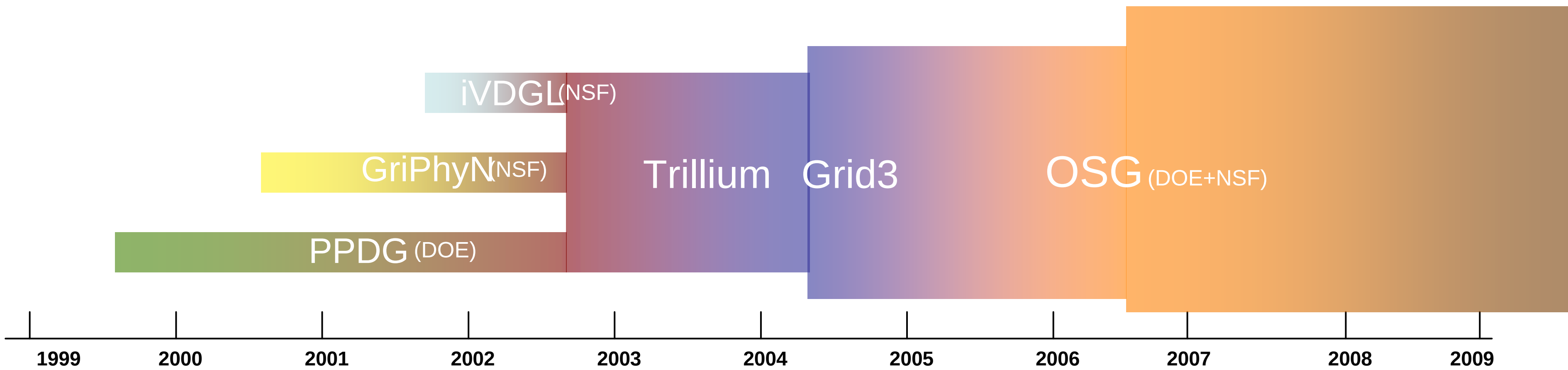
Evolution of OSG



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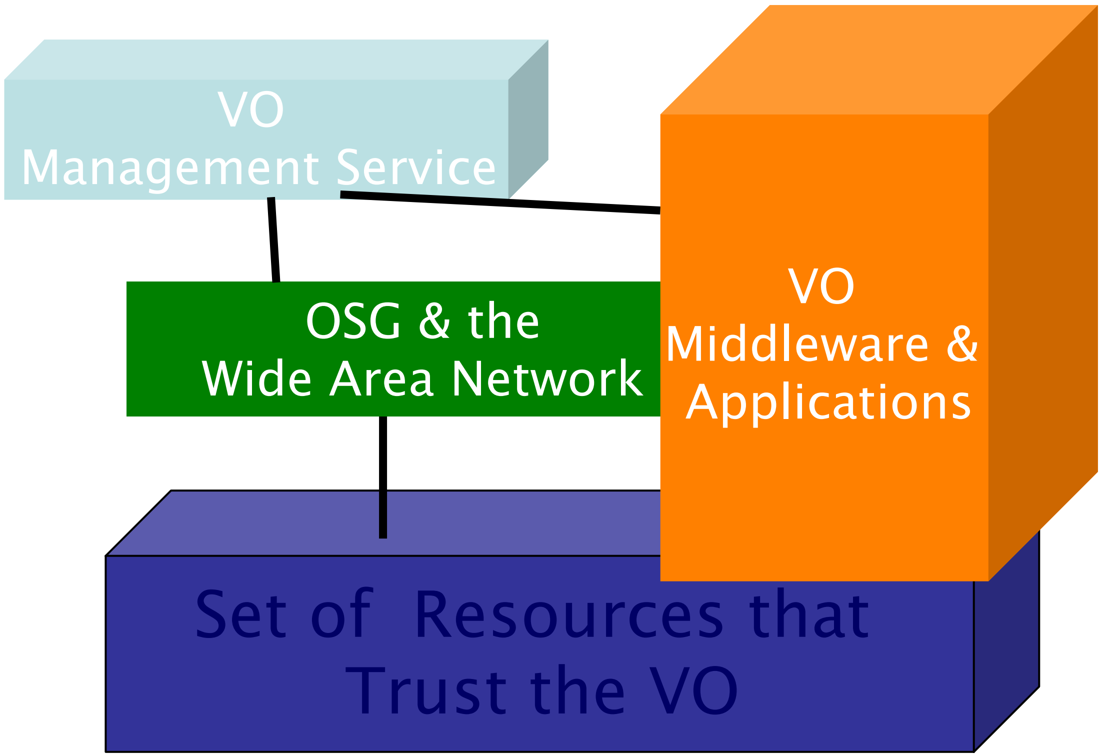
Virtual Organizations (VOs)

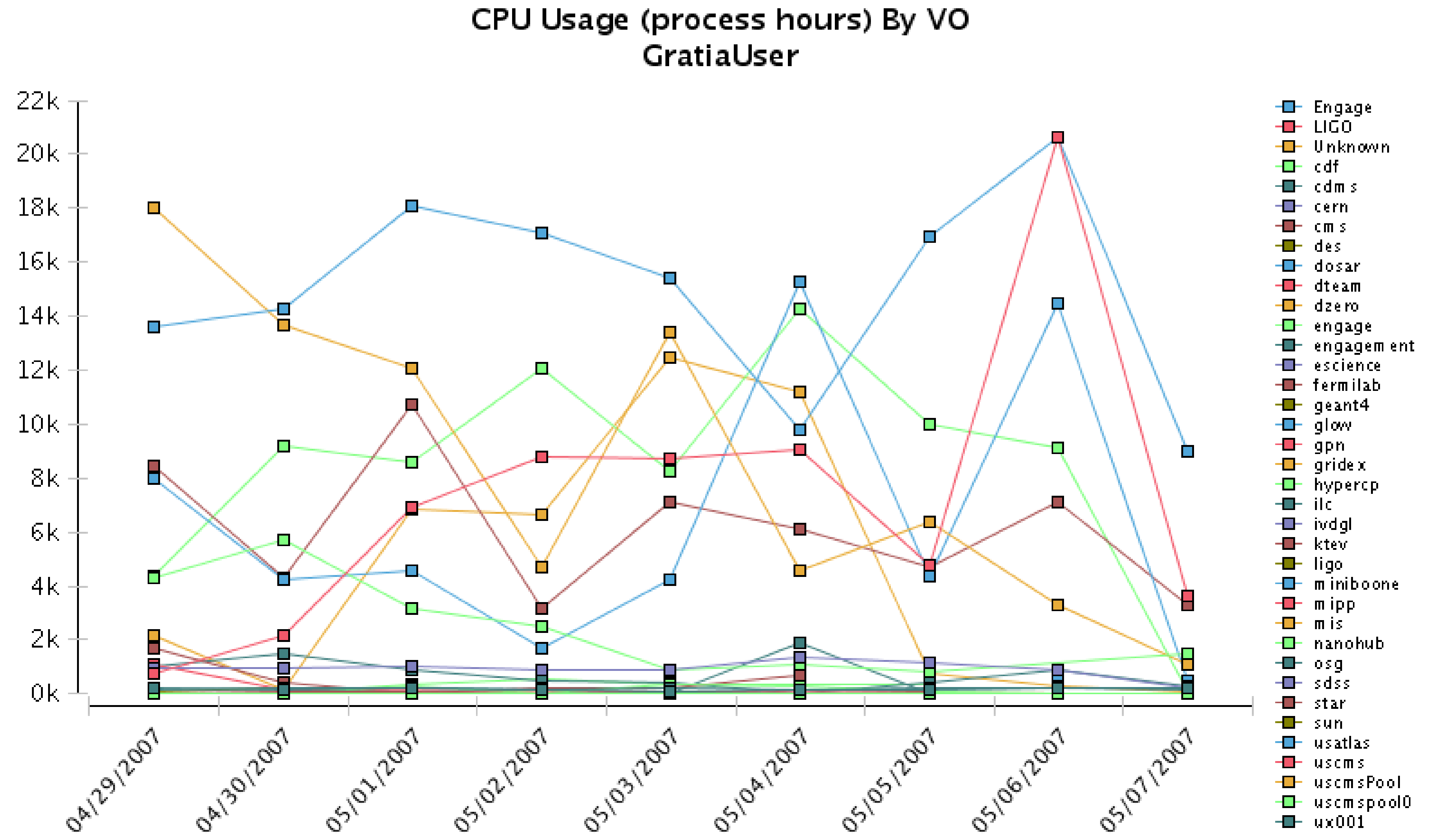
OSG Infrastructure trades in Groups not Individuals.

Virtual Organization Management services allow registration, administration and control of members of the group.

Facilities trust and authorize VOs.

Storage and Compute Services prioritize according to VO group.





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OSG Engagement

- Demonstrate the value of OSG to the general US research and education communities
- Bring new non-HEP user communities onto the infrastructure
- Function as a broker between the infrastructure providers and end user research communities
  - Shield users from detailed knowledge about the infrastructure
  - <adjective> feedback to the infrastructure providers

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OSG Engagement

- First new user community
  - Rosetta: Protein Folding
  - Serial jobs, easily structured to fit the optimum infrastructure parameters
  - Have consumed **>100k cpu hours** in the last four weeks with trivial overhead for the user
  - Leading to two new related communities:
    - drug design, biochemistry
  - Leading to campus integration with OSG

- Next focus: WRF Weather modeling (MPI)

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Campus Cyberinfrastructure Workshops

- Combined efforts of:
  - Educause, Internet2, Open Science Grid, TeraGrid
- At a campus, provide a *forum for discussion*:
  - Faculty and research staff
  - Information Technology service organizations
  - Campus administration
- National cyberinfrastructure starts at home
- **Catalyze the bottoms-up activities and provide support for top-down initiatives**

Campus Cyberinfrastructure Workshops

- First Workshop held recent at the University of California at Davis
  - Very strong interest from campus participants
  - Follow up with 2 individual faculty members, leading to pilot projects
  - Pilot projects leading to integration of local resources to support specific activities
  - Campus resource sharing and integration with national infrastructure demonstrated

Conclusions

- Campuses have serious issues and requirements that are lower on the stack than what we normally think of as Cyberinfrastructure
- Researchers are hesitant to share resources, however, with positive experience it is very possible to overcome
- Traditional IT service organizations are increasingly interested CI activities.
- Success is highly viral

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