Open Science Grid

What is OSG?
(What does it have to do with Atlas T3s?)

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Some Hypothetical Problems

- Lot's of hype in software marketing…
  - The Devil is in the details
- Setting up a grid is non-trivial
  - no matter what you read
  - Lots of trial and error 😐
- Difficult to know what "works"
  - "I'm a scientist" "I don't want to spend all my time w/CS"
- Which components do I need?
  - If I pick package X, will it work with Y? Which Versions?
- Which components are production ready?
- Where do I get each one?

The problems are not all technical…

Problems are not just “technical”

- Can we work together?
- Can we be compatible?

- Can we share our efforts?
  - Software design and reuse.
  - Stack design & reuse
  - Operation procedures

- What about monitoring/accounting?

- Must we always reinvent the wheel?

Open Science Grid

- The OSG was designed to tackle these problems:
- Create a common grid infrastructure
  - Based on working with the community (not independent)
  - Improve compatibility
  - Sites still autonomous, can experiment with different options
  - Successful combos often make it back into the VDT
- Test software combinations (so you don't need to)
- Integrate commonly used components
- Package results for centralized download
- Offer a centralized support structure
- Build a "community" for those who manage and operate grid infrastructures
  - From large centers to those who are just starting (read T3)

Main Stakeholders

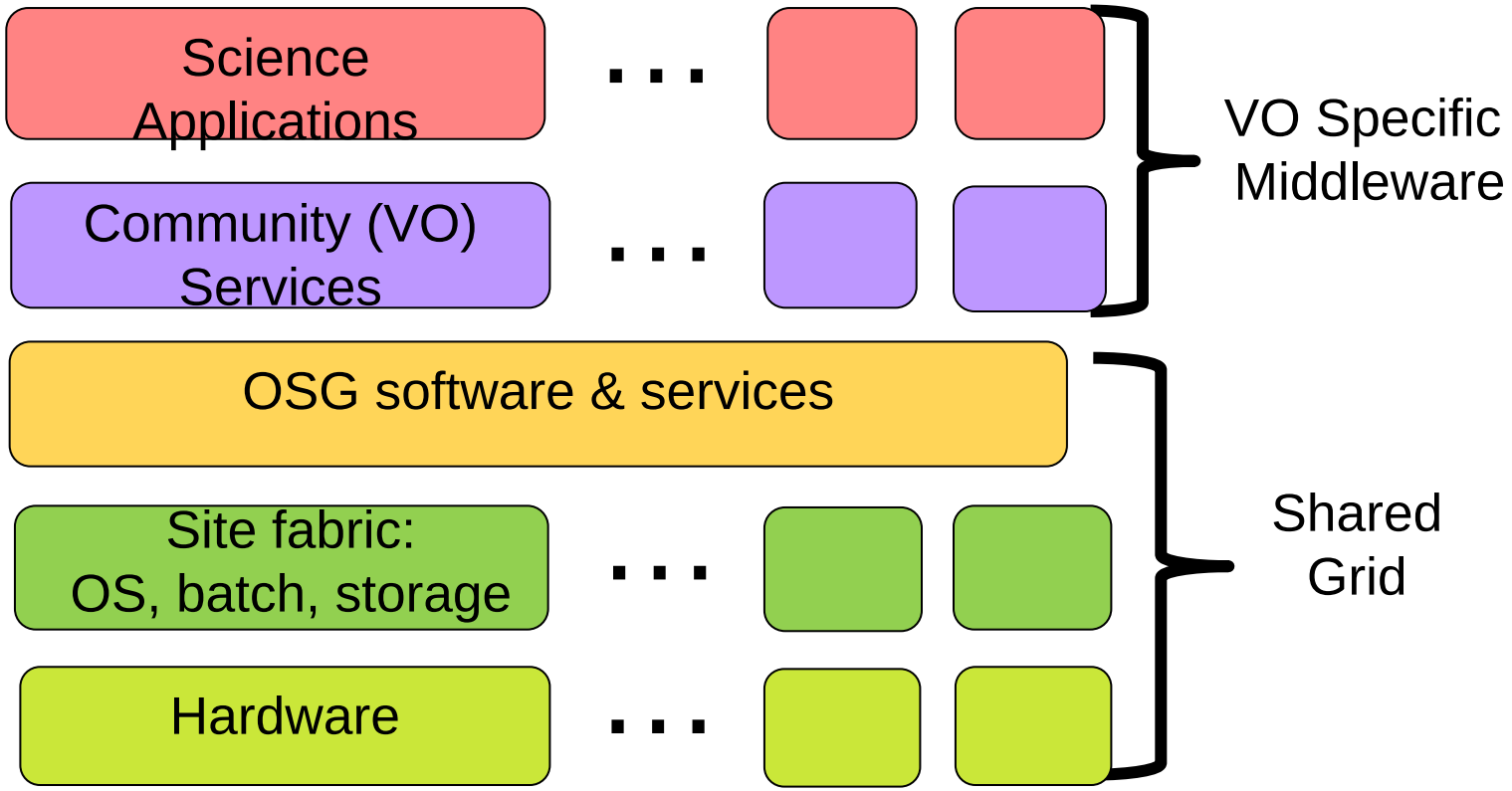
- US ATLAS
- US CMS
- LIGO

} US Large Hadron Collider Collaborations (US LHC).

For US LHC OSG is US infrastructure contributing on behalf of US LHC to the World Wide LHC Computing Grid (WLCG).

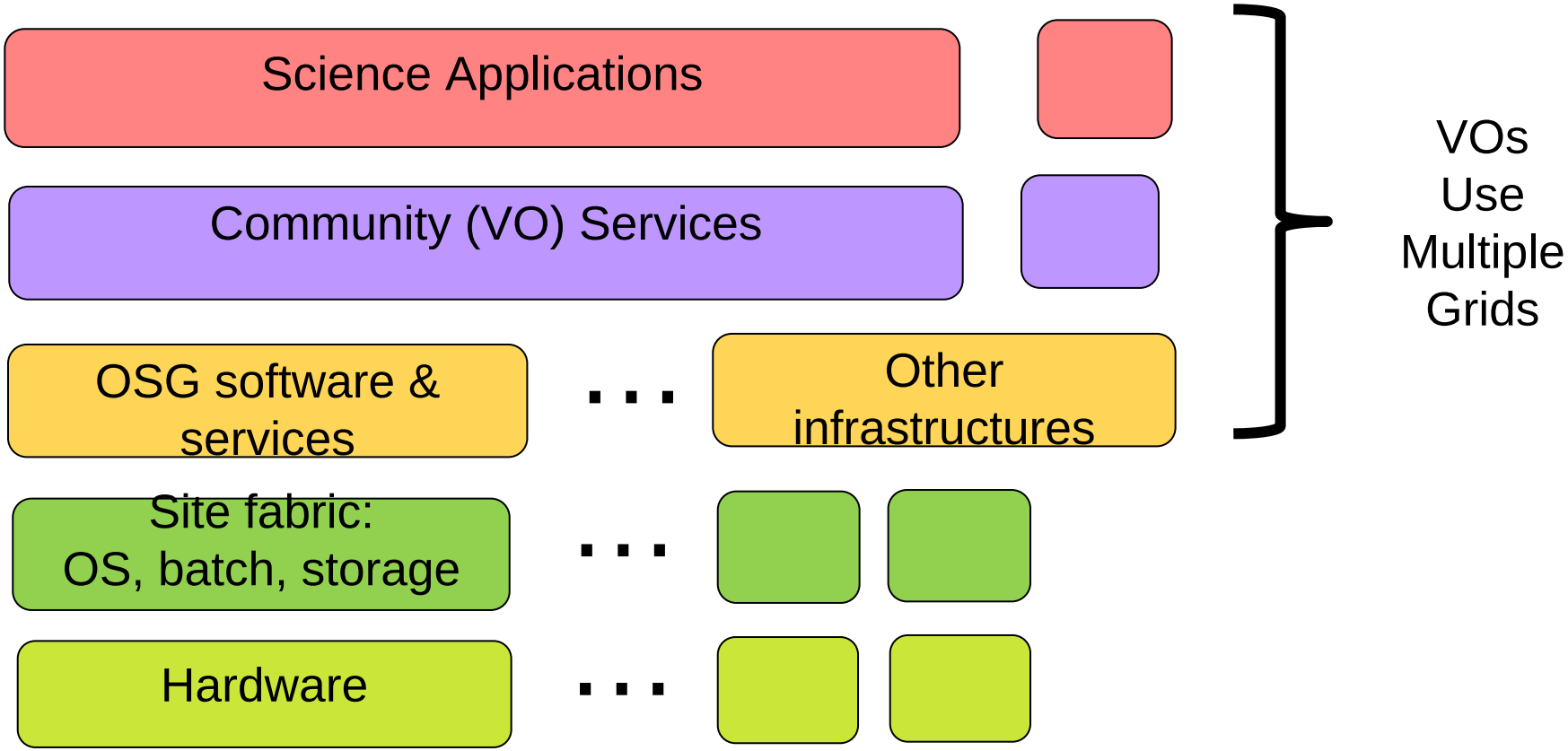
For LIGO OSG supports services and software for the LIGO Data Grid (LDG – a Community Grid) as well as cycles for the Einstein@HOME science application.

OSG's End to End Architecture



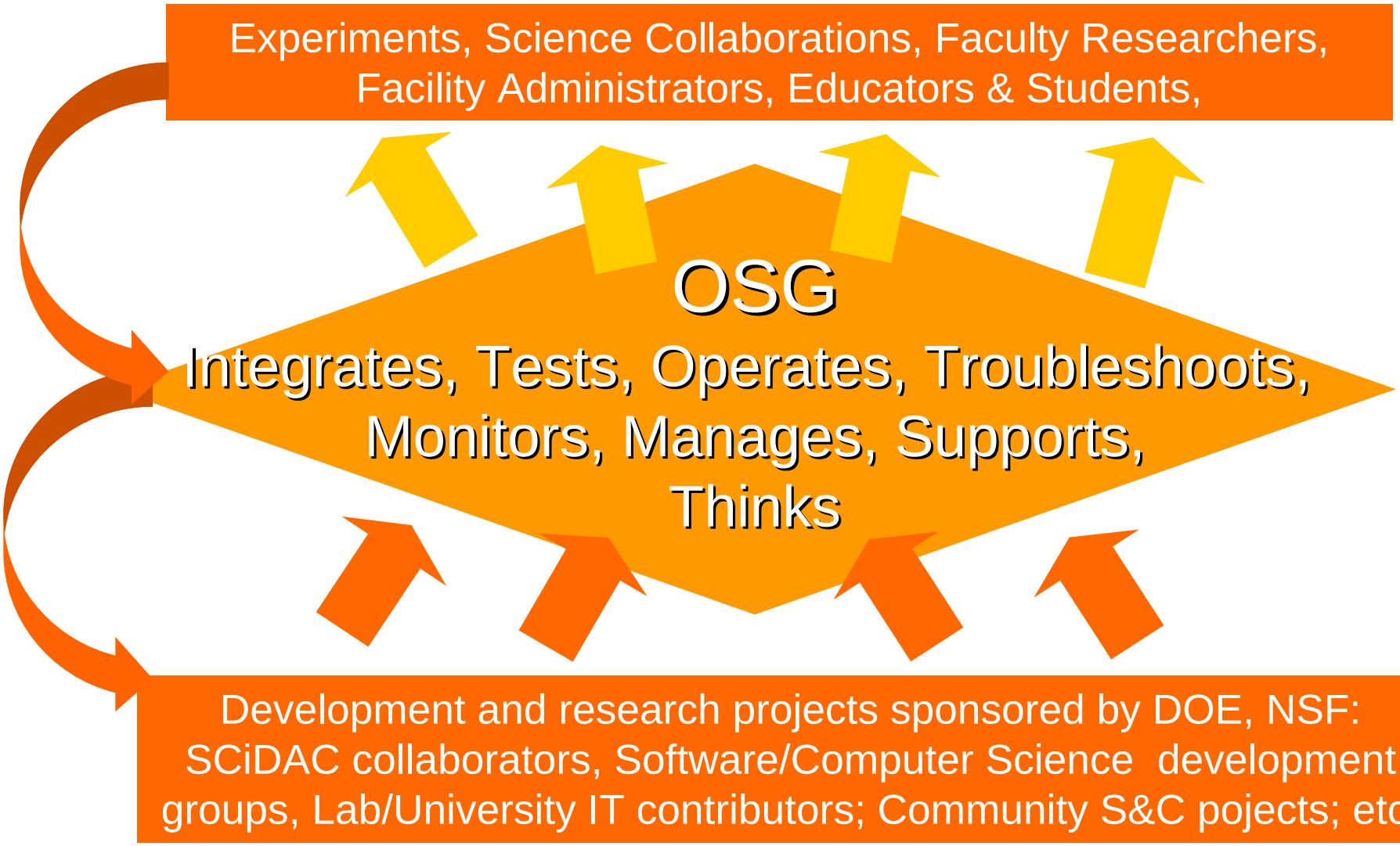
Multiple Communities, Multiple Sites, End-to-End scope

Operating in a Federation of Multiple Grids



Grids can be Campus, Community, Regional, National, International
OSG scope includes bridging, and interfacing between them

OSG Acts as an Agent



Does it solve all the problems?

- NO

- But it does allow scientists to move to the next level and concentrate more on “science”

What can we do for T3s?

- Started a group to understand needs of T3s
  - Atlas, CMS, OSG (storage)
- Are there common patterns that can build upon a common infrastructure?
- Can we package the infrastructure for some of these patterns?
  - Atlas/CMS specific application software provided by Atlas/CMS
  - T3 in a Box?
- Are there best practices that we can recommend in order for T3s to minimize site maintenance?
- Can we make this easier for non sys-admins?

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