EGI Cloud Federation:
A hybrid cloud at a European scale

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Logical CPUs (cores)
- 248,424 EGI (+29.3%)
- 337,608 All
106.7 PB disk and 112.8 PB tape
Resource Centres
- 329 EGI
- 346 All (+6.8%)
- 93 supporting MPI (+6.8%)
Countries (+11.5%)
- 50 EGI
- 57 All

38 NGIs providing resources
- 26 National Operations Centres
- 12 NGIs in 4 Federated Operations Centres
1 EIRO providing resources (CERN)
19 countries in 4 non-European Operations Centres
Federated Clouds Task Force

• Objectives
  – Secure federation of Virtualised Resources
  – Integration with EGI’s production infrastructure
  – Requirements for higher-level user services
  – Feedback to Technology Providers and SDOs

• Build on top of existing technology
  – Standards wherever possible
  – Profiles where necessary

http://go.egi.eu/tf-fedclouds
1. Running a pre-defined VM Image (VMI)
2. Using My VMIs & My Data in the Infrastructure
3. Running across multiple Resource Providers
4. Accounting across Resource Providers
5. Reliability & Availability of Resource Providers
6. VM/Resource state change notification

http://go.egi.eu/435
Aligned with NIST scenarios
Six Capabilities define the EGI Cloud Profile

Functionality required for uniform & integrated federated Cloud Computing

1. VM Management
2. Data access
3. Information (Discovery)
4. Accounting
5. Monitoring
6. Notification
A Federation of Resource Providers

- Autonomous in User Community choice
- Autonomous local Cloud Deployments

Private: Support a specific research community
Community: Support communities with similar business logic
Public: Support diverse user communities

Crossing both Administrative & Trust boundaries
EGI Strategy

• Enable support for diverse user communities
  – EGI currently provides a single business logic
    • Great if you are a community that uses this model
  – However, other communities have different logic!
    • Enable other community deployments through virtualisation

• Standards are critical for hybrid, federated Clouds
  – Core business need: to support multiple communities
  – Core resource model: independent cloud deployments