

# Transition Support Document

For Establishing a SURAgrid Virtual Organization within the Open Science Grid  
2011-01-19

## PURPOSE:

Improving access to scientific computing resources is a primary goal of the SURAgrid Strategic Plan (2008-2012 <http://www.sura.org/programs/docs/SURAgridSPlan.pdf>). SURAgrid members have been collaborating with Open Science Grid (OSG) on ways to engage a larger body of resource contributors and reduce the effort required to use those resources.

OSG provides a widely adopted framework for communities, such as SURAgrid, to establish and grant access to compute resources for their members. The SURAgrid Governance Committee (SGC) recommends that the SURAgrid community adopt the operating practices of OSG and form an OSG virtual organization (VO) to enhance the utility of SURAgrid compute facilities available to our user communities.

This transition document addresses questions about the OSG operating model and the benefits of OSG operations for the SURAgrid community. This document provides information that the SGC believes will help SURAgrid Contributing Members make an informed decision on the vote to establish and operate a SURAgrid Virtual Organization (SGVO) within OSG.

## OVERVIEW OF BENEFITS:

The benefits of establishing an OSG VO extend far beyond simplified management of and access to SURAgrid community resources. Additional benefits include:

- **Improved User Support:** By aligning SURAgrid operations with the broader OSG community, SURAgrid users will automatically benefit from existing application documentation of OSG's widely deployed computational framework. Users may also discover application communities across OSG that match their research interests and offer a larger peer group for supporting this science domain.
- **Easily Extended Resource Sharing:** By deploying an OSG compute resource, campus computing centers can offer their resources to OSG science communities of importance to campus researchers, link researchers directly with established OSG science communities, and form new communities around available campus resources. Likewise, SURAgrid members can more easily access compute capacity from a much wider network of OSG resource providers.
- **Influence Strategic Directions and Technical Development:** As a member of OSG, SURAgrid can participate in strategic and technical dialogs of the OSG

community. This will provide additional avenues for sharing campus-oriented operational requirements identified by SURAGrid community members and will offer more opportunities for collaboration to implement software components that satisfy local requirements.

As an example of the above benefits, consider a SURAGrid member investigator who is exploring structural biology. He can readily construct a research workflow for a SURAGrid cluster by simply using existing OSG workflow development documentation. The investigator may also find an established structural biology community VO, and specifically join in this VO and benefit from this established support community. Furthermore the investigator can work with his campus resource provider to add compute capacity from the local resources into the computational workflows available to this OSG-based VO. Indeed, where campus clusters already support OSG operations (through participation in SURAGrid), additional VO support can be enabled by straightforward privilege modifications, reducing the burden on resource operators to support a variety of science domains.

### **IMPACT FOR SURAGRID MEMBERS AND OPERATIONS:**

There are member support and operational impacts for SURAGrid members in establishing the SGVO.

- 1) SURAGrid members who contribute compute resources to SURAGrid will operate as an OSG resource provider. This includes
  - a. Adopting the OSG software stack. This more comprehensive stack is based on the familiar VDT Toolkit foundation of the current SURAGrid software stack.
  - b. Registering the resource with OSG Grid Operations Center (GOC). This publishes the resource to the monitoring and operational infrastructure so it can be discovered by SURAGrid members.
  - c. Granting access to SGVO members (and optionally other OSG VOs). Access can be granted individually or as a group.
- 2) The SURAGrid Community will operate and maintain a Support Center to assist SURAGrid members and sites with OSG operations. This includes
  - a. Maintaining a SGVO membership database used by sites providing compute resources to SGVO.
  - b. Providing assistance in registering as a member of SURAGrid VO, registering SGVO resources, reporting problems and/or obtaining help.
- 3) Users accessing SURAGrid resources will register with the SURAGrid membership database and use standards-based certificates.
- 4) SURAGrid will form an operational support group. SURAGrid has provided email support since its inception and has established regular office hours where members

can receive phone support. The SGVO will build on and expand our SURAGrid operational model.

- 5) SURAGrid will operate a ticket tracking system. While SURAGrid members have used various local systems, the SGVO will use a common system to submit, track, monitor, escalate, report and manage support requests as they cross multiple administrative domains.
- 6) SURAGrid will expand Documentation. Written instructions for member/resource registration and problem submission, tracking and resolution are required. A SURAGrid member-editable web site will support this community documentation.

The SGC recommends that current technical and operational SURAGrid working group activities engage with the broader OSG community, and so ensure our campus community requirements are well represented in OSG working groups.

The operational support model the SURAGrid community has been using is consistent with an OSG VO since OSG VOs also support their own community members. The SURAGrid VO will maintain operating practices to support users:

The above steps will enable SURAGrid to maintain an operational infrastructure that spans the distributed sites of its members.

#### **MIGRATION PLAN:**

1. (Done) Final Draft to SGC and recommend this go to SURAGrid for comment/input;
2. (Done) Await SGC “okay”;
3. (Done) Issue doc to SURAGrid (complete list);
4. Have a Feb. 7, 2011 SURAGrid Monthly Call Topic on this;
5. Incorporate input and answer questions;
6. Call for a Vote Contributing Member
7. Attend OSG All-Hands as members of SGVO

#### **ACKNOWLEDGEMENTS:**

This document was produced through the efforts of the SG-OSG working group in SURAGrid. Participants of that working include: Guy Almes (TAMU), Gary Crane (SURA), Steve Johnson (TAMU), John-Paul Robinson (UAB), Alan Sill (TTU), and Eduardo Socolovsky (NSU).

The SG-OSG working group is grateful to OSG members for their assistance, insight and support throughout the evaluation of OSG operations and would especially like to thank Keith Chadwick (FNAL), Dan Fraser (ANL), Sebastien Goasguen (Clemson), and John McGee (RENCI).

## FAQ:

The following are frequently asked questions regarding this transition. Please feel free to raise additional questions by sending them to the SURAgrid email list ([suragrid@sura.org](mailto:suragrid@sura.org)), by contacting any member of the SURAgrid Governance Committee ([http://www.sura.org/programs/sura\\_grid\\_gov.html](http://www.sura.org/programs/sura_grid_gov.html)), or by directly contributing a question and answer to the on-line transition FAQ:

<http://docs.uabgrid.uab.edu/suragrid>

Q: What about the cert requirement?

A: At the heart of OSG, you choose to trust the OSG (the DOE?) certificate and with that CERT in your browser, you have access to services.

Q: Currently SURAgrid membership is determined by contributing resources. Is this the same?

A: De facto, by being a supporter of SGVO – i.e. providing a resource that can be used by SGVO – SURAgrid membership is obtained. Perhaps SGC should review/adjust the SURAgrid Membership criteria

(<http://www.sura.org/programs/docs/SGMembershipOct07.pdf>), considering a shift of emphasis to the value of community participation.

NB: Alan Sill: Contribute resource and/or submit SG approved application.

Q: Can I be member of SGVO using the original, simplified install SURAgrid stack?

A1: It is not an either/or state. Likely, a roadmap statement is wise approach. OSG stack is superset of SURAgrid (by design of SURAgrid requirements defined by SG stack providers). Further, the requirements can be met in several ways (e.g. OSG stack, SG stack, other).

A2: We can use OSG working groups to present, advocate, and help implement features desired.

Q: How different?

A: SURAgrid has documented its sw stack requirements (basically a Web services GRAM, with option pre-WebServices GRAM, with gsi-ssh recommended) and we will engage our SURAgrid community to review and recommend the specific transition requirements.

A: If you are using the OSG stack currently, you are compatible enough for SURAgrid. If you are using the original SG stack, you are minimally compatible with OSG but would not be able register your resource for discovery services making it difficult to use. We believe the Globus compatibility is technically satisfied, but smooth operation warrants switching resources to the OSG stack.

Q: Is OSG a single organization?

A: OSG has many VOs and each may have some individual requirements. While basically, OSG VDT stack is the basis of OSG, various VOs may have unique requirements.

Q: Is OSG accounting/reporting required for the OSG VDT stack.

A: OSG stack has reporting tools, extra configuration options, gracia accounting tools... each of which adds functionality. We believe that SURAGrid services will be enhanced by considering these reporting/accounting functions.

Q: Is there a SG-OSG roadmap?

A: Yes and you can help define it further. Original Roadmap concept is outlined in the SURAGrid Strategic Plan, was described in the SURAGrid-OSG Statement of Shared Interest and has been further developed via working groups within SURAGrid. The road map is now being expanded via this transition document.

Q: How does the Access Management Working Group change?

A: The AMWG will continue as a technical requirements forum that we think would work well within the OSG working groups; and the AMWG will also continue as a high-level in supporting the access management infrastructure used by SGVO.

Q: What certificates will SGVO use?

A: In order to access OSG resources, SG user would need to use an International Grid Trust Federation (IGTF <http://www.igtf.net/>) accredited certificate.

Q: Does the OSG stack come with installed certs?

A: Actually, OSG stack comes without any certs, and you can install any certs that you wish. You make the choice. SGC recommends that the SGVO host certs are IGTF-accredited which will enable full accounting/reporting capabilities.

Q: Is there someone looking into these technical details?

A: Yes. The SURAGrid Access Management Working Group, the SG-OSG Transition Group, and the SGC have been working these details over the last two years. You are welcome to join these technical working group discussions.

Q: How does this fit with the SURAGrid Starategic Plan?

A: GOAL 1 – will significantly expand our outreach potential.  
GOAL 5: Strengthen our partnership.

Q: What is the SG Membership database?

A: OSG uses VOMs. Much like the SURAGrid LDAP server, VOMS provides a needed mechanism to manage the user base.

Q: Does operating an OSG VO mean that SURAGrid is subordinate to OSG?

A: In OSG terminology, a Virtual Organization (VO) is an abstraction designed to facilitate resource sharing between sites. It does not define how those organizations operate pursuant to their missions. There are many examples of independent, real-world organizations that leverage OSG conventions to facilitate resource sharing for example LIGO, LHC, and a number of universities.

Q: In an era of clouds, do grids matter?

A: Clouds have greatly enhanced our ability to package services for consumption by a broad spectrum of users. Grid services are a vital component of this framework and provide a proven platform for adding large amounts of compute capacity to your applications. An important goal of the SGVO is to simplify access to these compute resources so they can enhance the performance of applications available to your campus community.