OSG User Support

- Verbal input: Gratia is very important to the OSG.
- Rest from and in the context of the OSG-XSEDE proposal. Ie. needs defined as OSG-XSEDE but actually more general needs:

- We have identified the list on the following slide as critical, and currently lacking, information to enable us to improve the user experience and usage of the resources and services provided

- Show the opportunistic use of CPU from XSEDE users across OSG, per site and month.
- Provide a list of individuals, their science, using the OSG VO over the past year and show their CPU consumption per month.
- Show the queue depths, wait times, retries and other usability parameters.
- Identify whether jobs are queued when appropriate resources are actually available across the OSG (e.g. help understand under-utilization due to problems and constraint in the job distribution methods).
- Characterize unused capacity on OSG, per site (which VOs supported), per VO (per site) (now, yesterday, last week).
- How much total work is waiting for execution across the CI? (i.e. how much is in the queues at the various submit points).
- Understand why some VO's run into a "glass ceiling" on access to opportunistic resources by creating visibility into unused capacity at various resources.
- Understand the integration with Campus Grids related usage information and perform analyses as above, and identify other reporting needs.
- Preparation for reporting of production usage of Cloud resources – initially for applications already under test by OSG VOs.

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How will this help?

Examples of where this information will lead to improvements are:

- configuring the sites being used to provide the maximum total throughput;
- better understanding of where bottlenecks are happening across the (>100 site) infrastructure;
- planning (and recruiting) for future capacity expansions – including into incrementally available cloud resources;
- and development of policies and prioritization of use based on user needs.

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New Probes

Provisioning this information will require new usage and availability probes to be developed that forward specific status to the data warehouse. These probes must be deployed at key service points - at compute elements, storage elements, job submission (glideinWMS) factories, and VO operated (glideWMS) front-ends. Examples of such probes include:

- available job slots at a site;
- queue depth and scheduling priority by VO at a site;
- idle jobs pending at the front-end;
- idle glide-in jobs by VO at each site as reported by the factory;
- storage available/used by a VO at a storage element.

Reporting and Drivers

- We will also need to extend the query and reporting services to access the additional data created by these probes to provide the information above, tailored to the needs already identified by our clients.
- The scientific drivers for this include applications from campus organizations such as GLOW, HCC, and the users of OSG through the XSEDE allocations and submit gateways that are requesting increasing cycles from OSG production.