



Grid Services at NERSC

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What are Grid Services?

- **Set of services and tools used for remotely managing jobs and data**
- **Useful for job workflows and data movement across sites and systems**
- **NERSC Grid software is based on Globus toolkit**
- **“Grid Certificate” is the common access token that lets you transparently access multiple sites and resources**



Common Concerns

- **Process of acquiring and setting up a DOEGrids certificate is too complex**
- **Installing and using Globus client is a heavyweight labor-intensive process**

We've listened to your comments!



Services Overview

- **Certificate Services – NERSC Online Certificate Authority**
 - Generate a ready-to-use certificate with a **SINGLE COMMAND!**
- **Grid Client Package**
 - Easy to download toolkit with basic grid clients
- **Remote Job Submission**
 - preWS GRAM Offered on all NERSC Systems
 - WS-GRAM currently being deployed across NERSC
- **WAN File Transfer**
 - GridFTP – supported across all systems
 - GSI enabled PFTP (access to HPSS)
 - SRM access to PDSF
- **Open Science Grid Compute/Storage Element**
 - NERSC systems are available to OSG as Compute Elements (OSG 1.0.0)
 - PDSF supports a BeStMan SRM based Storage Element



NERSC CA

- **Generate a short lived certificate (12 hrs-11 days) using your NIM password:**
`myproxy-logon -T -s nerscca.nersc.gov`
- **Can be used to access any NERSC system**
- **Your certificate information is already in NIM (Look under “Grid Certificates Tab”)**
- **Receiving TAGPMA accreditation, so NERSC certificates are recognized anywhere (November 2008)**



NERSC Client

- NERSC is providing a pacman cache to download a light(ish) Grid Client
- Download, install and configure in one step:

```
pacman -get
```

```
http://www.nersc.gov/users/services/  
Grid/pacman:nersc-grid-client
```



Looking Ahead

- **Science Gateways - Web Services**
 - Built on top of grid infrastructure to provide web-based access to standard applications
 - eg. Web Interfaces to VASP, Gaussian etc.
- **SRM access to other NERSC systems**
- **Full GridFTP access to HPSS**
- **High Performance Data Mover Nodes for GridFTP transfers in and out of NERSC**
- **Project Accounts**
 - Use grid certificates to access a common “project account” to enable collaboration within a group



Documentation

<http://www.nersc.gov/nusers/services/Grid/grid.php>