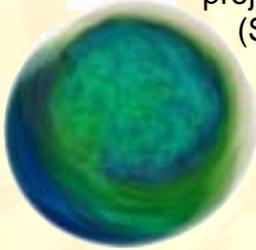
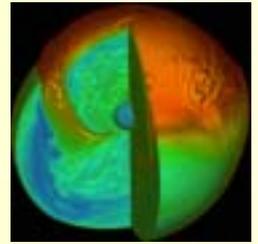


Access to Computing Resources



The Terascale Supernova Initiative (TSI) project is one of the many projects in the DOE Scientific Discovery through Advanced Computing (SciDAC) program that have collaborators from national laboratories and universities located across the U.S. TSI researchers rely on ESnet to provide access to supercomputers at Oak Ridge National Laboratory (ORNL) and the National Energy Research Supercomputing Center (NERSC). (www.ccs.ornl.gov/astro)



X.509 Certificates Authenticate File Transfers across Atlantic

As research needs outgrow the capabilities of individual computers and data repositories, scientists are establishing "grids"—collections of computers and data repositories at widely distributed locations that can be connected together to run as a single resource. One of the critical elements of establishing an international grid is the "trivial step" of identifying who is requesting some activity on this grid.

Public Key Infrastructure (PKI) using X.509 certificates is the technology being deployed to enable this authentication. ESnet has set up the first elements of a PKI and has established a Certificate Authority (CA) for the domain DOESciencegrid.org (DOESG). ESnet staff helped to work out some technical details of how to set up certificates and configure the Globus software.

The Particle Physics Data Grid Collaboratory (PPDG) is running a prototype registration authority to carry out the initial identity check of individuals requesting certificates. (www.ppdg.net)

- On 11 Feb. 2002 a certificate was issued to a member of the PPDG team.
- On 15 Feb. 2002 a host certificate was issued by the DOESG CA for one of the computers at Fermilab. Based on these X.509 certificates, the PPDG collaborator then worked with colleagues in the U.K. to establish the necessary trust relationships between the computers in the U.S. and the U.K.
- On 19 Feb. 2002 these colleagues performed file transfers authenticated with these certificates. The transfers were both directions between Imperial College and Fermilab, and also Lancaster University and Fermilab.



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