



Effective Practice: GPN: Integrating Shibboleth, Grid, and Bioinformatics

Submitting Institution:

University of Missouri-Columbia

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Subject Terms:

Grid Computing , Informatics , Shibboleth

Background/Challenge:

The Great Plains Network (GPN) is a regional consortium of public universities in seven states: Arkansas, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, and South Dakota. This effective practice is a companion to "GPN: Building the Regional Middleware Infrastructure" (#294). It describes the creation of applications using middleware tools being developed as part of the NSF Middleware Initiative (NMI). These tools support collaborative research projects and the sharing of resources in a multi-institutional, virtual organization environment. This report is part of the NMI-EDIT Identity and Access Management Case Study Series.

Practice/Solution:

This project is a supplement to the Great Plains Network Extending the Reach (ETR) project. It involves the integration of multiple middleware technologies to facilitate collaborative research and the sharing of resources in a multi-institutional, regional consortium.

The goal of this project is to deploy an application in the biological sciences to support researchers associated with the GPN ETR project. It offers interinstitutional authentication via Shibboleth, fine-grained authorization to access specific resources via entitlements, and three bioinformatics tools to access some commonly used genomic software, including a genomic database search capability. The system also employs grid-computing technologies to leverage different project resources.

Benefits:

The GPN member institutions are developing the means to share expertise and resources on a regional basis using standard middleware tools.

Shortcomings:

The challenge is to overcome the barriers to collaboration across multiple institutions in a virtual organization when issues arise related to identity management, authentication, and authorization.

Future Plans:

The project efforts continue to include a broader representation of users who can benefit from the ability to share research resources across the region.

References - URLs:

<http://archie.csce.uark.edu/gpn/index.html>

<http://genome.rnet.missouri.edu/GPN/Docs/>

<http://www.greatplains.net/>

References - File(s):

[MUCaseStudy](#)

