Secure Federated Light-weight Web Portals for FusionGrid

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Abstract

The FusionGrid infrastructure provides a collaborative virtual environment for secure sharing of computation, visualization and data resources over the Internet to support the scientific needs of the US magnetic fusion community. Invoking FusionGrid computational services is typically done through client software written in, for historical reasons, the commercial language IDL. Scientists use these clients to prepare input data and launch FusionGrid computational services. There are also numerous web sites throughout the US dedicated to fusion research, functioning as light-weight single purpose portals. Within the FusionGrid alone, there are web sites associated with authentication, authorization, and monitoring of services. Pubcookie and MyProxy technology were used to federate these disparate web sites by enabling them to authenticate a user by their FusionGrid ID and then to securely invoke FusionGrid computational services. As a result of this drop-in authentication mechanism, portals were created that allow easier usage of FusionGrid services by the US fusion community. The shared authentication mechanism was accomplished by the integration of Pubcookie's single sign-on mechanism with the MyProxy credential repository that was already in use by the FusionGrid. This paper will outline the implementation of the FusionGrid portal technology, discuss specific use cases for both invoking secure services and unifying disparate web sites, present lessons learned from this activity, and discuss future work.