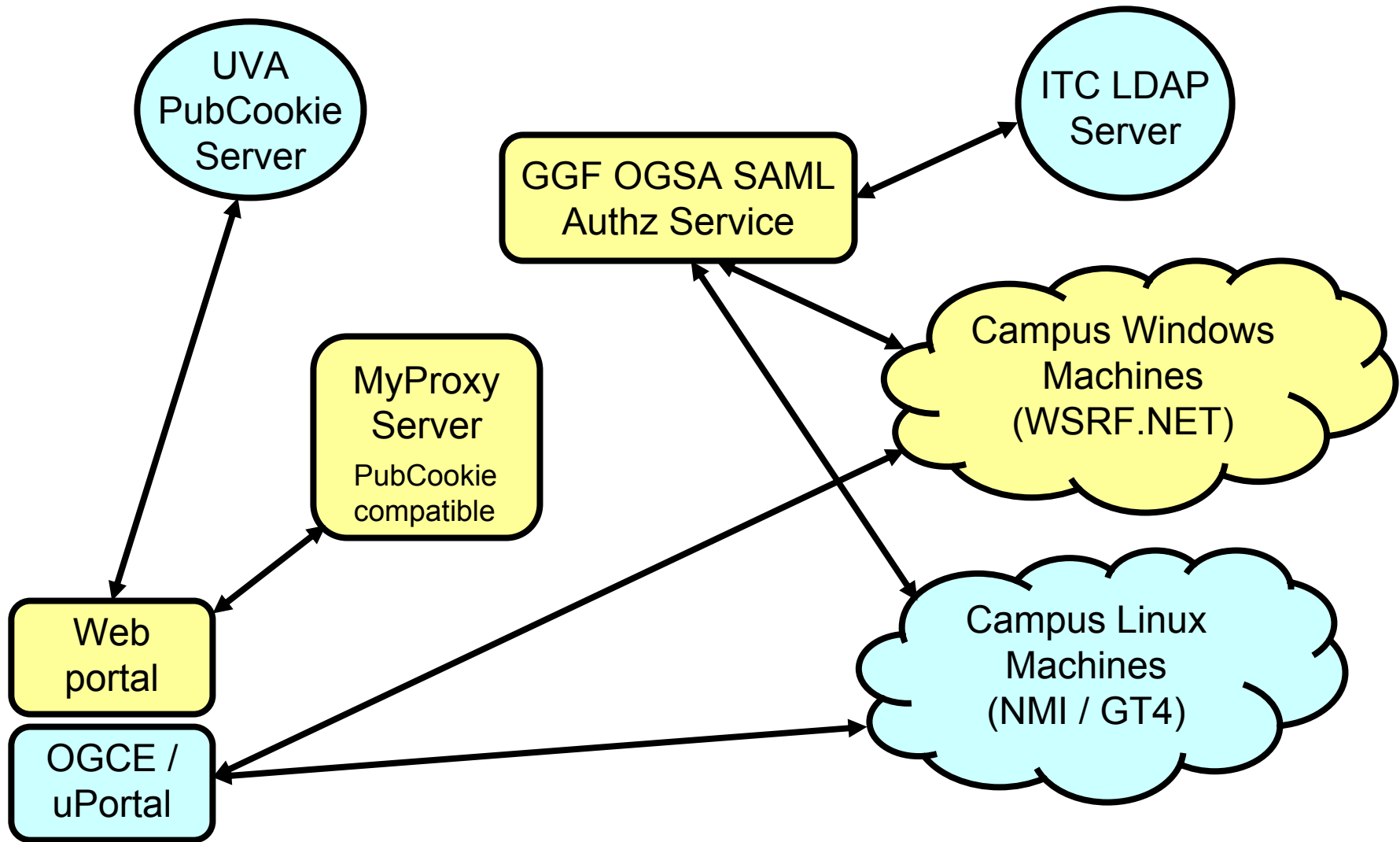# The UVA Campus Grid

Glenn Wasson

University of Virginia

The UVA Campus Grid - UVACG

- **NSF NMI funded project**

- **Our motto: Reuse!**
  - i.e. only deploy new infrastructure if no existing infrastructure fills the need

- **Campus infrastructure for Authentication, Authorization, User access, Resources, etc.**

UVA Campus Grid Overview

UVA PubCookie Server

ITC LDAP Server

GGF OGSA SAML Authz Service

MyProxy Server
PubCookie compatible

Campus Windows Machines (WSRF.NET)

Web portal

OGCE / uPortal

Campus Linux Machines (NMI / GT4)

Existing

We built

UVA Campus Grid Portal

- **Based on**
  - OGCE
  - uPortal
- **Portlets allows**
  - File operation via GridFTP
  - Remote execution via GRAM
  - Credential retrieval via MyProxy

Authentication

- **Authentication to campus grid**
  - ❑ UVA PubCookie server exchanges username password for PubCookie token
- **Authentication to grid resources**
  - ❑ UVACG MyProxy server exchanges PubCookie token for ProxyCert (signed by UVA CA)

**UVACG Portal MyProxy Portlet**

Authorization

- Grid resources callout to UVACG Authz service

- Authz service provides GGF OGSA SAML interface

- Authz service uses UVA Campus LDAP server to get user rights information

Grid Resources

- Campus Linux machines running NMI stack and GT4
- Campus Windows machines running WSRF.NET
  - Including new 4-node cluster using Windows Compute Cluster Edition)
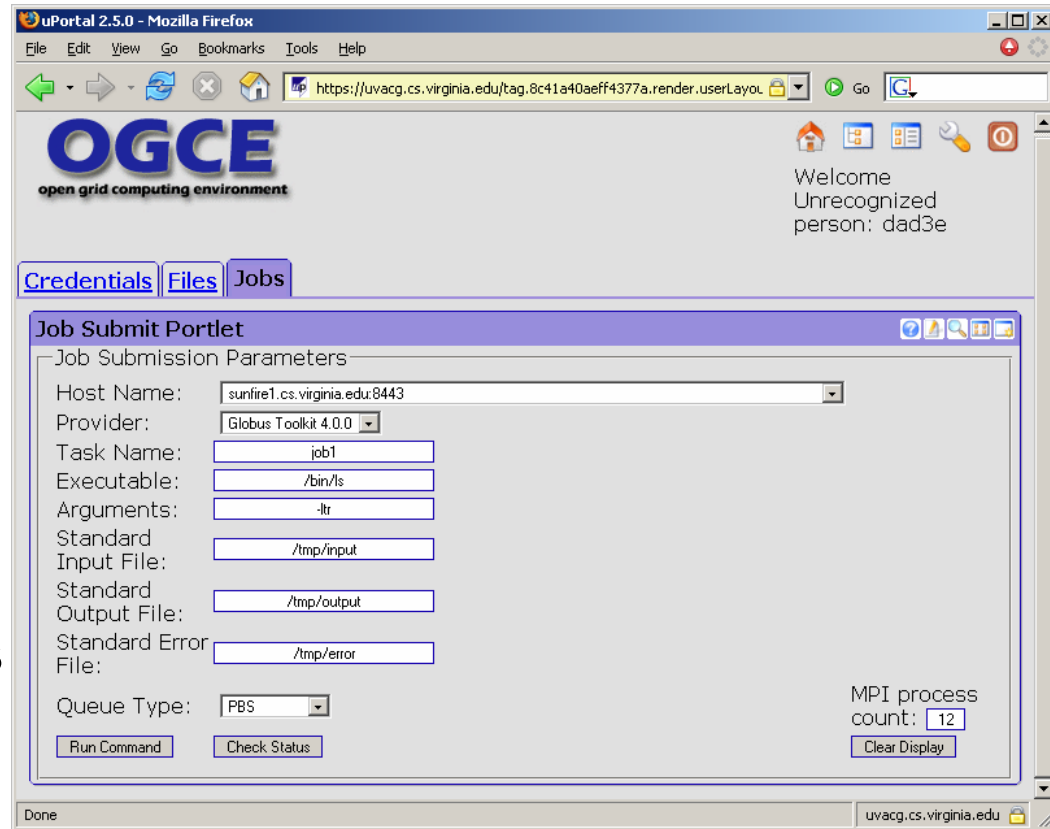
WSRF.NET Integration

- WSRF.NET is an implementation of the WSRF/WSN specifications on .NET
    - Interoperable with GT4 on the WSRF level
- WSRF.NET includes GridFTPd and GRAM service
    - Both interoperable with GT4
- Perform same OGSA SAML Authz callout
- Available at http://www.ws-rf.net

Who's Involved?

- **Who are the users?**
  - ❑ Matlab users – most common job run on UVA's clusters
  - ❑ Computer architecture simulations
  - ❑ Interest from high-energy physics, chemistry, chemical engineering and biomedical engineering
- **Who are the resource providers?**
  - ❑ Computer Science
  - ❑ School of Engineering
  - ❑ UVA campus-wide labs

The Road Ahead…

- Management / policy are tricky!
  - Working with Jim Jokl
- Improve support for Windows clusters
- New versions of .NET framework and VS.NET
- What else?