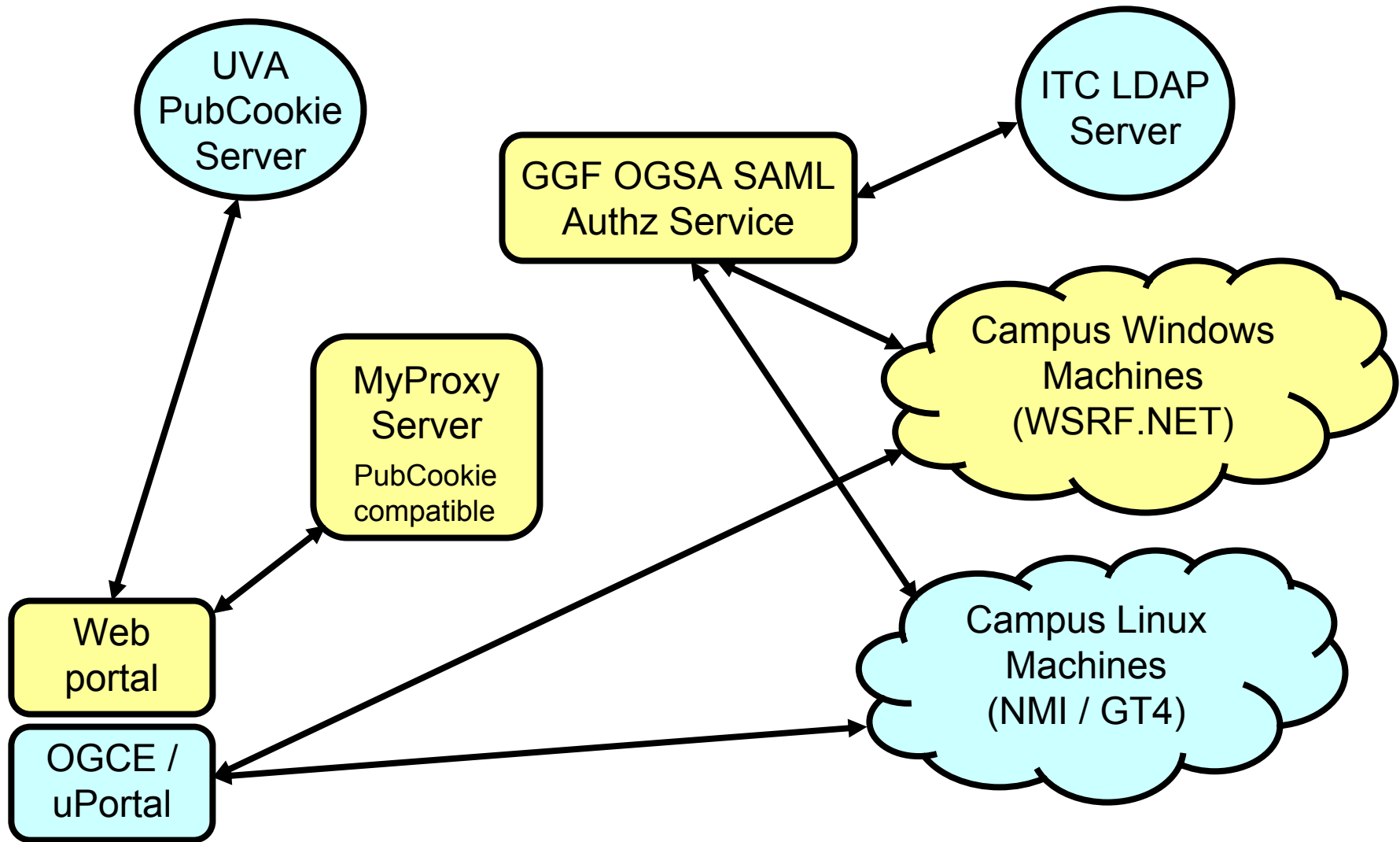

The UVA Campus Grid

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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.
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UVA Campus Grid Overview



UVA Campus Grid Portal

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

The screenshot shows the uPortal 2.5.0 interface in Mozilla Firefox. The browser address bar displays the URL: <https://uvacg.cs.virginia.edu/tag.8805a3c012a1ec56.render.userLayout>. The interface includes tabs for [Credentials](#), [Files](#), and [Jobs](#). The main content area is titled "File Transfer Portlet" and displays two Grid FTP hosts.

Grid FTP Host 1: opteron3.cs.virginia.edu:2811 [\[Home\]](#)

Name	Size	Time		
../				
.bash_history	41548	20050928215709		<input type="checkbox"/>
.bash_logout	302	20050124162056		<input type="checkbox"/>
.bash_profile	365	20050513150955		<input type="checkbox"/>
.bash_profile~	310	20050128194229		<input type="checkbox"/>
.bashrc	124	20050124162056		<input type="checkbox"/>
.cvspass	214	20050614205206		<input type="checkbox"/>
.emacs	383	20050124162056		<input type="checkbox"/>

Grid FTP Host 2: sunfire1.cs.virginia.edu:2811 [/h](#)

Name	Size	
../		
aaa6j		2004
agh9a		2005
ajn2a		2005
ak7q		2005
ans5k		2005
as5de		2005
at4a		2005

The browser status bar at the bottom shows the URL: <https://uvacg.cs.virginia.edu/filetransfer/gfd?host=opteron3.cs.virginia.edu&port=2811&path=/home/dad3e&purpose=2-part...> and the domain uvacg.cs.virginia.edu.

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)

The screenshot shows a web browser window titled "uPortal 2.5.0 - Mozilla Firefox". The address bar displays the URL "https://uvacg.cs.virginia.edu/tag.ebf4ff945bbd9869.render.userLayout". The page features the "OGCE" logo (open grid computing environment) and a welcome message: "Welcome Unrecognized person: dad3e". Below the logo, there are tabs for "Credentials", "Files", and "Jobs". The "Credentials" tab is active, showing the "Proxy Manager Portlet".

The "Proxy Manager Portlet" contains the following text: "Fill out the following parameters and click 'Get Proxy' to retrieve your proxy from the MyProxy server specified below:".

Below this text is a section titled "MyProxy Settings" with the following fields:

- Hostname:
- Port:
- Username:
- Password:
- Lifetime: (hours)

To the right of the "Password" field is a checkbox labeled "Use NetBadge (PubCookie)?" which is checked.

Below the fields is a note: "Note: the lifetime of your GSI proxy credential will depend on the maximum lifetime specified for delegated credentials when you stored your long-term GSI proxy credential in the MyProxy server (by default 2 hours)."

At the bottom of the form is a button labeled "Get Proxy from MyProxy".

The browser's status bar at the bottom shows "Done" and the URL "uvacg.cs.virginia.edu".

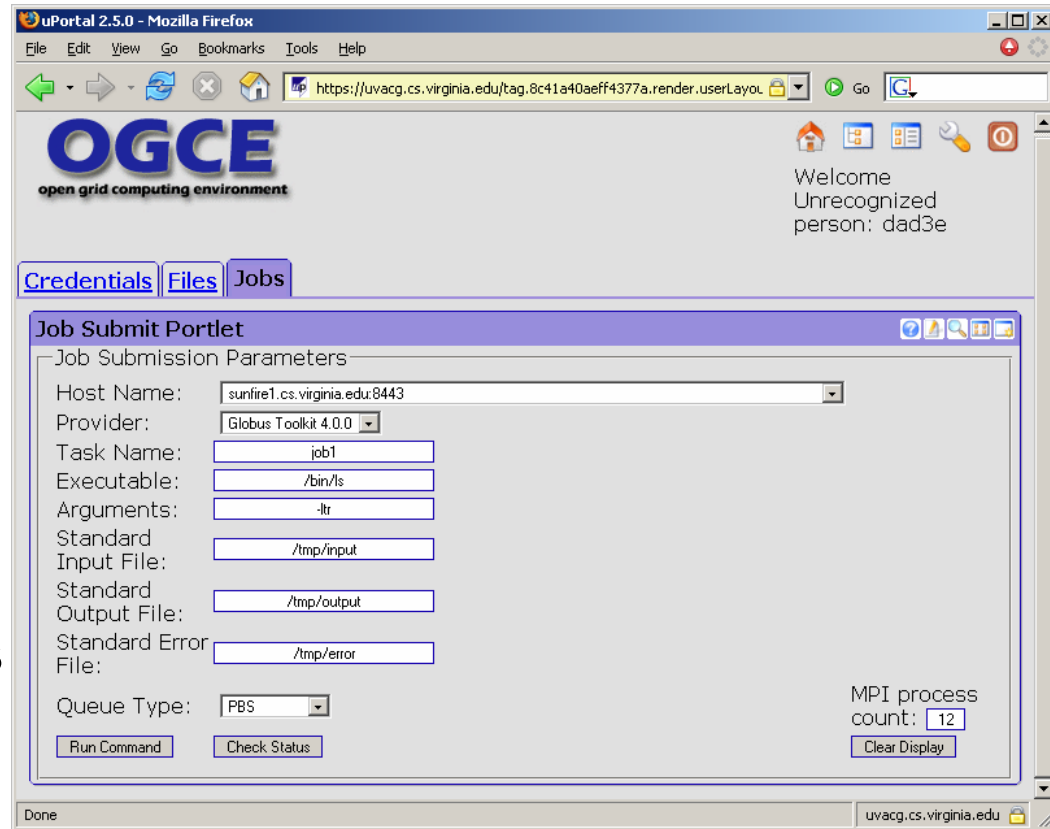
UVACG Portal MyProxy Portlet

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
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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?
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