Developments in the GPN Shibbolized Virtual Organization Testbed

Oklahoma Supercomputing Symposium

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Points to make today:

- **Entitlement server (ES)**
  - **ES and Service Provider (SP) mutually authenticate each other when communicating**
  - **Public key encryption for authentication and privacy**
- **Multiple VOs, possibly with overlapping resources (e.g., GPNVO and UMVO)**
- **Possibly distributed entitlement servers**
- **Administration of entitlements highlights the fine-grained authorization**
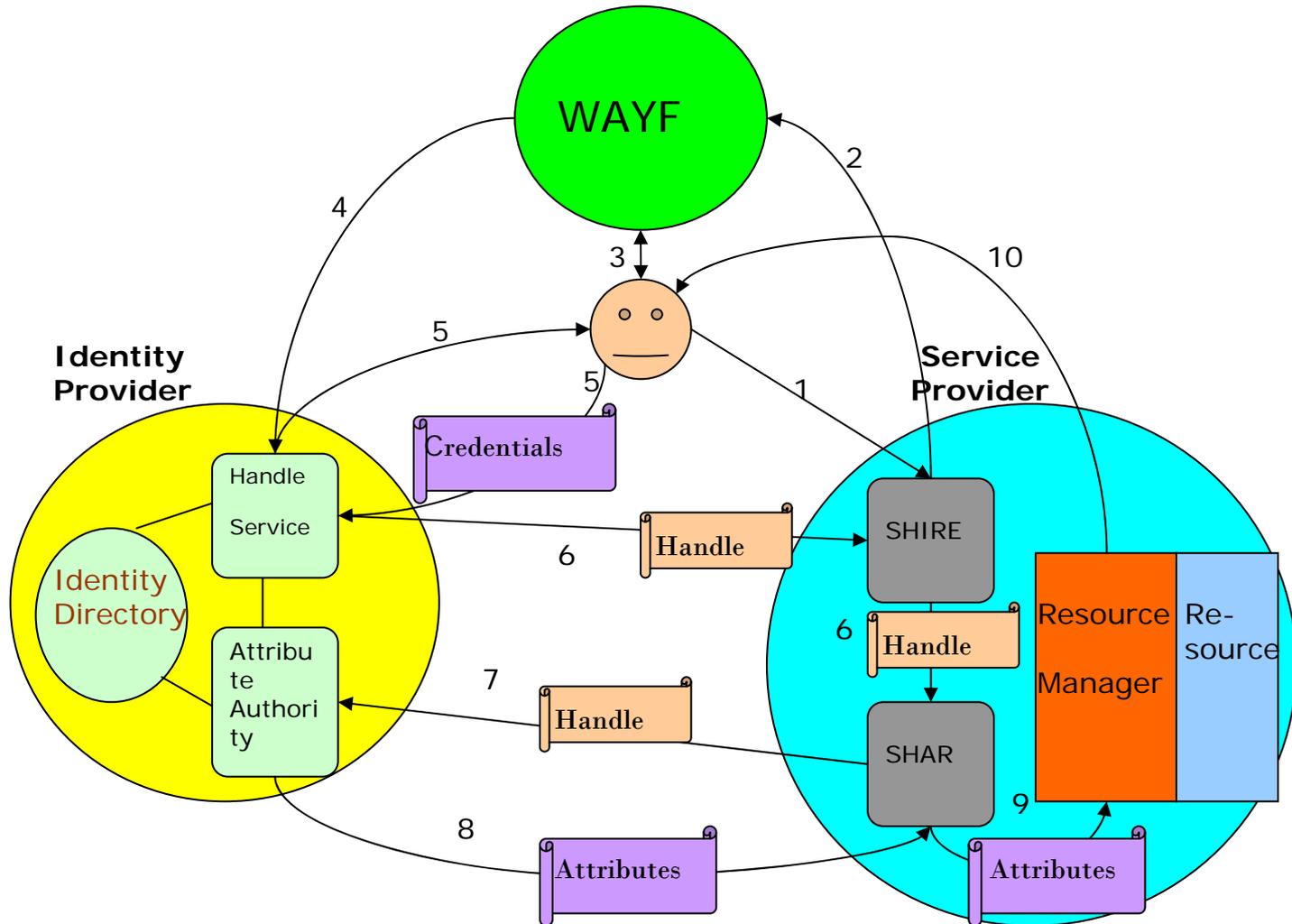- **Session ID database allows admin to see activity**

Sept. 24, 2007
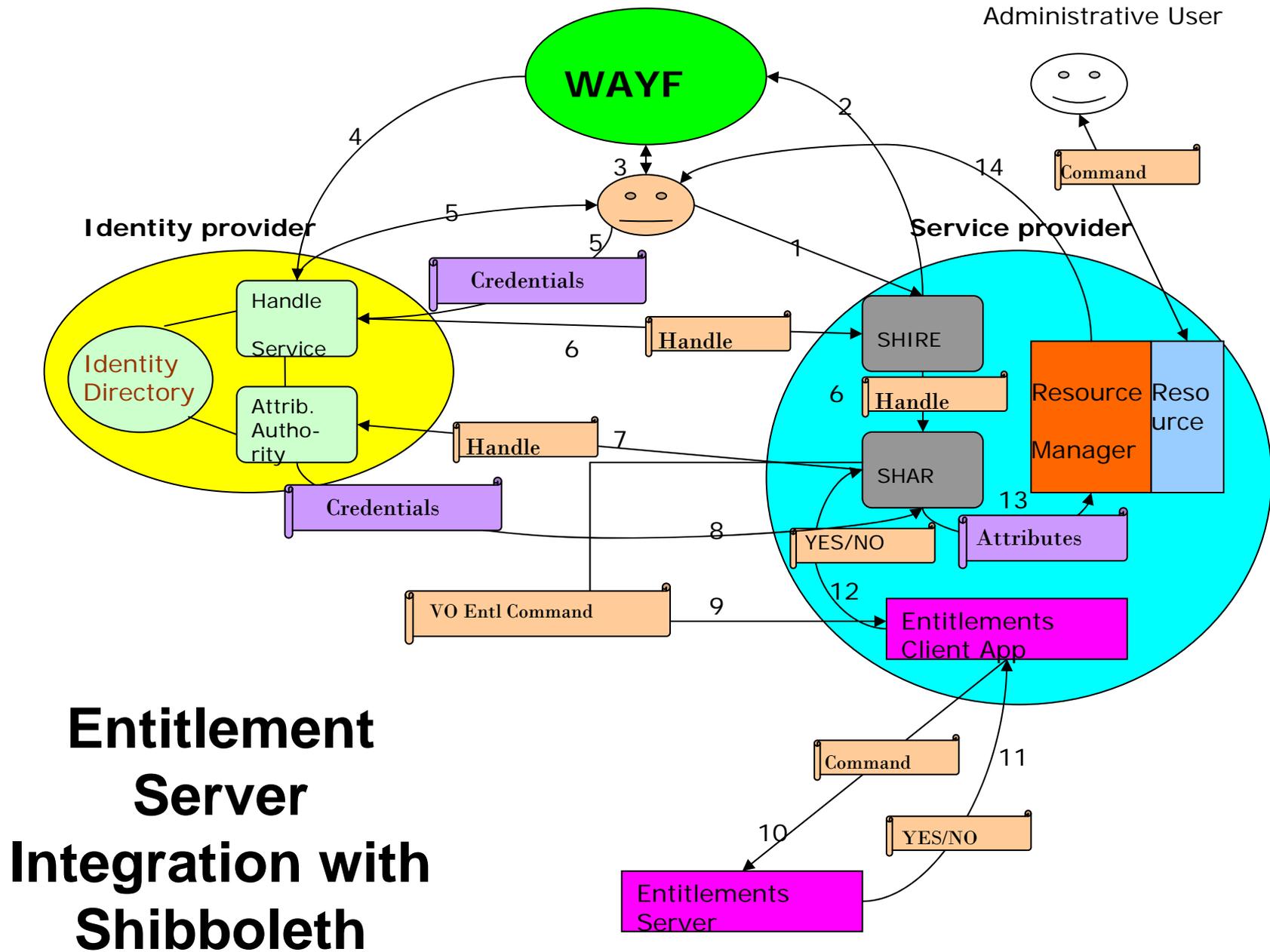NSF: <u>What is the intellectual merit of the proposed activity?</u>

"*To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? … Is there sufficient <u>access</u> to resources?"*
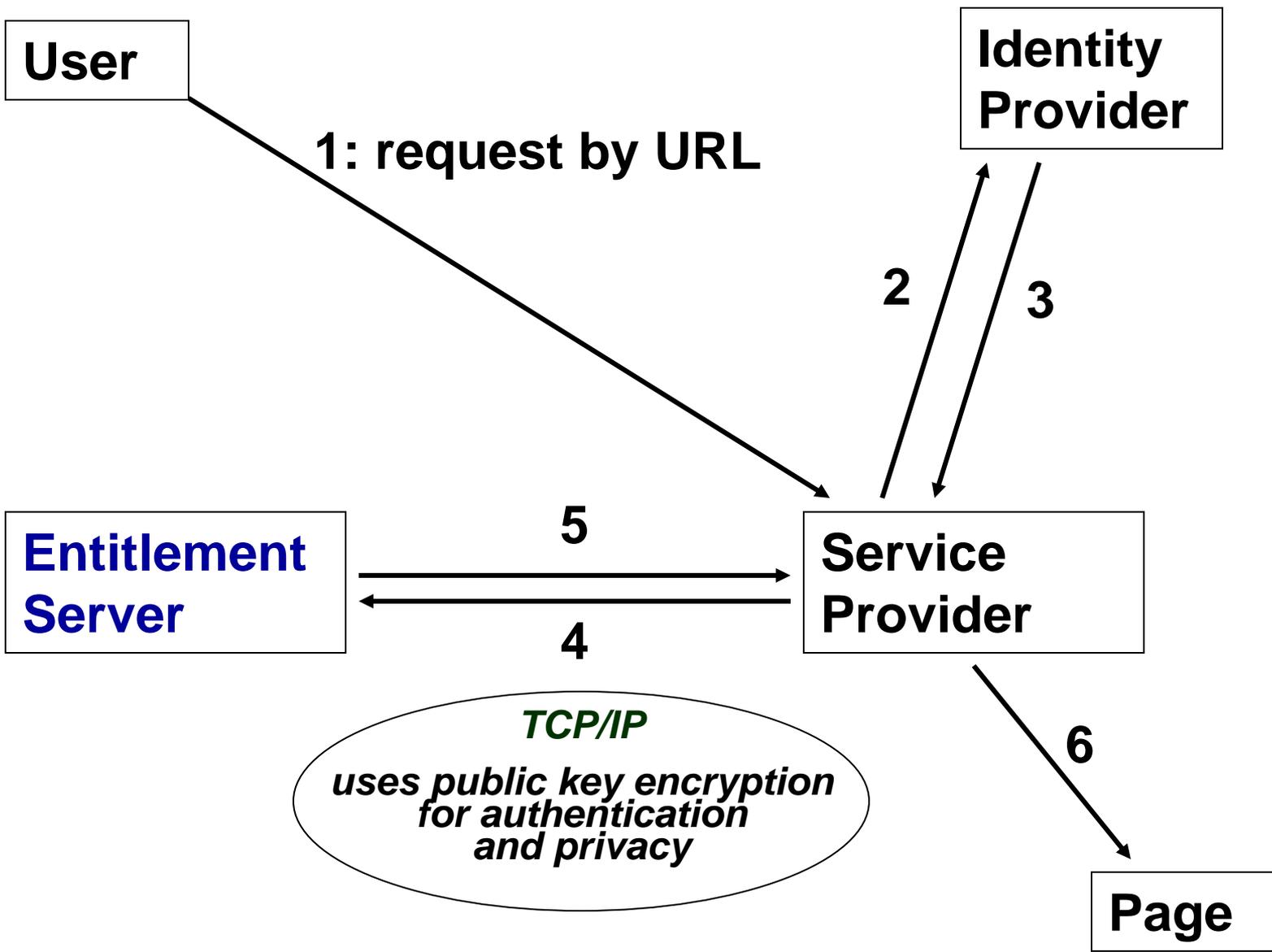
From "Important Notice No. 130: Transformative Research",
<u>http://www.nsf.gov/pubs/2007/in130/in130.jsp</u>

Shibboleth can provide a single sign-on to <u>access</u> resources at several institutions.

Original Shibboleth Protocol

Entitlement Server Integration with Shibboleth

User

Identity Provider

1: request by URL

2

3

Entitlement Server

5

Service Provider

4

TCP/IP

uses public key encryption for authentication and privacy

6

Page

GP.Middleware Shibboleth VO - Access

Access to Site Data

Project Access

Participants

GPN

NORTH DAKOTA STATE UNIVERSITY
FARGO, ND

UNIVERSITY of ARKANSAS

The University of
KANSAS

O the university of KLAHOMA

University of
Nebraska
Lincoln

Mizzou
UNIVERSITY OF MISSOURI-COLUMBIA

SDSU

it's all
about U.
the university of south dakota.

GPN-ETR Presentations

(Updated: 05/18/2007)   Administrators Only

Print This Page

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Please send comments to: wwwadm@rnet.missouri.edu

Done   osprey.rnet.missouri.edu

start   Inbox - Micro...   beagle.rnet....   SecureFX   2 Windows ...   Microsoft Acc...   Capture a Sc...   GP.Middlewa...   Presentation1   2:48 PM

GPN-VO Repository
Menu Selections

User: spollenw@missouri.edu

Login Time: Wed May 30 09:24:51 2007

Menu Options

- GO File Process
- GO File Upload
- GO MU Swine Genomics Project
- GO WebMPI - University of Arkansas
- GO Biotools

[Back] [Menu Options] [Reload] [Logout And Close Window]

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Please send comments to: wwwadm@rnet.missouri.edu

Done

genome.rnet.missouri.edu

GPN-VO BioSci
Bioinformatics Tools

User: spollenw@missouri.edu   Login Time: Wed May 30 9:29:21 2007

Please select one of the following analysis tools:

WWWBlast	Run the Web Version of the Blast Tool	
mpiBlast - Raptor	Run the MPI Version of the Blast Tool on Raptor	Run-time help
mpiBlast - Lewis	Run the MPI Version of the Blast Tool on Lewis	Run-time help
ClustalW	Run the ClustalW Utility	Run-time help
DeCypher	Run the DeCypher Bioinformatics Engine (UMC Only)	
UALR Resources	Access Resources at UALR (UArk, Little Rock)	

Close Window

Print This Page

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Please send comments to: wwwadm@rnet.missouri.edu

Done   genome.rnet.missouri.edu

https://genome.rnet.missouri.edu - GPN-VO BioSci- Bioinformatics Tools - Mozilla Firefox

GPN-VO Repository - Menu Selections   GPN-VO BioSci- Bioinformatics To...

After Post

key --si-- value --vvfT79NSpLUjT--
key --name-- value --spollenw@missouri.edu--
key --entitle-- value --urn:mace:greatplains.net:biosci--
key --shibsid-- value --_fbaacd329af446769a645eabae75bc0b--
key --ts-- value --1190995183--
key --__utmz-- value --262015377.1185207308.20.7.utmccn=(referral)|utmcsr=web.rnet.missouri.edu|utmcct=/Test/FileProcess/FDLhead.html|utmcmd=
key --CFID-- value --2754207--
key --CFTOKEN-- value --99562301--
key --__utma-- value --262015377.890417246.1180964236.1188312705.1189516896.40--
key --SignOnDefault-- value --SPOLLENW--

After Request

Testing in Progress

orgSite = https://osprey.rnet.missouri.edu/shibboleth/testshib/idp
eppn = spollenw@missouri.edu
Remote IP address: 128.206.118.140
SPUserName: genome.rnet.missouri.edu
Server address: 128.206.116.93
Server administrator: wwwadm@genome.rnet.missouri.edu

This debug illustrates the communication between ES and SP

Shibboleth session Id: _fbaacd329af446769a645eabae75bc0b
b[0] = operationType = 20 serverName = beagle.rnet.missouri.edu SP_username = genome.rnet.missouri.edu SP_institution = missouri.edu SP_vo = grea
b[1] = SP_SESSION_EXPIRED
a[0] = operationType = 10 serverName = beagle.rnet.missouri.edu SP_username = genome.rnet.missouri.edu SP_institution = missouri.edu SP_vo = grea
a[1] = SP_SETUP_SUCCESS
c[0] = operationType = 20 serverName = beagle.rnet.missouri.edu SP_username = genome.rnet.missouri.edu SP_institution = missouri.edu SP_vo = grea
c[1] = SP_SESSION_OK
c[2] = USER_ENTITLEMENT_LOOKUP_SUCCEEDED
CKent: cnt=0 spollenw@missouri.edu urn:mace:greatplains.net:biosci RC=1
epEntitlement: urn:mace:greatplains.net:biosci

GPN-VO BioSci

GP.Middleware Shibboleth VO Entitlement Management

G P N

Please select a role:

◉ Administrator   ○ Root Administrator

Virtual Organization: greatplains.net

[Submit]

[Close Window]

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Please send comments to: wwwadm@rnet.missouri.edu

start | Microsoft PowerPoint ... | beagle.rnet.missouri.... | 3 Firefox | 11:15 PM

Entitlement Management

Please use the following options in order to accomplish your task.

Your privilege level: **admin**

Your virtual organization: **greatplains.net**

Please select one and fill the text boxes bellow accordingly:

○ Add a new entitlement - Fill *User Name, Institution Name, Virtual Organization Name, Entitlement value*

○ Delete an existing entitlement - Fill *User Name, Institution Name, Virtual Organization Name, Entitlement value*

○ Lookup an existing entitlement - Fill *User Name, Institution Name, Virtual Organization Name, Entitlement value*

⦿ Display all entitlements of the user - Fill *User Name, Institution Name, Virtual Organization Name value*

○ Display all the users with the entitlement - Fill *Entitlement value*

○ Display all records

○ Logout

User Name: `spollenw`

Institution Name: `missouri.edu`

Virtual Organization: `greatplains.net`

Entitlement value: [urn:mace:greatplains.net: ▼] [   ]

The values "user", "admin" or "root" are reserved. Please use only if appropriate!

[Submit]

GP.Middleware Shibboleth VO
Entitlement Management

← GPNVO

Index	VO	Institution	User Name	Entitlement
1	greatplains.net	missouri.edu	spollenw	root
2	greatplains.net	missouri.edu	spollenw	urn:mace:greatplains.net:biosci
3	greatplains.net	missouri.edu	spollenw	urn:mace:greatplains.net:biogrid
4	greatplains.net	missouri.edu	spollenw	urn:mace:greatplains.net:GPNVO
5	greatplains.net	missouri.edu	spollenw	urn:mace:greatplains.net:repository
6	greatplains.net	missouri.edu	spollenw	admin
7	greatplains.net	missouri.edu	spollenw	urn:mace:greatplains.net:missouri.edu:decypher

UMVO →

GP.Middleware Shibboleth VO
Entitlement Management

Index	VO	Institution	User Name	Entitlement
1	umsystem.edu	missouri.edu	spollenw	urn:mace:greatplains.net:UMVO
2	umsystem.edu	missouri.edu	spollenw	admin
3	umsystem.edu	missouri.edu	spollenw	root

Return to the Administration Page

Entitlements administered by the Great Plains Network allow…

Namespace	Purpose
urn:mace:greatplains.net:GPNVO	GPNVO Entitlement
urn:mace:greatplains.net:biosci	BioSci Entitlement
urn:mace:greatplains.net:biogrid	BioGrid Entitlement
urn:mace:greatplains.net:repository	Data Repository Entitlement
urn:mace:greatplains.net:missouri.edu:DeCypher	DeCypher Entitlement
urn:mace:greatplains.net:uark.edu:webmpi	Web MPI Entitlement

… fine-grained authorization

- `peter    urn:mace:greatplains.net:GPNVO`

- `paul     urn:mace:greatplains.net:GPNVO`
  `         urn:mace:greatplains.net:biogrid`

- `mary     urn:mace:greatplains.net:GPNVO`
  `         urn:mace:greatplains.net:repository`

- `spollenw urn:mace:greatplains.net:GPNVO`
  `         urn:mace:greatplains.net:biogrid`
  `         urn:mace:greatplains.net:biosci`
  `         urn:mace:greatplains.net:repository`
  `         admin`

When Peter asks for Biotools he is refused: