

A Search Federation Framework

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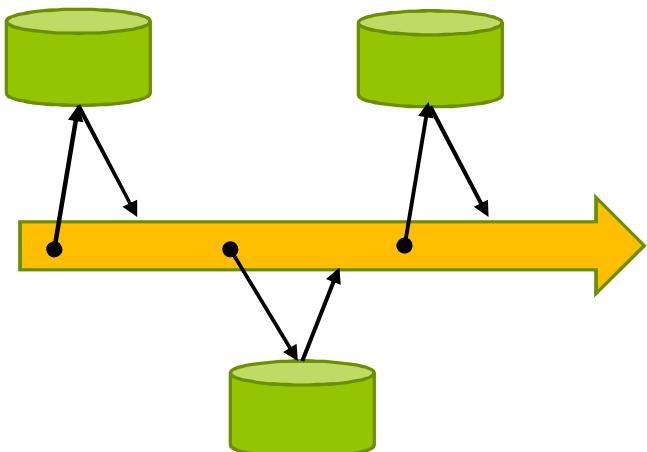
Why federate?

- May not be able crawl and index a data source
- Don't want to duplicate the indexed content in another system
- Don't want to enforce access controls for indexed content from another system
- Get the latest content from the source system

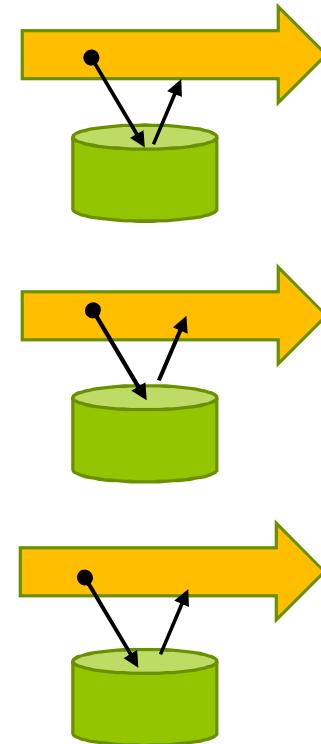
Disadvantages of Federation

- Must impersonate the user to access what they're authorized to see
- Must decide how to interleave/prioritize results
- Responsiveness is tied to the slowest source
- Need to support multithreading for performance

Serial versus Parallel access



Serial access to repositories



Parallel access to repositories

Multithreading issues

- “A programmer says: I have a problem. I'll use multi-threading to solve it.” Now he has two problems.
- Threadsafe is an oxymoron.” Dr. Richard Hipp
- Multi-threaded programs start out fine and then go downhlil form theer

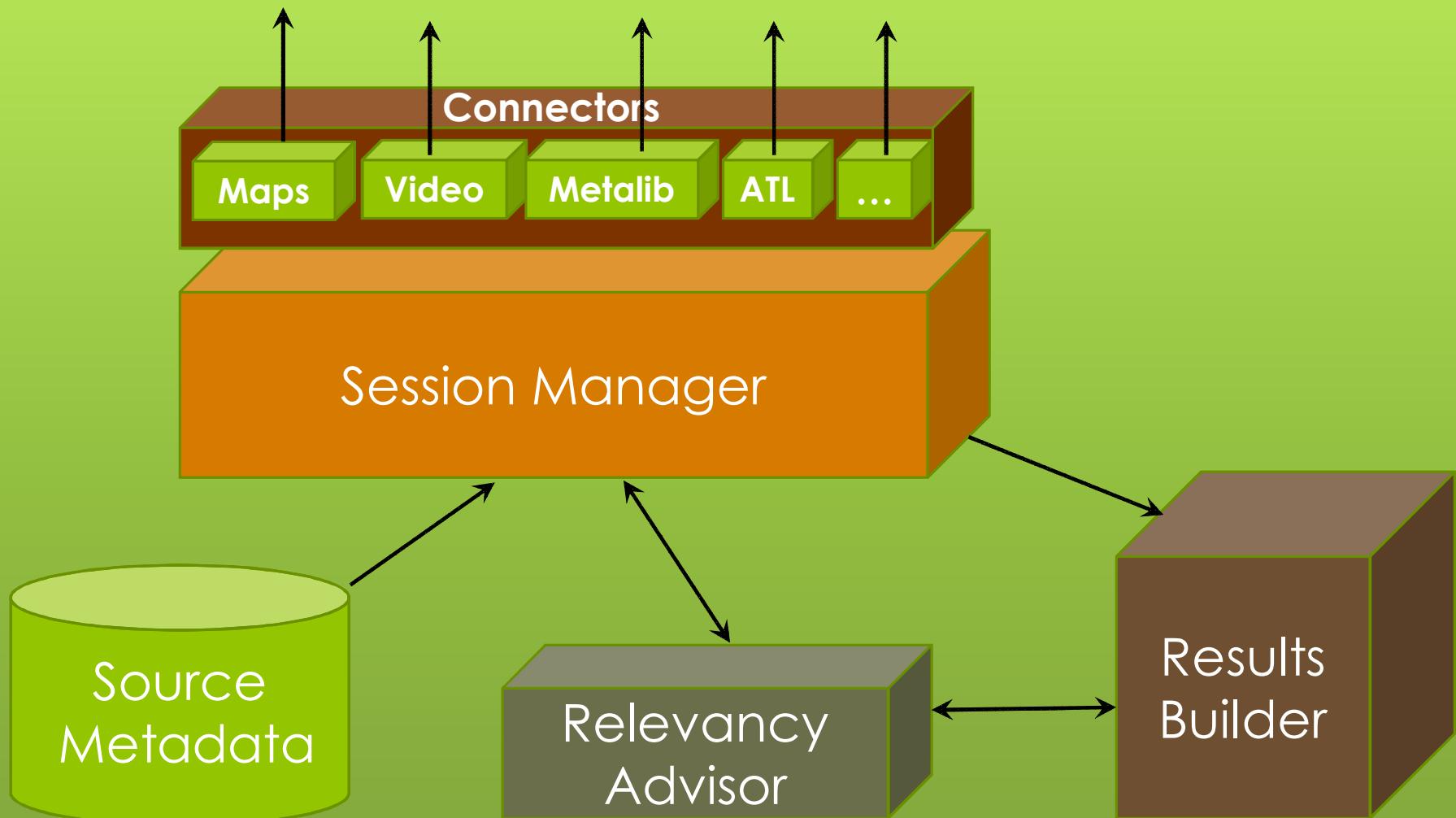
Authentication Trade Offs

- Using entity accounts vs user credentials
 - Easier to utilize an entity account – if you can get system admins to give it super-user privileges
 - More technically challenging to utilize customer credentials – but can now filter content based on their authorizations
 - We used Kerberos constrained delegation of authority -- limits what the application can do on behalf of the user

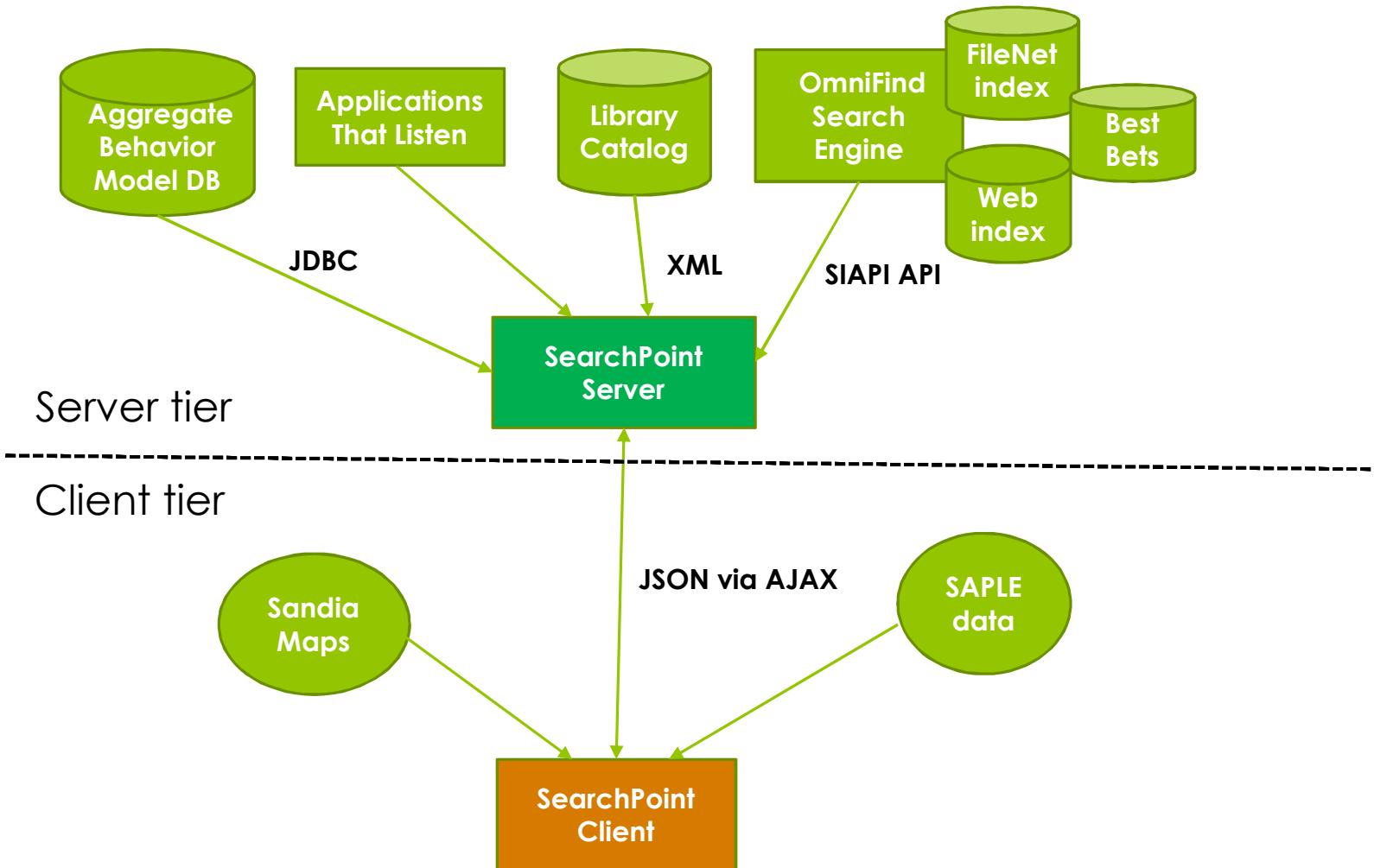
Client vs Server Federation

- Do we conduct federation on the client?
 - Want to use all the power available at the desktop
 - Requires more complex logic on the client
- Do we perform federation on the server?
 - Multi-threading issues add complexity
 - Keeps the client simpler (3 tier architecture)

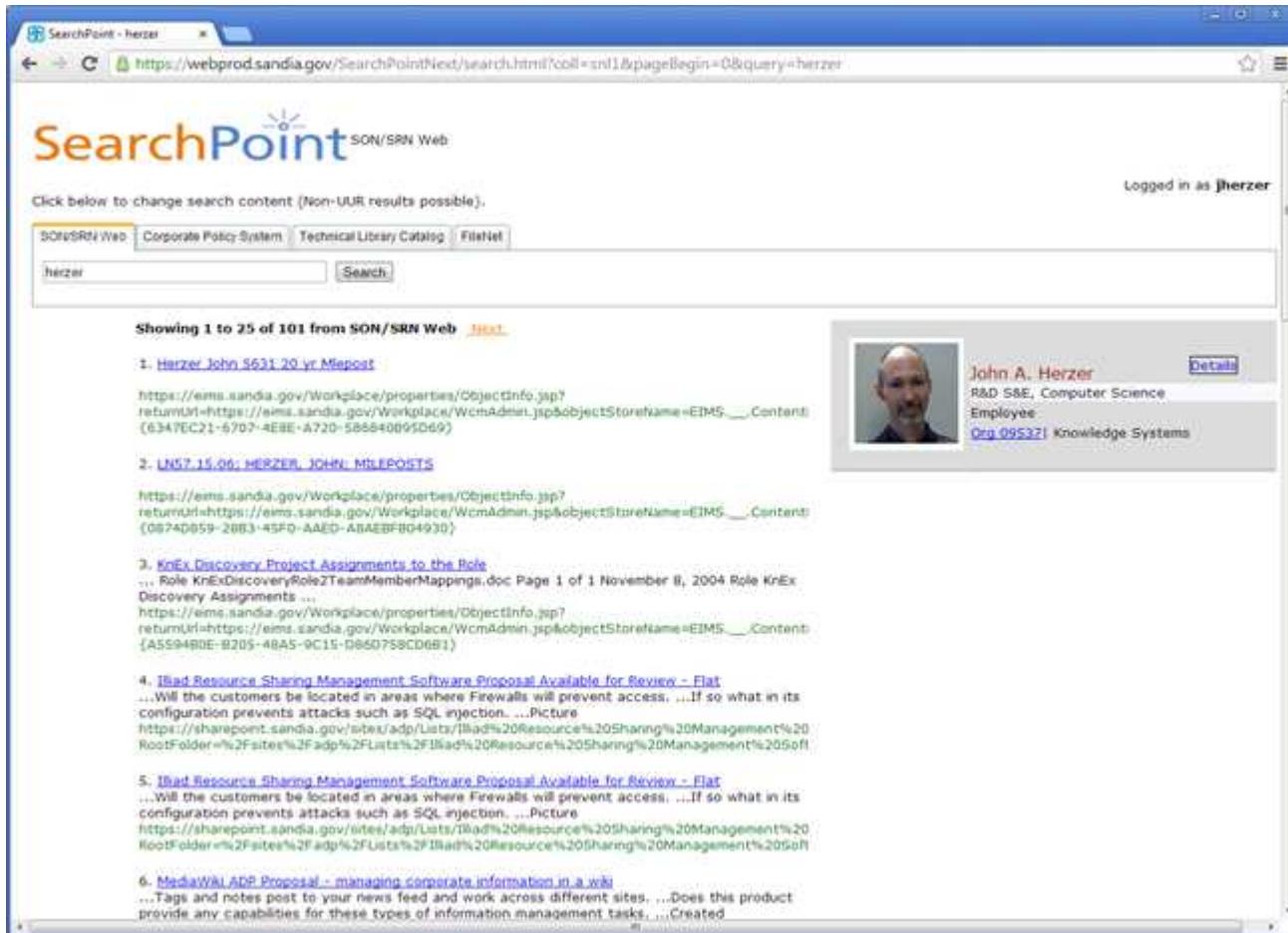
Federator Architecture



SearchPoint Data Sources



Federation of personnel data



SearchPoint - herzer

https://webprod.sandia.gov/SearchPointNed/search.html?coll=srd1&pageBegin=0&query=herzer

SearchPoint SON/SRN Web

Logged in as **jherzer**

Click below to change search content (Non-UUR results possible).

SON/SRN Web Corporate Policy System Technical Library Catalog FileNet

herzer

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1. [Herzer John 5631 20 yr Milepost](#)
https://eims.sandia.gov/Workplace/properties/ObjectInfo.jsp?returnUrl=https://eims.sandia.gov/Workplace/WcmAdmin.jsp&objectStoreName=EM5____Content(6347EC21-6707-4EEB-A720-586840695D69)

2. [LN57 15.06 HERZER, JOHN: MILEPOSTS](#)
https://eims.sandia.gov/Workplace/properties/ObjectInfo.jsp?returnUrl=https://eims.sandia.gov/Workplace/WcmAdmin.jsp&objectStoreName=EM5____Content(0674D059-2883-45F0-AAE0-ABAE8F804930)

3. [KnEx_Discovery_Project_Assignments_to_the_Role](#)
... Role KnExDiscoveryRole2TeamMemberMappings.doc Page 1 of 1 November 8, 2004 Role KnEx Discovery Assignments ...
https://eims.sandia.gov/Workplace/properties/ObjectInfo.jsp?returnUrl=https://eims.sandia.gov/Workplace/WcmAdmin.jsp&objectStoreName=EM5____Content(A599480E-9205-48A5-9C15-0860778CD681)

4. [Ibad Resource Sharing Management Software Proposal Available for Review - Flat](#)
...Will the customers be located in areas where Firewalls will prevent access. ...If so what in its configuration prevents attacks such as SQL injection. ...Picture
https://sharepoint.sandia.gov/sites/Ibad%20Resource%20Sharing%20Management%20Root%20Folder%20%2Fsites%2Fadp%2FLists%2BIbad%20Resource%20Sharing%20Management%20off

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https://sharepoint.sandia.gov/sites/Ibad%20Resource%20Sharing%20Management%20Root%20Folder%20%2Fadp%2FLists%2BIbad%20Resource%20Sharing%20Management%20off

6. [MediaWiki APP Proposal - managing corporate information in a wiki](#)
...Tags and notes post to your news feed and work across different sites. ...Does this product provide any capabilities for these types of information management tasks. ...Created

John A. Herzer [Details](#)
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Federation of map data

SearchPoint - ipoc

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<https://info.sandia.gov/ctf/IPOC/>

2. [Innovation Parkway Office Center \(IPOC\) and Badge Office Map](#)
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https://ems.sandia.gov/Workplace/getContent?objectStoreName=EMS_ROS&objectType=Document&vId={901BE45D-B1D8-454B-A146-8B4BDE5CAE17}

3. [Badges in IPOC](#)
...However this requirement is a little different in two specific locations at [IPOC](#). ...All other [IPOC](#)!
<https://info.sandia.gov/iss/home/article/badges-in-ipoc-139.html>

4. [Sandia Maps](#)
Sandia Maps, [IPOC](#) Research Park Maps Tech Area Maps Innovation Parkway Office Center [IPOC](#) Gates Maps Bul
<https://info.sandia.gov/maps/>

5. [Department 10241 \(National Security Programs and Pulsed Power Sciences Procurement\)](#)
...IPOC Pod Lead 5000 5200 5900, - [IPOC](#) Pod 5700 non USNDS ...
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<http://ctf.sandia.gov/procure/lcmPages/Depts/dpt.10241.html>

6. [Employee Caring Program | Sandia National Laboratories](#)
...IPOC 2nd Floor Break Room 10:00 a.m. - 2:00 p.m., MIEE Community Circuit Oct. 17th at Hardin Field, The Community Involvement C
<http://gve.sandia.gov/index.htm>

7. [IPOC](#)
Link to Sandia map application
<https://webprod.sandia.gov/SearchPointNext/search.html>

Go to Sandia Maps



Load testing with JMeter

