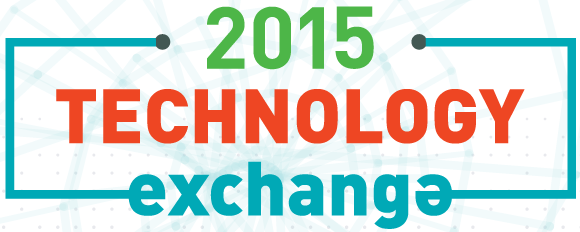


OCTOBER 4–7
CLEVELAND OH

FEDERATION INTEROP AND EDUGAIN BRIEFING

Walter Hoehn, U. Memphis / Nick Roy and Tom Scavo, InCommon

Federation Interop: What's Up With That?

Agenda

- Why a Federation Interop Working Group?
- Scope of Work
- Current Status
- What's Next?

Why a Federation Interop Working Group?

- Aren't there already at least a couple of those?
  - Yes
  - This is focused first on the groundwork needed to support multilateral, full mesh SAML federations in use in the research and education sector
  - Chartered by the TAC to help drive solutions to concrete problems in InCommon
- Want to be able to hand the first work product to SAML software implementers who want to target our federation model
- Many such participants in the working group (thanks!)
- Their support is fundamental to continuing to deliver value to InCommon participants

Scope of Work

- Provide creators of SAML products with a concrete set of requirements for interoperating within InCommon
- Outline SP and IdP operational and deployment practices that are necessary for interoperability with minimal or no administrator involvement
- Provide direction concerning the most common interoperability problems encountered by InCommon participants.

- Recognition of wider applicability

- Stack
  - Implementation Profile
  - SAML2Int
  - Document(s) covering higher-ed-specific or InCommon-specific practices

Current Status

- Call for Participation - July 7, 2015
- Began Weekly Conference Calls - August 10, 2015
- Face to Face meeting during Advance Camp - October 5, 2015

- Matrix - common interoperability problems
  - Categorized (Software vs. Operational)

- Began work on Implementation Profile Specification
  - “SAML V2.0 Federation Implementation Interoperability Profile”
  - Building on pre-existing materials
  - Coming Soon: workable draft that can be reviewed by a wider audience

What's Next?

- Complete Draft of Implementation Profile - Submit to TAC
- Solicit feedback within InCommon
- Engage other communities - REFEDS/Kantara Initiative
- Publish profile
- Federation lab (GÉANT and Kantara) Test Suite
- Proposed updates to SAML2int

Global Interfederation

Federation at Scale

Contents

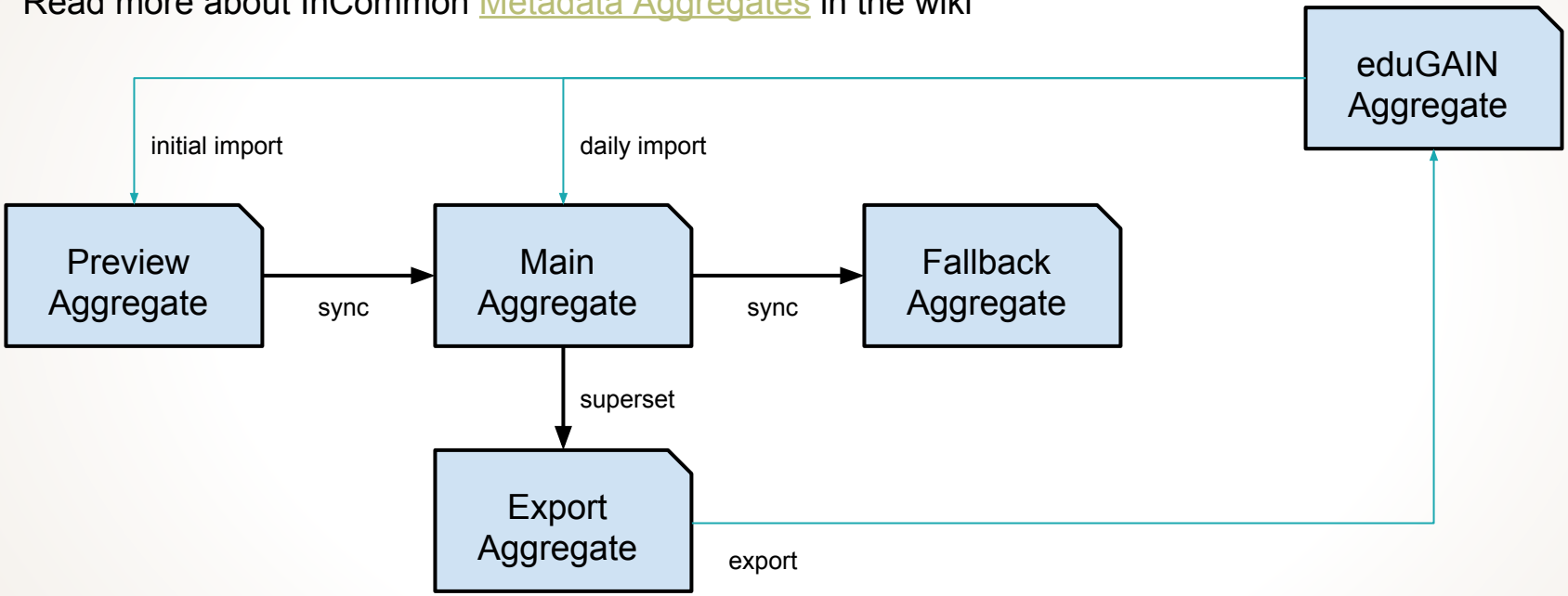
1. What is eduGAIN?
2. eduGAIN Checklists
   a. eduGAIN for Organizations
   b. eduGAIN for IdP Operators
   c. eduGAIN for SP Owners

What is eduGAIN?

- eduGAIN = EDUcation Global Authentication INfrastructure
- eduGAIN is a *metadata aggregation service* run by GÉANT for the higher ed community worldwide
- The eduGAIN service routinely imports metadata from dozens of participating federations, aggregates that metadata into a single signed document, and then serves the aggregate file from a well-known HTTP location
- eduGAIN operates at the federation level, that is, the eduGAIN aggregate is not intended to be downloaded directly by IdP operators and SP owners
- InCommon signed the eduGAIN Declaration in April 2014

InCommon Metadata Pipeline

Read more about InCommon Metadata Aggregates in the wiki



Importing eduGAIN Metadata

(as of 2015-09-27)	**BEFORE**	**AFTER**
Metadata file size:	16062158 bytes	32322949 bytes
Number of registrars:	1	35
Number of organizations:	573	2106
Number of SAML entities:	2960	5269
Number of IdP roles:	412	1836
Number of SAML2 IdP roles:	406	1828
Number of SP roles:	2548	3435
Number of SAML2 SP roles:	2501	3354

Metadata Registrars

The five largest metadata registrars (as of 2015-09-30):

Registrar ID	# of entities	# of IdPs	# of SPs
https://incommon.org	2962	412	2550
http://ukfederation.org.uk	1216	513	704
https://federation.renater.fr/	257	238	19
http://cafe.rnp.br	114	114	0
http://www.idem.garr.it/	98	69	28

For a complete list of metadata registrars in higher ed:
https://incommon.org/federation/info/all-entities-mdq-beta.html

Prepare for Metadata Import

The Shibboleth IdP is known to be sensitive to large metadata aggregates. To prepare for the import of eduGAIN metadata, InCommon recommends:

1. Allocate **at least 1024MB of heap space** in the JVM
2. Enable DEBUG-level logging on the following Java classes:
   V2: org.opensaml.saml2.metadata.provider.AbstractReloadingMetadataProvider
   V3: org.opensaml.saml.metadata.resolver.impl.AbstractReloadingMetadataResolver

Read more about how to protect against failed metadata processes

The Export Aggregate

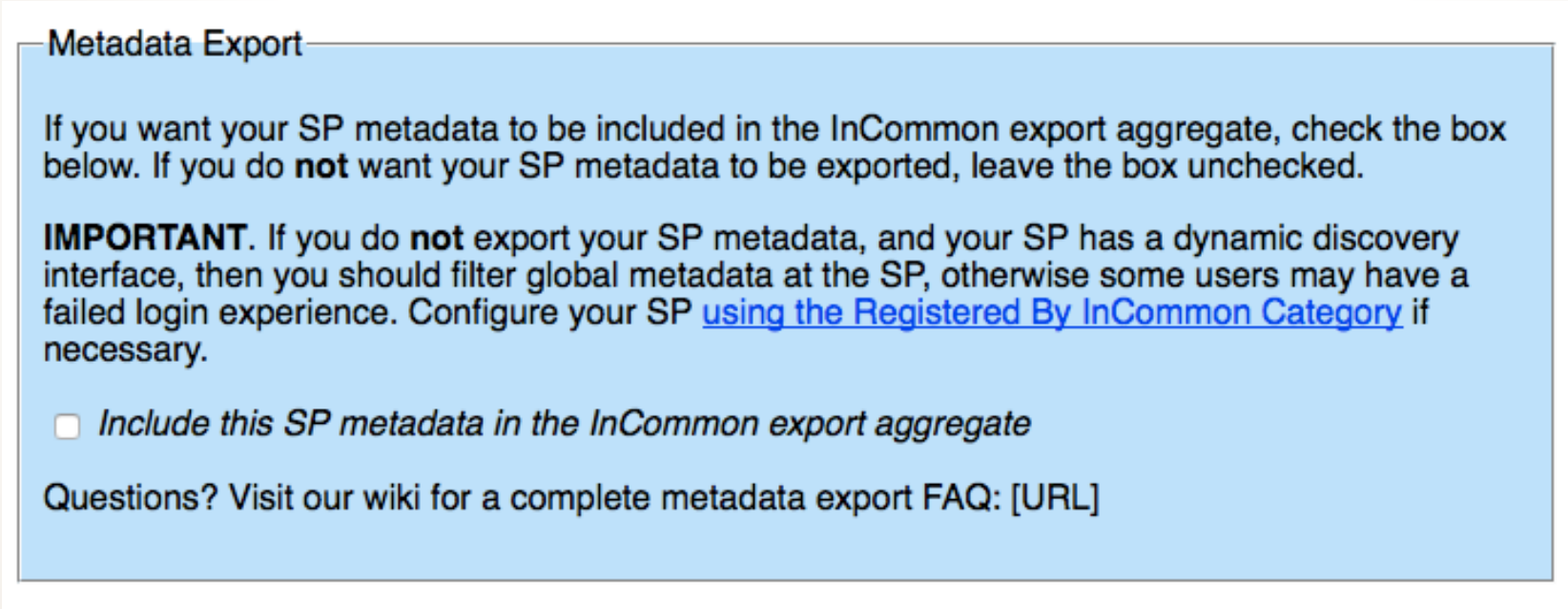
A small group of InCommon participants have been exporting their metadata to eduGAIN in pilot mode since the summer of 2014:

- University of Wisconsin-Milwaukee
- LIGO Scientific Collaboration
- Internet2
- National Institutes of Health

Currently 16 R&S SPs are included in the InCommon Export Aggregate. Full eduGAIN participation is scheduled to begin early in 2016.

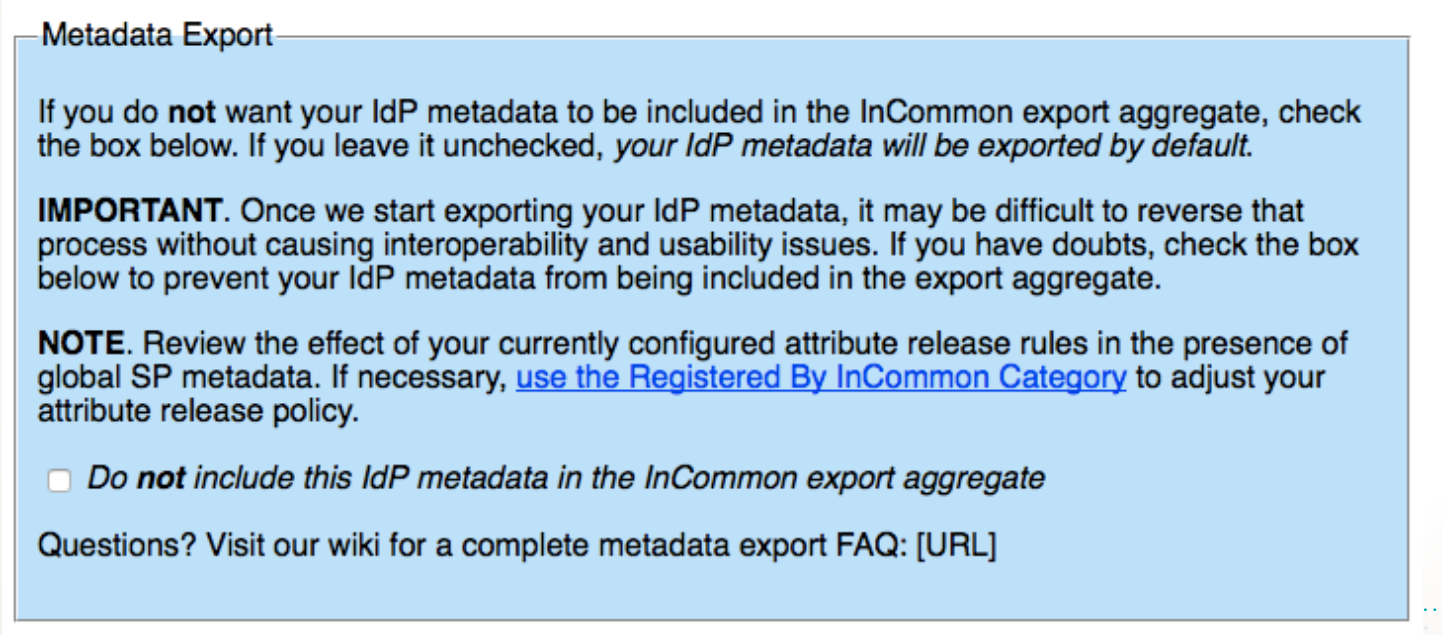
User Interface: Metadata Export for SPs

SP owners choose to **opt-in** to metadata export:



User Interface: Metadata Export for IdPs

IdP operators choose to **opt-out** of metadata export:



eduGAIN Checklist

The rest of this presentation outlines how to prepare for eduGAIN.

1. eduGAIN for Organizations
2. eduGAIN for IdP Operators
3. eduGAIN for SP Owners

eduGAIN for Organizations

Are all stakeholders in your organization ready for eduGAIN?

1. Fill all organizational roles ASAP
   a. Appoint an Executive
   b. Identify two Federation Site Administrators
2. Read the eduGAIN Intent Statement
3. Review the new InCommon Participation Agreement (when it becomes available)

eduGAIN for IdP Operators

Is your IdP deployment ready for eduGAIN?

1. Configure your IdP software
2. Fine-tune your IdP metadata
3. Upgrade to Shibboleth IdP V3 (if applicable)

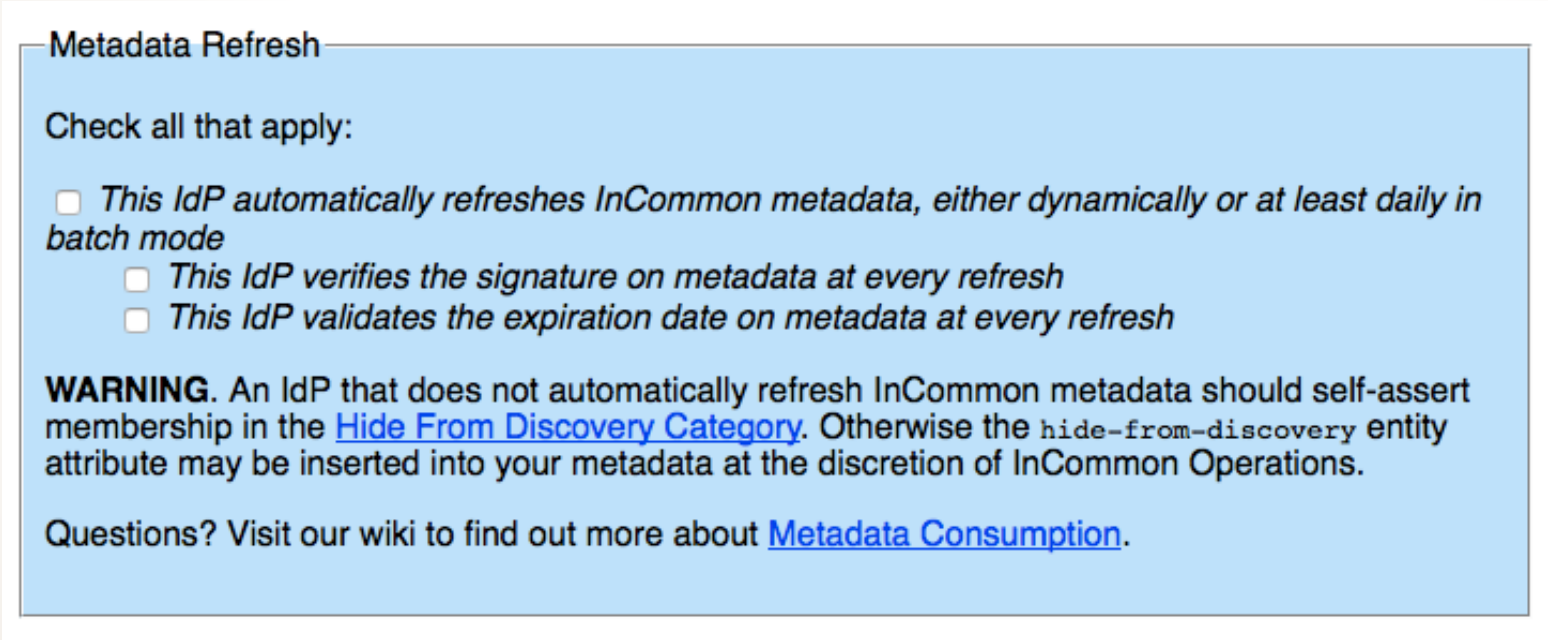
Configure your IdP Software

Complete the following tasks before Ops begins importing eduGAIN metadata:

1. Refresh and verify InCommon metadata at least daily
   a. Metadata Consumption
   b. Hide From Discovery Category
2. Review your attribute release policy rules
   a. Do not rely on the md:EntitiesDescriptor/@Name XML attribute in InCommon metadata
   b. Review your Default Attribute Release policy
   c. Support the global Research & Scholarship Category
      i. Research and Scholarship for IdPs (new R&S IdPs)
      ii. Migrating an IdP to Global Research and Scholarship (existing R&S IdPs)
      iii. Do not rely on the incommon.org R&S entity attribute value in SP metadata
   d. Using the Registered By InCommon Category

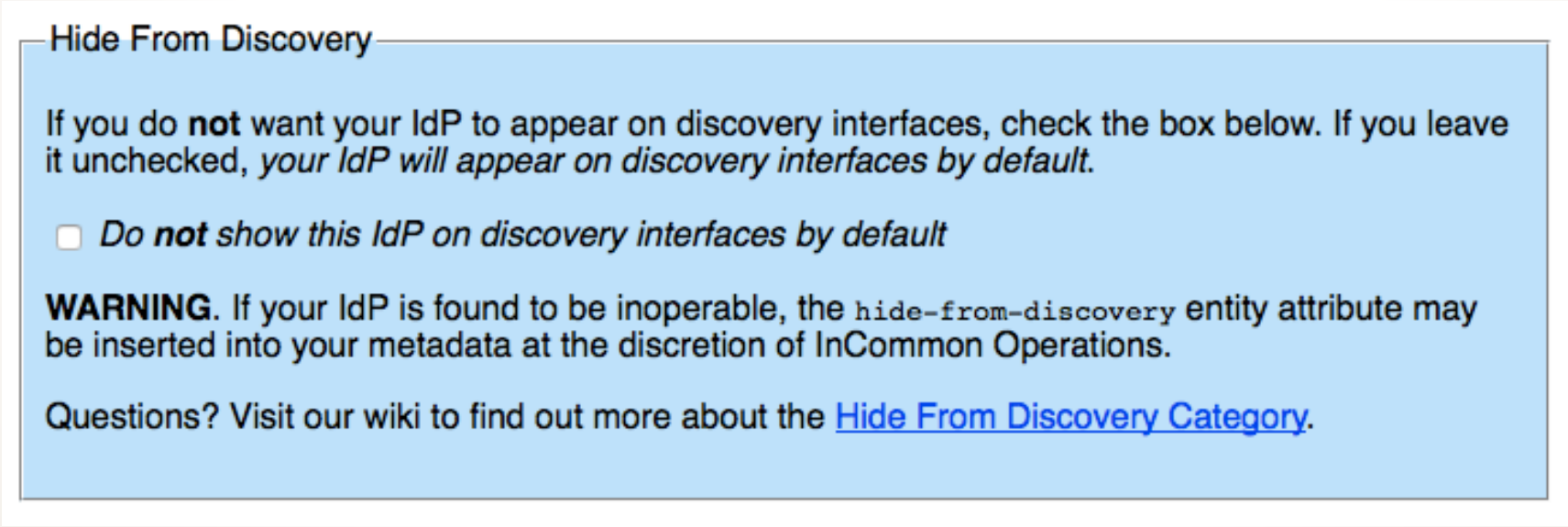
User Interface: Metadata Refresh for IdPs

IdPs confirm that they automatically refresh and verify metadata:



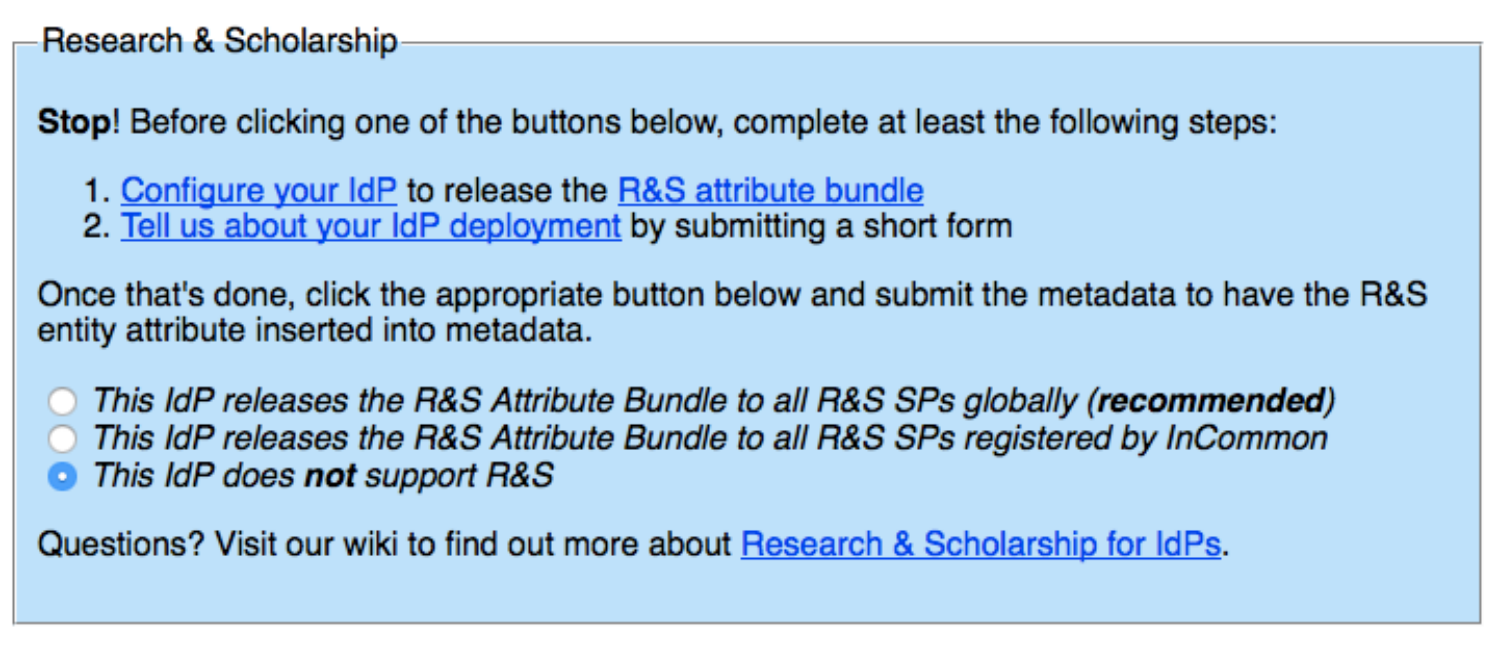
User Interface: Hide From Discovery Category

IdPs that don't automatically refresh metadata should self-assert membership in the Hide From Discovery Category:



User Interface: Research & Scholarship for IdPs

An IdP declares its level of support for Research & Scholarship:



Fine-tune your IdP Metadata

Complete the following tasks before Ops exports your IdP metadata to eduGAIN:

1. Stabilize metadata elements: entityID, Scope, endpoint locations
2. Publish long-lived, self-signed X.509 Certificates in Metadata
   a. Remove unnecessary certificates from IdP metadata
3. Publish a SAML2 SingleSignOnService endpoint that supports HTTP-Redirect binding
   a. SAML1-only IdPs will **not** be exported to eduGAIN by default
4. Advertise support for the front-channel SSO protocols only (if possible)
   a. Avoid advertising support for Back-channel SAML Protocols
5. Publish technical and administrative Contacts in Metadata

Upgrade to Shibboleth IdP V3

As of September 26, 2015:

- 412 InCommon IdPs
  - 39 Non-Shibboleth IdP deployments
  - 373 Shibboleth IdP deployments

(as of 2015-09-26)	**# of IdPs**
Shib IdP V1:	7
Shib IdP V2:	318
Shib IdP V3:	27
Shib IdP V?:	21
Total Shib IdPs:	373

Upgrading to Shibboleth IdP V3:

1. **Goal**: Deploy a test instance of Shibboleth IdP V3 by the end of 2015
2. Allocate at least 1024MB heap in the JVM
3. Point your test IdP at the InCommon Preview Aggregate
4. Know your SP partners

eduGAIN for SP Owners

Is your SP deployment ready for eduGAIN?

1. Configure your SP software
2. Fine-tune your SP metadata
3. Consolidate your SP metadata
4. Apply for membership in the Research & Scholarship Category (if applicable)

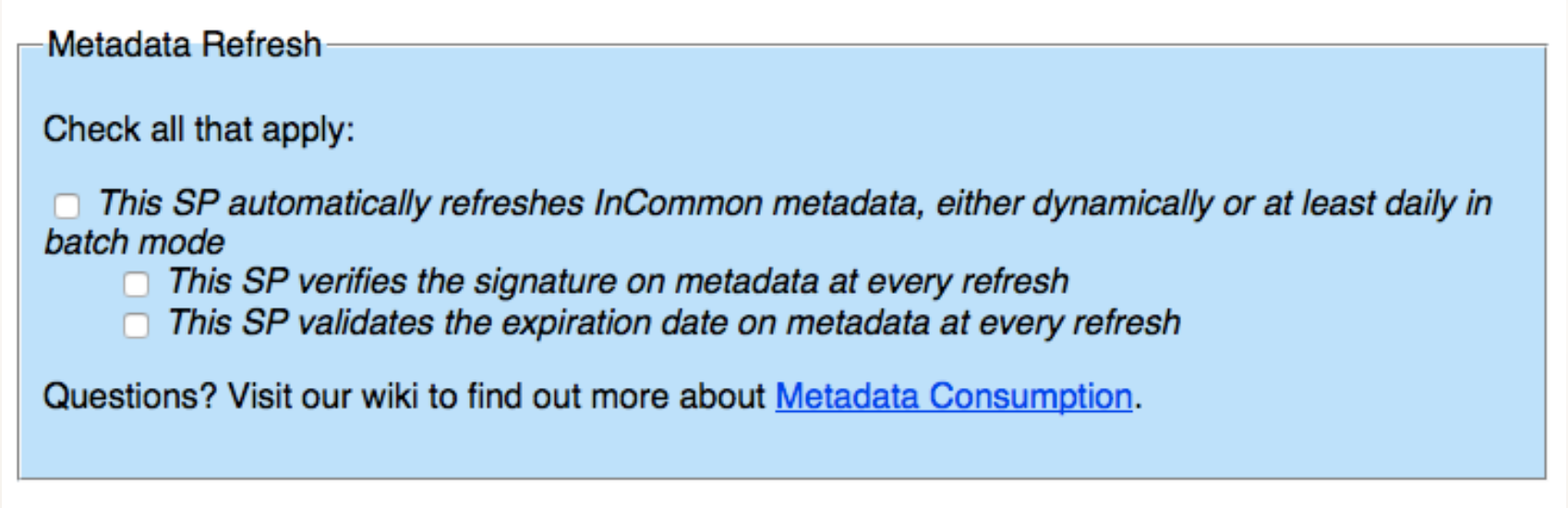
Configure your SP Software

Complete the following tasks before Ops begins importing eduGAIN metadata:

1. Refresh and verify InCommon metadata at least daily
2. Filter IdPs tagged with the hide-from-discovery entity attribute
   a. If your SP has a dynamic discovery interface, do not expose such IdPs
3. Filter global metadata (only if absolutely necessary)
   a. If you do not export your SP metadata, and your SP has a dynamic discovery interface, then you should filter global metadata up front
   b. Using the Registered By InCommon Category

User Interface: Metadata Refresh for SPs

SPs confirm that they automatically refresh and verify metadata:



Fine-tune your SP Metadata

Complete the following tasks before Ops exports your SP metadata to eduGAIN:

1. Stabilize the SP entityID
2. Publish a human-readable DisplayName
3. Publish long-lived, self-signed X.509 Certificates in Metadata
    a. Remove unnecessary certificates from SP metadata
4. Publish at least one SAML2 AssertionConsumerService endpoint that supports the HTTP-POST binding
5. Publish Requested Attribute elements in metadata
6. Publish technical and administrative Contacts in Metadata

TIP. Take advantage of Delegated Administration of SP metadata

Consolidate your SP Metadata

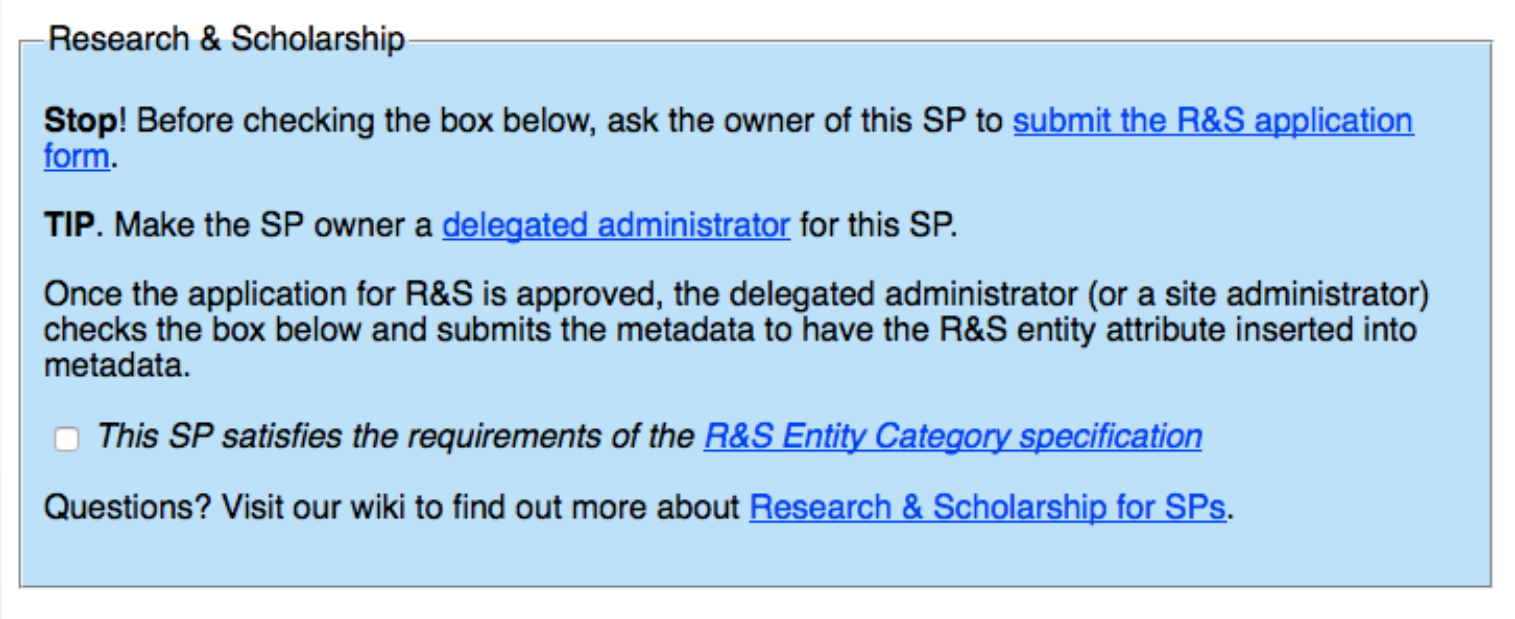
- Do you publish your metadata across multiple federations?
  - In fact, about 70 InCommon SPs publish their metadata in other federations
- If the answer is yes, eduGAIN will give you pause for thought...
  - From an operational point of view, a single source of globally distributed metadata is optimal
  - Once eduGAIN is fully operational, you may want to consolidate your metadata within a single "home federation"
- Begin the process of synchronizing disparate metadata sources so that they are functionally equivalent across federations
  - Only then can you phase out redundant metadata instances without loss of service

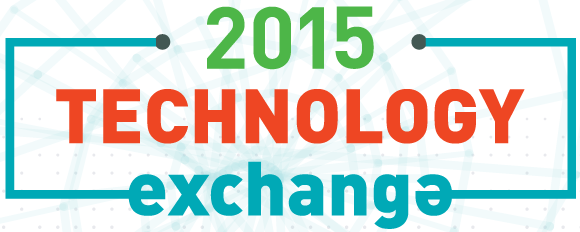
Apply for Membership in the R&S Category

- Is your service eligible for membership in the global Research & Scholarship Category?
  - Is your service operated for the purposes of supporting research and scholarship interaction, collaboration or management, at least in part?
  - Refer to the REFEDS Research & Scholarship Entity Category specification
- Research and Scholarship for SPs
- Research and Scholarship Application Form

User Interface: Research & Scholarship for SPs

An SP conforms to the requirements of global Research & Scholarship:





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