



Time to REST: The University of Stirling's REST API based integration between Worktribe and DSpace

DuraSpace-euroCRIS joint Repository/CRIS Workshop @OR2019
June 10th, 2019

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History/Background

STORRE: Stirling Online Research Repository

- Mature, Full text only DSpace based Institutional Repository

Converis Research Management System (RMS)

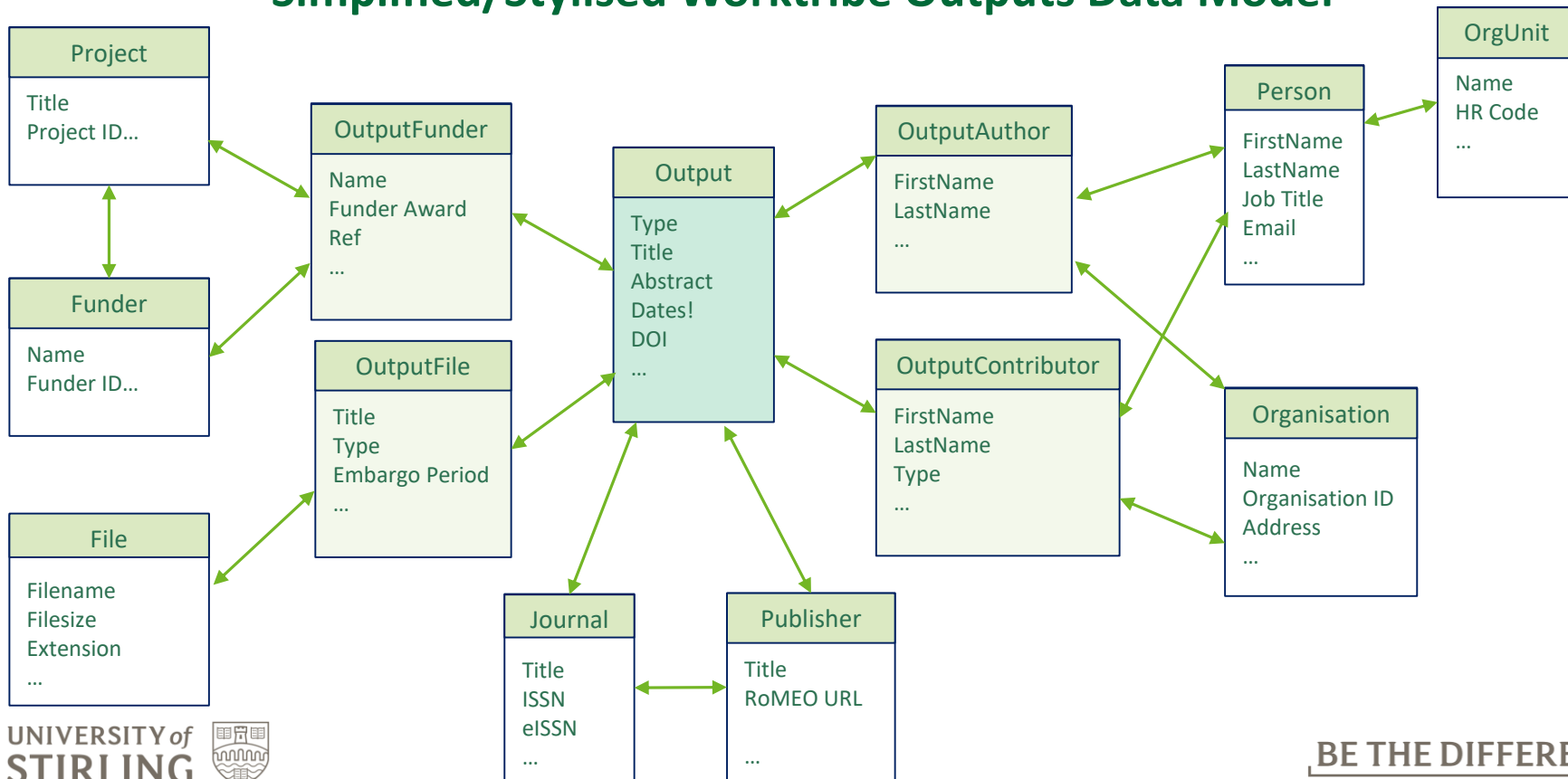
- Live 2012
- “Out of the box” integration with DSpace - had “issues”

Worktribe selected to replace Converis (Aut 2016)

- Cloud based/SaaS CRIS Supplier – number of “Modules”:
 - Pre/Post Award, Outputs, REF, Repository
- No existing DSpace integration
 - Not CERIF Compliant
 - Extensive REST API

Implementation Project Jan 2017 - May 2018

Simplified/Stylised Worktribe Outputs Data Model



Worktribe REST API & “Action Subscription Queues”

Standard REST endpoints for each WT Entity:

- to Create (POST), Update (PUT), Get (GET), and Delete (DELETE)

WT API/Admin Users can create **Worktribe Action Subscription Queues**:

- API Endpoints for accessing Entity records based on Workflow or Edit events
- Snapshot of Entity added to Action Subscription Queue

2 types of Action Subscription Queue

- **PUSH Queue**: WT pushes relevant modified records to user supplied REST API endpoint
- **PULL Queue**: WT adds relevant modified records to Queue which user can poll on a schedule of their choice

The WT-STORRE integration makes extensive use of PUSH Queues – one each for:

- Output, OutputAuthor, OutputContributor, OutputFile, OutputFunder

STORRE Overview

Built on DSpace v6

- Had to upgrade to get required REST functionality

DSpace REST API is based around Communities, Collections, Items, and Bitstreams

- GET, POST (create), PUT (update), DELETE
- “?expand=” → Child/Parent objects

STORRE Community Structure based on University Structure

- 1 Top Level Community per Faculty/Service Area
 - Some Faculties also have a sub-Community for each Division (“department”)

Collections based on Output Type

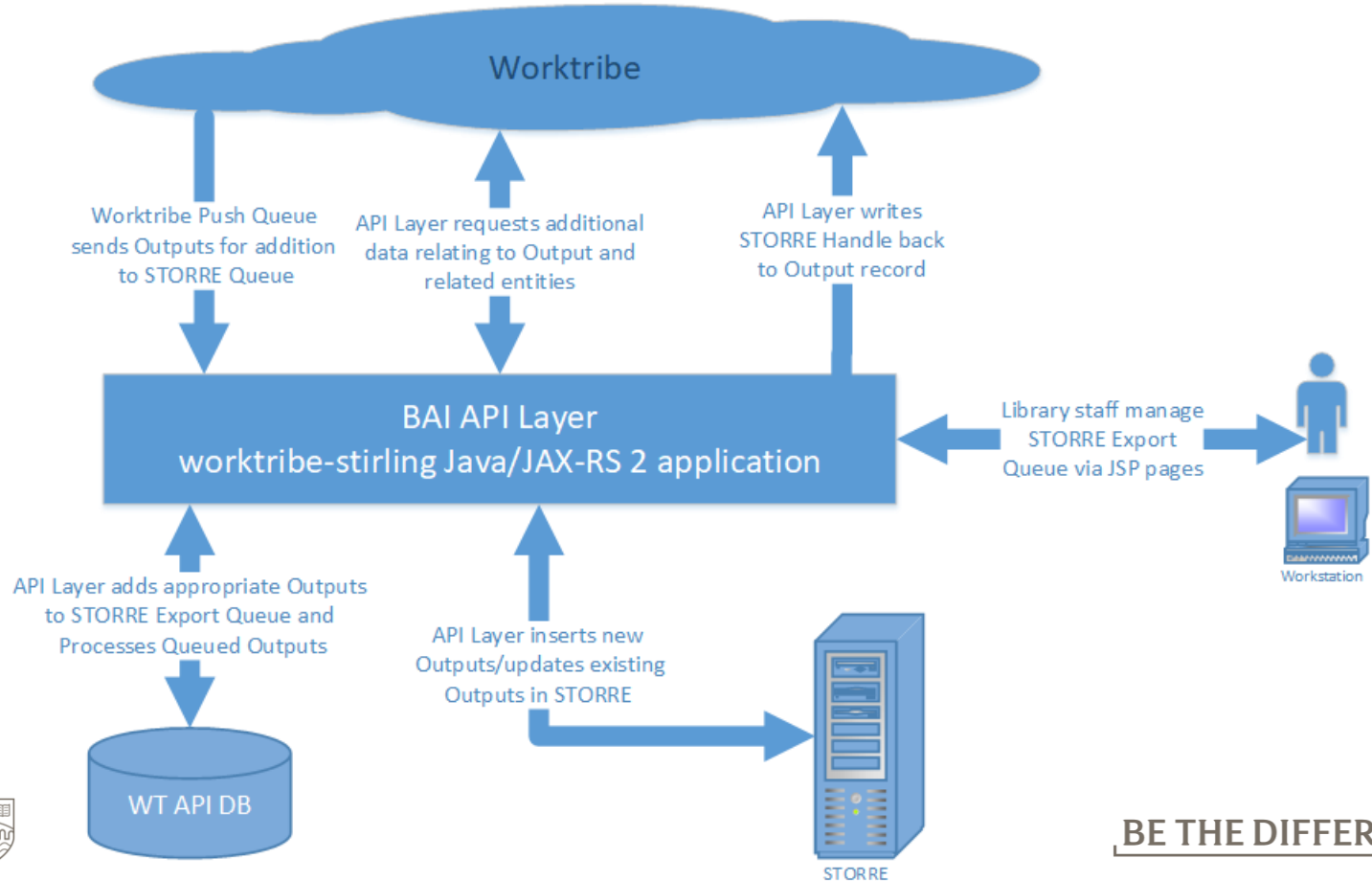
- Each (sub)Community has 1 Collection for each Output Type deposited by their Faculty/Division

The WT-STORRE Integration has to work out where to deposit Outputs!

The API Layer Overview

- Provides REST endpoints to accept PUT requests from WT PUSH Queue
- Processes those requests and adds Outputs to STORRE Queue if appropriate
- Provides tools for Repository Librarian to manage items on the Queue
 - And manage mappings, create Collections etc
- Exports Queued Outputs to STORRE as required
- Writes Item's handle back to WT
- Logs results & sends email report at end of export

Architecture Diagram



Database Objects

STORRE Queue

- Output ID, Title, Last User, File Count, First Added Date, Last Added Date, Processed Date

Output Export Records – one per Output

- Last Modified Date, DSpace First/Last Export Date, DSpace Handle, DSpace Collection, Embargo End Date, Submit flag, Submit Date
- New Output Export records added for new Outputs via PUSH Queue

Mappings

- OrgUnit → DSpace Community
- WT Type → DSpace Type (→ DSpace Collection Names)
- DSpace Collection Names → Collection Handles
- WT OutputFile → DSpace Bitstream

Adding to STORRE Queue

- Every time an Output, OutputAuthor, OutputContributor, OutputFile, or OutputFunder is created, edited, or deleted:
 - Worktribe calls API Layer PUSH Queue endpoint
- API Layer (gets full Output record from WT and) checks Output:
 - is at an appropriate workflow status (Discoverable);
 - is of Type that is accepted in STORRE;
 - has been modified since it was last exported to STORRE;
 - has files for STORRE deposit attached (i.e. either Discoverable or Embargoed files)
- If output is eligible for deposit/update in STORRE, add to Queue
- Update Output Export record as appropriate

The STORRE Queue

ETHOS Importer

STORRE Export Queue Admin Page

Westlaw UK session timed out

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https://bai-api.stir.ac.uk/worktribe-stirling/admin/storre-queue.jsp

Worktribe environment: <https://stirling-research.worktribe.com>
Agresso environment: PRODUCTION MS6 (abwss6.stir.ac.uk)
Interface Database: ADMIN PROD
Public Web Database: PROD

Build: 6.0.5-SNAPSHOT
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STORRE Export Queue Admin

STORRE Integration Admin Index

Migrate next N Worktribe Outputs to STORRE

Number of Worktribe Outputs to export Export N Outputs to STORRE

STORRE Export Queue

STORRE Export Queue key:

Total	New Output, Submit Flag = No	New Output, will be Inserted	New Output, Submit Date not reached	Existing Output, Submit Flag = No	Existing Output, will be Updated	Existing Output, Submit Date not reached	STORRE File(s) removed
21	19	0	0	0	2	0	0

WT ID	Title	Last Modified	First Export Date	Last Export Date	Collection	Handle	Embargo End Date	Submit Flag	Submit Date	Last Editor	File Count	Actions
532384	Can Survey Participation Alter Household Saving Behaviour?	2019-06-04 09:43:17	2017-03-30 00:00	2018-01-09 12:32:59	1893/232	1893/25229	null	Yes: ☒ No: ☐	2017-03-30	Clare Allan (cma1)	1	Update Record Export Output Remove from Queue
1384262	Social Identity Moderates the Effects of Team-Referent Attributions on Collective Efficacy but Not Emotions (Forthcoming)	2019-06-03 17:29:22	-	-			null	Yes: ☐ No: ☒	2019-06-03	Clare Allan (cma1)	1	Update Record Export Output Remove from Queue
554582	Saving the World's Terrestrial Megafauna	2019-06-03 11:48:20	2016-07-28 00:00	2018-01-20 02:29:14	1893/123	1893/23934	null	Yes: ☒ No: ☐	2016-07-28	Tania Browne (tb22)	1	Update Record Export Output Remove from Queue
1244336	Responsible participation and housing: restoring democratic theory to the scene	2019-04-05 11:20:10	-	-			null	Yes: ☐ No: ☒	2019-03-13	Elizabeth Fuller (eaf3)	1	Update Record Export Output Remove from Queue
		2019-04-05						Yes: ☐ No: ☒		Elizabeth Fuller		Update Record Export Output

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BE THE DIFFERENCE

Processing Queue records

Inserting:

- Checks OutputExport record:
 - Submit Flag, Submit Date
- GETs Output and related data from WT via WT's REST API
- Transforms WT Output (etc) Attributes to Dublin Core metadata
 - Complicated by number of types, required richness of our metadata, ...
- Determines Community/Collection (if not already/explicitly set)
 - OrgUnit → Community/OutputType → Collection
- POSTs/PUTs Dublin Core and Files to STORRE
 - By default, only Admin has Anonymous READ Policy on Files
- Determines any Embargoes that need to be applied (complex spec!)
 - Sets Anonymous READ Policies as required
 - » With or without Start Date

Updating:

- Checks if Metadata, Files, Collection actually require updating!

Export Report

Book1 - Excel

FileHomeInsertPage LayoutFormulasDataReviewViewTell me what you want to do...Michael WhiteShare

E18

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Thanks for listening!

