

Use Case 1.2 - SOLR Design

[Planning](#) | [Description](#) | [Requirements](#) | [UI Mockup](#) | [Triples](#) | **SOLR Design**

SOLR and the ORE ontology gem

AggregationResource

Properties

Property	Predicate	Type	Count	Comments
id		[URI]	1	rdf_subject
type	RDF::type	[URI]	1..m	can a resource not have a type?
title	RDF::DC.title	string	1	
description	RDF::DC.description	string	1	
owner	DCTERMS.creator	FOAF.person [URI]	1..m	Likely moving to PROV-O or PRAV can there be multiple owners?
aggregates	ORE.aggregates	[URI]	0..m	
first	IANA.first	ORE.proxy [URI]	0..1	
last	IANA.last	ORE.proxy [URI]	0..m	

Solr

Fields

field name	type	value	value from property	indexed (i)	stored (s)	multi (m)	required	facet	sortable	solrizer modifier
id	string	rdf_subject of ORE.Aggregation	obj.id	yes	yes	no	yes	no		
at_model	string	"LD4L::OreRDF::AggregationResource"	obj.class.to_s	yes	yes	no	yes	yes	?	_sim : facetable
title_ti	text	"my","collection"	obj.title	yes	no	no	yes	no	no	_tesi : stored_sortable _ssm : displayable
title_sort_ss	string	"My Collection"	obj.title	no	yes	no	yes	no	yes	N/A
description_tsi	text	"my","collection","resources"	obj.description	yes	yes	no	yes	no	no	_tesim : stored_searchable _ssm : displayable
owner_uri_ss	string	FOAF.person [URI]	obj.owner	no	yes	?	yes	no	no	_ssm : displayable
owner_name_ti	text	"john","smith"	obj.owner.name	yes	no	?	yes	yes	no	_tesim : stored_searchable _ssm : displayable _sim : facetable
owner_name_sort_ss	string	"John Smith"	obj.owner.name	no	yes	?	yes	no	yes	N/A
item_proxies_ssm	string	ORE.proxy [URI] - gathered from all proxies	generated	no	yes	yes	no	no	?	_ssm : displayable
aggregates_ssim	string	[URI]	obj.aggregates	yes	yes	yes	no	no	?	_ssim : displayable

object_profile_ss	string	"object_profile_ssm":["{ \ "id\":"http://www.example.org/a2d61b58-2207-49d4-b151-140def2b11c0", \ "type\":"http://www.openarchives.org/ore/terms/Aggregation", \ "title\":"My Collection", \ "description\":"My collection of resources.", \ "owner\":"http://example.org/elr", \ "aggregates\":[{" https://newcatalog.library.cornell.edu/catalog/5449293"}], \ "first_proxy\":"http://www.example.org/75661b44-4524-1883-3653-483d34b11a534", \ "last_proxy\":"http://www.example.org/23161b44-9824-1323-8453-993d34b11a883" }"]	serialization of active_triples object	no	yes	?	yes	no	no	_ssm : displayable This is what ActiveFedora uses for its object_profile
-------------------	--------	--	--	----	-----	---	-----	----	----	---

NOTE: All fields are dynamic except id and at_model.

Example Solr Document

```
{
  "id":"http://www.example.org/a2d61b58-2207-49d4-b151-140def2b11c0",
  "at_model_ssi":"LD4L::OreRDF::AggregationResource",
  "title_sort_ss":"My Collection",
  "description_tsi":"My collection of resources.",
  "owner_uri_ss":"http://example.org/js333",
  "owner_name_sort_ss":"John Smith",
  "item_proxies_ssm": [
    "http://www.example.org/75661b44-4524-1883-3653-483d34b11a534"
    "http://www.example.org/82361b44-2324-1943-8a53-493d34b11a1c4"
    "http://www.example.org/23161b44-9824-1323-8453-993d34b11a883"
  ],
  "object_profile_ssm":[
    "{
      \ "id\":"http://www.example.org/a2d61b58-2207-49d4-b151-140def2b11c0",
      \ "type\":"http://www.openarchives.org/ore/terms/Aggregation",
      \ "title\":"My Collection",
      \ "description\":"My collection of resources.",
      \ "owner\":"http://example.org/elr",
      \ "aggregates\":[{"https://newcatalog.library.cornell.edu/catalog/5449293"}],
      \ "first_proxy\":"http://www.example.org/75661b44-4524-1883-3653-483d34b11a534",
      \ "last_proxy\":"http://www.example.org/23161b44-9824-1323-8453-993d34b11a883"
    }"
  ]
}
```

Queries

Get all collections owned by user.

```
http://localhost:8983/solr/#/development/select?
q=owner_uri_ss:http://example.org/elr
&fq=at_model_ssi:LD4L::\:OreRDF\::\:AggregationResource
&fl=id,object_profile_ssm
```

ProxyResource

Properties

Property	Predicate	Type	Count	Comments
id		[URI]	1	rdf_subject
type	RDF:type	[URI]	1..m	can a resource not have a type?

proxyFor	ORE.proxyFor	[URI]	1	resource uri
proxyIn	ORE.proxyIn	ORE.Aggregation [URI]	1	aggregation uri
next	IANA.next	ORE.proxy [URI]	0..1	uri of next proxy in the linked list
prev	IANA.prev	ORE.proxy [URI]	0..1	uri of previous proxy in the linked list
contributor	RDF::DC.contributor	FOAF.person [URI]	0..m	Likely moving to PROV-O or PRAV

Solr

Fields

field name	type	value	value from property	indexed (i)	stored (s)	multiValued (m)	required	facet	sortable
id	string	rdf_subject of ORE.Proxy	obj.id	yes	yes	no	yes	no	
at_model_ssi	string	"LD4L::OreRDF::ProxyResource"	obj.class.to_s	yes	yes	no	yes	yes	?
proxy_in_ssi	string	[URI] of parent vc	obj.proxy_in	yes	no	no	yes	yes	no
proxy_for_ssi	string	[URI] of resource in catalog	obj.proxy_for	yes	no	no	yes	yes	no
prev_ss	string	[URI]	obj.prev	no	yes	no	no	no	no
next_ss	string	[URI]	obj.next	no	yes	no	no	no	no
contributor_uri_ss	string	[URI]	obj.contributor	no	yes	?	yes	no	no
contributor_name_ti	text	"john","smith"	obj.contributor.name	yes	no	?	yes	yes	no
contributor_name_sort_ss	string	"John Smith"	obj.contributor.name	no	yes	?	yes	no	yes
object_profile_ss	string	"object_profile_ssm": [{ "id": "http://www.example.org/82361b44-2324-1943-8a53-493d34b11a1c4", "type": "http://www.openarchives.org/ore/terms/Proxy", "proxy_in": "http://www.example.org/a2d61b58-2207-49d4-b151-140def2b11c0", "proxy_for": "https://newcatalog.library.cornell.edu/catalog/5449293", "prev": "http://www.example.org/75661b44-4524-1883-3653-483d34b11a534", "next": "http://www.example.org/23161b44-9824-1323-8453-993d34b11a883" }]	serialization of active_triples object	no	yes	?	yes	no	no
order_itsi	tint	0..N	generated	yes	yes	no	yes	no	yes
resource_title_ti	text	"archery", "fundamentals"	get from content negotiation of obj.proxy_for	yes	no	?	yes	yes	no
resource_title_sort_ss	string	"Archery fundamentals"	get from content negotiation of obj.proxy_for	no	yes	?	yes	no	yes
resource_author_ti	text	["douglas", "engh"]	get from content negotiation of obj.proxy_for	yes	no	yes	no	yes	no
resource_author_sort_ss	string	["Douglas Engh."]	get from content negotiation of obj.proxy_for	no	yes	yes	no	no	yes
resource_subject_ti	text	["archery", "arrow", "bow", "games", "history"]	get from content negotiation of obj.proxy_for	yes	no	yes	no	yes	no
resource_subject_sort_ss	string	["Archery", "Bow and arrow", "Games", "History"]	get from content negotiation of obj.proxy_for	no	yes	yes	no	no	yes
resource_call_number_ti	text	["anthropology", "geography", "history", "recreation", "world"]	get from content negotiation of obj.proxy_for	yes	no	?	no	yes	no
resource_call_number_sort_ss	string	["G - Geography, Anthropology, Recreation", "D - World History"]	get from content negotiation of obj.proxy_for	no	yes	?	no	no	yes
resource_publisher_ti	text	"champaign", "il", "human", "kinetics", "c2005"	get from content negotiation of obj.proxy_for	yes	no	?	no	no	no

resource_publisher_ss	string	"Champaign, IL : Human Kinetics, c2005."	get from content negotiation of obj. proxy_for	no	yes	?	no	no	yes
resource_publication_year_iti	tint	2005	get from content negotiation of obj. proxy_for	yes	no	?	no	yes	no
resource_profile_ss	string	"resource_profile_ssm":["{ \ "resource_title_sort_ss\":" Archery fundamentals\ \ "resource_author_sort_ss\":[\ Douglas Engh.\], \ "resource_subject_sort_ss\":[\ Archery\,\ Bow and arrow\ \,\ Games, History\ \], \ "resource_call_number_sort_ss\":" [\ G - Geography, Anthropology, Recreation\ \, \ D - World History\ \], \ "resource_publisher_ss\":" Champaign, IL : Human Kinetics, c2005.\" }"]"	serialization of resource metadata	no	yes	no	yes	no	no

NOTE: All fields are dynamic except id and at_model.

Example Solr Document

```
{
  "id":"http://www.example.org/82361b44-2324-1943-8a53-493d34b11a1c4",
  "at_model":"LD4L:OreRDF:ProxyResource",
  "proxy_in_ssi":"http://www.example.org/a2d61b58-2207-49d4-b151-140def2b11c0"
  "proxy_for_ssi":"https://newcatalog.library.cornell.edu/catalog/5449293"
  "prev_ss":"http://www.example.org/75661b44-4524-1883-3653-483d34b11a534",
  "next_ss":"http://www.example.org/23161b44-9824-1323-8453-993d34b11a883",
  "contributor_uri_ss":"http://example.org/js333",
  "contributor_name_sort_ss":"John Smith",
  "object_profile_ssm":[
    "{
      \"id\":"http://www.example.org/82361b44-2324-1943-8a53-493d34b11a1c4\",
      \"type\":"http://www.openarchives.org/ore/terms/Proxy\",
      \"proxy_in\":"http://www.example.org/a2d61b58-2207-49d4-b151-140def2b11c0\"
      \"proxy_for\":"https://newcatalog.library.cornell.edu/catalog/5449293\"
      \"prev\":"http://www.example.org/75661b44-4524-1883-3653-483d34b11a534\"
      \"next\":"http://www.example.org/23161b44-9824-1323-8453-993d34b11a883\"
    }"
  ],
  "order_itsi":2
  "resource_title_sort_ss":"Archery fundamentals",
  "resource_author_sort_ss":["Douglas Engh."],
  "resource_subject_sort_ss":["Archery", "Bow and arrow", "Games,History"],
  "resource_call_number_sort_ss":["G - Geography, Anthropology, Recreation", "D - World History"],
  "resource_publisher_ss":"Champaign, IL : Human Kinetics, c2005."
  "resource_profile_ssm":[
    "{
      \"resource_title_sort_ss\":"Archery fundamentals\",
      \"resource_author_sort_ss\":[\"Douglas Engh.\"],
      \"resource_subject_sort_ss\":[\"Archery\", \"Bow and arrow\", \"Games,History\"],
      \"resource_call_number_sort_ss\":[\"G - Geography, Anthropology, Recreation\", \"D - World
History\"],
      \"resource_publisher_ss\":"Champaign, IL : Human Kinetics, c2005.\"
    }"
  ]
}
```

Queries

Get display fields for first 20 items in a virtual collection __VC_URI__.

```
# assumes contiguous ordering which has implications for reordering, inserts, deletes with potential updates to
all proxies in the worst case
http://localhost:8983/solr/#/development/select?
q=proxy_in_ssi:__VC_URI__&
&fq=at_model_ssi:LD4L\:\:OreRDF\:\:ProxyResource
&fq=order_itsi:[0 TO 19]
&fl=id,object_profile_ssm,resource_profile_ssm
&sort=order

# potential to skip documents with reordering, inserts, deletes by other users
# has to get all documents before start + rows - has implications for getting start=1000000000 rows=20
http://localhost:8983/solr/#/development/select?
q=proxy_in_ssi:__VC_URI__&
&fq=at_model_ssi:LD4L\:\:OreRDF\:\:ProxyResource
&fl=id,object_profile_ssm,resource_profile_ssm
&sort=order
&start=0
&rows=19
```

Find next 20 items for a virtual collection __VC_URI__.

```
http://localhost:8983/solr/#/development/select?
q=proxy_in_ssi:__VC_URI__&
&fq=at_model_ssi:LD4L\:\:OreRDF\:\:ProxyResource
&fq=order_itsi:[20 TO 39]
&fl=id,object_profile_ssm,resource_profile_ssm
&sort=order

http://localhost:8983/solr/#/development/select?
q=proxy_in_ssi:__VC_URI__&
&fq=at_model_ssi:LD4L\:\:OreRDF\:\:ProxyResource
&fl=id,object_profile_ssm,resource_profile_ssm
&sort=order
&start=20
&rows=19
```