OLE REST Services Technical Document

Last Published May 7, 2015

Purpose

REpresentational State Transfer (REST) is a software architecture style with guidelines and best practices for creating web services. It is a simpler alternative to SOAP and WSDL based web services. OLE uses REST to expose as web services those functions which are often accessed from outside by external systems.

In a Library Management System (LMS), circulation services and Automatic Storage and Retrieval (ASR) System are the most commonly accessed services by external systems. OLE exposes the following services as web services using REST:

Circulation
- Lookup User
- Checked Out Items
- Place Request
- Cancel Request
- Renew Item
- Accept Item
- Check In Item
- Check Out Item
- Fine
- Holds

Automatic Storage and Retrieval (ASR)
- Lookup New ASR Items
- Lookup ASR Requests
- Lookup ASR Item Holds
- Cancel Hold
- Remove ASR Item
- Update ASR Item Status to Available
- Update ASR Item Status to Missing
- Update ASR Item Status to Being Retrieved
- Place ASR Request
- Update ASR Request
- Add New ASR Item
- Send ASR Request
- Receive Transit of ASR Item
- Check In ASR Item

Dependencies / Logical Data Model / Physical Data Model

No special database tables are being used for REST services.

Service Interface Design (Java)

The Circulation services are exposed as web services by extending HttpServlet of Java's Generic Servlet class. The *OLECirculationServlet* class extends the HttpServlet class and uses the HttpServletRequest and HttpServletResponse as parameters for the doPost and doGet methods. Depending on the request, the corresponding circulation service is called and the response is built in XML or JSON formats.
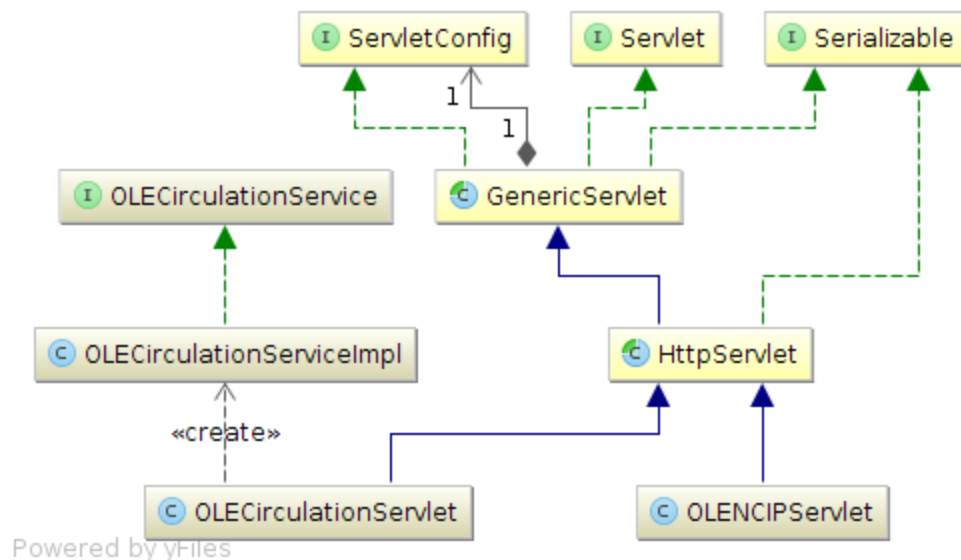
The *OLECirculationServlet* class makes calls to methods in *OLECirculationServiceImpl* class for the various services listed above. Each service is identified by the service parameter in the request. The services use HTTP Methods, GET and POST, depending on their purpose.

The ASR services are exposed as web services using the Jersey toolkit. Jersey is an open source framework for web services and extends the Java API for RESTful Services (JAX-RS) toolkit with additional features and simplifies development.
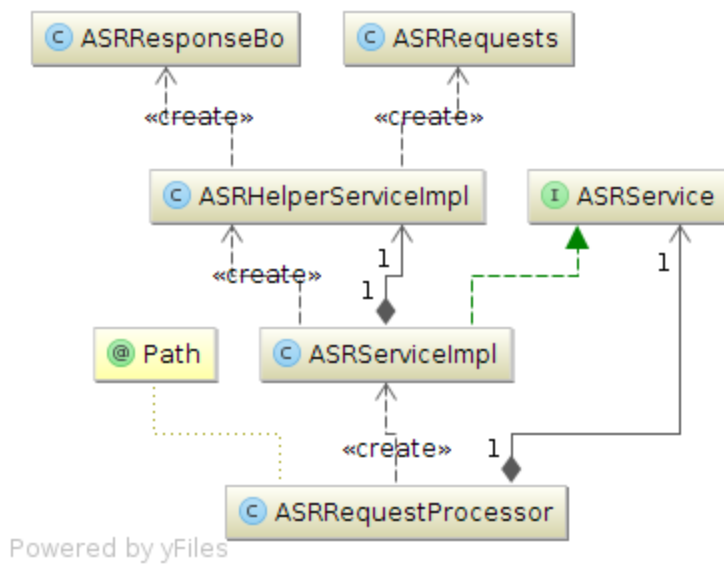
The *ASRRequestProcessor* class has each service as a seperate method. The services use HTTP Methods, GET, POST and DELETE, depending on their purpose. Each service, unlike in case of *OLECirculationServlet*, is identified by the Path annotation.
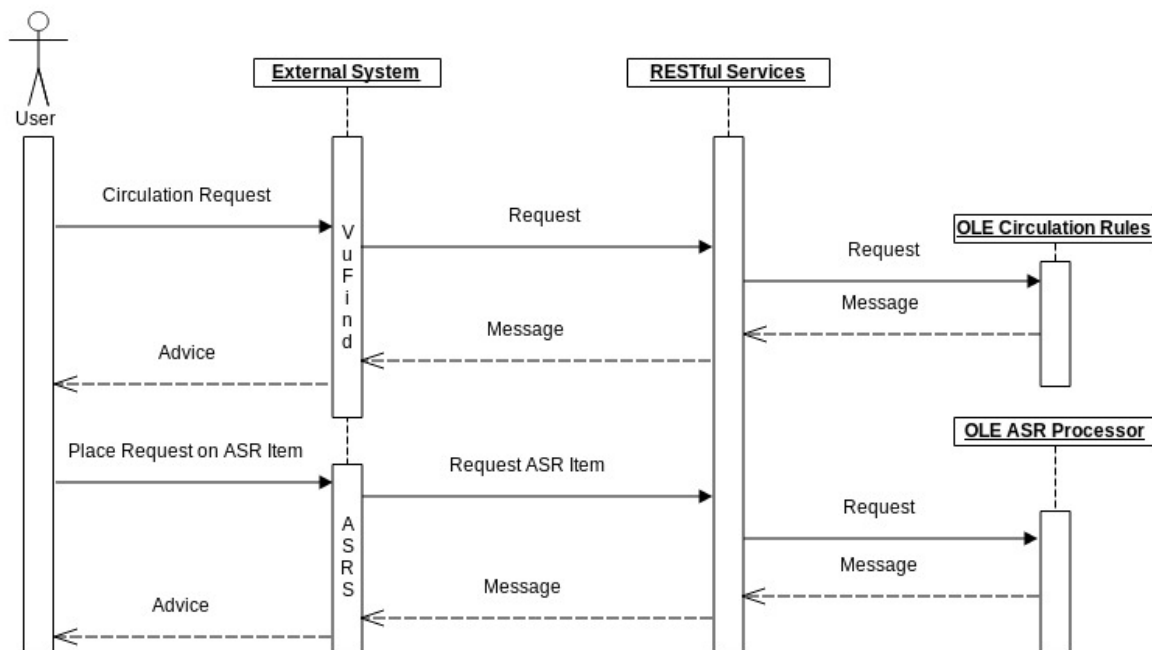
Service Interface Design (REST if applicable)

Circulation Services

Lookup User (GET)

The service returns the details of the Patron.

Parameter	Value	Mandatory
service	"lookupUser"	Y
patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
format	"xml" (Default) or "json"	N
Sample URL: http://<host>/olefs/circulation?service=lookupUser&patronBarcode=1234567890&operatorId=API		

Checked Out Items (GET)

The service returns the items currently checked out by the Patron.

Parameter	Value	Mandatory
service	"getCheckedOutItems"	Y
patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
format	"xml" (Default) or "json"	N
Sample URL: http://<host>/olefs/circulation?service=getCheckedOutItems&patronBarcode=1234567890&operatorId=API		

Place Request (POST)

The service places a request for the specified item by the specified Patron.

Parameter	Value	Mandatory
service	"placeRequest"	Y

patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
itemBarcode	<itemBarcode>	Y
requestType	<requestType>	Y
format	"xml" (Default) or "json"	N
Sample URL:	http://<host>/olefs/circulation	

Cancel Request (POST)

The service cancels the request for the specified Item by the specified Patron.

Parameter	Value	Mandatory
service	"cancelRequest"	Y
operatorId	<operatorId>	Y
requestId	<requestNumber>	Y
format	"xml" (Default) or "json"	N
Sample URL:	http://<host>/olefs/circulation	

Renew Item (POST)

The service renews a check out of the specified Item by the specified Patron.

Parameter	Value	Mandatory
service	"renewItem"	Y
patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
itemBarcode	<itemBarcode>	Y
format	"xml" (Default) or "json"	N
Sample URL:	http://<host>/olefs/circulation	

Accept Item (POST)

The service creates a temporary item and places a request of that item to the specified patron.

Last Published May 7, 2015

Parameter	Value	Mandatory
service	"acceptItem"	Y
patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
itemBarcode	<itemBarcode>	Y
title	<title>	Y
author	<author>	Y
callNumber	<callNumber>	Y
itemLocation	<itemLocation>	Y
itemType	<itemType>	Y
dateExpires	<dateExpires>	Y
requestType	<requestType>	Y
format	"xml" (Default) or "json"	N
Sample URL:	http://<host>/olefs/circulation	

Check In Item (POST)

The service returns an item currently checked in by the specified Patron.

Parameter	Value	Mandatory
service	"checkInItem"	Y
patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
itemBarcode	<itemBarcode>	Y
deleteIndicator	"Y" or "N"	Y
format	"xml" (Default) or "json"	N
Sample URL:	http://<host>/olefs/circulation	

Check Out Item (POST)

The service loans an Item specified to the specified Patron.

Parameter	Value	Mandatory
service	"checkOutItem"	Y
patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
itemBarcode	<itemBarcode>	Y
format	"xml" (Default) or "json"	N
Sample URL:	http://<host>/olefs/circulation	

Fine (GET)

The service returns the fine amount due by the specified Patron.

Parameter	Value	Mandatory
service	"fine"	Y
patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
format	"xml" (Default) or "json"	N
Sample URL: http://<host>/olefs/circulation?service=fine&patronBarcode=12345678&operatorId=API		

Holds (GET)

The service returns the active requests by the specified Patron

Parameter	Value	Mandatory
service	"holds"	Y
patronBarcode	<patronBarcode>	Y
operatorId	<operatorId>	Y
format	"xml" (Default) or "json"	N

Sample URL: http://\<host\>/olefs/circulation?service=holds&patronBarcode=12345678&operatorId=API

ASR Services

Lookup New ASR Items (GET)

The service returns the ASR Items if there are any available.

Parameter	Value	Mandatory
operatorId	\<operatorId\>	Y
Sample URL: http://\<host\>/olefs/asr/lookupNewAsrItems/{operatorId}		

Lookup ASR Requests (GET)

The service retrieves the ASR requests active in the specified location.

Parameter	Value	Mandatory
operatorId	\<operatorId\>	Y
asrLocation	\<asrLocation\>	Y
Sample URL: http://\<host\>/olefs/asr/lookupAsrRequests/{operatorId},{asrLocation}		

Lookup ASR Item Holds (GET)

The service retrieves the request of the specified Item.

Parameter	Value	Mandatory
operatorId	\<operatorId\>	Y
itemBarcode	\<itemBarcode\>	Y
Sample URL: http://\<host\>/olefs/asr/lookupAsrItemHolds/{operatorId},{itemBarcode}		

Cancel Hold (DELETE)

The service cancels the ASR request.

Parameter	Value	Mandatory
operatorId	\<operatorId\>	Y
holdId	\<holdId\>	Y

Last Published May 7, 2015

Sample URL: http://<host>/olefs/asr/cancelHold/{holdId},{operatorId}

Remove ASR Item (DELETE)

The service removes an ASR item.

Parameter	Value	Mandatory
itemBarcode	<itemBarcode>	Y
Sample URL: http://<host>/olefs/asr/removeASRItem/{itemBarcode}		

Update ASR Item Status Available (POST)

The service updates the ASR Item status to available.

Parameter	Value	Mandatory
itemBarcode	<itemBarcode>	Y
Sample URL: http://<host>/olefs/asr/removeASRItem/{itemBarcode}		

User Interface Design

There is no user interface involved in RESTful services.

Data Importing

Not Applicable

Data Exporting (if applicable)

Not Applicable

Workflow

Not Applicable

System Parameters

Namespace Code	Parameter Name	Description

OLE-DLVR	ASR_ITEM_AVAILABLE	This is for configuring ASR item available status
OLE-DLVR	ASR_ITEM_MISSING	This is for configuring ASR item missing status
OLE-DLVR	ASR_ITEM_RETRIVED	This is for configuring ASR item retrived status
OLE-DLVR	ASR_LOCATIONS	This is setting the ASR Location
OLE-DLVR	ASR_REQUEST_ITEM_STAT US	This is to specify the item status of an item to which the ASR Request can be made
OLE_DLVR	ASR_REQUEST_TYPE	This is for configuring ASR Request Type

Roles and Permissions

Permissions are linked to roles which are in turn linked to Users to give them access to screens and functions.

The Circulation web services being involved in circulation activity would need to use an operator identity having the Roles and Permissions of a circulation staff to be able to carry out the activity.

Permission ID	Permission Name
	Patron and Item blocks used while loaning items
OLE10298	Patron record expired
OLE10299	Proxy patron record expired
OLE10300	Patron has a general block
OLE10301	Patron has max # of items checked out
OLE10302	Patron has max # of checked out items marked 'claimed returned'
OLE10303	Patron has max amount of overdue fines
OLE10304	Patron has max amount of replacement fees
OLE10305	Patron has max amount of all charges

OLE10306	Patron has max # of overdue items checked out
OLE10307	Patron has max # of recalled overdue items checked out
OLE10308	Item on hold for another patron
OLE10309	Renewal limit reached
OLE10311	Patron has at least one item overdue for more than n days
OLE10312	Patron has at least one recalled item overdue for more than n days
OLE10313	Item currently loaned to another patron
OLE10314	Item has pending request queue where patron presenting item is NOT the patron in queue position '1'
OLE10315	Item not at circ desk authorized to service the item's shelving location
OLE10324	Item contains the pending request
	Permissions for the Loan interface
OLE10192	Can Remove Note
OLE10201	Can Override
OLE10187	Can Override Loan
OLE10195	Create fastadd
OLE10197	Display existing loan
OLE10198	Update due date
OLE10199	Display request
OLE10200	Update request queue
OLE10202	Post payment
OLE10203	Post forgive
OLE10206	Can backdate check-in time/date
OLE10209	Display Current loan
OLE10210	Display bill
OLE10211	Create/update bill

| OLE10214 | Edit Request Document |
| OLE10288 | Display Loaned records |

Role ID	Role Name	Permissions
OLE10063	Operator	OLE10192
OLE10061	Unit Manager	OLE10187
OLE10073	Super Circulation Supervisor	OLE10195, OLE10196, OLE10197, OLE10198, OLE10199, OLE10200, OLE10201, OLE10202, OLE10203, OLE10205, OLE10206, OLE10207, OLE10208, OLE10209, OLE10210, OLE10211, OLE10212, OLE10214, OLE10276, OLE10282, OLE10283, OLE10284, OLE10285, OLE10286, OLE10287, OLE10288, OLE10289, OLE10290, OLE10291, OLE10292, OLE10293, OLE10224, OLE10234, OLE10298, OLE10299, OLE10300, OLE10301, OLE10302, OLE10303, OLE10304, OLE10305, OLE10306, OLE10307, OLE10308, OLE10309, OLE10311, OLE10312, OLE10313, OLE10314, OLE10315, OLE10324
OLE10074	Circulation Supervisor	OLE10195, OLE10197, OLE10198, OLE10199, OLE10200, OLE10201, OLE10202, OLE10203, OLE10205, OLE10206, OLE10207, OLE10208, OLE10209, OLE10210, OLE10211, OLE10212, OLE10214, OLE10276, OLE10282, OLE10283, OLE10284, OLE10285, OLE10286, OLE10287, OLE10288, OLE10289, OLE10290, OLE10291, OLE10292, OLE10293, OLE10224, OLE10234, OLE10298, OLE10299, OLE10300, OLE10301, OLE10302, OLE10303, OLE10304, OLE10305, OLE10306, OLE10307, OLE10308, OLE10309, OLE10311, OLE10312, OLE10313, OLE10314, OLE10315, OLE10324

OLE10075	Circ Desk Attendant I	OLE10201, OLE10206, OLE10208, OLE10195, OLE10277, OLE10301
OLE10076	Circ Desk Attendant II	OLE10195, OLE10197, OLE10198, OLE10199, OLE10200, OLE10201, OLE10202, OLE10203, OLE10205, OLE10206, OLE10207, OLE10208, OLE10209, OLE10210, OLE10211, OLE10212, OLE10214, OLE10276, OLE10282, OLE10283, OLE10284, OLE10285, OLE10286, OLE10287, OLE10288, OLE10289, OLE10290, OLE10291, OLE10292, OLE10293, OLE10224, OLE10234, OLE10298, OLE10299, OLE10300, OLE10301, OLE10302, OLE10303, OLE10304, OLE10305, OLE10306, OLE10307, OLE10311, OLE10312