OLE Circulation Processes Technical Document

Purpose

The circulation processes of OLE are designed to handle the core functionality of a library with functions such as recording the loaning, returning and renewing of resources such as books, requesting for resources, generating notices for overdues, replacements and also fine calculations along with Calendar and Circulation desk functions. The circulation processes works in tandem with Kuali Rules Management System, KRMS or Drools a Business Rules Management System (BRMS), an alternative to KRMS, which holds the circulation rules of the library to decide on a myriad of factors affecting the circulation processes.

Dependencies (db tables)

Tables used in Circulation Processes

ole_dlvr_loan_t	Loan
ole_dlvr_loan_notice_t	Loan Notices
ole_dlvr_rqst_t	Request
ole_dlvr_rqst_typ_t	Request Type
ole_dlvr_ptrn_bill_t	Patron Bill
ole_clndr_t	Calendar
ole_clndr_grp_t	Calendar Group
ole_crcl_dsk_t	Circulation Desk

Tables where LOAN_TRAN_ID, OLE_RQST_ID, OLE_CLNDR_ID are used/referenced

ole_dlvr_circ_record	Circulation Records
ole_dlvr_rqst_hstry_rec_t	Request History Records
ole_clndr_excp_dat_t	Calendar Exception Date
ole_clndr_wk_t	Calendar Week
ole_circ_dsk_dtl_t	Circulation Desk Detail

Logical Data Model (Class Structure)
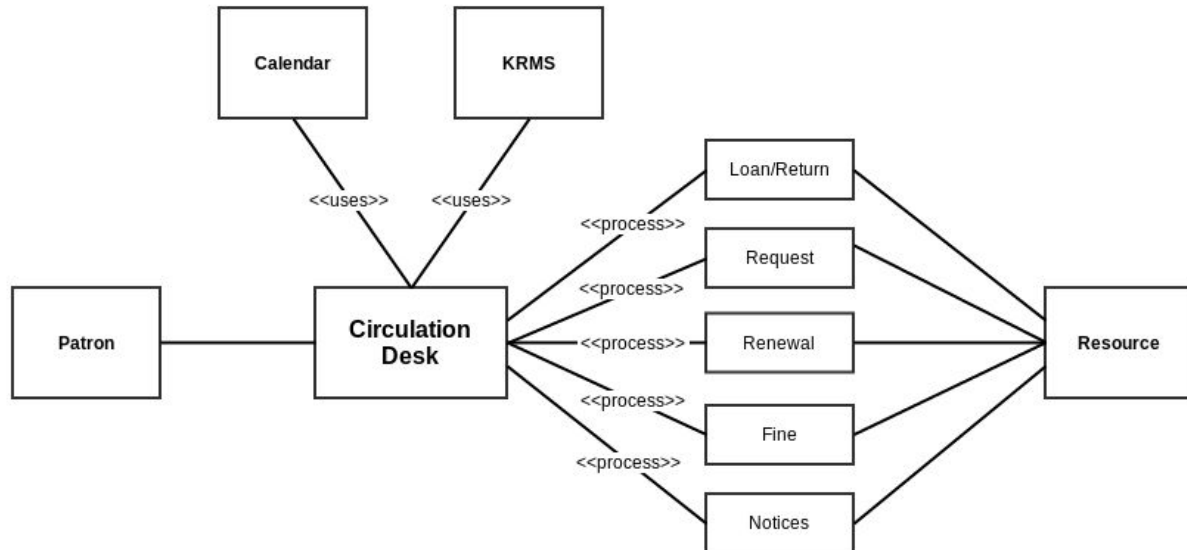
The Circulation processes of a library involve the Resource such as books, journals, CDs and the Patron. A Patron would loan/return, renew, request for a resource. Also part of the circulation are fine calculations in case of lost or overdue resources and notice generation to Patrons. This is accomplished at the Circulation Desk or automated through Self-check Machines (like 3M) or Discovery layers (like VuFind). The rules that govern circulation are fed into the Rules Management Engine. Kuali Rice has a proprietary rules engine, KRMS. The Drools BRMS, which promises better performance and easier rule authoring, can also be used as a KRMS alternative. These rules, given that they vary across institutions, are customizable with no change to underlying code, to a fair extent. There is also a calendar which can be configured for calculation of holidays, weekends and other vacations during which the library would remain closed.

Physical Data Model (Database Schema)
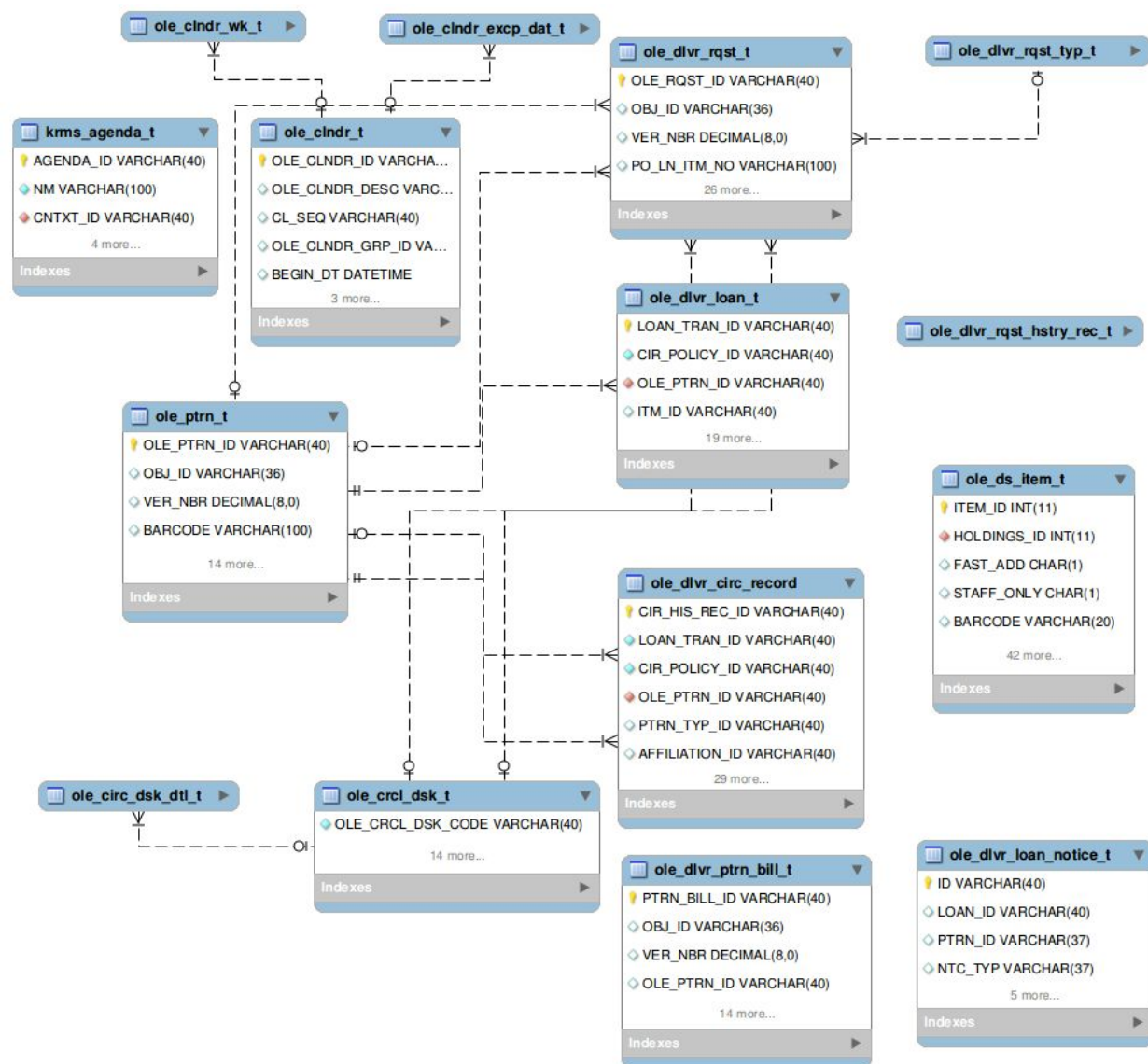
The circulation policies are designed to rely on three important values for major rules. They are the Borrower type, Location and Item type. The borrower type comes from the Patron table, *ole_ptrn_t*, where all patron data resides. The item type comes from the Item table, *ole_ds_item_t* and the location comes from the Circulation Desk, *ole_crcl_dsk_t*, to which locations are added. The *krms_agenda_t* table contains the KRMS agendas where the rules are defined. The calendar table, *ole_clndr_t*, contains exception days such as holidays and weekends which is used for calculation of time. Based on all this, processes such as Request, Loan, Return, Renew, bill and notice generation are done. The *ole_dlvr_rqst_t* table contains Request related information, *ole_dlvr_loan_t* contains information on Loan, Return and Renew and *ole_dlvr_ptrn_bill_t* and *ole_dlvr_loan_notice_t* contains bill and notice related information.

Last Published September 8, 2015

If the institution uses the Drools BRMS to maintain circulation policies then the *krms_agenda_t* table is not used. Drools rules are stored in special DRL files and doesn't use database. However, OLE uses tables to persist circulation rules data for easy modifications. More information can be found [here](#).

Service Interface Design (Java)

Loan, Return, Renew
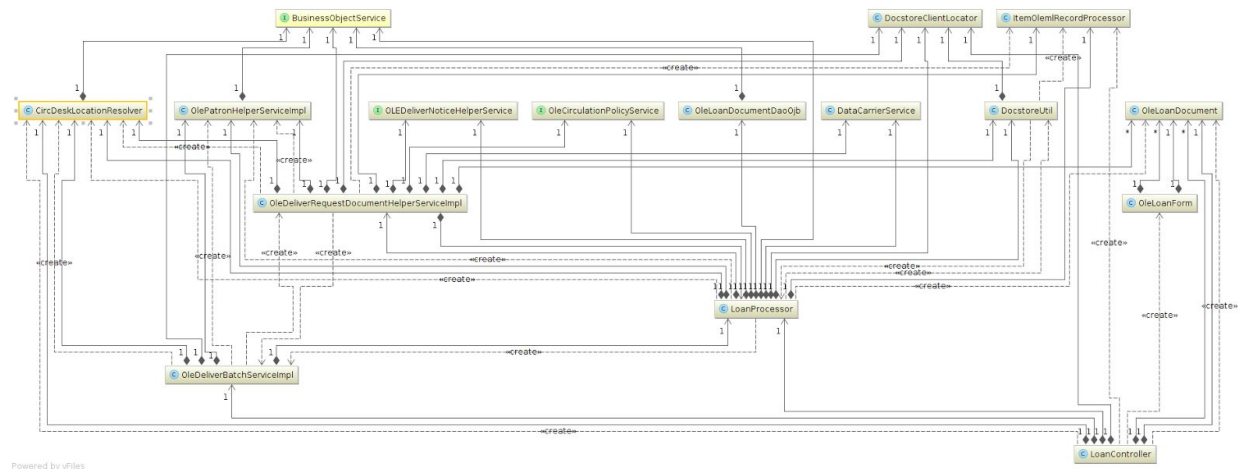
The *LoanProcessor* class takes care of Loan, Return and Renew functionalities. The *LoanController* class acts as the controller and loads up loan related information in the *LoanForm* class. The *LoanDocument* class also brings existing data about the loan. The *processLoan*, *returnLoan* and *getLoanObjectFromDAOForRenewal* methods of *LoanProcessor* class do further processing.

Request
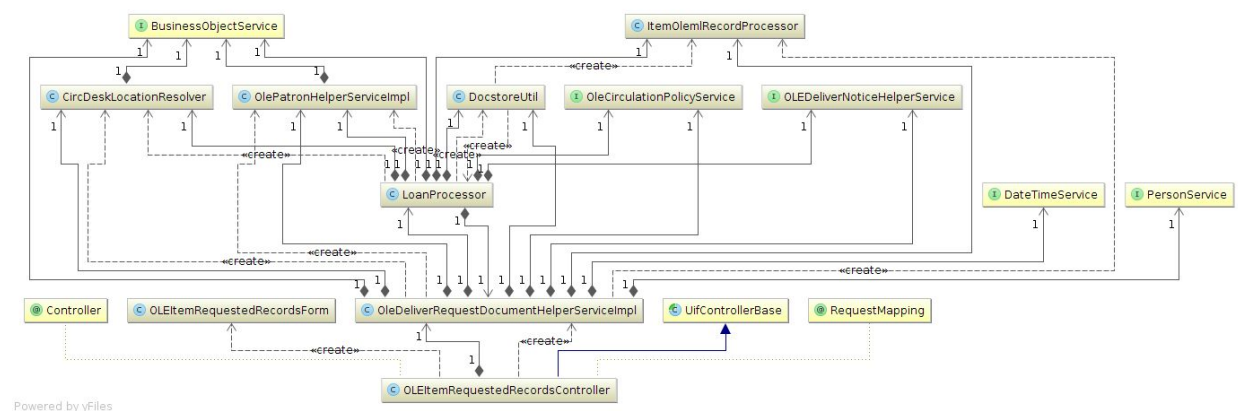
The *OLEItemRequestedRecordsController* class acts as the controller for the request function. The *OleDeliverRequestBo* is retrieved based on the item barcode and is sent to processing to the *processItem* method of *OleDeliverRequestDocumentHelperServiceImpl* class.

Last Published September 8, 2015

Notice
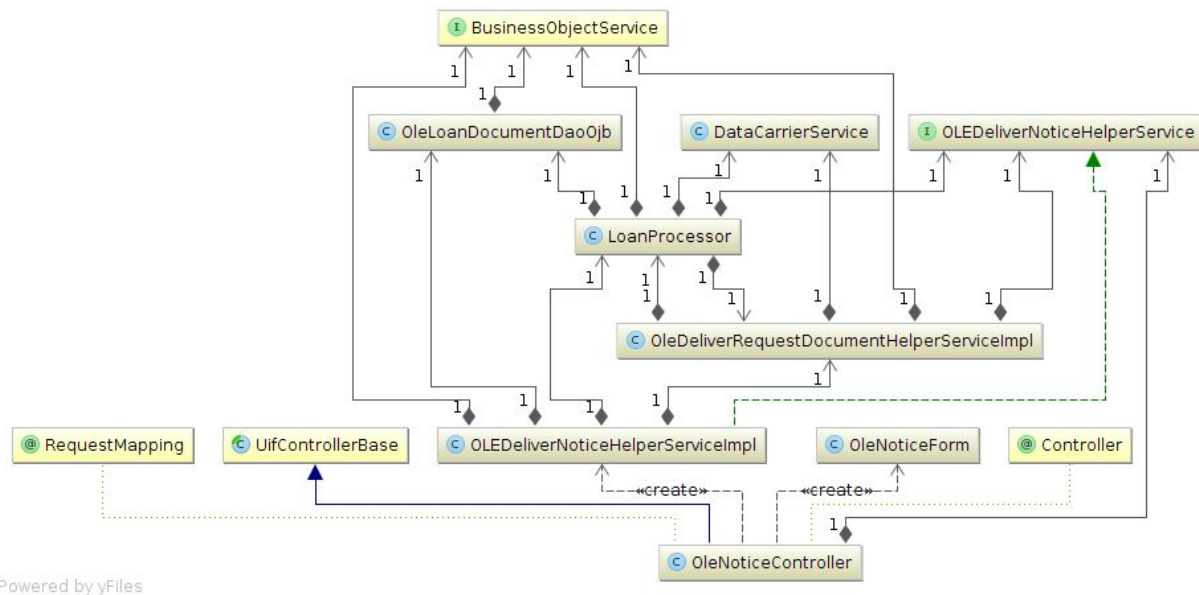
The *OleNoticeController* class acts as the controller for Notices. The *getUIFModelAndView* method of the *UifControllerHelper* class set the Model and View for Notices. The *updateDeliverNoticeForUnprocessedLoans* method of *OLEDeliverNoticeHelperServiceImpl* class and *getUnprocessedOverdueLoanDocuments* method of *OleLoanDocumentDaoOjb* class helps in identifying loan documents and process them.

Patron Bill

Last Published September 8, 2015
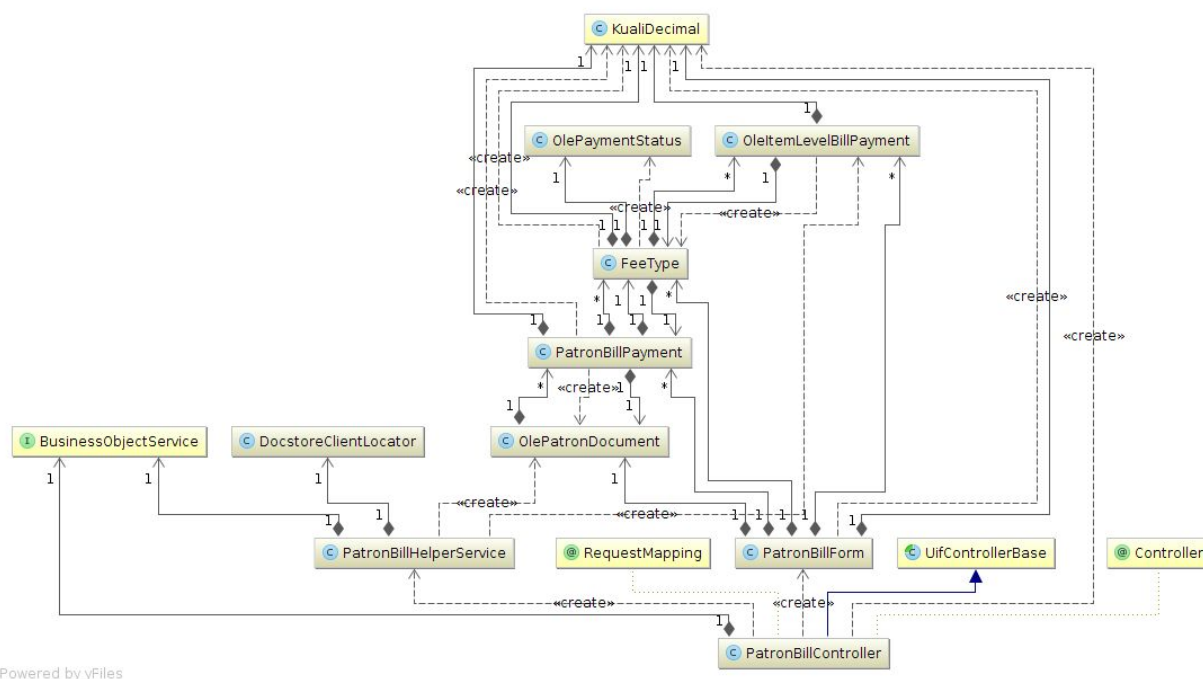
The *PatronBillController* class is where all Patron bill related activities happen such as payment of fines, forgiving payment, printing a bill and cancellation.

For more information, Javadocs can be found [here](#).

Service Interface Design (SOAP/REST)

OLE supports REST services for circulation related activities. This is documented [here](#). OLE also exposes most of the Circulation functions in both NCIP and [SIP2](#) for access to external systems.

User Interface Design

The OLE circulation processes use KRAD's UIF (User Interface Framework). A very good guide on this can be found [here](#).

Data Importing

OLE uses a RDBMS backend and hence any data can be imported using simple update SQL queries.

Data Exporting

OLE uses a RDBMS backend and hence any data can be exported using simple SQL queries. Currently there is no direct way in which circulation process related data can be exported directly from OLE.

Workflow

CIrculation processes don't have any workflow defined by default. However, if needed it can be defined at *OleDeliverDocType.xml* file. In case an user lacks specific permissions an over ride can be done by an user with the required permissions.

System Parameters

Namespace Code	Parameter Name	Description
OLE-DLVR	AUDIO_OPTION	This is for configuring the audio option to turn on/off

Last Published September 8, 2015

OLE-DLVR	AUTH_BARCODE	This parameter is used to specify the parameter to look for if there is no user id in the ncip input xml
OLE-DLVR	CANCELLATION_BO DY	Cancellation Notice Body
OLE-DLVR	CLAIMS_CHECKED_ IN_NOTE	This is for configuring claims checked in note
OLE-DLVR	CLAIMS_CHECKED_ OUT_NOTE	This is for configuring claims checked out note
OLE-DLVR	COPY_REQUEST_IT EM_STATUS	This is to specify the item status of an item to which the Copy Request can be made.Multiple item status can be provided using ; as seperator
OLE-DLVR	COURTESY_NOTICE _CONTENT	Courtesy Notice Body
OLE-DLVR	COURTESY_NOTICE _INTER	Setting interval for courtesy notice
OLE-DLVR	COURTESY_NOTICE _TO_DATE	The courtesy notices will be send to the patron who are having the courtesy date falling on or before the date specified in this parameter while running the notice job
OLE-DLVR	COURTESY_NOTICE _TYPE	Specify the type of Courtesy Notice viz mail, email, etc
OLE-DLVR	COURTESY_TITLE	Courtesy Notice Title
OLE-DLVR	DAMAGED_PIECE_C HECKED_IN_NOTE	This is for configuring Damaged Item checked in note
OLE-DLVR	DAMAGED_PIECE_C HECKED_OUT_NOT E	This is for configuring Damaged Item checked out note
OLE-DLVR	DEF_CLOSE_TIME	This is the default value for close time
OLE-DLVR	DEFAULT_CIRCULA TION_DESK	This parameter value wil be used as the default circulation desk value if the item owning location is not mapped to any circulation desk
OLE-DLVR	DEFAULT_REQUEST _LEVEL	This is for setting the default request level while placing a request. The allowed values are Item and Title.

OLE-DLVR	DELIVER_NOTICE_FROM_ADDRESS	This is for setting the from mail address for the notices related deliver module
OLE-DLVR	EXP_HOLD_NOTICE_CONTENT	Expired Hold Notice Body
OLE-DLVR	EXP_REQ_BODY	Expired Request Notice Body
OLE-DLVR	EXP_REQ_TITLE	Expired Request Notice Title
OLE-DLVR	EXPIRED_TITLE	Expired Hold Notice Title
OLE-DLVR	FAST_ADD_ITEM_DEFAULT_STATUS	This is for configuring the default item status
OLE-DLVR	HOLD_DELIVERY_ITEM_STATUS	This is to specify the item status of an item to which the Hold/Delivery Request can be made.Multiple item status can be provided using ; as seperator
OLE-DLVR	HOLD_HOLD_ITEM_STATUS	This is to specify the item status of an item to which the Hold/Hold Request can be made.Multiple item status can be provided using ; as seperator
OLE-DLVR	HOLDCOURTESY_NOTICE_TYPE	Specify the type of Hold Courtesy Notice viz mail, email, etc
OLE-DLVR	INCLUDE_NON_WORKING_HRS	This is for configuring the excluding non working hours
OLE-DLVR	INCLUDE_NON_WORKING_HRS_FOR_FINE_CAL	This is for configuring the including non working hrs for fine calculation.
OLE-DLVR	ITEM_DIGIT_ROUTINE	This is for setting a boolean to decide whether to validate Item Barcode.
OLE-DLVR	ITEM_DIGIT_ROUTINE_PATTERN	This is for setting regular expression for item barcode
OLE-DLVR	ITEM_STATUS_FOR_RET_LOAN	This is for retrieving all the item
OLE-DLVR	LOST_NOTICE_TO_DATE	The replacement fee will be generated and item status is updated to lost for the items have the lost date falling on or before the date specified in this parameter
OLE-DLVR	mail.smtp.host	This is for configuring the smtp host

OLE-DLVR	mail.smtp.password	This is for setting the password
OLE-DLVR	mail.smtp.port	This is for configuring the smtp port number
OLE-DLVR	MAX_NO_OF_DAYS _ON_HOLD	This is for setting max no of days on hold
OLE-DLVR	MAX_TIME_CHECK_ IN	This is for setting max session time to check in date
OLE-DLVR	MAX_TIME_LOAN	This is for setting max session time to loan
OLE-DLVR	MISSING_PIECE_CH ECKED_IN_NOTE	This is for configuring Missing Piece Item checked in note
OLE-DLVR	MISSING_PIECE_CH ECKED_OUT_NOTE	This is for configuring Missing Piece Item checked out note
OLE-DLVR	NOTICE_THREAD_P OOL_SIZE	This parameter provides the number of parallel execution to be applied on the notice generation process
OLE-DLVR	ON_HOLD_NOTICE_ ITEM_STATUS	This parameter defines the item status code to which the notice to be send to the patron when the on hold notice job runs.';' act as record separator for each item status
OLE-DLVR	ON_HOLD_NOTICE_ REQUEST_TYPE	This parameter defines the request type codes to which the notice to be send to the patron when the on hold notice job runs.';' act as record separator for each request type
OLE-DLVR	ONHOLD_BODY	OnHold Notice body
OLE-DLVR	ONHOLD_NOTICE_T YPE	Specify the type of On Hold Notice viz mail, email, etc
OLE-DLVR	ONHOLD_TITLE	On Hold Notice Title
OLE-DLVR	OVERDUE_NOTICE_ CONTENT	Overdue Notice Body
OLE-DLVR	OVERDUE_NOTICE_ INTER	Setting interval for overdue notice
OLE-DLVR	OVERDUE_NOTICE_ TO_DATE	The overdue notices will be send to the patron who are having the overdue date falling on or before the date specified in this parameter while running the notice job

OLE-DLVR	OVERDUE_NOTICE_TYPE	Specify the type of On Notice viz mail, email, etc
OLE-DLVR	OVERDUE_TITLE	Overdue Notice Title
OLE-DLVR	PAGE_DELIVERY_ITEM_STATUS	This is to specify the item status of an item to which the Page/Delivery Request can be made.Multiple item status can be provided using ; as seperator
OLE-DLVR	PAGE_HOLD_ITEM_STATUS	This is to specify the item status of an item to which the Page/Hold Request can be made.Multiple item status can be provided using ; as seperator
OLE-DLVR	PATRON_BILL_REVIEW_PRINT	This is for setting patron bill review for print
OLE-DLVR	PATRON_DIGIT_ROUTINE	This is for setting patron digit routine boolean
OLE-DLVR	PATRON_DIGIT_ROUTINE_PATTERN	This is for setting regular expression for patron barcode
OLE-DLVR	PAYMENT_MODE_FORGIVE	The forgive value can be configured.(e.g) SOAS needs Waived instead of Forgive. So Universities can have the value whatever is appropriate to them
OLE-DLVR	PAYMENT_MODE_FORGIVE_MESSAGE	The forgive message can be configured.(e.g) SOAS needs has been waived instead of has been forgiven. So Universities can have the value whatever is appropriate to them
OLE-DLVR	PDF_LOCATION	This is to specify the location to which the pdf files should be created. If Parameter Value is not mentioned ,default location would be /home/tomcat/kuali/main/${nvironment}/olefs-webapp/work/staging. If Parameter Value is mentioned with some value like test, location would be /home/tomcat/kuali/main/${nvironment}/olefs-webapp/test
OLE-DLVR	PICKUP_TITLE	Pickup Notice Title
OLE-DLVR	PRINT_DUE_DATE_PER_TRANSACTION	Print the due date slip for every loan
OLE-DLVR	RECALL_BODY	Recall Notice Body

OLE-DLVR	RECALL_DELIVERY_ITEM_STATUS	This is to specify the item status of an item to which the Recall/Delivery Request can be made.Multiple item status can be provided using ; as seperator
OLE-DLVR	RECALL_HOLD_ITEM_STATUS	This is to specify the item status of an item to which the Recall/Hold Request can be made.Multiple item status can be provided using ; as seperator
OLE-DLVR	RECALL_NOTICE_TYPE	Specify the type of Recall Notice viz mail, email, etc
OLE-DLVR	RECALL_TITLE	Recall Notice Title
OLE-DLVR	RENEW_INFORMATION_INDICATOR_FOR_VUFIND_SERVICES	This is for deciding whether the renewable value is needed in the getCheckedOutItems and lookupUser service response or not
OLE-DLVR	REQUEST_QUEUE	This is for changing the request priority
OLE-DLVR	RQST_EXPR_NOTICE_TYPE	Request Expiration Notice Type
OLE-DLVR	SHELVING_LAG_TIME	This is for setting shelving lag time
OLE-DLVR	SIP2_INSTITUTION_NAME	This parameter hold the Institution name for 3M machine
OLE-DLVR	SIP2_OPERATOR_ID	This parameter hold the operator id for 3M machine to perform checking/checkout operation
OLE-DLVR	SIP2_REQUEST_TYPE	This parameter hold the request type for 3M machine
OLE-DLVR	TEMP_ITEM_DELETE_INDICATOR	This parameter is used to decide whether to delete an item that is checked in through ncip check in service or not.If it is set as 'Y' it will delete the created temporary item at check in time
OLE-DLVR	TITLE_LEVEL_REQUEST_INDICATOR	This is to decide whether the title request can be placed on an item or not. Allowed values are Y and N

Roles and Permissions

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

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