

OLE i18n Technical Document

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Purpose

OLE was initially targeted as a Library Management System (LMS) for Universities and Colleges based in the United States. However, the open source nature and low costs involved captured the imagination of institutions across the world and the need to internationalize units to cater to varied geographical regions arose.

The following configurations are available to institutions to customize OLE to serve their purpose

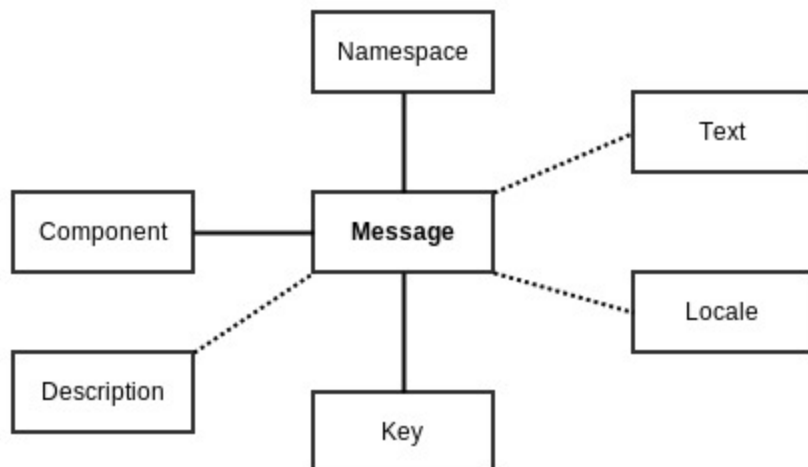
- Date Format
- Currency Symbol and Format
- Custom Labels
- Postal Code Validation
- Phone Number Validation

Dependencies (DB tables)

Tables used in Internationalization

krad_msg_t	Message Table
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Logical Data Model



The Message object represent each message string in KRAD and it is made up of the following properties.

Namespace: It defines which namespace the message belongs to.

Component Code: It defines the component or group the message belongs to. This is a more detailed grouping of the message within the namespace.

Key: A unique key for the message within the namespace and the group.

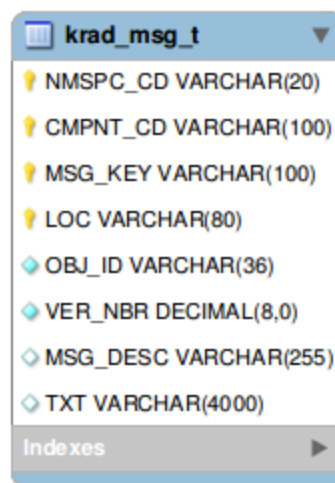
Text: It defines the text for the message.

Description: It contains, as the name suggests, the description of the message.

Locale: It is an identifier representing the language of the message.

A combination of namespace, component code and key is needed to uniquely identify the message.

Physical Data Model



The screenshot shows a database table named 'krad_msg_t' with the following columns and data types:

Column Name	Data Type
NMSPC_CD	VARCHAR(20)
CMPNT_CD	VARCHAR(100)
MSG_KEY	VARCHAR(100)
LOC	VARCHAR(80)
OBJ_ID	VARCHAR(36)
VER_NBR	DECIMAL(8,0)
MSG_DESC	VARCHAR(255)
TXT	VARCHAR(4000)

Below the columns, there is a section labeled 'Indexes' with a right-pointing arrow.

The *krad_msg_t* table is an alternate way of inserting customized messages. The other way is to have them as property files from which it would be read before the page is rendered. The table contains the Namespace code, Component code, Message key, Locale, Message description and Text. A combination of namespace, component code and key is used to uniquely identify the message and the message which should replace the original is given in the Text column. It also includes Object Id and Version Number for the following [reason](#).

Service Interface Design (Java)

Date Format, Currency Symbol and Format

The Date and Currency are handled at Kualiti Rice level. Rice uses the Commons Configuration software library to read configuration data. Commons Configuration software library provides a generic configuration interface which enables Java applications to read configuration data from a variety of sources. The full Javadoc API documentation can be found [here](#).

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The configuration file location is specified as a parameter in *BootStrapConfig.xml* under the parameter name, *config.location*. This is configured with the file name, *common-config-defaults.xml* under the *META-INF* folder as below.

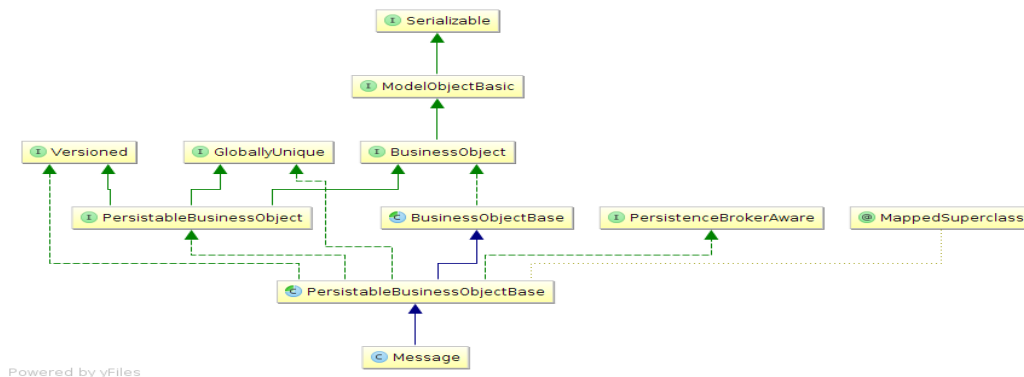
```
<param name="config.location">classpath:META-INF/common-config-defaults.xml</param>
```

Since, these files are present in Kuali Rice Source code and changing them would necessitate building the package again, we override these files in OLE. This is achieved by having another configuration file, *custom-common-config-defaults.xml* file, in OLE. We specify the location of this new file in *BootStrapConfig.xml*. This will allow the parameters in the file to be overridden.

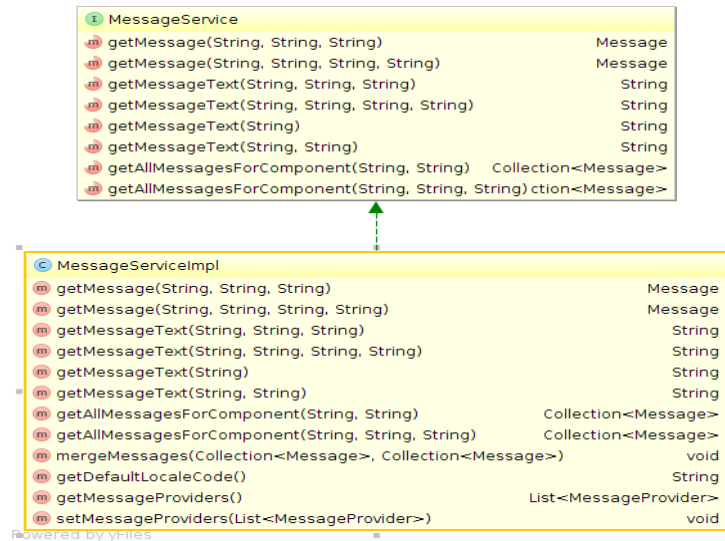
The parameters and the values with which they are to be updated are explained in detail [here](#).

Custom Labels

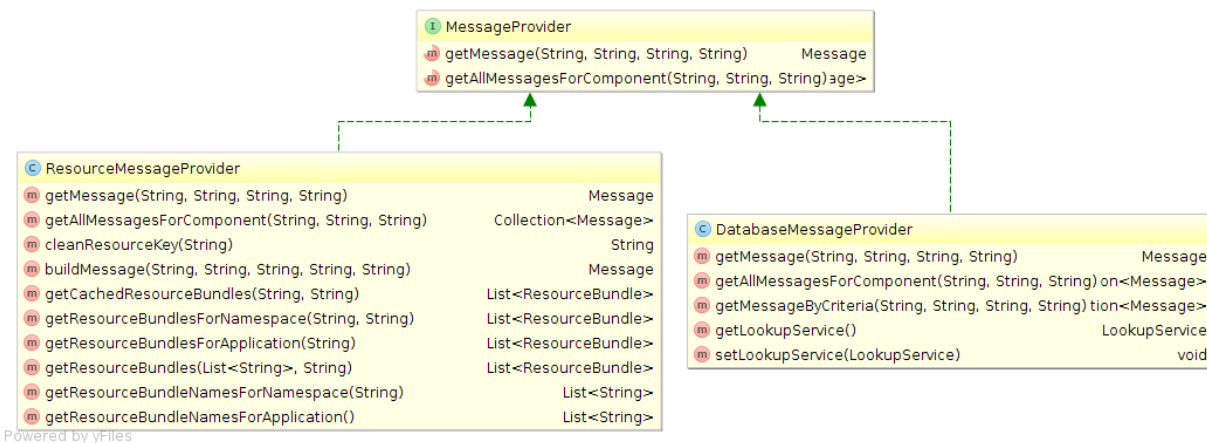
Kuali Rice provides an option to externalize messages. This allows to customize messages by overriding existing messages in property files and javascript from an external message repository. The external message repository is either a Database table or a property file.



The *message* (`org.kuali.rice.krad.messages.Message`) object represents a message string in the external message repository. It has Namespace, Component Code, Key, Text, Description and Locale. A combination of Namespace, Component Code and Key uniquely identifies the message.



The *MessageService* class provides access to one or more external message repository. It is used by KRAD and other modules to acquire the text for a message.



The *MessageProvider* reads from the external message repository and returns a Message Object. The interface is implemented by `DatabaseMessageProvider` which brings message object data from database table (*krad_msg_t*) and `ResourceMessageProvider` which brings message object data from property files.

More detailed information on how to configure are mentioned [here](#).

Postal code and Phone number Validation Configuration

Postal code validation and Phone number validation is done at Kuala Lumpur level. Regular Expression (RegEx) are used for pattern matching with strings. The RegEx are configured in the *ApplicationResources.properties* file.

The *ConfigurationBasedRegexPatternConstraint* class which extends from *Constraint* class is where the value is validated with the RegEx. The configuration is made in the

DataDictionaryBaseTypes.xml and the error message is configured in *KRADApplicationResource.properties*.

More information on configuration can be found [here](#)

Service Interface Design (REST if applicable)

Not Applicable

User Interface Design

Not Applicable

Data Importing

Not Applicable

Data Exporting (if applicable)

Not Applicable

Workflow

Not Applicable

System Parameters

Namespace Code	Parameter Name	Description
KR-NS	DEFAULT_LOCALE_CODE	The locale code that should be used within the application when otherwise not specified.

Roles and Permissions

Not Applicable