

# ART Libraries

ART uses a number of free and open source libraries and resources in order to provide various functionality. Below is a listing of some of them.

Library	License	Comment
<a href="#">Tango Desktop Project</a>	Public Domain	Many icons used in the application have come from this icon set
<a href="#">Logback</a>	EPL v1.0 and LGPL 2.1	Provides the concrete logging library. More currently maintained than log4j used previously. Enables modification of logging level without need to restart the application. Switching to debug mode can now be done without much thought. Also provided code to enable viewing of logs from the application interface. No longer need access to application server machine to view logs.
<a href="#">SLF4J</a>	MIT	Logging facade allowing for change of the concrete logging library without changing application code. Allowed for an easy change from using log4j to logback (ART 2.3.1 to 2.4). No code changes were needed and there was minimal change from the log4j.xml file to the logback.xml file.
<a href="#">jsoup</a>	MIT	Enable automatic generation of pdf manuals from wiki contents
<a href="#">html2ps</a>	GPL	Enable automatic generation of pdf manuals from wiki contents
<a href="#">sorttable.js</a>	X11	Enable sorting of data in htmlGrid view mode
<a href="#">date.js</a>	MIT and GPL	Used to verify validity of dates entered for date parameters
<a href="#">AjaxTags</a>	Apache	Used to display dashboards, to provide information about queries in the start page and to retrieve saved schedule information in the define job page
<a href="#">Cewolf</a>	LGPL	Used to display charts on the browser
<a href="#">JFreeChart</a>	LGPL	Used to output charts as pdf and png files
<a href="#">Mondrian</a>	EPL	Used to provide OLAP functionality
<a href="#">JPivot</a>	CPL	Used to provide the interface for interacting with OLAP cubes

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<a href="#">Apache Commons</a> , including fileupload, lang	Apache	Used for a number of utility functions
<a href="#">HSQLDB</a>	<a href="#">custom</a> , based on BSD	Used to provide a demo database with sample queries
<a href="#">iText</a>	MPL or LGPL Using iText 2.1.7 which was the last version under this license. Later iText versions are licensed under the AGPL	Used to provide pdf output
<a href="#">JasperReports</a>	LGPL	Used to provide support for formatted reports
<a href="#">JCIFS</a>	LGPL	Used to provide windows authentication
<a href="#">Apache POI</a>	Apache	Used to provide xls, xlsx and docx output for tabular reports
<a href="#">Quartz</a>	Apache	Used to provide scheduling for jobs
<a href="#">SPNEGO</a>	LGPL	Used to provide integrated windows authentication or Single Sign On
<a href="#">DataTables</a>	GPL or BSD	Used to provide the htmlDataTable view mode. Enables paginated results, sorting and searching of results
<a href="#">jQuery</a>	MIT	Used to display query results in the select parameters page
<a href="#">jQuery Form Plugin</a>	MIT and GPL	Enable use of AJAX in form submission
<a href="#">TinyMCE</a>	LGPL	Used to provide a HTML WYSIWYG editor for defining job email message text, and contents of text queries
<a href="#">DHTMLgoodies JS Calendar</a>	LGPL	Used to provide a date picker for date parameters in the select parameters page
<a href="#">jBCrypt</a>	ISC/BSD	Used to hash user passwords
<a href="#">log4jdbc</a>	Apache	Used to support logging of sql statements
<a href="#">OWASP Java Encoder</a>	New BSD	Escaping/encoding of strings that build html output, to prevent cross-site scripting

Library	License	Comment
Font Awesome	SIL OFL 1.1	Used to provide icons used within the application. (ART 3.0+)
Bootstrap	MIT	Provides a responsive user interface, enabling use of a single code base for different screen sizes i.e. for tablets, phones and computers. (ART 3.0+)
Bootbox.js	MIT	Provides information and confirmation dialogs e.g. when deleting records. (ART 3.0+)
Bootstrap-hover-dropdown	MIT	Enables bootstrap menus to dropdown on hover instead of on click. (ART 3.0+)
HTML5 Shiv	MIT/GPL2	Enables use of HTML5 with Internet Explorer 6-8. (ART 3.0+)
jquery.dataTables.rowReordering.js	GPL v2 or BSD style	Enables reordering of rows within a DataTables table. Used to change drilldown and report parameter positions. (ART 3.0+)
jquery.quicksearch.js	MIT	Allow for search within a multi-select. (ART 3.0+)
lou multiselect.js	Custom	Provides a user-friendly way to perform multi selects. (ART 3.0+)
Notify.js	MIT	Used to provide event notifications e.g. successful record deletion. (ART 3.0+)
Respond.js	MIT	Enables use of HTML5 with Internet Explorer 6-8. (ART 3.0+)
Appelsiini chained select	MIT	Provides the chained parameters feature. (ART 3.0+)
Bootstrap-select	MIT	Provides enhanced functionality in select elements e.g. allowing for search and multi select. (ART 3.0+)
Eonasdan datetimepicker	MIT	Provides a date picker. (ART 3.0+)
moment.js	MIT	Manipulating dates in javascript. Required by eonasdan date picker. (ART 3.0+)
jQuery UI	MIT	Provides ui effects. Required by jquery.dataTables.rowReordering.js. (ART 3.0+)
Thymeleaf	Apache	Provides email templates used with scheduled jobs. (ART 3.0+)
Spring Framework	Apache	Provides the MVC framework. (ART 3.0+)

Library	License	Comment
<a href="#">Commons DbUtils</a>	Apache	Makes working with JDBC cleaner. (ART 3.0+)
<a href="#">Joda-Time</a>	Apache	Provides date manipulation functions. (ART 3.0+)
<a href="#">Ehcache</a>	Apache	Provides object caching. (ART 3.0+)
<a href="#">Jackson JSON processor</a>	Apache, LGPL	Provides for loading and saving java objects to json files. (ART 3.0+)
<a href="#">Hibernate validator</a>	Apache	Provides validation annotations. (ART 3.0+)
<a href="#">UnboundID LDAP SDK</a>	GPL 2, LGPL 2.1, <a href="#">Custom</a>	Enables LDAP authentication. (ART 3.0+)
<a href="#">jTDS</a>	LGPL	A JDBC driver for SQL Server
<a href="#">MySQL Connector/J</a>	GPL	JDBC driver for MySQL
<a href="#">MariaDB Connector/J</a>	LGPL	JDBC driver for MariaDB
<a href="#">CUBRID JDBC driver</a>	BSD	JDBC driver for CUBRID
<a href="#">PostgreSQL JDBC Driver</a>	BSD	JDBC driver for PostgreSQL
<a href="#">UCanAccess</a>	Apache	JDBC driver for MS-Access
<a href="#">jXLS</a>	Apache	Provides reports based on pre-created MS-Excel templates
<a href="#">HikariCP</a>	Apache	Provides connection pooling. (ART 3.0+)
<a href="#">JavaMail API</a>	CDDL 1.1, GPL 2	Enables sending of emails
<a href="#">Barbecue</a>	<a href="#">BSD-style</a>	Used for jasper reports with barcodes. (ART 3.0+)
<a href="#">Freemarker</a>	Apache	Used for reports based on freemarker templates. (ART 3.0+)
<a href="#">Bootstrap Switch</a>	Apache	Used to display checkboxes as toggle switches. (ART 3.0+)
<a href="#">XDocReport</a>	MIT	Used for reports based on docx, odt or pptx templates. (ART 3.0+)
<a href="#">Simple Java API for ODF</a>	Apache	Used to provide odt and ods output for tabular reports. (ART 3.0+)
<a href="#">Apache Commons Net</a>	Apache	Used to provide ftp functionality. (ART 3.0+)
<a href="#">Java CAS client</a>	Apache	Provides CAS authentication functionality. (ART 3.0+)