



# iSphere for RDi 9.5.1.3+

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## Overview

The following features are provided by iSphere for WDSCi 7.0/RDi 9.5.1.3+.

- Binding Directory Editor for editing binding directory entries within a binding directory.
- Data Area Editor for editing data areas.
- User Space Editor for editing user spaces.
- Data Queue Viewer.
- Message File Editor for editing message of a message file.
- Message File Compare Editor for comparing message files.
- Message File Search for searching message in message files.
- An extremely fast search feature for searching source files. Searching a member filter in the Remote Systems Explorer with iSphere Source File Search is about 60 times faster than searching with the original RSE Search.
- Compare/Merge Editor for comparing/merging source members.
- A spooled file subsystem with the ability to open/save spooled files in Text, HTML and PDF format.
- LPEX Task Tags for source physical file members.
- Host Object Decorator to display object descriptions in the RSE tree as well in i projects.
- RSE Filter Management to import and export all or single filters.
- Views for monitoring data areas and user spaces.
- Message Subsystem.
- 5250 Emulator.
- Display module view.
- Job Log Explorer.
- Journal Explorer.
- Job Trace Explorer.



### **Change Log 5.1.2.b001** (10.05.2022)

Library: V7R1

- Fixed setting default values when comparing source members and stream files (iSphere ticket #127).

### **Change Log 5.1.1.r** (08.05.2022)

This version does not necessarily require updating your iSphere library unless you want to get the 'date last changed' value of the iSphere Stream File Search.

iSphere stream file search is restricted to resolve subdirectories down to 1 level, because IFS directory trees may be extremely large.

Library: V7R1

- Added options to set the previous values when comparing stream files. (see: preferences)
- Added Excel export to iSphere Stream File Search result view.
- Added option for creating an IFS filter to iSphere Stream File Search result view.
- Added column Severity to iSphere Message File Editor.
- Added option to specify whether the iSphere message description editor is started in browse or edit mode, when double-clicking an item in the result view of the iSphere Message File Search.
- Added option for opening a search result or Excel export file after it has been saved to disk (iSphere ticket #123). iSphere preferences page: Appearance – Open files after saving.
- Added vertical scroll bar to iSphere Source/Message file search pages (Ctrl+H).
- Added "iSphere Stream File Search Page" (CTRL+H).
- Added "iSphere Stream File Search" option to IFS stream file context menu.
- Changed layout of iSphere Source/Message file search dialog (removed sash form).
- Fixed the message popup dialog of the iSphere Messages subsystem to open on the active screen.



- Fixed missing value 'date last changed' of iSphere Stream File Search.
- Fixed iSphere Message/Stream File Search preferences.

#### **Change Log 5.0.1.r** (28.04.2022)

Library: V7R1

- Fixed endless loop in BasicMessageFormatter for messages starting with spaces. Identified with message CPF1241 on 7.4 after applying a PTF.

#### **Change Log 5.0.0.r** (23.03.2022)

This version requires updating your iSphere library to v5.0.0

Library: V7R1

- Added iSphere Stream File Compare Editor.
- Added iSphere Stream File Search.
- Added option to scan for LPEX task tags, when the source member is changed.
- Added option to remove LPEX task tags, when the source member is closed.
- Changed the "Copy Members to..." option to disallow copying dirty files (open in editors) at all.
- Changed iSphere BUILD to delete the source files of the STRPREPRC and WHOAMI utilities after their installation. (New parameter DLTUTLSRCF of command BUILD)
- Fixed problem that spooled file actions were incorrectly displayed for RSE filters that are not an iSphere spooled file filter.
- Fixed iSphere filter manager for dark mode (iSphere ticket #121).
- Fixed creating LPEX task tags. Markers are created on the UI thread, now.
- Fixed problem that the record length of the target source file was not always checked, when copying members.



### **Change Log 4.2.4.r** (09.01.2022)

Library: V7R1

- Enhanced options "Compare / Load previous values" to let the user select the values to be preserved for the next compare.
- Added renaming rule "Numerical Extended".
- Removed plug-in discovery sites that are no update sites.
- Fixed renaming rule to ignore backup names with a different length of the extension.
- Fixed renaming rule so that backup member names can be renamed, too. For example OLD.05 is renamed to OLD.05.01, when copied for the first time.

### **Change Log 4.2.3.r** (14.12.2021)

This version does not necessarily require updating your iSphere library unless you want to get the update of the STRPREPRC command.

Library: V7R1

- Updated Log4j from 2.15.0 to 2.16.0 (CVE-2021-44228).

### **Change Log 4.2.2.r** (13.12.2021)

Library: V7R1

- Added option for renaming existing members when copying members.
- Updated STRPREPRC to v1.20.2.
- Removed methods from iSphere Core extension point " RDi Contributions: IRDiContributions":
  - executeCommand()
  - checkLibrary()
  - checkFile()
  - checkMember()
- Fixed NullPointerException, when the iSphere Compare Filters plug-in is not installed.
- Fixed problem in iSphere Compare Filters plug-in for RDi 9.5.
- Fixed Log4j2 vulnerability (CVE-2021-44228).



### **Change Log 4.2.1.r** (08.10.2021)

Library: V7R1

- Fixed iSphere Filter, Command and User Action Managers to properly close their repository XML files.

### **Change Log 4.2.0.r** (06.10.2021)

**Notice:** Support for RDP 8.0 has been discontinued with iSphere 4.2.

This version requires RDi 9.5.1.3 or higher.

This version does not necessarily require updating your iSphere library unless you want to get the update of the STRPREPRC command.

Library: V7R1

- Removed support for RDP 8.0.
- Changed development environment to RDi 9.5.1.3.

### **Change Log 4.1.1.r** (20.09.2021)

Library: V7R1

- Changed dialog settings manager to not reset the column size to the default value, when the column size has been reduced to 0. (various tables)
- Changed minimum column size of "Copy Members" dialog to 10 pixel.
- Fixed resetting column size of "statements" table of iSphere Source File Search.
- Fixed resetting column size of "message ids" table of iSphere Message File Search.
- Updated STRPREPRC command to v1.20.1 to properly retrieve the compile errors when the target object library has been overridden.
- Disabled caching of filtered regions in iSphere Compare Editor to fix compare errors.

### **Change Log 4.1.0.r** (11.05.2021)

Library: V7R1



- Fixed daylight saving offset when retrieving journal entries.
- Fixed problems in various views and editors, when using remote system profiles.
- Fixed NullPointerException, when closing the data queue monitor, when auto-refresh is enabled.
- Fixed problem that property "Display informational messages as list on startup" on the "Message Queue Monitoring" properties page was not persisted.

#### **Change Log 4.0.3.r** (27.04.2021)

Library: V7R1

- Fixed iSphere Source File Search page to allow generic library and source file names.

#### **Change Log 4.0.2.r** (27.04.2021)

Library: V7R1

- Fixed iSphere Source File Search page to allow generic library and source file names.

#### **Change Log 4.0.1.r** (23.04.2021)

Library: V7R1

- Fixed journal explorer, which picked up a wrong library name.

#### **Change Log 4.0.0.r** (22.04.2021)

**Notice:** Support for WDSCi 7.0 has been discontinued with iSphere 4.0.

This version does not necessarily require updating your iSphere library unless you want to get the update of the STRPREPRC command.

This version requires reapplying the settings on the "Label Decorations" preferences page, because of internal changes.

The format of journal entries exported to a Json file has been changed. Load and save Json files created prior iSphere 4.0 to convert them to the new format.



## Library: V7R1

### Work With Spooled Files:

- Added key modifier "Ctrl" to menu option "Work With Spooled Files". Pressing the "Ctrl" key while clicking the menu option opens the spooled files view setting the "pinned" flag.
- Changed persistence attributes of the iSphere "Spooled File" view due to internal changes. Sort orders of pinned views are lost, when updating to iSphere 4.0.0.r.
- Fixed problem that the sort order was not restored when loading a pinned iSphere "Work With Spooled Files" view.

### Source File Search:

- Changed layout of iSphere Source File Search result view.
- Changed iSphere Source File Search to resolve remote system filters and objects in batch. Added option for switching between the old and new mode to the preferences page.
- Added toolbar button for closing all search result tabs of the iSphere Source File Search result view.

### Message Search:

- Changed layout of iSphere Message File Search result view.
- Added toolbar button for closing all search result tabs of the iSphere Message File Search result view.

### Journal Explorer:

- Greatly improved performance, when loading journal entries from a journal.
- Changed compare side-by-side compare dialog of iSphere Journal Explorer to resize the columns of both sides together.
- Added "Copy" and "Copy value" actions to context menu of journal entry details viewer.
- Enhanced the iSphere Journal Explorer and added option to search for entry specific data.
- Enabled the iSphere Journal Explorer for objects of type \*DTAARA and \*DTAQ.
- Added option to display only changed fields, when comparing records in the iSphere Journal Explorer.

### Remote Systems View:

- Added preferences option to merge the results of a spooled file filter with more than one filter expression. The final result is sorted by creation time.



- Added option "Work With Spooled Files" to job entries of a RSE job filter.
- Added option "Copy Qualified Name" to job entries of a RSE job filter.
- Added special value \*TODAY to the "End date" property of the iSphere spooled file filter.

#### Source Member Compare:

- Added option "Ignore white spaces" to source member compare preferences page.

#### Other Components:

- Changed SQL query engine to ignore trailing spaces.
- Enabled command key F5 for refreshing the iSphere "Work With Spooled Files" view.
- Enabled command key F5 for refreshing the iSphere "Job Log Explorer" view.
- Enabled command key F5 for refreshing the iSphere "Job Trace Explorer" view.
- Enabled command key F5 for refreshing the iSphere "Journal Explorer" view.
- Updated STRPREPRC command to v1.19.1 with improved error reporting.

#### iSphere APIs:

- Added iSphere Core plug-in API.
- Added iSphere Job Log Explorer plug-in API.
- Added iSphere Journal Explorer Core plug-in API.
- Added iSphere Job Trace Explorer plug-in API.

This version is compatible with RDP 8.0.

### **Change Log 3.8.1.r** (21.12.2020)

#### Library: V7R1

- Added spooled file decorator variable &FORMTYPE.
- Fixed description of spooled file decorator variable &STATUS on preferences page.





## Change Log 3.8.0.r (04.11.2020)

**Notice:** iSphere v3.8.x is the last version that is compatible with RDP 8.0 and WDSCi 7.0. The next iSphere version may require at least RDi 9.5.1.3.

### Library: V7R1

- Added new feature "iSphere Job Trace Explorer" for analyzing job traces produced with the STRTRC/ENDTRC commands. See help page for details.
- Enhanced the "iSphere Journal Explorer", to check the iSphere library, when attempting to display the journal entries of a selected file.
- Added option to open the "iSphere Journal Explorer" from the context menu of a journal.
- Added columns JOSEQN and JOCCID to "iSphere Journal Explorer" (SQL Editor).
- Added "Save" and "Load" options to the view menu of the "iSphere Journal Explorer" to save/load journal entries to/from a Json file.
- Changed "iSphere Journal Explorer" not to auto-close the tab when no journal entries are loaded.
- Added options for saving the items of a spooled file filter as Text, HTML or PDF to a PC.
- Changed spool file "save as" and "open as" options, so that pressing the "Cancel" button cancels the whole series.
- Added button for opening a job log to the toolbar of the "iSphere Job Log Explorer" view.
- Added menu option to the "Job" node of the debug view to open the "iSphere Job Log Explorer", when a program stops at a breakpoint. (Not available for WDSCi)
- Changed "iSphere Job Log Explorer" not to auto-close the tab on errors, when refreshing the data.
- Removed editor area from "iSphere Job Log Explorer" perspective.
- Added menu option to the "Job" node of the debug view to open the "iSphere Work With Spooled Files" view, when a program stops at a breakpoint. (Not available for WDSCi)
- Added menu option to the "Job" node of the debug view to copy the qualified job name to the clipboard, when a program stops at a breakpoint. (Not available for WDSCi)



- Fixed problem that background coloring did not work for Job Logs parsed from a spooled file stored on a PC.
- Fixed NullPointerException when updating the history of the SQL editor of a journal explorer tab.
- Introduced plug-in "iSphere IDE Base Plugin" to remove dependency to RDi/WDSCi from the "iSphere Core Plugin" plug-in. This change had been requested by CMOne.

### **Change Log 3.7.2.r** (06.07.2020)

Library: V7R1

- Changed upload library feature to let the user select a RSE connection for uploading the iSphere library.
- Changed iSphere to thoroughly use SSL connections, when remote connections are configured to use SSL.
- Added Marco Riva to the list of Italian translators.
- Updated (reworked) Italian translation. Special thanks to Marco Riva for his efforts.
- Updated STRPREPRC command to v1.18. Added >>INCLUDE<< tag.

### **Change Log 3.7.1.r** (13.05.2020)

Library: V7R1

- Changed default of "To file" field of "Copy Members" dialog to \*FROMFILE when from members are selected from multiple from files.
- Changed binding directory editor to allow selecting multiple items.
- Partially updated Italian translation. Thanks to Marco Riva for his work.
- Fixed iSphere ticket #101 "binding directory editor: too many entries".

### **Change Log 3.7.0.r** (20.04.2020)

This version requires updating your iSphere library to v3.7.0

Library: V7R1

- Added Option "Match all per Line" to iSphere Source File Search. This option operates on single source lines instead of the source member. Source lines are found, if all conditions are met for the line.



- Added replacement variables "&OUTQ" and "&OUTQLIB" to spooled file decorator.

### **Change Log 3.6.3.r** (04.04.2020)

Library: V7R1

- Added command definition "Copy Member(s) To..." to allow defining a keyboard shortcut for the "Copy Members To" option.
- Fixed problem that saving a 5250 theme did not work, when the current session theme was \*NONE.
- Fixed incorrect enablement of "Pin View" button of "Work With Spooled Files" view.

### **Change Log 3.6.2.r** (03.03.2020)

Library: V7R1

- Added option to close tab items of the iSphere source and message file search result view with a mouse middle-click.
- Moved menu option "Display Journal Entries" from menu group "group.browsewith" back to "additions" where it had been before.
- Changed iSphere source and message file search dialogs to use the default size calculated by the default SWT algorithm.
- Changed "Display journal entries" dialog to display an error message, when no journal entry types are selected.
- Changed "Display journal entries" dialog to let the user select journal entry types with the space bar.
- Fixed AS400JDBCSQLException when an object name contains a dot, e.g. "ISPHERE.6", when executing a SQL statement.
- Fixed problem that "Display Journal Entries..." was called with member \*FIRST instead of \*ALL when executed for a file.
- Fixed various problems in "Open journal" dialog when connections have not yet been configured or when the last used connection no longer exists.
- Fixed "ExtendedIllegalArgumentException" when parsing a time value when loading a journal entries output file into the journal explorer.
- Fixed problems when editing BigDecimal values in the user space editor.



### **Change Log 3.6.1.r** (19.02.2020)

Library: V7R1

- Added option to cancel the job log parser.
- Fixed regular expression of job log parser.

### **Change Log 3.6.0.r** (17.02.2020)

This version requires updating your iSphere library to v3.6.0

Changed iSphere Source File Search to filter by member type.

Changed result view of iSphere Source File Search to display the member source type.

Library: V7R1

- Added pinable "Spooled Files" view along with menu option "Work With Spooled Files", which is available from the context menu of an iSphere spooled file filter.
- Added option to cancel loading journal entries to Journal Explorer view.
- Added SQL WHERE editor to the "Job Log Explorer" view.
- Refactored the Job Log Explorer to align the UI with the design of the Journal Explorer plug-in.
- Enhanced the job log parser to understand the different IBM I date and time formats. See Job Log Explorer preferences.
- Added option to cancel the copy operation of the "Copy Members" operation.
- Improved performance of copying members between different IBM i systems.
- Changed source file search and added attribute "Member type" to restrict the search to a certain member type.
- Changed source file search dialog and made member list area resizable.
- Changed result view of iSphere Source File Search to display the sort order in the column header of the members table.
- Improved error checking of WHERE clauses when filtering journal entries.
- Fixed iSphere Source File Search (regular expression option) to properly support locales (CCSIDs).



- Fixed ErrorCompletingRequestException (Length is not valid), when receiving journal entries with a 16MB buffer.
- Fixed error when parsing a job log when the time separator is a space.
- Fixed problem that source members with a \*BLANK source type were included in the iSphere source member search, when the search was restricted to a certain source type. Added special value \*BLANK for restricting the search to members without a source type.

#### **Change Log 3.5.6.r** (13.09.2019)

Library: V7R1

- Added preferences options to enable/disable loading previous values in source member compare dialog.

#### **Change Log 3.5.5.r** (10.09.2019)

**Notice:** Version 3.5.5.r is shipped with a library compiled for 7.1.

This version does not necessarily require updating your iSphere library unless you want to get the update of the STRPREPRC command.

Library: V7R1

- Moved parameter "ASP group" from the "Transfer iSphere library" dialog to the iSphere "Library" preferences page.
- Changed the source member compare dialog to update the history values. Now history values and last used values are stored separately depending on how many members were selected.
- Changed job log explorer to use SQLJEP under the cover for further enhancements.
- Changed job log explorer to keep a selected row, when applying a filter that does not hide that row.
- Updated STRPREPRC to v1.17. Added command parameter EXECOPT to select the type of commands to execute: \*PRECMDS, \*CRTCMD and \*POSTCMDS. This parameter has been added for a better integration with CMOne.



### **Change Log 3.5.4.r** (12.07.2019)

**Notice:** Version 3.5.4.r will be the last version with an iSphere library compiled for V6R1. Upcoming versions will be compiled for 7.1 when there is a need for changing the library.

Library: V6R1

- Fixed cursor positioning issue, when filtering messages in the iSphere message file editor. (Ticket #72).

### **Change Log 3.5.3.r** (15.05.2019)

Library: V6R1

- Added option to specify the name of an ASP device, when uploading the iSphere library.
- Added "Print job log" button to the install iSphere library dialog.
- Disabled dialog close button while uploading the iSphere library.
- Changed LPEXTaskManager to remove closing comment characters from task description.
- Fixed NullPointerException in task tags editor.
- Fixed NullPointerException in task tags preferences when saving a document.

### **Change Log 3.5.2.r** (06.04.2019)

This version does not necessarily require updating your iSphere library unless you want to get the update of the STRPREPRC command.

- Updated STRPREPRC to v1.15.4. Improved error reporting of syntactically wrong creation commands.
- Added option "Date range" to Journal Explorer preferences.

### **Change Log 3.5.1.r** (19.01.2019)

- Added the "Copy Members to" menu option to the "Remote Scratchpad" view.
- Added help topic "Troubleshooting".
- Added help page "Debugging Server Jobs".
- Added help page "RSE Object Decoration is Missing".
- Added coloring to journal entry details viewer.



- Added journal column JOCTRR to Journal Entries Details view.
- Added journal column JONVI (null value indicators) to all journal explorer views.
- Added SQL WHERE editor to the "Open journal" dialog.
- Added options for selecting journal entry types to "Display journal entries" dialog.
- Added "WHOAMI" utility and help page.  
(update the library to get the WHOAMI utility)
- Changed journal entry details viewer to use the same sort order as the table viewer.
- Changed the Journal Explorer to filter journal entries locally without accessing the host.
- Changed Journal Explorer to store column sizes.
- Changed journal explorer to display all \*TYPE5 fields when retrieving journal entries directly from a journal.
- Changed journal explorer to display JOJID as hex string.
- Changed journal to allow selecting multiple files when retrieving journal entries.
- Changed LPEX Task Tags preference page to sort the table of file extensions by name.
- Fixed NullPointerException in TimeEdit (WDSCi).
- Fixed Journal Explorer to handle and display date, time and timestamp fields as text fields to avoid timezone and daylight saving time adjustments.
- Fixed exception due to disposed images in message file compare editor.
- Fixed iSphere Source and Message File Search to log all JDBC connection problems and to leave the "check status" loop when the status record could not be found for whatever reasons.
- Fixed problem in iSphere Job Log Explorer that searchUp/searchDown did not properly wrap.

### **Change Log 3.5.0.r** (03.10.2018)

This version requires updating your iSphere library to v3.5.0

- New menu option "Display Module View".



- Added Feature "iSphere RSE Command Management" to import and export compile commands.
- Added Feature "iSphere RSE User Action Management" to import and export user actions.
- Added option "Display Module View" to the context menu of \*MODULE objects to display the debug view of the module.
- Added menu option "Export to Member Filter" (selected items) to Source File Search viewer.
- Added menu option "Export to Excel" (selected items) to Source File Search viewer.
- Added menu option "Export to Object Filter" (selected items) to Message File Search viewer.
- Added menu option "Export to Excel" (selected items) to Message File Search viewer.
- Added column "Count" to the member list of the result view of the iSphere Source File Search.
- Added search options sheet to Excel export.
- Added option "Show all statements" to iSphere Source File search, when launched from the RSE tree.
- Changed Source File Search and Message File Search to save the last used export folder.
- Changed Journal Explorer to display an error, when the IBM i release is less than V5R4M0, when attempting to retrieve journal entries.
- Removed non-applicable menu option from ReadOnlyEditor, which is used for displaying spooled files.
- Removed obsolete field "XIFLCD" from table "FNDSTRI".
- Fixed NullPointerException when loading the filters for the source and message file search pages, when processing a broken filter pool reference. (Ticket #64).
- Fixed NoClassDefFoundError (class: ProgramParameter) when attempting to display journal entries with the iSphere Journal Explorer. (Ticket #65).
- Fixed NullPointerException when the meta data of a journal entry could not be retrieved.
- Fixed column mismatch between headline and data when exporting journal entries to Excel.





### **Change Log 3.4.1.r** (02.07.2018)

- Changed service program FNDSTR to call QUSRMBRD for retrieving member attributes such as the "source last changed" date.
- Fixed NullPointerException in java.util.Calendar.setTime() when the iSphere Source File Search is called by CMOne.

### **Change Log 3.4.0.r** (18.06.2018)

This version requires updating your iSphere library to v3.4.0

- New column "Last changed" in iSphere Source File Search view.
- Added column "Last changed" to the member list of the result view of the iSphere Source File Search.
- Added connection name to member title when comparing source members in the iSphere Compare Editor.
- Added error logging when opening or saving a spooled file.
- Changed ISpherePlugin to check the .project file of the iSphereSpooledFiles project.
- Changed signon dialog to store host and user names, when transferring the iSphere library.
- Changed "new release notification URL" to "http://isphere.sourceforge.net/MANIFEST.MF".
- Fixed problem that color attributes were accidentally promoted between sessions with different themes.
- Fixed problem that option "Save as Theme" did not work.
- Fixed problem that spooled files could not be opened, when the workspace is located in the IFS. (NullPointerException)

### **Change Log 3.3.1.r** (25.05.2018)

- Fixed error message "Parameter "ccsid" must not be [null]" when attempting to display, edit or added a message description.
- Changed binding directory editor to set activation default to \*IMMED when adding a service program entry.
- Added options "Ignore changes left" and "Ignore changes right" to iSphere Compare Editor when using three-way compare.



### **Change Log 3.3.0.r** (06.05.2018)

- Added "theme" to TN5250J session configuration for overriding color attributes.
- Changed 5250 settings dialog to check for changes when the dialog is closed.
- Added default printer font to default 5250 configuration.
- Fixed problem that object names were not properly validated. Now the system ccsid is taken into account when validating object names. Refer to "iSphere -> Library" help page for details.
- Fixed dead lock on AWT thread when closing a TN5250J session with unsaved configuration changes.
- Fixed NullPointerException, when the user attempts to open the popup menu of a 5050 session, before the session had been completely initialized.
- Fixed timing problem that SetSessionFocus occasionally blocked the UI thread.
- Fixed minor problems in class ColorAttributesPanel.
- Fixed NullPointerException in GUIGraphicsUtils.getApplicationIcons() when loading window title icons.
- Fixed NullPointerException when creating a "XTFRFile" dialog in WDSCi.
- Updated STRPREPRC to v1.15.3 to fix RNX0100 (Length or start position is out of range for the string operation) in procedure replaceCmdKeyword().

### **Change Log 3.2.5.r** (18.03.2018)

- Fixed CCSID issue in iSphere Compare Editor.

### **Change Log 3.2.4.r** (05.03.2018)

- Fixed problem that the iSphere Source File Search and Message File Search did not come to an end, when the connection has been broken.
- Fixed problem that "Copy Members to" did not copy member descriptions containing quotes.

### **Change Log 3.2.3.r** (18.02.2018)

- Fixed NullPointerException in AbstractTypeDAO, when opening an output file.

- Added additional log statements to ease debugging of errors in Journal Explorer plug-in.
- Added InvalidVersionNumberException to get better diagnostic messages when searching for updates.

#### **Change Log 3.2.2.r** (10.02.2018)

- Added "Member" field to the "Open Journal Output File" dialog.
- Added "Export to Excel" option to Journal Explorer view.
- Added column JOCTRR (relative record number) to Journal Explorer view.
- Added column JOFLAG to Journal Explorer view.
- Fixed focus problem when switching forth and back between a view and a 5250 session in the "iSphere 5250 Session View" (Ticket #51).

#### **Change Log 3.2.1.r** (01.02.2018)

- Fixed incorrect enablement of button "SQL Editor" in class JournalExplorerView.
- Fixed problem, that loading journal entries did not stop, when the maximum number of entries had been loaded.
- Fixed missing column descriptions on Journal Explorer preference page.
- Fixed NumberFormatException in class ConfigureParserDialog.
- Fixed method getTimestamp() of class LoadJournalEntriesDialog, which incorrectly used "Calendar.DAY\_OF\_YEAR" to set the day. That worked for January but no longer with February.

#### **Change Log 3.2.0.r** (31.01.2018)

- Added JDBC connection manager for supporting Kerberos JDBC connections.
- Added menu option for displaying journal entries of selected file or member.
- Added preferences value to limit the number of journal entries downloaded to a client PC. The default value is 1000.
- Added preferences value to define the buffer size for retrieving journal entries.
- Fixed problem, that the iSphere spooled file filter sometimes shows "%1" without any meaningful message. (Problem with Kerberos authentication.)



- Change the iSphere error logger to open the Eclipse error log when it is asked to log an error.
- Added preferences switch "Appearance - Open Eclipse error log on error".
- Added appearance option "Format resource date and time", which controls, whether date and time values of spooled files or messages are formatted and displayed as strings. That can be useful in certain cases, but does not allow sorting by dates in tables.
- Added menu option to start source compare from the context menu of the Lpex editor (Source -> Compare...).
- Changed compare editor to honor the state of the view/edit button of the "iSphere Source File Search" view.

#### **Change Log 3.1.4.r** (11.01.2018)

- Fixed "StringIndexOutOfBoundsException" in Journal Explorer view, when opening an output file with entry specific data less than 200 bytes.
- Changed Journal Explorer to only parse journal entries, which are a result of a record level operation (BR, DL, DR, IL, PT, PX, UB, UP, and UR).

#### **Change Log 3.1.3.r** (02.12.2017)

- Fixed CCSID issue in iSphere Compare Editor, when saving a source member to the host.

#### **Change Log 3.1.2.r** (17.11.2017)

- Fixed CCSID issue in iSphere Compare Editor.

#### **Change Log 3.1.1.r** (06.11.2017)

- Enhanced the "export to filter" option of the search result views to extend existing filters.
- Fixed problem that the "Save" dialog did not display existing files when saving a spooled file.

#### **Change Log 3.1.0.r** (23.10.2017)

This version requires updating your iSphere library to v3.1.0.

- New Journal Explorer plug-in.



- Updated STRPREPRC to v1.15.

- Added options to indent/unindent source lines. (See help text of "iSphere Add-Remove Comments" feature for details.)
- Added option to retrieve the binder source from a service program.
- Added iSphere "Journal Explorer" plug-in. Refer to the iSphere help pages for details.
- Added button "Map Keys..." to TN5250j preferences page.
- Added menu option "Compare Source Members" to iSphere main menu.
- Added menu option "Compare Source Members" to the "members" section of the result view of the "iSphere Source File Search".
- Added tooltip showing the search options to search result tabs.
- Added context menu with option "Display Search Options" to search result tabs.
- Added option to reset the "Copy Members" dialog.
- Updated STRPREPRC utility to v1.15. Improved compatibility with CMOne command XCRTSQLOBJ. See iSphere help for details.
- Change iSphere compare dialog to load/store member values when called from the iSphere main menu (no members passed to compare dialog)
- Fixed bug in BUILD\_CRT that cleared the ISPHERE library, when the production and development library names were equal.
- Fixed problem that the date and time values were not preserved when copying members between two systems.
- Fixed incorrect dependency between the "iSphere Compare Filters Feature" and the "org.eclipse.platform" feature that blocked installing the compare filters feature in RDi 9.6.
- Renamed "Add-Remove Comments" plug-ins and feature to "Lpex Editor Extensions".

### **Change Log 3.0.6.r** (27.07.2017)

- Added the iSphere specific TN5250J keys to "KeyMapper" to fix the issue of the hidden fast cursor up/down keys.
- Updated iSphere help with instructions how to enable SSL sessions.



### **Change Log 3.0.5.r** (19.07.2017)

- Enabled the "Delete" key to delete spooled files of the iSphere Spooled Files subsystem. (Not yet for WDSCi)
- Fixed performance issue that has been introduced with bug fix of ticket #42.

### **Change Log 3.0.4.r** (14.07.2017)

- Fixed problem that non-source files have been searched when the "iSphere Source File Search" was started for a member filter.
- Fixed problem that the iSphere Source Compare editor did not check member locks when comparing members in edit mode.
- Fixed problem that the right source member was always editable when comparing source members with WDSCi.
- Added wait time between two connections, because some systems (e.g. PUB400.COM) seem to reject connections when they come too close after each other.

### **Change Log 3.0.3.r** (16.06.2017)

- Fixed "org.eclipse.swt.SWTException: Widget is disposed" error in WDSCi, when trying to reopen a previously closed 5250 view.

### **Change Log 3.0.2.r** (15.06.2017)

This version does not necessarily require updating your iSphere library unless you need the English user interface of the STRPREPRC utility.

- Fixed broken "save" action of WDSCi compare/merge editor.
- Fixed broken STRPREPRC installer.

### **Change Log 3.0.0.r** (02.04.2017)

This version requires updating your iSphere library to v3.0.0

- Added "iSphere Add-Remove Comments" feature mainly intended to be used with WDSCi 7.0. (See help text for details.)
- Added new feature "iSphere Job Log Explorer".
- Added option "Match message ID" to the iSphere Message File Search.
- Added option "Send message" to the iSphere Data Queue Monitor.



- Added preference option to specify how to open spooled files that have been downloaded to the PC. Options: Viewer|Editor. (iSphere Spooled Files → Conversion)
- Added button to show/hide replacement variables. (iSphere Spooled Files → Conversion)
- Added text decoration of source files of i Projects.
- Added option "Include message id" to the iSphere Message File Search. (Requires updating the library.)
- Added special search mode "Search for specific message IDs" to the iSphere Message File Search. Please refer to the iSphere help for details. (Requires updating the library.)
- Added existence check for the message queue, when the "iSphere Message Monitor" starts.
- Added scrollbars to the "IBM i Message" dialog box of the "iSphere Message Monitor".
- Added menu option "Send Message" to the context menu of the "iSphere Message Subsystem".
- Added preferences page "Message Monitor".
- Added option to the global "iSphere Source File Search" dialog to select a RSE filter that is used to specify the items that are used for the search.
- Added option to the global "iSphere Message File Search" dialog to select a RSE filter that is used to specify the items that are used for the search.
- Added option to use a SSL connection for the 5250 emulator.
- Changed STRPREPRC plug-in to properly remove user actions on shutdown.
- Fixed problem that "Do not ask me again" messages could not be disabled.
- Fixed problem, that the filter string was not reset, when restoring the attributes of the "iSphere Message Monitor".
- Fixed problem that the "User Space Editor" did not properly save the data to the user space.

### **Change Log 2.9.4** (29.01.2017)

- Fixed CCSID problem when copying members between connections. (Ticket #32)



### **Change Log 2.9.3** (26.10.2016)

- Fixed problem that 5250 key bindings are applied to RSE items with RDi 9.5.
- Disabled Eclipse F1 key (Help) for 5250 vies and editors.
- Updated STRPREPRC utility to report errors in the header tags to RDi.
- Fixed problem, that certain key strokes followed by the [tab] key made the 5250 view to lose focus.

### **Change Log 2.9.2** (07.10.2016)

- Changed spooled file editor back to an editor instead of being a browser, because the search option is more comfortable. The editor is read-only, now.
- Fixed problem, that messages, retrieved from a data queue, were not correctly copied to the clipboard.
- Added option to specify the maximum number of messages to retrieve from a data queue.
- Added option to specify a replacement character that is used to replace non-displayable characters when retrieving messages from a data queue.
- Added warning message for data queue messages exceeding the 259 table column boundary of MS Windows.
- Added additional demo/test data queues to the iSphere library.
- Added option to use the font size of the spooled file viewer (Colors and Fonts: Basic -> Text Font) to compute the page size when converting a spooled file to PDF.
- Fixed problems when adding a STRPREPRC header to a source member.

### **Change Log 2.9.1** (20.09.2016)

- Fixed IllegalArgumentException when producing the spooled file description for a spooled file containing dollar (\$) characters in the name.

### **Change Log 2.9.0** (16.09.2016)

This version requires updating your iSphere library to v2.9.0





**Notice:** This version requires re-enabling the iSphere RSE object decorator.

**Notice:** We are sorry to let you know that we no longer have an option to create the iSphere library for V5R4. Beta version 2.9.0.b003 is the last V5R4 library. All newer versions will be compiled for V6R1. Please refer to the iSphere help to read how to install the library from an i Project.

- Added filter option "spooled file name" to the iSphere spooled file subsystem.
- Added filter options "starting date/time" and "ending date/time" to the iSphere spooled file subsystem.
- Added options for changing the text (displayed next to the name of the spooled file) to the context menu of the iSphere Spooled File subsystem.
- Added options group "auto-refresh delay" to the iSphere "Appearance" preferences page. By default that delays auto-refresh when filtering large message files.
- Added option to "pin" the 5250 view.
- Added option to disable/enable 5250 multi session views.
- Added option to group 5250 sessions by connections or to open individual views for each session.
- Added option "Copy Members to" to source file objects and member filters.
- Changed option "Copy Members to..." to copy members between different connections (systems).
- Fixed "Copy Members to" to copy member between source files with different source line lengths.
- Changed iSphere Compare Editor to ignore members that have been already opened, when started in "Browse" mode. Removed message "Member is already open in an editor".
- Changed object decorator to optionally display the library and file name of file members.
- Fixed class "SpooledFile" to use the time formatter specified in the preferences.
- Disabled "Delete Session" option (RSE context menu), when one or more 5250 sessions are still connected.



- Fixed problem that 5250 sessions were not disconnected when closing a tab of the sessions view.
- Now displaying an error message, when a 5250 session configuration file could not be found.

### **Change Log 2.8.1** (12.04.2016)

This version does not necessarily require updating your iSphere library unless you want to get the update of the STRPREPRC command.

- Updated STRPREPRC utility to v1.9
- New, more intuitive "IMPORTANT" tags of the STRPREPRC utility
- Added new iSphere STRPREPRC plug-in.
- Added option to filter messages by message ID in the iSphere message file editor.
- Now messages can be removed from a monitored message queue from the RSE tree.
- Changed message filter to use wildcard characters.
- Changed the TN5250J view to restore the previous state of the key filter on part activation.
- Changed "Open spooled file as text" to display the spooled file with a browser instead of an editor to work the same as with HTML and PDF.
- Updated the STRPREPRC utility to v1.9.1.
- Fixed problems when restarting a message monitor.
- Fixed iSphere notifier to follow HTTP redirects.
- Fixed various bugs with Copy & Paste for the iSphere data space editors.
- Fixed wrong "member not found" message when comparing multiple members against another library or source file.

### **Change Log 2.8.0** (31.01.2016)

This version does not necessarily require updating your iSphere library unless you want to get the following fixes and enhancements:

- iSphere handler to start the LPEX editor from an iSphere 5250 session



- Removed hard-links between service programs
- Bugfix in STRPREPRC utility

- Added iSphere 5250 emulator (based on TN5250J).
- Added iSphere specific connection properties.
- Added iSphere User Space editor.
- Added "Copy members" option to the iSphere Source File Search result view.
- Added option for downloading spooled files asynchronously.
- Added options "Page size" and "Adjust font size" for spooled file transformation to PDF.
- Added filter properties to the message monitor.
- Added warning message "iSphere Compare Filters for RDi 9.5+ are not installed" to the options window of the iSphere Compare/Merge editor.
- Added "OK to All" button to the "iSeries Message" popup window of the message monitor.
- Added option to display all pending informational messages in a list, when the message monitor starts.
- Added option to specify a suggested file name, when saving a spooled file to the local PC.
- Added option "Delete LPEX task tags" to the context menu of the LPEX tasks to remove all tasks associated to the selected resource.
- Added option "Copy Member(s) to" to the context menu of IBM i source members.
- Added handler to set a service entry point (SEP) from an iSphere 5250 session.
- Moved status line items of data area and compare message file editors to standard Eclipse status line.
- Fixed problem of lost change dates of source members saved from the iSphere Compare/Merge editor. (Only for RDi 9.5+, requires installing the iSphere Compare Filters plug-in.)
- Fixed problem of missing German "Umlaute" when transforming spooled files.

### **Change Log 2.7.0** (31.10.2015)

This version requires updating your iSphere library to v2.7.0



- Added the iSphere Messages Subsystem.
- Added option "regular expression" to source file search.
- Added checkbox to select whether the message help text is displayed as formatted text when displaying a message description in the iSphere Message File Editor.
- Added "Appearance" preferences page to specify date and time formats different from the locale RDi has been started with.
- Now the version of the iSphere library is displayed on the "Library" preferences page.
- Updated utility STRPREPRC to latest version.
- Changed message description editor to allow resizing of message help text and message field formats areas.
- Changed RSE filter manager to automatically add file name extensions when selecting a filter repository.
- Fixed NPE when the RSE plug-in is not installed.
- Fixed problem that negative values could not be entered when editing data spaces.
- Fixed problem that errors and warnings were not removed from the data space monitor view after the problem had been fixed.
- Fixed problem of empty messages boxes of the data space editor and monitor.
- Renamed save file ISPHERE to ISPHERE.SAVF to ease Drag & Drop from the RSE tree, when installing the library by hand.
- Fixed filter manager to preserve the order of the filter strings of a filter.
- Fixed problem that underscore characters were lost when opening or saving a spooled file.
- Fixed invalid time values when working with spooled files.

### **Change Log 2.6.2** (08.07.2015)

This version requires updating your iSphere library to v2.6.2 in order to fix the "iSphere Source File Search" bug.

- Fixed problem that "iSphere Source File Search" did not return a result when the search arguments were all set to "contains-not".
- Fixed problem that spooled file transformation cannot be used with V5R3. Now using default conversion instead.



## **Change Log 2.6.1** (16.06.2015)

- Fixed problem that exporting all RSE filters (option "Single filter pool" not checked) did not work.

## **Change Log 2.6.0** (06.06.2015)

This version requires updating your iSphere library to v2.6.0

This version requires V5R4 for restoring the save file.

- Changed build process to produce a V5R4 save file.
- Added iSphere Data Queue Monitor view.
- Added iSphere Message File Compare editor.
- Added option to delete existing objects to the iSphere library uploader.
- Added option to the result view of the iSphere Source File Search to specify the mode (\*EDIT/\*BROWSE) the Lpex editor is started for when double-clicking a source member.
- Added popup menu to the statements table of the iSphere Source File Search view.
- Added view menu to the iSphere Source File Search view with options for loading and saving search results.
- Added options to the preferences page and the "iSphere Source File Search" and "iSphere Message File Search" views for automatically saving search results when the view is closed.
- Added preferences page for label decorations of the RSE tree.
- Added key bindings (Ctrl+I,M) and (Ctrl+I,S) for the iSphere source file and message file dialogs.
- Added commands to assign key bindings to: "Data Space Editor Designer", "RSE Filter Management", "Transfer iSphere Library", "Open message file search dialog" and "Open source file search dialog".
- Added menu option "Help" to the iSphere menu.
- Added "Close" button the iSphere Source File Search and Message File Search result views.
- Added option "Copy selected" to the context menu of the iSphere search result views (source file members/message files).
- Added keyboard shortcuts CTRL-A (select all) and CTRL-C (copy) and a context menu to the iSphere Transfer Library dialog to copy the displayed messages to the clipboard for easier error reporting.



- Added i Project label decorator to show the object descriptions in an i Project.
- Added dialog for selecting the filter pool when exporting a search result to a member or object filter.
- Changed the iSphere Compare feature, so that more than two members can be selected for easily comparing members with the same name in different source files.
- Now the iSphere search dialogs show up in the Eclipse "Search" menu.
- Fixed bug, that the decimal data area editor did not allow negative values
- Fixed double print problem when converting a spooled file to TEXT, HTML or PDF.
- Fixed minor page break problem when converting a spooled file to HTML.
- Fixed bug that the character preceding a form feed (FF) was not converted to text, html and pdf when saving or displaying a spooled file.
- Fixed formatting problem in message preview view.
- Fixed problem that the designer repository was not properly saved as UTF-8 stream.
- No dropping an object on a pinned view is rejected.
- Now dropping a data space object is rejected when auto-refresh is on.
- Now properly disabling auto-refresh options when there is no object in a view.
- Removed the need for the QGPL/ISPHERE data area. That data area can be safely deleted, now. We now use the QSZRTVPR API to get the release level of the operating system.
- Added Eclipse update sites:  
RDi: <http://isphere.sourceforge.net/eclipse/rdi8.0/>  
WDSCi: <http://isphere.sourceforge.net/eclipse/wdsci7.0/>
- Added Eclipse update sites for beta version:  
RDi: <http://isphere.sourceforge.net/beta-version/eclipse/rdi8.0/>  
WDSCi: <http://isphere.sourceforge.net/beta-version/eclipse/wdsci7.0/>

## Change Log 2.5.2 (11.02.2015)

- Added menu option "Transfer iSphere Library". Default values are: Library ISPHERE and FTP port number 21. The defaults can be changed on the "iSphere/Library" preference page.



- Improved error logging of FTP transfer.

### **Change Log 2.5.1** (10.02.2015)

(Internal test release)

- Fixed bug that substitution variables were not properly retrieved by the new IQMHRTVM API.
- Fixed NullPointerException in the iSphere Message File Editor, when using the DEL key to delete message descriptions.
- Fixed ClassCastException in AbstractViewManager when closing views that are not an instance of IPinableView.

### **Change Log 2.5.0** (08.02.2015)

This version requires updating your iSphere library to v2.5.0

- Added the iSphere Data Area Editor.
- Added the iSphere User Space Editor.
- Added view for monitoring data areas and user spaces.
- Added the iSphere Data Space Editor Designer for defining the structure of data areas and user spaces.
- Added Italian translation.
- Fixed bug that the message description was not updated in the table viewer on a double-click change event.
- Fixed bug, which dropped newly added messages from the list when the filter had been changed afterwards.
- The length of a message will be displayed in the iSphere Message File Editor.
- Extended the "Search for updates" feature to optionally search for beta versions.
- Now the iSphere Search Pages (CTRL+H) remember the last used connection.
- Changed structure of iSphere zip file so that it can be used as an archived update site.
- iSphere RSE Filter Management with special support for filter pools.
- Added option to remove items from the "iSphere Source File Search" and the "iSphere Message File Search" result views.
- Added option to invert the selection of the "iSphere Source File Search" and the "iSphere Message File Search" result views.



- Added iSphere "Retrieve Message (IQMHRTVM) API" to speed up loading large message files.

#### **Change Log 2.4.0** (12.09.2014)

- New Feature "iSphere RSE Filter Management" to import and export all or single filters.
- New Feature "Search for updates" to search for new iSphere versions when the IDE starts.
- Fixed bug in iSphere Compare/Merge Editor when using the flag "Ignore case". Whether or not this flag will be set, it will not be considered.
- Fixed bug in iSphere Source File Search. Flags "Include first level text" and "Include second level text" will be provided. In iSphere Source File Search this is wrong and has fixed.

#### **Change Log 2.3.0** (22.08.2014)

- Added option "include 1. level text" to "iSphere Message File Search Page".
- Added options "Include first level text" and "Include second level text" to "iSphere Message File Search" from the RSE tree.
- Now storing the current values of the "iSphere Message File Search" from the RSE tree.
- Enhanced the iSphere Message File Editor to use a multiline text field instead of a small combo box.
- Added options to the iSphere Message File Editor to filter messages by first and/or second level text.

#### **Change Log 2.2.0** (19.08.2014)

- Fix invalid length property when adding a message description with a \*VARY field.
- Fixed iSphere Compare Editor to ignore trailing spaces.
- Added port number for FTP transfer to preferences page.
- Enabled source member compare editor to work on two selected members.
- Added "iSphere Message File Search Page" (CTRL+H).
- Added "iSphere Source File Search Page" (CTRL+H).
- Enhanced "iSphere Message File Search" from the RSE tree to allow logical AND/OR combinations of multiple search strings.





- Enhanced "iSphere Source File Search" from the RSE tree to allow logical AND/OR combinations of multiple search strings.
- Added option to change attributes "Severity" and "Ccsid" of a message description.
- Added RSE object decorator to show the object descriptions in the RSE tree.
- Added view "iSphere Message Description" to show the formatted text of a message description of the RSE tree or "iSphere Message File Editor".

#### **Change Log 2.1.0** (10.04.2014)

- Changed build process to produce a V5R3 save file.
- Added Dutch translation.

#### **Change Log 2.0.0** (02.04.2014)

- In view "iSphere Source File Search", which contains the search results, the member description will now be displayed next to the member.
- If you export the search results displayed in view "iSphere Source File Search" to Excel, the output contains now also the column "Member Description".
- If you export the search results displayed in view "iSphere Message File Search" to Excel, the output contains now also the column "Message File Description".
- iSphere Source File Search can now run in background. When starting the search a progress window appears. Here you can press the button "Run in Background".
- iSphere Message File Search can now run in background. When starting the search a progress window appears. Here you can press the button "Run in Background".
- Deleting spooled files can now run in background. When starting the delete task, a progress window appears. Here you can press the button "Run in Background".
- When opening a member via the view "iSphere Source File Search" the LPEX editor will be used by default. When you now open a member with type DSPF, MNUDDS or PRTF iSphere asks you to use the LPEX editor, the screen designer or the report designer.
- The search results of iSphere Source File Search can now be exported to a member filter



- The search results of iSphere Message File Search can now be exported to an object filter
- By default spooled files are converted by spooled file transform and workstation customization objects, now.
- The binding directory editor has been changed to let you double-click a binding directory entry for editing.
- The binding directory entry and the message description editor have been changed to remember their size and position.
- Added new "iSphere Task Tags" plugin. Now you can add your own task tags to your source member, e.g. TODO, FIXME, etc.
- Now a list of spooled files based on spooled file filters can be shown in view "Remote System Details" by selecting "Show in Table" in the context menu of the spooled file filter.

#### **Change Log 1.4.2** (23.03.2014)

- When opening a spooled file it can occur that the contents of the spooled file will not be displayed. This error has fixed.

#### **Change Log 1.4.1**

- For the iSphere client the right iSphere library has to be installed on the host. If not, then a window should pop up with a specific message. This window doesn't pop up. This error has now fixed.

#### **Change Log 1.4.0**

- A new spooled file subsystem with the ability to open spooled files in Text, HTML and PDF format.
- The search results of iSphere Source File Search and iSphere Message File Search can be exported now to Excel.

#### **Change Log 1.3.0**

- A new extremely fast search feature for searching message files.

#### **Change Log 1.2.2**

- When comparing two members with the Compare/Merge Editor and trying to save the left member after changing it an error occurs in RDi 8.5 and RDi 9.0 that the save operation has failed. This has fixed.

#### **Change Log 1.2.0**

- A new extremely fast search feature for searching source files.



### **Change Log 1.1.1**

- Making the Binding Directory Editor work for servers which are not running at least V6R1M0.

### **Change Log 1.1.0**

- For the Message File Editor you now can specify to search by the filter case sensitive or not.
- A new Binding Directory Editor for editing binding directory entries within a binding directory is provided.



## iSphere On The Internet

Homepage	<a href="http://isphere.sourceforge.net/index.php">http://isphere.sourceforge.net/index.php</a>
SourceForge	<a href="https://sourceforge.net/projects/isphere/">https://sourceforge.net/projects/isphere/</a>
Help	<a href="http://isphere.sourceforge.net/help/">http://isphere.sourceforge.net/help/</a>
WDSCi 7.0 Update Site	<a href="http://isphere.sourceforge.net/eclipse/wdsci7.0/">http://isphere.sourceforge.net/eclipse/wdsci7.0/</a>
RDt 9.5.1.3+ Update Site	<a href="http://isphere.sourceforge.net/eclipse/rdt8.0/">http://isphere.sourceforge.net/eclipse/rdt8.0/</a>
Help Beta	<a href="http://isphere.sourceforge.net/beta-version/help/">http://isphere.sourceforge.net/beta-version/help/</a>
WDSCi 7.0 Beta Update Site	<a href="http://isphere.sourceforge.net/beta-version/eclipse/wdsci7.0/">http://isphere.sourceforge.net/beta-version/eclipse/wdsci7.0/</a>
RDt 8.0 Beta Update Site	<a href="http://isphere.sourceforge.net/beta-version/eclipse/rdt8.0/">http://isphere.sourceforge.net/beta-version/eclipse/rdt8.0/</a>