Reuse Library Framework
Unix Binary Release Version 4.1
Version Description Document

Informal Technical Data

STARS-UC-05156/016/00
March 1993
Best Available Copy
VERSION DESCRIPTION DOCUMENT

For
SOFTWARE TECHNOLOGY FOR ADAPTABLE, RELIABLE SYSTEMS
(STARS)

Reuse Library Framework
UNIX Binary Release Version 4.1
SunOS Implementation

STARS-UC-05156/016/00
March 1993

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VERSION DESCRIPTION DOCUMENT
Reuse Library Framework
UNIX Binary Release Version 4.1
SunOS Implementation

Approvals:

Task Manager Richard E. Creps

(Signatures on File)
VERSION DESCRIPTION DOCUMENT
Reuse Library Framework
UNIX Binary Release Version 4.1
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The Reuse Library Framework (RLF) is an Ada system designed and implemented to support the production and installation of domain-specific software library systems. The RLF is based on two fundamental subsystems: AdaKNET (Ada Knowledge NETwork) and AdaTAU (TAU is an acronym for Think Ask Update) which are knowledge representation and inferencing systems derived from systems previously developed by Unisys in Prolog. These subsystems are supported by an integrating framework to allow them to be used in combination with each other. AdaKNET and AdaTAU are also equipped with interface specification languages (Library Model Definition Language (LMDL) and Rule Base Definition Language (RBDL) respectively) that are used to initialize domain models that describe the library (or application) domain. In addition to the support of library systems, the RLF was used to develop a prototype Ada unit test assistant during the STARS Foundations period and has been applied to the representation of software and reuse process models which are themselves machine processable.
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The distribution is organized as follows:

Libraries
Libraries/Taustuff
Libraries/Text
Libraries/Text/demo_animals
Libraries/Text/sort_and_search
docs
docs/manuals
docs/tutorials
bin
bin/bitmaps
man
man/cat1
man/man1
models
models/ada_x
models/ada_x/Text
models/ada_x/Text/Widgets
models/ada_x/Text/Xlib
models/ada_x/Text/Xmu
models/ada_x/Text/Xt
models/animals
models/animals/Text
models/hsw
models/hsw/Text
models/common_data_model
models/common_data_model/Text
models/demo_actions
models/demo_actions/Text
models/demo_actions/Text/sounds
models/demo_actions/Text/xbm
models/window_manager
models/window_manager/Text
models/software_technology
models/software_technology/Text
models/sort_and_search
models/sort_and_search/Text

A complete listing of the contents of this distribution is included in Appendix A.

3.1.1 Directory: docs

The two subdirectories of docs contain the RLF manuals and tutorials currently delivered in this RLF release.

3.1.1.1 Subdirectory: manuals
3.1.1.1 **RLF Administrator's Manual.** The *RLF Administrator's Manual* provides the information necessary for an RLF reuse library administrator to install, modify, and maintain a reuse library hosted on RLF.

3.1.1.2 **RLF Installation Guide.** The *RLF Installation Guide* informs the user how to install, build and start up the STARS RLF and its user interface applications, namely the RLF Graphical Browser and the RLF Library Manager.

3.1.1.3 **RLF Modeler's Manual.** The *RLF Modeler's Manual* provides the information necessary for an RLF reuse library domain modeler to model, encode, and build an RLF reuse library specification and the library itself. It also defines how to model, encode, and install the RLF library advice modules called "inferencers."

3.1.1.4 **RLF User's Manual.** The *RLF User's Manual* describes the use and basic customization of the Graphical Browser application. The reader is not expected to be a programmer, but familiarity with the UNIX C shell, and basic X Window System operations using the Motif Window Manager (mwm) or some other window manager is assumed. Some explanation of RLF concepts is provided, but only at an elementary level.

3.1.1.2 **Subdirectory: tutorials** This directory contains three PostScript file representations of the contents of three RLF training packages that will be used as hand-out material in support of the delivery of RLF training sessions. While the documents can be read on their own, and are formatted in an article-style format, they are oriented more for a presentation of the material by a speaker using transparencies. The tutorials are also designed to be supplemented by in-class demonstrations of RLF software and the conducting and monitoring of both in-class and out-of-class student exercises using the software.

3.1.1.2.1 **RLF User Tutorial.** The *RLF User Tutorial* presents a survey of the usage of the RLF Graphical Browser application which will enable new RLF users to quickly learn the user interface and the various RLF features which it presents.

3.1.1.2.2 **RLF Administrator Tutorial.** The *RLF Administrator Tutorial* provides an introduction to the installation and maintenance of RLF library systems. This tutorial assumes that the user is familiar with the basic RLF interface (for example, as presented in the *RLF User Tutorial*). A survey of the Library Manager application is also presented in the tutorial.
3.1.2.3 RLF Modeler Tutorial. The RLF Modeler Tutorial provides a thorough presentation of RLF modeling capabilities so that attendees can begin the construction of RLF models for application domains of interest to them. Familiarity with the material covered in the RLF User Tutorial is assumed. Modeling techniques are discussed and the use of the RLF model specification languages is taught through the use of a detailed example.

3.1.2 Directory: models

Sample libraries and their build scripts are found in the models directory, which contains the ada.x, animals, asw, common.data.model, demo.actions, window.manager, software.technology and sort.and.search subdirectories. The contents of these subdirectories are described in the following sections. This directory also contains the file library.model.template.lmdl, which contains an example LMDL specification for a library action subtree.

3.1.2.1 Subdirectory: models/ada.x ...contains the LMDL and RBDL specifications and associated text files for a sample RLF library describing the STARS Ada/Xt system. The specification files must be processed by the LMDL and RBDL translators to build the ada.x knowledge base.

3.1.2.2 Subdirectory: models/animals ...contains the LMDL specification and associated text files for a sample knowledge base describing a simple animals taxonomy. The specification files must be processed by the LMDL translator to build the animals knowledge base.

3.1.2.3 Subdirectory: models/asw ...contains the LMDL specification and associated text files for a sample RLF library addressing the anti-submarine warfare (ASW) domain. The specification files must be processed by the LMDL translator to build the asw library.

3.1.2.4 Subdirectory: models/common.data.model ...contains the LMDL specification and associated text files for a sample RLF library illustrating how the Common Data Model defined in the STARS ALOAF document can be expressed using RLF. The specification files must be processed by the LMDL translator to build the Common Data Model library.

3.1.2.5 Subdirectory: models/demo.actions ...contains the LMDL specification and associated text files for a sample RLF library addressing the modeling of LMDL actions. The sound actions contained in this library only work on a Sun workstation that has a sound board. The specification files must be processed by the LMDL translator to build the Demo Actions library.
3.1.2.6 Subdirectory: models/window-manager ... contains the LMDL and RBDL specifications and associated text files for a sample RLF library addressing the SEI's FODA example on move operations in the window manager domain. The specification files must be processed by the LMDL and RBDL translators to build the Move Domain library.

3.1.2.7 Subdirectory: models/software-technology ... contains the LMDL specification and associated text files for a sample RLF library providing both a functional and product-oriented view into the domain and defining numerous attributes for describing software engineering components. The specification files must be processed by the LMDL translator to build the Software Technology library.

3.1.2.8 Subdirectory: models/sort-and-search ... contains the LMDL and RBDL specifications and associated text files for a sample RLF library describing a sort and search algorithms domain. The specification files must be processed by the LMDL and RBDL translators to build the Sort and Search library.

3.1.3 Directory: Libraries

The Libraries directory contains two prebuilt RLF version 4.1 libraries. The subdirectories Taustuff, Text, Text/demo-action, and Text/sort-and-search contain text and AdaTAU information for the two libraries.

3.1.4 Directory: unix/bin

The unix/bin directory contains the binaries and support files used to execute the UNIX Sun-4 version of the RLF. This directory contains the application resource file RLF.Browser, the Graphical.Browser start-up script RLF_GB, a sample RLF start-up file .rlfrc, and the associated bitmaps for the RLF.Browser file in the subdirectory bitmaps. These items are used with the Graphical.Browser application, with the .rlfrc also being used for the other RLF applications.

Included in the RLF 4.1 release is a Sndl.to.Lmdl translator for the conversion of the old SNDL syntax to the LMDL syntax for RLF library models.

This directory also contains public-domain executables that are used by the sample models included with this release, which are not part of the standard SunOS or X releases. The executables included are less and xloadimage. In addition, a script called view.stp.csh is provided as an example of an RLF action to view a Software Through Pictures (STP) diagram using STP.

The start-up script RLF_GB and the sample start-up file .rlfrc are included in this document in Appendix B.
3.1.4.1 Subdirectory: bin/bitmaps ...contains the bitmaps used in the execution of the GraphicalBrowser.

△ 3.2 Changes Installed for Version 4.1

The largest changes in RLF 4.1 from RLF 4.0 is the support for the operation of RLF on top of PCTE in addition to UNIX. However, these changes do not affect the UNIX Binary Release. Other changes include documentation updates (including UNIX-styled man pages) and LibraryManager application refinement.

3.2.1 LibraryManager Application Refinement

The LibraryManager application introduced in RLF 4.0 has been refined in version 4.1 to replace some dynamic menus with scrollable list widgets and to desensitize button choices which would lead to the pop-up of an empty menu. A limit on the number of libraries the LibraryManager could process was also removed.

3.2.2 RLF Graphical Browser

No significant changes were made to the UNIX version of the GraphicalBrowser.

3.2.3 RLF Sample Libraries

The old RLF model move_domain has been renamed to window managers.

3.2.4 Installation Script Insertion

An installation script is now provided for the binary release of the RLF. This script installs the RLF_Browser resource file and its associated bitmaps in an appropriate directory.

The following files were added or changed to support automated installation:

   InstallRLF.bin
   InstallRLF.csh
   InstallRLF.var

3.3 Adaptation Data

3.3.1 Operating Environment

   Sun workstation with a minimum of 8 MB of main memory
3.3.2 Development Environment

Sun-4 workstations with a minimum of 8 MB of main memory
SunOS Version 4.1 or later
SERC Ada/Motif, Version 1.0 for Sun Ada version 1.1
Reusable Graphical Browser, Version 1.0 (Graphical_Browser only)
X Window System, Version 11, Release 4
OSF/Motif version 1.1
Sun Ada Version 1.1

3.4 Interface Compatibility

3.4.1 Previously Built RLF Libraries

The 4.1 version of the RLF is compatible with version 4.0 RLF libraries, but is incompatible with pre-4.0 libraries. Post-4.0 versions of the RLF cannot accept RLF libraries built with pre-4.0 versions of RLF. LMDL now supersedes SNDL as the library modeling language.

3.4.2 Libraries Built with Different Compilers

Data representations are different between Ada compilers. As a result, RLF libraries created by old versions of the RLF built with other compilers are not compatible with libraries created by a version of the RLF built with the Sun Ada compiler.

3.5 Installation and Usage Instructions

All the executables for the RLF are located in the unix/bin directory. The file InstallRLF.bin is an executable UNIX C shell script, which can be used to install the UNIX binary version of the RLF. The complete installation and verification procedures are located in the RLF Installation Guide.

NOTE: Appendix C contains a listing of the UNIX installation scripts provided in this distribution.
3.5.1 Invoking RLF Applications

Once the RLF executables have been installed, any of the executables can be run by invoking them by name. Information about invoking the RLF Graphical.Browser application is located in the RLF User's Manual. Additional information about RLF applications and their uses may be found in the RLF Modeler's Manual and the RLF Administrator's Manual.

3.6 Potential Problems

3.6.1 Graphical.Browser Known Problems

During the execution of the Graphical.Browser a few infrequent errors may occur. The errors listed here are attributed to bugs in Motif version 1.1. It is expected that future versions of Motif will eliminate these errors.

The following is the list of known errors and their descriptions:

1. **Warning**: XtRemoveGrab asked to remove a widget not on the list — This text message, which appears in the originating window, often occurs when a window in the Graphical.Browser is exited or canceled.

2. **Menu bar menu relocating to upper left hand corner of the screen** — This event can happen when the Node History menu option, which is in the Navigate View menu bar option, is selected. As the pointer passes over the menu entry the cascading menu may be placed in the upper left hand corner of the screen.

3. **Node menu creation error** — This display alert box randomly appears when a node is selected. If the node is selected again the error usually does not occur. Reselect the node and the correct menu should appear.

3.7 Future Enhancements

For the basic RLF capabilities, future enhancements may include:

1. Additional built-in Ada procedure actions.

2. Performance enhancements for the LMDL translator.


In the area of the Library.Manager, future enhancements may include:

1. The ability to manipulate several directories containing library model representations.
2. LMDL features to dump and display LMDL for library model entities.

3. Finer control of attribute and inferencer file representations and library representation permissions.

4. Fully implemented import and export capability for assets.

5. Extensive model editing capabilities.

In the area of the Graphical Browser, future enhancements may include:

1. Adding more sophisticated query capabilities to the simple pattern matcher of the Search function.

2. Adding a control panel to modify start-up variables, such as the aggregation view depth, after the application has started.

3. Improved view management, involving such capabilities as dynamic graph relayout, zooming, and more sophisticated filtering flexibility.

4 USER FEEDBACK

This version of RLF is considered an “alpha” release. One of the primary purposes of the release is to encourage experimentation with the software and to solicit feedback from the Ada user community to assist us in improving the product and advancing software reuse. Thus, we would greatly appreciate your comments, suggestions, and criticisms. Although we do not guarantee the applicability of the RLF to particular application needs at this time, we are interested in hearing about successes as well as failures.

We have included three forms in this release which we hope you will use to provide us with needed feedback:

- A registration form (in file Registration.Form) that we would like you to fill out and return to us so that we can keep track of our user base and can notify you of product upgrades and other important product news.

- A Program Problem Report (in file Problem.Report) that you should use to identify any specific problems you encounter in installing and using the software.

- A New Feature Request (in file Feature.Request) that you should use to describe specific enhancements that you believe should be incorporated into the product.

We have established three electronic mailing lists to facilitate RLF usage and feedback:
• rlf@stars.rosslyn.paramax.com
  This list provides a public forum for discussing RLF issues. If you ask to be included in this list, you will receive all messages sent to the list and may respond accordingly.

• rlf-request@stars.rosslyn.paramax.com
  You should send your completed registration form to this address, as well as requests to be added to or deleted from the rlf list (NOTE: Do NOT send add or delete requests to the rlf list itself).

• rlf-bugs@stars.rosslyn.paramax.com
  You should send completed Program Problem Reports and New Feature Requests to this address.

If you do not have electronic mail access or wish to send us printed information, please send mail to:

RLF
Paramax STARS Center
12010 Sunrise Valley Drive
Reston, VA 22091

5 NOTES

Both AdaTAU and AdaKNET were designed for independent use by applications requiring knowledge representation and inferencing capabilities. The specification languages provided for these subsystems foster their transfer to diverse application areas and their programmatic interfaces enable their integration into general Ada applications. Additional applications will help determine system shortcomings and lead to their correction.
A Appendix: Inventory of Contents

NOTE: "*" identifies executables; "/" identifies directories

- Contents.tty
- Install_RLF_bin*
- Libraries/
  - README
  - VDDrlf_unix_bin.ps
  - VDDrlf_unix_bin.tty
  - docs/
  - man/
  - models/
  - unix/

Libraries:
- 2097153.HYB
- 3145729.HYB

ALL*
- AdaNET_States*
- NET2097154MI_GEN_RESTR
- NET2097154MI_PAR_RESTR
- NET2097154SUBROLE
- NET2097154MI_GEN_RESTR
- NET2097154MI_PAR_RESTR
- NET2097154SUBROLE
- NET2097155ACTION
- NET2097155ACTION_ATTRS
- NET2097155ACT_ATTR_TBL
- NET2097155GC
- NET2097155GEN_ACTOWN_TBL
- NET2097155GEN_OWNER_TBL
- NET2097155INDIV
- NET2097155INDIV_TBL
- NET2097155IND_OWNER_TBL
- NET2097155IND_SUBROLE
- NET2097155IND_OWN_TBL
- NET2097155OVERRIDE
- NET2097155SATIS_TBL
- NET2097155SPEC_TBL
- NET2097155SUBROLE_TBL
- NET2097155VAL_RESTR_TBL
- NET3146731ACTION
- NET3146731ACTION_ATTRS
- NET3146733ACT_ATTR_TBL
- NET3146733GC
- NET3146733GEN_ACTOWNER_TBL
- NET3146733GEN_OWNER_TBL
- NET3146733INDIV
- NET3146733INDIV_TBL
- NET3146733IND_OWNER_TBL
- NET3146733IND_OWN_TBL
- NET3146733OVERRIDE
- NET3146733SUBROLE_TBL

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 Libraries/Taustuff:
10485885.A
10485885.C
10485885.CF
10485885.CL
10485885.F
10485885.FL
10485885.FPL
10485885.I
10485885.IF
10485885.IL
10485885.Q
10485885.QF
10485885.QL
10485885.S
10485885.SL
10485885.U
10485885.UR
10485885.URF
11534344.A
11534344.C
11534344.CF
11534344.CL
11534344.F
11534344.FL
11534344.FPL
11534344.I
11534344.IF
11534344.IL
11534344.Q
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11534344.QL
11534344.S
11534344.SL
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11534344.UL
11534344.UR
11534344.URF
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12583025.C
12583025.CF
12583025.CL
12583025.F
12583025.FL
12583025.FPL
12583025.I
12583025.IF
12583025.IL
12583025.Q
12583025.QF
12583025.QL
12583025.S
12583025.SL
12583025.U
12583025.UL
12583025.UR
12583025.URF
13631496.A
13631496.C
13631496.CF
13631496.CL
13631496.Q
13631496.QF
13631496.QL
13631496.S
13631496.SL
13631496.U
13631496.UL
13631496.UR
13631496.URF
14680072.A
14680072.C
14680072.CF
14680072.CL
14680072.F
14680072.FL
14680072.FPL
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14680072.SL
14680072.U
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14680072.UR
14680072.URF
15728682.A
15728682.C
9437301.QL
9437301.S
9437301.SL
9437301.U
9437301.UL
9437301.UR
9437301.URF
Inf_UID_Mapping

Libraries/Text:
1048659
1048660
1048661
2097235
2097236
2097237
3145842
3145843
3145844
3145845
3145846
3145847
3145848
3145849
3145850
3145851
3145852
3145853
animals/
sort_and_search/

Libraries/Text/animals:
del
dick
snoopy
tori
tim
xterm_pager.tool*

Libraries/Text/sort_and_search:
exchange_sort_desc
heap_spec_.a
insertion_sort_desc
quick_sort_.a
selection_sort_desc
shaker_sort_.a
xterm_less.tool*
xterm_less_int.tool*

docs:
manuals/
tutorials/
docs/manuals:
AdministratorsManual.ps
AdministratorsManual.tty
InstallationGuide_Binary.ps
InstallationGuide_Binary.tty
InstallationGuide_Source.ps
InstallationGuide_Source.tty
ModelersManual.ps
ModelersManual.tty
UsersManual.ps
UsersManual.tty

docs/tutorials:
RLF_UU
admin-art.ps
admin-training.tex
model-art.ps
model-training.tex
user-art.ps
user-training.tex

man:
cat1/
man1/
whatis

man/cat1:
Graphical_Browser.1
Library_Manager.1
Lmdl.1
RLF.1
RLF_GB.1
Rbd1.1
rif.1

man/man1:
Graphical_Browser.1
Library_Manager.1
Lmdl.1
RLF.1
RLF_GB.1
Rbd1.1
rif.1

models:
ada_x/
animals/
aw/
common_data_model/
demo_actions/
library_model_template.lmdl
library_model_template.pcte.lmdl
software_technology/
sort_and_search/
window_manager/
models/ada_x:
  Build_Ada_X_Lib.csh
  Build_Ada_X_Lib.esh
  ada_x.lmdl
  ada_x_pcte.lmdl
  ada_xt_widget_package.rbdl
  ada_xt_widget_pkg.rbdl
  application_shell_widget_package.rbdl
  application_shell_widget_pkg.rbdl
  ascii_disk.rbdl
  ascii_disk_widget_package.rbdl
  ascii_disk_widget_pkg.rbdl
  ascii_string.rbdl
  ascii_string_widget_package.rbdl
  ascii_string_widget_pkg.rbdl
  bboard.rbdl
  bboard_widget_package.rbdl
  bboard_widget_pkg.rbdl
  command.rbdl
  command_widget_package.rbdl
  command_widget_pkg.rbdl
  composite_object_widget_package.rbdl
  composite_object_widget_pkg.rbdl
  composite_widget_package.rbdl
  composite_widget_pkg.rbdl
  constraint_widget_package.rbdl
  constraint_widget_pkg.rbdl
  core.rbdl
  core_widget_package.rbdl
  core_widget_pkg.rbdl
  dialog.rbdl
  dialog_widget_package.rbdl
  dialog_widget_pkg.rbdl
  form.rbdl
  form_widget_package.rbdl
  form_widget_pkg.rbdl
  label.rbdl
  label_widget_package.rbdl
  label_widget_pkg.rbdl
  manager.rbdl
  manager_widget_package.rbdl
  manager_widget_pkg.rbdl
  object_widget_package.rbdl
  object_widget_pkg.rbdl
  override_shell_widget_package.rbdl
  override_shell_widget_pkg.rbdl
  rect_object_widget_package.rbdl
  rect_object_widget_pkg.rbdl
  scroll.rbdl
  scroll_widget_package.rbdl
  scroll_widget_pkg.rbdl
  shell_widget_package.rbdl
  shell_widget_pkg.rbdl
simple.rbdl*
simple_widget_package.rbdl*
simple_widget_pkg.rbdl*
text.rbdl*
text_widget_package.rbdl*
text_widget_pkg.rbdl*
top_level_shell_widget_package.rbdl*
top_level_shell_widget_pkg.rbdl*
 transient_shell_widget_package.rbdl*
 transient_shell_widget_pkg.rbdl*
 vendor_shell_widget_package.rbdl*
 vendor_shell_widget_pkg.rbdl*
viewport.rbdl*
viewport_widget_package.rbdl*
viewport_widget_pkg.rbdl*
 window.rbdl*
 window_object_widget_package.rbdl*
 window_object_widget_pkg.rbdl*
wm_shell_widget_package.rbdl*
wm_shell_widget_pkg.rbdl*

models/animals:
Build_Animals_Lib.csh*
Build_Animals_Lib.esh*
 Text/
animals.mdl*
animals_pcte.mdl*

models/animals/Text:
del*
dick*
snoopy*
teri*
tim*
xterm_pager.tool*

models/asw:
Build_AswLib.csh*
Build_AswLib.esh*
 Text/
asw.mdl*
asw_pcte.mdl*

models/asw/Text:
AGP_CommandsSada*
AGP_InputBada*
AGP_InputSada*
AGP_Memory_ManagerSada*
AGP_OutputBada*
AGP_OutputSada*
 confirm_panel_package*
dialog_public_a*
dialog_publica*
dialog_publica2*
form_public_a*
form_publica*
viewport_public_a*
viewport_publica*
xterm_int.tool*
xterm_less.tool*

models/common_data_model:
Build_Common_Data_Model_Lib.csh*
Build_Common_Data_Model_Lib.esh*
Text/
common_data_model.lmdl*
common_data_model_pkte.lmdl*

models/common_data_model/Text:
astronomical_constants_s.a*
desc_astronomical_constants_s*
desc_math_interface_s modele*
desc_overpass*
desc_sat_comp_s*b*
desc_sat_io_b*
desc_sat_io_s*
desc_units_s*
math_interface_s b.a*
overpass.a*
restr_as_is_warranty*
sat_comp_s b.a*
sat_io_b.a*
sat_io_s.a*
units_s.a*

models/demo_actions:
Build_Demo_Actions_Lib.csh*
Build_Demo_Actions_Lib.esh*
Text/
demo_actions.lmdl*
demo_actions_pkte.lmdl*

models/demo_actions/Text:
buildings*
general_floorplan*
imprint.tool*
lp tool*
message*
my_floorplan*
play.tool*
sounds/
xbm/
xloadimage.tool*
xterm_less.tool*
xterm_vi.tool*

models/demo_actions/Text/sounds:
clint_eastwood.au*
March 1993

software_a_and_e*
software_technology_inc*
ssags.abs*
ssags.con*
ssags.tem*
vfl_history*

models/sort_and_search:
Build_SaS_Lib.csh*
Build_Sort_And_Search_Lib.csh*

Text/

algorithms.rbdl*
binary_ins.rbdl*
diminishing_inc.rbdl*
exchange_sorts.rbdl*
heapsort.rbdl*
insertion_sorts.rbdl*
internal_sorts.rbdl*
quicksort.rbdl*
selection_sorts.rbdl*
shakersort.rbdl*
shellsort.rbdl*
sort_algorithms.rbdl*
sort_and_search.lmdl*
sort_and_search_pcte.lmdl*
straight_ins.rbdl*
straight_sel.rbdl*

models/sort_and_search/Text:

exchange_sort_desc*
heap_spec_a*
insertion_sort_desc*
quick_sort_a*
selection_sort_desc*
shaker_sort_a*
xterm_less_tool*
xterm_less_int_tool*

models/window_manager:
Build_Window_Manager_Lib.csh*
Build_Window_Manager_Lib.csh*

Text/

move_domain.lmdl*
move_domain.rbdl
move_domain_pcte.lmdl
option_move_resize.rbdl
sunview_move.rbdl
x10_move.rbdl

models/window_manager/Text:
abort_move.att#
constrained_move.att#
expose_after_move.att#
moves_domain_concept.help#
moves_icon.att#
partially_off_screen.att#
tiled_layout.descr#
xterm_less_12.tool#
xterm_less_40.tool#

unix:
bin/

unix/bin:
.rlfrc
InstallRLF.csh#
InstallRLF.var
RLF_Browser
RLF_GB#
SndI_to_Lmdl#
bitmaps/
less*
viewstp.csh*
xloadimage*

unix/bin/bitmaps:
alert.xbm
alert_notice.xbm
bigquestion.xbm
box_AI_m.xbm
box_AI_rev_m.xbm
box_AI_rev_s.xbm
box_AI_rev_xs.xbm
box_AI_s.xbm
box_AI_xs.xbm
box_A_m.xbm
box_A_rev_m.xbm
box_A_rev_s.xbm
box_A_rev_xs.xbm
box_A_s.xbm
box_A_xs.xbm
box_I_m.xbm
box_I_rev_m.xbm
box_I_rev_s.xbm
box_I_rev_xs.xbm
box_I_s.xbm
box_Ixs.xbm
small_solid_square.xbm
small_solid_square_5x5.xbm
small_solid_square_rev.xbm
small_solid_square_rev_5x5.xbm
small_thick_circle.xbm
square_24x23.xbm
B Appendix: RLF Start-up Files

B.1 Sample RLF .rlfrc Start-up File

B.1.1 File: .rlfrc

```plaintext
-- I
-- Sample startup file for the Reuse Library Framework version 4.1

-- I
-- Library directory or name specifications
-- I
library directory : /path/Libraries
-- I
library : "Sort and Search Algorithms"

-- I
-- Parameters for the RLF Graphical Browser
-- I
topology : off
-- I
cardinality : off
-- I
layout offset : x : 20
-- I
layout offset : y : 5
-- I
history length : 50
-- I
view type : specialization
-- I
view depth : relationship : 2

-- I
-- AdaTau inferencing settings
-- I
advice : explanations : all
-- I
advice : automatic move : false

-- I
-- Bitmaps for nodes
-- I
--node bitmap : category : /path/box.m.xbm
--node bitmap : category : inferencer : /path/box_I.m.xbm
--node bitmap : category : actions : /path/box_A.m.xbm
--node bitmap : category : inferencer actions : /path/box_AI.m.xbm
--node bitmap : object : /path/cube.m.xbm
--node bitmap : object : inferencer : /path/cube_I.m.xbm
--node bitmap : object : actions : /path/cube_A.m.xbm
--node bitmap : object : inferencer actions : /path/cube_AI.m.xbm

-- I
-- Specification translator settings
-- I
translator: Lmdl: quiet: no
-- I
translator: Rbdl: quiet: no
```
B.2 RLF Graphical Browser Start-up Script

B.2.1 Script: RLF_GB

```csh
#!/bin/csh -f

#---------------------------------------------
# RLF_GB - Startup script for the RLF Graphical Browser, v.4.1
#---------------------------------------------
# 1.) Check that an X environment is present and running.
# 2.) Ensure the environment variables (RLF_LIBRARIES, DISPLAY, and possibly
# XAPPLRESDIR) are properly set.
# 3.) Invoke the Graphical Browser with all command line arguments specified
# by the user.
#
# If either an environment variable is not set or incorrectly set or X is not
# running, then abort the script and notify the user of the problem.
#---------------------------------------------

echo ""
echo " ==========="" 
echo " RLF v.4.1 Graphical Browser Startup Script " 
echo " ==========="" 
echo ""

# Determine if the DISPLAY environment variable is set;
# if it is set, then proceed;
# if it is not set, attempt to set it to a meaningful value.
#---------------------------------------------

if ( ! $?DISPLAY ) then
    set host-name = 'hostname'
    setenv DISPLAY ${host-name}:0
endif


echo ""
echo " Ensure the DISPLAY environment variable is" 
echo " set correctly; the correct format is <host_name>:0,"
echo " where the host_name indicates what CPU your X server "
echo " is running on."
echo ""
echo "Currently, DISPLAY = "
echo "$DISPLAY"
echo ""
set local_host = 'echo $DISPLAY | sed 's/.*$//''
echo "This means the graphical output will be sent to host: "
echo "$local_host"
echo ""
```

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# Query the X resource database to determine whether $DISPLAY is valid.
#---------------------------------------------
xrdb -query > & /dev/null
#---------------------------------------------

# The DISPLAY environment variable was set incorrectly
# if the status is not 0. Notify the user.
#---------------------------------------------
if ( ! $status == 0 ) then
  unsetenv DISPLAY
  echo ""
  echo " There's a problem with your X server."
  echo " There's probably no X server running on host 'hostname'."
  echo " Determine where your X server is running,"
  echo " then issue the following command: "
  echo ""
  echo " setenv DISPLAY <hostname>:0 "
  echo ""
  echo " where <hostname> is the host where your "
  echo " X server is running."
  echo ""
endif

# If RLFLIBRARIES environment variable not already set, or
# incorrectly set exit the script and notify the user.
#---------------------------------------------
if ( ! $?RLFLIBRARIES ) then
  # Check the command line options to see if the user
  # specified a library
  #
  if ( $#argv >= 2 ) then
    index = 1
    while ($#argv >= $index + 1)
      index2 = $index + 1
      if ( $argv[$index] == "-I" ) then
        if ( ( -d $argv[$index2]/Text ) & &
             ( -d $argv[$index2]/tastuff ) ) then
          echo "Library directory to be used is $argv[$index2]"
          echo ""
          goto Library_Found
        else
          echo ""
          echo "FATAL ERROR:"
          echo " The RLF library ($argv[$index2]) you"
          echo " indicated from the command line is invalid."
          echo " You must set it to a proper RLF library location."
          echo ""
      endif
    endwhile
  else
    echo ""
    echo "FATAL ERROR:"
    echo " The RLF library ($argv[$index2]) you"
    echo " indicated from the command line is invalid."
    echo " You must set it to a proper RLF library location."
    echo ""
exit(-1)

echo ""

echo "FATAL ERROR:"

echo " RLF_LIBRARIES is currently unset."

echo " You must set it to the proper location"

echo " or specify a library directory with"

echo " a command line option."

echo ""

echo ""

exit(-1)

echo ""

echo "FATAL ERROR:"

echo " RLF_LIBRARIES is incorrectly set."

echo " There are missing elements in the libraries."

echo " You must set it to the proper location."

echo ""

echo ""

exit(-1)

echo "Currently, RLF_LIBRARIES = "

echo "$RLF_LIBRARIES"

echo ""

Library_Found:

# Set other X Window System environment variables (besides DISPLAY).
# Make a couple of guesses as to where the RLF_Browser file resides.
# If the RLF_Browser is not found, then alert the user.

if ( ! $?XAPPLRESDIR ) then

No_Browser_File:

if ( -e RLF_Browser ) then

setenv XAPPLRESDIR '/bin/pwd'
else
  if ( ! -e /usr/lib/Xll/app-defaults/RLFBrowser ) then
    echo ""
    echo "WARNING:"
    echo " Environment variable XAPPLRESDIR is undefined."
    echo " You need to find the pathname to the RLFBrowser file."
    echo " Then issue the following command:"
    echo " setenv XAPPLRESDIR <pathname>"
    echo ""
    echo ""
  else
    echo ""
    echo "You will be using the following RLFBrowser resource file"
    echo " /usr/lib/Xll/app-defaults/RLFBrowser"
    echo ""
    setenv XAPPLRESDIR /usr/lib/Xll/app-defaults
  endif
endif
endif
else
  if ( ! -e $XAPPLRESDIR/RLFBrowser ) then
    goto No_Browser_File
  endif
endif
#-------------------------------------------------------------
# Check if a "bitmaps" directory resides beneath $XAPPLRESDIR.
#-------------------------------------------------------------
if ( $?XAPPLRESDIR ) then
  echo ""
  echo "Currently, XAPPLRESDIR = "
  echo "$ XAPPLRESDIR"
  echo ""
  if ( ! -d $XAPPLRESDIR/bitmaps ) then
    echo ""
    echo "WARNING:"
    echo " Bitmaps directory not found:"
    echo "$ XAPPLRESDIR(bitmaps was not found.""
    echo ""
    echo " The RLF Graphical Browser will not be able to display"
    echo " its bitmaps for the graph nodes. This may make the"
    echo " graph display less aesthetically pleasing."
    echo ""
    echo " The 'bitmaps' directory should exist as a subdirectory"
echo "from the location of the 'RLF_Browser' file."
  echo "(This is a Motif limitation.)"
  echo"
endif
endif

echo "#-------------------------------------------------------------
| If the user has not already defined the environment variables |
| RLF_PAGER and RLF_EDITOR, the script will default the to be |
| "more" and "vi", respectively. |
#-------------------------------------------------------------
if ( ! $?RLF_PAGER ) then
  setenv RLF_PAGER more
endif

if ( ! $?RLF_EDITOR ) then
  setenv RLF_EDITOR vi
endif

echo "#-------------------------------------------------------------
  Invoke the RLF Graphical-Browser with any command line arguments
#-------------------------------------------------------------
```
Graphical_Browser $argv
```
C Appendix: UNIX Installation

C.1 Scripts for Installing the UNIX RLF Binary Release

C.1.1 Script: InstallRLF.bin

```bash
#!/bin/csh -f
#
# InstallRLF_bin - C Shell script to install RLF v.4.1 Binary Release.
# This script installs the software.
#
# Usage: InstallRLF_bin
#
#----------------------------------------------------------------------------------------

set config_file = "unix/bin/InstallRLF.var"  # name of installation
set interactv_install = "unix/bin/InstallRLF.csh"  # name of interactive installation file

stty ignbrk  # ignore break on input
stty -brkint  # don't signal SIGINT on break

set cmdname = $0
if ( $#argv != 0 ) then
  echo "Usage: $cmdname: t"  # print only tail of cmd name
  exit
endif

/usr/ucb/clear  # clear the screen

# Display initial menu

+-------------------------------------------------------------------------+
|                         RLF 4.1 Installation Script                              |
| Binary Release           |
+-------------------------------------------------------------------------+

You must choose one of the following installation options:

1) Interactive installation

   * You are prompted for all necessary configuration values (i.e., pathnames).

2) Edit the file that contains the configuration values

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You edit the file "InstallRLF.var" and set the configuration values appropriately for your site.

3) EXIT this script.

(If you do not edit the "InstallRLF.var" file, or specify invalid values, you will be prompted for the configuration values anyway.)

Which installation option do you prefer?

X_SCREEN

# Read input from user.

set answer = 0
set noglob
set answer = ( $< )
set answer = ( $answer )
set answer = $answer[1]

Get_Valid_Input:

    echo ""  
    echo "*** Invalid input. Please try again. ***"
    echo ""  
    echo "Please enter 1, 2, or 3 > "
    set answer = ( $< )
    set answer = ( $answer )
    set answer = $answer[1]
end

while ( $answer[1] < 1 || $answer[1] > 3 )
    echo ""
    echo "*** Invalid input. Please try again. ***"
    echo ""
    echo "Please enter A NUMBER: 1, 2, or 3 > "
    set answer = ( $< )
    set answer = ( $answer )
    set answer = $answer[1]
end

echo ""
echo "You chose: $answer[1]"

#
# Process input, execute appropriate procedure.

```
switch ( "$answer[1]" )
    case [1]:
        # Interactive
        echo ""
        echo "+--------------------------------------------------"
        echo "| Executing interactive installation script. |
        echo "+--------------------------------------------------"
        echo ""
        source $interactv_install
        break
    case [2]:
        # Edit the 'var' file
        # Calculate string lengths for proper display.
        set beginning = "$config_file"

        line = 'expr length "' + " | $config_file"
        remainder = $line - 'expr length "$beginning"'

        echo ""
        echo "+--------------------------------------------------"
        echo "| To install the Reuse Library Framework binary |
        echo "| release in batch mode, you must edit the |
        echo "| installation configuration file: |
        echo "| |
        echo "|
        set ctr = 1
        set line = "$(beginning)"
        while ( $ctr < $remainder )
            set line = "${line}"
            set ctr = $ctr + 1
        end
        echo -n "$line"
        echo "|
        echo "|
        echo "| Then execute ..e command: |
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        echo "|
        break
    case [3]:
        # Exit
        echo ""
        echo "Exiting installation script."
        break
    case [!%]:
```
155      echo ""  
156      echo "Pathological input."
157      echo "Of course C shell scripts are breakable, please be kind."
158      echo "T"
159      exit -1
160      breaksw
161
162      default:
163          # if here, something's wrong
164          echo "*** Invalid input. ***"
165          goto Get_Valid_Input
166          breaksw
167      endsw
168
169      echo ""
170      exit 1
171      exit 1
172
173
C.1.2 Script: Install_RLF.csh

```bash
#!/bin/csh -f

#---------------------------------------
# Install_RLF.csh  -  C Shell script to install the Source Code Release
# of the RLF 4.1 software.
#
#-- ---------------------------------------
#
# Uncomment the following two lines if you need to increase the
# system resources on your host; else ignore.
#
## limit stacksize unlimited
## limit datasize unlimited
#
# Read in the site-dependent data from the 'var' file.
#
#define the site-dependent environment variables.
--------------------------------------------

source ./InstallRLF.var

Moving the RLF GB resource file (RLFBrowser) to: "$APPDEFAULTS"

mv -f $RLFBIN/RLFBrowser $APPDEFAULTS

Moving the RLF GB bitmap files to: "$BITMAPS"

if [ -e $BITMAPS ] mkdir $BITMAPS
mv -f $RLFBIN/bitmaps/* $BITMAPS

Installation Complete
```

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C.1.3 File: Install.Rlf.var

```sh
#------------------------------------------------------------------------
#
# InstallRLF.var - RLF software installation configuration file.
#
#-------------------------------------------------
#
# Directory for installation of the RLF Graphical Browser resource file
# and the bitmaps sub-directory.
#
# Note: You usually need root privilege to write in this directory,
# installation of the resource file and the bitmaps sub-directory will fail
# if write permission is denied.
#
setenv APPDEFAULTS /usr/lib/X11/app-defaults
setenv BITMAPS $APPDEFAULTS/bitmaps

# Uncomment and edit these lines if you do not want to
# be prompted for the environment variables (i.e., if you
# want to run the script in batch mode instead of interactively.)
#
setenv RLFHOME /myhome/test/rlf/4.0

# Uncomment (but do not edit) these lines.
#
setenv RLFBIN $RLFHOME/bin

#------------------------------------
#
# END OF REQUIRED EDITING FOR BATCH MODE
#
#------------------------------------

# Define the location of RLFHOME
#
setRLFHOME:
if ( $?RLFHOME == 0 ) then # if NOT set
  echo ""
  echo "Specify path to top-level RLFHOME directory" 
  echo "-----------------------------------------------" 
  echo " Examples: "
  echo " /mybase/RLF "
  echo " /afs/myhome/see/rlf "
  echo " /usr/tools/rlf "
  echo " etc. "
  echo ""
  echo ""
  echo "-n " RLFHOME = "
  set noglob
  setenv RLFHOME "$<
```
```
53   echo ""
54   endif
55
56   if ( $RLFHOME == "" ) then
57     unsetenv RLFHOME
58     goto setRLFHOME
59   endif
60
61   if ( ! -e $RLFHOME ) then
62     echo ""
63     echo "**** $RLFHOME does not exist ****"
64     echo "**** Please try again. ****"
65     echo ""
66     unsetenv RLFHOME
67     goto setRLFHOME
68   else
69     if ( ! $?RLFBIN ) then
70       if ( $PCTE == Y ) then
71         setenv RLFBIN $RLFHOME/pcte/bin
72       else
73         setenv RLFBIN $RLFHOME/unix/bin
74       endif
75     endif
76
77     endif
78
79     echo ""
80     echo "RLFHOME = $RLFHOME"
81     echo "RLFBIN = $RLFBIN"
82     echo ""
83     echo "APPDEFAULTS = $APPDEFAULTS"
84     echo "BITMAPS = $BITMAPS"
85     echo ""
```
C.2 Scripts for Building Sample Networks

C.2.1 Script: Build_Ada_X.Lib.csh

```
#!/bin/csh -f
#
## This script builds the "Paramax STARS Ada/X" library for the RLF.
#
#
# Locate the RLF Libraries
# setRLF_LIBRARIES:
if (! $?RLFLIBRARIES) then
  echo ""
  echo "Specify path to the RLF libraries"
  echo "(e.g. /afs/reston/see/rlf/4.0/Libraries)"
  echo ""
  echo -n " RLFLIBRARIES = "
  setenv RLFLIBRARIES $<
  echo ""
endif

echo ""
echo "Creating required sub-directories"

if ( ! -d $RLFLIBRARIES/Text/ada.x ) mkdir -p $RLFLIBRARIES/Text/ada.x
if ( ! -d $RLFLIBRARIES/Taustuff ) mkdir $RLFLIBRARIES/Taustuff

echo ""
echo "Initializing text files"
cp -r Text/* $RLFLIBRARIES/Text/ada.x

echo ""
echo "Building library model from ada_x.lmdl"
Lmdl ada_x.lmdl

foreach i (*.rbdl)
  echo ""
  echo "Creating Inferencer from $i"
  echo ""
  Rbdl < $i
end
```

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C.2.2 Script: Build_Animals_Lib.csh

```bash
#!/bin/csh -f
###limit stacksize unlimited
###limit datasize unlimited
#
# This script builds a demonstration animals library for the RLF.
#
# Locate the RLF Libraries
setRLF_LIBRARIES:
if (! $?RLFLIBRARIES) then
  echo ""
echo "Specify path to the RLF libraries"
echo "(e.g. /afs/reston/see/rlf/4.0/Libraries)"
echo ""
echo -n "  RLFLIBRARIES = "
setenv RLFLIBRARIES $<
echo ""
endif

echo ""
echo "Creating required sub-directories"
if ( ! -d $RLFLIBRARIES ) mkdir $RLFLIBRARIES
if ( ! -d $RLFLIBRARIES/Taustuff ) mkdir $RLFLIBRARIES/Taustuff
if ( ! -d $RLFLIBRARIES/Text ) mkdir $RLFLIBRARIES/Text
if ( ! -d $RLFLIBRARIES/Text/animals ) mkdir -p $RLFLIBRARIES/Text/animals

echo ""
echo "Initializing text files"
echo ""
cp Text/* $RLFLIBRARIES/Text/animals

echo ""
echo "Building Lmdl Network from animals.lmdl"
echo ""
Lmdl animals.lmdl
```
C.2.3 Script: Build_Asw_Lib.csh

1 #!/bin/csh -f
2 #limit stacksize unlimited
3 #limit datasize unlimited
4 
5 # This script builds a sample Anti-Submarine Warfare library for the RLF.
6 #
7 #
8 # Locate the RLF Libraries
9 #
10 setRLF_LIBRARIES:
11 if (! $?RLF_LIBRARIES) then
12   echo ""
13   echo "Specify path to the RLF libraries"
14   echo "(e.g. /afs/reston/see/rlf/4.0/Libraries)"
15   echo ""
16   echo -n " RLFLIBRARIES = "
17   setenv RLFLIBRARIES $<
18   echo ""
19 endif
20 
21 echo "Creating required sub-directories"
22 echo ""
23 if ( ! -d $RLF_LIBRARIES/Text/asw ) mkdir -p $RLF_LIBRARIES/Text/asw
24 if ( ! -d $RLF_LIBRARIES/Taustuff ) mkdir $RLF_LIBRARIES/Taustuff
25 echo ""
26 echo "Initializing text files"
27 echo ""
28 cp Text/* $RLF_LIBRARIES/Text/asw
29 echo ""
30 echo "Building library model from asw.lmdl"
31 echo ""
32 Lmdl asw.lmdl
C.2.4 Script: Build_Common_Data_Model_Lib.csh

```bash
#!/bin/csh -f
##*limit stacksize unlimited
##*limit datasize unlimited
#
# This script builds a demo Common Data Model library for the RLF.
#
#
# Locate the RLF Libraries
#
setRLF_LIBRARIES:
if (! $?RLF_LIBRARIES) then
    echo ""
    echo "Specify path to the RLF libraries"
    echo "(e.g. /afs/reston/see/rlf/4.0/Libraries)"
    echo ""
    echo -n " RLFLIBRARIES = "
    setenv RLFLIBRARIES $<
    echo ""
endif

echo ""
echo "Creating required sub-directories"
if ( ! -d $RLFLIBRARIES/Text/satText ) mkdir -p $RLFLIBRARIES/Text/satText
if ( ! -d $RLFLIBRARIES/Taustuff ) mkdir $RLFLIBRARIES/Taustuff

echo ""
echo "Initializing text files"
if ( ! -d $RLFLIBRARIES/Text/satText ) cp Text/* $RLFLIBRARIES/Text/satText

echo ""
echo "Building LMDL Network from cdm.lmdl"
Lmdl < common_data_model.lmdl
```
C.2.5 Script: Build_Demo_Actions_Lib.csh

```csh
#!/bin/csh -f
###limit stacksize unlimited
###limit datasize unlimited

# This script builds a demonstration actions library for the RLF.
#
#
# Locate the RLF Libraries
#
setRLF_LIBRARIES:
if (! $?RLF_LIBRARIES) then
  echo ""
  echo "Specify path to the RLF libraries"
  echo "(e.g. /afs/reston/see/rlf/4.0/Libraries)"
  echo ""
  echo -n " RLFLIBRARIES = "
  setenv RLFLIBRARIES $<
  echo ""
endif

echo "Creating required sub-directories"
if (! -d $RLFLIBRARIES/Text/demo-actions ) then
  mkdir -p $RLFLIBRARIES/Text/demo-actions
endif
if (! -d $RLFLIBRARIES/Taustuff ) mkdir $RLFLIBRARIES/Taustuff

echo "Initializing text files"
cp -r Text/* $RLFLIBRARIES/Text/demo-actions

echo "Building LMDL Network from demo_actions.lmdl"
Lmdl demo_actions.lmdl
```
C.2.6 Script: Build_SW_Tech_Lib.csh

```csh
#!/bin/csh -f
###limit stacksize unlimited
###limit data size unlimited
#
# This script builds the Software Technology library for the RLF.
#
#
# Locate the RLF Libraries
#
setRLF_LIBRARIES:
if (! $?RLF_LIBRARIES) then
    echo "
echo "Specify path to the RLF libraries"
echo "(Defaults to $RLF/Libraries)"
echo ""
echo -n " RLFLIBRARIES = 
setenv RLFLIBRARIES $<
echo ""
echo ""
if ($RLFLIBRARIES ==) setenv RLFLIBRARIES $RLF/Libraries
endif

echo ""
echo "Creating required sub-directories"
if ( ! -d $RLF_LIBRARIES/Text/sw.tech ) mkdir -p $RLF_LIBRARIES/Text/sw.tech
if ( ! -d $RLF_LIBRARIES/Taustuff ) mkdir $RLF_LIBRARIES/Taustuff

echo ""
echo "Initializing text files"
cp -r Text/* $RLF_LIBRARIES/Text/sw.tech

echo ""
```

Lmdl sw_tech.lmdl
C.2.7 Script: Build_Sort_And_Search_Lib.csh

#!/bin/csh -f
## limit stacksize unlimited
## limit datasize unlimited

# This script builds the "Sort and Search Algorithms" library for the RLF.
#
# Locate the RLF Libraries
#
setRLF_LIBRARIES:
if (! $?RLF_LIBRARIES) then
  echo ""
  echo "Specify path to the RLF libraries"
  echo "(e.g. /afs/reston/see/rlf/4.0/Libraries)"
  echo ""
  echo " -n " RLF_LIBRARIES = "
  setenv RLF_LIBRARIES $<
  echo ""
endif

echo ""
echo "Creating required sub-directories"
if (! -d $RLF_LIBRARIES/Text/sort-and-search) mkdir -p $RLF_LIBRARIES/Text/sort-and-search
if (! -d $RLF_LIBRARIES/Taustuff) mkdir $RLF_LIBRARIES/Taustuff

echo ""
echo "Initializing text files"
cp -r Text/* $RLF_LIBRARIES/Text/sort-and-search

echo ""
echo "Building library model from sort-and-search.lmdl"
Lmdl sort-and-search.lmdl

foreach i (*.rbdl)
  echo ""
  echo "Creating Inferencer from $i"
  echo ""
  Rbdl < $i
end

C.2.8 Script: Build_Move_Domain_Lib.csh

#!/bin/csh -f
## limit stacksize unlimited
## limit datasize unlimited

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This script builds the Cathy Lin's Window Manager library for the RLF.

Locate the RLF Libraries

setRLF_LIBRARIES:
if (! $?RLF_LIBRARIES) then
  echo ""
  echo "Specify path to the RLF libraries"
  echo "(Defaults to $RLF/Libraries)"
  echo ""
  echo -n " $RLF_LIBRARIES = "
  echo ""
  setenv RLFLIBRARIES $<
  echo ""
  if ($RLF_LIBRARIES ==) setenv RLFLIBRARIES $RLF/Libraries
endif

echo "Creating required sub-directories"
if (! -d $RLF_LIBRARIES/Text/wmnmove ) mkdir -p $RLF_LIBRARIES/Text/wmnmove
if (! -d $RLF_LIBRARIES/Taustuff ) mkdir $RLF_LIBRARIES/Taustuff

echo "Initializing text files"
cp -r Text/* $RLF_LIBRARIES/Text/wmnmove

echo "Building LMDL Network from move_domain.lmdl"
Lmdl move_domain.lmdl

foreach i (*rbdl)
  echo ""
  echo "Creating Inference from $i"
  echo ""
  Rbdl < $i
end