



Tech transfer, Licensing, Issue-Tracking, Releases, Software Maintenance

Presenters: Edie Zagona and Team

5 Major RiverWare Activities at CADSWES

- Software development (R&D)
- Basin Specific modeling and sponsor support
- Software Maintenance and Releases
- Help Desk/ User Support
- Training/ Tech Transfer

Training

Standard 3-day Training offered – now scheduled in advance

- Intro to Simulation
- Rulebased Simulation
- Accounting
- Optimization offered for 1st time June 2019
- Overview: Broadly cover both Simulation and Rules

4-day accelerated Simulation and Rulebased Simulation

1 or 2-week RiverWare and River System Management (mainly for foreigners)

Dedicated Training classes: standard + specific models

Online materials – to be increased as possible

Needs? Special topics?

Funded by attendee payments; covers time, materials, updates to training materials

Other Training Tools

- Video Demonstrations
 - Model Reports
 - RiverSMART
 - Notes on Series Slots
 - Database DMI Excel
 - Database DMI DSS
 - Smart Linker
 - Open Object Dialogs
 - Unit Schemes

- Informational Tutorials
 - Simulation
 - Rulebased Simulation
 - Multiple Run Management

http://www.riverware.org/PDF/RiverWare/documentation/

User Support

Provided to sponsors through contract support tasks and licensees through purchased support hours

All user support questions should be sent to:

riverware-support@colorado.edu

Multiple support staff receive email and most appropriate or available person can respond

Provides assistance for

- "How to" use the software to accomplish your modeling objectives
- Analyzing problems
- Interpreting results

Software Development (R&D)

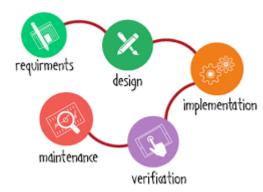
Goal: deliver professional quality software applications that meet users' needs

R&D Team:, water resources engineers, operations research analyst, professional software developers

Support Team: software configuration management, hardware and software maintenance, licensing, releases

Process

- Requirements analysis and documentation
- High level design document/ Estimates
- Detailed designs for sponsor review
- Implementation and testing
- Pre-release or snapshots for testing
- Feedback from sponsors, further testing
- Final release, user documentation, regression tests



Funded typically by Sponsors, sometimes by others under contract agreements (all users have access to all development)

Basin Specific Modeling/Reviews

CADSWES focuses on R&D and Tech Transfer, but assists with applications when necessary (funded by users or sponsors under contracts or user support funds). Examples:

- Models that use new RiverWare software features/functionality
- Applications or special studies that benefit from expertise not yet developed in agencies or with consultants
- Model reviews, performance analysis

We encourage in-house expertise and use of consultants; this benefits all users and CADSWES

Software Maintenance and Releases

This work includes

 Keeping the software upgraded for new versions of compilers, operating systems, platforms and third-party software libraries (Qt (with WebKit), Qwt, CPLEX, Concert, GDAL/OGR, FlexLM, Reprise, Oracle, Tcl,netCDF, Google Protocol Buffers, QuaZIP, Java Runtime Environment)

Issue tracking and fixing

- Maintain issue tracking application (Gnats, per CGI Scripts)
- Critical issues fixed immediately for next patch release
- Non-critical issues deferred to next major release or later
- Minor enhancements, refactoring, modernizing GUI
- Maintaining Development Environments:
 Microsoft Visual Studio, Source control (Git and Git Extensions), Rational
 Purify and Quantify, DevPartner BoundsChecker, Regression tests,
 modelcomp

Software Maintenance and Releases

Releases

Major releases: RiverWare 7.2 – usually 2 per year

Fully tested (after pre-release), updated online help and release notes

Patch releases: RiverWare 7.2.1 – as needed

Generated from last full release with fixes and minor enhancements, possible doc updates; Tested and verified (usually without a prerelease)

Installation and Licensing

Installshield updates, license software updates, issue licenses, maintain online payment web pages, maintain user databases, send quotes, invoices, renewal notices

 Maintain download Web sites, upload ftp site, user support tracking tools

Funded by sponsors and license fees (by MOU agreement with CU, BOR, TVA, USACE)

NEW: Jira Issue Tracking

- Retired old gnats system used since 90's
- New look and feel
- Modern web application with secure login
- Accepts attachments
- Includes all 6000+ prior issues
- Better queries for CADSWES

Current effort for v7.6 RiverWare Tools Upgrade

Upgrade of compiler and all 3rd party libraries: every 2-3 years

Important.

- Keep up-to-date with Windows & Oracle
- Continued library support and new features.

A big job.

- Compiler upgrade Visual Studio 2017
- New Qt Framework 5.12.2
- New versions: CPLEX, Oracle Client, GDAL, Qwt...etc.

Complex Dependencies.

- Over 20 3rd-party library and tools upgrades
- Open-source rebuilds for compiler compatibility

RiverWare Maintenance - past ~year

- 175 bugs closed
- Licensing and Installshield upgrades
 - License Manager Upgrade & Improvements Activation Keys
 - Cloud Licensing
 - RiverWare Viewer Licensing
- New Linux Server & Download Security
- Regression Test Enhancements
- DSS Build Environment
- JIRA Issue Tracking System
- New Browser-based online help

New Licensing Options

- Discounts for multi-year licenses
- Cloud licenses for portability, convenience and using cloud computing resources
 - License server is in cloud access from any machine on internet
 - Can "check out" license to reside on a machine to work off the net