**CADSWES Maintenance Accomplishment Report Compilation -- August 2014**Edit: 9-3-2014 (Phil)

Report contributors:

* Substantive content from: Bill, Jessica, Patrick and David.
* Minor items from: Neil and Phil.
* Indicated that they had no *maintenance* accomplishments to report this month: Mitch, Tim.

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| (II) RiverWare Software Maintenance   1. Releases, Patches and Snapshots 2. Software Updates, Bug fixes (not associated with new development) 3. Development tool improvements; issue tracking software; modelcomp 4. Enhancements or changes to regression tests (not part of development tasks) 5. Download, Install and Release Processes 6. Updates to license software/procedures 7. Updates to download/install/configure user documentation 8. Modification to Web pages for downloads and installs |

**(II.A) Releases, Patches and Snapshots**

The following releases were generated in August:

* RiverWare 6.5 Pre-release
  + 8-1-2014
* RiverWare 6.5 Release
  + 8-7-2014

RiverWare 6.5 release notes can be found in:

* R:\doc\onlineHelp\RelNotes\RelNotes\_6\_5\6\_5\_Notes.fm, and
* http://www.riverware.org/PDF/RiverWare/documentation/6\_5\_RelNotes.pdf

**(II.B) Software Updates, Bug fixes (not associated with new development)**

**The following bugs were fixed:**

* Bug 5526: Crash when using phase balancing flood control
* Bug 5527: Error loading periodic slot from model file when period is very long
* Bug 5528: RPL not displaying correctly on Windows 8.1
* Bug 5531: Distributed MRM looks for first trace of data, even when initial offset is non-zero\*

\*Bug 5531 Detail:

Distributed MRM was not using the configured index sequential initial offset or the traces first trace when distributing runs. This meant that the distribution always began with trace 1. This has been fixed.

**(II.C) Development tool improvements; issue tracking software; modelcomp**

**Decomissioning maelstrom**

Over the years RiverWare development has migrated from Solaris to Windows and Linux, to the extent that a single Solaris machine (maelstrom) remained. maelstrom was used for a small number of tasks. It was decided to decommision maelstrom and complete the migration from Solaris. Tasks included:

1. Deploying our Support Tool (for logging user support time) on Alamosa (linux). The support tool is written in Java and was a fairly straightforward port from Solaris to Linux.
2. Deploying "modelcomp" with xmgr -- for comparing model files and plotting differences -- on Alamosa. Attempts to find a Linux xmgr binary which could be installed were unsuccessful. Subsequent attempts to find source code which could be compiled were successful.
3. Confirming usability of Flex/Bison (parsing library) tools on Alamosa. These are used within RiverWare for processing files having particular grammars, e.g. RPL ruleset and SCT files.

**Windows Development Tools**

RiverWare development requires a sophisticated development environment with several third party tools and libraries. Over the years an infrastructure has been developed for configuring Windows machines for RiverWare development. The infrastructure used both CVS (a source control system) and tar files for deploying the development environment. There were two problems with the infrastructure. First, using CVS was a "chicken and the egg" situation - CVS was necessary to install CVS on a Windows machine. Second, portions of the development environment had become fragmented across three directories (bin, bin.reorg and perllib). The reasons for the fragmentation are known to but a single RiverWare developer, and he isn't talking. Anyway, the decision was made to ditch CVS, to combine the three directories into a single directory, and to jettison tools which are no longer being used. This was accomplished and greatly simplified configuring Windows machine for RiverWare development.

***Oh Say Can You Not C!***

From the beginning RiverWare Windows development has been on the C: partition, in C:\RiverWare. This seems to be counter to "best practices" which separate data from the operating system to facilitate backing up data independently from the operating system. Some RiverWare tools relied on RiverWare development being in C:\RiverWare; the tools were modified to be accepting of other partitions. (They use heuristics to locate directories which are known to be part of the RiverWare development environment).

**Creating a Development Environment on Windows 8.1**

CADSWES staff configured a Windows 8.1 machine to support RiverWare development and created a document describing the procedures for doing this on other machines. To illustrate, the following are some of the steps involved in configuring a machine for RiverWare development:

* Install the compiler (Visual Studio 2010)
* Install third party software libraries (e.g., Qt and GDAL)
* Install configuration management tools (e.g., the source code versioning application, git, and a custom script for conducting regression tests)
* Configure permissions for access to remote source code repositories
* Create a local copy of the source code repository

As part of this work, problems were identified with the existing script for installing RiverWare libraries and that script was significantly redesigned.

**(II.D) Enhancements or changes to regression tests (not part of development tasks)**

The regression tests continue to be maintained on a daily basis. This involves updating the regression tests to exercise new developments in the code. Also, as new code is added to the development area, the model comparisons performed in the nightly regression tests usually show differences (for example, because a new method category may have been added). When this occurs, the regression tests need to be updated to reflect the current state of the development area so model comparisons do not fail. In addition, every week, the daily history of each regression test is analyzed to determine if the run time or model size has significantly changed because of new development.

**(II.E) Download, Install and Release Processes**

* Updated the two new IS2013 (InstallShield) project files for generating the 6.5 release install files.
* Upgrading InstallShield to release IS2014:
  + Cleaned up and verified all the IS2013 project files to get them ready for converting to IS2014.
  + Set up a new directory structure for holding the new IS project files with IS2014 release. The current six main project files located in the \projects\riverware\IS\is2013-project folder (64-bit version and 32-bit version for snapshot, pre-release, and official release releases) have been copied over to the new IS2014 project folder \projects\riverware\IS\is2014-project and converted to use the new IS2014 release.
  + Working on configuring and setting up the six new project files (for creating snapshot 6.6, pre-release  6.5, and release 6.5 install files), which were converted from IS2013 to IS2014.
* Cleaning up (deleting or coping to CDs) the old build folders in three release areas on both spurwink and scuba, so Jim Pasquotto can do his system backups.

**(II.F) Updates to license software/procedures**

* RiverWare test executables were created for 32 and 64 bit Windows with Reprise 11 libraries and DLLs. This will allow for testing of the new Reprise license software version before eventual incorporation into RiverWare.
* Maintaining RiverWare licenses for internal development systems. This is an ongoing task.
* Updated internal document "RLM for RiverWare-Configuration and Build Guide." This document contains the instructions for downloading, installing, configuring, and building the RLM Developer Kit for RiverWare.
* Worked with Neil Wilson on the testing of the new RLM release 11.1. Currently working on the testing of the new version with all different license files created by the new license generating program rlmsign.exe. After the new version is confirmed working without any issue, RLM release 11.1 will be checked into the version 6.6 development build (in early September) and will start configuring and setting up the Active Pro.
* Updated document "RiverWare License File Creation Guide." This document is for internal use only.

**(II.G) Updates to download/install/configure user documentation**

None reported for August 2014

**(II.H) Modification to Web pages for downloads and installs**

None reported for August 2014

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