Neil Wilson Maintenance Accomplishments – December 2015

II RiverWare Software Maintenance

Bug fixes (not associated with new development)

5692 – Last accessed package directory not remembered

5695 – RPL debug slow on subsequent runs

Software Updates

TCL

TCL is a third-party software utilized in loading and interpreting RiverWare model files. The version of TCL used by RiverWare was previously updated within the 8.5 series from 8.5.1 to 8.5.18 to address a crash that occurred when loading a user’s model. The change, however, resulted in a slowdown of up to 10% in the overnight running of some regression tests. A potential fix for this was tried to eliminate the writing of continued separate lines for the data in long time series so that these lines do not need to be rejoined during loading. This did not improve the slowdown in regression tests.

A second attempt at a fix was successful, accomplished by upgrading TCL to the most recent 8.6 version (8.6.4). This fix required minor changes to some TCL method calls made from the RiverWare code, but resulted in restoring regression test run times to prior levels. The new version of TCL was incorporated into the RiverWare build process, which involved:

* Downloading and building 32 and 64 bit versions of TCL 8.6.4
* Creating tarred package files of the new versions for 32 and 64 bit.
* Modifying the window configuration process for development machines to download the correct package file for the new version.
* Committing the required RiverWare source code changes to the prerelease and master development branches of the code repository.
* Updating all development machines to use the new version.

Reprise

Reprise is the licensing software that is used by RiverWare. The RiverWare executable developed to use static linking to Reprise was tested and found to work correctly. However, when a statically linked 32 bit executable was attempted, there were errors due to multiply defined symbols in the dongle libraries of Reprise and FlexLM (FlexLM is the prior license software used by RiverWare, which is still used for various reasons by some customers on 32 bit). In consultation with Reprise customer support, several approaches were tried to fix these conflicts, but none were successful. It was decided that the 32 bit build of RiverWare would continue to use dynamic linking to Reprise, but the resulting 32 bit executable would be placed on a password protected area of the RiverWare web pages and be available to customers by request only. This is due to security concerns from hacking of the Reprise dynamically linked library file.

RiverWare configuration files were modified to link statically on 64 bit and dynamically on 32 bit. These changes were incorporated into the RiverWare build process by creating 32 and 64 bit package files, modifying the window configuration process for development machines, committing the necessary RiverWare source code changes, and updating all development machines with the Reprise changes.