CWMS RiverWare Plugin
Release Notes

Center for Advanced Decision Support for Water and Environmental Systems (CADSWES)

Version 1.7 – Released August 12, 2021

The following features are included in version 1.7 of the CWMS RiverWare plugin adapter:

- Bug Fix: In RiverWare 8.3, DSS connectivity was re-implemented, changing from the Java DSS server to the HEC C and Fortran libraries. When RiverWare 8.3 was integrated with CWMS 3.2.2, it was observed that the DSS DMI wasn't succeeding. The adapter has been modified to start RiverWare with different options, which enables the DSS DMI to succeed. Version 1.7 should be used with RiverWare 8.3.1.

Version 1.6 – Released December 18, 2019

The following features are included in version 1.6 of the CWMS RiverWare plugin adapter:

- Version 1.6 of the CWMS RiverWare plugin requires RiverWare 8.0 and CWMS 3.0.x.
- The plugin has been improved to enable you to specify the RiverWare model's simulation time step when importing a model alternative. The time step is for verification purposes; if the model's simulation time step is not the specified time step the computation fails with an error message. The enhancement supports RiverWare models which are at a different time step than the CAVI. See the last section of the User's guide for more information.

Version 1.5.1 – Released May 07, 2019

The following features are included in version 1.5.1 of the CWMS RiverWare plugin adapter:

- Bug Fix: The "Plot <Plot Name>" buttons now open the correct plot, rather than the plot dialog listing all plots.

Version 1.5 – Released October 03, 2018

The following features are included in version 1.5 of the CWMS RiverWare plugin adapter:

- Version 1.5 of the CWMS RiverWare plugin requires RiverWare 7.3.1 and CWMS 3.0.x.
- The plugin has been improved to allow you to cancel a RiverWare compute (simulation) from the CAVI. After you cancel a compute you will see a message similar to the following in the CAVI compute status window:

```
State: Stopped
------ Rulebased Simulation RUN STOPPED ------
"WhiteRiver_realtime_ForCAVI.mdl.gz at 09:30:20 August 22, 2018 (14
seconds)"
```

- Error handling has been improved. In previous versions of the adapter, low level methods which detected errors issued minimal information, which is to be expected – low level methods typically don't have the context to properly frame an error. What was intended, but not initially implemented, was that higher level methods would catch the errors, add context information, and issue additional

messages. With this approach, now errors presented show the context necessary to understand the errors. Consider as an example the situation where RiverWare fails to load a model file. RiverWare's previous error might be something like:

```
Invalid command: OutputsSavePrecision
```

With the improved error handling, the plugin and RiverWare now issues multiple lines with more information:

```
Cannot open RiverWare model alternative WhiteRiver_RiverWare: Error
loading model file: Invalid command: OutputSavePrecision.
```

- Bug Fix: The "needs to recompute" behavior now correctly indicates in all cases whether RiverWare needs to recompute.
- The plugin interface was improved for robustness. For example, getProjectName() has been implemented. It now returns the name of the currently open project.

Version 1.4 – Released July 17, 2018

The following features are included in version 1.4 of the CWMS RiverWare plugin adapter:

- Version 1.4 of the CWMS RiverWare plugin requires RiverWare 7.2.7 and CWMS 3.0.x.
- The RiverWare model is now saved when a forecast is saved. (Note that a CAVI bug will prevent this from working until CWMS 3.1.1 is released.)
- Better standalone compute behavior – Previously, when users clicked the RiverWare model alternative's compute button, the CAVI froze for the duration of the compute and the CAVI compute status window wasn't displayed. Both issues have been fixed.
- The RiverWare diagnostic window no longer opens behind the CAVI when a model is loaded. There is now a RiverWare model alternative diagnostics button, which opens the diagnostic window.
- RiverWare compute status messages are now displayed in the CAVI compute status window. These include the required information, warning, error and internal error messages.
- The recompute behavior was improved. Previously the RiverWare plugin always indicated that RiverWare needed to recompute. It now does so only if the RiverWare user interface has been exposed.
- When importing a RiverWare model alternative, users can now select which of the following should have buttons associated with the alternative:
    - Scripts
    - Plot Pages
    - Charts
    - Output Canvas

  Once shown in the model alternatives, these buttons will open the appropriate dialog, E.g. Script Dashboard, Plot Page viewer, generated Chart or Output Canvas.
- Bug fix: Computing RiverWare as a standalone run now invokes the input and output DMIs.
- Bug fix: The close forecast behavior is now implemented; RiverWare clears the workspace when the forecast is closed.
- Bug fix: The SCT close confirmation dialog is no longer displayed.

Version 1.3 – Released for testing purposes only, May 2018

Version 1.2 – Released March 27, 2017

The following features are included in version 1.2 of the CWMS RiverWare plugin adapter:

- Version 1.2 of the CWMS RiverWare plugin requires RiverWare 7.0.6 and CWMS 3.0.1.
- If the RiverWare run aborts, an abort message is displayed in the CAVI compute window and the forecast run stops.
- In the CAVI, RiverWare now has a Compute button on the Actions tab.
- The plugin logic for starting RiverWare has been improved. Previously, if RiverWare was slow to start, the plugin's attempt to connect with RiverWare would fail, and the plugin would shut down RiverWare. Now the plugin has a retry loop which enables it to wait for RiverWare to start before connecting to RiverWare.
- The RiverWare version is no longer tied to the plugin version, enabling RiverWare to be upgraded.
- Snapshot objects are now included in CWMS. Previously the plugin stopped adding simulation objects to CWMS when the first snapshot object was encountered. So not only were snapshot objects not included in CWMS, all simulation objects after the first snapshot object were not included either.
- Additional errors, including errors loading the model file, are now detected and reported to the user.
- The plot dialog button in CWMS opens the appropriate dialog in RiverWare.
- The plugin was improved to allow RiverWare to import data from multiple input models. This allows you to have multiple hydrologic models, perhaps representing subbasin.

Version 1.1 - Released September 19, 2016

The following features are included in version 1.1 of the CWMS RiverWare plugin adapter:

- Version 1.1 of the CWMS RiverWare plugin requires RiverWare 6.9.5 and CWMS 3.0.1.
- A bug in CWMS 3.0 prevented the right-click tool tips and context menus from being available in the CWMS map. With the release of CWMS version 3.0.1, this bug has been addressed. RiverWare icon tool tips and context menus in the CWMS map are now supported.
- RiverWare windows are now opened in front of the CAVI. Previously, they always opened behind the CAVI windows.
- Within the CAVI, the order of RiverWare objects now matches the order shown in the RiverWare workspace in the Object list. If you wish to change the order in the CAVI, change it in the RiverWare interface and save the model. When the model is reloaded into the CAVI, the new object order will be reflected.

Version 1.0 - Released June 1, 2016

The following features are included in version 1.0 of the CWMS RiverWare plugin adapter:

- The RiverWare plugin and RiverWare (v6.9) provide all capabilities required of a model in CWMS.
- Clicking on the RiverWare Icon in CWMS toolbar will open the RiverWare workspace.
- Users will import RiverWare model alternatives into a CWMS using the RiverWare import dialog which enables users to specify:
  - The model alternative name (with a suitable default)
  - The RiverWare model file with embedded policy (global function sets and rule sets).
  - The CWMS input and output DMI names (with suitable defaults).
  - Multiple SCTs, whose names indicate their purpose (e.g., "Release Overrides.sct" for altering the releases for a forecast run, "Flow Summary.sct" for viewing flows after a run has computed).
- All RiverWare simulation objects will be displayed in the CWMS user interface.
- RiverWare simulation objects will be displayed with their native RiverWare icons.
- RiverWare simulation objects will be displayed alphabetically in the CWMS treeview (first by object type, then by object name).

- RiverWare simulation objects which have been geospatially located in the RiverWare geospatial view will be geospatially located in the CWMS map.
- When a model alternative is selected, users will be able to perform the following actions (edits) via buttons in the CWMS interface:
  - Open an SCT (one button for each imported SCT).
  - Open a RPL set editor (one button for each non-empty embedded RPL set, e.g., the loaded rule set, global function set, etc.).
- When a model alternative is selected, users will be able to view the following reports via buttons in the CWMS interface:
  - Open an SCT (one button for each imported SCT).
  - Open a RiverWare native plot dialog configured to list all plots associated with the RiverWare model file; clicking on one of these plots will display it in the dialog.
- When a simulation object is selected, users will be able to perform the following actions (edits) via buttons in the CWMS interface:
  - Open the simulation object's open object dialog.
- When a simulation object is selected, users will be able to view the following reports via buttons in the CWMS interface:
  - Open a RiverWare native plot dialog configured to list all plots associated with the RiverWare model file; clicking on one of these plots will display it in the dialog.
  - Open a RiverWare native plot dialog configured to display information about the selected simulation object (one button for each such plot).
- All the actions and reports discussed above are also available via drop down menus, which include either the model alternative actions and reports or the simulation object actions and reports, depending on the context of the user selection that activates the menu.