# HEC-RTS RiverWare Plugin version 1.1 Installation and User Guide

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

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The installation consists of three files plus supporting documentation:

- RTSRiverWarePlugin.jar – The RiverWare plugin Java archive file.
- RiverWare.installinfo – The RiverWare installation information file.
- RiverWare.ver – The RiverWare version file.
- HEC-RTS RiverWare Plugin Release Notes.pdf – An overview of the RiverWare integration features, enumerating the RiverWare functionality available from HEC-RTS in version 1.1.
- HEC-RTS RiverWare Plugin User Guide.pdf – This document, containing the RiverWare plugin installation and user guides.

## 1. Installing RiverWare and HEC-RTS

### Installing RiverWare

The RiverWare HEC-RTS Plugin version 1.1 integration requires RiverWare release 8.2 or later. This document assumes that RiverWare release 8.2 is installed in the default location:

> C:\Program Files\CADSWES\RiverWare 8.2\

References to directory and file paths will need to be adjusted accordingly if a different RiverWare release (e.g., 8.3.2) is installed or if RiverWare is installed in a different location.

### RiverWare plugin network connection

The RiverWare plugin communicates with RiverWare using IP address 127.0.0.1 (localhost) and port number 27002. If this port is unavailable due to firewall or other issues, a plugin using a different port number can be provided.

### Installing HEC-RTS

HEC-RTS integration requires HEC-RTS release 3.1.x. Please follow the HEC-RTS installation instructions for further information on HEC-RTS 3.1.x.  This document assumes that HEC-RTS is installed in:

> C:\HEC-RTS-3.1.1\

References to directory and file paths will need to be adjusted accordingly if HEC-RTS is installed in a different directory.

## 2. Adding RiverWare to HEC-RTS

### Install the RiverWare plugin Java archive file

Copy RTSRiverWarePlugin.jar to the directory:

> C:\ HEC-RTS-3.1.1\HEC-RTS\jar\ext

The model plugins in this directory are named with prefixes which determine the order in which they appear in the HEC-RTS user interface, but which otherwise have no impact on model behavior. For example, HEC-RTS 3.1.x typically displays the models HMS, ResSim, and RAS in that order as the associated plugins have the following names:

> S10hmsPlugin.jar
> S15resSimPlugin.jar
> S20rasPlugin.jar

If you would like the RiverWare plugin to appear before ResSim you would rename RTSRiverWarePlugin.jar to S14RTSRiverWarePlugin.jar; to appear after ResSim you would rename it to S16RTSRiverWarePlugin.jar.

## Install the RiverWare installation information and version files

Copy RiverWare.installinfo and RiverWare.ver to:

> C: \HEC-RTS-3.1.1\HEC-RTS\config

RiverWare.installinfo contains the directory path of the RiverWare installation directory:

> <InstallLocation>C:\Program Files\CADSWES\RiverWare 8.2\</InstallLocation>

The value is currently set to the default location for the 8.2 release; if a different release (e.g., 8.3.2) is installed or if RiverWare is installed in a different location then the file will need to be edited.

RiverWare.ver contains the required RiverWare version:

> 8.2+

The value is currently set for the 8.2 release (or more recent); if a different release (e.g., 8.3.2) is required then the file will need to be edited.

## 3. RiverWare plugin user guide

The majority of the RiverWare plugin's functionality is accessed via general mechanisms that apply to all models, as described in the HEC-RTS user manual. However, when one imports a RiverWare model alternative, the plugin presents a special dialog (Import RiverWare Model Alternative) for gathering the necessary information. This dialog has six tabs: General, SCTs, output devices (Plot Pages, Charts, Output Canvases) and Scripts.

## General Tab
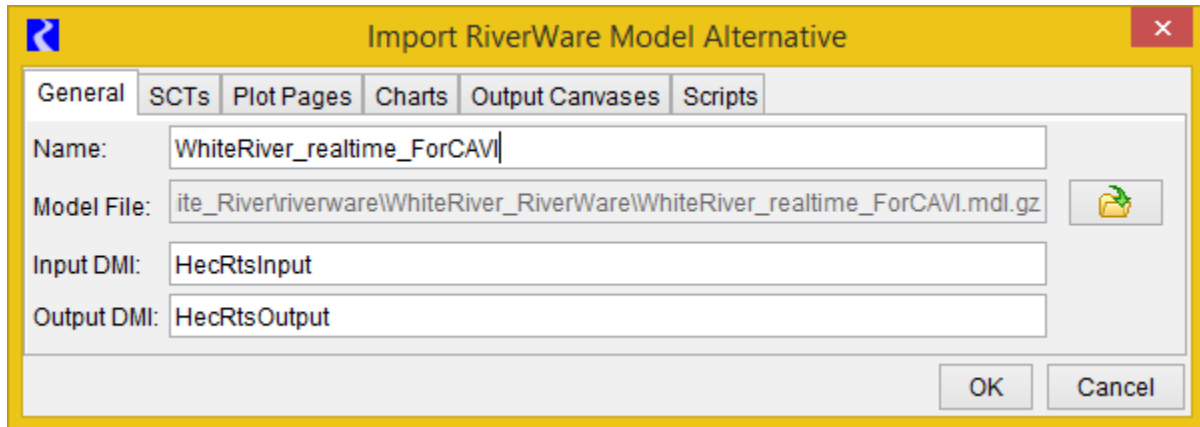


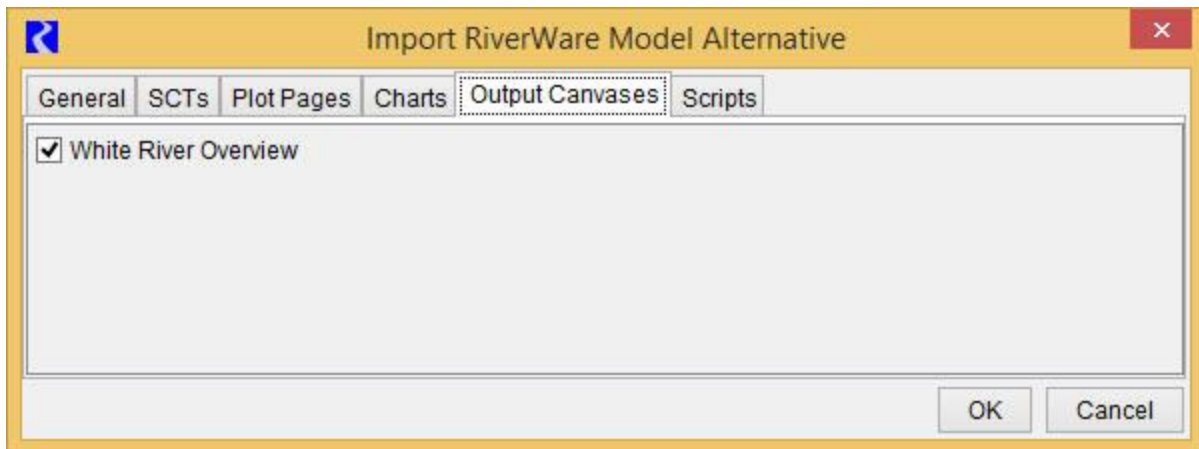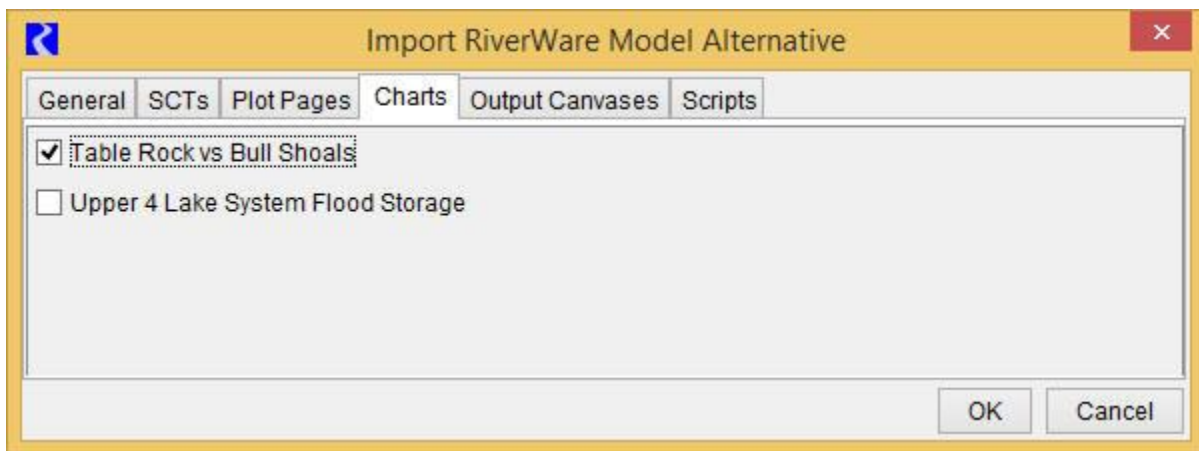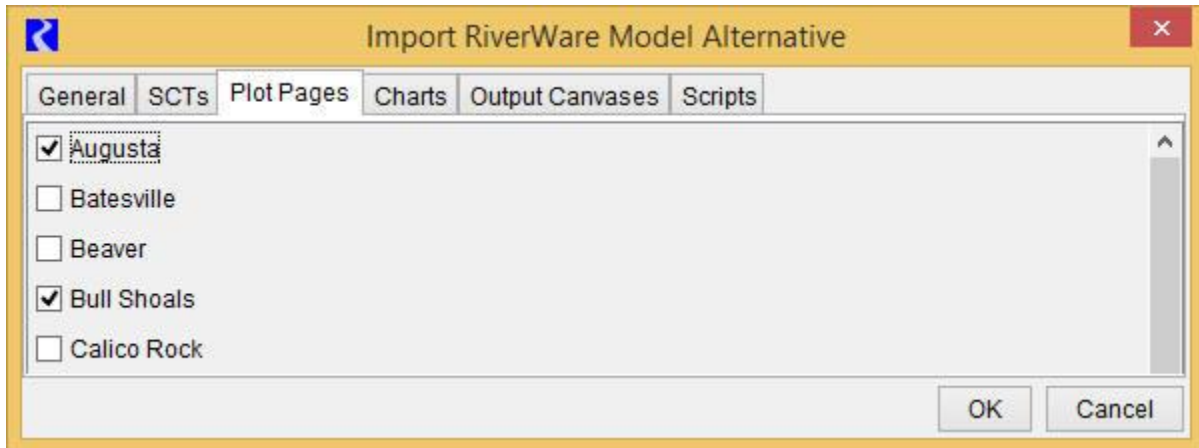The General tab enables users to:

- Specify the model alternative name. The name defaults to the model file name with file suffixes removed.
- Select the model file. For rulebased simulation models, the policy (global function sets and ruleset) must be saved within the model file.
- Specify the input and output DMI names. The default names, HecRtsInput and HecRtsOutput, respectively, are shown in the figure above.

## SCTs Tab
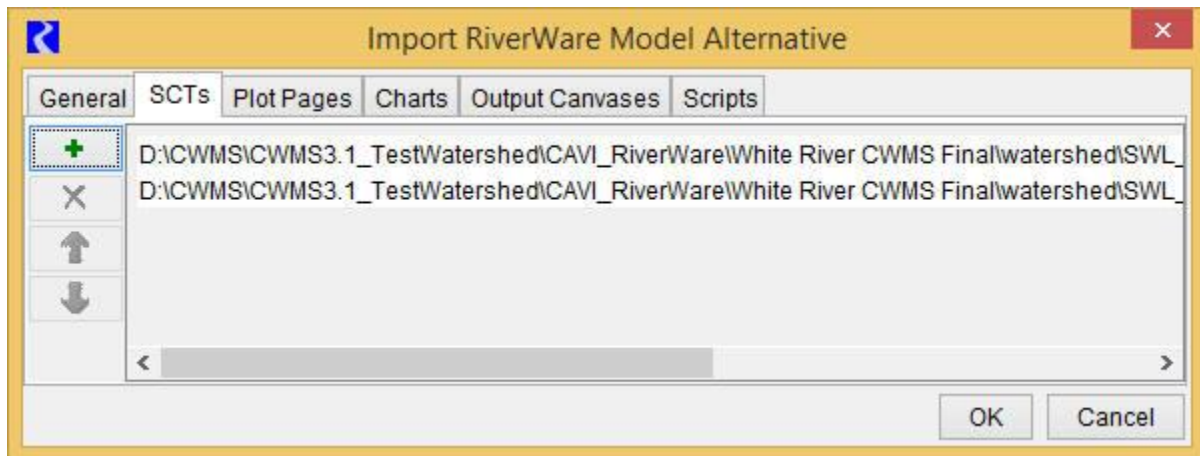


The SCTs tab enables users to select an ordered list of SCT files, with buttons to add, remove and reorder the files. The file names, with suffixes removed, are shown on buttons and in context menus in the HEC-RTS user interface.

## Output Devices (Plot Pages, Charts, Output Canvases) Tabs



**Import RiverWare Model Alternative**

General | SCTs | **Plot Pages** | Charts | Output Canvases | Scripts

☑ Augusta
☐ Batesville
☐ Beaver
☑ Bull Shoals
☐ Calico Rock

OK | Cancel



**Import RiverWare Model Alternative**

General | SCTs | Plot Pages | **Charts** | Output Canvases | Scripts

☑ Table Rock vs Bull Shoals
☐ Upper 4 Lake System Flood Storage

OK | Cancel



**Import RiverWare Model Alternative**

General | SCTs | Plot Pages | Charts | **Output Canvases** | Scripts

☑ White River Overview

OK | Cancel

The Plot Pages, Charts and Output Canvases tabs enable users to select the output devices which are shown on buttons and in context menus in the HEC-RTS user interface.
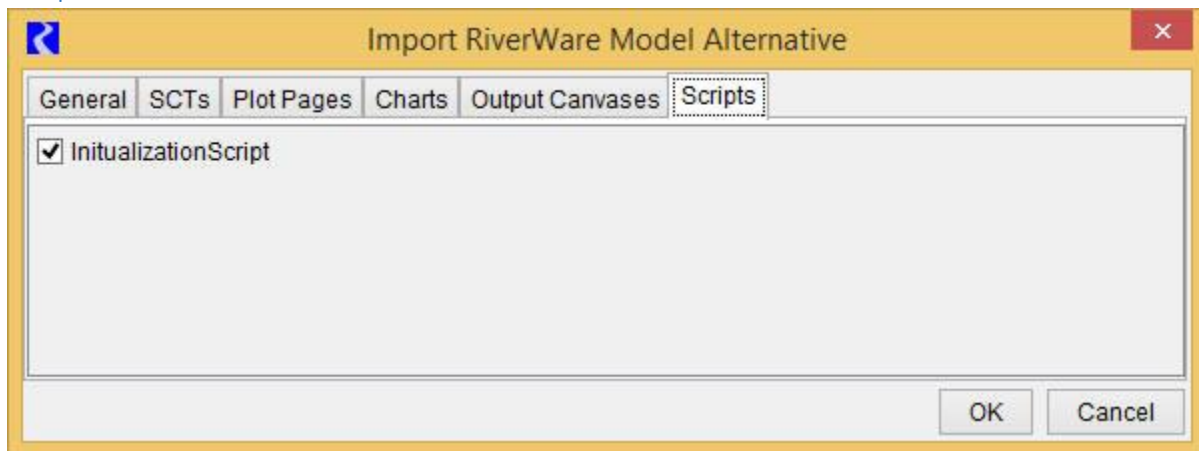
The Scripts tab enables users to select the scripts which are shown on buttons and in context menus in the HEC-RTS user interface.

## 4. RiverWare user interface

As described in the document **RiverWare HEC-RTS Integration Features.docx**, the following RiverWare dialogs are directly accessible from HEC-RTS buttons and context menus:

- The RiverWare workspace (from which all RiverWare dialogs are available).
- RPL editors.
- SCTs.
- Plot dialogs.
- Plot Page dialogs
- Chart dialogs.
- Output Canvas dialogs.
- Script Dashboard dialogs.
- Open object dialogs.
- Diagnostic Output dialog.

## 5. RiverWare Usability Notes

### RiverWare diagnostics

The HEC-RTS user interface presents important RiverWare diagnostic messages in the Messages window; for a complete set of messages refer to RiverWare's native Diagnostic Output dialog. The dialog can be opened from a button or context menu in the HEC-RTS user interface.

### RiverWare debug files

The RiverWare plugin writes debug messages to the file:

C:\Users\<user name>\AppData\Local\Temp\RiverWarePlugin.log

and RiverWare writes debug messages to the file:

C:\Users\<user name>\AppData\Local\Temp\RwServer.27002.log

(The number in the second file name will change if the RiverWare plugin uses a different port number, as discussed above.)

The files contain messages about the low-level interaction between the RiverWare plugin and RiverWare and will be useful if RiverWare isn't functioning properly in HEC-RTS.

## Geolocation of RiverWare objects

For RiverWare simulation objects to be correctly located within HEC-RTS map displays, the imported RiverWare model must contain coordinates for those objects as well as a description of the associated coordinate system. There are several ways to accomplish this; which method is most convenient will depend on the context. For example, if you have a map of the watershed which includes projection information metadata, then it will probably be most convenient to configure that as the background image of the geospatial view's canvas and then place icons by hand. Alternatively, if you have a WKT (well known text) representation of a coordinate system and object coordinates in a shapefile format with appropriate attributes, then these can be provided to the Geospatial Canvas Configuration dialog and Object Coordinate Manager, respectively. For more details, see the RiverWare online help.