



**Technical Documentation Version 5.1**

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# **Model Files**

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**C A D S W E S**

**Center for Advanced Decision Support for Water and Environmental Systems**

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# Model Files

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## 1. Introduction

RiverWare models are saved as ASCII files in Tcl (Tool Command Language). These files may be viewed and edited with a text editor outside of RiverWare, but their complexity and frequent format changes make direct editing difficult and dangerous. CADSWES neither recommends nor supports direct editing of model files.

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## 2. Loading Models

Loading a new model clears any existing model on the workspace after prompting the user for verification. In the case of a blank workspace, no verification is needed. To load a model:

- Select **File** ➤ **Open Model...** from the main workspace menu bar or click on the Open Model File toolbar button. A File Chooser dialog appears.



The RiverWare File Chooser dialog is used to Open and Save model files, ruleset files sets, and identify paths to control files and external executables. The contents of the current directory are displayed in the main window. Alternately, a file name or full path may be typed directly into the text field at the bottom of the file chooser.

### 2.1 Look in pull down

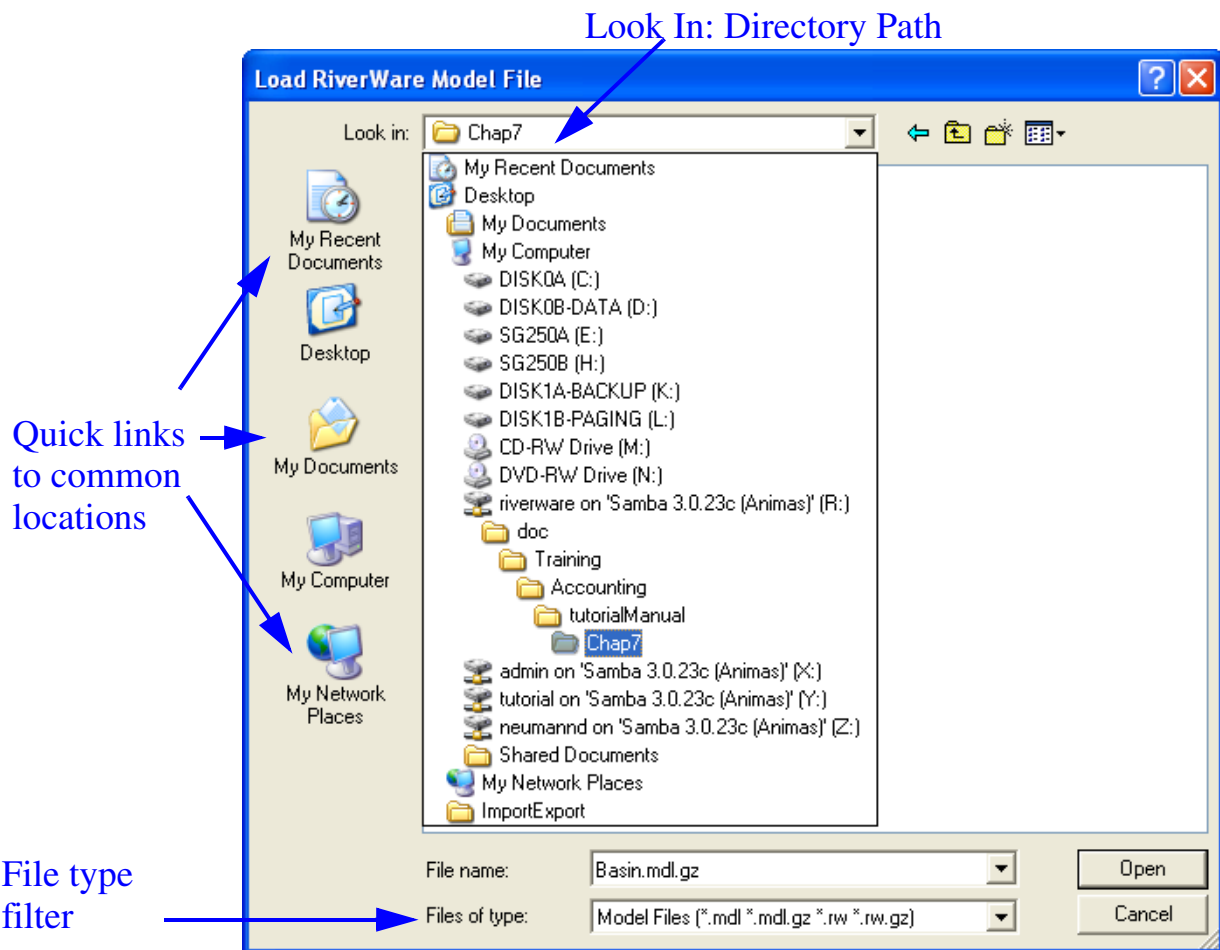
The Look in pull down menu at the top of the dialog indicates the current directory. Clicking on the menu displays each directory on your system including mapped network drives. Any of these directories can be moved to by selecting them in the menu.

### 2.2 Quick links

Along the left side of the file chooser are quick links to common locations. If you are re-opening a model, use the My Recent Documents to show previously accessed directories and files. You may need to sort by date to show the most recent ones. This acts much like a history of previously viewed models and directories.

### 2.3 Files of Type

The file chooser filters by the commonly used file extensions for Model Files:



- Model Files: \*.mdl, \*.mdl.gz \*.rw and \*.rw.gz (default)
- gzip Files (\*.gz)
- All \*

For RPL sets, the filters include

- RuleSet files (\*.rls, \*.rls.gz)
- gzip files (\*.gz)
- All (\*)

In addition, the user can use asterisks (\*) as wildcards in the File name to further filter.

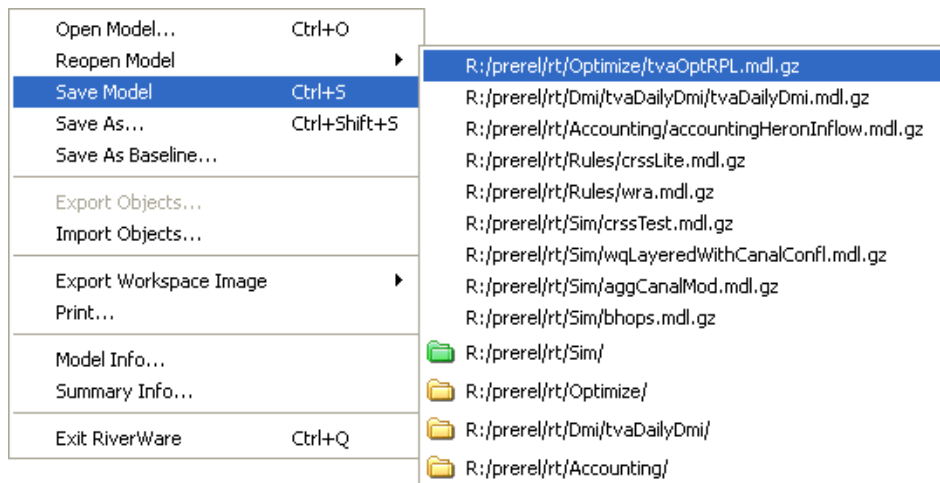
**Note:** The selected filter is preserved across RiverWare sessions. If the user always wants to see the All (\*) filter, the user will need to select this once. Then in all future RiverWare sessions, this will be the default filter.

Once a file has been selected and the Open button has been clicked, the cursor turns into an hourglass while the model is loading. Once the model is loaded a diagnostic window pops up with information

regarding the date and time when the model was last saved, by whom the model was saved, and which version (release) of RiverWare.

## 2.4 Reloading Models

On the **Workspace**, the **File** ➔ **Reopen Model** gives the user previously opened models and directories. This is a quick and easy way to reopen a model. For rulesets there are options to **Reopen** and **Reopen and Load** previously viewed rulesets.



Listed in this menu are previously opened models and a list of recently accessed directories. Selecting a directory item (shown with a yellow folder icon) opens up a file chooser initialized to the specified directory. Also shown is a single user-configured "default" directory (for the specific type of file), based on an environment variable. This directory is shown as a green folder. If this is defined, the file chooser opened using the **File** ➔ **Open** menu will open to that default directory the first time within a RiverWare session. Supported environment variables include:

Type of File	Environment Variable
Model Files	RIVERWARE_DFLT_MODEL_DIR
Rulesets (RPL)	RIVERWARE_DFLT_RULESET_DIR
Optimization Rulesets	RIVERWARE_DFLT_OPTSET_DIR
SCT Files	RIVERWARE_DFLT_SCT_DIR

## 2.5 Save History and Model File Information

Every time a model is loaded a diagnostic window opens with the **Model Save History**. The model save history appears as a brown diagnostic with information regarding the date and time when the model was last saved, the username of person who save the model, and the RiverWare version in which the model was last saved. The Model Save History is part of the Model File Information and is stored with the model file when a model is saved. The model save history is automatically updated each time a model is saved.

In addition to the Save History, it is also possible to enter and save comments about a model. Like the save history, this information is saved together with the model file. Users can write comments or a brief description of a model and save this with the **Model File Information** by selecting **File ▶ Model Info...** from the main RiverWare workspace and typing a comment in the **File Comment** field.

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## 3. Saving Models

There are three ways to save a model in RiverWare, the default **Save**, **Save As...** and **Save As Baseline...** The default **Save** command re-saves the current model with the same name and in the same directory as it was last opened or saved. The save button on the workspace menu bar implements **Save**.



The **Save As...** command invokes a file chooser to select a new name and/or directory into which to save the current workspace. Once a **Save As...** has been performed, any subsequent **Save** will use the same file name and directory until a new model is loaded, the RiverWare session ends, or a new **Save As...** overrides it. The **Save As Baseline...** is used to create an unalterable baseline model for generating alternate simulation scenarios with the Scenario Manager. Creating alternate scenarios is described in greater detail in the Scenario Manager section.

### 3.1 Saving Output Values

As models can be large and take up significant disk space, several options are available for minimizing the saved model size. One option is whether or not to save the model with its calculated output values. The model file size is greatly reduced if the output values are not saved. This is the recommended option for saving frequently run models. Since only the input values are required to reproduce a run, the output may be regenerated by re-running the simulation once the model has been re-loaded. Only **Save As...** prompts for whether or not to save output values. The selected choice is then applied for all subsequent **Save**'s until a new model is loaded, the RiverWare session ends, or a new **Save As...** overrides it. The default **Save** behavior for a new session or model is to save output values.

### 3.2 Naming conventions

Although there is no required extension for RiverWare model files, the “.mdl” is often used to identify a file as a model file and a “.rls” is used to identify a ruleset file.

### 3.3 Compressing Model Files

Model files may be automatically compressed when they are saved by giving their file name a “.gz” extension (the gnu zip compression). When the model is re-loaded, the extension is detected, and the file is uncompressed automatically. Manually compressing and uncompressing files is accomplished through the UNIX “gzip” and “gunzip” commands. Manually compressing and uncompressing files in

WINDOWS is accomplished using any zip program such as WinZip. Manually compressed model files which do not have a “.gz” extension will not be recognized by RiverWare, and will produce an error upon loading.

### **3.4 Back-up files**

The first time a model is saved to an existing file, a backup of the original file is made automatically. This prevents data loss if an overwrite is unintentional or the save process fails and the model is corrupted. The backup file has the same name as the original with a “.bak” extension. A single backup file is made for each model. When upgrading to a newer version of RiverWare, the backup model file name will contain the previous RiverWare version number to the model file (e.g., SampleModel.4.7.mdl.gz). This ensures that there will be a model file compatible with RiverWare version 4.7 until the user explicitly removes it.