CHAN for Windows Frequently Asked Questions (FAQs)

This a listing of answers to the most frequently asked questions about Aquarian Software's CHAN for Windows.

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I can start up the CHAN program, but I don't know what to do next. Where do I begin?

Start by using the CHAN Editor to create a network file (.net), and then create a runtime control file (.ctl). Those are the only two files that are required to perform a basic simulation. Once those two files have been created, you're ready to run! You can download a series of tutorials, with step by step instructions on using the CHAN Editor, for FREE from the Aquarian Software web site.

What is a Network data file and how do I create one?

The Network data file (.net) contains all of the physical descriptions of the drainage system you are modeling. To create one, click on the "Edit" icon on the CHAN Shell. Then, once the CHAN Editor is up and running, select the "File, New, Network" menu item - this creates a new model network data file! Select the "Edit, Network Topology" menu item to add node and reach elements to your model network. After you append a list of reach elements, you can double-click on any reach or node in the topology lists to assign specific data. When you're finished defining your network, press "OK" to close the Network Topology form. Similarly, select the "Edit, Basin Topology" menu item to add basin elements and assign them to nodes in your model network. Then double-click each basin in your topology list to define their hydrologic characteristics. Press "OK" to close the Basin Topology form and return to the main menu of the CHAN Editor. Don't forget to save your network data file!

What is a Runtime Control file and how do I create one?

A Runtime Control file (.ctl) is simply a set of instructions that tell the CHAN Simulation and Retrieval System what network you are modeling, and what time-steps and output intervals to use during simulation. To create one, click on the "Edit" icon on the CHAN Shell. Then, once the CHAN Editor is up and running, select the "File, New, Control" menu item - this creates a new runtime control file! Select the "Edit, Runtime Control" menu item to display the control data form. Fill in all of the requested control data. If you double-click in the Network text box, a file selection dialog will appear - you can use this dialog to locate the model network that you want to include in the simulation. The complete path and filename will be placed in the text box for you. Press "OK" to close the Control form and return to the main menu of the CHAN Editor. Don't forget to save your file!

How do I perform a simulation?

Once you have created a Network data file and a Runtime Control file, you are ready to make a "run". Simply click on the "Simulate" icon on the CHAN Shell. Then, once the

CHAN Simulation and Retrieval System is up and running, select the "File, Open" menu item and select the Runtime Control file that you want to use for simulation. CHAN will read the control file and load your network data into memory. Press the "Run Hydrology" button, then the "Execute" button to compute runoff hydrographs. When hydrographs are completed, press the "Menu" button to return to the main menu. Press the "Run Hydrodynamics" button, then the "Execute" button to perform the hydrodynamic simulation. When the simulation is completed, press the "Menu" button to return to the main menu. Select the "File, Exit" menu item to return to the CHAN Shell.

How do I use the CHAN Shell File Manager?

Click on the "files" icon. Then, select the types of files you want displayed from the pulldown listbox (at the top left corner of the file manager) - this allows you to filter out all extraneous file types, other than the particular types of CHAN data files that you are interested in. Next, use the drive list and directory tree to locate your data files. As you maneuver through your drives and directories, CHAN data files are displayed graphically as folders. You can drag those folders and drop them onto the CHAN Shell Icons (lining the right side of the window) to launch the Editor or the Simulation and Retrieval system. When launched in this manner, those CHAN modules will automatically load the data file for use.

How do I find out if there are errors in my Network file?

Make certain that the "Update Status During File Save" option (located under the "File, Preferences" menu item) has a checkmark next to it. When this feature is enabled, the CHAN Editor performs detailed error checking just before saving the network file. If errors are identified, the Editor will inform you and allow you the opportunity to view them in a text file. In addition, if you check the "Status" checkbox on the Network and Basin Topology forms, each basin, node, and reach element which contains an error will be identified with an "X" mark.

Can I leave fields blank on forms?

No! You must supply data for every field on every form. Blank field are interpreted as zero values or empty strings, and can sometimes lead to unpredictable results.

That's a lot of fields to fill in!

Well, yes it is. But it is more important that you be deliberate in the specification of data when describing your drainage system than it is to be fast! Fortunately, the CHAN Editor is loaded with tools to help ease the data entry load. For example, you can globally assign parameter values to basins with incredible ease and speed. Find out how to speed data entry by reading Tips and Techniques in the Support page of the Aquarian Software web site.

What is the Import format for _____ ...?

You can import many different types of data while using the CHAN Editor. All import functions require that the source data be in a comma-delimited ASCII text file. The exact

format of the import files varies, depending upon the type of data you wish to import. There are two ways to determine the required format. One simple way is to export data of the same type that you wish to import. The exported data will be in the exact same format as that required for importing! The other way is to us the Editor's IntroNotes feature to view an example of the import format. To use IntroNotes, make sure that the feature is turned on, by pressing CTRL-I (or by selecting the feature from the "File, Preferences" menu item). With the IntroNotes feature turned on, whenever you begin an import, you will first be given an opportunity to read a brief introductory note and then you can press an "Example" button to view the format that your data must be in to import successfully.

When I try to start CHAN, I receive the message "Date violation or Execute Count Expired (Security Error 7145-0000-0101)"...

You will receive this or a similar message if you try to execute multiple copies of CHAN. You may have minimized the CHAN Shell window and forgotten that it was already running, then received this message when you tried to start a new instance of the CHAN program. Simply restore the running version and continue on.

When I press F1 to get help, I get a message "The topic does not exist. Contact your application vendor for an updated help file".

Currently, the CHAN Help system can not be accessed from within some of the CHAN Editor's forms. One work-around, of course, is to open up the help system from the main Editor form, then minimize it until it is needed.

How many basins, nodes and reaches can I model with the standard version of CHAN for Windows?

Because CHAN is a 32-bit application, using dynamic memory allocation, it's limits are usually determined by available memory in your computer. There are no programmed limits on the number of basins, nodes and reaches you can model with CHAN for Windows. The CHAN Editor is limited to 32,000 model network elements.

Is there a written manual for CHAN?

A brief written manual is provided with CHAN for Windows. However, most of the documentation is provided in the online help system. In addition, Aquarian Software has created tutorial slideshows, lists of frequently asked questions and lists of tips and techniques, which you can download from the ASI Web Site.

How do you enter data to describe a Box Culvert?

A box culvert is modeled as a bridge with a rectangular cross section. The cross section can also be defined as an irregular section, with x-y data pairs describing the opening (make sure you close the opening off at the top).

Why does the culvert form include a field for rise, but not span?

Given the rise, CHAN for Windows will automatically compute the span based upon the shape of the culvert barrel.

How do I model a culvert with an irregular shape?

You can model a squashed, silted, or otherwise misshaped culvert as a bridge and define the shape of its opening with a series of x-y data pairs in the assigned cross section (the shape must be closed).

What is meant by "Velocity Head Coefficient"?

There are two velocity head coefficients. The first is for unsteady open channels. It describes the vertical distribution of the velocity profile. This number is always set to 1.0, unless there is a good hydrodynamic reason to do otherwise. We recommend using 1.0 in all cases. The second velocity head coefficient is associated with velocity distributions in culvert pipes, bridges and junction channels and is used during iterative step-backwater computations for computation of flow. It should also be set to 1.0 unless there is a good reason (associated with crushed pipe or something that affects losses within the barrel other than friction). The entrance loss coefficient for culverts, bridges and junction channels is not related to either of the above.

How do you enter data for a circular orifice?

CHAN does not, at this time, provide for a circular orifice. You may choose to model circular orifices as rectangular orifices with equivalent areas, which under full flow conditions are computationally equivalent (discharge is a function of cross sectional area, coefficient of discharge and head conditions). Under weir flow conditions, the computed discharge will not be identical to that of the true circular orifice (however, you can provide depth variable discharge coefficients for the weir flow component to approximate the circular orifice discharge under partial flow conditions). If you are modeling a very large circular orifice, then you may consider using a short, circular culvert instead. We are evaluating the addition of the circular shaped orifice for a future release of CHAN.