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# Wahoo! Results

**John D. Strunk**

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## DOWNLOAD

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### Download the latest version

Version 0.8.0 - 07/03/2022 - [wahoo-results.exe](#) See it on the [GitHub releases page](#).

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The scoreboard is packaged as a single executable, and no installation is necessary. The above executable is all you need to get started.

Want to know what's changed? [Check out the changelog!](#)

User preferences are saved in a `wahoo-results.ini` file in the same directory as the executable. If it doesn't exist, it will be created when the program is first run.



## CONFIGURATION

The main window allows configuring the scoreboard and monitoring the latest results that are being transmitted.

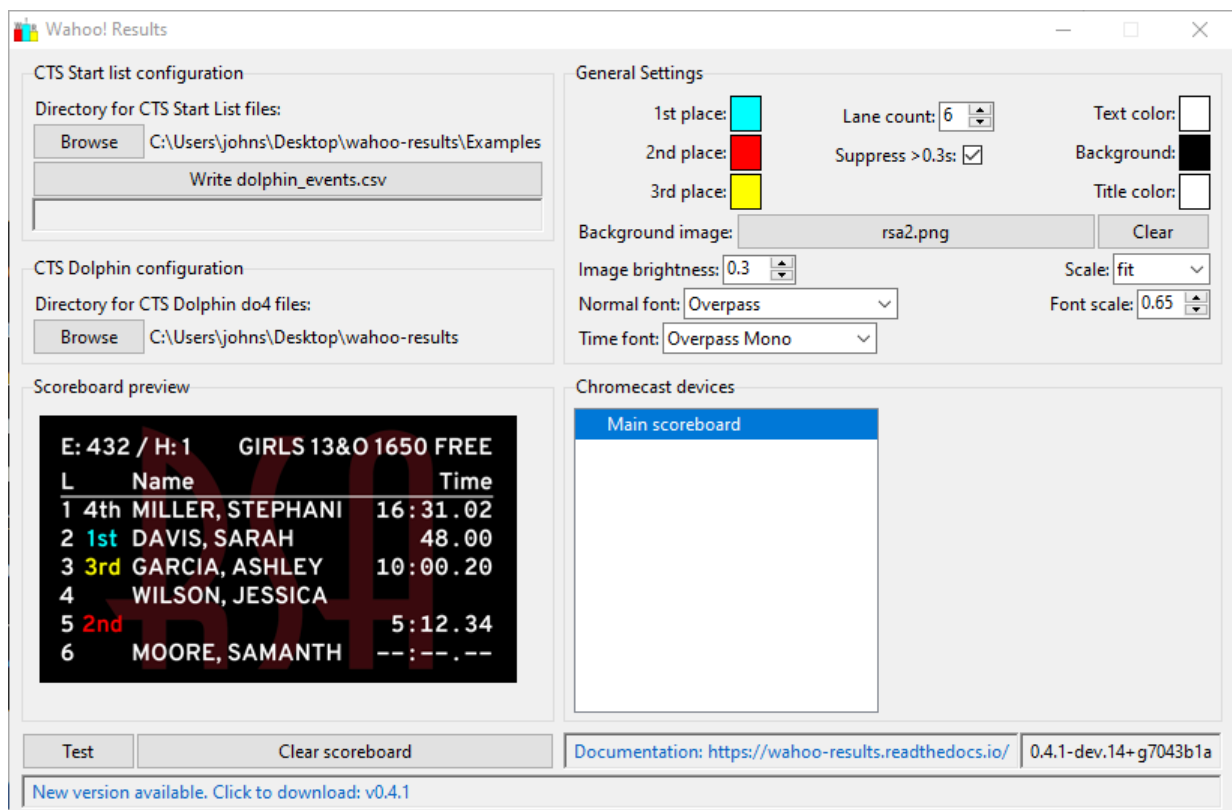


Fig. 1: Main window

## 2.1 Start list configuration

The first step in configuring Wahoo! Results is to obtain the start list files.

### 2.1.1 Creating start list files

The start lists used by Wahoo! Results are the same as the files that are used for scoreboards run by a Colorado System 6 or similar system.

Meet Manager

Meet Maestro

In Meet Manager, start lists can be created by selecting:

File > Export > Start Lists for Scoreboard > Start Lists for CTS ([Click here for an example](#))

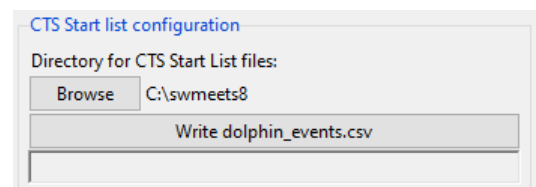
The desktop version of Meet Maestro (free from Swimtopia's web site) is required to generate the start list files. They cannot be exported by the web version currently.

To export the start lists:

Settings (gear icon in the upper right) > Timing Setup > Scoreboards > "Export start lists for CTS" ([Click here for an example](#))

The above steps will create a series of files named E<###>.scb, one for each event in the session(s) that were exported. The start lists should all be placed into a directory that Wahoo! Results will be able to access.

### 2.1.2 Selecting the start list directory

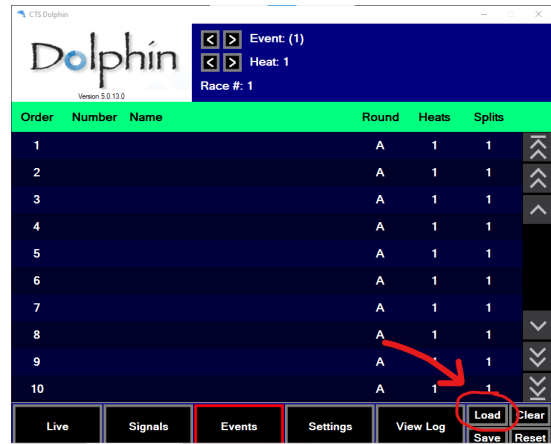


The top left section of the configuration screen is used to select the directory where the start lists have been saved. Click the "Browse" button and navigate to the appropriate directory. Once chosen, the directory path will appear on the right.

After choosing the directory, click the "Write dolphin\_events.csv" button. This reads all the start lists and creates a list of events, heats, and descriptions that can be imported into the CTS Dolphin software. The status line below the button will update with the number of events that were found/processed. For example:

Wrote 24 events to dolphin\_events.csv





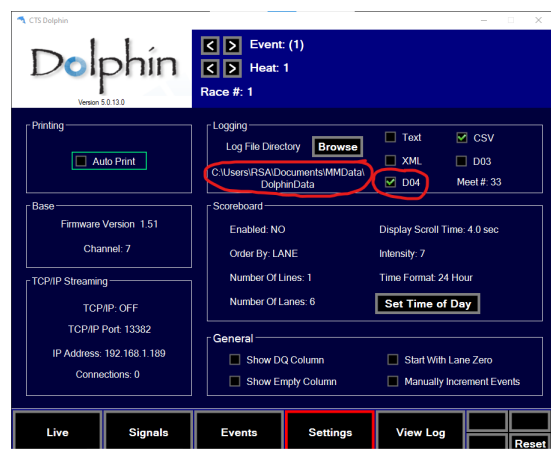
This `dolphin_events.csv` file can now be imported into the Dolphin software (on the Events screen). It will provide the event numbers, descriptions, and number of heats for each event. **Having the correct event and heat number in the Dolphin software is required for the scoreboard to correctly recognize the race results.**

In the Dolphin software, navigate to the “Events” screen and click “Load.” Select the `dolphin_events.csv` that was just created in the start list directory. This will populate the event screen with all the events and their heat counts.

## 2.2 Dolphin configuration

The second step is to configure the Dolphin software and tell Wahoo! Results where to find the race results.

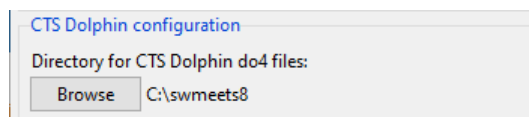
### 2.2.1 Dolphin software



In order to obtain the race results, Wahoo! Results needs to be able to read the data files that are generated by the Dolphin software. Dolphin must be configured to produce D04 result files (aka results with splits). The split times themselves do not need to be captured and are not actually used. If you do not normally use D04 files, multiple file formats can be enabled in the Dolphin software.

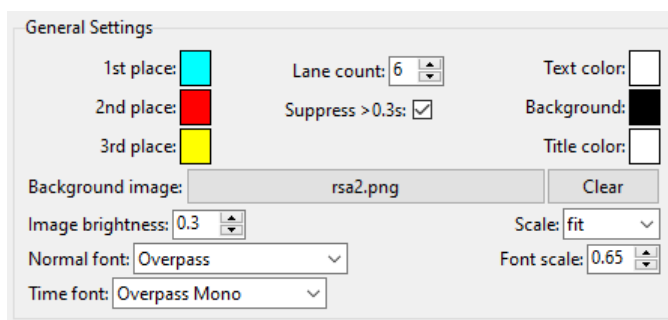
Also make a note of the log directory that is being used. This is where the result files will be written, and Wahoo! Results needs to be able to locate them.

### 2.2.2 Setting the results directory



In Wahoo! Results, the Dolphin's logging directory needs to be selected. Click on the “Browse” button and navigate to the logging directory noted above. The chosen directory will appear next to the button once selected.

### 2.3 General options



The upper-right section of the configuration screen is used to set the general options that control the look of the scoreboard. When customizing options, click the “Test” button to display a sample scoreboard in the chosen style.

Below is an explanation of each option. Tooltips are also available in the application by hovering over any item.

#### 1st, 2nd, and 3rd place colors

By clicking on the color swatch next to each of these, the color of the “1st”, “2nd”, and “3rd” place markers can be configured.

#### Lane count

Sets the number of lanes to display on the scoreboard.

#### Suppress >0.3s

When this option is selected, if the minimum and maximum individual times received for a lane differ by more than 0.3s, the time for that lane will not be displayed. The displayed result will be “-:-” instead. This prevents showing results where there may have been a timing anomaly.

#### Text, background, and title colors

Clicking on the corresponding color swatch allows customizing the color for each of these items.

#### Background image

An image can be selected to display behind the results. The currently selected image is shown on the button. The selection can be cleared by pressing the “Clear” button.

When selecting a background image, keep in mind that any transparent areas of the image will be replaced by the solid background color (above option).

#### Image brightness

This allows decreasing the brightness of the background image so that the scoreboard results are easier to read.

#### Scale

This adjusts how the background image is scaled to fit on the scoreboard. There are four options:

- None: The image is not scaled; it is used as-is.
- Cover: The image is uniformly scaled so that the **smallest** dimension fills the screen (i.e., the image will fully “cover” the screen).
- Fit: The image is uniformly scaled so that the **largest** dimension fills the screen (i.e., the image will “fit” within the screen).
- Stretch: The image is non-uniformly scaled so that the image fully fills the screen yet still fits within it.

**Normal font & Time font**

These select the font that will be used for displaying the text on the scoreboard. Any font that is installed on the computer may be used.

It is suggested that a monospaced font be used for the time font so that the result times align vertically on the scoreboard (i.e., all the “:” and “.” separators line up vertically).

**Font scale**

The size of the fonts are automatically chosen based on the size of the scoreboard window and the number of lanes. This scale parameter controls the amount of “whitespace” that is left between scoreboard lines. Choosing a larger scale factor will produce larger text, but it can also lead to the scoreboard text looking “crowded.”

## 2.4 Chromecast selection

The lower-right of the window displays the names of all the Google Chromecast devices that have been discovered on the local network. Select one or more of these devices to enable them. You may need to <ctrl>-click or <shift>-click to adjust the selection. The selected Chromecast devices should immediately begin displaying the latest scoreboard image.

## 2.5 Preview window

The lower-left of the main window contains a preview of what is currently being broadcast to the enabled Chromecast devices. The “test” and “clear” buttons just below this preview image can be used to send test data or clear the currently displayed results.



## FAQ/TROUBLESHOOTING

Having problems?

**I'm not getting any results.**

The scoreboard displays race results when a new D04 file appears in the configured log directory.

1. Ensure the Dolphin software is *configured to generate* D04 files in addition to any other type of log file you may be using.
2. Ensure Wahoo! Results is configured to *watch the correct log directory*.

**I get results, but none of the swimmer's names are displayed.**

The scoreboard is not able to find a corresponding start list for the event/heat.

1. Ensure the Event and Heat number of the race are displayed correctly.
2. Ensure Wahoo! Results is looking for the *start lists in the correct directory*.

**The event and heat number are wrong.**

The event and heat number are read from the D04 result file. Ensure the Dolphin software displays the correct event and heat number for each race.

**My Chromecast devices aren't being discovered.**

When the application starts, it can take several seconds to discover the Chromecasts on the local network. If your device still doesn't appear after a minute or two, it may not be discoverable due to your facility's network configuration.

One way to troubleshoot further is to see if you can *cast a Google Chrome web browser tab to the device*. If you are unable to cast from Chrome, it is unlikely that Wahoo! Results is going to be able to find the device.

**I've selected the Chromecast(s), but no image is being sent.**

Make sure that Wahoo! Results is not being blocked by Windows Firewall. The Chromecast protocol works by sending a web URL to the chromecast device, then the device fetches the actual media from that address. This means that Wahoo! Results runs an embedded web server that server must be accessible to the chromecast devices.

Question still not answered? [Feel free to ask on GitHub](#).

Wahoo! Results is a free swimming scoreboard that you can use to display race results at your meets. It combines start list data from your meet management software (e.g., [HyTek Meet Manager](#) or [SwimTopia Meet Maestro](#)) with data files from a Colorado Dolphin timing system to produce an attractive scoreboard that keeps swimmers, coaches, and spectators informed of race results in real-time.

The scoreboard is transmitted to Chromecast devices, allowing the results to be available on many displays at your facility.

E: 432 / H: 1		GIRLS 13&O 1650 FREE	
L	Name	Time	
1 4th	MILLER, STEPHANI	16:31.02	
2 1st	DAVIS, SARAH	48.00	
3 3rd	GARCIA, ASHLEY	10:00.20	
4	WILSON, JESSICA		
5 2nd		5:12.34	
6	MOORE, SAMANTH	--:--.--	

In a hurry? [Skip to the download page](#)

## FEATURES

The Wahoo! Results scoreboard is customizable to meet the needs of your swim team.

- Configurable number of lanes (6 - 10)
- Use custom text fonts, sizes, and colors plus a background image or solid color to fit your team's theme
- Final times are calculated based on multiple Dolphin watches
- Results are transmitted to your [Google Chromecast](#) devices





## REQUIREMENTS

- HyTek Meet Manager, SwimTopia Meet Maestro, or other meet management software that can generate scoreboard “CTS start list” files
- Colorado Dolphin timing system
- Windows 10 PC to run Wahoo! Results (It can be shared with either of the above.)
- One or more Chromecast devices



## **LICENSE**

Wahoo! Results is free, open-source software that you can download and use. The software is licensed under the GNU Affero General Public License, version 3.

If you are interested in contributing, [check out the project's repository on GitHub](#):

- View the latest releases
- Ask questions
- File bug reports
- Download the source code
- Contribute enhancements